



Spann-und Vorrichtungssysteme
Mold and Workpiece Clamping Systems

“Wir produzieren Qualität”

“We produce quality in clamping equipment”



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2022 KATALOG
CATALOGUE



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UNSER GESCHÄTZTER KUNDE;

Als ER-EL MAKINA stellen wir seit 1989 Produkte her, die uns zu einem Symbol des Vertrauens und der Qualität im Bereich der Formspann- und Bearbeitungsgeräte machen. Im Laufe der Jahre hat sich ER-EL mit steigender Kapazität und Gesamtbeschäftigung immer weiter entwickelt. Heute exportiert das Unternehmen in mehr als 35 Länder, hauptsächlich in europäische Länder.

Unsere Forschungs- und Entwicklungsabteilung, deren Aufgabe es ist, Lösungen zu finden, die den Bedürfnissen und Anforderungen unserer Kunden entsprechen, von denen jeder einen eigenen Wert und eine eigene Bedeutung hat, setzt ihre Bemühungen fort, die Produktvielfalt mit großem Engagement zu erweitern. Unser Unternehmen verfolgt einen effizienten, nachhaltigen Weg, indem es seine Investitionen erhöht, um wertschöpfende, qualitativ hochwertige und sichere Produkte herzustellen. 2004 wurde das Qualitätsmanagementsystem ISO 9001:2015 eingeführt und die bestehende Qualität zertifiziert. Das Unternehmen verfügt über ein Umweltmanagementsystem nach ISO14001:2015 und ein Managementsystem für Gesundheit und Sicherheit am Arbeitsplatz nach ISO 45001:2018.

Heute sind wir stolz darauf, ein Marktführer und Hersteller im Bereich der Werkzeug- und Werkstückspannvorrichtungen und Bearbeitungssysteme zu sein, mit über 4500 schnell lieferbaren Lagerprodukten.

Neben unserer Standardproduktion stellen wir auch projektbezogene Sonderspannvorrichtungen her. Vor allem in der Verteidigungs- und Luftfahrtindustrie, in der Automobilbranche, in der Weißwarenindustrie, im Schwermaschinenbau und in der Waffenindustrie werden mechanische, pneumatische und hydraulische Vorrichtungen eingesetzt, die wir für das Werkstück entwickeln und produzieren. Mit unserer Produktgruppe, die die Leistungsfähigkeit der Systeme optimiert, produzieren wir weiterhin weltweit anerkannte Standards, die in der Praxis gültig sind.

ER-EL, das 2017 in eine eigene neue Fabrik umgezogen ist, setzt seine Geschäftsaktivitäten mit hervorragenden Leistungen fort, mit dynamischem und fachkundigem Personal und mit Standard- und projektbasierten Lösungen, die den Anforderungen entsprechen und weiterhin die Kundenzufriedenheit als seine Philosophie erreichen.

MIKSAN Schnell-Spannsysteme, das seit vielen Jahren als Hersteller von Spannsystemen im In- und Ausland in der Branche tätig ist, wurde übernommen und in das Unternehmen ER-EL adaptiert. MIKSAN-Produkte, eine Marke von ER-EL; Unser Unternehmen wird weiterhin mit Qualität und Sicherheit dienen.

Bei dieser Gelegenheit möchten wir uns bei Ihnen, unseren geschätzten Kunden, für Ihr Vertrauen in ER-EL bedanken und wünschen uns, dass wir unsere Zusammenarbeit noch viele Jahre fortsetzen können.

Mit freundlichen Grüßen;
ER-EL Direktoren

OUR ESTEEMED CUSTOMER;

ER-EL MACHINE SPARE PARTS MANUFACTURING INDUSTRY CO.LTD. Since 1989, we have been producing products that make us a symbol of trust and quality in mold clamping and processing equipment. Over the years, ER-EL has progressed more and more confidently with its increasing capacity and total employment. Today, it export to more than 35 countries, mainly European countries.

Our R & D department, which operates to provide solutions that meet the needs and demands of our customers, each of which has a distinct value and importance, continues its efforts to increase the product variety with great devotion. Our company follows an efficient, sustainable way by increasing its investments in order to produce value added, quality and safe products; In 2004, it established ISO 9001:2015 Quality Management System and documented its existing quality. The company has ISO14001:2015 Environmental Management System, ISO 45001:2018 Occupational Health and Safety Management System.

As of today, we are proud to be the leader and manufacturer company in the field of mold & workpiece clamping equipment and processing systems, over 4500 fast immediate delivery stock products.

In addition to our standard production, we also produce project-based special fixture apparatus. Especially in Defense & Aviation Industry, Automotive, White Goods, Heavy Machinery and Weapon Industry sectors such as industry-renowned companies; mechanical, pneumatic and hydraulic fixture products that we design and produce for the workpiece are used. With our product group optimizing system efficiency; we continue to produce world-accepted standards that are valid in the field.

Our company moved to the new factory in 2017; with its dynamic and expert staff in the field of production facility and management building, it works with superior performance for customer satisfaction with both standard and project based fixture solutions.

MIKSAN Fast Coupling Systems company which has been serving to the sector as a manufacturer of mold fasteners in our country and abroad for many years has been purchased as of and ER-EL Mold Clamping and Processing Systems has joined our company. MIKSAN products which are an ER-EL brand; Our company will continue to serve with quality and assurance.

We would like to thank you, our esteemed customers for your trust in ER-EL and hope to work for many years with the same stability and confidence.

Kind regards;
ER-EL Directors





























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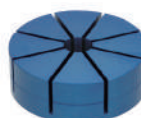
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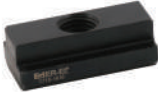
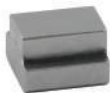







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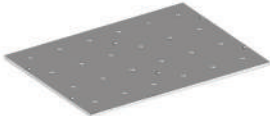


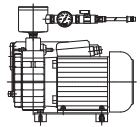



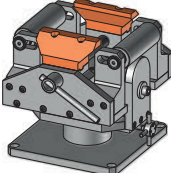










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5-Achs Basismodul

5-Axis Clamping Block

Kombination

- Modulare Montagemöglichkeiten und 5-Seiten Bearbeitung auf CNC Horizontal-Bearbeitungszentren, CNC-Vertikal-Bearbeitungszentren, CNC-5-Achsen Maschinen mit "T" Nut und Rasterplatten verwendet.

Combination

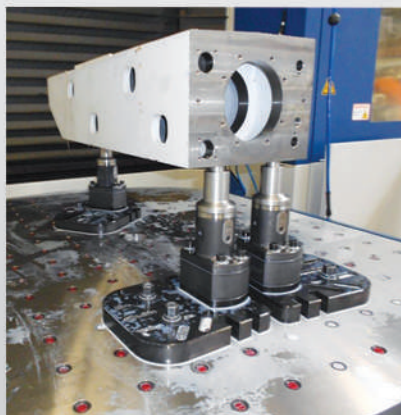
- Its modular assembly and 5 edge ability, it can be used on CNC Horizontal, CNC Vertical CNC 5 Axis machines with T-Slots and rasterized plates.

Eigenschaften

- Bedienungsfreundlichkeit bei 5-Seiten Bearbeitung
- Erweiterbare Funktionalität
- Variable Montagemöglichkeiten
- wiederholbare Präzision bei Massenproduktion
- Hohe Spannkraft

Features

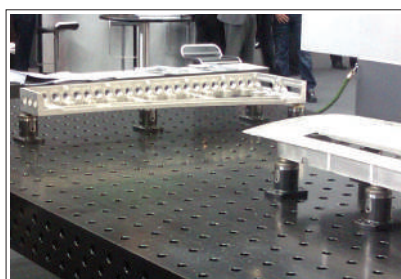
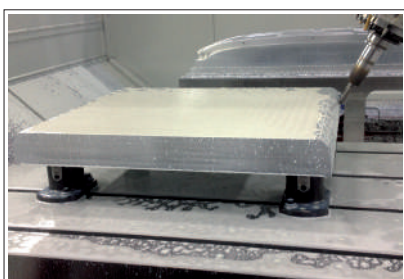
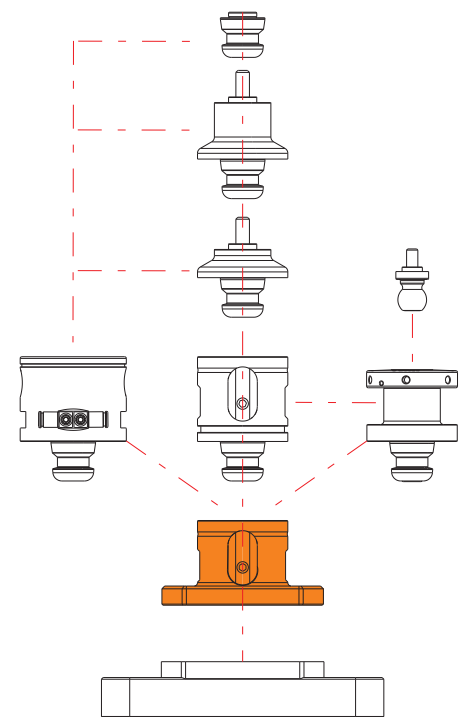
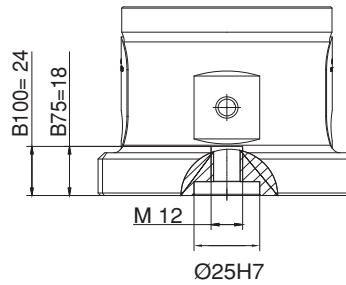
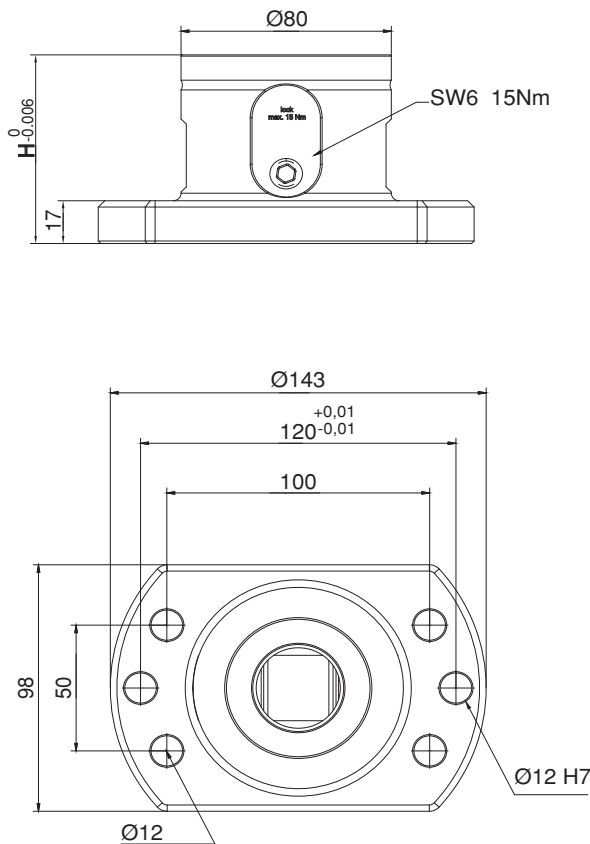
- Ease at 5 axis operations
- Height adjusting feature
- Variable fixing possibility
- Repeating precision at mass production
- High clamping force





| Referenz-Nr. Order No. | Technische Daten / Specifications | |
|---------------------------|---|--|
| 0900-UL800010 | Durchmesser: 80mm Höhe: 75mm Haltekraft (M10): 3500 kgf Haltekraft (M12): 5000 kgf Wiederholgenauigkeit: <0.005 mm Gewicht: 3.65 kg | Diameter: 80mm Height: 75mm Retention force (M10): 3500 kgf Retention force (M12): 5000 kgf Repeatability: <0.005 mm Weight: 3.65 kg |
| 0900-UL800012 | Durchmesser: 80mm Höhe: 100mm Haltekraft (M10): 3500 kgf Haltekraft (M12): 5000 kgf Wiederholgenauigkeit: <0.005 mm Gewicht: 4.55 kg | Diameter: 80mm Height: 100mm Retention force (M10): 3500 kgf Retention force (M12): 5000 kgf Repeatability: <0.005 mm Weight: 4.45 kg |

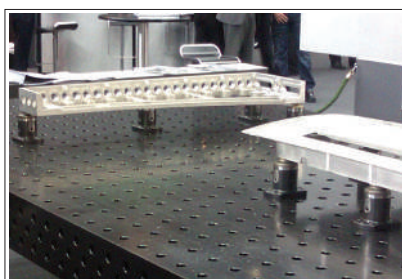
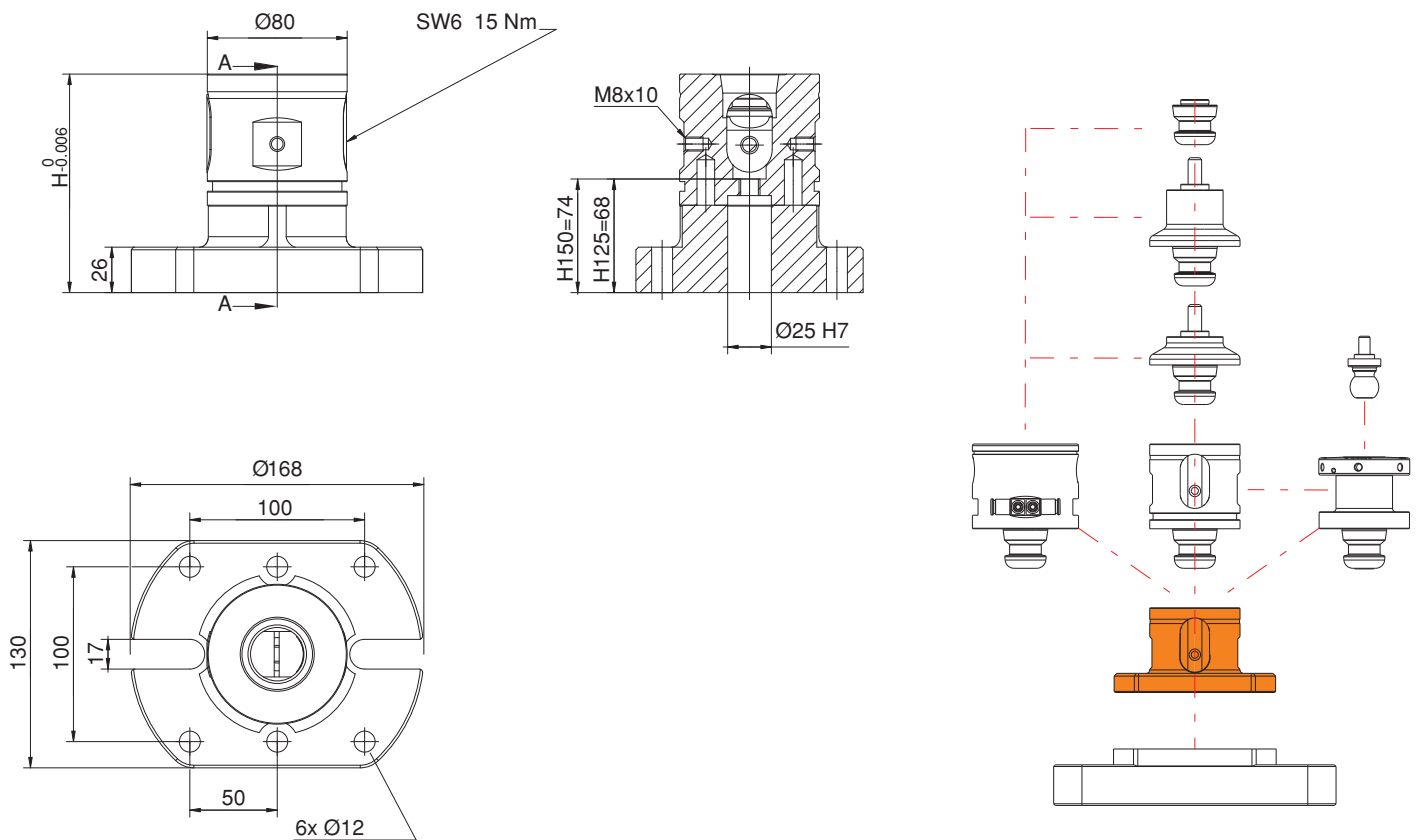
0900





| Referenz-Nr. Order No. | Technische Daten / Specifications | |
|---------------------------|--|--|
| 0900-UL800018 | Durchmesser: 80mm Höhe (H): 125 mm Haltekraft (M10): 3500 kgf Haltekraft (M12): 5000 kgf Wiederholgenauigkeit: <0.005 mm Gewicht: 6.65 kg | Diameter: 80mm Height (H): 125mm Retention force (M10): 3500 kgf Retention force (M12): 5000 kgf Repeatability: <0.005 mm Weight: 6.65 kg |
| 0900-UL800019 | Durchmesser: 80mm Höhe (H): 150 mm Haltekraft (M10): 3500 kgf Haltekraft (M12): 5000 kgf Wiederholgenauigkeit: <0.005 mm Gewicht: 7.60 kg | Diameter: 80mm Height (H): 150mm Retention force (M10): 3500 kgf Retention force (M12): 5000 kgf Repeatability: <0.005 mm Weight: 7.60 kg |
| 0900-UL800020 | Durchmesser: 80mm Höhe (H): 175 mm Haltekraft (M10): 3500 kgf Haltekraft (M12): 5000 kgf Wiederholgenauigkeit: <0.005 mm Gewicht: 8.45 kg | Diameter: 80mm Height (H): 175mm Retention force (M10): 3500 kgf Retention force (M12): 5000 kgf Repeatability: <0.005 mm Weight: 8.45 kg |

0900



| Referenz-Nr. Order No. | Technische Daten / Specifications | |
|---------------------------|--|--|
| 0900-UL800030 | Durchmesser: 80mm Höhe (H): 75 mm Haltekraft (M10): 3500 kgf Haltekraft (M12): 5000 kgf Wiederholgenauigkeit: <0.005 mm Gewicht: 2.85 kg | Diameter: 80mm Height (H): 75mm Retention force (M10): 3500 kgf Retention force (M12): 5000 kgf Repeatability: <0.005 mm Weight: 2.85 kg |
| 0900-UL800031 | Durchmesser: 80mm Höhe (H): 100 mm Haltekraft (M10): 3500 kgf Haltekraft (M12): 5000 kgf Wiederholgenauigkeit: <0.005 mm Gewicht: 3.65 kg | Diameter: 80mm Height (H): 100mm Retention force (M10): 3500 kgf Retention force (M12): 5000 kgf Repeatability: <0.005 mm Weight: 3.65 kg |
| 0900-UL800032 | Durchmesser: 80mm Höhe (H): 125 mm Haltekraft (M10): 3500 kgf Haltekraft (M12): 5000 kgf Wiederholgenauigkeit: <0.005 mm Gewicht: 4.70 kg | Diameter: 80mm Height (H): 125mm Retention force (M10): 3500 kgf Retention force (M12): 5000 kgf Repeatability: <0.005 mm Weight: 4.70 kg |

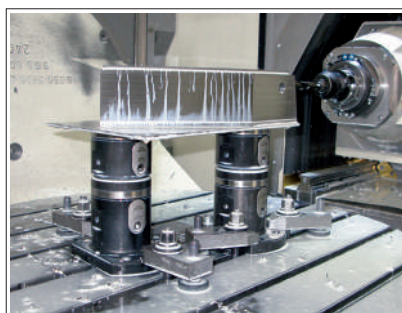
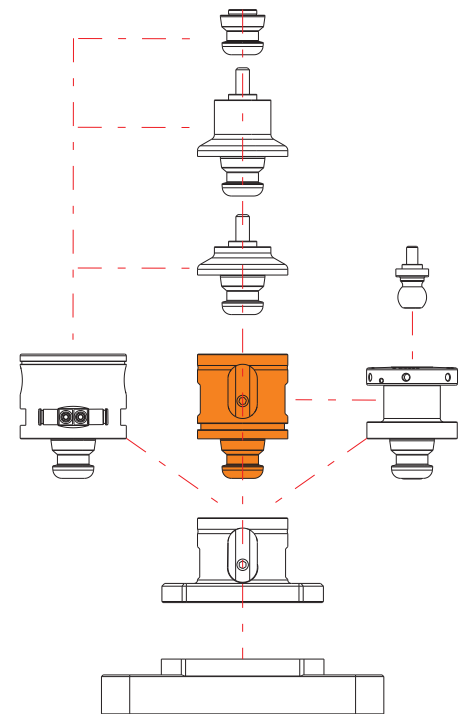
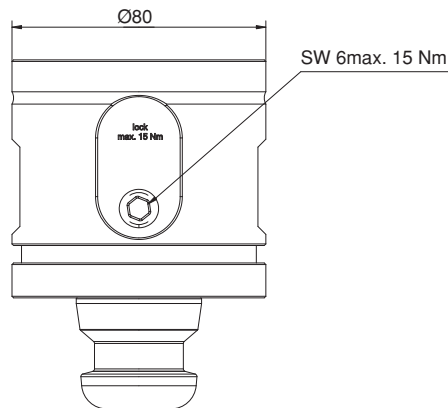
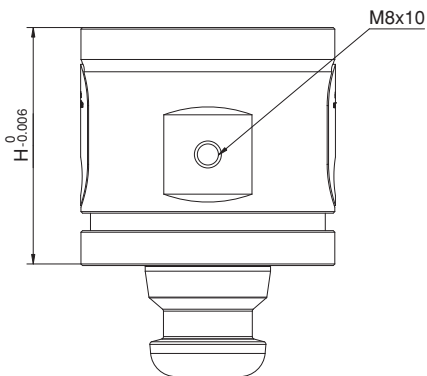
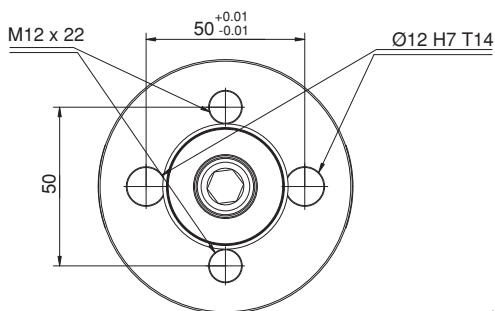


0900

- Anwendungshöhe: 75mm, 100 mm, 125mm
- Ermöglicht die Verwendung von bis zu 1m Aufrüstung.

0900

- 75mm, 100mm and 125 mm in height can be used.
- Allows the use of up to 1m upgrade.



| Referenz-Nr. Order No. | Technische Daten / Specifications | |
|---------------------------|---|---|
| 0900-UL800033 | Durchmesser: 80mm Höhe (H): 75 mm Haltekraft (M10): 3500 kgf Haltekraft (M12): 5000 kgf Wiederholgenauigkeit: <0.005 mm Gewicht: 3.30 kg | Diameter: 80mm Height: 75mm Retention force (M10): 3500 kgf Retention force (M12): 5000 kgf Repeatability: <0.005 mm Weight: 3.30 kg |

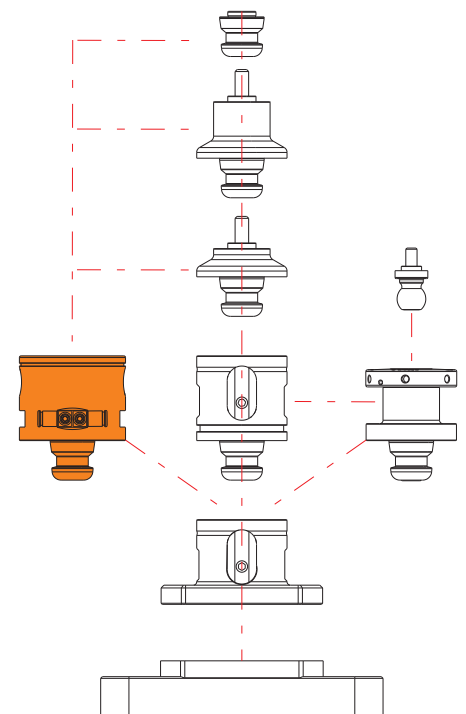
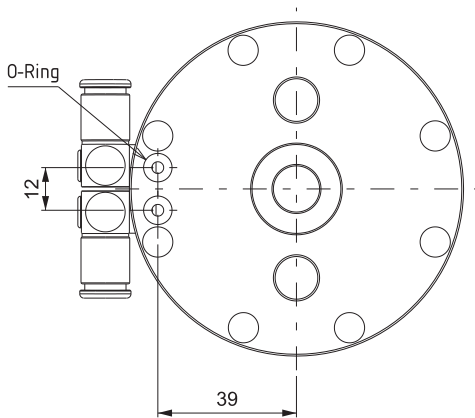
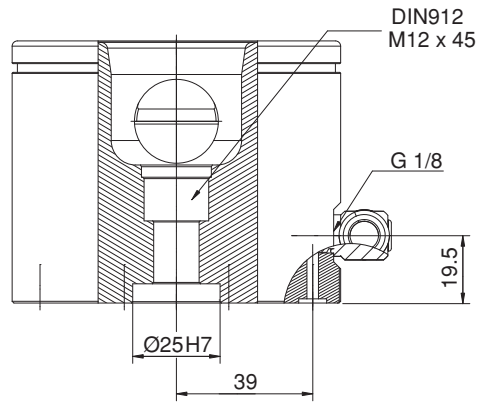
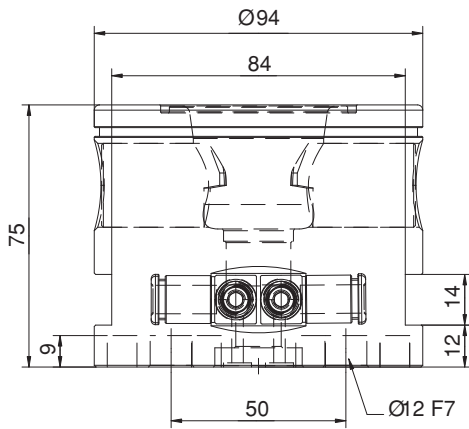


0900

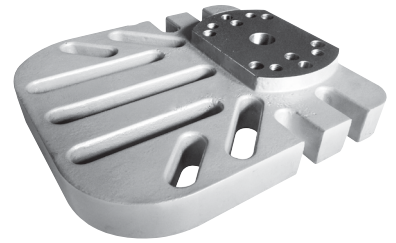
- pneumatisches Öffnen und Schließen bei Massenproduktion

0900

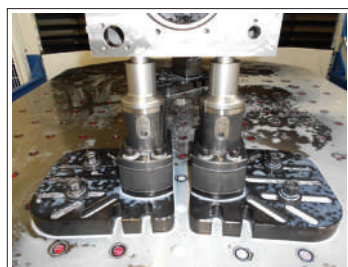
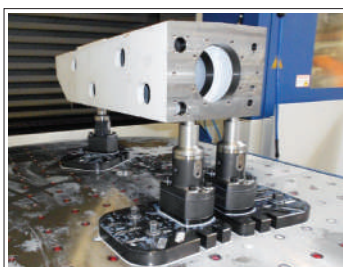
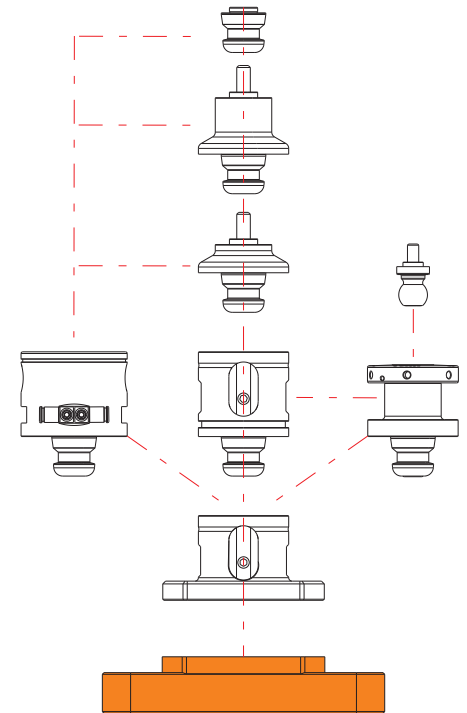
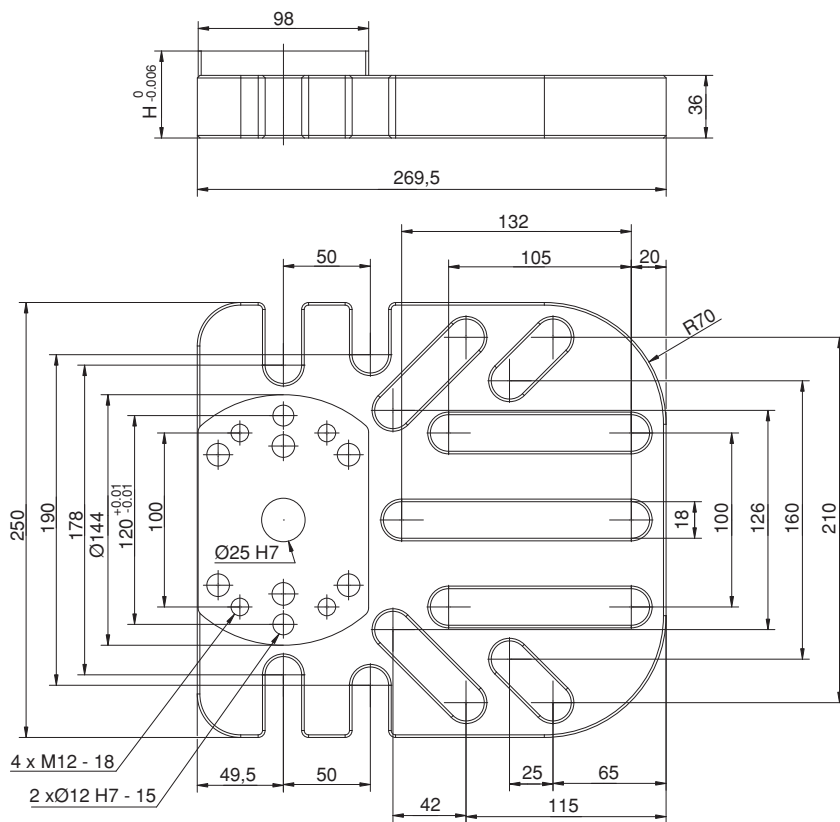
- Pneumatic opening and closing at mass production



| Referenz-Nr. Order No. | Technische Daten / Specifications | |
|---------------------------|--|--|
| 0900-UL800055 | Höhe (H): 50 mm Länge: 250mm Breite: 270mm Gewicht: 14.20 kg | Height (H): 50mm Length: 250mm Width: 270mm Weight: 14.20 kg |
| 0900-UL800056 | Höhe (H): 100 mm Länge: 250mm Breite: 270mm Gewicht: 18.70 kg | Height (H): 100mm Length: 250mm Width: 270mm Weight: 18.70 kg |
| 0900-UL800057 | Höhe (H): 150 mm Länge: 250mm Breite: 270mm Gewicht: 21.20 kg | Height (H): 150mm Length: 250mm Width: 270mm Weight: 21.20 kg |



0900



| Referenz-Nr. Order No. | Technische Daten / Specifications | |
|---------------------------|--|---|
| 0900-UL800126 | 1x SBC 40-25-5-16, 1x Befestigungsschraube M12x100mm Gewicht: 0.875 kg | 1x SBC 40-25-5-16, 1x mounting screw M12x100mm Weight: 0.875 kg |
| 0900-UL800123 | 1x SBC 40-25-5-16, 1x Befestigungsschraube M12x75mm Gewicht: 0.875 kg | 1x SBC 40-25-5-16, 1x mounting screw M12x75mm Weight: 0.875 kg |
| 0900-UL800120 | 1x SBC 40-25-5-12, 1x Befestigungsschraube M10x100mm Gewicht: 0.875 kg | 1x SBC 40-25-5-12, 1x mounting screw M10x100mm Weight: 0.875 kg |
| 0900-UL800117 | 1x SBC 40-25-5-12, 1x Befestigungsschraube M10x75mm Gewicht: 0.875 kg | 1x SBC 40-25-5-12, 1x mounting screw M10x75mm Weight: 0.875 kg |

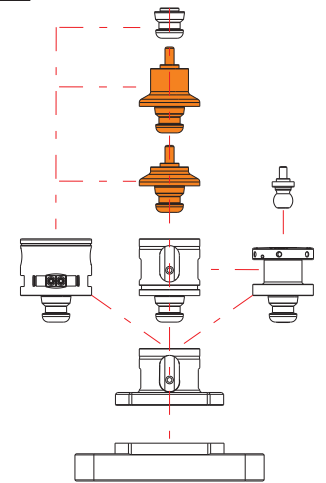
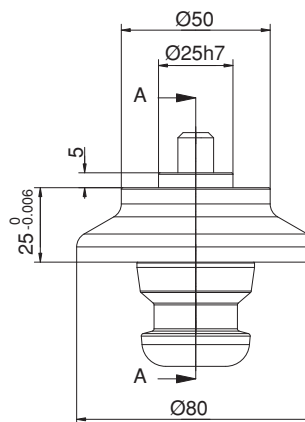
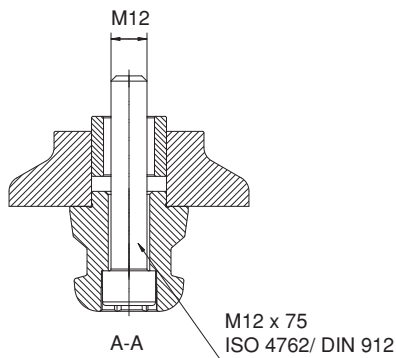


0900

- Um Deformationen des Werkstücks zu verhindern.

0900

- To prevent deformations of the workpiece.



5-Achs Reduktion inkl.

5-Axis Clamping Block Intermediary Part (Hard)

| Referenz-Nr. Order No. | Technische Daten / Specifications | |
|---------------------------|--|---|
| 0900-UL800111 | 1x SBC 40-25-5-16, 1x Befestigungsschraube M12x100mm Gewicht: 1.180 kg | 1x SBC 40-25-5-16, 1x mounting screw M12x100mm Weight: 1.180 kg |
| 0900-UL800108 | 1x SBC 40-25-5-16, 1x Befestigungsschraube M12x75mm Gewicht: 1.180 kg | 1x SBC 40-25-5-16, 1x mounting screw M12x75mm Weight: 1.180 kg |
| 0900-UL800105 | 1x SBC 40-25-5-16, 1x Befestigungsschraube M10x100mm Gewicht: 1.180 kg | 1x SBC 40-25-5-12, 1x mounting screw M10x100mm Weight: 1.180 kg |
| 0900-UL800102 | 1x SBC 40-25-5-16, 1x Befestigungsschraube M10x75mm Gewicht: 1.180 kg | 1x SBC 40-25-5-12, 1x mounting screw M10x75mm Weight: 1.180 kg |

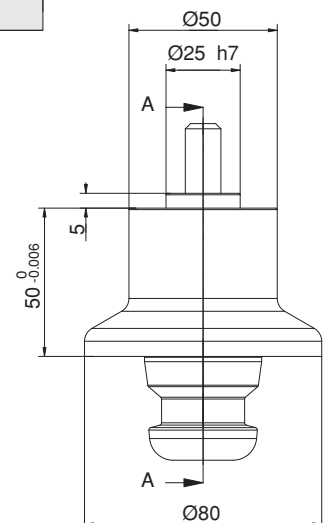
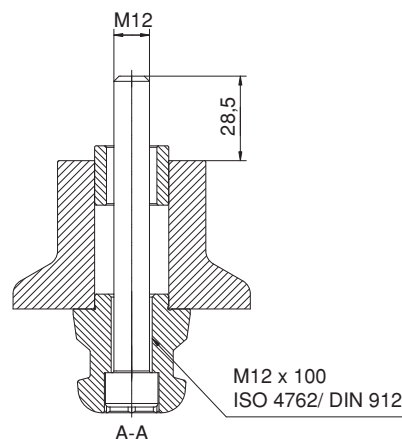



0900

- Um eine Änderung der Wechselgenauigkeit zu verhindern.

0900

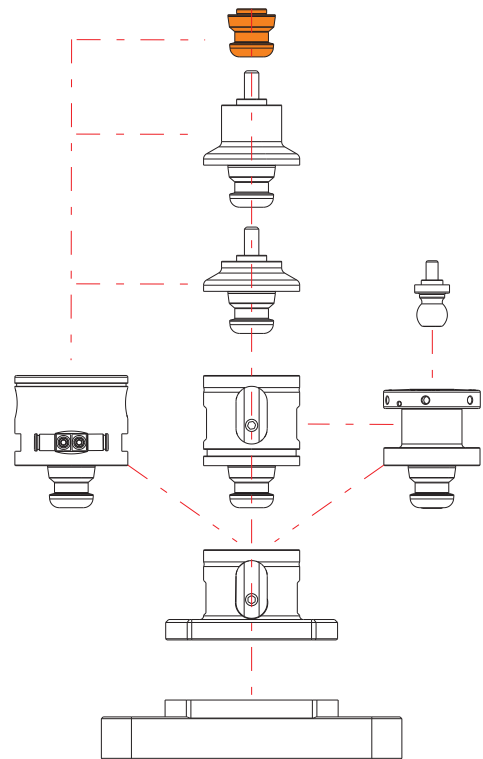
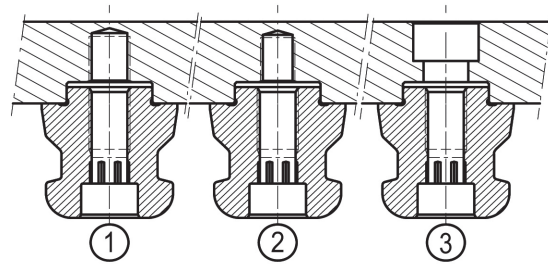
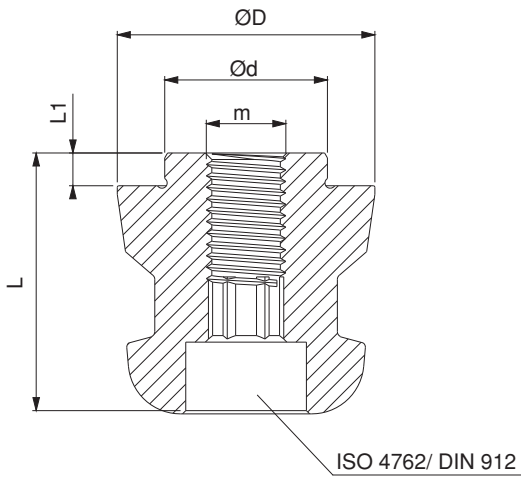
- To prevent change of repeating precision.



| Referenz-Nr. Order No. | Spezifikationen Description | L x ØD | Ød | L1 | m |  (kg) |
|---------------------------|--------------------------------|--------|------|----|----|--|
| 0900-UL500115 | SBC | 40 | 25h6 | 5 | 12 | 0.200 |
| 0900-UL500118 | SBC | 40 | 25h6 | 5 | 16 | 0.200 |
| 0900-UL500121 | SBC | 40 | 25h6 | 5 | 20 | 0.200 |



0900



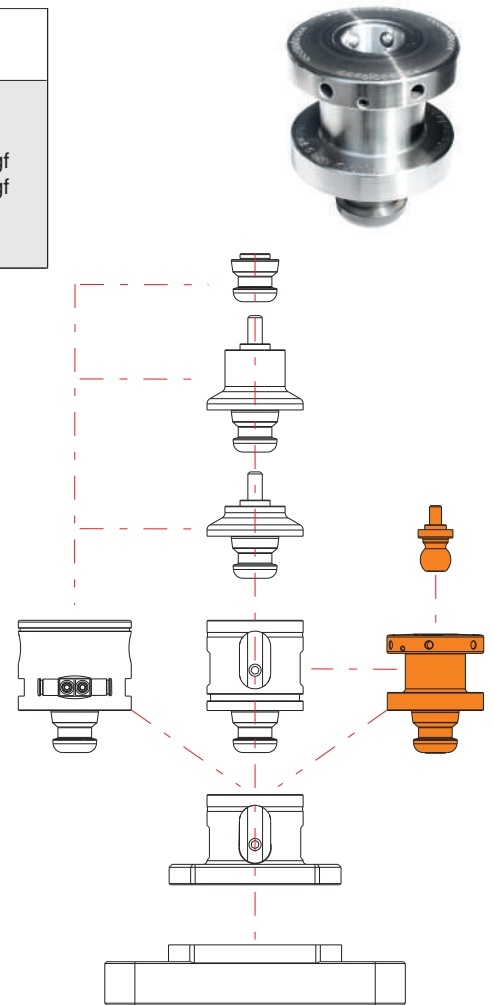
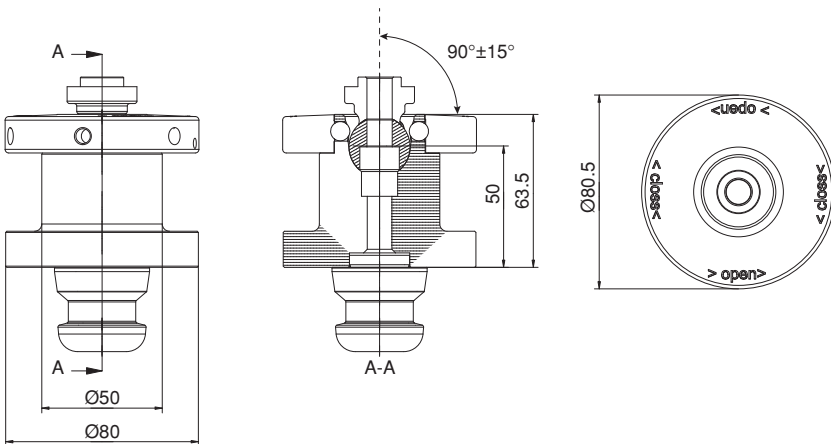
| Referenz-Nr. Order No. | Technische Daten / Specifications | |
|---------------------------|---|---|
| 0900-UL800360 | Durchmesser: 80mm Höhe : 63.50 mm Haltekraft (M10): 3500 kgf Haltekraft (M12): 5000 kgf Wiederholgenauigkeit: <0.005 mm Gewicht: 1.90 kg | Diameter: 80 mm Height: 63.50 mm Retention force (M10): 3500 kgf Retention force (M12): 5000 kgf Repeatability: <0.005mm Weight: 1.90 kg |

0900

- Ermöglicht Werkstücke mit bis zu 15° Schräge zu klemmen.
- Mindestens drei Klemmstellen auf dem Werkstück sind erforderlich.

0900

- Enables to clamp inclined workpieces with up to 15°
- At least three clamping points on the workpiece are required.



5-Achs FLEX Spannkuigel inkl.

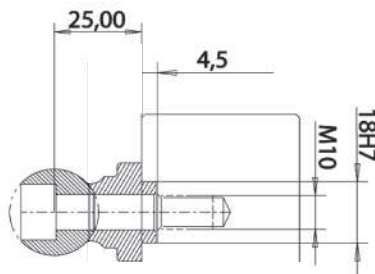
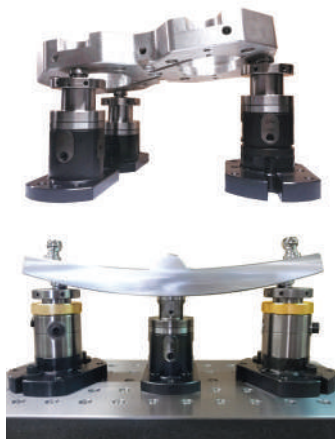
| Referenz-Nr. Order No. | Technische Daten / Specifications | |
|---------------------------|--|--|
| 0900-UL800382 | Kugeldurchmesser: 25,4 mm inkl. Zentrierungsdeckel 15° Ausgleichsbereich Gewicht: 0.10 kg | Diameter head / head diameter: 25.4 mm included centering cover 15° working weight: 0.10 kg |

0900

- 15° maximaler Winkelabstand

0900

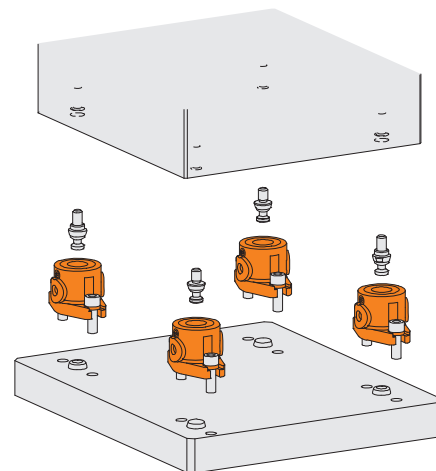
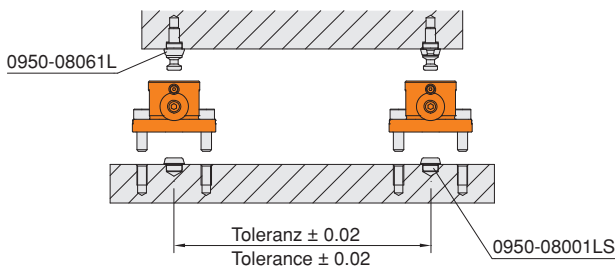
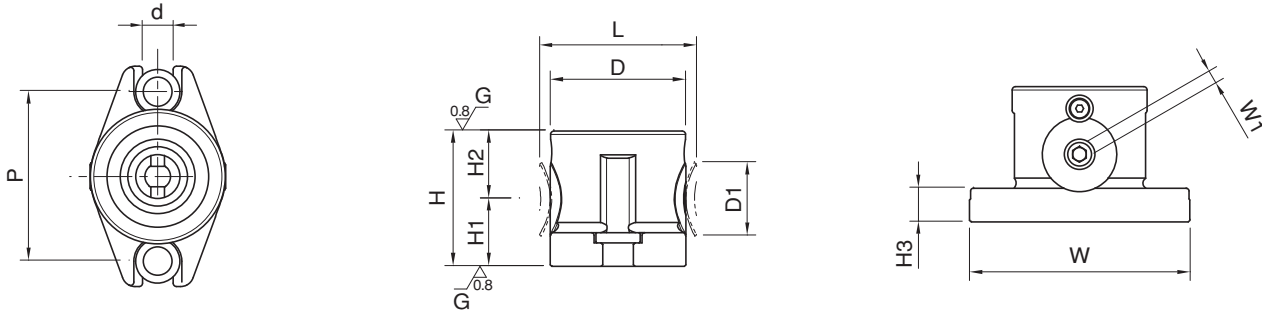
- 15° maximum angular space



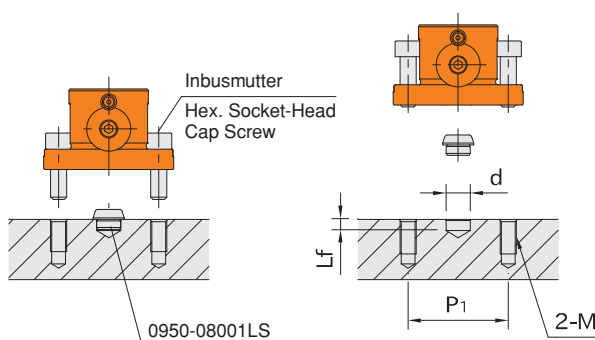
| Referenz-Nr. Order No.Nr. | D | H (±0.01) | D1 | L | H1 | H2 | W | H3 | d | P | W1 | Spannkraft Clamping Force Kgf | zulässiges Drehmoment Allowable Screw Torque (N-m) | (g) |
|------------------------------|----|--------------|----|------|------|------|-----|----|-----|-----|----|----------------------------------|---|------|
| 0950-06025 | 30 | 25 | 15 | 34.5 | 12.5 | 12.5 | 54 | 7 | 6.6 | 42 | 3 | 500 | 4 | 100 |
| 0950-08040 | 40 | 40 | 22 | 46 | 20 | 20 | 65 | 10 | 9 | 50 | 4 | 800 | 8 | 300 |
| 0950-12063 | 60 | 63 | 32 | 69 | 33 | 30 | 95 | 15 | 13 | 75 | 6 | 1500 | 22 | 1400 |
| 0950-16080 | 80 | 80 | 44 | 91 | 40 | 40 | 130 | 20 | 17 | 130 | 8 | 2500 | 50 | 3300 |



0950



Anwendungsbeispiel / Application Examples

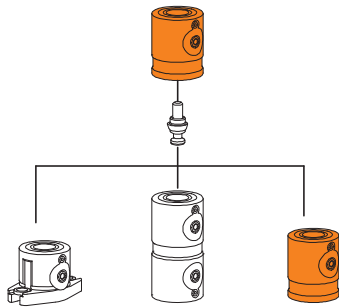
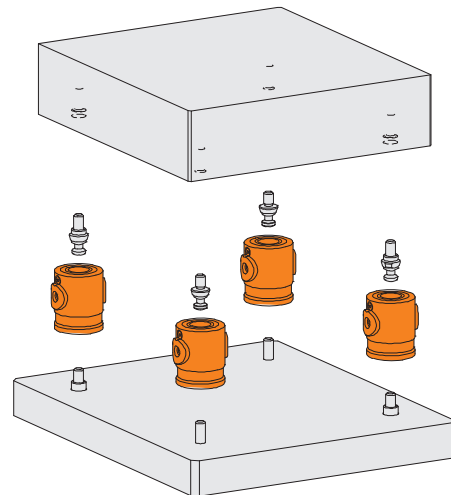
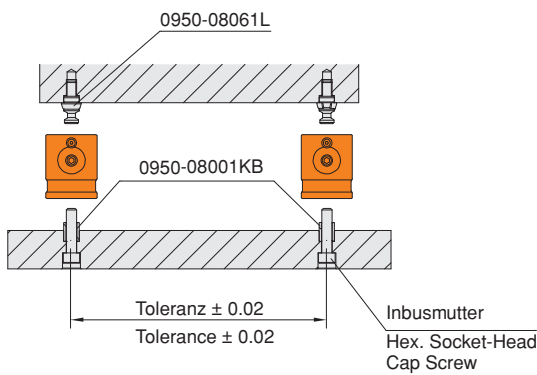
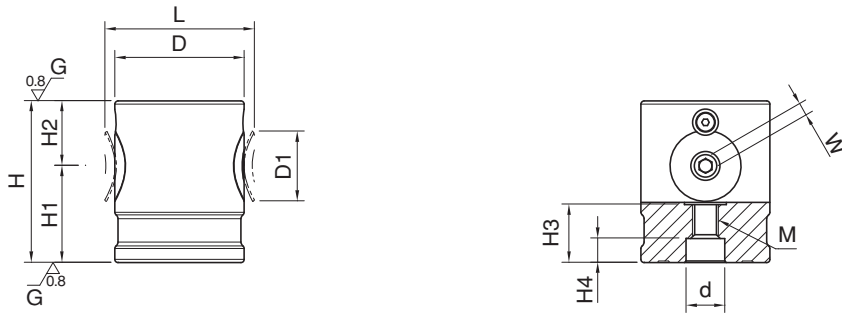


| Referenz-Nr. Order No. | d (H7) | Lf | M | P1 |
|---------------------------|-----------|-----|-----|-----|
| 0950-06025 | 8 | 5.5 | M6 | 42 |
| 0950-08040 | 12 | 5.5 | M8 | 50 |
| 0950-12063 | 18 | 6.5 | M12 | 75 |
| 0950-16080 | 22 | 8 | M16 | 100 |

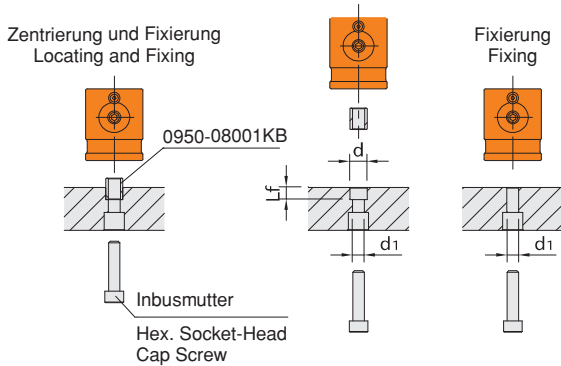


| Referenz-Nr. Order No. | D | H (±0.01) | D1 | L | H1 | H2 | H3 | d (H7) | H4 | M | W | Spannkraft Clamping Force Kgf | zulässiges Drehmoment Allowable Screw Torque (N-m) | (g) |
|---------------------------|----|--------------|----|------|------|------|------|-----------|------|-----|---|----------------------------------|---|------|
| 0950-06032 | 30 | 32 | 15 | 34.5 | 19.5 | 12.5 | 11.5 | 8 | 5 | M6 | 3 | 500 | 4 | 200 |
| 0950-08050 | 40 | 50 | 22 | 46 | 30 | 20 | 18 | 12 | 7.5 | M8 | 4 | 800 | 8 | 500 |
| 0950-12080 | 60 | 80 | 32 | 69 | 50 | 30 | 25 | 18 | 10.5 | M12 | 6 | 1500 | 22 | 1600 |
| 0950-16100 | 80 | 100 | 44 | 91 | 60 | 40 | 31 | 22 | 12.5 | M16 | 8 | 2500 | 50 | 3800 |


0950



Anwendungsbeispiel / Application Examples

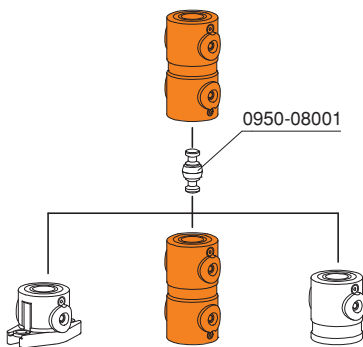
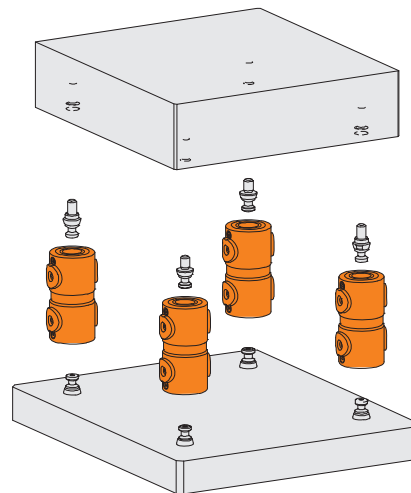
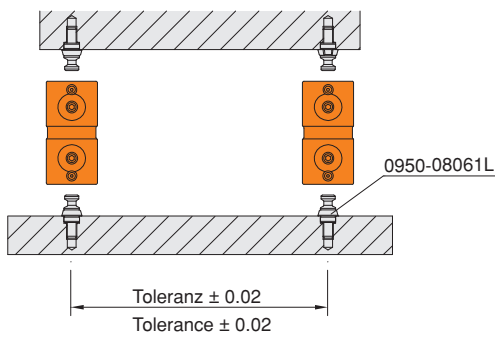
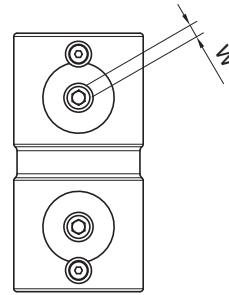
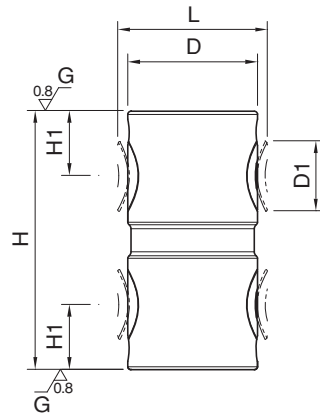


| Referenz-Nr. Order No. | d (H7) | Lf | d1 (+0.2) 0 |
|---------------------------|-----------|------|-------------------|
| 0950-06032 | 8 | 6.5 | 6 |
| 0950-08050 | 12 | 8.5 | 8 |
| 0950-12080 | 18 | 12.5 | 12 |
| 0950-16100 | 22 | 16.5 | 16 |

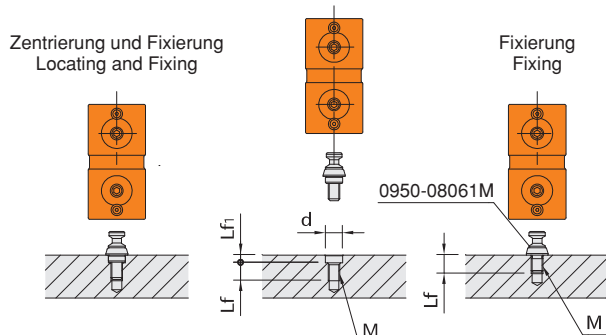
| Referenz-Nr. Order No. | D | H (±0.01) | D1 | L | H1 | W | Spannkraft Clamping Force Kgf | zulässiges Drehmoment Allowable Screw Torque (N-m) |  (g) |
|---------------------------|----|--------------|----|------|------|---|-------------------------------------|---|--|
| 0950-06050 | 30 | 50 | 15 | 34.5 | 12.5 | 3 | 500 | 4 | 200 |
| 0950-08080 | 40 | 80 | 22 | 46 | 20 | 4 | 800 | 8 | 700 |
| 0950-12125 | 60 | 125 | 32 | 69 | 30 | 6 | 1500 | 22 | 2600 |
| 0950-16160 | 80 | 160 | 44 | 91 | 40 | 8 | 2500 | 50 | 5800 |



0950



Anwendungsbeispiel / Application Examples



| Referenz-Nr. Order No. | d (H7) | Lf | Lf1 | M |
|---------------------------|-----------|----|-----|-----|
| 0950-06050 | 8 | 9 | 5.5 | M6 |
| 0950-08080 | 12 | 13 | 5.5 | M8 |
| 0950-12125 | 18 | 19 | 6.5 | M12 |
| 0950-16160 | 22 | 23 | 8 | M16 |

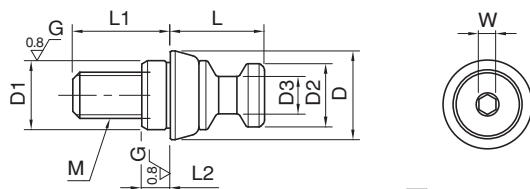
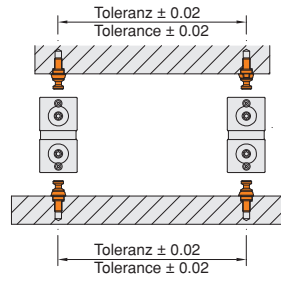
| Referenz-Nr. Order No. | M | D1 (g6) | L2 | L1 | D | L | D2 | D3 | W | $\frac{1}{g}$ (g) |
|---------------------------|-----|------------|-----|----|------|------|----|-----|-----|----------------------|
| 0950-06001L | M6 | 8 | 5 | 13 | 11.5 | 10 | 8 | 4.8 | 2.5 | 6 |
| 0950-08061L | M6 | 10 | 5 | 17 | 15.5 | 16.5 | 11 | 6.5 | 3 | 17 |
| 0950-08001L | M8 | 12 | 5 | 17 | 15.5 | 16.5 | 11 | 6.5 | 3 | 20 |
| 0950-12081L | M8 | 12 | 5 | 17 | 24.5 | 25 | 16 | 9.5 | 5 | 52 |
| 0950-12001L | M12 | 18 | 6 | 24 | 24.5 | 25 | 16 | 9.5 | 5 | 70 |
| 0950-16121L | M12 | 18 | 6 | 24 | 31.5 | 33 | 21 | 13 | 6 | 125 |
| 0950-16001L | M16 | 22 | 7.5 | 30 | 31.5 | 33 | 21 | 13 | 6 | 150 |

0950

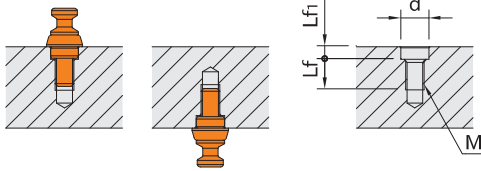
• Toleranz ± 0.02

0950

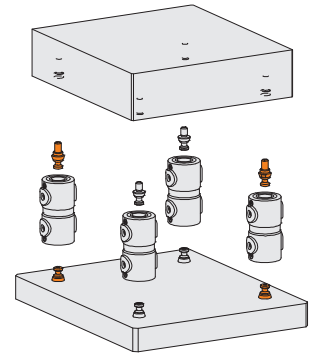
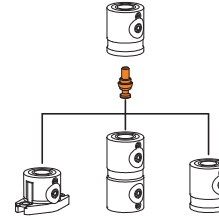
• Tolerance ± 0.02



Anwendungsbeispiel Application Examples



| Referenz-Nr. Order No. | d (H7) | Lf | Lf1 | M |
|---------------------------|-----------|----|-----|-----|
| 0950-06001L | 8 | 9 | 5.5 | M6 |
| 0950-08061L | 10 | 13 | 5.5 | M6 |
| 0950-08001L | 12 | 13 | 5.5 | M8 |
| 0950-12081L | 12 | 13 | 5.5 | M8 |
| 0950-12001L | 18 | 19 | 6.5 | M12 |
| 0950-16121L | 18 | 23 | 6.5 | M12 |
| 0950-16001L | 22 | 23 | 8 | M16 |

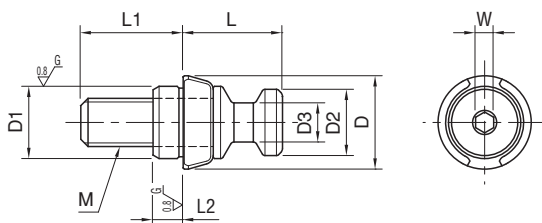
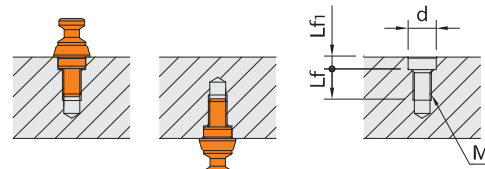


Klemmblock Spannbolzen

5-Axis Clamping Block Puller Bolt

| Referenz-Nr. Order No. | M | D1 (g6) | L2 | L1 | D | L | D2 | D3 | W | $\frac{1}{g}$ (g) |
|---------------------------|-----|------------|-----|----|------|------|----|-----|---|----------------------|
| 0950-08061D | M6 | 10 | 5 | 17 | 15.5 | 16.5 | 11 | 6.5 | 3 | 17 |
| 0950-08001D | M8 | 12 | 5 | 17 | 15.5 | 16.5 | 11 | 6.5 | 3 | 20 |
| 0950-12081D | M8 | 12 | 5 | 17 | 24.5 | 25 | 16 | 9.5 | 5 | 51 |
| 0950-12001D | M12 | 18 | 6 | 24 | 24.5 | 25 | 16 | 9.5 | 5 | 70 |
| 0950-16121D | M12 | 18 | 6 | 24 | 31.5 | 33 | 21 | 13 | 6 | 123 |
| 0950-16001D | M16 | 22 | 7.5 | 30 | 31.5 | 33 | 21 | 13 | 6 | 150 |

Anwendungsbeispiel Application Examples



| Referenz-Nr. Order No. | d (H7) | Lf | Lf1 | M |
|---------------------------|-----------|----|-----|-----|
| 0950-08061D | 10 | 13 | 5.5 | M6 |
| 0950-08001D | 12 | 13 | 5.5 | M8 |
| 0950-12081D | 12 | 13 | 5.5 | M8 |
| 0950-12001D | 18 | 19 | 6.5 | M12 |
| 0950-16121D | 18 | 23 | 6.5 | M12 |
| 0950-16001D | 22 | 23 | 8 | M16 |

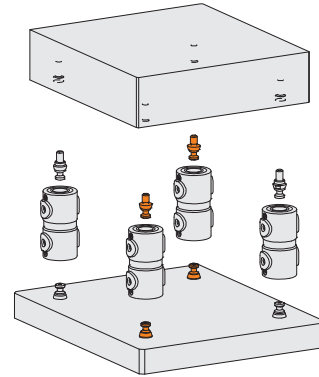
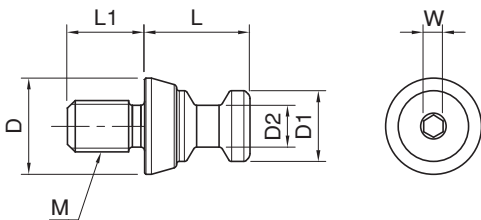
| Referenz-Nr. Order No. | M | L1 | D | L | D1 | D2 | W |  |
|---------------------------|-----|----|----|------|----|-----|-----|---|
| 0950-06001M | M6 | 8 | 11 | 10 | 8 | 4.8 | 2.5 | 5 |
| 0950-08061M | M6 | 9 | 15 | 16.5 | 11 | 6.5 | 3 | 13 |
| 0950-08001M | M8 | 12 | 15 | 16.5 | 11 | 6.5 | 3 | 16 |
| 0950-12081M | M8 | 12 | 24 | 25 | 16 | 9.5 | 5 | 46 |
| 0950-12001M | M12 | 18 | 24 | 25 | 16 | 9.5 | 5 | 57 |
| 0950-16121M | M12 | 18 | 31 | 33 | 21 | 13 | 6 | 108 |
| 0950-16001M | M16 | 22 | 31 | 33 | 21 | 13 | 6 | 125 |

0950


• Toleranz ±0.2

0950

• Tolerance ±0.2



Spannbolzen
5-Axis Clamping Block Puller Bolt

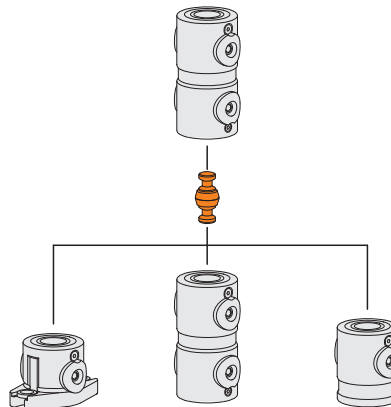
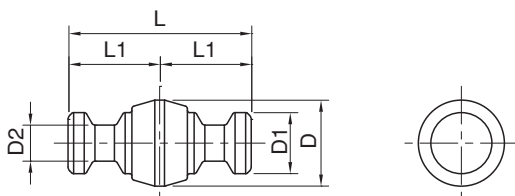
| Referenz-Nr. Order No. | D | L | D1 | D2 | L1 |  |
|---------------------------|------|----|----|-----|------|---|
| 0950-08001 | 15.5 | 33 | 11 | 6.5 | 16.5 | 24 |
| 0950-12001 | 24.5 | 50 | 16 | 9.5 | 25 | 85 |
| 0950-16001 | 31.5 | 66 | 21 | 13 | 33 | 190 |

0950

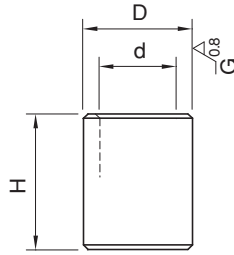
• Wiederholungsgenauigkeit 0,2

0950

• Locating Repeatability is 0.2



| Referenz-Nr. Order No. | d | D (h6) | H | |
|---------------------------|------|-----------|----|----|
| 0950-06001KB | 6 | 8 | 11 | 2 |
| 0950-08001KB | 8.5 | 12 | 15 | 7 |
| 0950-12001KB | 12.5 | 18 | 22 | 22 |
| 0950-16001KB | 16.5 | 22 | 28 | 35 |

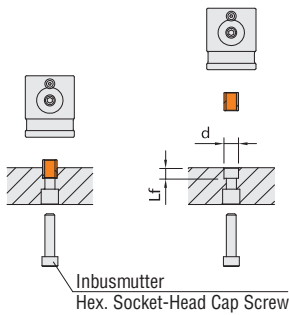


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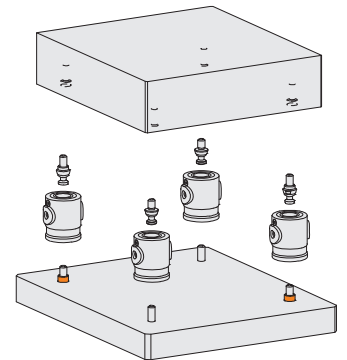
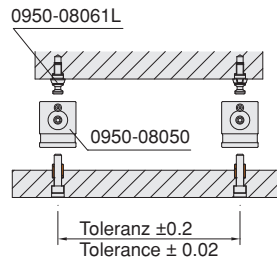
• Toleranz ± 0.2

0950

• Tolerance ± 0.02



| Referenz-Nr. Order No. | d (H7) | Lf |
|---------------------------|-----------|------|
| 0950-06001KB | 8 | 6.5 |
| 0950-08001KB | 12 | 8.5 |
| 0950-12001KB | 18 | 12.5 |
| 0950-16001KB | 22 | 16.5 |



| Referenz-Nr. Order No. | D1 $^{-0.02}$ $^{-0.05}$ | D | H | H1 | M | |
|---------------------------|--------------------------------|------|----|-----|-----|----|
| 0950-06001LS | 8 | 11.5 | 4 | 5 | M6 | 4 |
| 0950-08001LS | 12 | 15.5 | 5 | 5 | M8 | 8 |
| 0950-12001LS | 18 | 24.5 | 8 | 6 | M12 | 27 |
| 0950-16001LS | 22 | 31.5 | 10 | 7.5 | M16 | 51 |
| 0950-06001SM | 8 | 11.5 | 4 | 5 | M6 | 4 |
| 0950-08001SM | 12 | 15.5 | 5 | 5 | M8 | 8 |
| 0950-12001SM | 18 | 24.5 | 8 | 6 | M12 | 27 |
| 0950-16001SM | 22 | 31.5 | 10 | 7.5 | M16 | 51 |

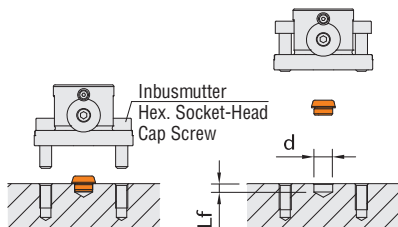
0950

• Geschliffene Toleranz ± 0.02
• Standard-Toleranz $^{+0.1}$

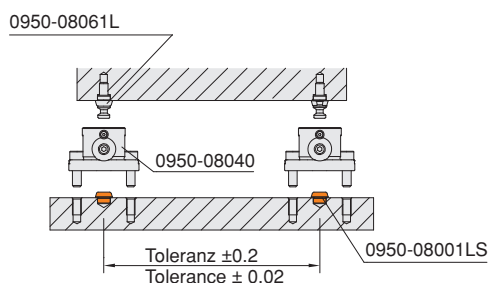
0950

• Stoning Tolerans ± 0.02
• Standard Tolerance $^{+0.1}$

Anwendungsbeispiel / Application Examples



| Referenz-Nr. Order No. | d (H7) | Lf |
|---------------------------|-----------|-----|
| 0950-06001LS | 8 | 5.5 |
| 0950-08001LS | 12 | 5.5 |
| 0950-12001LS | 18 | 6.5 |
| 0950-16001LS | 22 | 8 |



Klemmblock Lokalisierungsbuchse

5-Axis Clamping Block Locating Bushings



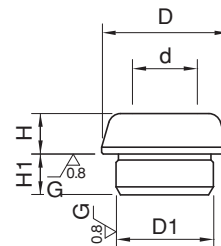
LS

Geschliffene Toleranz
Stoning Tolerance



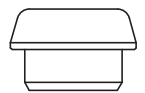
SM

Standard-Toleranz
Standard Tolerance



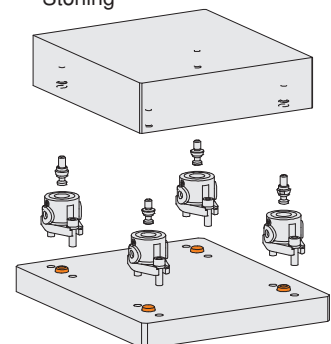
LS

Geschliffene Toleranz
Stoning



SM

Standard
Standard



Werkzeug-Schnellwechselsystem

Quick Mold Change System



Werkzeug-Schnellwechselsystem
(Spritzguss)

QUICK MOLD CHANGE SYSTEM
(INJECTION)



Werkzeug-Schnellwechselsystem
(Pressen)

QUICK DIE CHANGE SYSTEM
(PRESS)



Werkzeug-Schnellwechselsystem

Wenn Werkzeuge schneller gewechselt werden müssen, weil es verschiedene Anfragen und weniger Stückzahlen gibt, ist es Zeit auf das Schnelle Schnellwechselsystem zu wechseln.

Anwendung

- Pressen und hydraulische - Spritzguss
- unterschiedliche automatische Maschinen

Application

- Press - hydraulic press - injection
- Different automatic machine clamp system

Quick Die Change System

It's an era for making high frequency of die changing with multiple patterns and small quantity. In order to save die changing time and ensure operational safety, it is just in time to apply Quick Die Change System.

Elektronische Bediensäule Electronic Control Operation Panel

- mit Verriegelungssteuerung ausgestattet.
- It is equipped with interlock control switch for connecting to the machine.
- mit Sicherheitschalter zur Vermeidung von Betriebsfehler.
- It is designed with safety control device which prevents any operation error.
- Anwendung Programmsteuerung vorhanden
- PLC Uygulama mevcuttur.

Werkzeugheber / Die Lifter

Modell / Model: DL - DB - DLS - DBS

- Hydraulisch oder gefedert.
- Hydraulijc type, spring type.
- Befestigung in T-Nur oder U-Nut.
- Install in the T-slot or U-slot.



Werkzeugschiebearm / Die Arm

Modell / Model: RC - RD - RE/RF - RS - RSM

- auf Maschinentisch leicht schiebbar.
- Can pull out and push in the die from the plate easily.
- 4 unterschiedlich Werkzeugarm – Modelle,
- There are 4 different models of die arm.

Hydraulische Luftdruck-Pumpeneinheit Air Driven Hydraulic Pump Unit

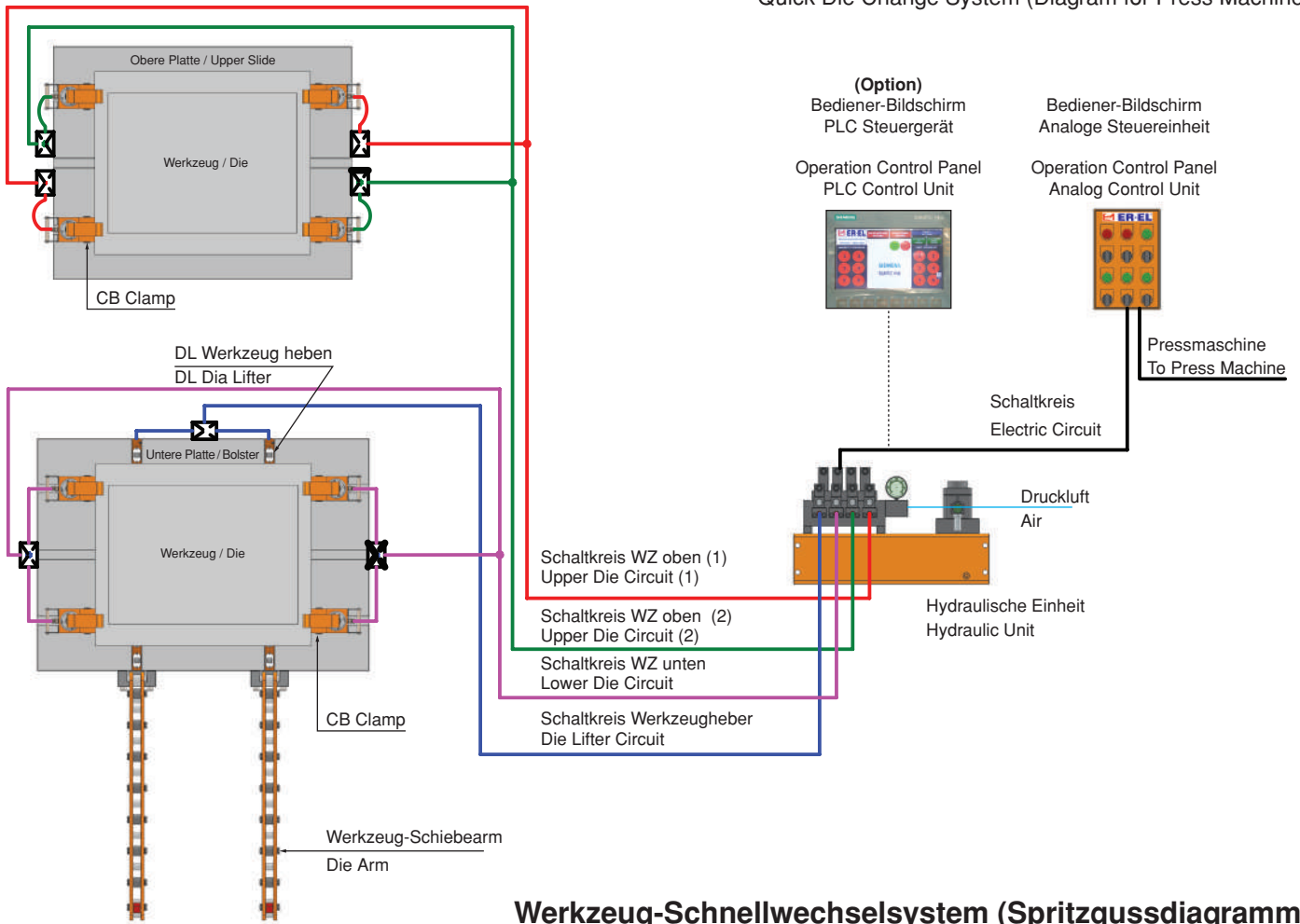
- Geeignet für die Druckprüfung und Verriegelung mit Maschinen.
- Capable of pressure inspection and interlocking with machines.
- Die Bewegungen zwischen den einzelnen Geräten werden gegenseitig festgelegt, um die Betriebssicherheit zu gewährleisten.
- The movements between each devices will be pinned down mutually in order to ensure operational safety.

Werkzeugspanner / Die Clamp

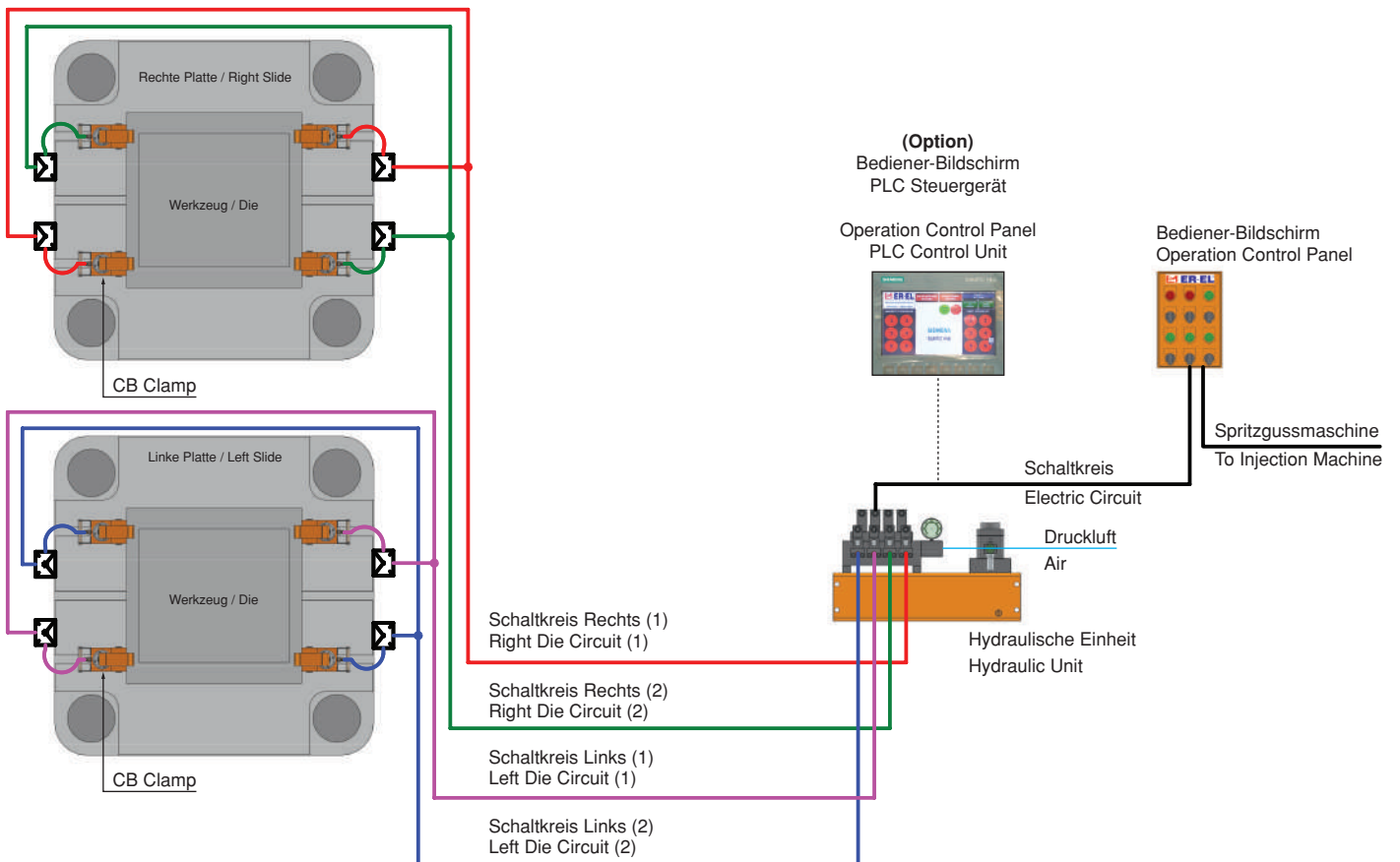
Modell / Model: CA - CAS - CV - CC - CB - CBS - CD

- ersetzt konventionelle Methoden.
- Replacing the traditional method which uses screws to fix dies.
- Einsatz bei Maschinen mit T-Nut-Tisch.
- Using T-slots to lock or fix directly on the plate.





Werkzeug-Schnellwechselsystem (Spritzgussdiagramm)

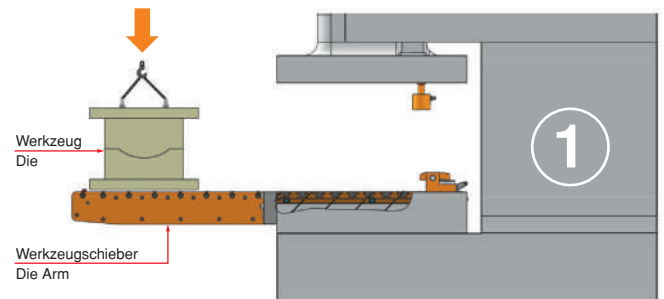


Einlegen des Werkzeugs

Beladen Sie das Werkzeug mit einem Kran oder Gabelstapler.
Die Werkzeugschieber ermöglichen eine einfache Beladung.

Load the die

Load the die using a crane or forklift.
The pre-rollers enable easy loading.

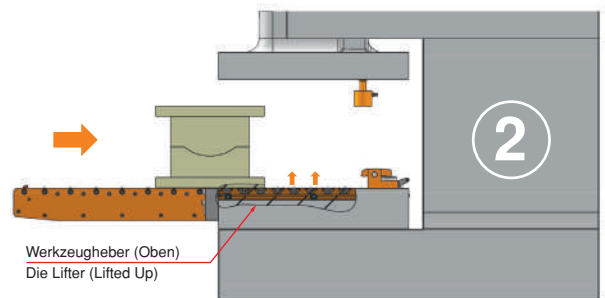


Schieben Sie das Werkzeug auf die untere Platte.

Durch den Werkzeugheber und Werkzeugschiebern ist zum Bewegen des Werkzeugs nur minimale Kraft erforderlich.
Die Werkzeugheber werden in den T- / U-Nuten eingebaut.
Werkzeugheber: Hydraulikdruck **ON**

Transfer the die to the bolster.

With the pre-rollers and die lifters, minimal force is required to move the die.
The lifters are set in the T- / U-slots.
Die Lifter : Hydraulic pressure **ON**

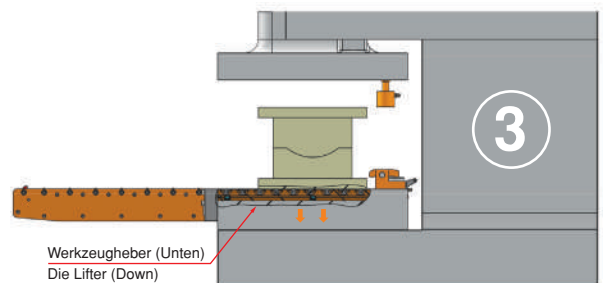


Setzen Sie das Werkzeug auf die Platte.

Bei Drucktastenbedienung wird der Werkzeugheber gesenkt und das Werkzeug berührt die Platte.
Werkzeugheber: Hydraulikdruck **OFF**

Set the die on the bolster.

With push-button operation, the die lifter releases and the die makes contact with the bolster.
Die Lifter : Hydraulic Pressure **OFF**

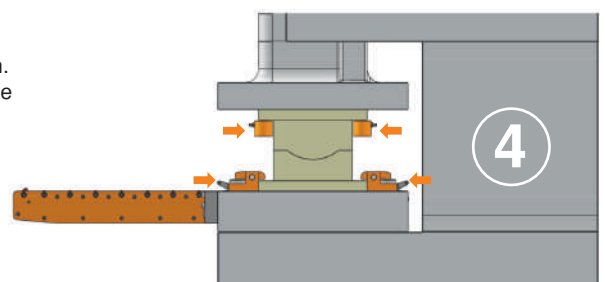


Platzieren Sie die hydraulischen Spannelemente .

Platzieren Sie die hydraulischen Spannelemente dem Werkzeug entsprechend ein.
Schieben Sie die hydraulischen Spannelemente in den T-Nuten und bringen Sie sie in die Nähe des Werkzeugs.
Hydraulische Spannelemente: Hydraulikdruck **OFF**

Set the automatic clamps.

Set the slide to the bottom dead center .
Slide automatic clamps on the T-slot and bring them near the die.
Hydraulic Clamp : Hydraulic Pressure **OFF**

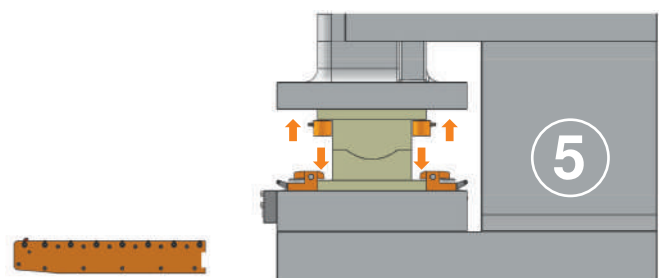


Spannen Sie das Werkzeug.

Bei Drucktastenbedienung werden die Spannelemente gespannt.
Nach der Sicherheitsüberprüfung kann der Werkzeugschieber entfernt werden.
Hydraulische Spannelemente: Hydraulikdruck **ON**

Lock the die.

With push-button operation, automatic clamps lock the die.
After safety confirmation, the pre-roller can be removed.
Hydraulic Clamp : Hydraulic Pressure **ON**



| Modell / Model | | CA-1 | CA-2 | CA-4 | CA-6 | CA-10 | CA-16 | CA-25 |
|--|-----|------|------|------|------|-------|-------|-------|
| Spannkapazität Capacity of clamp | Ton | 1 | 2 | 4 | 6 | 10 | 16 | 25 |
| Total-Hub (X) Total stroke (X) | mm | 6 | 8 | 8 | 8 | 8 | 8 | 8 |
| Spannhub (Y) Stroke of clamp (Y) | mm | 3 | 4 | 4 | 4 | 4 | 4 | 4 |
| Schonhub (Z) Preserved stroke (Z) | mm | 3 | 4 | 4 | 4 | 4 | 4 | 4 |
| Zylinder-Gesamtvolumen Total volumn of cylinder | cc | 3 | 7 | 13 | 21 | 32 | 54 | 76 |
| Toleranzen Werkzeugunerteil-Dicke (H) The tolerance of the template thickness (H) | mm | ±1.5 | ±2 | ±2 | ±2 | ±2 | ±2 | ±2 |

Hydraulischer Druck / Hydraulic pressure : 250kg/cm²

| Referenz-Nr. Order No. | ØF | E | ØG | ØJ | H+d max. | L max. | a min. | K | P |
|---------------------------|-----|-----|----|----|-------------|-----------|-----------|-----|-------|
| 1010-CA01 | 44 | 48 | 12 | 30 | 60 | 12 | 8 | 9.5 | PT1/8 |
| 1010-CA02 | 53 | 52 | 16 | 48 | 80 | 17 | 12 | 12 | PT1/8 |
| 1010-CA04 | 65 | 58 | 23 | 58 | 90 | 20 | 16 | 15 | PT1/4 |
| 1010-CA06 | 82 | 65 | 30 | 64 | 100 | 25 | 18 | 15 | PT1/4 |
| 1010-CA10 | 99 | 71 | 38 | 78 | 110 | 30 | 22 | 15 | PT1/4 |
| 1010-CA16 | 126 | 82 | 45 | 88 | 120 | 38 | 28 | 17 | PT1/4 |
| 1010-CA25 | 150 | 100 | 55 | 98 | 140 | 45 | 36 | 23 | PT1/4 |

1010

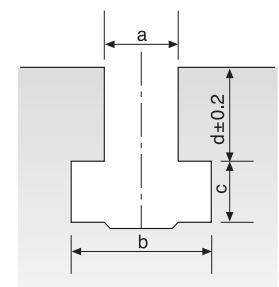
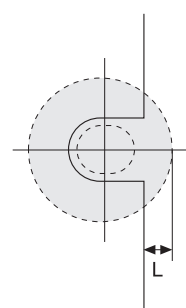
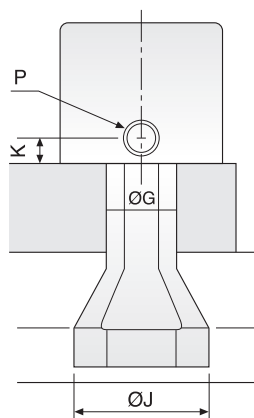
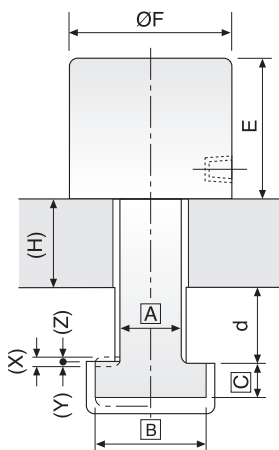
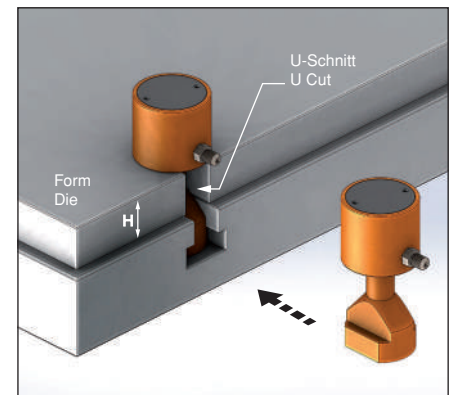
- Spannmaße A, B und C werden in T-Nut gespannt festgelegt.
- Wenn Spannmaß (H+d) höher als obige Werte ist, wird dies als Sonderkonstruktion bewertet.
- Temperatur Standard : 60°

1010

- The sizes of clamps (A),(B) and (C) are made based on the size of T slot.
- If the thickness of clamp (H+d) is more than the max. value listed on the left, it will be regarded as special pattern.
- Standard Temperature : 60°



- Bei Bestellung bitte T-Nut-Größe (a,b,c,d) und Werkzeugunterteil-Dicke (H) angeben.
- Please indicate the size of T-slot (a,b,c,d) and the thickness (H) of the template for the die when purchasing.



L: Länge Schablone zum Spannen
L: Template's length for clamp

| Referenz-Nr. Order No. | min - max | Spannkapazität Capacity of Clamp | Hubweg Traveling Stroke (S) | Hubgeschwindigkeit Traveling Speed m/sec. | X | Z | ØF | E |
|---------------------------|---------------|-------------------------------------|-----------------------------------|---|---|---|-----|----|
| 1010-CAS04 | 28 - 32 | 27 | - | 1 | 8 | 4 | 65 | 62 |
| 1010-CAS06 | 28 - 32 | 36 | - | 1 | 8 | 4 | 82 | 69 |
| 1010-CAS10 | 28 - 32 | 42 | - | 1 | 8 | 4 | 99 | 75 |
| 1010-CAS16 | 28 - 32 | 51 | - | 1 | 8 | 4 | 126 | 86 |

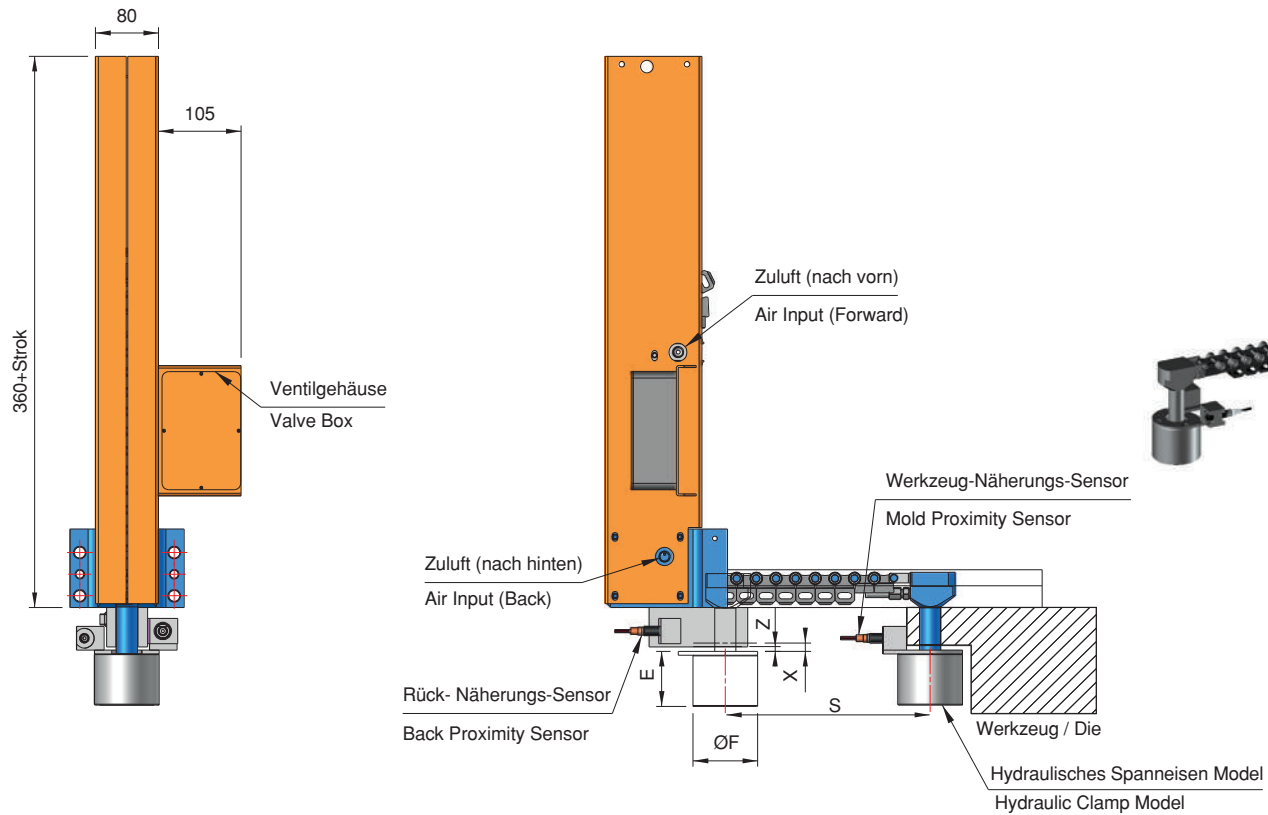


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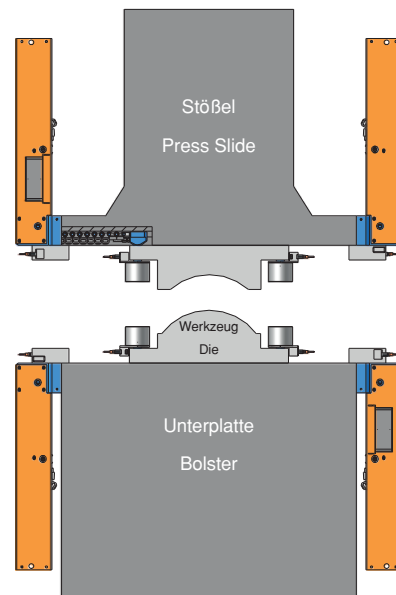
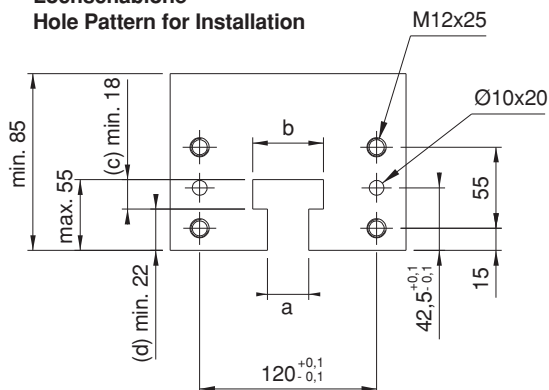
- Bei Bestellung den Hubweg nennen
- Hydraulische Spannkraft 250kgf/cm²
- Pneumatische Schiebekonsolle Luftdruck mMax. 10 bar

1010

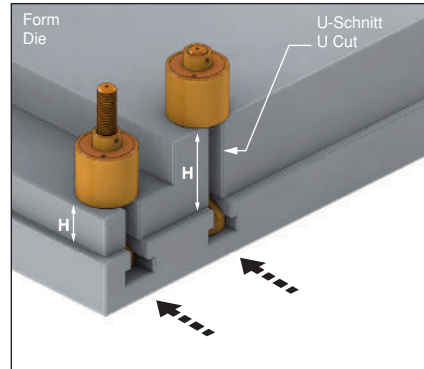
- Please inform the stroke distance before purchase
- Hydraulic clamp pressure 250kgf/cm
- Pneumatic Slide Console Air Bar Max.



Lochschaablonen Hole Pattern for Installation



| Modell / Model | | CV-4 | CV-6 | CV-10 |
|--|-----|------|------|-------|
| Spannkapazität Capacity of clamp | Ton | 4 | 6 | 10 |
| Total-Hub (X) Total stroke (X) | mm | 8 | 8 | 8 |
| Spannhub (Y) Stroke of clamp (Y) | mm | 4 | 4 | 4 |
| Schonhub (Z) Preserved stroke (Z) | mm | 4 | 4 | 4 |
| Zylinder-Gesamtvolumen Total volumn of cylinder | cc | 13 | 21 | 32 |
| Toleranzen Werkzeugunerteil-Dicke (H) The tolerance of the template thickness (H) | mm | ±2 | ±2 | ±2 |



Hydraulischer Druck / Hydraulic pressure : 250kgf/cm²

| Referenz-Nr. Order No. | | A | B | C | D | E + K1 | Einstellidistanz adjust distance | F | Max. L | M | ØG | ØJ | K | P |
|---------------------------|----|------|----|----|-----|--------|-------------------------------------|----|--------|-----|----|----|----|--------|
| 1010-CV042020125 | 20 | 19.6 | 32 | 12 | 85 | 70 | 15 | 65 | 125 | M20 | 20 | 58 | 15 | PT 1/4 |
| 1010-CV042020160 | 20 | 19.6 | 32 | 12 | 110 | 70 | 40 | 65 | 160 | M20 | 20 | 58 | 15 | PT 1/4 |
| 1010-CV042022125 | 22 | 21.6 | 35 | 14 | 85 | 70 | 15 | 65 | 125 | M20 | 20 | 58 | 15 | PT 1/4 |
| 1010-CV042022160 | 22 | 21.6 | 35 | 14 | 110 | 70 | 40 | 65 | 160 | M20 | 20 | 58 | 15 | PT 1/4 |
| 1010-CV062424125 | 24 | 23.6 | 40 | 16 | 85 | 77 | 8 | 82 | 125 | M24 | 24 | 64 | 15 | PT 1/4 |
| 1010-CV062424160 | 24 | 23.6 | 40 | 16 | 110 | 77 | 33 | 82 | 160 | M24 | 24 | 64 | 15 | PT 1/4 |
| 1010-CV062428125 | 28 | 27.6 | 44 | 18 | 85 | 77 | 8 | 82 | 125 | M24 | 24 | 64 | 15 | PT 1/4 |
| 1010-CV062428160 | 28 | 27.6 | 44 | 18 | 110 | 77 | 33 | 82 | 160 | M24 | 24 | 64 | 15 | PT 1/4 |
| 1010-CV102727160 | 27 | 26.6 | 46 | 18 | 110 | 83 | 27 | 99 | 160 | M27 | 27 | 78 | 15 | PT 1/4 |
| 1010-CV102727200 | 27 | 26.6 | 46 | 18 | 125 | 83 | 42 | 99 | 200 | M27 | 27 | 78 | 15 | PT 1/4 |
| 1010-CV102732160 | 32 | 31.6 | 50 | 20 | 110 | 83 | 27 | 99 | 160 | M27 | 27 | 78 | 15 | PT 1/4 |
| 1010-CV102732200 | 32 | 31.6 | 50 | 20 | 125 | 83 | 42 | 99 | 200 | M27 | 27 | 78 | 15 | PT 1/4 |
| 1010-CV103036160 | 36 | 35.6 | 56 | 23 | 110 | 83 | 27 | 99 | 160 | M30 | 30 | 88 | 15 | PT 1/4 |
| 1010-CV103036200 | 36 | 35.6 | 56 | 23 | 135 | 83 | 52 | 99 | 200 | M30 | 30 | 88 | 15 | PT 1/4 |
| 1010-CV103036250 | 36 | 35.6 | 56 | 23 | 150 | 83 | 67 | 99 | 250 | M30 | 30 | 88 | 15 | PT 1/4 |

1010

- Schraubenabstandseinstellung kann vorgenommen werden.
- Temperatur Standard : 60°

1010

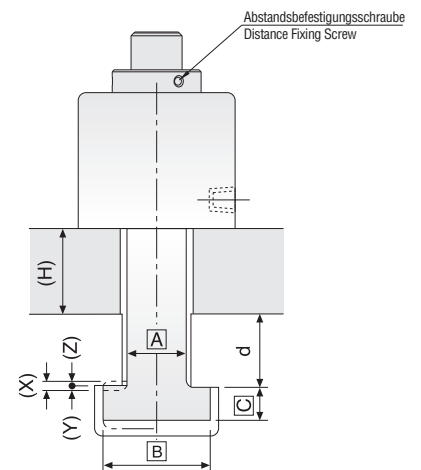
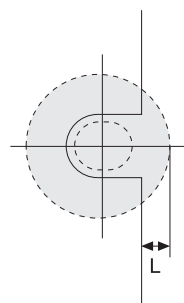
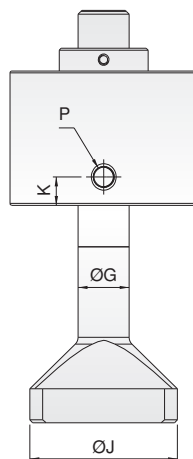
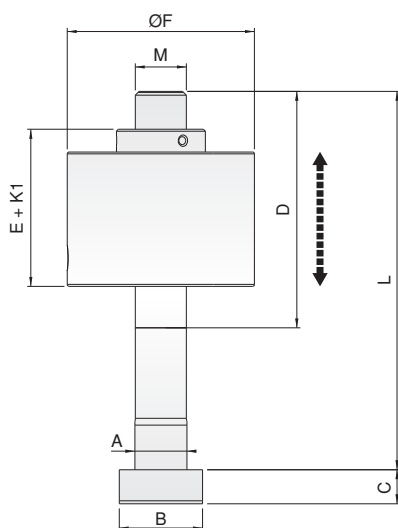
- Screw-distance adjustment can be made.
- Standard Temperature : 60°

Hinweis

Der eingestellte Hub (Z) muss bei einer Änderung der Einstellungen kontrolliert werden.

Notes

The set stroke (Z) must be checked when changing the settings.



| Modell / Model | | CC-1 | CC-2 | CC-4 | CC-6 | CC-10 |
|--|-----|------|------|------|------|-------|
| Spannkapazität Capacity of clamp | Ton | 1 | 2 | 4 | 6 | 10 |
| Total-Hub (X) Total stroke (X) | mm | 9 | 9 | 9 | 12 | 12 |
| Spannhub (Y) Stroke of clamp (Y) | mm | 4 | 4 | 4 | 4 | 4 |
| Schonhub (Z) Preserved stroke (Z) | mm | 5 | 5 | 5 | 8 | 8 |
| Zylinder-Gesamtvolumen Total volumn of cylinder | cc | 3 | 7.5 | 13 | 21 | 38 |
| Toleranzen Werkzeugunerteil-Dicke (H) The tolerance of the template thickness (H) | mm | ±1.5 | ±2 | ±2 | ±2 | ±2 |



- Bei Bestellung bitte T-Nut-Größe (a,b,c,d) und Werkzeugunerteil-Dicke (H) angeben.
- Please indicate the size of T-slot (a,b,c,d) and the thickness (H) of the template for the die when purchasing.

Hydraulischer Druck / Hydraulic pressure : 250kg/cm²

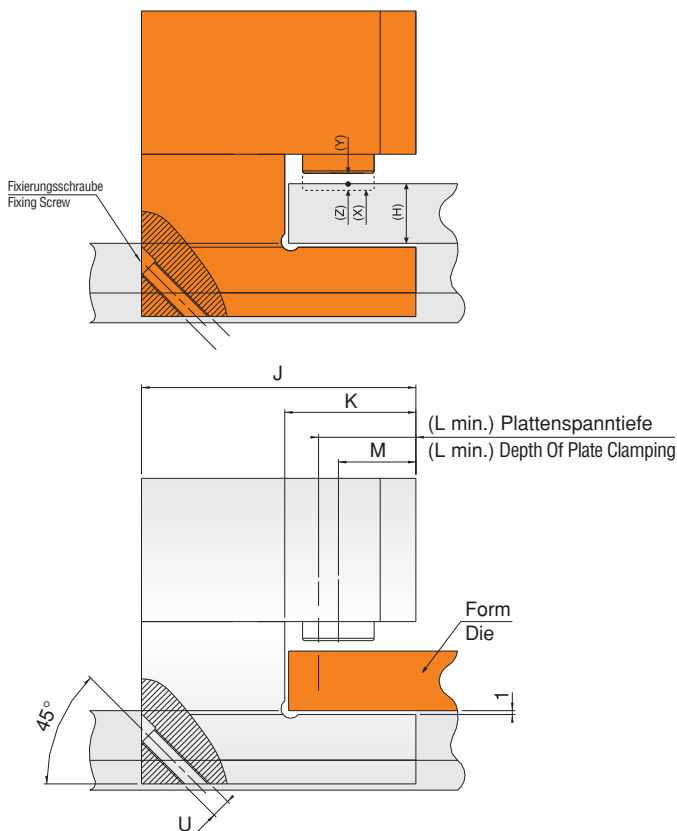
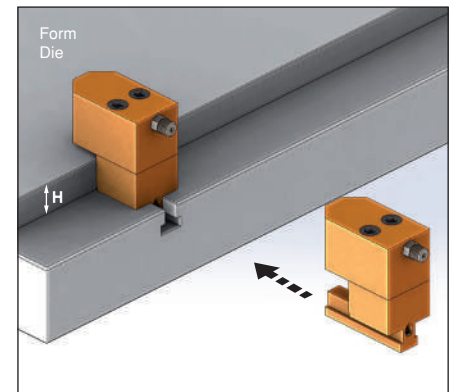
| Referenz-Nr. Order No. | H min. - max | A min. | C min. | E | F | G | I | J | K | L min. | M | T | U |
|---------------------------|-----------------|-----------|-----------|-----|------|------|-------|-----|----|-----------|------|-----|-----|
| 1015-CC01 | 20-35 | 10 | 6.5 | 43 | G+43 | H+9 | Ø16 | 75 | 33 | 27 | 21.5 | 1/8 | M5 |
| 1015-CC02 | 25-40 | 14 | 10 | 50 | G+50 | H+9 | Ø18 | 91 | 43 | 30 | 25 | 1/8 | M5 |
| 1015-CC04 | 25-40 | 18 | 12 | 65 | G+60 | H+9 | Ø30 | 115 | 55 | 40 | 32.5 | 1/8 | M8 |
| 1015-CC06 | 35-55 | 22 | 14 | 80 | G+65 | H+12 | Ø37.5 | 130 | 65 | 48 | 40 | 1/4 | M10 |
| 1015-CC10 | 40-60 | 24 | 16 | 100 | G+82 | H+12 | Ø50 | 160 | 85 | 60 | 49 | 1/4 | M12 |

1015

- Spannmaße A, B C und D werden in T-Nut gespannt festgelegt.
- Temperatur Standard : 60°

1015

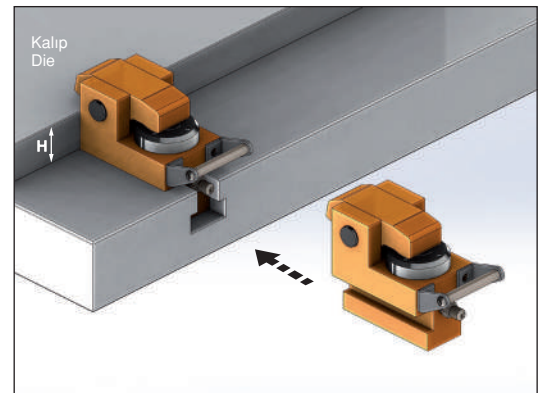
- The sizes of clamps(A),(B),(C) and (D) are made based on the size of T-slot.
- Standard Temperature : 60°



| Referenz-Nr. Order No. | L | K | J | H min. | H+d min. max | E min. | F | G | a min. | C min. | P |
|---------------------------|------|-----|------|-----------|-----------------|-----------|-----|----|-----------|-----------|-------|
| 1015-CB01 | 74.5 | 60 | 14.5 | 25 | 100 | 42 | 44 | 20 | 10 | 6.5 | PT1/8 |
| 1015-CB02 | 110 | 90 | 20 | 25 | 100 | 73 | 68 | 32 | 14 | 10 | PT1/4 |
| 1015-CB04 | 134 | 110 | 24 | 25 | 130 | 77 | 79 | 40 | 18 | 12 | PT1/4 |
| 1015-CB06 | 159 | 130 | 29 | 30 | 150 | 92 | 96 | 46 | 22 | 14 | PT1/4 |
| 1015-CB10 | 189 | 159 | 30 | 40 | 140 | 114 | 117 | 54 | 24 | 16 | PT1/4 |
| 1015-CB16 | 230 | 200 | 30 | 40 | 130 | 126 | 129 | 58 | 28 | 20 | PT1/4 |
| 1015-CB25 | 265 | 235 | 30 | 45 | 120 | 148 | 156 | 70 | 36 | 23 | PT1/4 |



| Modell / Model | CB-1 | CB-2 | CB-4 | CB-6 | CB-10 | CB-16 | CB-25 |
|---|-------|-------|-------|-------|--------|--------|--------|
| | CBL-1 | CBL-2 | CBL-4 | CBL-6 | CBL-10 | CBL-16 | CBL-25 |
| Spannkapazität Capacity of clamp | 1 | 2 | 4 | 6 | 10 | 16 | 25 |
| Total-Hub (X) Total stroke (X) | 6 | 8 | 8 | 8 | 8 | 8 | 8 |
| Spannhub (Y) Stroke of clamp (Y) | 2.5 | 3 | 3 | 3 | 3 | 3 | 3 |
| Schonhub (Z) Preserved stroke (Z) | 3.5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Zylinder-Gesamtvolumen Total volumn of cylinder | 3 | 7.5 | 13 | 21 | 38 | 55 | 98 |
| Toleranzen Werkzeugunerteil-Dicke (H) The tolerance of the template thickness (H) mm | ±1.5 | ±2 | ±2 | ±2 | ±2 | ±2 | ±2 |



1015

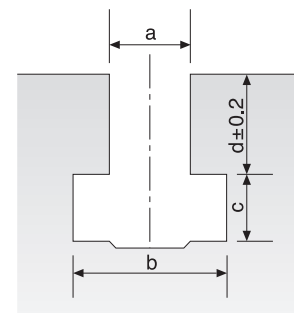
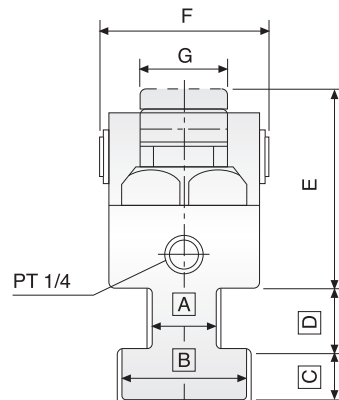
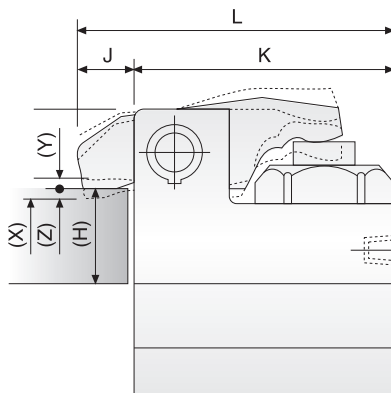
- Spannmaße A, B C und D werden in T-Nut gespannt festgelegt.
- Temperatur Standard : 60°
- Hidrolischer Druck 250kgf/cm²

1015

- The sizes of clamps(A),(B),(C) and (D) are made based on the size of T-slot.
- Standard Temperature : 60°
- Hydraulic pressure : 250kgf/cm²

- Bei Bestellung bitte T-Nut-Größe (a,b,c,d) und Werkzeugunerteil-Dicke (H) angeben.

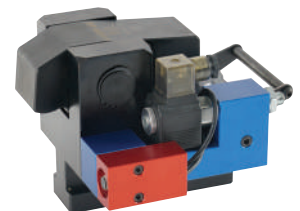
- Please indicate the size of T-slot (a,b,c,d) and the thickness (H) of the template for the die when purchasing.



| Referenz-Nr. Order No. | L | K | J | H min. | H+d min. max | E min. | F | G | a min. | C min. | P |
|---------------------------|------|-----|------|-----------|-----------------|-----------|-----|----|-----------|-----------|-------|
| 1015-CBL01 | 74.5 | 60 | 14.5 | 25 | 100 | 42 | 44 | 20 | 10 | 6.5 | PT1/8 |
| 1015-CBL02 | 110 | 90 | 20 | 25 | 100 | 73 | 68 | 32 | 14 | 10 | PT1/4 |
| 1015-CBL04 | 134 | 110 | 24 | 25 | 130 | 77 | 79 | 40 | 18 | 12 | PT1/4 |
| 1015-CBL06 | 159 | 130 | 29 | 30 | 150 | 92 | 96 | 46 | 22 | 14 | PT1/4 |
| 1015-CBL10 | 189 | 159 | 30 | 40 | 140 | 114 | 117 | 54 | 24 | 16 | PT1/4 |
| 1015-CBL16 | 230 | 200 | 30 | 40 | 130 | 126 | 129 | 58 | 28 | 20 | PT1/4 |
| 1015-CBL25 | 265 | 235 | 30 | 45 | 120 | 148 | 156 | 70 | 36 | 23 | PT1/4 |

Hydraulik-Spann-Modell CBL

Hydraulic Clamp Model CBL



1015

- Vorrichtungsmäße (A),(B),(C) und (D) werden im Zustand gespannt T-Nut bestimmt.
- Standard-Temperatur : 60°
- Hydraulischer Druck : 250kgf/cm²

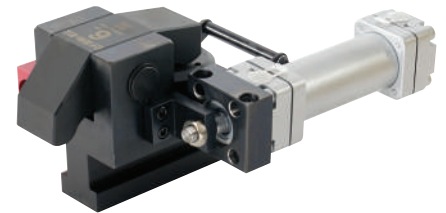
1015

- The sizes of clamps(A),(B),(C) and (D) are made based on the size of T-slot.
- Standard Temperature : 60°
- Hydraulic pressure : 250kgf/cm²

- Hinweis**
mit Verriegelungsoption

- Note**
With locking option

| Modell / Model | | CBS-1 | CBS-2 | CBS-4 | CBS-6 | CBS-10 | CBS-16 | CBS-25 |
|---|-----|-------|-------|-------|-------|--------|--------|--------|
| Spannkapazität Capacity of clamp | Ton | 1 | 2 | 4 | 6 | 10 | 16 | 25 |
| Total-Hub (X) Total stroke (X) | mm | 6 | 8 | 8 | 8 | 8 | 8 | 8 |
| Spannhub (Y) Stroke of clamp (Y) | mm | 2.5 | 3 | 3 | 3 | 3 | 3 | 3 |
| Schonhub (Z) Preserved stroke (Z) | mm | 3.5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Zylinder-Gesamtvolumen Total volumn of cylinder | cc | 3 | 7.5 | 13 | 21 | 38 | 55 | 98 |
| Toleranzen Werkzeugunerteil-Dicke(H) The tolerance of the template for the die | mm | ±1.5 | ±2 | ±2 | ±2 | ±2 | ±2 | ±2 |
| Hubweg (S) Traveling Stroke (S) | | | | | | | | |

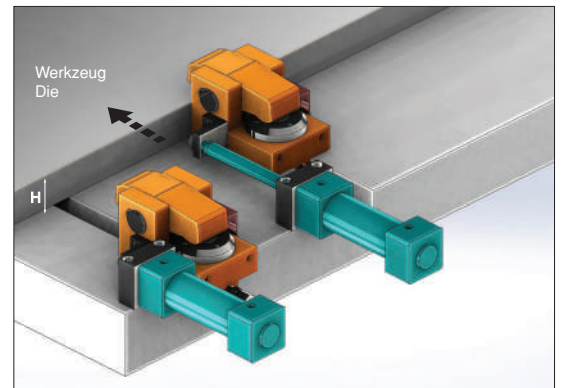


- Bei Bestellung Maße T-Nut (a,b,c,d) und Dicke Werkzeugschablone (H) nennen
- Please indicate the size of T-slot (a,b,c,d) and the thickness (H) of the template for the die when purchasing.

Bei Bestellung den Hubweg nennen
Hydraulischer Druck : 250kgf/cm2

Please inform the stroke distance before purchase.
Hydraulic pressure : 250kgf/cm2

| Referenz-Nr. Order No. | L | K | J | H min. | H+d min. max | E min. | F | G | a min. | C min. | P |
|---------------------------|------|-----|------|--------|--------------|--------|-----|----|--------|--------|-------|
| 1015-CBS01 | 74.5 | 60 | 14.5 | 25 | 100 | 42 | 44 | 20 | 10 | 6.5 | PT1/8 |
| 1015-CBS02 | 110 | 90 | 20 | 25 | 100 | 73 | 68 | 32 | 14 | 10 | PT1/4 |
| 1015-CBS04 | 134 | 110 | 24 | 25 | 130 | 77 | 79 | 40 | 18 | 12 | PT1/4 |
| 1015-CBS06 | 159 | 130 | 29 | 30 | 150 | 92 | 96 | 46 | 22 | 14 | PT1/4 |
| 1015-CBS10 | 189 | 159 | 30 | 40 | 140 | 114 | 117 | 54 | 24 | 16 | PT1/4 |
| 1015-CBS16 | 230 | 200 | 30 | 40 | 130 | 126 | 129 | 58 | 28 | 20 | PT1/4 |
| 1015-CBS25 | 265 | 235 | 30 | 45 | 120 | 148 | 156 | 70 | 36 | 23 | PT1/4 |



1015

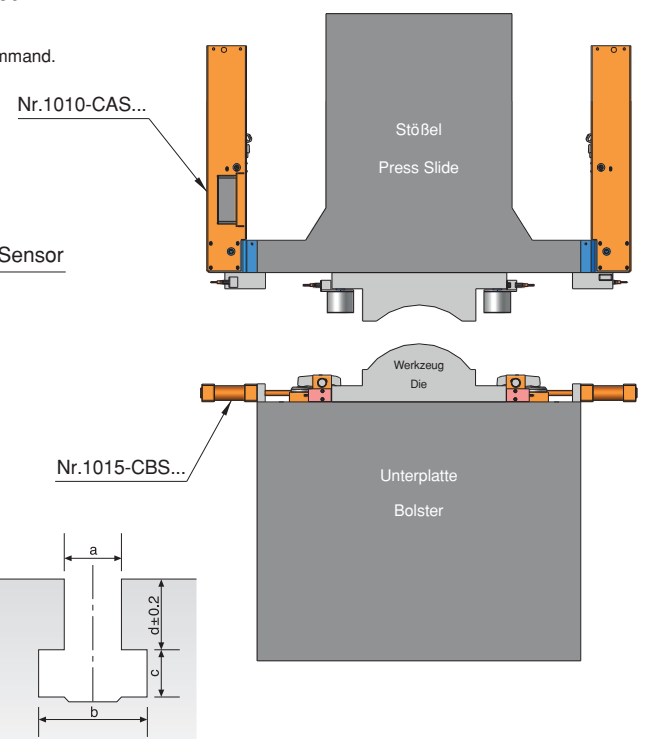
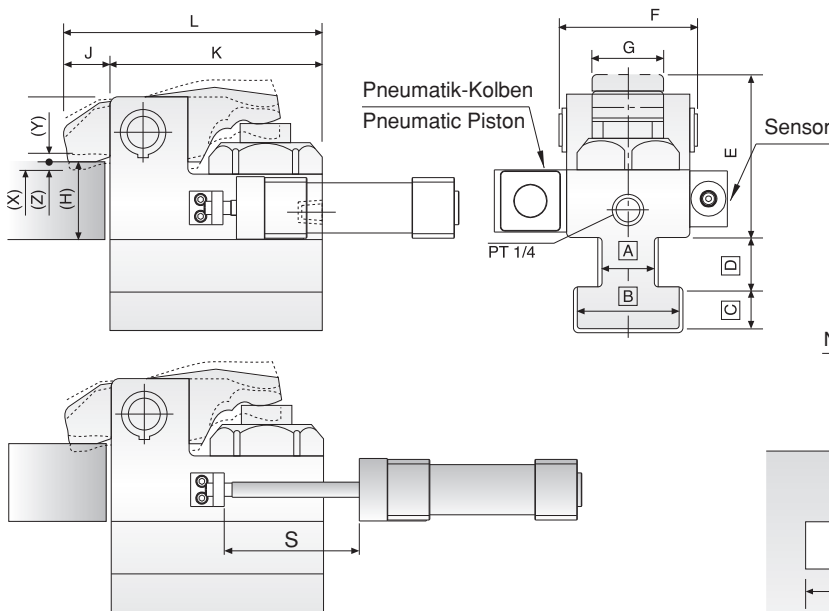
- Vorrichtungsmaße (A),(B),(C) und (D) werden im Zustand gespannt T-Nut bestimmt.
- Standard-Temperatur : 60°

1015

- The sizes of clamps(A),(B),(C) and (D) are made based on the size of T-slot.
- Standard Temperature : 60°

Hinweis
Bewegung durch automatischen Befehl

Note
Proceeds with automatic command.





| Modell / Model | | CD-2 | CD-4 | CD-6 | CD-10 | CD-16 | CD-25 |
|--|-----|------|------|------|-------|-------|-------|
| Spannkapazität Capacity of clamp | Ton | 2 | 4 | 6 | 10 | 16 | 25 |
| Total-Hub (X) Total stroke (X) | mm | 8 | 8 | 8 | 8 | 8 | 8 |
| Spannhub (Y) Stroke of clamp (Y) | mm | 3 | 3 | 3 | 3 | 3 | 3 |
| Schonhub (Z) Preserved stroke (Z) | mm | 5 | 5 | 5 | 5 | 5 | 5 |
| Zylinder-Gesamtvolumen Total volumn of cylinder | cc | 7.5 | 13 | 21 | 38 | 55 | 98 |
| Toleranzen Werkzeugunerteil-Dicke (H) The tolerance of the template thickness (H) | mm | ±2 | ±2 | ±2 | ±2 | ±2 | ±2 |

Hydraulischer Druck / Hydraulic pressure : 250kg/cm²

| Referenz-Nr. Order No. | A | B | C | D | E min. | F | G | W | N max. | T |
|---------------------------|----|----|-----|-----|-----------|-----|----|-----|-----------|---------|
| 1015-CD02 | 12 | 20 | 80 | 98 | 90 | 76 | 30 | 124 | 25 | M10x20D |
| 1015-CD04 | 12 | 25 | 100 | 109 | 93 | 87 | 30 | 135 | 30 | M12x24D |
| 1015-CD06 | 15 | 30 | 120 | 126 | 109 | 104 | 30 | 152 | 35 | M12x24D |
| 1015-CD10 | 15 | 35 | 150 | 148 | 131 | 124 | 36 | 174 | 40 | M14x28D |
| 1015-CD16 | 20 | 40 | 200 | 166 | 142 | 138 | 44 | 200 | 50 | M18x36D |
| 1015-CD25 | 20 | 45 | 235 | 200 | 163 | 168 | 48 | 240 | 60 | M22x45D |

1015

• Temperatur Standard : 60°

1015

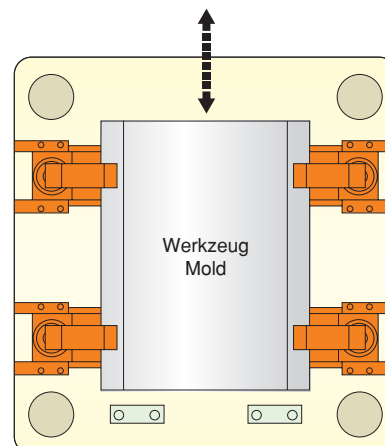
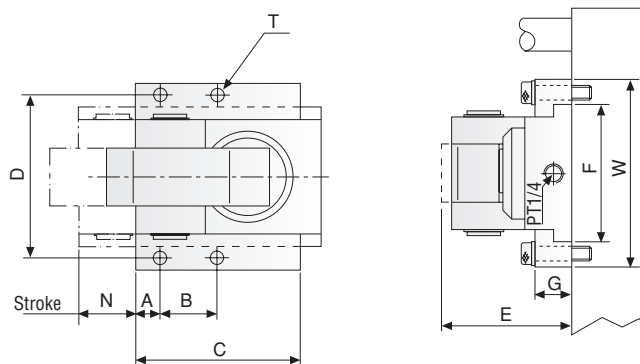
• Standard Temperature : 60°

Hinweis

Anwendung bei Maschinenplatten mit Bohrungen möglich

Note

It can be used in machines with holes on the plate.



| Modell / Model | | CG-4 | CG-6 | CG-10 | CG-16 | CG-25 | CG-50 |
|--------------------------------------|-----|------|------|-------|-------|-------|-------|
| Spannkapazität Capacity of clamp | Ton | 4 | 6 | 10 | 16 | 25 | 50 |
| Haltekraft Retaining force | Ton | 0.80 | 1.2 | 2 | 3.2 | 5 | 10 |
| Schonhub (Z) Preserved stroke (Z) | mm | 1.5 | 1.5 | 2 | 2 | 2 | 2 |



Hydraulischer Druck / Hydraulic pressure : 250kg/cm²

- Bei der Bestellung bitte die Werkzeughöhe (H) bekanntge
- Please thickness (H) of the template for the die when purchasing.

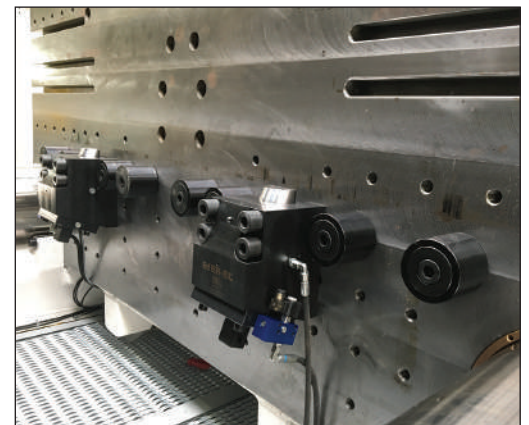
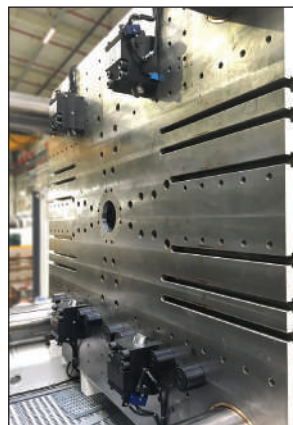
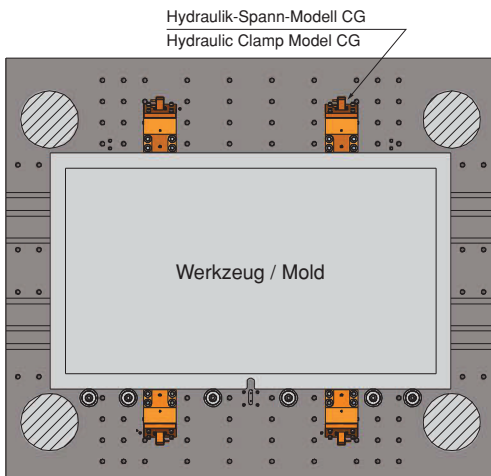
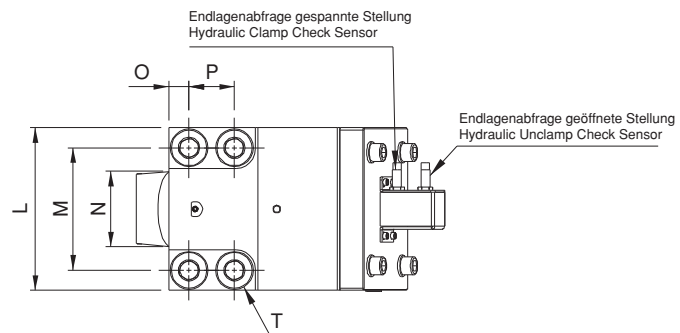
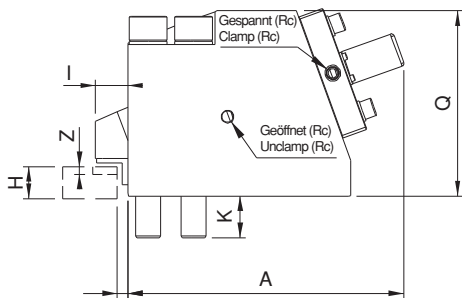
| Referenz-Nr. Order No. | I | J | K | L | M | N | O | P | Q | Rc | H | T |
|---------------------------|----|---|----|-----|-----|-----|----|----|-----|-----|----|-----|
| 1015-CG04 | 17 | 2 | 27 | 90 | 62 | 35 | 14 | - | 115 | 1/4 | 25 | M16 |
| 1015-CG06 | 19 | 3 | 33 | 110 | 76 | 45 | 17 | - | 124 | 1/4 | 30 | M20 |
| 1015-CG10 | 23 | 3 | 36 | 135 | 95 | 50 | 20 | - | 131 | 1/4 | 30 | M24 |
| 1015-CG16 | 28 | 5 | 33 | 138 | 104 | 60 | 17 | 40 | 156 | 1/4 | 30 | M20 |
| 1015-CG25 | 33 | 5 | 40 | 170 | 130 | 75 | 20 | 50 | 188 | 1/4 | 40 | M24 |
| 1015-CG50 | 35 | 5 | 50 | 215 | 162 | 100 | 27 | 60 | 227 | 3/8 | 50 | M33 |

1015

- Temperatur Standard : 60°

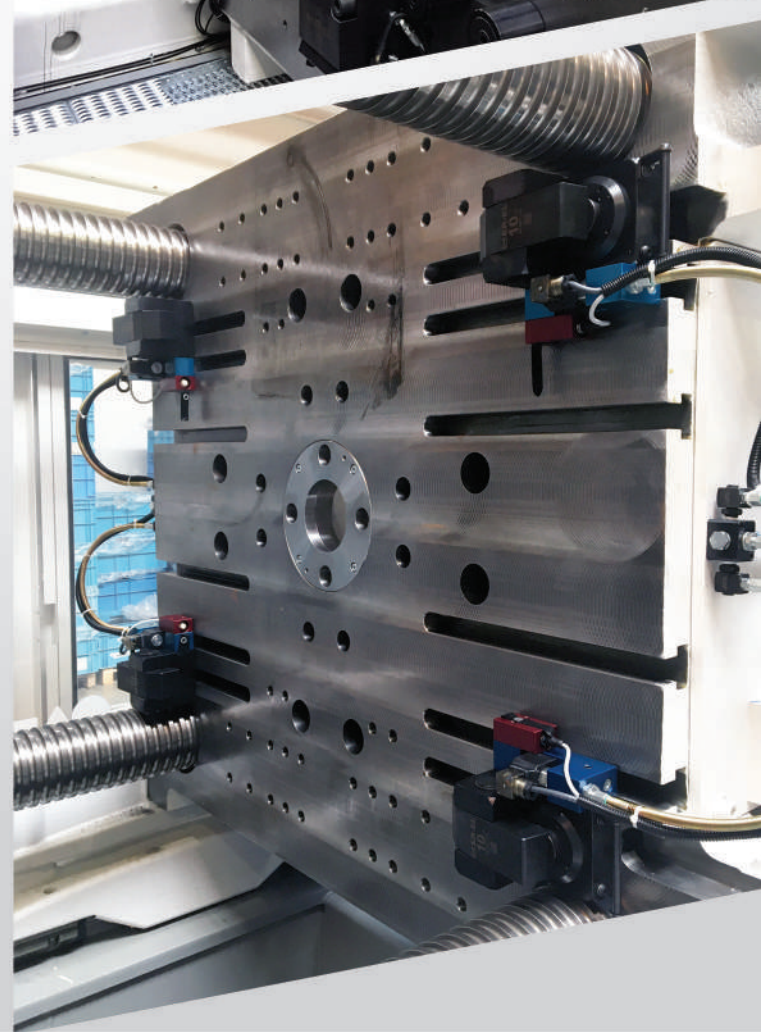
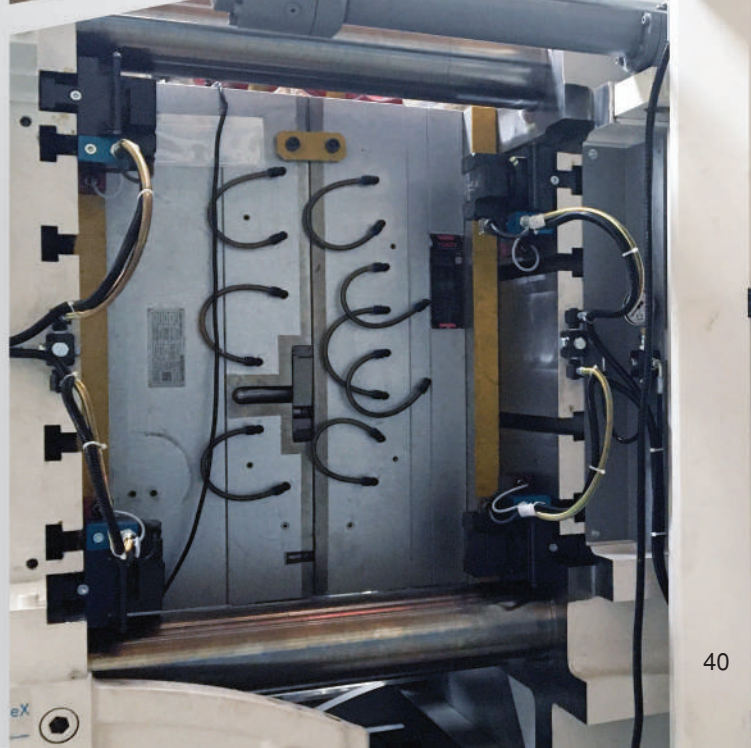
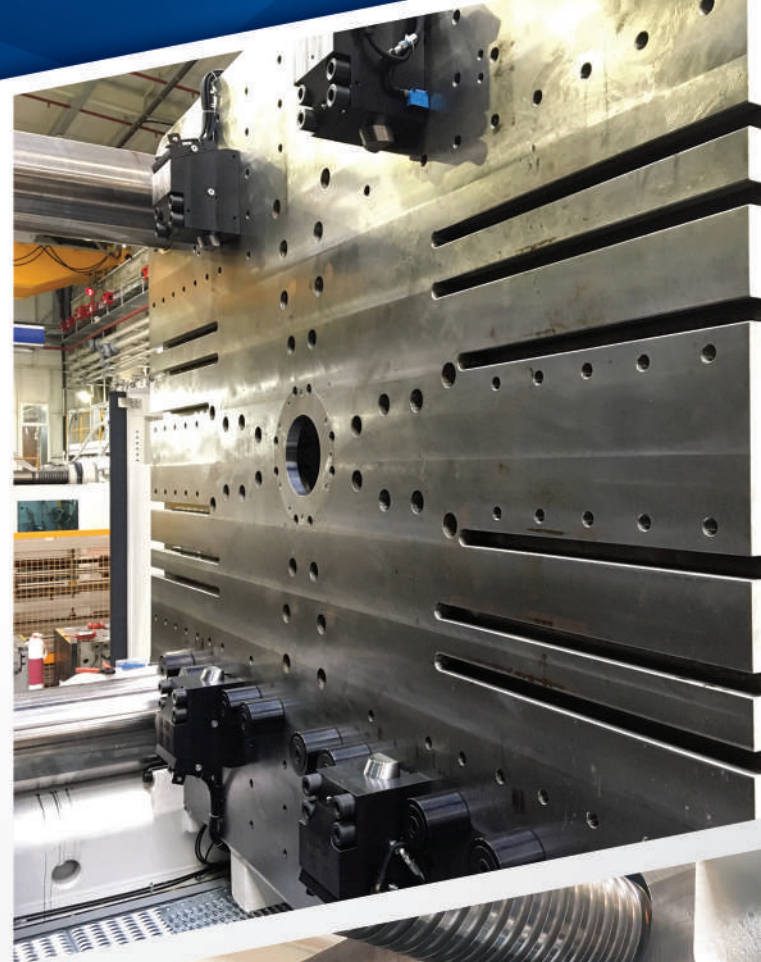
1015

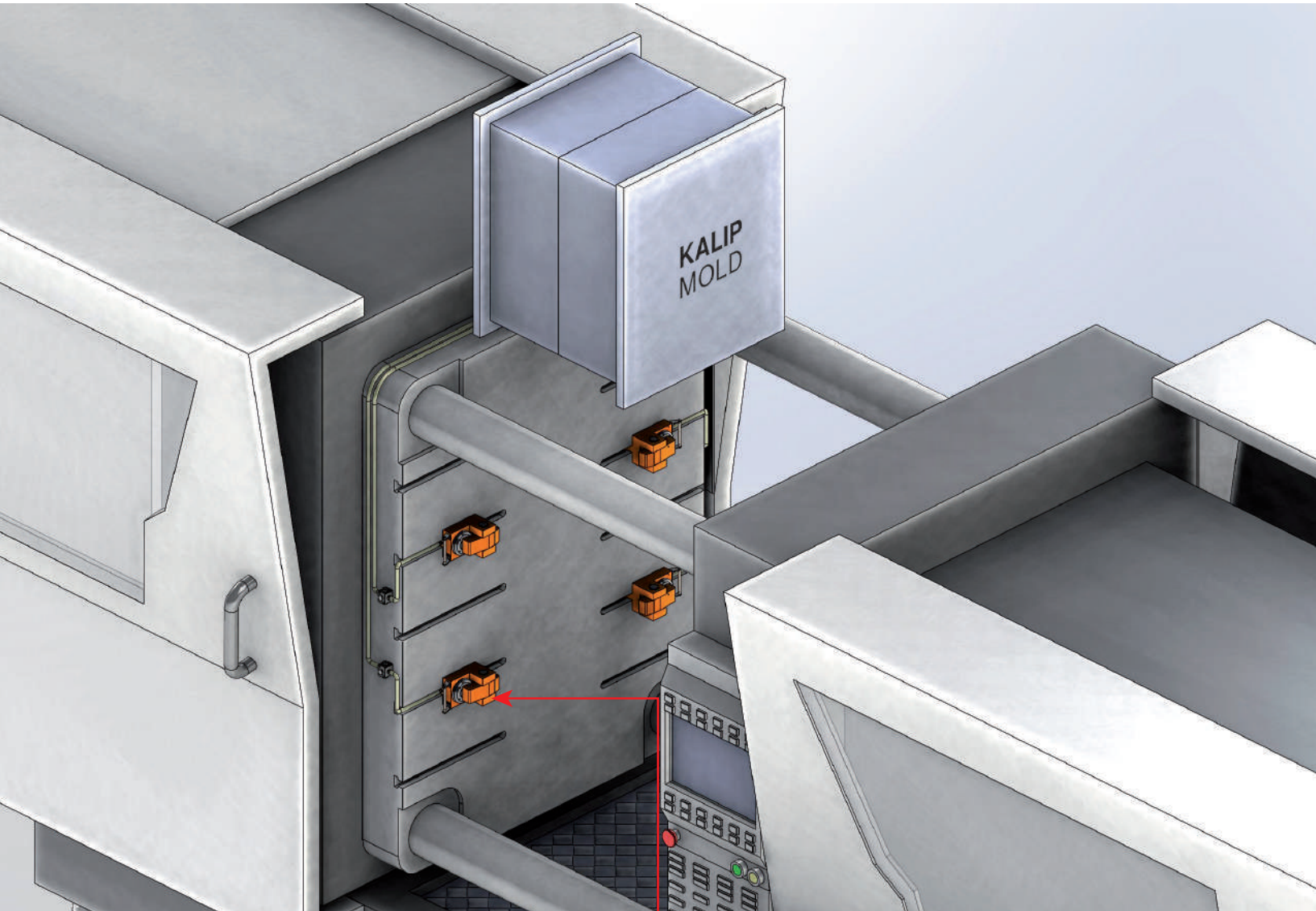
- Standard Temperature : 60°



Werkzeug-Schnellwechselsystem

Quick Mold Change System





Hydraulische Spannelemente / Hydraulic Clamp Models



Model CA



Model CV



Model CB



Model CBS



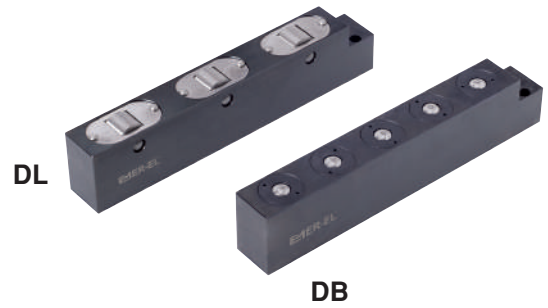
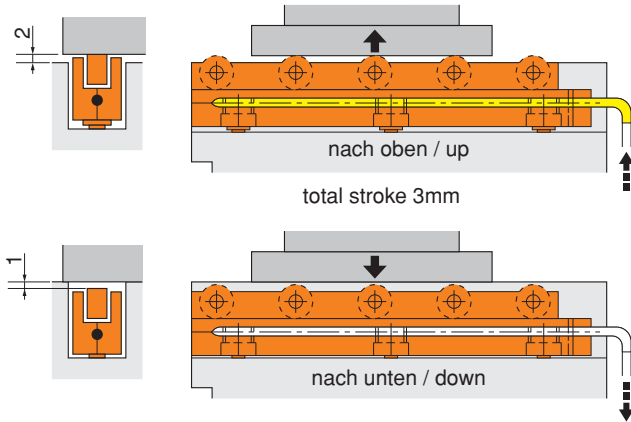
Model CC



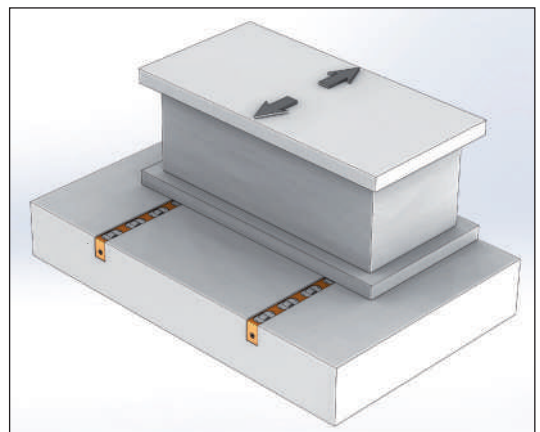
Model CD



Model CG

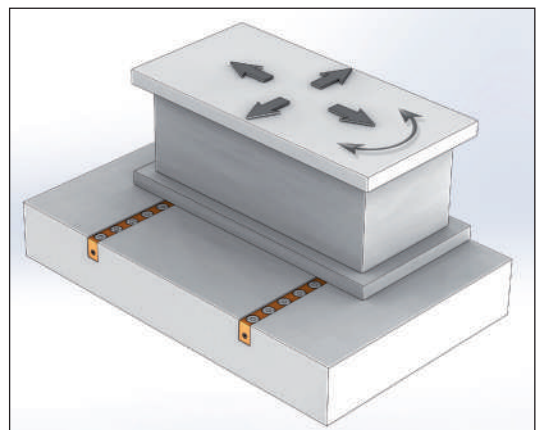


| | |
|---|----------------------------|
| Außenmaße Outline Dimensions | <p>D□18 Serie / Series</p> |
| Plattenbearbeitungsmaß (U-Nut) Processing Size for Plate (U-slot) | |



Model DL Bewegungsrichtung
Model DL Movement Direction

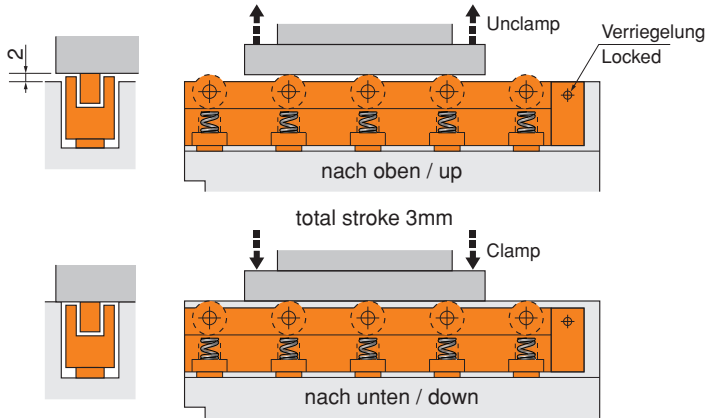
| Referenz-Nr. Order No. | L | D□18 | | | | Hydr. Zylinder Hyd. cylinder | |
|---------------------------|------|------------------------|-----------------------------|-----------------------|-----------------------------|---------------------------------|-----------------------------|
| | | DL18 | | DB18 | | Menge Quantity | Kapazität Capacity kg |
| | | Ring Roller (DL) | Kapazität Capacity kg | Kugel Ball (DB) | Kapazität Capacity kg | | |
| 1020-0200 | 200 | 3 | 300 | 5 | 250 | 2 | 560 |
| 1020-0300 | 300 | 5 | 500 | 7 | 350 | | |
| 1020-0400 | 400 | 6 | 560 | 10 | 500 | 3 | 840 |
| 1020-0500 | 500 | 8 | 800 | 12 | 600 | | |
| 1020-0600 | 600 | 9 | 840 | 15 | 750 | | |
| 1020-0700 | 700 | 11 | 840 | 17 | 840 | 4 | 1120 |
| 1020-0800 | 800 | 12 | 1120 | 20 | 1000 | | |
| 1020-0900 | 900 | 14 | 1120 | 22 | 1100 | 5 | 1400 |
| 1020-1000 | 1000 | 15 | 1250 | 25 | 1250 | | |



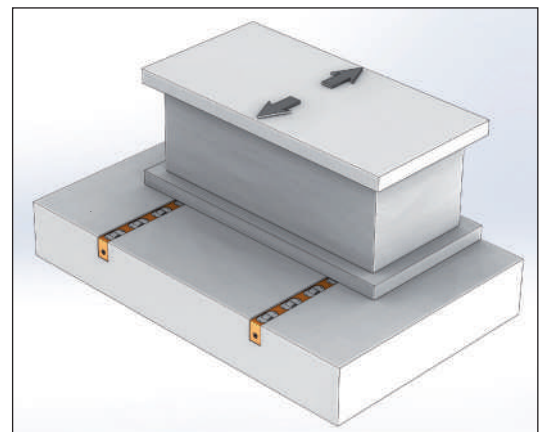
Model DB Bewegungsrichtung
Model DB Movement Direction

1020
• Temperatur Standard : 60°

1020
• Standard Temperature : 60°



| | |
|--|----------------------------|
| Außenmaße Outline Dimensions | <p>D□18 Serie / Series</p> |
| Plattenbearbeitungsmaß (U-Nut) Processing Size for Plate (U-slot) | |



Model DLS Bewegungsrichtung
Model DLS Movement Direction

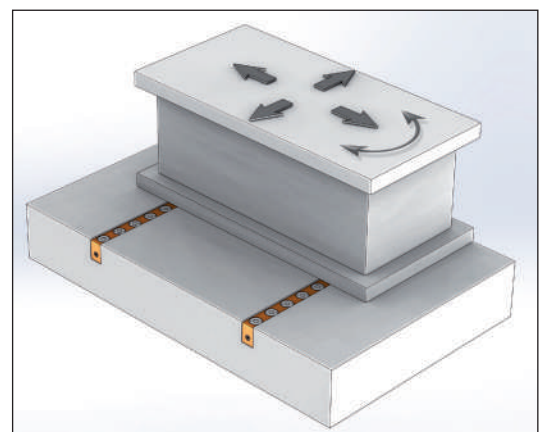
| Referenz-Nr. Order No. | L | D□18 | | | | | |
|---------------------------|------|-------------------------|----|-----------------------------|------------------------|----|-----------------------------|
| | | DLS18 | | | DBS18 | | |
| | | Ring Roller (DLS) | | Kapazität Capacity kg | Kugel Ball (DBS) | | Kapazität Capacity kg |
| 1022-0200 | 200 | 3 | 4 | 200 | 5 | 6 | 150 |
| 1022-0300 | 300 | 5 | 6 | 300 | 7 | 8 | 200 |
| 1022-0400 | 400 | 6 | 7 | 350 | 10 | 11 | 275 |
| 1022-0500 | 500 | 8 | 9 | 450 | 12 | 13 | 325 |
| 1022-0600 | 600 | 9 | 10 | 500 | 15 | 16 | 400 |
| 1022-0700 | 700 | 11 | 12 | 600 | 17 | 18 | 450 |
| 1022-0800 | 800 | 12 | 13 | 650 | 20 | 21 | 525 |
| 1022-0900 | 900 | 14 | 15 | 750 | 22 | 23 | 575 |
| 1022-1000 | 1000 | 15 | 16 | 800 | 25 | 26 | 650 |

1022

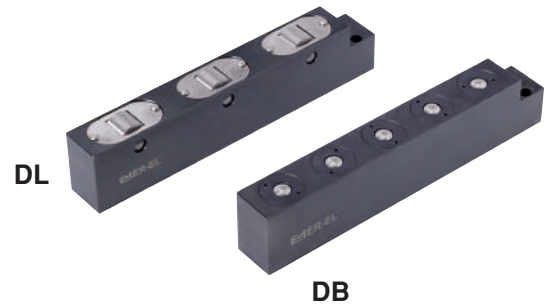
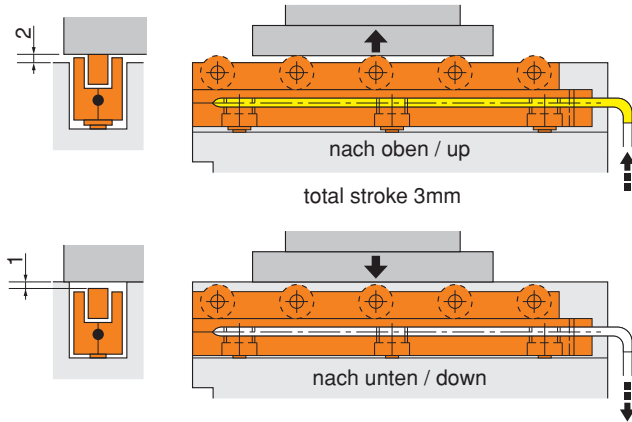
- Temperatur Standard : 60°

1022

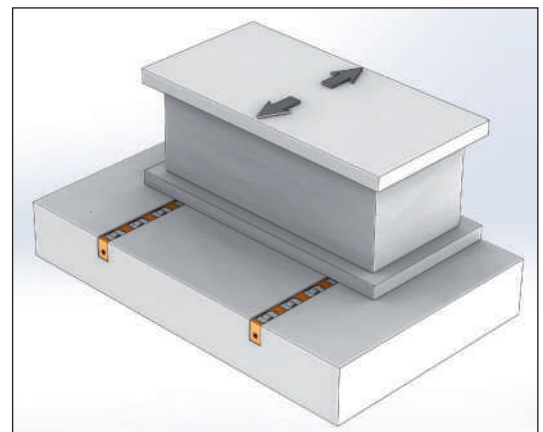
- Standard Temperature : 60°



Model DBS Bewegungsrichtung
Model DBS Movement Direction



| | |
|--|-----------------------------|
| <p>Außenmaße Outline Dimensions</p> | <p>D□22 Serisi / Serial</p> |
| <p>Plattenbearbeitungsmaß (U-Nut) Processing Size for Plate (U-slot)</p> | |

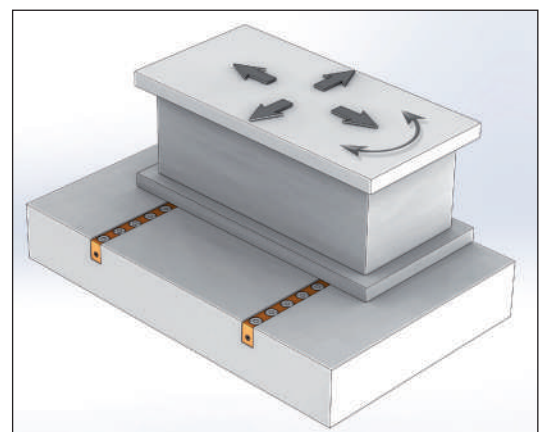


Model DL Bewegungsrichtung
Model DL Movement Direction

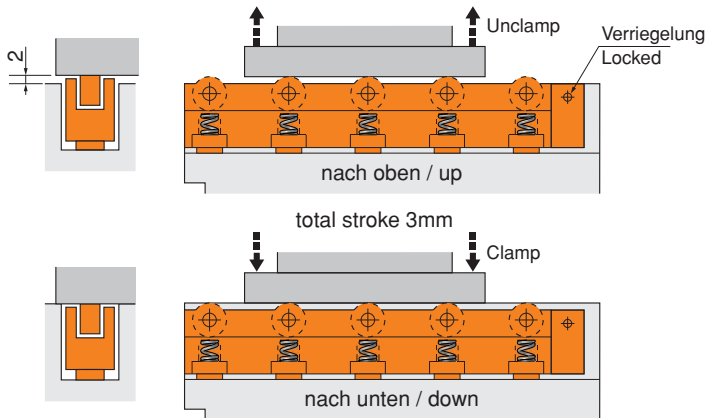
| Referenz-Nr. Order No. | L | D□22 | | | | Hid. Silindir Hyd. cylinder | |
|---------------------------|------|------------------------|-----------------------------|-----------------------|-----------------------------|--------------------------------|-----------------------------|
| | | DL22 | | DB22 | | Menge Quantity | Kapazität Capacity kg |
| | | Ring Roller (DL) | Kapazität Capacity kg | Kugel Ball (DB) | Kapazität Capacity kg | | |
| 1020-0200 | 200 | 3 | 480 | 5 | 370 | 2 | 1000 |
| 1020-0300 | 300 | 5 | 800 | 7 | 518 | | |
| 1020-0400 | 400 | 6 | 960 | 10 | 740 | | |
| 1020-0500 | 500 | 8 | 1280 | 12 | 888 | 3 | 1500 |
| 1020-0600 | 600 | 9 | 1400 | 15 | 1110 | | |
| 1020-0700 | 700 | 11 | 1500 | 17 | 1250 | | |
| 1020-0800 | 800 | 12 | 1920 | 20 | 1480 | | |
| 1020-0900 | 900 | 14 | 2000 | 22 | 1628 | 4 | 2000 |
| 1020-1000 | 1000 | 15 | 2000 | 25 | 1850 | | |

1020
• Temperatur Standard : 60°

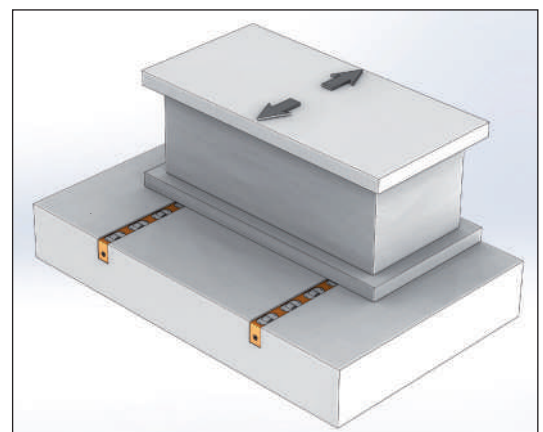
1020
• Standard Temperature : 60°



Model DB Bewegungsrichtung
Model DB Movement Direction



| | |
|--|-----------------------------|
| Außenmaße Outline Dimensions | <p>D□22 Serisi / Serial</p> |
| Plattenbearbeitungsmaß (U-Nut) Processing Size for Plate (U-slot) | |

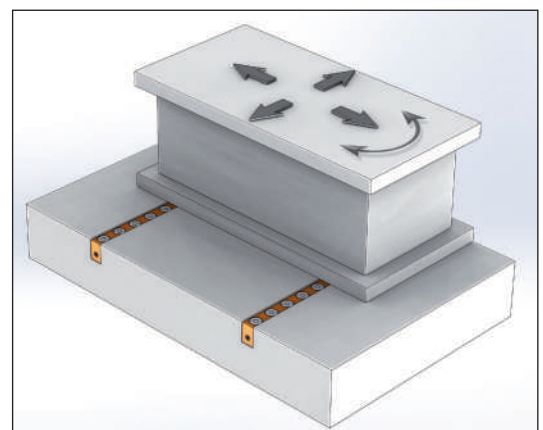


Model DLS Bewegungsrichtung
Model DLS Movement Direction

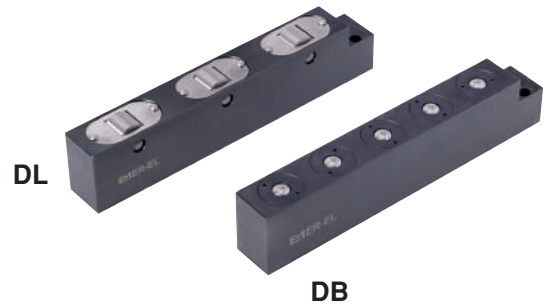
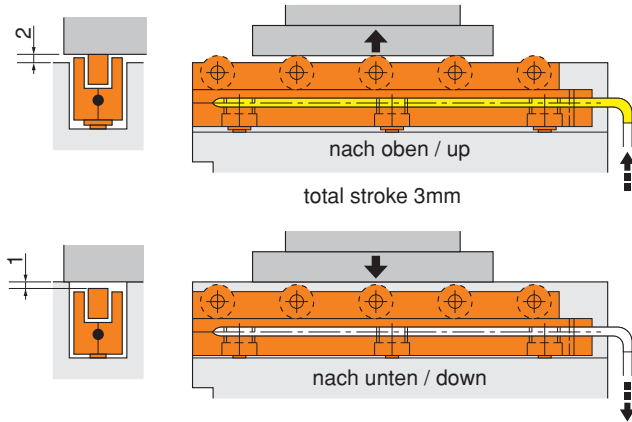
| Referenz-Nr. Order No. | L | D□22 | | | | | |
|---------------------------|------|-------------------------|----|-----------------------------|------------------------|----|-----------------------------|
| | | DLS22 | | | DBS22 | | |
| | | Ring Roller (DLS) | | Kapazität Capacity kg | Kugel Ball (DBS) | | Kapazität Capacity kg |
| 1022-0200 | 200 | 3 | 3 | 240 | 5 | 5 | 200 |
| 1022-0300 | 300 | 5 | 5 | 400 | 7 | 7 | 280 |
| 1022-0400 | 400 | 6 | 6 | 480 | 10 | 10 | 400 |
| 1022-0500 | 500 | 8 | 8 | 640 | 12 | 12 | 480 |
| 1022-0600 | 600 | 9 | 9 | 720 | 15 | 15 | 600 |
| 1022-0700 | 700 | 11 | 11 | 880 | 17 | 17 | 680 |
| 1022-0800 | 800 | 12 | 12 | 960 | 20 | 20 | 800 |
| 1022-0900 | 900 | 14 | 14 | 1120 | 22 | 22 | 880 |
| 1022-1000 | 1000 | 15 | 15 | 1200 | 25 | 25 | 1000 |

1022
• Temperatur Standard : 60°

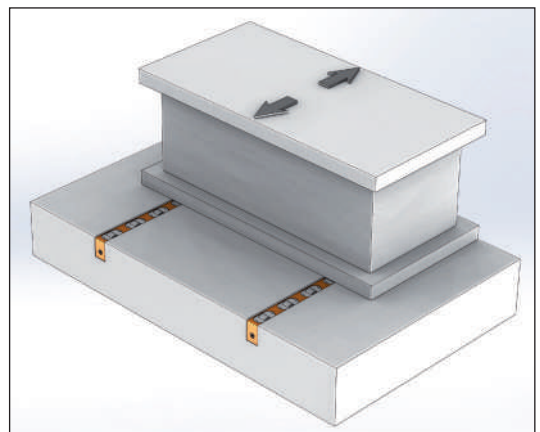
1022
• Standard Temperature : 60°



Model DBS Bewegungsrichtung
Model DBS Movement Direction

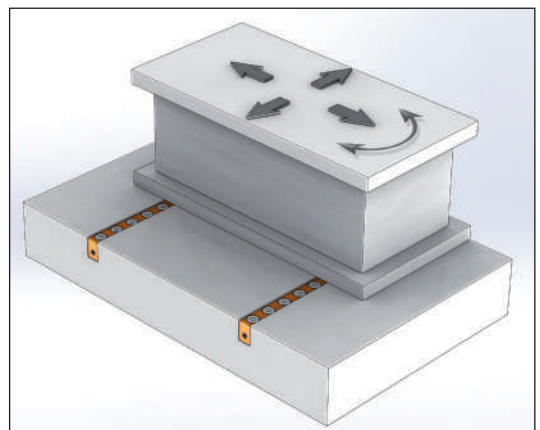


| | |
|---------------------------------|--|
| Außenmaße Outline Dimensions | <p>□28 Serie / Series</p> |
| | <p>Plattenbearbeitungsmaß (U-Nut) Processing Size for Plate (U-slot)</p> |



Model DL Bewegungsrichtung
Model DL Movement Direction

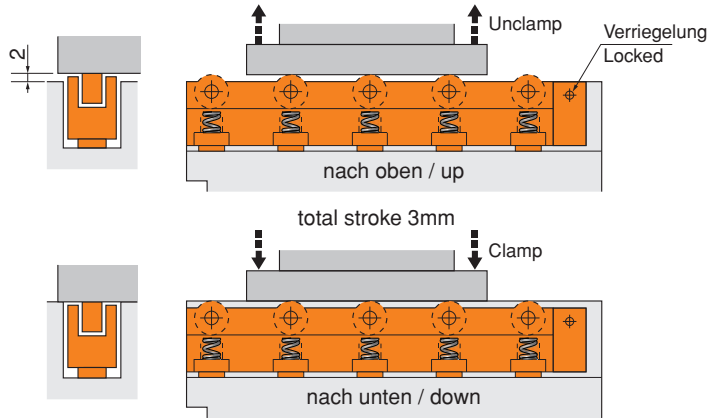
| Referenz-Nr. Order No. | L | □28 | | | | | |
|---------------------------|------|------------------------|-----------------------------|-----------------------|-----------------------------|---------------------------------|-----------------------------|
| | | DL28 | | DB28 | | Hydr. Zylinder Hyd. cylinder | |
| | | Ring Roller (DL) | Kapazität Capacity kg | Kugel Ball (DB) | Kapazität Capacity kg | Menge Quantity | Kapazität Capacity kg |
| 1020-0200 | 200 | 3 | 750 | 5 | 475 | | |
| 1020-0300 | 300 | 5 | 1250 | 7 | 665 | 2 | 1260 |
| 1020-0400 | 400 | 6 | 1260 | 10 | 950 | | |
| 1020-0500 | 500 | 8 | 1890 | 12 | 1140 | | |
| 1020-0600 | 600 | 9 | 1890 | 15 | 1425 | 3 | 1890 |
| 1020-0700 | 700 | 11 | 1890 | 17 | 1615 | | |
| 1020-0800 | 800 | 12 | 2520 | 20 | 1900 | | |
| 1020-0900 | 900 | 14 | 2520 | 22 | 2090 | 4 | 2520 |
| 1020-1000 | 1000 | 15 | 3150 | 25 | 2375 | | |
| 1020-1100 | 1100 | 16 | 3150 | 27 | 2565 | 5 | 3150 |
| 1020-1200 | 1200 | 17 | 3150 | 30 | 2850 | | |
| 1020-1300 | 1300 | 18 | 3780 | 32 | 3040 | | |
| 1020-1400 | 1400 | 19 | 3780 | 35 | 3325 | 6 | 3780 |
| 1020-1500 | 1500 | 20 | 3780 | 37 | 3515 | | |
| 1020-1600 | 1600 | 22 | 4410 | 40 | 3800 | | |
| 1020-1700 | 1700 | 24 | 4410 | 42 | 3990 | 7 | 4410 |
| 1020-1800 | 1800 | 25 | 4410 | 45 | 4275 | | |
| 1020-1900 | 1900 | 27 | 5040 | 47 | 4465 | 8 | 5040 |



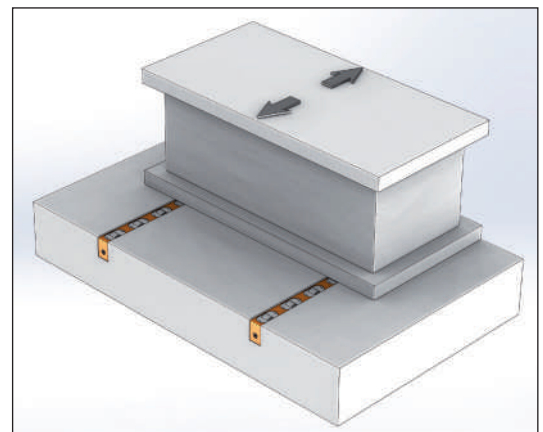
Model DB Bewegungsrichtung
Model DB Movement Direction

1020
• Temperatur Standard : 60°

1020
• Standard Temperature : 60°

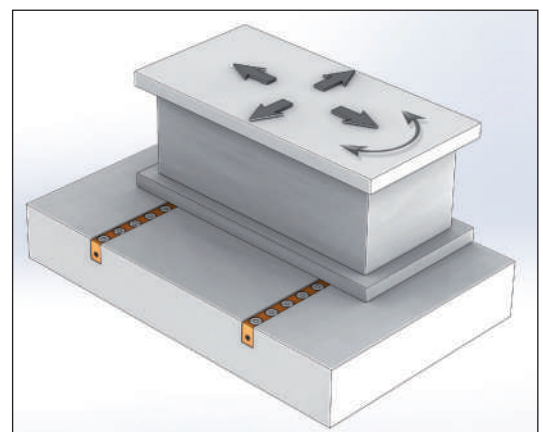


| | |
|--|----------------------------|
| Außenmaße Outline Dimensions | <p>D□28 Serie / Series</p> |
| Plattenbearbeitungsmaß (U-Nut) Processing Size for Plate (U-slot) | |



Model DLS Bewegungsrichtung
Model DLS Movement Direction

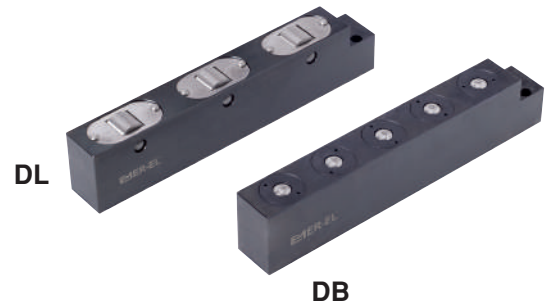
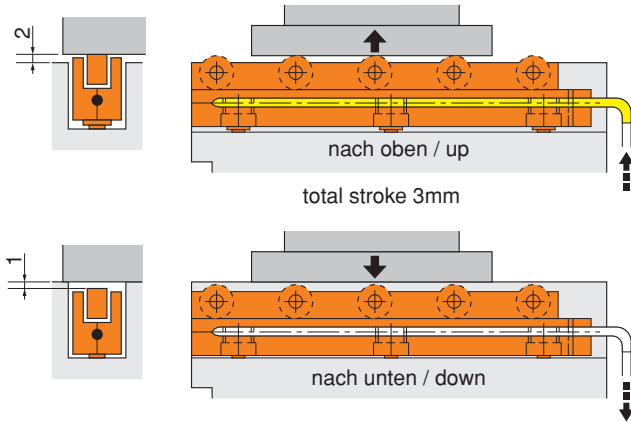
| Referenz-Nr. Order No. | L | D□28 | | | | | |
|---------------------------|------|-------------------------|----|-----------------------------|------------------------|----|-----------------------------|
| | | DLS28 | | | DBS28 | | |
| | | Ring Roller (DLS) | | Kapazität Capacity kg | Kugel Ball (DBS) | | Kapazität Capacity kg |
| 1022-0200 | 200 | 3 | 4 | 500 | 5 | 5 | 315 |
| 1022-0300 | 300 | 5 | 6 | 750 | 7 | 7 | 441 |
| 1022-0400 | 400 | 6 | 7 | 875 | 10 | 10 | 630 |
| 1022-0500 | 500 | 8 | 9 | 1125 | 12 | 12 | 756 |
| 1022-0600 | 600 | 9 | 10 | 1250 | 15 | 15 | 945 |
| 1022-0700 | 700 | 11 | 12 | 1500 | 17 | 17 | 1071 |
| 1022-0800 | 800 | 12 | 13 | 1625 | 20 | 20 | 1260 |
| 1022-0900 | 900 | 14 | 15 | 1875 | 22 | 22 | 1386 |
| 1022-1000 | 1000 | 15 | 16 | 2000 | 25 | 25 | 1575 |
| 1022-1100 | 1100 | 16 | 17 | 2125 | 27 | 27 | 1701 |
| 1022-1200 | 1200 | 17 | 18 | 2250 | 30 | 30 | 1890 |
| 1022-1300 | 1300 | 18 | 19 | 2375 | 32 | 32 | 2016 |
| 1022-1400 | 1400 | 19 | 20 | 2500 | 35 | 35 | 2205 |
| 1022-1500 | 1500 | 20 | 21 | 2625 | 37 | 37 | 2331 |
| 1022-1600 | 1600 | 22 | 23 | 2875 | 40 | 40 | 2520 |
| 1022-1700 | 1700 | 24 | 25 | 3125 | 42 | 42 | 2646 |
| 1022-1800 | 1800 | 25 | 26 | 3250 | 45 | 45 | 2835 |
| 1022-1900 | 1900 | 27 | 28 | 3500 | 47 | 47 | 2961 |



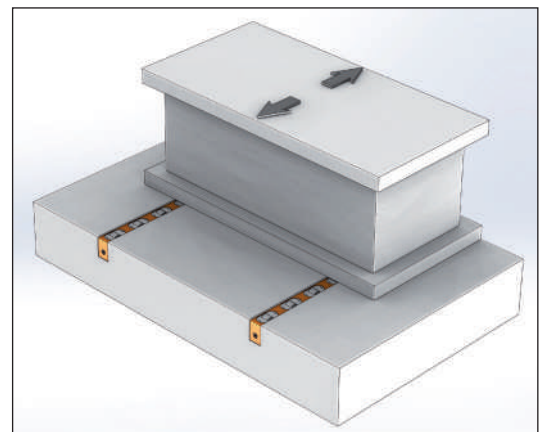
Model DBS Bewegungsrichtung
Model DBS Movement Direction

1022
• Temperatur Standard : 60°

1022
• Standard Temperature : 60°

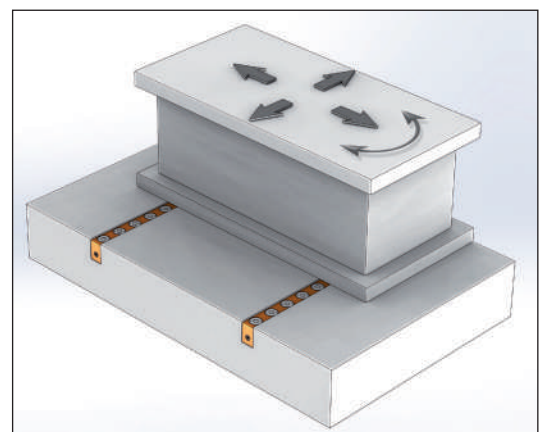


| | |
|---------------------------------|--|
| Außenmaße Outline Dimensions | <p>□36 Serie / Series</p> |
| | <p>Plattenbearbeitungsmaß (U-Nut) Processing Size for Plate (U-slot)</p> |



Model DL Bewegungsrichtung
Model DL Movement Direction

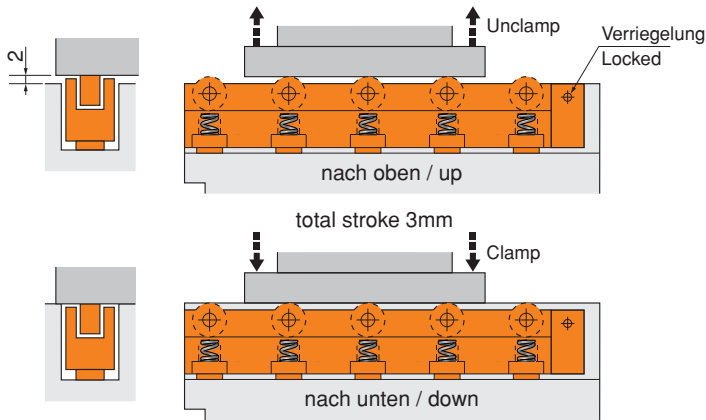
| Referenz-Nr. Order No. | L | □36 | | | | | |
|---------------------------|------|------------------------|-----------------------------|-----------------------|-----------------------------|---------------------------------|-----------------------------|
| | | DL36 | | DB36 | | Hydr. Zylinder Hyd. cylinder | |
| | | Ring Roller (DL) | Kapazität Capacity kg | Kugel Ball (DB) | Kapazität Capacity kg | Menge Quantity | Kapazität Capacity kg |
| 1020-0200 | 200 | 3 | 1050 | 5 | 600 | 2 | 1700 |
| 1020-0300 | 300 | 5 | 1750 | 7 | 840 | | |
| 1020-0400 | 400 | 6 | 1700 | 10 | 1200 | 3 | 2600 |
| 1020-0500 | 500 | 8 | 2600 | 12 | 1440 | | |
| 1020-0600 | 600 | 9 | 2600 | 15 | 1800 | | |
| 1020-0700 | 700 | 11 | 2600 | 17 | 2040 | 4 | 3500 |
| 1020-0800 | 800 | 12 | 2600 | 20 | 2400 | | |
| 1020-0900 | 900 | 14 | 3500 | 22 | 2640 | 5 | 4400 |
| 1020-1000 | 1000 | 15 | 3500 | 25 | 3000 | | |
| 1020-1100 | 1100 | 16 | 3500 | 27 | 3240 | | |
| 1020-1200 | 1200 | 17 | 4400 | 30 | 3600 | 6 | 5300 |
| 1020-1300 | 1300 | 18 | 4400 | 32 | 3840 | | |
| 1020-1400 | 1400 | 19 | 4400 | 35 | 4200 | | |
| 1020-1500 | 1500 | 20 | 4400 | 37 | 4400 | | |
| 1020-1600 | 1600 | 22 | 5300 | 40 | 4800 | | |
| 1020-1700 | 1700 | 24 | 5300 | 42 | 5040 | | |
| 1020-1800 | 1800 | 25 | 5300 | 45 | 5300 | | |
| 1020-1900 | 1900 | 27 | 5300 | 47 | 5300 | | |



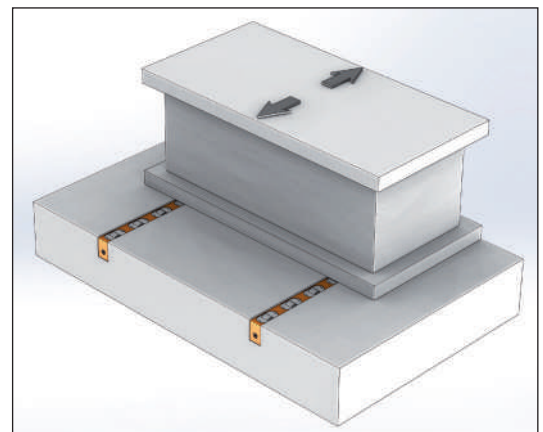
Model DB Bewegungsrichtung
Model DB Movement Direction

1020
• Temperatur Standard : 60°

1020
• Standard Temperature : 60°

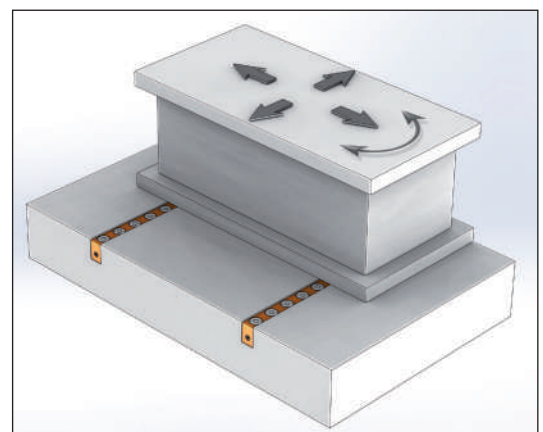


| | |
|--|----------------------------|
| Außenmaße Outline Dimensions | <p>D□36 Serie / Series</p> |
| Plattenbearbeitungsmaß (U-Nut) Processing Size for Plate (U-slot) | |



Model DLS Bewegungsrichtung
Model DLS Movement Direction

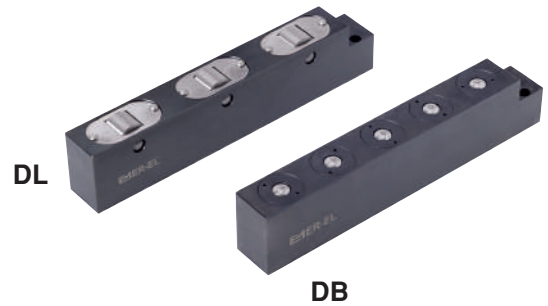
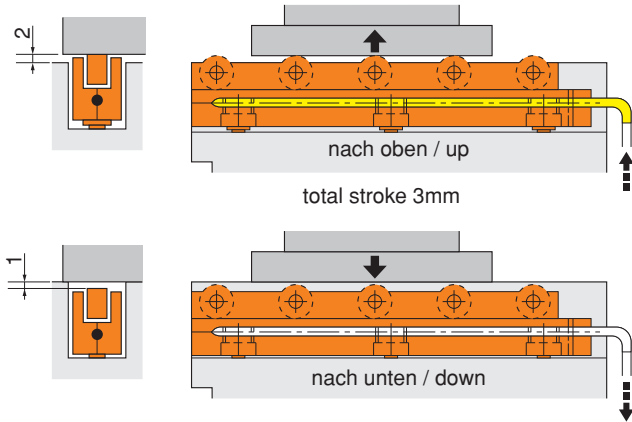
| Referenz-Nr. Order No. | L | D□36 | | | | | |
|---------------------------|------|-------------------------|----|-----------------------------|------------------------|----|-----------------------------|
| | | DLS36 | | | DBS36 | | |
| | | Ring Roller (DLS) | | Kapazität Capacity kg | Kugel Ball (DBS) | | Kapazität Capacity kg |
| 1022-0200 | 200 | 3 | 3 | 600 | 5 | 5 | 500 |
| 1022-0300 | 300 | 5 | 5 | 1000 | 7 | 7 | 700 |
| 1022-0400 | 400 | 6 | 6 | 1200 | 10 | 10 | 1000 |
| 1022-0500 | 500 | 8 | 8 | 1600 | 12 | 12 | 1200 |
| 1022-0600 | 600 | 9 | 9 | 1800 | 15 | 15 | 1500 |
| 1022-0700 | 700 | 11 | 11 | 2200 | 17 | 17 | 1700 |
| 1022-0800 | 800 | 12 | 12 | 2400 | 20 | 20 | 2000 |
| 1022-0900 | 900 | 14 | 14 | 2800 | 22 | 22 | 2200 |
| 1022-1000 | 1000 | 15 | 15 | 3000 | 25 | 25 | 2500 |
| 1022-1100 | 1100 | 16 | 16 | 3200 | 27 | 27 | 2700 |
| 1022-1200 | 1200 | 17 | 17 | 3400 | 30 | 30 | 3000 |
| 1022-1300 | 1300 | 18 | 18 | 3600 | 32 | 32 | 3200 |
| 1022-1400 | 1400 | 19 | 19 | 3800 | 35 | 35 | 3500 |
| 1022-1500 | 1500 | 20 | 20 | 4000 | 37 | 37 | 3700 |
| 1022-1600 | 1600 | 22 | 22 | 4400 | 40 | 40 | 4000 |
| 1022-1700 | 1700 | 24 | 24 | 4800 | 42 | 42 | 4200 |
| 1022-1800 | 1800 | 25 | 25 | 5000 | 45 | 45 | 4500 |
| 1022-1900 | 1900 | 27 | 27 | 5400 | 47 | 47 | 4700 |



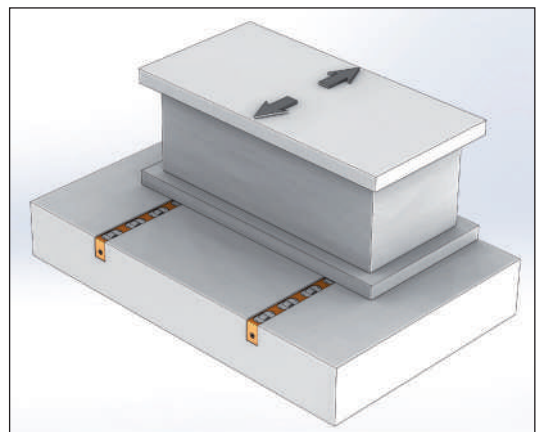
Model DBS Bewegungsrichtung
Model DBS Movement Direction

1022
• Temperatur Standard : 60°

1022
• Standard Temperature : 60°

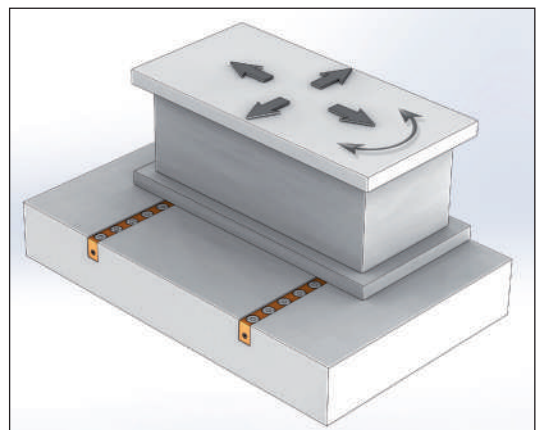


| | D□50 Serie / Series | D□50 Serie / Series |
|---|---------------------|---------------------|
| Außenmaße Outline Dimensions | | |
| Plattenbearbeitungsmaß (U-Nut) Processing Size for Plate (U-slot) | | |



Model DL Bewegungsrichtung
Model DL Movement Direction

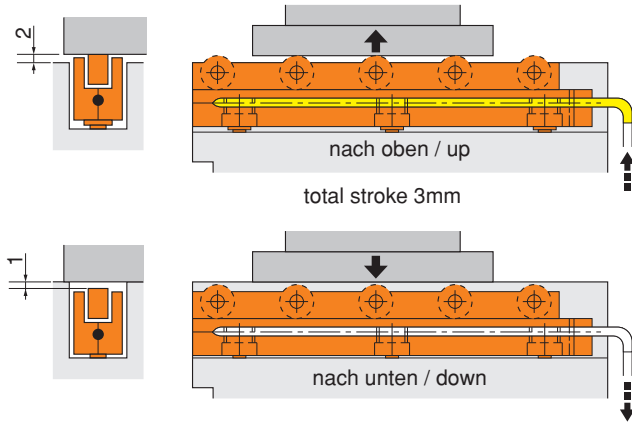
| Referenz-Nr. Order No. | L | D□50 | | | | | |
|---------------------------|------|------------------------|-----------------------------|-----------------------|-----------------------------|--------------------------------|-----------------------------|
| | | DL50 | | DB50 | | Hid. Silindir Hyd. cylinder | |
| | | Ring Roller (DL) | Kapazität Capacity kg | Kugel Ball (DB) | Kapazität Capacity kg | Menge Quantity | Kapazität Capacity kg |
| 1020-0200 | 200 | 2 | 1000 | 4 | 640 | 2 | 2200 |
| 1020-0300 | 300 | 3 | 1500 | 6 | 960 | | |
| 1020-0400 | 400 | 4 | 2000 | 9 | 1440 | 3 | 3300 |
| 1020-0500 | 500 | 5 | 2500 | 11 | 1760 | | |
| 1020-0600 | 600 | 6 | 3000 | 13 | 2080 | | |
| 1020-0700 | 700 | 7 | 3300 | 16 | 2560 | 4 | 4400 |
| 1020-0800 | 800 | 8 | 3300 | 18 | 2880 | | |
| 1020-0900 | 900 | 9 | 4400 | 20 | 3200 | 5 | 5500 |
| 1020-1000 | 1000 | 10 | 4400 | 23 | 3680 | | |
| 1020-1100 | 1100 | 11 | 4400 | 25 | 4000 | | |
| 1020-1200 | 1200 | 12 | 5500 | 27 | 4320 | 6 | 6600 |
| 1020-1300 | 1300 | 13 | 5500 | 29 | 4640 | | |
| 1020-1400 | 1400 | 14 | 5500 | 31 | 4960 | 7 | 7700 |
| 1020-1500 | 1500 | 15 | 5500 | 33 | 5280 | | |
| 1020-1600 | 1600 | 16 | 6500 | 35 | 5600 | | |
| 1020-1700 | 1700 | 17 | 6500 | 38 | 6080 | 8 | 8800 |
| 1020-1800 | 1800 | 18 | 6500 | 40 | 6400 | | |
| 1020-1900 | 1900 | 19 | 6500 | 42 | 6720 | 8 | 8800 |
| 1020-2000 | 2000 | 20 | 7700 | 44 | 7040 | | |
| 1020-2100 | 2100 | 21 | 7700 | 46 | 7360 | | |
| 1020-2200 | 2200 | 22 | 7700 | 48 | 7680 | 8 | 8800 |
| 1020-2300 | 2300 | 23 | 7700 | 50 | 7700 | | |
| 1020-2400 | 2400 | 24 | 8800 | 52 | 8320 | 8 | 8800 |
| 1020-2500 | 2500 | 25 | 8800 | 54 | 8640 | | |



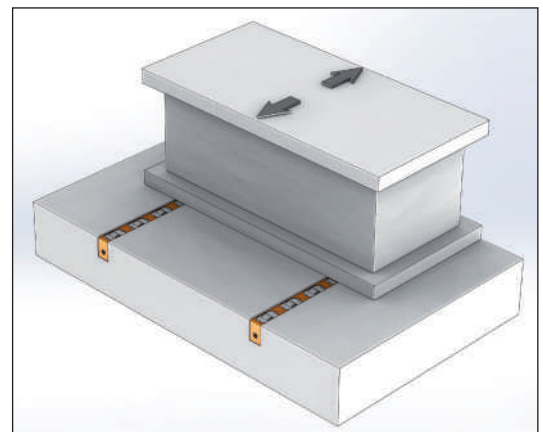
Model DB Bewegungsrichtung
Model DB Movement Direction

1020
• Temperatur Standard : 60°

1020
• Standard Temperature : 60°



| | |
|--|----------------------------|
| Außenmaße Outline Dimensions | <p>D□80 Serie / Series</p> |
| Plattenbearbeitungsmaß (U-Nut) Processing Size for Plate (U-slot) | |




Model DL Bewegungsrichtung
Model DL Movement Direction

| Referenz-Nr. Order No. | L | D□80 | | | |
|---------------------------|------|------------------------|-----------------------------|-------------------|-----------------------------|
| | | Ring Roller (DL) | Kapazität Capacity kg | Menge Quantity | Kapazität Capacity kg |
| 1020-0200 | 200 | - | - | - | - |
| 1020-0300 | 300 | - | - | - | - |
| 1020-0400 | 400 | - | - | - | - |
| 1020-0500 | 500 | 5 | 3250 | 2 | 5600 |
| 1020-0600 | 600 | 6 | 3900 | | |
| 1020-0700 | 700 | 7 | 4550 | 3 | 8400 |
| 1020-0800 | 800 | 8 | 5200 | | |
| 1020-0900 | 900 | 9 | 5850 | | |
| 1020-1000 | 1000 | 10 | 6500 | 4 | 11200 |
| 1020-1100 | 1100 | 11 | 7150 | | |
| 1020-1200 | 1200 | 12 | 7800 | | |
| 1020-1300 | 1300 | 13 | 8450 | | |
| 1020-1400 | 1400 | 14 | 9100 | 5 | 14000 |
| 1020-1500 | 1500 | 15 | 9750 | | |
| 1020-1600 | 1600 | 16 | 10400 | | |
| 1020-1700 | 1700 | 17 | 11050 | 6 | 16800 |
| 1020-1800 | 1800 | 18 | 11700 | | |
| 1020-1900 | 1900 | 19 | 12350 | | |
| 1020-2000 | 2000 | 20 | 13000 | | |
| 1020-2100 | 2100 | 21 | 13650 | 7 | 19600 |
| 1020-2200 | 2200 | 22 | 14300 | | |
| 1020-2300 | 2300 | 23 | 14950 | | |
| 1020-2400 | 2400 | 24 | 15600 | | |
| 1020-2500 | 2500 | 25 | 16250 | | |

1020
• Temperatur Standard : 60°

1020
• Standard Temperature : 60°

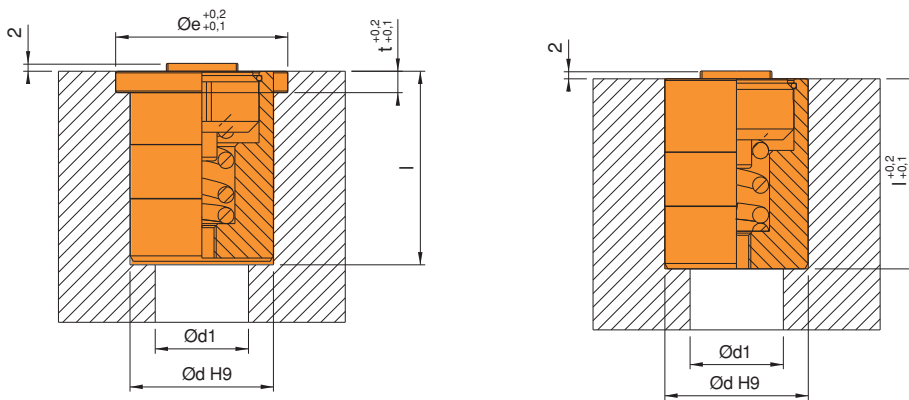
| Referenz-Nr. Order No. | d | Kapazität Capacity kg | e | t | l | d1 |  (g) |
|---------------------------|----|-----------------------------|----|-----|----|----|--|
| 1022-DLSD0050 | 20 | 50 | 25 | 3.5 | 31 | 10 | 45 |
| 1022-DLSD0080 | 24 | 80 | 30 | 4 | 39 | 14 | 75 |
| 1022-DLSD0125 | 30 | 125 | 35 | 5 | 45 | 20 | 140 |
| 1022-DLSD0200 | 40 | 200 | 50 | 6 | 54 | 30 | 375 |
| 1022-DLSDD050 | 20 | 50 | - | - | 30 | 10 | 35 |
| 1022-DLSDD080 | 24 | 80 | - | - | 38 | 14 | 70 |
| 1022-DLSDD125 | 30 | 125 | - | - | 44 | 20 | 130 |
| 1022-DLSDD200 | 40 | 200 | - | - | 53 | 30 | 240 |



DLSD


DLSDD

1022



Federzylinder Werkzeugheber Modell DLS

Die Lifter Spring Cylinder Model DBS

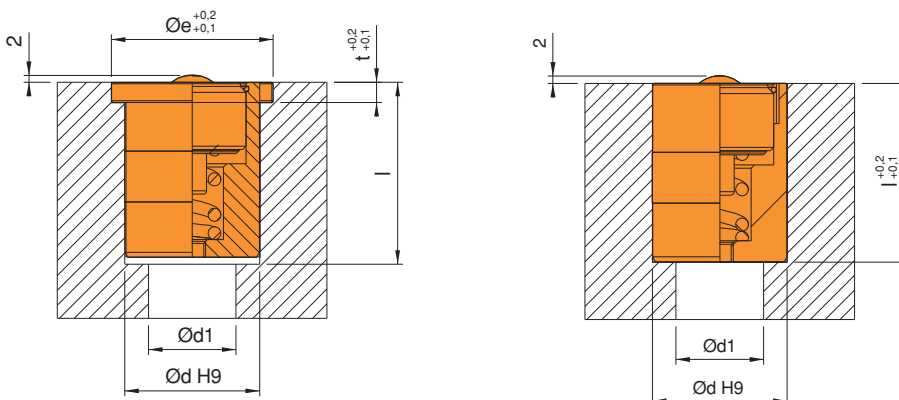
| Referenz-Nr. Order No. | d | Kapazität Capacity kg | e | t | l | d1 |  (g) |
|---------------------------|----|-----------------------------|----|-----|----|----|--|
| 1022-DBSD0025 | 20 | 25 | 25 | 3.5 | 31 | 10 | 45 |
| 1022-DBSD0040 | 24 | 40 | 30 | 4 | 39 | 14 | 85 |
| 1022-DBSD0063 | 30 | 63 | 35 | 5 | 45 | 20 | 150 |
| 1022-DBSD0100 | 40 | 100 | 50 | 6 | 54 | 30 | 350 |
| 1022-DBSDD025 | 20 | 25 | - | - | 30 | 10 | 40 |
| 1022-DBSDD040 | 24 | 40 | - | - | 38 | 14 | 80 |
| 1022-DBSDD063 | 30 | 63 | - | - | 44 | 20 | 140 |
| 1022-DBSDD100 | 40 | 100 | - | - | 53 | 30 | 325 |



DBSD

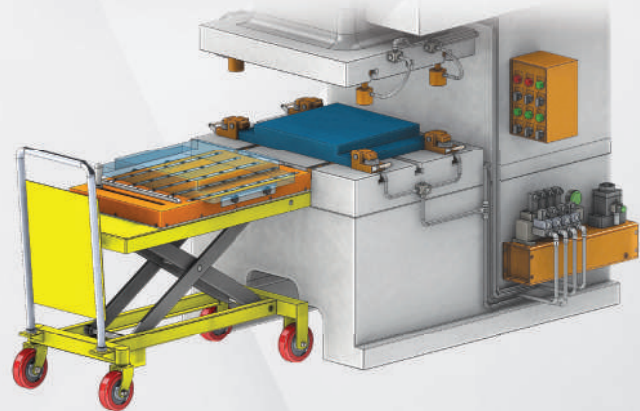
DBSDD

1022



Werkzeugtransportplatte

Mold Transport Tray



Anwendungsbeispiele für Werkzeugwechselwagen / Mold Transport Tray Applications



Werkzeugtransportplatte
Mold Transport Tray



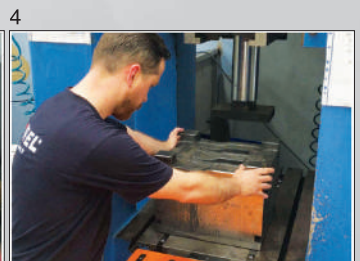
Werkzeugwechselwagen
Mold Transport Tray (Trolley)



Elektrischer Werkzeugwechselwagen
Mold Transport Tray (Electric Forklift)



Werkzeugwechselwagen (Gabelstapler)
Mold Transport Tray (Forklift)



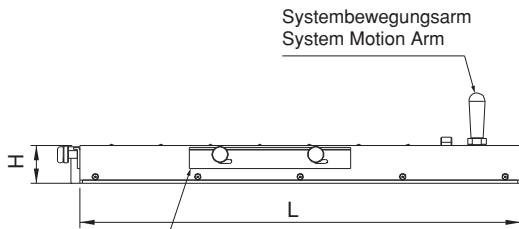
| Referenz-Nr. Order No. | A | L2 | H | L | Kapazität Capacity |
|---------------------------|-----|-----|----|-----|-----------------------|
| 1024-500670 | 500 | 670 | 71 | 818 | 1 Tonne / Tone |

1024

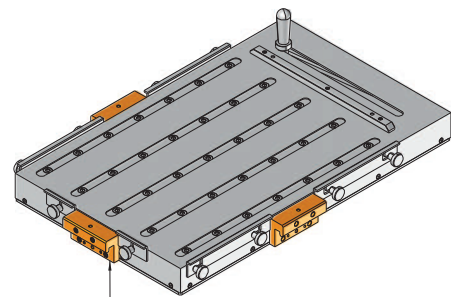
- Für Werkzeuge bis zu einem Gewicht von 1 Tonne geeignet. Er reduziert den Oberflächenkontakt, wenn das Werkzeug während der Beladung bewegt werden soll, um auf den Pressentisch oder ins Regal zu platzieren. So bietet es die Möglichkeit, das Werkzeug einfach und schnell ohne großen Kraftaufwand zu beladen.
- Sie kann auf Werkzeugwagen oder Gabelstaplern montiert werden und ist einfach zu bedienen.

1024

- Molds up to 1 ton weight, it reduces surface contact when it is desired to be moved during loading to be placed on the press table or shelves. Thus, it provides the possibility of loading the mold easily and quickly without the need for much power.
- It can be mounted on mold cart or forklifts and can be easily used.

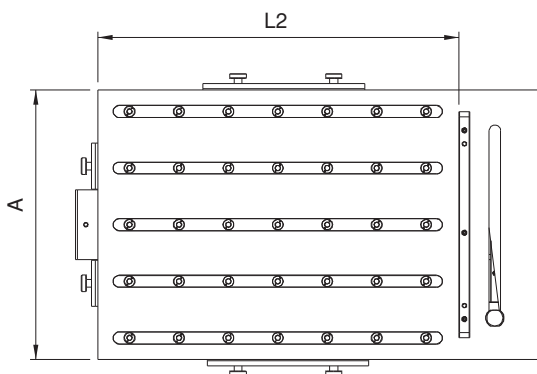


Sicherheitsanschlüsse auf 4 Seiten
Four-Sided Safety Stopper

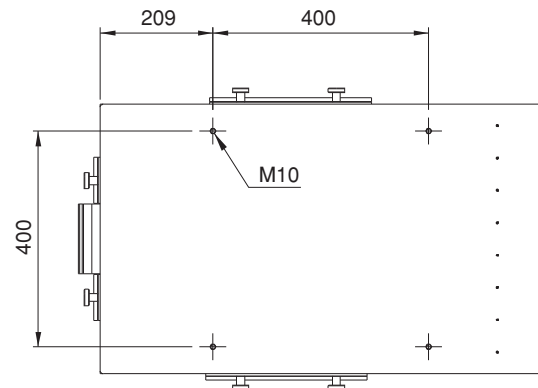


Ausrichthaken Auf vordere und seitliche Flächen kann es montiert werden.

It can be mounted on the front and side surfaces.



Montagelöcher für Transportwagen oder ähnliche Systeme
Mounting Holes For Transport Tray and Similar Equipment



Anwendungsbeispiele für Werkzeugwechselwagen / Mold Transport Tray Applications



Werkzeugtransportplatte
Mold Transport Tray



Werkzeugwechselwagen
Mold Transport Tray (Trolley)



Elektrischer Werkzeugwechselwagen
Mold Transport Tray (Electric Forklift)



Werkzeugwechselwagen (Gabelstapler)
Mold Transport Tray (Forklift)

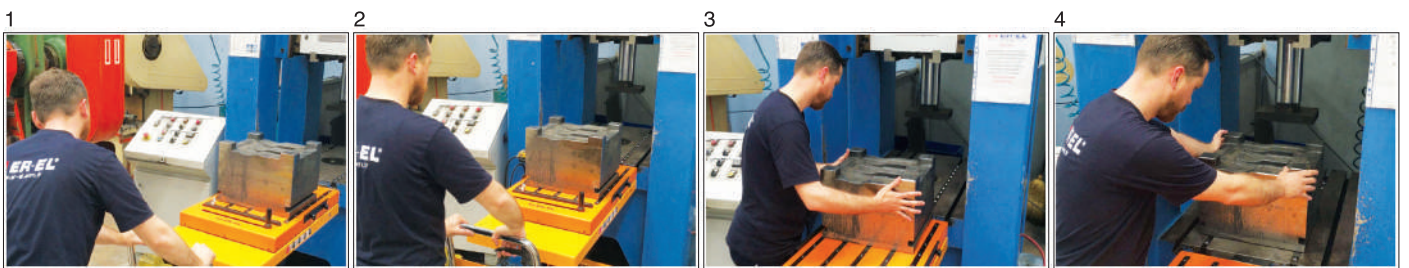
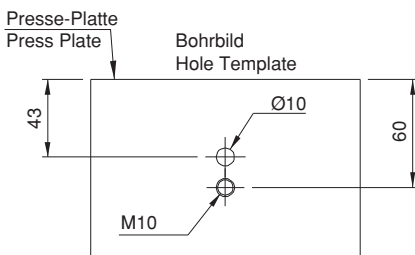
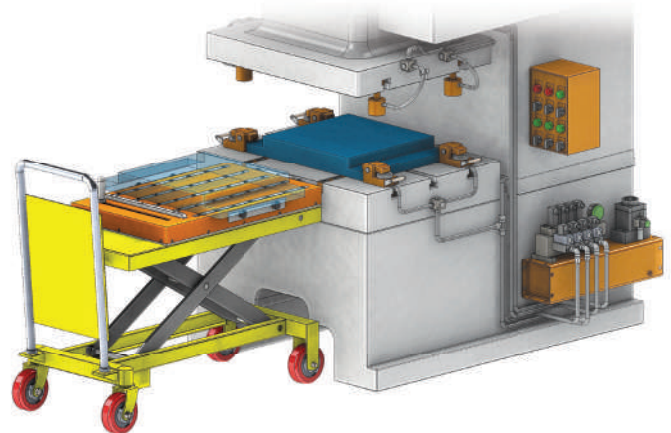
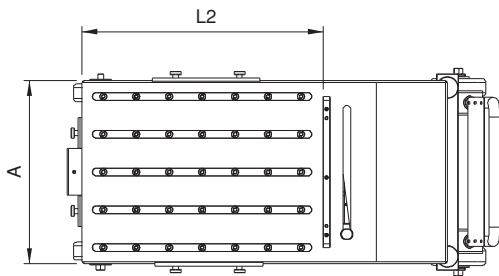
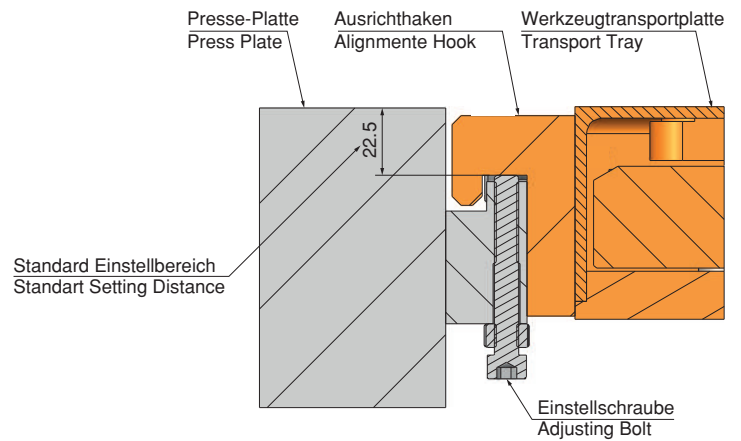
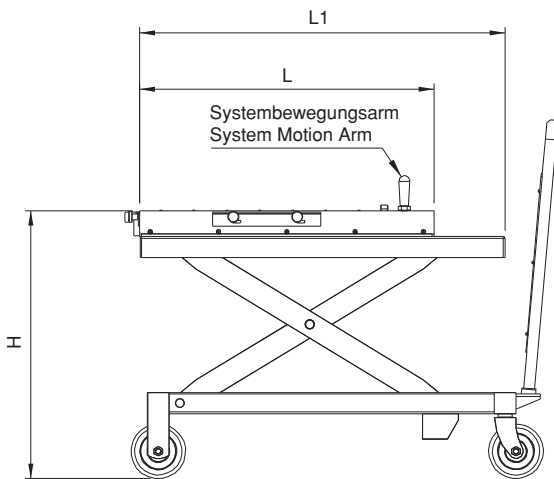
| Referenz-Nr. Order No. | A | L2 | H (min. - max.) | L | L1 | Kapazität Capacity |
|---------------------------|-----|-----|--------------------|-----|------|-----------------------|
| 1024-500671 | 500 | 670 | 480 - 1050 | 818 | 1015 | 1 Tonne / Tone |

1024

• Für Werkzeuge bis zu einem Gewicht von 1 Tonne geeignet. Er reduziert den Oberflächenkontakt, wenn das Werkzeug während der Beladung bewegt werden soll, um auf den Pressentisch oder ins Regal zu platzieren. So bietet es die Möglichkeit, das Werkzeug einfach und schnell ohne großen Kraftaufwand zu beladen.

1024

• Molds up to 1 ton weight, it reduces surface contact when it is desired to be moved during loading to be placed on the press table or shelves. Thus, it provides the possibility of loading the mold easily and quickly without the need for much power.

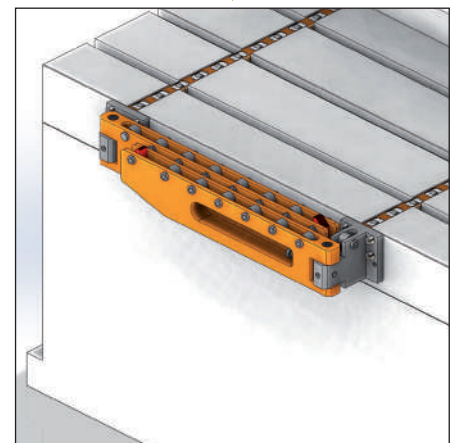
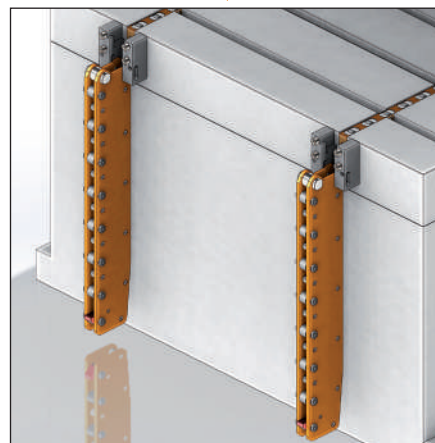
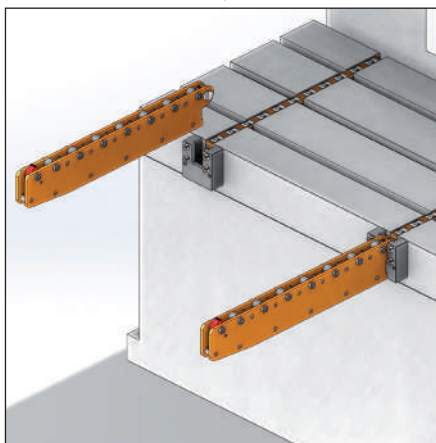
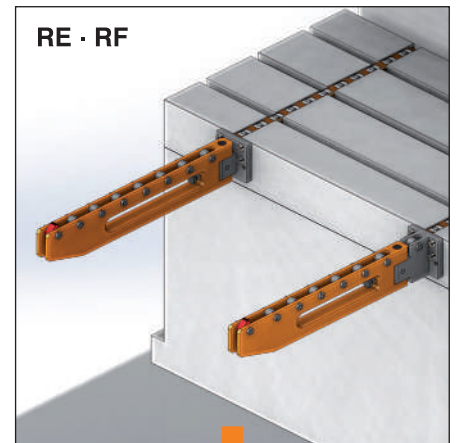
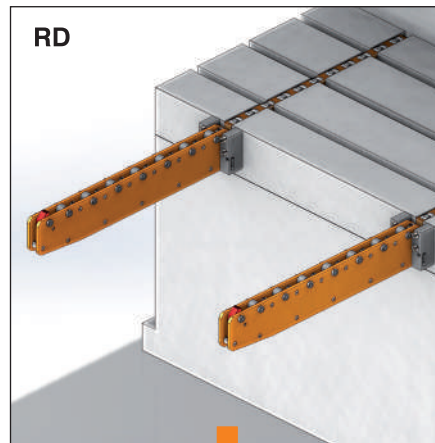
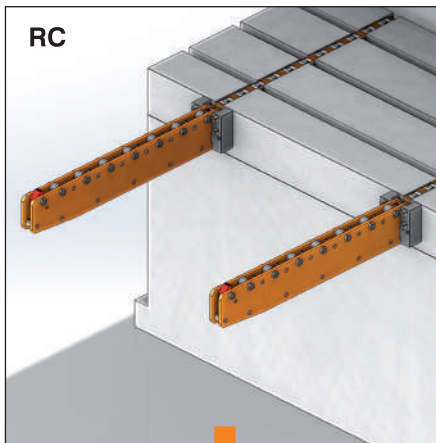
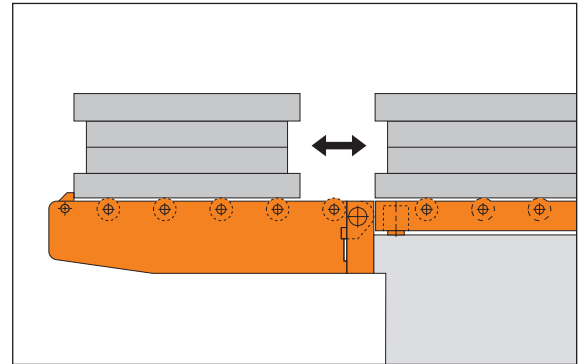


Modell / Model RC - RD - RE/RF

Modellauswahl / Model Selection

R ① - ②

| Modell Model | Lagermethode Storage Method | Beschreibung Specification |
|-----------------|-----------------------------------|-------------------------------|
| C | demontiert / dismantling | 580 mm |
| D | hängend / hanging | 760 mm |
| E | klappend (kurz) / folding (short) | 880 mm |
| F | klappend (lang) / folding (long) | 990 mm |

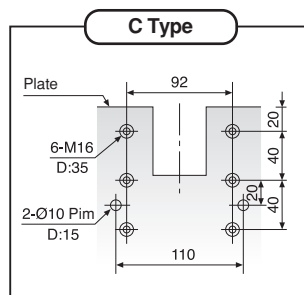
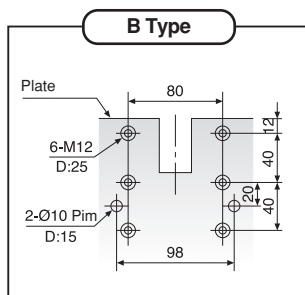
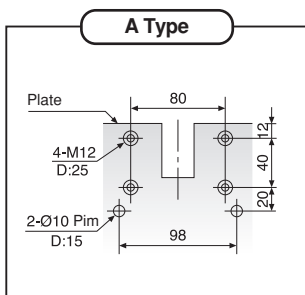
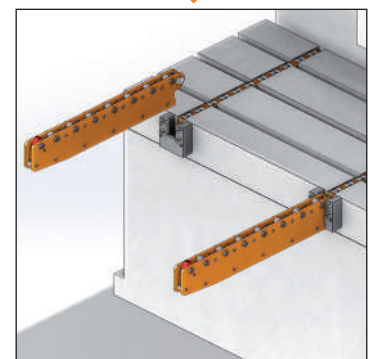
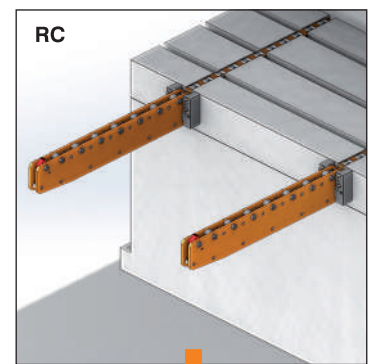
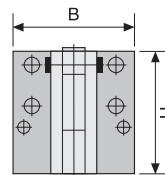
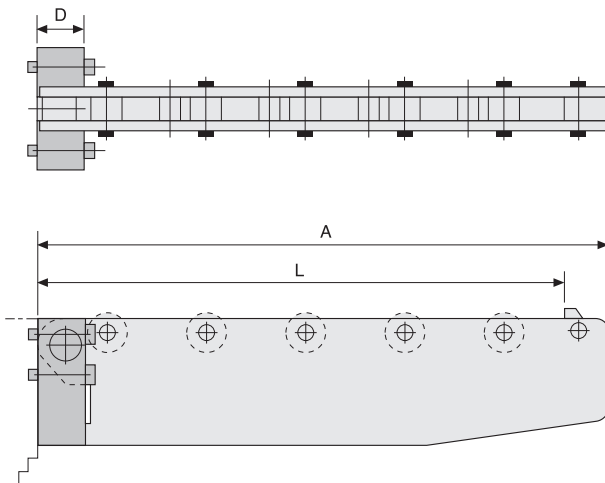
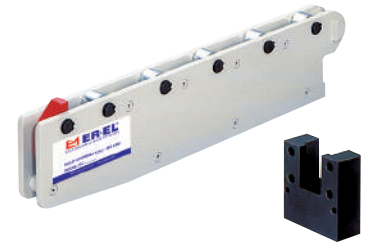


| Referenz-Nr. Order No. | Modell Stütze Model of Support | erforderliche Werkzeuiglänge Length Needed of the Die L (mm) | Max. Kapazität Max. Capacity (kgf) | Gesamtlänge Total Length A (mm) | Maße Stütze Size of Support | | | Lochform für Montage Hole Pattern For Installation | Anzahl Zylinder Number of Roller |
|---------------------------|-----------------------------------|---|--|---------------------------------------|--------------------------------|-----|-----|---|-------------------------------------|
| | | | | | D | B | H | | |
| 1025-RC580 | RC-12 | 500 | 800 | 550 | 48 | 115 | 118 | A Type | 5 |
| 1025-RC760 | RC-12 | 700 | 600 | 750 | 48 | 115 | 118 | A Type | 7 |
| 1025-RC880 | RC-16 | 800 | 800 | 850 | 48 | 115 | 158 | B Type | 8 |
| 1025-RC990 | RC-20 | 900 | 900 | 950 | 48 | 115 | 188 | B Type | 9 |
| 1027-RC05125 | RC-14H | 500 | 1250 | 550 | 55 | 130 | 138 | C Type | 7 |
| 1027-RC05160 | RC-16H | 500 | 1600 | 550 | 55 | 130 | 158 | C Type | 7 |
| 1027-RC05200 | RC-18H | 500 | 2000 | 550 | 55 | 130 | 178 | C Type | 7 |
| 1027-RC07125 | RC-14H | 700 | 1250 | 750 | 55 | 130 | 138 | C Type | 9 |
| 1027-RC07160 | RC-16H | 700 | 1600 | 750 | 55 | 130 | 158 | C Type | 9 |
| 1027-RC07200 | RC-18H | 700 | 2000 | 750 | 55 | 130 | 178 | C Type | 9 |
| 1027-RC08125 | RC-16H | 800 | 1250 | 850 | 55 | 130 | 158 | C Type | 10 |
| 1027-RC08160 | RC-18H | 800 | 1600 | 850 | 55 | 130 | 178 | C Type | 10 |
| 1027-RC08200 | RC-20H | 800 | 2000 | 850 | 55 | 130 | 188 | C Type | 10 |
| 1027-RC09160 | RC-22H | 900 | 1600 | 950 | 55 | 130 | 218 | C Type | 11 |

1027

Modell / Model RC (Demontage / Dismantling)

- Arm und Stütze können separat verwendet werden
- The arm itself and the support in Model RC can be used separately.

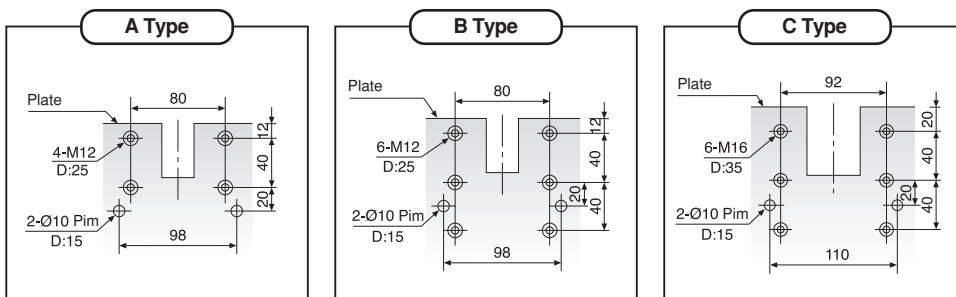
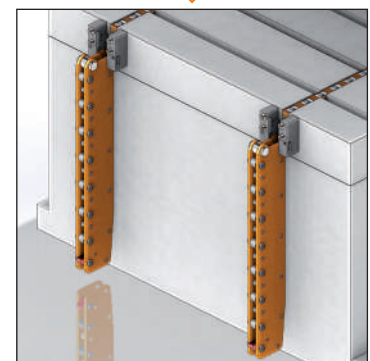
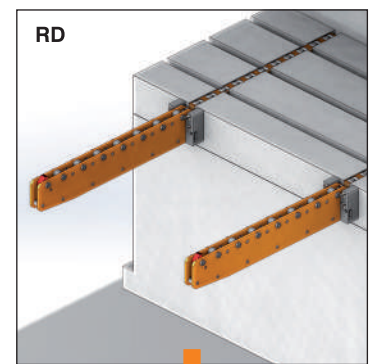
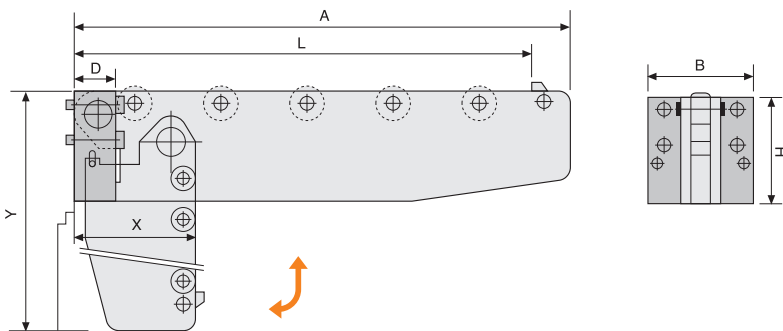


| Referenz-Nr. Order No. | erforderliche Werkzeuglänge Length Needed of the Die L (mm) | Max. Kapazität Max. Capacity (kgf) | Gesamtlänge Total Length A (mm) | Hängemaße Size of Hanging | | Maße Stütze Size of Support | | | Lochform für Montage Hole Pattern For Installation | Anzahl Zylinder Number of Roller |
|---------------------------|--|--|---------------------------------------|------------------------------|------|--------------------------------|-----|-----|---|--|
| | | | | X | Y | D | B | H | | |
| 1030-RD580 | 500 | 800 | 550 | 140 | 620 | 52 | 115 | 118 | A Type | 5 |
| 1030-RD760 | 700 | 600 | 750 | 140 | 820 | 52 | 115 | 118 | A Type | 7 |
| 1030-RD880 | 800 | 800 | 850 | 180 | 960 | 52 | 115 | 158 | B Type | 8 |
| 1030-RD990 | 900 | 900 | 950 | 220 | 1100 | 52 | 115 | 188 | B Type | 9 |
| 1030-RD05125 | 500 | 1250 | 550 | 170 | 645 | 62 | 130 | 138 | C Type | 7 |
| 1030-RD05160 | 500 | 1600 | 550 | 190 | 670 | 62 | 130 | 158 | C Type | 7 |
| 1030-RD05200 | 500 | 2000 | 550 | 210 | 675 | 62 | 130 | 178 | C Type | 7 |
| 1030-RD07125 | 700 | 1250 | 750 | 170 | 840 | 62 | 130 | 138 | C Type | 9 |
| 1030-RD07160 | 700 | 1600 | 750 | 190 | 865 | 62 | 130 | 158 | C Type | 9 |
| 1030-RD07200 | 700 | 2000 | 750 | 210 | 890 | 62 | 130 | 178 | C Type | 9 |
| 1030-RD08125 | 800 | 1250 | 850 | 190 | 960 | 62 | 130 | 158 | C Type | 10 |
| 1030-RD08160 | 800 | 1600 | 850 | 210 | 985 | 62 | 130 | 178 | C Type | 10 |
| 1030-RD08200 | 800 | 2000 | 850 | 220 | 995 | 62 | 130 | 188 | C Type | 10 |
| 1030-RD09160 | 900 | 1600 | 950 | 250 | 1130 | 62 | 130 | 218 | C Type | 11 |

1030

Modell / Model RD (Hängend / Hanging)

- Hängelänge (Y) muss niedriger als das Maß zwischen Boden und Platte sein.
- The hanging length (Y) of Model RD should be less than the height between the plate and the ground



| Referenz-Nr. Order No. | erforderliche Werkzeuglänge Length Needed of the Die L (mm) | Max. Kapazität Max. Capacity (kgf) | Gesamtlänge Total Length A (mm) | erforderliche min. Distanz für Montage Min. Distance for Installation C (mm) | Dimensionen (zugeklappt) dimensions (folded) | | Maße Stütze Size of Support | | Anzahl Zylinder Number of Roller | M | N | Lochform für Montage Hole Pattern For Installation |
|---------------------------|--|--|---------------------------------------|---|---|-----|--------------------------------|-----|--|----|-----|---|
| | | | | | X | Y | B | H | | | | |
| 1033-RERF580 | 500 | 800 | 550 | 525 | 90 | 150 | 115 | 118 | 5 | 57 | 120 | A Type |
| 1033-RERF760 | 700 | 600 | 750 | 725 | 90 | 150 | 115 | 118 | 7 | 57 | 120 | A Type |
| 1033-RERF880 | 800 | 800 | 850 | 825 | 90 | 150 | 115 | 158 | 8 | 57 | 120 | B Type |
| 1033-RERF990 | 900 | 900 | 950 | 925 | 90 | 150 | 115 | 188 | 9 | 57 | 120 | B Type |

1033

- Klappbar nach rechts oder links

1033

- Itself can be turned left or right for storage.

| Referenz-Nr. Order No. | erforderliche Werkzeuglänge Length Needed of the Die L (mm) | Max. Kapazität Max. Capacity (kgf) | Gesamtlänge Total Length A (mm) | erforderliche min. Distanz für Montage Min. Distance for Installation C (mm) | Dimensionen (zugeklappt) dimensions (folded) | | Maße Stütze Size of Support | | Anzahl Zylinder Number of Roller | M | N | Lochform für Montage Hole Pattern For Installation |
|---------------------------|--|--|---------------------------------------|---|---|-----|--------------------------------|-----|--|----|-----|---|
| | | | | | X | Y | B | H | | | | |
| 1035-RERF05160 | 500 | 1600 | 550 | 525 | 105 | 170 | 130 | 158 | 7 | 74 | 140 | C Type |
| 1035-RERF05200 | 500 | 2000 | 550 | 525 | 105 | 170 | 130 | 178 | 7 | 74 | 140 | C Type |
| 1035-RERF07160 | 700 | 1600 | 750 | 725 | 105 | 170 | 130 | 158 | 9 | 74 | 140 | C Type |
| 1035-RERF07200 | 700 | 2000 | 750 | 725 | 105 | 170 | 130 | 178 | 9 | 74 | 140 | C Type |
| 1035-RERF08160 | 800 | 1600 | 850 | 825 | 105 | 170 | 130 | 178 | 10 | 74 | 140 | C Type |
| 1035-RERF08200 | 800 | 2000 | 850 | 825 | 105 | 170 | 130 | 188 | 10 | 74 | 140 | C Type |
| 1035-RERF09160 | 900 | 1600 | 950 | 925 | 105 | 170 | 130 | 218 | 11 | 74 | 140 | C Type |
| 1035-RERF09200 | 900 | 2000 | 950 | 925 | 105 | 170 | 130 | 248 | 11 | 74 | 140 | C Type |

1035

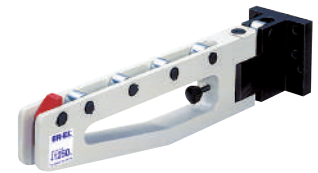
- Klappbar nach rechts oder links
- Die Distanz der Montage der Modelle RE und RF muss größer als das Maß C sein.

Product Nr. 1035 Die Arm Model RE-RF

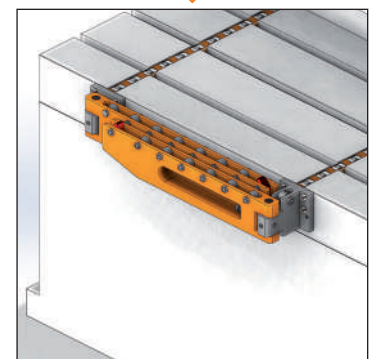
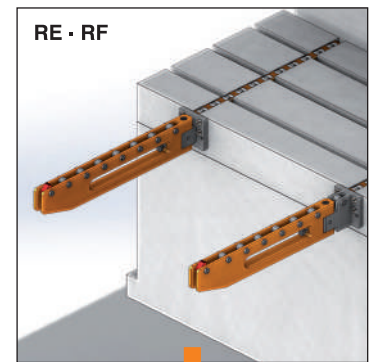
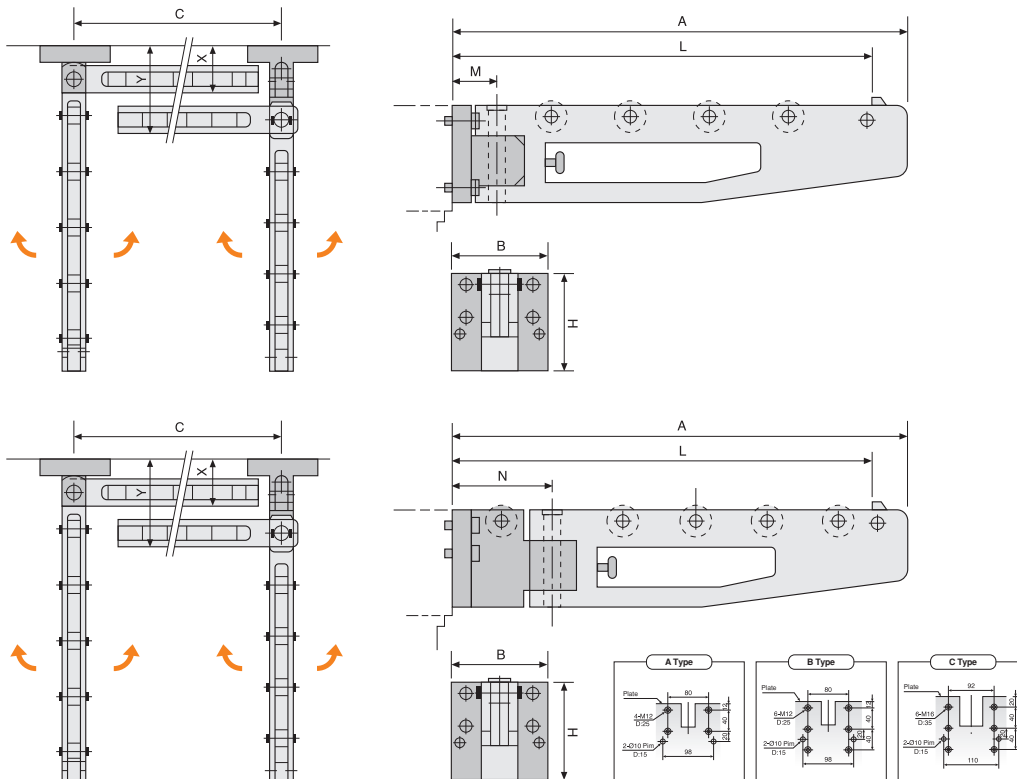
- Itself can be turned left or right for storage.
- The distance for installing the two arms of Model RE and RF should be more than the distance between the installations (C)



**Modell RE Klappbar
Model RE Folding**



**Modell RF Klappbar
Model RF Folding**

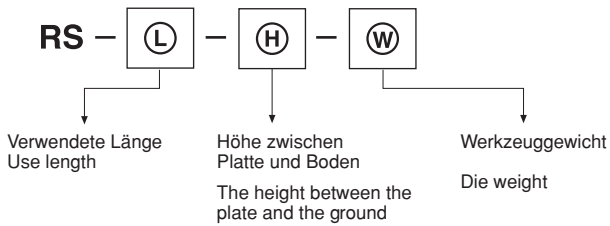


Modell / Model RS (Stütze / Supporter)

- ✔ **Hinweis**
Projektbasierte Ausführung
- ✔ **Note**
Project is special produce.

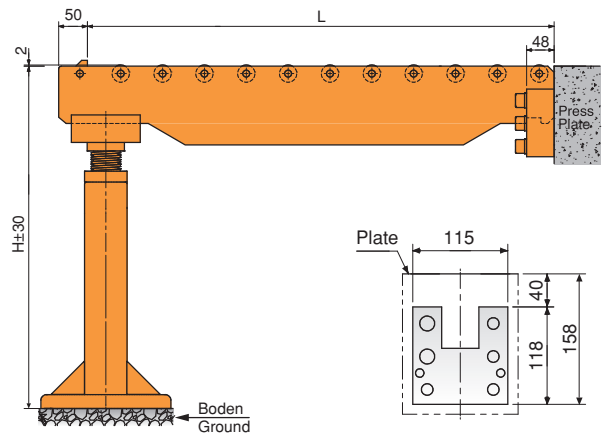


Modellauswahl / Model Selection

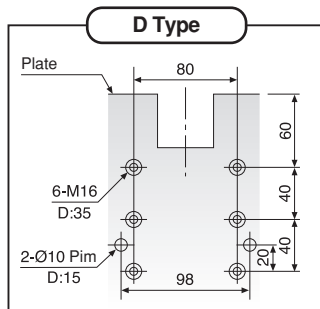


**1037 Werkzeugschiebe-Konsole Modell RS (schweres Gewicht)
1037 Die Arm Model RS (Heavy Duty)**

- Bei Bestellung bitte obige Werte angeben.
- Übernehmen Sie das Lochbild Typ (D) für die Installation.
- Please clearly indicate the above information while ordering.
- Adopt (D) type to install hole pattern.

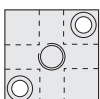


**LOCHSCHABLONEN
HOLE PATTERN FOR INSTALLATION**



**Zubehör
Accessories**

Schlauchverbinder
Tube Connector
Referenz-Nr.
Order No.
1036-BT



Drehwirbel
Swivel
Referenz-Nr.
Order No.
1036-FD



Drehgelenk
Rotary Joint
Referenz-Nr.
Order No.
1036-DE



Spannbügel
Clamp Bracket
Referenz-Nr.
Order No.
1036-CACV



Spannbügel
Clamp Bracket
Referenz-Nr.
Order No.
1036-CB



Pumpenkabine
Pump Cabin
Referenz-Nr.
Order No.
1036-PK

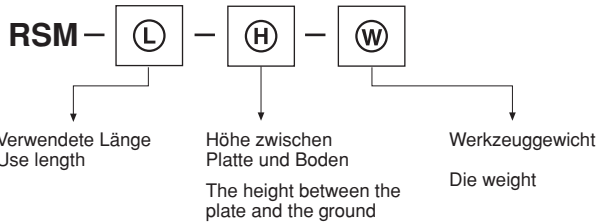


Modell / Model RSM (Stütze / Supporter)

- ✔ **Not**
Projektbasierte Ausführung
- ✔ **Note**
Project is special produce.

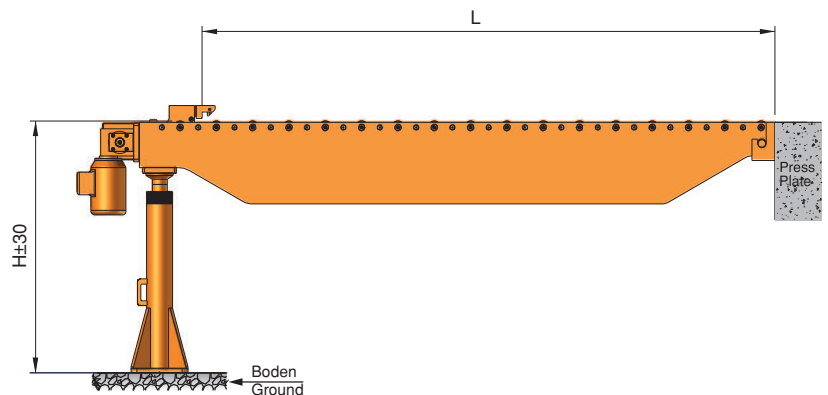


Modellauswahl / Model Selection



1038 Werkzeugschiebe-Konsole mit Motor Modell RSM
1038 Motor-Driven Die Arm Console Set - Model RSM (Heavy Duty)

- Bei Bestellung bitte obige Werte angeben.
- Pleasa cleary indicate the above information while ordering.



| Referenz-Nr. Order No. | L1 | L2 | H | (kg) |
|---------------------------|-----|-----|-----|----------|
| 1040-PB0801P1V | 250 | 225 | 367 | 15.55 |
| 1040-PB0801P2V | 310 | 285 | 367 | 18.55 |
| 1040-PB0801P3V | 428 | 403 | 367 | 21.50 |
| 1040-PB0801P4V | 487 | 462 | 367 | 24.70 |
| 1040-PC1201P3V | - | 397 | 367 | - |

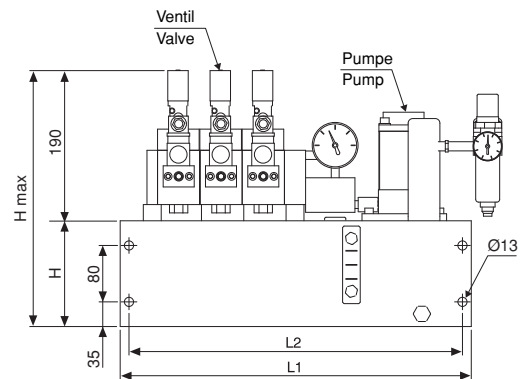
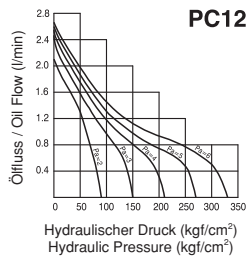
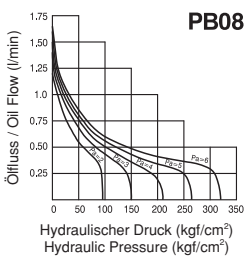


1040

- Wenn der hydraulische Druck den vorgegebenen Wert erreicht hat, wird die Pumpe ausgeschaltet, um Energie zu sparen. Auf der anderen Seite, wenn der Arbeitsdruck niedriger wird, wird der Luftdruck automatisch wiedergegeben.
- Der Steuerkreis prüft und verhindert evtl. Undichtheiten. Auch wenn der pneumatische Druck aussetzt, wird der hydraulische Druck aufrecht erhalten.
- Druckprüfung und Eigenschaft Spannen an die Maschinen ist vorhanden.
- Bei Anwendung mit CA und CB-16 oder 25 Spannsystem wird das Pumpenmodell PC12 empfohlen.
- Kapazität 500 max. bar
- Druckregelventil

1040

- The hydraulic pump is driven by air. Once the hydraulic pressure reaches the pressure setting, it stops pumping which is energy saving. Meanwhile, if the working pressure reduces, the pump would supply pressure automatically to keep working pressure continuously.
- The circuit control system is designed with the function of checking and avoiding oil leakage. If pneumatic pressure out, the hydraulic pressure still maintains.
- It is capable of pressure inspection and connecting to machines.
- It is suggested to adopt pump model PC12 when used with clamp model CA&CB-16 or 25.
- Capacity 400 max. bar
- Pressure control valve



Steuergerät

Control Unit

| Referenz-Nr. Order No. | Schaltkreis Circuits |
|---------------------------|-------------------------|
| 1041-QDC01 | 1 |
| 1041-QDC02 | 2 |
| 1041-QDC03 | 3 |
| 1041-QDC04 | 4 |
| 1041-QMC04 | 4 |



1041

- QDC Presse Steuergerät
- QMC Spritzguss Steuergerät

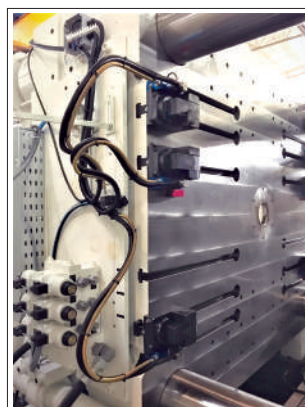
1041

- QDC Press control unit
- QMC Injection control unit

| Referenz-Nr. Order No. |
|---------------------------|
| 1041-PLCSMS |
| 1041-PLCGMT |

1041

- PLC Steuergerät Kategorie 4
- PLC Steuergerät



1041

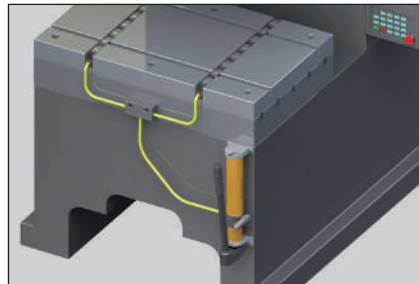
- PLC Control Unit Category 4
- PLC Control Unit

PLC Steuergerät

PLC Control Unit



| |
|---------------------------|
| Referenz-Nr. Order No. |
| 1040-PB0101 |



alternatives System
Alternative Systems



1040

- Wird nur der Werkzeugheber benutzt, kann alternative eine hydraulische Handpumpe verwendet werden.
- 250 Bar

1040

- If only the die lifter is used, the usage of a manual hydraulic pump can alternatively be used.
- 250 Bar

Hydropneumatische Pumpe mit Fusspedal

Foot Pedal Hydropneumatic Pump

| Referenz-Nr. Order No. | Tankvolumen Working Pressure | Aktives Ölvolumen Reservoir Capacity | Pumpenausführung Usable Oil | Liter/min 50/700 bar lt./min. 50/700 bar | Luftdruck Air requirement min-max | Luftverbrauch Air Consumption | Betriebsdruck Pressure Rating | Ölanschluss Connection Thread | Gewicht inkl. Öl Weight incl. Oil | Maße Sizes mm |
|---------------------------|------------------------------------|---|-----------------------------------|---|--|-------------------------------------|-------------------------------------|-------------------------------------|--|---------------------|
| 1040-PA0202 | 1500 cm ³ | 1000 cm ³ | Einstufig Single Stage | 600/110 cm ³ | 5-7 | 250 l/d | 50-700 | 3/8 NPT | 12 kg | 262x190x186 |

1040

- Fusspedal ermöglicht eine robuste Anwendung
- Fusspedal aktiviert das System mit 5-6 bar, das die Schieber mit Öl versorgt und entleert.
- Anwendung in unterschiedlichen Bereichen:
Hydraulische Zylinder, Werkzeugheber, Pressenbereiche



1040

- With foot pedal operation, hydro-pneumatic system makes it easier to use rigid.
- The foot pedal is operated with 5-6 bar in one movement and the system is activated and instead of manpower, it only serves to transfer oil to lifters.
- Hydropneumatic foot pumps producing 700 bar hydraulic oil pressure with minimum 5 bar air can be used in many different fields ; operating hydraulic cylinders, pullers, mold lifters and presses.

Elektrisches Hydraulik-Aggregat

Electric Hydraulic Pump Unit

| Referenz-Nr. Order No. | Ventil Valve | Durchfluss Flow | | bar |
|---------------------------|-----------------|--------------------|---------|-----|
| | | (l/min) | (l/min) | |
| 1040-1P1VD | 1 | 6 | 14 | 100 |
| 1040-1P2VD | 2 | 6 | 14 | 100 |
| 1040-1P3VD | 3 | 6 | 14 | 100 |
| 1040-1P4VD | 4 | 6 | 14 | 100 |

1040

- Es ist für ein Direktanschluss-System geeignet.
- Bitte geben Sie vor dem Kauf die gewünschte Durchflussgeschwindigkeit (l/min) an.

1040

- It is suitable for direct connection system.
- Please, you specify about flow speed (l/minute) before make purchase.



| Referenz-Nr. Order No. | Maximaler Druck Maximum Pressure | Max. Arbeitsdruck Max Operation Pressure | Volumenstrom Hydraulic fluid expelled l/min | Öltank Oli Tank Capacity | Öl Oil |
|---------------------------|-------------------------------------|---|--|-----------------------------|-----------|
| 1040-06ABP | 36 | 6 Kg/cm ² | 16 | 5 lt | ISO-VG68 |
| 1040-10ABP | 60 | 6 Kg/cm ² | 10 | 5 lt | ISO-VG68 |
| 1040-25ABP | 150 | 6 Kg/cm ² | 5 | 5 lt | ISO-VG68 |
| 1040-44ABP | 250 | 6 Kg/cm ² | 3 | 5 lt | ISO-VG68 |

Hinweis
Geeignet für die Verwendung mit hydraulischen Komponenten
Spannungstypen : AC110V, AC220V, DC12V, DC24V

Note
Suitable for use with hydraulic components
Coil Type : AC110V, AC220V, DC12V, DC24V



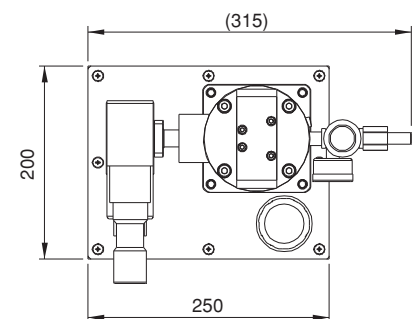
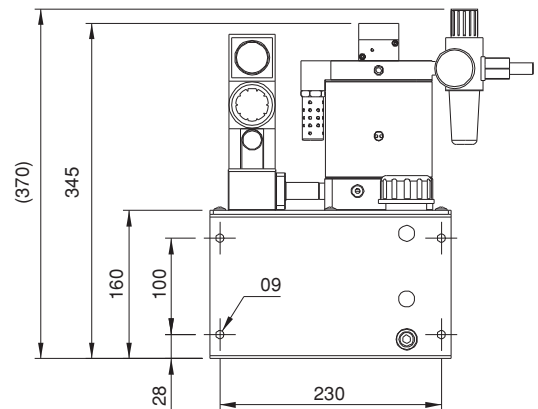
1040

- Die Druckerhöhungspumpe wird durch Luft angetrieben, um einen hydraulischen Druck für eine Kraftquelle für Hydraulikzylinder zu erzeugen. Die Fördermenge ist größer als bei einem herkömmlichen Booster. Kontinuierliche Druckverstärkung und keine Begrenzung des Verstärkerhubs für den arbeitenden Zylinder.
- Die Druckeinstellung erfolgt über ein Luftdruckregelventil. Sobald der Druck den gewünschten Wert erreicht, stoppt der Antrieb sofort. Bei einem Druckabfall gleicht die Pumpe den Druck automatisch aus. Die Baureihe eignet sich besonders für den Einsatz im Bereich der hydraulischen Langzeitspannung. Außerdem ist sie energiesparend, ohne Öltemperaturerhöhung, wirtschaftlich und komfortabel.
- Bei Einsatz der Doppelpumpe kann das Druckverhältnis gewählt werden. Es ist besonders geeignet für Vorrichtungen, die Hoch- und Niederdruckbetrieb zusammen erfordern.

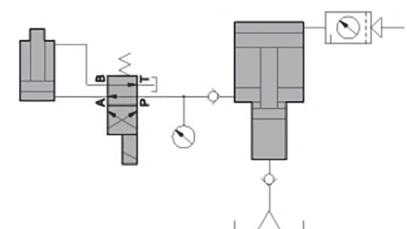
- Typ A:** Ausgestattet mit ISO-geprüftem Verteiler und Magnetventil. Anwendbar für einfach oder doppelt wirkende Hydraulikzylinder. Ausgestattet mit HDV Richtungssteuerungswert zur Verbesserung der internen Leckage Leckageproblem zu verbessern und die Lebensdauer der Luftpumpe zu gewährleisten.
- Typ B:** Ausgestattet mit einem Rohrblock mit PT-Anschlüssen für den Anschluss an ein manuelles Drehventil zur Betriebssteuerung.
- Reduziertes Öltankvolumen für Platzersparnis und bequeme Installation

1040

- The booster pump is driven by air to output hydraulic pressure for a power source for hydraulic cylinder. Its flow rate is bigger than than of a conventional booter. Continuous pressure boosting and no limitation of booster stroke for the acting cylinder.
- Pressure adjustment is made by an air pressure regulation valve. Once pressure reaches the desired value drive stops immediately. In case pressure drops the pump will compensate pressure automatically. The series is especially ideal for long time hydraulic clamping application. Also features energy saving no oil temperature growth economical and convenient.
- When double-pump is applied you can select the boost pressure ratio. It is especially suitable for jig and fixture which requires high and low pressure operation together.
- A Type:** Equipped with ISO approved manifold and solenoid valve. Applicable for single-acting or double-acting hydraulic cylinder. Equipped with HDV direction control valve to improve internal leakage problem and ensure the service life of air pump.
- B Type:** Equipped with pipe block with PT ports permitting for connecting to a manual contort valve for operation control.
- Reduced oil tank volume for space saving and convenient installation



Hydraulikschem
Circuit Diagram



| Referenz-Nr. Order No. | Verstärker Druck Multiple Boost | Hochdruck Output High Pressure Output | A | B | C | ØD | E1 | E2 | F1 | F2 | F3 | H | ØK | ØM | N | PT |
|---------------------------|--|--|-----|-----|----|----|----|----|----|----|----|---|----|----|----|-------|
| 1040-HB0906 | 9 | 6cc | 157 | 107 | 50 | 46 | 58 | 72 | 43 | 56 | 55 | 7 | 7 | 11 | 71 | PT1/4 |
| 1040-HB0510 | 5 | 10cc | 157 | 107 | 50 | 46 | 58 | 72 | 43 | 56 | 55 | 7 | 7 | 11 | 71 | PT1/4 |
| 1040-HB3515 | 3.5 | 15cc | 157 | 107 | 50 | 46 | 58 | 72 | 43 | 56 | 55 | 7 | 7 | 11 | 71 | PT1/4 |
| 1040-HB0822 | 8 | 22cc | 210 | 139 | 71 | 58 | 82 | 95 | 62 | 80 | 70 | 9 | 9 | 14 | 96 | PT1/4 |
| 1040-HB0535 | 5 | 35cc | 210 | 139 | 71 | 58 | 82 | 95 | 62 | 80 | 70 | 9 | 9 | 14 | 96 | PT1/4 |
| 1040-HB3845 | 3.8 | 45cc | 210 | 139 | 71 | 58 | 82 | 95 | 62 | 80 | 70 | 9 | 9 | 14 | 96 | PT1/4 |



| | | | | | | | |
|--------------------------------------|----|----|----|----|----|----|----|
| M6 Höhe L mm M6 Length L mm | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| Anfangsdruck Start Pressure kg/cm | 20 | 25 | 30 | 35 | 40 | 45 | 50 |

Betriebsdruck
Max. Operation pressure 50kg/cm

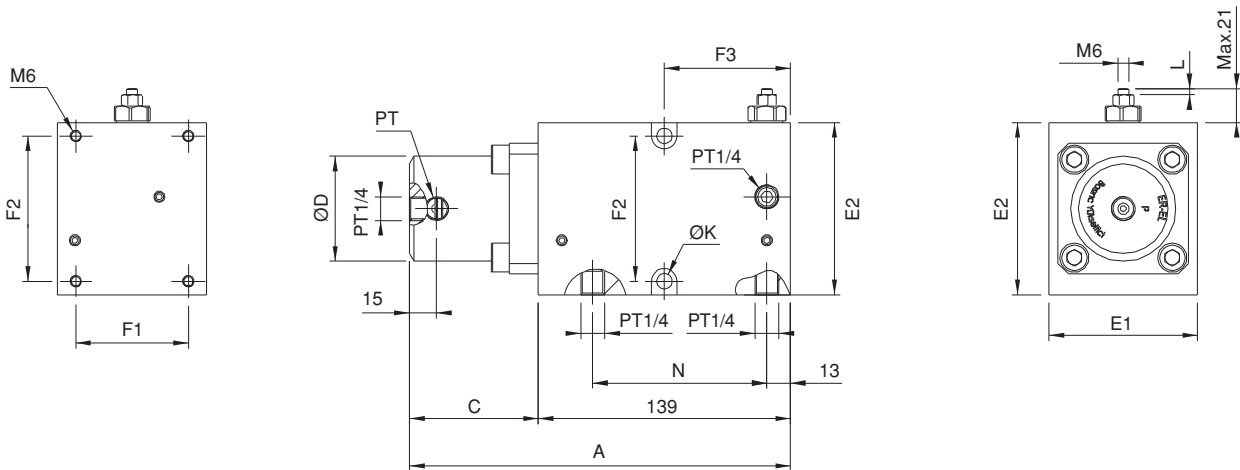
Eingestellter Druck 30kg/cm
Pressure set at 30kg/cm

1040

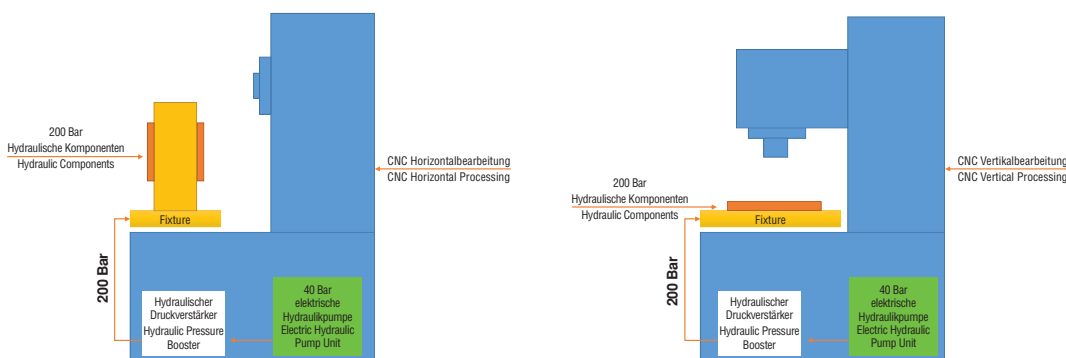
- An diese Einheit ist ein hydraulisch sequenzielles Ventil angeschlossen. Im Betrieb kann in das Zylinder Öl geführt, ermöglicht dualen Druck, aktiviert das sequenzielle Ventil und verstärkt den Druck mehrfach.
- Es ist geeignet für spezielle hydraulische Maschine und MC-Klemme in Niederdruck.
Ein Magnetventil muss montiert werden und man kann den HB Schnell-Lader verwenden.
Der Schnell-Lader wandelt den Öl-Niederdruck in Öl-Hochdruck automatisch und ermöglicht somit das Spannen im Hochdruck.

1040

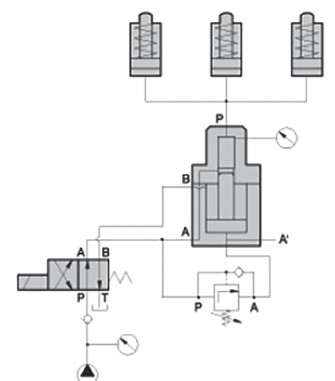
- A hydraulic sequential valve is attached to the structure of this unit. When operating, it may oil to cylinder and makes it be at the dual pressure and let the sequential valve act and then it will provide multiple boosting pressure.
- It's fit for hydraulic special purpose machine and MC clamp in low pressure circuit. It needs a solenoid valve installed in the circuit and then it will be able to operate HB super-charger. The super-charger may be converted automatically from low oil-pressure to high oil-pressure and obtain a high pressure clamping.




Anwendungsbeispiel / Application Example

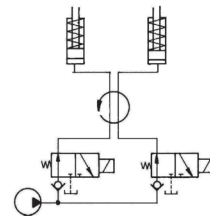
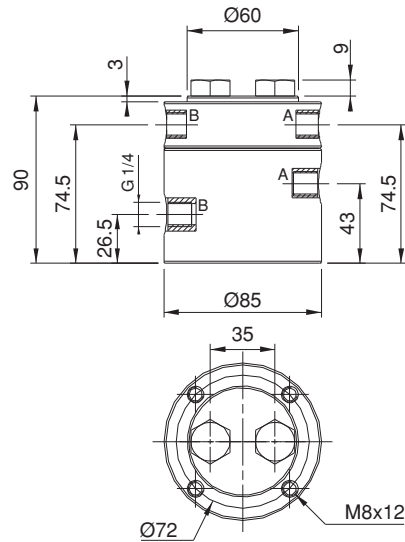
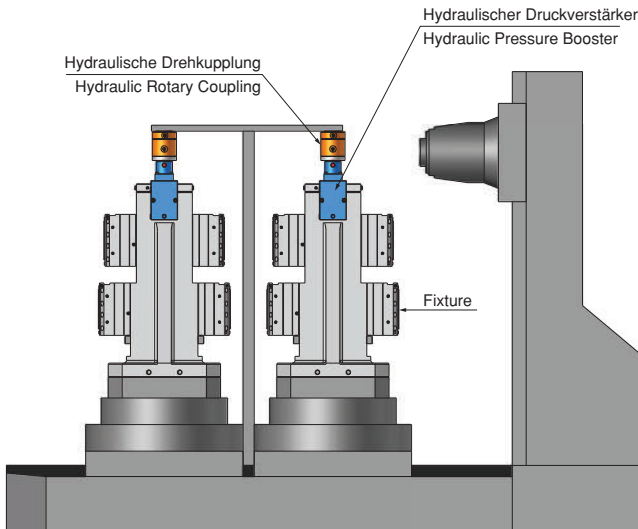


Schaltkreis Circuit Diagram

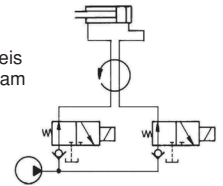



| Referenz-Nr. Order No. | Anzahl der Ausgänge Number of Outlets | Geschwindigkeit Speed | Max. bar |  |
|---------------------------|--|--------------------------|----------|---|
| 1040-02 | 2 | 5.0 m/sn | 300 | 2.3 |

1040

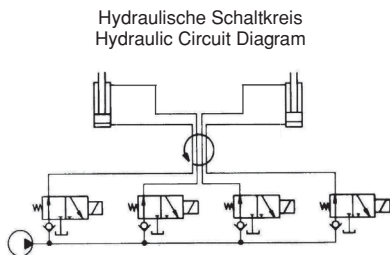


Hydraulische Schaltkreis
Hydraulic Circuit Diagram

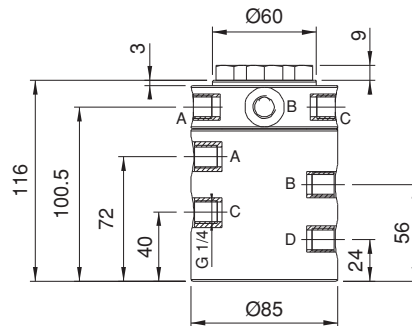
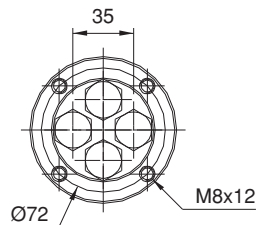



| Referans Nr. | Anzahl der Ausgänge Number of Outlets | Geschwindigkeit Speed | Max. bar |  |
|--------------|--|--------------------------|----------|---|
| 1040-04 | 4 | 5.0 m/sn | 300 | 2.8 |

1040

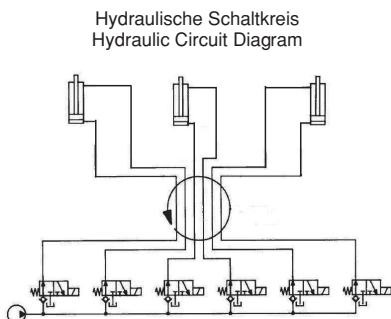


Hydraulische Schaltkreis
Hydraulic Circuit Diagram

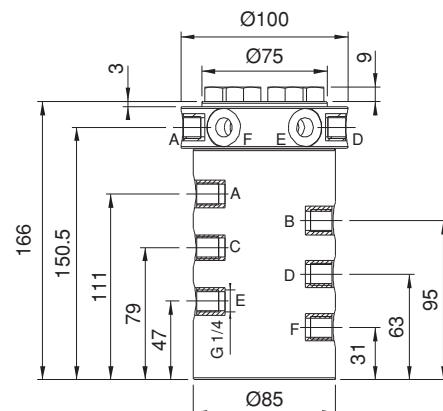
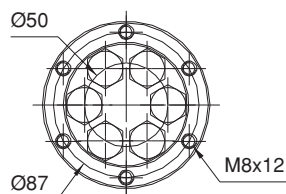


| Referans Nr. | Anzahl der Ausgänge Number of Outlets | Geschwindigkeit Speed | Max. bar |  |
|--------------|--|--------------------------|----------|---|
| 1040-06 | 6 | 5.0 m/sn | 300 | 4.2 |

1040

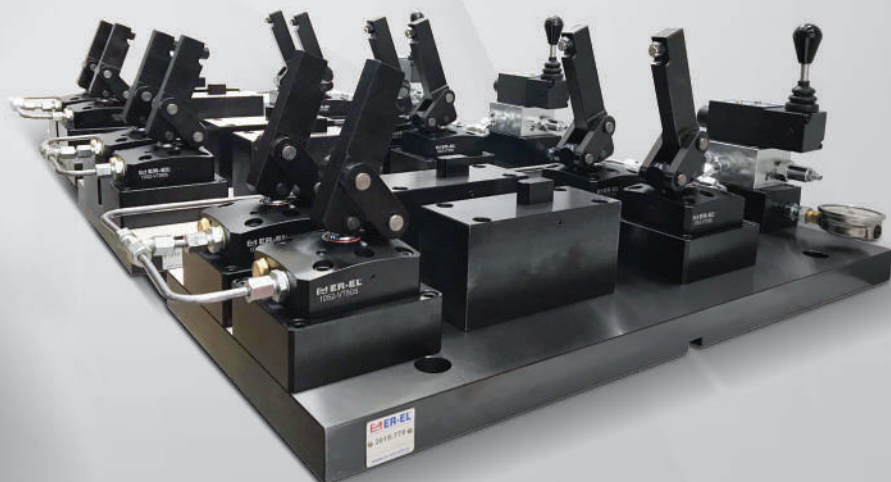
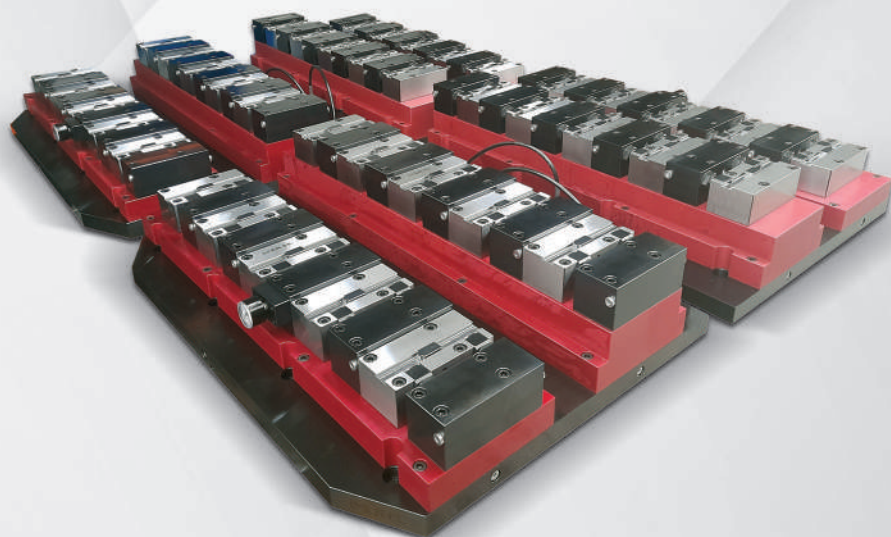
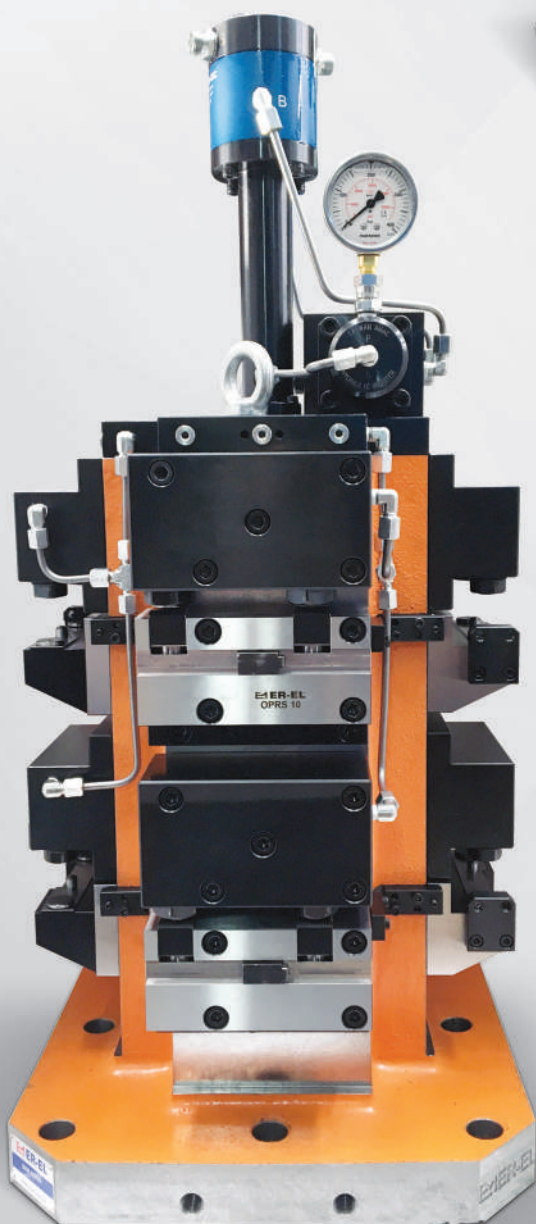


Hydraulische Schaltkreis
Hydraulic Circuit Diagram



Hydraulische Spannvorrichtung Anwendungsbeispiele

Hydraulic Fixture Application



Hydraulik-Komponenten

Hydraulic Components



Anwendung

Der hydraulische Schwenkspanner ist die beste Auswahl, wenn Werkstücke frei zugänglich eingelegt werden müssen und höhere Spannkraften in Spanneinrichtungen benötigt sind.

Funktion

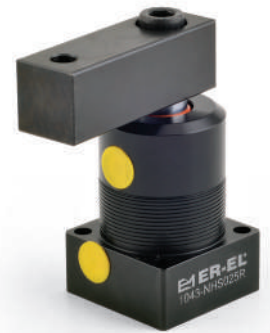
Der Zylinder hat Zieh-Eigenschaft. Der Gesamthub entspricht dem Dreh- und Ziehhub.

Type

Der Zylinder übt Druck nach unten aus. Er bewegt sich im Uhrzeigersinn und umgekehrt. Standardwinkel ist 90°, optional 0°-45° und 60°.

Material

Der Grundkörper ist aus Aluminiumlegierung.



Application

When machining a workpiece by means of a machine tool, a hydraulic swing clamping cylinder will be your best choice if the placing and taking of the workpiece are not allowed to be interfered by the clamping and need a larger clamping force.

Funktion

This cylinder belongs to a pull cylinder of which the total stroke is equal to the sum of a swing stroke and a clamping stroke, and is usually used within the clamping stroke.

Type

This swing cylinder belongs to a double-acting type which is operated mainly in a downward pressing manner, including clockwise swing and counterclockwise swing; standard angle is 90°, and optional angles include 0°, 45°, 60°; clamping means includes single arm or double arms; the mounting manner includes threaded type and lower flange type for manifold mounting with O-ring seal.

Material

This material of the main body is aluminum alloy.

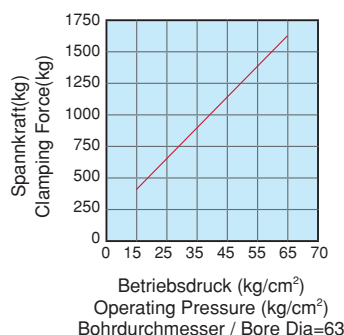
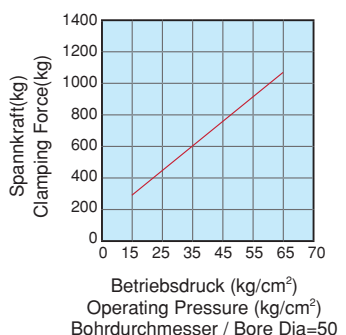
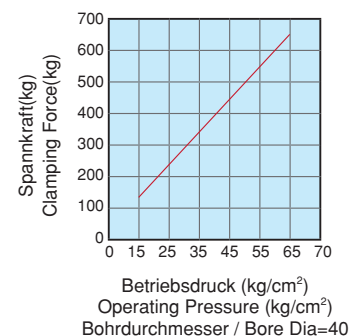
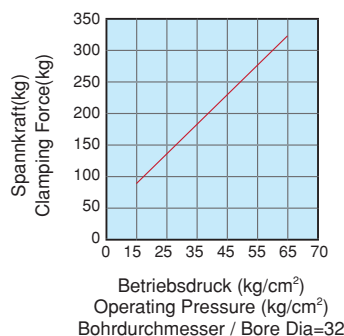
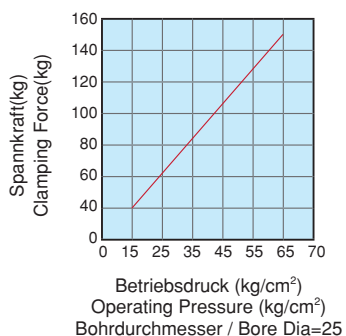


Bestellbeispiel / Ordering example

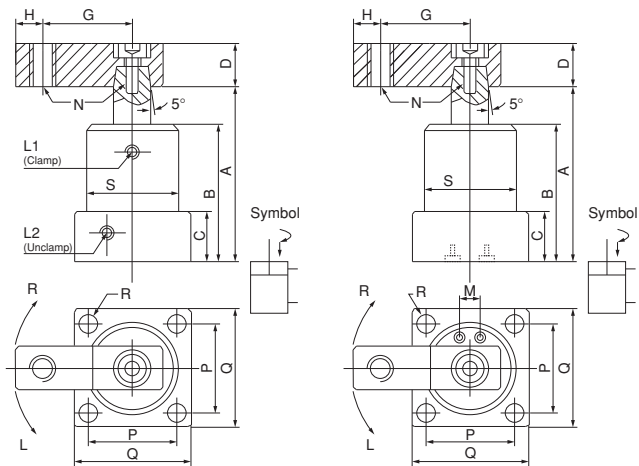
| Referenz-Nr. Order No. | NHS Basis-Nr. Base No. | T Type Flansch Flange T: verzahnt T: Threaded | D Arm Type D: Doppelarm D: Double Arm Leer : Einzelbewegung Blank: Single Arm | L – Drehrichtung Swivel Direction L: links L: Left R: rechts R: Right | 40 Kolben / Piston Ø 25 32 40 50 63 | x 90° – Winkel / Angle 0° 45° 60° 90° 180° |
|---------------------------|------------------------------|--|--|---|---|--|
|---------------------------|------------------------------|--|--|---|---|--|

Schematische Übersicht theoretischer Spannkraften unter unterschiedlichem Hydraulik-Druck

Schematic view showing a theoretical clamping force under different hydraulic pressure:



| Referenz-Nr. Order No. | Spann-Type Mounting Type | Spannarm Clamping Arm | Max. Druck Max. Pressure | Normaldruck Normal Pres. | Bewegungs-Type Acting Type | Drehwinkel Swivel Angle | Drehhub Swivel Stroke (mm) | Spannhub Clamp Str. (mm) | Bohrdurchmesser Diameter Ø (mm) | Kolbenstange Piston Rod Ø | Spannkraft Force (25kg/cm ²) | A (mm) Lösen Unclamp | B (mm) | C (mm) | D (mm) | G (mm) | H (mm) | L1 Spannen / Clamp L2 Lösen / Unclamp | N (mm) | P (mm) | Q (mm) | R (mm) | S (mm) | O-Ring/ Manifold O-Ring | M (mm) | F (mm) | Gewicht Weight (kg) |
|---------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|--|------------------------------|-------------------------------|-----------------------------|------------------------------------|------------------------------|---|-------------------------|--------|--------|--------|--------|--------|--|-----------|--------|--------|--------|--------|----------------------------|--------|--------|------------------------|
| 1043-NHS025 | Bottom Flange | 1-Arm / Single Arm | 70 kg/cm ² | 20-45 kg/cm ² | doppelseitige Bewegung / Double Acting | 90° (0° 45°, 60°, 180°) ± 2° | 12 | 14 | 25 | 18 | 59 | 100 | 70 | 23 | □ 25.4 | 50 | 10 | 1/8 PF | M10 x1.5 | 40 | 50 | ∅ 6.5 | ∅ 45 | S4 | 18 | 15 | 0.8 |
| 1043-NHS032 | | | | | | | 14 | 15 | 32 | 20 | 125 | 111 | 76 | 25 | □ 25.4 | 55 | 10 | 1/8 PF | M10 x1.5 | 44 | 55 | ∅ 6.5 | ∅ 50 | S4 | 24 | 17 | 1.0 |
| 1043-NHS040 | | | | | | | 14 | 15 | 40 | 20 | 200 | 113.6 | 80 | 27 | □ 25.4 | 55 | 10 | 1/8 PF | M10 x1.5 | 48 | 62 | ∅ 8.5 | ∅ 54 | S4 | 26 | 20 | 1.1 |
| 1043-NHS050 | | | | | | | 14 | 15 | 50 | 20 | 400 | 114.5 | 80 | 27 | □ 25.4 | 55 | 10 | 1/8 PF | M10 x1.5 | 57 | 74 | ∅ 8.5 | ∅ 65 | S4 | 30 | 25 | 1.4 |
| 1043-NHS063 | | | | | | | 14 | 15 | 63 | 25 | 600 | 118 | 85 | 32 | □ 32 | 75 | 11 | 1/8 PF | M12 x1.75 | 70 | 88 | ∅ 10.5 | ∅ 80 | S4 | 40 | 30 | 2.3 |



1043

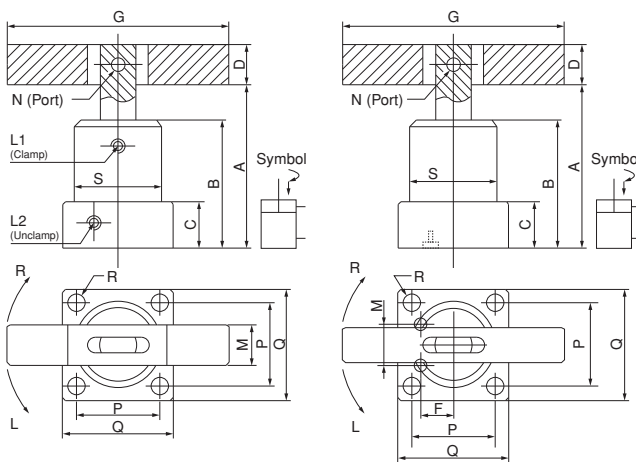
NHS – Flanschversion, 1-Arm
Mit Rohr oder Verteiler

NHS – Flange Version, Single Arm
With Pipe or Manifold

- Bei Bestellung bitte Bewegungs-Type und Drehwinkel angeben.
- Before buying please, movement indicate the type and rotation angle.



| Referenz-Nr. Order No. | Spann-Type Mounting Type | Spannarm Clamping Arm | Max. Druck Max. Pressure | Normaldruck Normal Pres. | Bewegungs-Type Acting Type | Drehwinkel Swivel Angle | Drehhub Swivel Stroke (mm) | Spannhub Clamp Str. (mm) | Bohrdurchmesser Diameter Ø (mm) | Kolbenstange Piston Rod Ø | Spannkraft/Clamp Force (25kg/cm ²) | A (mm) Lösen Unclamp | B (mm) | C (mm) | D (mm) | G (mm) | H (mm) | L1 Spannen / Clamp L2 Lösen / Unclamp | N (mm) | P (mm) | Q (mm) | R (mm) | S (mm) | O-Ring/ Manifold O-Ring | M (mm) | F (mm) | Gewicht Weight (kg) |
|---------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|--|------------------------------|-------------------------------|-----------------------------|------------------------------------|------------------------------|---|-------------------------|--------|--------|--------|--------|--------|--|--------|--------|--------|--------|--------|----------------------------|--------|--------|------------------------|
| 1045-NHSD025 | Bottom Flange | 2-Arm / Single Arm | 70 kg/cm ² | 20-45 kg/cm ² | doppelseitige Bewegung / Double Acting | 90° (0° 45°, 60°, 180°) ± 2° | 12 | 14 | 25 | 18 | 59 | 100 | 70 | 23 | □ 19 | 100 | 1/8 PF | ∅ 8 | 40 | 50 | ∅ 6.5 | ∅ 45 | S4 | 18 | 15 | 0.9 | |
| 1045-NHSD032 | | | | | | | 14 | 15 | 32 | 20 | 125 | 111 | 76 | 25 | □ 22 | 120 | 1/8 PF | ∅ 8 | 44 | 55 | ∅ 6.5 | ∅ 50 | S4 | 24 | 17 | 1.1 | |
| 1045-NHSD040 | | | | | | | 14 | 15 | 40 | 20 | 200 | 113.6 | 80 | 27 | □ 22 | 120 | 1/8 PF | ∅ 8 | 48 | 62 | ∅ 8.5 | ∅ 54 | S4 | 26 | 20 | 1.2 | |
| 1045-NHSD050 | | | | | | | 14 | 15 | 50 | 20 | 400 | 114.5 | 80 | 27 | □ 22 | 120 | 1/8 PF | ∅ 8 | 57 | 74 | ∅ 8.5 | ∅ 65 | S4 | 30 | 25 | 1.5 | |
| 1045-NHSD063 | | | | | | | 14 | 15 | 63 | 25 | 600 | 118 | 85 | 32 | □ 25.4 | 140 | 1/8 PF | ∅ 10 | 70 | 88 | ∅ 10.5 | ∅ 80 | S4 | 40 | 30 | 2.5 | |



1045

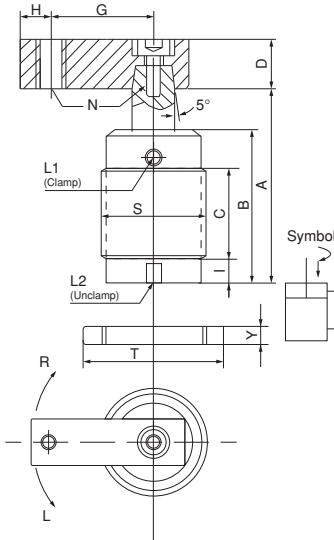
NHSD – Flanschversion, Doppelarm
Mit Rohr oder Verteiler

NHSD – Flange Version, Double Arm
With Pipe or Manifold

- Bei Bestellung bitte Bewegungs-Type und Drehwinkel angeben.
- Before buying please, movement indicate the type and rotation angle.



| Referenz-Nr. Order No. | Spann-Type Mounting Type | Spannarm Clamping Arm | Max. Druck Max. Pressure | Normaldruck Normal Pres. | Bewegungs-Type Acting Type | Drehwinkel Swivel Angle | Drehhub Swivel Stroke (mm) | Spannhub Clamp Str. (mm) | Bohrdurchmesser/ Bore Diameter Ø (mm) | Kolbenstange Piston Rod Ø | Spannkraft/Clamp Force (25kg/cm ²) | A (mm) Lösen Unclamp | B (mm) | C (mm) | D (mm) | G (mm) | H (mm) | I (mm) | L1 Spannen / Clamp L2 Lösen / Unclamp | N (mm) | S (mm) | T (mm) Kolbenstange 2 St. T (mm) 2 pcs/set | Y (mm) | Gewicht Weight (kg) | |
|---------------------------|-----------------------------------|--------------------------|-----------------------------|-----------------------------|--|------------------------------|-------------------------------|-----------------------------|--|------------------------------|---|-------------------------|--------|--------|--------|--------|--------|--------|--|--------|----------|---|--------|------------------------|------|
| 1047-NHTS025 | verzahnter Körper / Threaded Body | 1-Arm / Single Arm | 70 kg/cm ² | 20-45 kg/cm ² | doppelseitige Bewegung / Double Acting | 90° (0° 45°, 60°, 180°) ± 2° | 12 | 14 | 25 | 18 | 59 | 100 | 70 | 35 | □ | 25.4 | 50 | 10 | 9 | 1/8 PF | M10 x1.5 | M45 x1.5 | Ø 65 | 10 | 0.8 |
| 1047-NHTS032 | | | | | | | 14 | 15 | 32 | 20 | 125 | 111 | 76 | 45 | □ | 25.4 | 55 | 10 | 9 | 1/8 PF | M10 x1.5 | M50 x1.5 | Ø 70 | 11 | 1.1 |
| 1047-NHTS040 | | | | | | | 14 | 15 | 40 | 20 | 200 | 113.6 | 80 | 45 | □ | 25.4 | 55 | 10 | 9 | 1/8 PF | M10 x1.5 | M55 x1.5 | Ø 75 | 11 | 1.25 |
| 1047-NHTS050 | | | | | | | 14 | 14 | 50 | 20 | 400 | 120 | 87 | 50 | □ | 25.4 | 55 | 10 | 9 | 1/8 PF | M10 x1.5 | M65 x1.5 | Ø 85 | 12 | 1.7 |



1047

NHTS – Verzahnte Version, 1-Arm
Mit Rohr

NHTS – Threaded Version, Single Arm
With Pipe

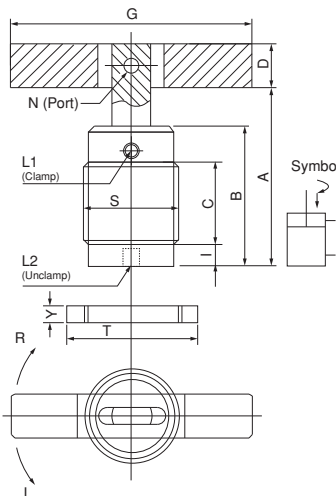
- Bei Bestellung bitte Bewegungs-Type und Drehwinkel angeben.
- Before buying please, movement indicate the type and rotation angle.



Hydraulischer Schwenkspanner

Hydraulic Swing Clamp

| Referenz-Nr. Order No. | Spann-Type Mounting Type | Spannarm Clamping Arm | Max. Druck Max. Pressure | Normaldruck Normal Pres. | Bewegungs-Type Acting Type | Drehwinkel Swivel Angle | Drehhub Swivel Stroke (mm) | Spannhub Clamp Str. (mm) | Bohrdurchmesser/ Bore Diameter Ø (mm) | Kolbenstange Piston Rod Ø | Spannkraft/Clamp Force (25kg/cm ²) | A (mm) Lösen Unclamp | B (mm) | C (mm) | D (mm) | G (mm) | I (mm) | L1 Spannen / Clamp L2 Lösen / Unclamp | N (mm) | S (mm) | T (mm) Kolbenstange 2 St. T (mm) 2 pcs/set | Y (mm) | Gewicht Weight (kg) | |
|---------------------------|-----------------------------------|--------------------------|-----------------------------|-----------------------------|--|------------------------------|-------------------------------|-----------------------------|--|------------------------------|---|-------------------------|--------|--------|--------|--------|--------|--|--------|--------|---|--------|------------------------|------|
| 1050-NHTSD-25 | verzahnter Körper / Threaded Body | 2-Arm / Double Arm | 70 kg/cm ² | 20-45 kg/cm ² | doppelseitige Bewegung / Double Acting | 90° (0° 45°, 60°, 180°) ± 2° | 12 | 14 | 25 | 18 | 59 | 100 | 70 | 35 | □ | 19 | 100 | 9 | 1/8 PT | Ø 8 | M45 x1.5 | Ø 65 | 10 | 0.9 |
| 1050-NHTSD-32 | | | | | | | 14 | 15 | 32 | 20 | 125 | 111 | 76 | 45 | □ | 22 | 120 | 10 | 1/8 PT | Ø 8 | M50 x1.5 | Ø 70 | 11 | 1.2 |
| 1050-NHTSD-40 | | | | | | | 14 | 15 | 40 | 20 | 200 | 113.6 | 80 | 45 | □ | 22 | 120 | 10 | 1/8 PT | Ø 8 | M55 x1.5 | Ø 75 | 11 | 1.4 |
| 1050-NHTSD-50 | | | | | | | 14 | 14 | 50 | 20 | 400 | 120 | 87 | 50 | □ | 22 | 120 | 10 | 1/8 PT | Ø 8 | M65 x1.5 | Ø 85 | 12 | 1.85 |



1050

NHTSD – Verzahnte Version, Doppelarm
Mit Rohr

NHTSD – Threaded Version, Double Arm
With Pipe

- Bei Bestellung bitte Bewegungs-Type und Drehwinkel angeben.
- Before buying please, movement indicate the type and rotation angle.

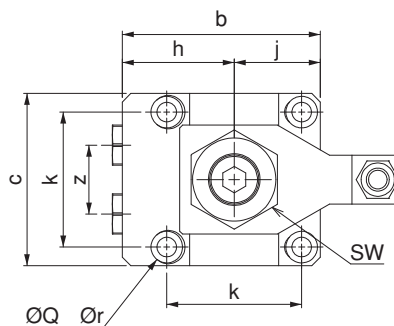
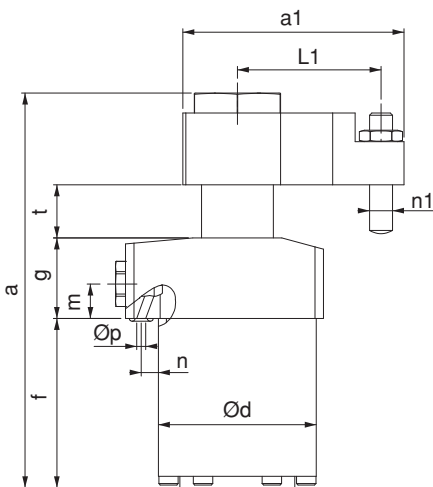


| Referenz-Nr. Order No. | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | H (mm) | J (mm) | K (mm) | M (mm) | N (mm) | P (mm) | Q (mm) | R (mm) | T (mm) | Z (mm) | A1 (mm) | L1 (mm) | N1 (mm) | (g) |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|------|
| 1051-VS035 | 129 | 61 | 51 | 48 | 80 | 52 | 28 | 35.5 | 25.5 | 40 | 12 | 30 | 3 | 9.5 | 5.5 | 16 | 22 | 65.5 | 42 | M6 | 0.84 |
| 1051-VS042 | 146 | 69 | 60 | 55 | 87 | 59 | 28 | 39 | 30 | 47 | 12 | 33.5 | 3 | 11 | 6.5 | 18.5 | 24 | 77 | 50 | M8 | 1.25 |
| 1051-VS050 | 153 | 81 | 70 | 65 | 93 | 63 | 30 | 46 | 35 | 55 | 13 | 39.5 | 5 | 11 | 6.5 | 20 | 30 | 91.5 | 56.5 | M10 | 1.86 |
| 1051-VS060 | 179 | 92 | 80 | 75 | 108 | 71 | 37 | 52 | 40 | 63 | 16 | 45 | 5 | 14 | 8.5 | 23.5 | 32 | 105 | 65 | M12 | 2.86 |
| 1051-VS074 | 192 | 107 | 95 | 90 | 114 | 74 | 40 | 59.5 | 47.5 | 75 | 16 | 52.5 | 5 | 17.5 | 10.5 | 25 | 37 | 127 | 75 | M16 | 4.75 |

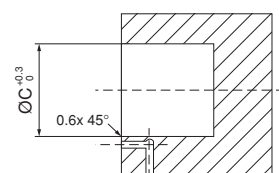
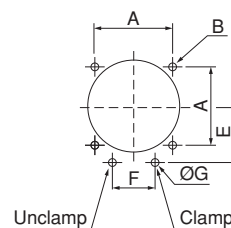
| Referenz-Nr. Order No. | Zylinderfläche cm ² Cylinder Area cm ² | Gesamthub Total Stroke | Spannhub Clamp Stroke | Drehhub Swivel Stroke | Ölvolumen cm ³ / Spannen Cylinder Volume cm ³ /Clamp | Ölvolumen cm ³ / Entspannen Cylinder Volume cm ³ /Release | Spannkraft 70 kg/cm ² Clamping Force at 70 kg/cm ² | Min./Max. Betriebsdruck kg /cm ² Min./Max. Operating Pressure kg /cm ² | Arbeitstemperatur Operating Temperature | 90° Drehwinkel Toleranz 90° Swing Angle Tolerance | Wiederholgenauigkeit Clamp-Swing Position Repeat Tolerance |
|---------------------------|--|---------------------------|--------------------------|--------------------------|--|---|---|---|--|--|--|
| 1051-VS035 | 5.8 | 22 | 8 | 14 | 12.8 | 21.2 | 405 | 5 - 70 | 0-70° | 90±2° | 0.5° |
| 1051-VS042 | 8.9 | 25 | 10 | 15 | 22.4 | 34.6 | 625 | 5 - 70 | 0-70° | 90±2° | 0.5° |
| 1051-VS050 | 12.6 | 26 | 10 | 16 | 32.7 | 51.0 | 880 | 5 - 70 | 0-70° | 90±2° | 0.5° |
| 1051-VS060 | 18.4 | 29 | 12 | 17 | 53.3 | 82.0 | 1285 | 5 - 70 | 0-70° | 90±2° | 0.5° |
| 1051-VS074 | 27.1 | 30 | 12 | 18 | 81.3 | 129.0 | 1896 | 5 - 70 | 0-70° | 90±2° | 0.5° |

1051

Mit Rohr und Verteiler With Pipe and Manifold



| Referenz-Nr. Order No. | A | B | C | E | F | G |
|---------------------------|----|-----|----|------|----|---|
| 1051-VS035 | 40 | M5 | 48 | 30 | 22 | 3 |
| 1051-VS042 | 47 | M6 | 55 | 33.5 | 24 | 3 |
| 1051-VS050 | 55 | M6 | 65 | 39.5 | 30 | 5 |
| 1051-VS060 | 63 | M8 | 75 | 45 | 32 | 5 |
| 1051-VS074 | 75 | M10 | 90 | 52.5 | 37 | 5 |



| Referenz-Nr. Order No. | Gesamthub Total Stroke (mm) | Spannhub Lock Stroke (mm) | Extrahub Extra Stroke (mm) | Max. Druck Max. operating pressure kg/cm | Min. Druck Min. operating pressure kg/cm | Spannkraft Clamping Force (at 70 kg/cm ²) | Arbeitstemperatur Operating Temperature | (kg) |
|---------------------------|-----------------------------------|---------------------------------|----------------------------------|--|--|---|---|----------|
| 1052-VT25S | 23.5 | 20.5 | 3 | 70 | 20 | 280kg | 0 - 70°C | 0.60 |
| 1052-VT32S | 26 | 23 | 3 | 70 | 20 | 448kg | 0 - 70°C | 0.92 |
| 1052-VT40S | 29.5 | 26.5 | 3 | 70 | 20 | 700kg | 0 - 70°C | 1.86 |
| 1052-VT50S | 35 | 32 | 3 | 70 | 20 | 1092kg | 0 - 70°C | 2.34 |
| 1052-VT63S* | 41 | 38 | 3 | 70 | 20 | 1736kg | 0 - 70°C | 3.90 |



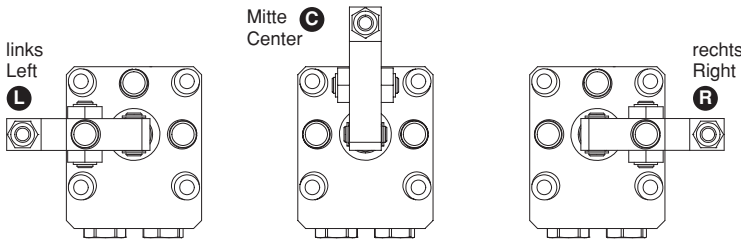
1052

• 1052-VT63S codierte Produkte sind mit Verteiler und Ölfluss, das Öl ist regenerierend.

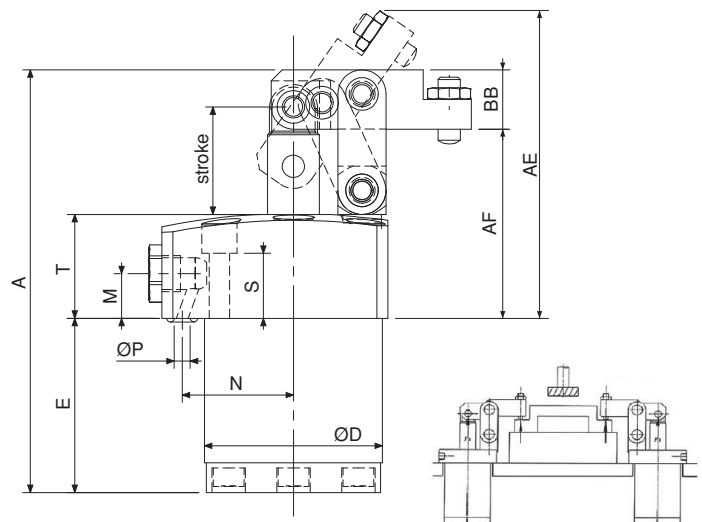
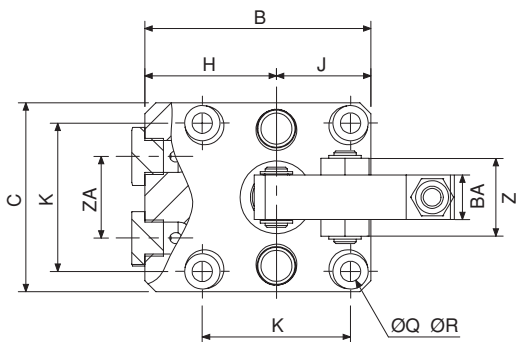
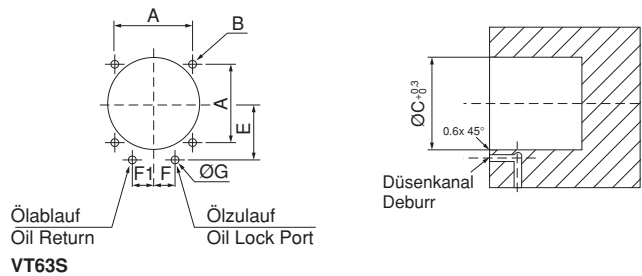
1052

• 1052-VT63S coded products manifold and oil flow, oil is reflexive.

Mit Rohr und Verteiler
With Pipe and Manifold



| Referenz-Nr. Order No. | A | B | C | E | F | G |
|---------------------------|----|--------|----|------|------|---|
| 1052-VT25S | 40 | M5x0.8 | 48 | 30 | 11 | 3 |
| 1052-VT32S | 47 | M6 | 55 | 33.5 | 12 | 3 |
| 1052-VT40S | 55 | M6 | 65 | 39.5 | 15 | 5 |
| 1052-VT50S | 63 | M8 | 75 | 45 | 16 | 5 |
| 1052-VT63S | 75 | M10 | 90 | 52.5 | 18.5 | 5 |



| Referenz-Nr. Order No. | A | B | C | D | E | H | J | K | M | N | S | T | Z | part | ZA | Spanneisen Clamping Arm | | | | ØQ | ØR |
|---------------------------|-------|-------|-----|----|-----|------|------|----|----|------|------|------|----|------|----|----------------------------|------|----|----|------|-----|
| | | | | | | | | | | | | | | | | AE | AF | BA | BB | | |
| 1052-VT25S | 114 | 61 | 51 | 48 | 75 | 35.5 | 25.5 | 40 | 12 | 30 | 17.5 | 35 | 21 | G1/8 | 22 | 92.4 | 51 | 12 | 16 | 9.5 | 5.5 |
| 1052-VT32S | 132.5 | 69 | 60 | 55 | 87 | 39 | 30 | 47 | 12 | 33.5 | 15 | 37.5 | 28 | G1/8 | 24 | 101.9 | 53.5 | 16 | 20 | 11 | 6.8 |
| 1052-VT40S | 147 | 81 | 70 | 65 | 93 | 46 | 35 | 55 | 13 | 39.5 | 15.5 | 45 | 37 | G1/4 | 30 | 111.4 | 59 | 19 | 25 | 11 | 6.8 |
| 1052-VT50S | 175 | 94.5 | 85 | 75 | 108 | 52 | 42.5 | 63 | 16 | 45 | 19.5 | 55 | 40 | G1/4 | 32 | 130.8 | 72 | 22 | 32 | 14 | 9 |
| 1052-VT63S | 207 | 109.5 | 100 | 90 | 128 | 59.5 | 50 | 75 | 16 | 52.5 | 19 | 64.5 | 49 | G3/8 | 37 | 146.5 | 81 | 25 | 38 | 17.5 | 11 |

Beschreibung

Dieser Einschraubzylinder wird in den ausgefahrenen Zustand gebracht und übt innerhalb eines Hubs eine Spannkraft auf ein Werkstück aus, um das Werkstück zu sichern. Die Montageweise dieses Einschraubzylinders ist in der folgenden Zeichnung dargestellt, die die empfohlenen Abmessungen der Geräte veranschaulicht, und diese Montage erfordert eine Teflondichtung, um Ölleckagen zu vermeiden.

Description

This threaded-body clamping cylinder is applied to a condition of knocking-out, and applies a clamping force on a workpiece within a stroke in order to secure the workpiece. The mounting manner for this threaded-body clamping cylinder is shown as the following drawing illustrating suggested dimensions of devices, and this mounting needs a Teflon packing in order to avoid oil leakage.

Bestellbeispiel / Ordering example

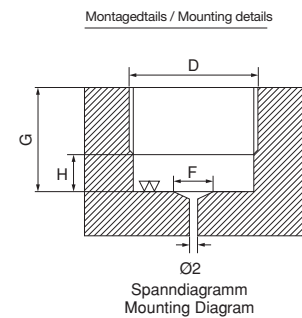
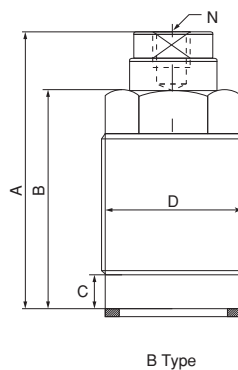
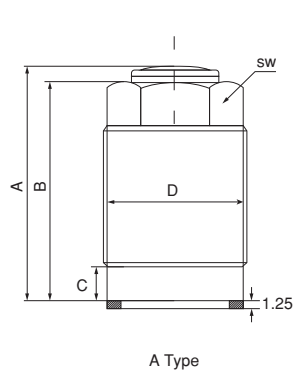
Nr. 1053 **TC** **12** **A**
 Basis Nr. Kolben Ø Serie / Series
 Base No.



A Type



B Type

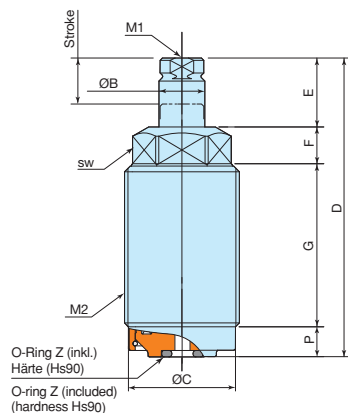


| Referenz-Nr. Order No. | Arbeits-Öldruck Operating Oil Pressure | Bewegungs-Type Acting Type | Hub Stroke S (mm) | Kolbenstange Piston Rod Ø (mm) | Spannkraft/Clamp Force (200kg/cm ²) | A (mm) | B (mm) | C (mm) | D (mm) | F (mm) | G (mm) | H (mm) | N (mm) | sw | Gewicht, Weight (kg) |
|---------------------------|---|--------------------------------|----------------------|-----------------------------------|--|--------|--------|--------|----------|--------|--------|--------|---------|----|-------------------------|
| 1053-TC12A | 20-350 kg/cm ² | einfachwirkend / Single Acting | 10 | 12 | 200 (kg) | 38 | 36 | 7 | M22 x1.5 | 12 | 16 | 6 | - | 17 | 0.07 |
| 1053-TC16A | | | 12 | 16 | 400 (kg) | 46.5 | 44.5 | 8 | M26 x1.5 | 16 | 20 | 7 | - | 22 | 0.14 |
| 1053-TC-20A | | | 15 | 20 | 620 (kg) | 56 | 54 | 8 | M30 x1.5 | 20 | 24 | 7 | - | 24 | 0.22 |
| 1053-TC25A | | | 16 | 25 | 980 (kg) | 57 | 55 | 11 | M38 x1.5 | 25 | 28 | 10 | - | 32 | 0.37 |
| 1053-TC12B | | | 10 | 12 | 200 (kg) | 45 | 36 | 7 | M22 x1.5 | 12 | 16 | 6 | M6x1 | 17 | 0.08 |
| 1053-TC16B | | | 12 | 16 | 400 (kg) | 52 | 44.5 | 8 | M26 x1.5 | 16 | 20 | 7 | M6x1 | 22 | 0.15 |
| 1053-TC20B | | | 15 | 20 | 620 (kg) | 64.5 | 54 | 8 | M30 x1.5 | 20 | 24 | 7 | M8x1.25 | 24 | 0.24 |
| 1053-TC25B | | | 16 | 25 | 980 (kg) | 67 | 55 | 11 | M38 x1.5 | 25 | 28 | 10 | M8x1.25 | 32 | 0.4 |

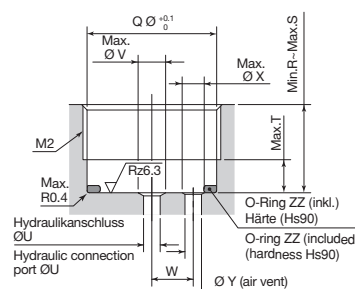
| Referenz-Nr. Order No. | Hub Stroke (mm) | Zylinderkraft(kN) / Cylinder Force(kN) | | | | Zylinderdurchmesser (mm) Cyl. inner dia. (mm) | Stangendurchmesser (mm) Rod dia. (mm) | Wirkungsfläche (cm ²) Effec. area (cm ²) | Max. Ölflussfläche (ℓ/min) Max. oil flow rate(ℓ/min) | Zylinderkapazität (cm ³) Cylinder cap.(cm ³) | | Rückkehr-Federkraft (N) Return spring force (N) | Spannkraft Clamp Force (200kg/cm ²) |
|---------------------------|-----------------------|---|---|--|--|--|--|---|---|---|------|--|---|
| | | Hydraulikdruck Hydraulic Press. 3.5 MPa | Hydraulikdruck Hydraulic Press. 7 MPa | Hydraulikdruck Hydraulic Press. 25 MPa | Hydraulikdruck Hydraulic Press. 35 MPa | | | | | 0.5 | 0.9 | | |
| 1055-CMD02 | 5 | 0.3 | 0.5 | 2.1 | 2.9 | 16 | 10 | 0.84 | 0.25 | 0.5 | 0.9 | 30~56 | 245 |
| 1055-CMD03 | 10 | 0.3 | 0.5 | 2.1 | 2.9 | 16 | 10 | 0.84 | 0.25 | 0.5 | 0.9 | 30~56 | 245 |
| 1055-CMD04 | 5 | 0.4 | 0.9 | 3.4 | 4.8 | 18 | 10 | 1.37 | 0.41 | 0.7 | 1.4 | 43~77 | 351 |
| 1055-CMD05 | 10 | 0.4 | 0.9 | 3.4 | 4.8 | 18 | 10 | 1.37 | 0.41 | 0.7 | 1.4 | 43~77 | 351 |
| 1055-CMD06 | 10 | 0.7 | 1.5 | 5.6 | 7.9 | 22 | 12 | 2.29 | 0.69 | 2.3 | 4.6 | 65~120 | 533 |
| 1055-CMD07 | 20 | 0.7 | 1.5 | 5.6 | 7.9 | 22 | 12 | 2.29 | 0.69 | 2.3 | 4.6 | 65~120 | 533 |
| 1055-CMD10 | 10 | 1.2 | 2.5 | 9.3 | 13 | 28 | 16 | 3.76 | 1.13 | 3.8 | 7.5 | 100~193 | 828 |
| 1055-CMD11 | 20 | 1.2 | 2.5 | 9.3 | 13 | 28 | 16 | 3.76 | 1.13 | 3.8 | 7.5 | 100~193 | 828 |
| 1055-CMD20 | 10 | 2 | 4.3 | 15.8 | 22.2 | 36 | 20 | 6.40 | 1.92 | 6.4 | 12.8 | 170~267 | 1400 |
| 1055-CMD21 | 20 | 2 | 4.3 | 15.8 | 22.2 | 36 | 20 | 6.40 | 1.92 | 6.4 | 12.8 | 170~267 | 1400 |

| Referans Nr. | Hub (mm) Stroke (mm) | B | C | D | E | F | G | (hex Weite) (hex width across flats) sw | (Körper mit Gewinde) (tip section thread) M1 | (Einschraub) (threaded body) M2 | P | Q | R | S | T | (Hydr.-Verbindung) (hydraulic connection port) U | V | W | X | Y | O-ring Z | O-ring ZZ |
|--------------|-------------------------|----|------|-----|----|------|------|---|--|---------------------------------------|-----|------|----|------|-----|--|---|-----|---|---|----------|-----------|
| CMD02 | 5 | 10 | 20.3 | 51 | 10 | 7.5 | 27 | 17 | M6×1 depth 11 | M22 ×1.5 | 6.5 | 20.5 | 13 | 32.5 | 5.5 | 3 | 5 | 7 | 4 | 3 | P6 | AS568-017 |
| CMD03 | 10 | 10 | 20.3 | 65 | 15 | 7.5 | 36 | 17 | M6×1 depth 11 | M22 ×1.5 | 6.5 | 20.5 | 13 | 41.5 | 5.5 | 3 | 5 | 7 | 4 | 3 | P6 | AS568-017 |
| CMD04 | 5 | 10 | 23.3 | 51 | 10 | 8 | 26.5 | 19 | M6×1 depth 11 | M25 ×1.5 | 6.5 | 23.5 | 14 | 32 | 5.5 | 3 | 5 | 7.5 | 4 | 3 | P6 | AS568-019 |
| CMD05 | 10 | 10 | 23.3 | 65 | 15 | 8 | 35.5 | 19 | M6×1 depth 11 | M25 ×1.5 | 6.5 | 23.5 | 14 | 41 | 5.5 | 3 | 5 | 7.5 | 4 | 3 | P6 | AS568-019 |
| CMD06 | 10 | 12 | 28.3 | 69 | 16 | 9.5 | 35.5 | 24 | M8×1.25 depth 18 | M30 ×1.5 | 8 | 28.5 | 15 | 42.5 | 7 | 3 | 5 | 9.5 | 4 | 3 | P6 | AS568-022 |
| CMD07 | 20 | 12 | 28.3 | 96 | 26 | 9.5 | 52.5 | 24 | M8×1.25 depth 18 | M30 ×1.5 | 8 | 28.5 | 15 | 59.5 | 7 | 3 | 5 | 9.5 | 4 | 3 | P6 | AS568-022 |
| CMD10 | 10 | 16 | 34.3 | 73 | 17 | 11.5 | 35.5 | 30 | M10×1.5 depth 20 | M36 ×1.5 | 9 | 34.5 | 17 | 43.5 | 8 | 4 | 5 | 12 | 4 | 3 | P6 | AS568-026 |
| CMD11 | 20 | 16 | 34.3 | 101 | 27 | 11.5 | 53.5 | 30 | M10×1.5 depth 20 | M36 ×1.5 | 9 | 34.5 | 17 | 61.5 | 8 | 4 | 5 | 12 | 4 | 3 | P6 | AS568-026 |
| CMD20 | 10 | 20 | 46.3 | 80 | 19 | 13.5 | 35.5 | 41 | M12×1.75 depth 22 | M48 ×1.5 | 12 | 46.5 | 20 | 46.5 | 11 | 6 | 7 | 15 | 4 | 3 | P8 | AS568-031 |
| CMD21 | 20 | 20 | 46.3 | 109 | 29 | 13.5 | 54.5 | 41 | M12×1.75 depth 22 | M48 ×1.5 | 12 | 46.5 | 20 | 65.5 | 11 | 6 | 7 | 15 | 4 | 3 | P8 | AS568-031 |

1055



Montagedetails / Mounting details



| Referenz-Nr. Order No. | Stützkraft bei 70kg/cm ² Support Force | Hub Stroke | Max. Druck Max. Pressure | Normaldruck Normal Pressure | Anlegekraft Contact force | A | B | C | D | E | F | G | H | I | J | K | M | N | O | P | Q | R | S | CA | CB | CC | Gewicht Weight (kg) | |
|---------------------------|--|---------------|-----------------------------|--------------------------------|------------------------------|-----|----|-----|------|----|---|----|----|----|------|------|-----|--------|---------|------|------|----|--------|----------|----------|-------|------------------------|------|
| 1056-WST26BL | 200 kg | 6 | 105 kg/cm ² | 25 - 70 kg/cm ² | 0.67 | 66 | 48 | 6.5 | 9 | 5 | 4 | 24 | 9 | 10 | - | - | - | M6 x9D | - | 24 | 26 | 10 | M26 x1 | M26 x1 | 20-30 | 2 | 0.20 | |
| 1056-WST30BL | 300 kg | 8 | | | 0.96 | 73 | 53 | 9.5 | 9 | 7 | 4 | 27 | 8 | 10 | - | - | - | - | M6 x9D | - | 28 | 30 | 10 | M30 x1.5 | M26 x1.5 | 20-50 | 9 | 0.25 |
| 1056-WST36BL | 360 kg | 8 | | | 2.12 | 69 | 50 | 9.5 | 8 | 7 | 4 | 32 | 11 | 10 | - | - | - | - | M8 x11D | - | 34.2 | 36 | 13 | M36 x1.5 | M26 x1.5 | 20-48 | 8 | 0.35 |
| 1056-WSU40BL | 360 kg | 8 | | | 1.82 | 67 | 31 | 25 | 14.5 | 7 | 4 | - | 11 | 12 | 22.5 | 31.5 | 5.5 | 5.5 | M10 x8 | 26 | 34 | 45 | 13 | Ø40 | Ø40 | - | - | 0.60 |
| 1056-WSU48BL | 720 kg | 10 | | | 2.16 | 75 | 39 | 23 | 13.5 | 9 | 4 | - | 12 | 11 | 25.5 | 35.5 | 5.5 | 5.5 | M10 x8 | 30 | 40 | 51 | 14 | Ø48 | Ø48 | - | - | 0.80 |
| 1056-WSU55BL | 840 kg | 12 | | | 1.33 | 85 | 45 | 23 | 11.5 | 11 | 6 | - | 15 | 14 | 30.5 | 39 | 6.8 | 6.8 | M10 x10 | 33.5 | 47 | 60 | 18 | Ø55 | Ø55 | - | - | 1.40 |
| 1056-WSU65BL | 1200 kg | 14 | | | 1.05 | 101 | 56 | 27 | 14.5 | 12 | 6 | - | 17 | 14 | 35 | 46 | 6.8 | 6.8 | M10 x10 | 40.5 | 55 | 70 | 20 | Ø55 | Ø55 | - | - | 2.20 |

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Niederdruck-Abstützelement

- der Betriebsdruck ist 25-70 kg/cm², mit Kopfflansch und einschraubbar
- Die Einlassöffnung ist kleiner, um die Geschwindigkeit des Kolbens zu verringern.

Wichtiger Hinweis zur Benutzung von Abstützelementen

- Reinheit des Hydrauliköls: Die inneren Teile des Abstützelements sind sehr präzise, deshalb ist die Reinheit des Öls ein sehr wichtiges Thema, das den Lebenszyklus beeinflussen kann. Eine schlechte Qualität des Öls wird zu geringerer Stützkraft führen. Normalerweise wird das Abstützelement wieder gut funktionieren, nachdem wir das Hydrauliköl gereinigt haben. In wenigen Bedingungen müssen wir das Abstützelement demontieren und die inneren Teile reinigen und die Öldichtung ersetzen.
- Reinigen Sie den Zylinderkörper: Die Metallverunreinigungen können während der Bearbeitung in das Innere gelangen, bitte reinigen Sie sie nach jeder Bearbeitung mit einer Luftpistole.
- Vermeiden Sie bitte folgendes oder der Abstützbolzen wird deformiert und der Kolben arbeitet nicht oder verliert die Stützkraft.

- A:** exzentrische Kraft auf den Kolben ausüben.
- B:** Last aufbringen, die die geschätzte Stützkraft übersteigt.
- C:** Den Kolben zu drehen, wenn in Stützposition



WSU

WST

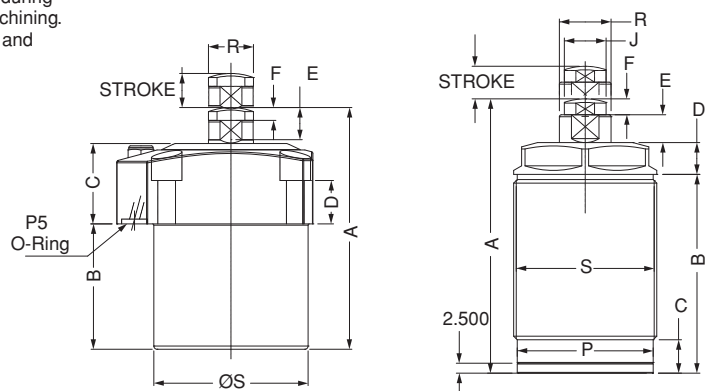
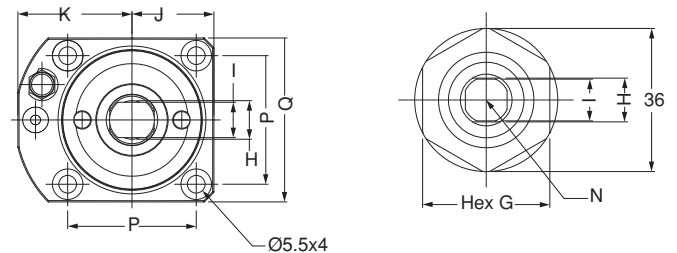
Work Support Low Pressure

- The operating range is 25-70 kg/cm², the mounting type includes thread body and upper flange, and we have piping mounting and manifold mounting in upper flange type.
- Inlet orifice is smaller, so it can reduce the speed of plunger when it is rising, it can reduce the impact onto workpiece, and reduce the tolerance which is caused by instant shock.

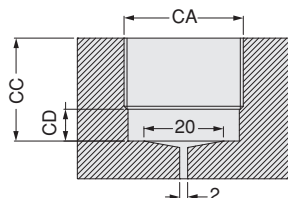
The important issue when you use work support

- The purity of hydraulic oil: the inner parts installed in work support are very precise, so the purity of hydraulic oil becomes a very important issue which can affect the life cycle of work support, bad quality of oil will cause to lose its supporting force. In usual, the work support will work well again after we clean the hydraulic oil, for few conditions, we need to disassemble the work support and clean the inner parts, even we need to replace oil seal.
- Clean the cylinder body: the metal impurity is possible going into the collet during the action, please make sure to clean by using an air gun after each machining.
- Please avoid the following condition, otherwise the collet will be deformed, and plunger will not work, or will lose supporting force.

- A:** Apply eccentric force onto plunger.
- B:** Apply an load which exceeds the estimated supporting force.
- C:** To turn the plunger when it is locked at supporting position



Montagedetails Mounting details



| Referenz-Nr. Order No. | erweiterte Methode advanced method | Stützkraft bei 20 Mpa Supporting Force | Hub Stroke | Max. Druck Max. Pressure | Min. Druck Min. Pressure | Normaldruck Normal Pressure | Betriebstemperatur Operateure Operating Temperature | Anlegekraft / kg Contact force | A | B | C | C1 | D | D1 | D2 | E | F | H1 | H2 | K | L | Q | U1 | U2 | O (O-ring) | Port | Gewicht Weight (kg) | | |
|---------------------------|---------------------------------------|---|---------------|-----------------------------|-----------------------------|--------------------------------|---|-----------------------------------|-------|------|------|------|----------|------|------|----|------|------|------|----------|-----|------|------|------|---------------|------|------------------------|---|------|
| 1056-WS16A | Spring | 600 kgf | 8 | 35 Mpa | 5 Mpa | 21 Mpa | 0° ~ +70° | - | 85.1 | 75.4 | 64.5 | 23.9 | M35 x1.5 | 38.1 | 60.5 | 16 | 12.4 | 11.2 | 7.6 | M10 x1.5 | 4.5 | - | 41.1 | 23.9 | - | - | 0.60 | | |
| 1056-WS16B | Hidrolik Hydraulic | 600 kgf | 8 | | | | | 2.35 | 99.3 | 89.7 | 78.7 | 27.4 | M35 x1.5 | 38.1 | 60.5 | 16 | 12.4 | 14.2 | 17.8 | M10 x1.5 | 4.5 | - | 41.1 | 23.9 | - | - | - | - | 0.60 |
| 1056-WS30A | Spring | 800 kgf | 13 | | | | | - | 105 | 92 | 83 | 25 | M60 x1.5 | 64 | 64 | 25 | 19 | 12.5 | - | M10 x1.5 | - | - | 52 | 52 | P7 | G1/8 | 1.80 | | |
| 1056-WS25B | Hidrolik Hydraulic | 800 kgf | 10.4 | | | | | 6.25 | 102.1 | 91.7 | 77.5 | 26.5 | M50 x1.5 | 64 | 64 | 25 | 19 | 14 | 17.5 | M16 x2 | 6 | 24.5 | 50 | 50 | P7 | G1/8 | 1.80 | | |
| 1056-WS38A | Spring | 1200 kgf | 10.4 | | | | | - | 96.5 | 86.1 | 74.9 | 24.9 | M68 x1.5 | 69.9 | 82.6 | 39 | 25.4 | 12.2 | 10.2 | M20 x2.5 | 6.1 | 27.4 | 55.4 | 55.4 | P10 | G1/8 | 2.20 | | |
| 1056-WS38B | Hidrolik Hydraulic | 1200 kgf | 10.4 | | | | | 8.86 | 102.1 | 91.7 | 78 | 26.4 | M68 x1.5 | 69.9 | 82.6 | 38 | 25.4 | 13.7 | 13.2 | M20 x2.5 | 6.1 | 27.4 | 55.4 | 55.4 | P10 | G1/8 | 2.20 | | |

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Beschreibung

Das Abstützelement wird eingesetzt, um das Durchbiegen und Vibrieren der Werkstücke zu vermeiden.

Typen

Typ A: Ausfahren mit Federkraft; Eine Feder wird verwendet, um die Kontaktkraft zu steuern, wenn sich die Ausstoßstange bis in die höchste Ausstoßposition erstreckt und das Werkstück berührt.

Typ B: Ausfahren mit Öldruck; Wenn der Stützbolzen in tiefster Position ist, wird sie mittels Öldruck betätigt und beim Füllen mit Öl abgestossen und verwendet eine Feder, um die Kontaktkraft mit dem Werkstück zu steuern.

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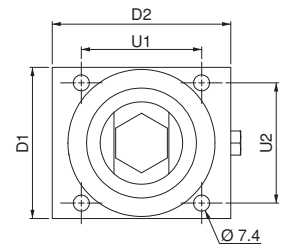
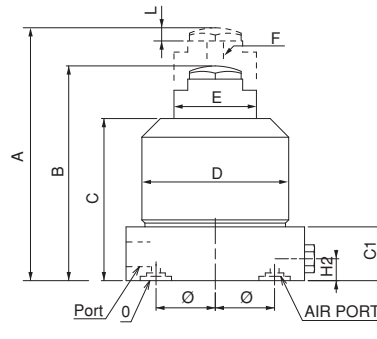
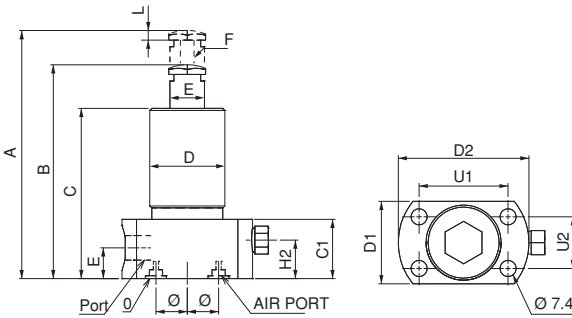
Description

Hydraulic work support is used for avoiding deformation and decreasing vibration during machining.

Types

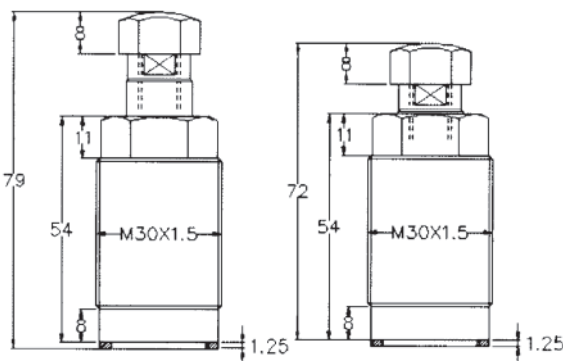
A type: knocking-out with a spring; the spring is used to control a contact force when the knocking out rod (piston rod) extends to a highest knocking-out position and contacts the workpiece.

B type: Knocking-out with oil pressure; when the knocking-out rod is at lowest position, it is operated by means of oil pressure and is knocked out when being filled with oil and uses a spring to control the contact force with the workpiece.

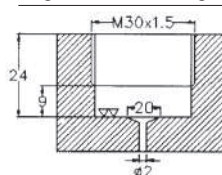


| Referans Nr. | Betriebsdruck Operating Oil Pressure | Wirkungsart Acting Type | Hub Stroke | Kolbenstange Piston Rod Ø (mm) | Stützkraft 200kg/cm ² Supporting Force | Anlegekraft / kg Contact force | A | B | C | D | E | F | Gewicht Weight (kg) |
|--------------|---|----------------------------|---------------|-----------------------------------|---|-----------------------------------|----|----|---|----------|----|---|------------------------|
| 1056-SP16A | 100-350 kg/cm ² | Feder Spring | 8 | 16 | 210 kg | - | 79 | 54 | 8 | M30 x1.5 | 11 | 8 | 0.30 |
| 1056-SP16B | 100-350 kg/cm ² | Hydraulik Hydraulic | 8 | 16 | 210 kg | 2.35 | 72 | 54 | 8 | M30 x1.5 | 11 | 8 | 0.30 |

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Montagedetails / Mounting details



Hydraulisches Abstützelement

Hydraulic Work Support



SP16A

SP16B

| Referenz-Nr. Order No. | Temperatur bis zu Temp. up to | Zylinder Piston Ø D (mm) | Kolbenstange Piston Rod Ø (mm) | Zug bei 100 bar Force to pull at 100 bar (kgf) | Zug bei 500 bar Force to pull at 500 bar (kgf) | Federückstellung Spring return force, min. (N) | Ölvolumen pro 10 mm Hub Oil volume per 10 mm stroke (cm ³) | a (mm) | b (mm) | c (mm) | f (mm) | g (mm) | h (mm) | k (mm) | m (mm) | n (mm) | o | p | r (mm) | s (mm) | t (mm) | SW (mm) | Hub Stroke ± 1 (mm) | I ± 1 (mm) | Gewicht Weight (kg) |
|---------------------------|----------------------------------|-----------------------------|-----------------------------------|---|---|---|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|--------|--------|--------|---------|------------------------|------------|------------------------|
| 1057-010016 | 100 °C | 16 | 10 | 110 | 600 | 40 | 1.22 | 60 | 35 | 22 | 30 | 6.5 | 30 | 17.5 | 16.5 | 11 | M6x12 | G1/4 | - | 40 | 22 | 8 | 8 | 78 | 0.8 |
| 1057-015016 | 150 °C | | | | | | | | | | | | | | | | | | | | | | | | |
| 1057-010025 | 100 °C | 25 | 16 | 270 | 1430 | 140 | 2.90 | 65 | 45 | 27 | 50 | 8.5 | 33 | 22.5 | 18 | 11 | M10x15 | G1/4 | - | 50 | 30 | 13 | 8 | 91 | 1.2 |
| 1057-015025 | 150 °C | | | | | | | | | | | | | | | | | | | | | | | | |
| 1057-010032 | 100 °C | 32 | 20 | 460 | 2420 | 195 | 4.90 | 75 | 55 | 35 | 55 | 10.5 | 38 | 27.5 | 22 | 11 | M12x15 | G1/4 | - | 55 | 35 | 17 | 10 | 110 | 1.8 |
| 1057-015032 | 150 °C | | | | | | | | | | | | | | | | | | | | | | | | |
| 1057-010040 | 100 °C | 40 | 25 | 730 | 3790 | 270 | 7.65 | 85 | 63 | 35 | 63 | 10.5 | 40 | 31.5 | 24 | 11 | M16x25 | G1/4 | 4 | 63 | 40 | - | 10 | 114 | 2.6 |
| 1057-015040 | 150 °C | | | | | | | | | | | | | | | | | | | | | | | | |
| 1057-010050 | 100 °C | 50 | 32 | 1100 | 5730 | 440 | 11.60 | 100 | 75 | 35 | 76 | 13 | 44 | 37.5 | 27 | 13 | M20x25 | G1/4 | 4 | 76 | 45 | - | 12 | 125 | 3.8 |
| 1057-015050 | 150 °C | | | | | | | | | | | | | | | | | | | | | | | | |
| 1057-010063 | 100 °C | 63 | 40 | 1790 | 9230 | 430 | 18.60 | 125 | 95 | 44 | 95 | 17 | 50 | 47.5 | 26 | 17 | M27x40 | G1/2 | 4 | 95 | 65 | - | 12 | 146 | 6.7 |
| 1057-015063 | 150 °C | | | | | | | | | | | | | | | | | | | | | | | | |
| 1057-010080 | 100 °C | 80 | 50 | 2920 | 15180 | 760 | 30.63 | 160 | 120 | 46 | 120 | 21 | 60 | 60 | 34 | 21 | M30x40 | G1/2 | 5 | 120 | 80 | - | 12 | 193 | 12.8 |
| 1057-015080 | 150 °C | | | | | | | | | | | | | | | | | | | | | | | | |
| 1057-100100 | 100 °C | 100 | 63 | 4560 | 23500 | 1200 | 47.36 | 200 | 150 | 55 | 158 | 25 | 64 | 75 | 35 | 25 | M42x60 | G1/2 | 6 | 158 | 108 | - | 12 | 185 | 24 |
| 1057-150100 | 150 °C | | | | | | | | | | | | | | | | | | | | | | | | |

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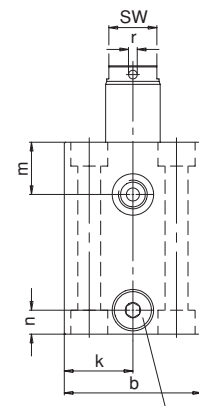
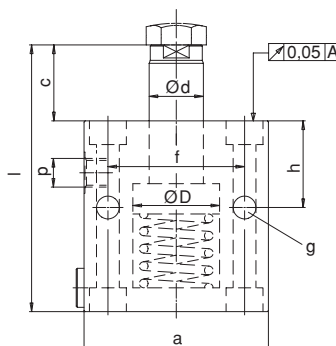
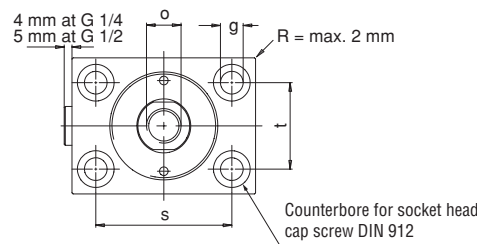
- Toleranzen für Längen- und Winkelmaße nach DIN 7168-m
- Tolerances for length and angle dimensions as per DIN 7168-m

wichtige Hinweise

Wenn die Möglichkeit besteht, dass aggressive Schneid- und Kühlmittel durch den Sintermetallluftfilter in das Zylinderinnere eindringen, muss ein Entlüftungsschlauch verbunden und in einer geschützten Position angeordnet sein.

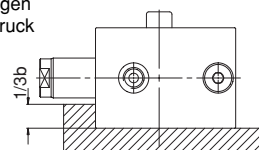
Important notes

If there is a possibility that aggressive cutting lubricants and coolants penetrate through the sintered metal air filter into the cylinder's interior, a vent hose has to be connected and be placed in a protected position.



Die Zylinder müssen vorn getragen werden, um zu funktionieren. Druck über 250 bar

Cylinders must be supported at the front for operating pressures exceeding 250 bar



Entlüftung mit Stopfen mit Sintermetall-Luftfilter
Bleeding by plug with sintered metal air filter

Anwendung

Der pneumatische Schwenkspanner ist die beste Auswahl, wenn Werkstücke frei zugänglich eingelegt werden müssen und höhere Spannkraften in Spanneinrichtungen benötigt sind.

Funktion

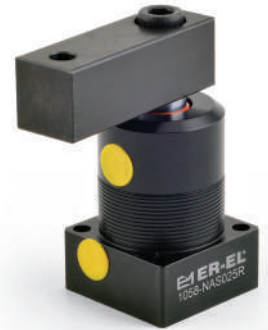
Der Zylinder hat Zieh-Eigenschaft. Der Gesamthub entspricht dem Dreh- und Ziehhub.

Type

Der Zylinder übt Druck nach unten aus. Er bewegt sich im Uhrzeigersinn und umgekehrt. Standardwinkel ist 90°, optional 0°-45° und 60°.

Material

Der Grundkörper ist aus Aluminiumlegierung.



Application

When machining a workpiece by means of a machine tool, a pneumatic swing clamping cylinder will be your best choice if the placing and taking of the workpiece are not allowed to be interfered by the clammer and need a larger clamping force.

Function

This cylinder belongs to a pull cylinder of which the total stroke is equal to the sum of a swing stroke and a clamping stroke, and is usually used within the clamping stroke.

Type

This swing cylinder belongs to a double-acting type which is operated mainly in a downward pressing manner, including clockwise swing and counterclockwise swing; standard angle is 90°, and optional angles include 0°, 45°, 60°; clamping means includes single arm or double arms; the mounting manner includes threaded type and lower flange type for manifold mounting with O-ring seal.

Material

This material of the main body is aluminum alloy.

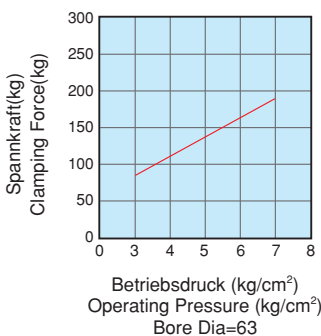
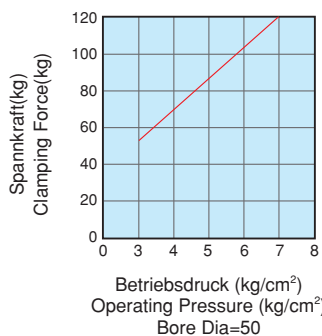
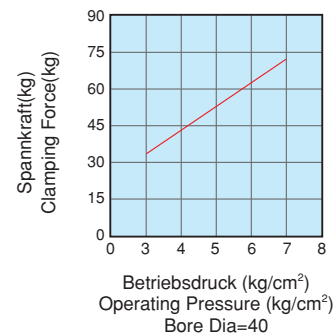
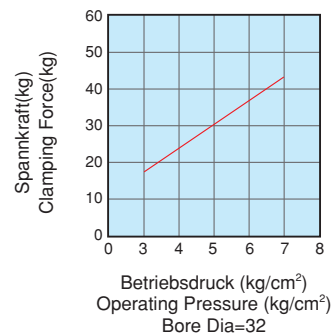
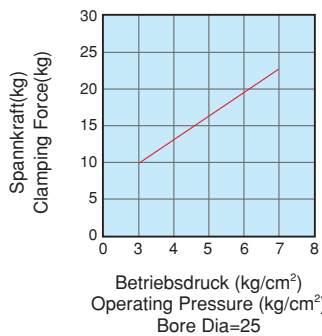


Bestellbeispiel / Ordering example

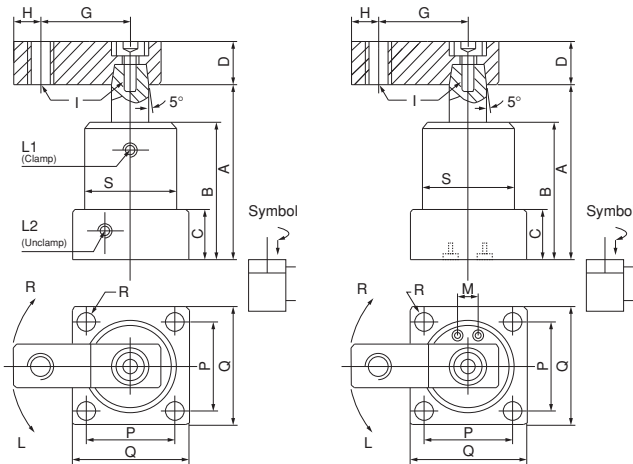
| Referans Nr. | NAS Temel No. Base No. | T Type Flansch Flange T: verzahnt T: Threaded | D Arm Type D: Doppelarm D: Double Arm Leer : Einzelbewegung Blank: Single Arm | L – Drehrichtung Swivel Direction L: links L: Left R: rechts R: Right | 40 Kolben / Piston Ø 25 32 40 50 63 | x 90° – Winkel / Angle 0° 45° 60° 90° 180° |
|--------------|------------------------------|--|--|---|---|--|
|--------------|------------------------------|--|--|---|---|--|

Schematische Übersicht theoretischer Spannkraften unter unterschiedlichem pneumatischen Druck

Schematic view showing a theoretical clamping force under different pneumatic pressure:



| Referenz-Nr. Order No. | Spann-Type Mounting Type | Spannarm Clamping Arm | Max. Druck Max. Pressure | Normaldruck Normal Pres. | Bewegungs-Type Acting Type | Drehwinkel Swivel Angle | Drehhub Swivel Stroke (mm) | Spannhub Clamp Str. (mm) | Bohrdurchmesser Diameter Ø (mm) | Kolbenstange Piston Rod Ø | Spannkraft Force (25kg/cm ²) | A (mm) Lösen Unclamp | B (mm) | C (mm) | D (mm) | G (mm) | H (mm) | L1 Spannen / Clamp L2 Lösen / Unclamp | I (mm) | P (mm) | Q (mm) | R (mm) | S (mm) | M (mm) | F (mm) | Gewicht Weight (kg) |
|---------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|--|------------------------------|-------------------------------|-----------------------------|------------------------------------|------------------------------|---|-------------------------|--------|--------|--------|--------|--------|--|--------|--------|--------|--------|--------|--------|--------|------------------------|
| 1058-NAS025 | Bottom Flange | 1-Arm / Single Arm | 7 kg/cm ² | 4-6 kg/cm ² | doppelseitige Bewegung / Double Acting | 90° (0° 45°, 60°, 180°) ± 2° | 12 | 14 | 25 | 14 | 16 | 95.5 | 65.5 | 23 | □ 16 | 30 | 8 | M5 | M6 | 30 | 40 | Ø 4.5 | Ø 35 | 18 | 12.5 | 0.40 |
| 1058-NAS032 | | | | | | | 12 | 14 | 32 | 16 | 30 | 102.5 | 71 | 23 | □ 19 | 50 | 9 | 1/8 PF | M8 | 44 | 54 | Ø 6.5 | Ø 50 | 22 | 17 | 0.70 |
| 1058-NAS040 | | | | | | | 12 | 15 | 40 | 16 | 50 | 106 | 75 | 26 | □ 19 | 50 | 9 | 1/8 PF | M8 | 48 | 58 | Ø 6.5 | Ø 55 | 26 | 19.5 | 0.85 |
| 1058-NAS050 | | | | | | | 14 | 15 | 50 | 20 | 85 | 113 | 80 | 26 | □ 25.4 | 70 | 10 | 1/8 PF | M10 | 55 | 68 | Ø 8.5 | Ø 65 | 30 | 24 | 1.30 |
| 1058-NAS063 | | | | | | | 14 | 15 | 63 | 20 | 140 | 119 | 86 | 30 | □ 25.4 | 70 | 10 | 1/8 PF | M10 | 64 | 80 | Ø 8.5 | Ø 70 | 40 | 20 | 1.80 |

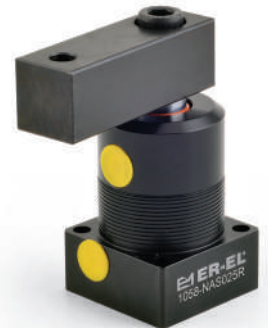


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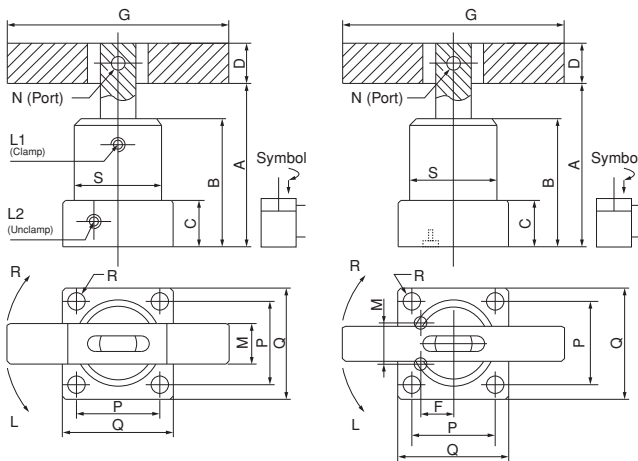
NAS – Flanschversion, 1-Arm
Mit Rohr oder Verteiler

NAS – Flange Version, Single Arm
With Pipe or the Manifold

- Bei Bestellung bitte Bewegungs-Type und Drehwinkel angeben.
- Before buying please, movement indicate the type and rotation angle.



| Referenz-Nr. Order No. | Spann-Type Mounting Type | Spannarm Clamping Arm | Max. Druck Max. Pressure | Normaldruck Normal Pres. | Bewegungs-Type Acting Type | Drehwinkel Swivel Angle | Drehhub Swivel Stroke (mm) | Spannhub Clamp Str. (mm) | Bohrdurchmesser Diameter Ø (mm) | Kolbenstange Piston Rod Ø | Spannkraft Force (25kg/cm ²) | A (mm) Lösen Unclamp | B (mm) | C (mm) | D (mm) | G (mm) | N (mm) | P (mm) | Q (mm) | R (mm) | S (mm) | M (mm) | F (mm) | Gewicht Weight (kg) | |
|---------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|--|------------------------------|-------------------------------|-----------------------------|------------------------------------|------------------------------|---|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------------------|------|
| 1058-NASD032 | Bottom Flange | 2-Arm / Double Arm | 7 kg/cm ² | 4-6 kg/cm ² | doppelseitige Bewegung / Double Acting | 90° (0° 45°, 60°, 180°) ± 2° | 12 | 14 | 32 | 16 | 30 | 102.5 | 71 | 23 | □ 19 | 100 | 1/8 PF | Ø 8 | 44 | 54 | Ø 6.5 | Ø 50 | 22 | 17 | 0.80 |
| 1058-NASD040 | | | | | | | 12 | 15 | 40 | 16 | 50 | 106 | 75 | 26 | □ 19 | 100 | 1/8 PF | Ø 8 | 48 | 58 | Ø 6.5 | Ø 55 | 26 | 19.5 | 0.95 |
| 1058-NASD050 | | | | | | | 14 | 15 | 50 | 20 | 85 | 113 | 80 | 26 | □ 22 | 120 | 1/8 PF | Ø 8 | 55 | 68 | Ø 8.5 | Ø 65 | 30 | 24 | 1.40 |
| 1058-NASD063 | | | | | | | 14 | 15 | 63 | 25 | 140 | 119 | 86 | 30 | □ 22 | 120 | 1/8 PF | Ø 8 | 64 | 80 | Ø 8.5 | Ø 75 | 40 | 29 | 1.90 |



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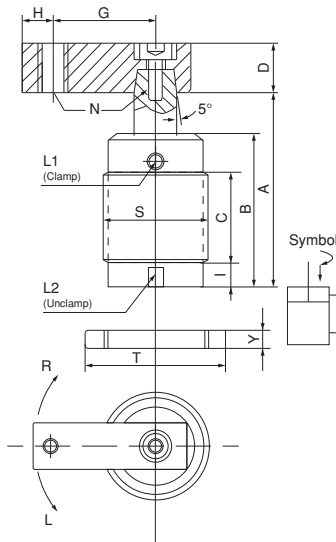
NASD – Flanschversion, Doppellarm
Mit Rohr oder Verteiler

NASD – Flange Version, Double Arms
With Pipe or the Manifold

- Bei Bestellung bitte Bewegungs-Type und Drehwinkel angeben.
- Before buying please, movement indicate the type and rotation angle.



| Referenz-Nr. Order No. | Spann-Type Mounting Type | Spannarm Clamping Arm | Max. Druck Max. Pressure | Normaldruck Normal Pres. | Bewegungs-Type Acting Type | Drehwinkel Swivel Angle | Drehhub Swivel Stroke (mm) | Spannhub Clamp. Str. (mm) | Bohrdurchmesser/ Bore Diameter Ø (mm) | Kolbenstange Piston Rod Ø | Spannkraft/Clamp Force (25kg/cm ²) | A (mm) Lösen Unclamp | B (mm) | C (mm) | D (mm) | G (mm) | H (mm) | I (mm) | L1 Spannen / Clamp L2 Lösen / Unclamp | N (mm) | S (mm) | T (mm) Kolbenmutter 2/St. T (mm) 2 pcs/set | Y (mm) | Gewicht Weight (kg) |
|---------------------------|-----------------------------------|--------------------------|-----------------------------|-----------------------------|--|----------------------------|-------------------------------|------------------------------|--|------------------------------|---|-------------------------|--------|--------|--------|--------|--------|--------|--|----------|----------|---|--------|------------------------|
| 1058-NATS025 | verzahnter Körper / Threaded Body | 1-Arm / Single Arm | 7 kg/cm ² | 4-6 kg/cm ² | doppelseitige Bewegung / Double-Acting | 90° ± 2° | 14 | 14 | 25 | 14 | 16 | 104 | 70 | 35 | □ 16 | 50 | 6 | 10 | M5 | M6 x1 | M40 x1.5 | Ø 58 | 9 | 0.80 |
| 1058-NATS032 | | | | | | | 14 | 16 | 32 | 16 | 30 | 113 | 79 | 40 | □ 19 | 60 | 9 | 13 | 1/8 PF | M8 x1.25 | M50 x1.5 | Ø 70 | 11 | 1.10 |
| 1058-NATS040 | | | | | | | 14 | 15 | 40 | 16 | 50 | 116 | 83 | 45 | □ 19 | 70 | 9 | 13 | 1/8 PF | M8 x1.25 | M55 x1.5 | Ø 75 | 11 | 1.25 |
| 1058-NATS050 | | | | | | | 14 | 14 | 50 | 20 | 80 | 120 | 87 | 50 | □ 25 | 80 | 10 | 13 | 1/8 PF | M12 x1.5 | M65 x1.5 | Ø 85 | 12 | 1.70 |
| 1058-NATS063 | | | | | | | 15 | 15 | 63 | 20 | 140 | 127 | 92 | 56 | □ 25 | 90 | 10 | 13 | 1/8 PF | M12 x1.5 | M80 x1.5 | Ø 105 | 15 | 2.20 |



1058

NATS – Verzahnte Version, 1-Arm
Mit Rohr

NATS – Threaded Version, Single Arm
With Pipe

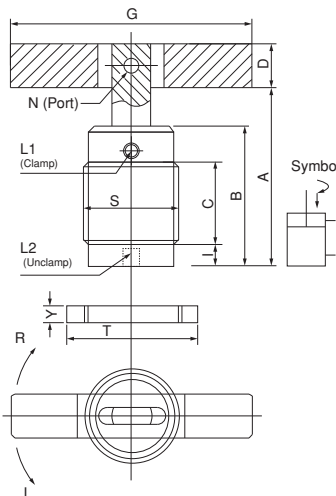
- Bei Bestellung bitte Bewegungs-Type und Drehwinkel angeben.
- Before buying please, movement indicate the type and rotation angle.



Pneumatischer Schwenkspanner

Pneumatic Swing Clamp

| Referenz-Nr. Order No. | Spann-Type Mounting Type | Spannarm Clamping Arm | Max. Druck Max. Pressure | Normaldruck Normal Pres. | Bewegungs-Type Acting Type | Drehwinkel Swivel Angle | Drehhub Swivel Stroke (mm) | Spannhub Clamp. Str. (mm) | Bohrdurchmesser/ Bore Diameter Ø (mm) | Kolbenstange Piston Rod Ø | Spannkraft/Clamp Force (25kg/cm ²) | A (mm) Lösen Unclamp | B (mm) | C (mm) | D (mm) | G (mm) | I (mm) | L1 Spannen / Clamp L2 Lösen / Unclamp | N (mm) | S (mm) | T (mm) Kolbenmutter 2/St. T (mm) 2 pcs/set | Y (mm) | Gewicht Weight (kg) |
|---------------------------|-----------------------------------|--------------------------|-----------------------------|-----------------------------|--|-------------------------------|-------------------------------|------------------------------|--|------------------------------|---|-------------------------|--------|--------|--------|--------|--------|--|--------|----------|---|--------|------------------------|
| 1058-NATSD032 | verzahnter Körper / Threaded Body | 2-Arm / Double Arm | 7 kg/cm ² | 4-6 kg/cm ² | doppelseitige Bewegung / Double-Acting | 90° (0°, 45°, 60°, 180°) ± 2° | 14 | 16 | 32 | 16 | 30 | 113 | 79 | 40 | □ 19 | 100 | 13 | 1/8 PT | Ø 8 | M50 x1.5 | Ø 70 | 11 | 1.10 |
| 1058-NATSD040 | | | | | | | 14 | 15 | 40 | 16 | 50 | 116 | 83 | 45 | □ 19 | 100 | 13 | 1/8 PT | Ø 8 | M55 x1.5 | Ø 75 | 11 | 1.30 |
| 1058-NATSD050 | | | | | | | 14 | 14 | 50 | 20 | 85 | 120 | 77 | 50 | □ 22 | 120 | 13 | 1/8 PT | Ø 8 | M65 x1.5 | Ø 85 | 12 | 1.80 |



1058

NATSD – Verzahnte Version, Doppelarm
Mit Rohr

NATSD – Threaded Version, Double Arms
With Pipe

- Bei Bestellung bitte Bewegungs-Type und Drehwinkel angeben.
- Before buying please, movement indicate the type and rotation angle.

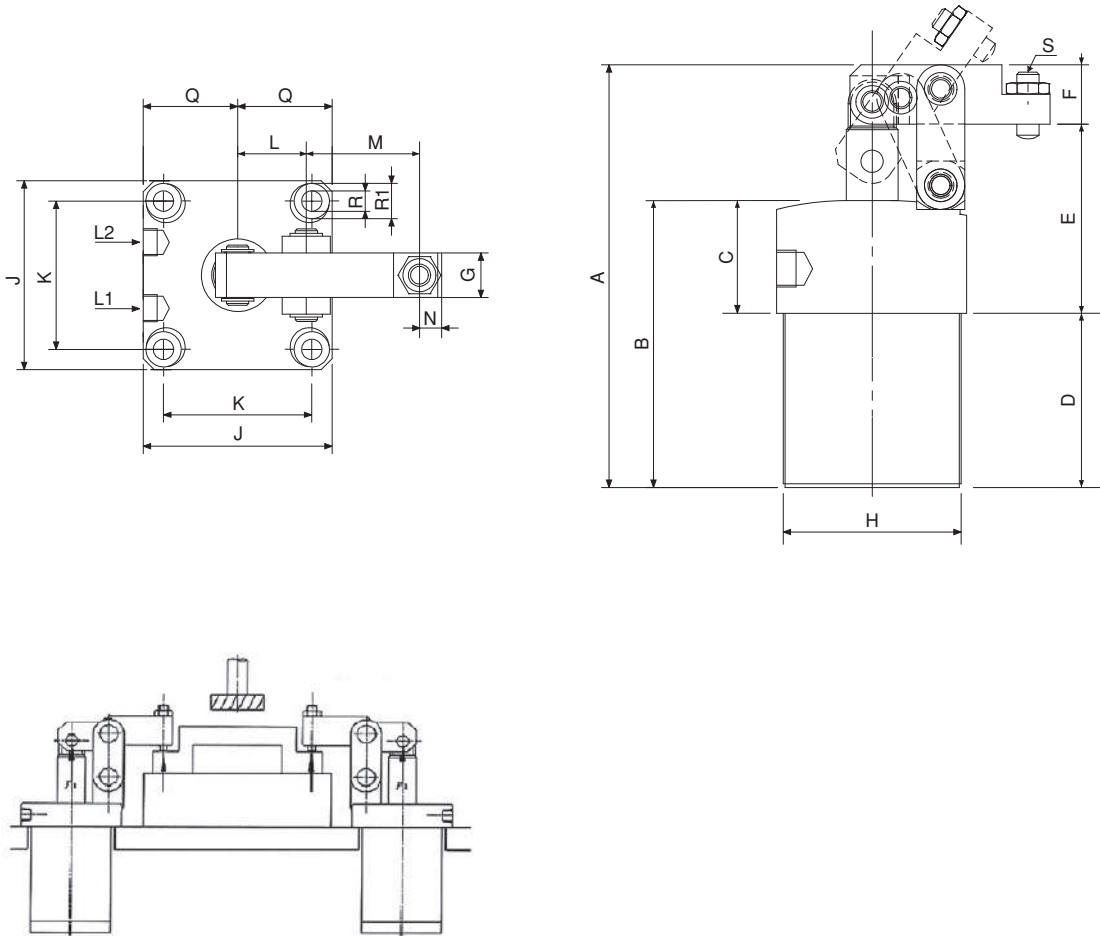


| Referenz-Nr. Order No. | Betriebsdruck Operating Pressure | Arbeitstemperatur Operating Temperature | Spann-Typ Mounting Type | Hub Stroke (mm) | Bohrdurchmesser Diameter Ø (mm) | Kolbenstange Piston Rod Ø (mm) | Spannkraft Clamp. Force (7kg/cm ²) | A | B | C | D | E | F | G | H | I | J | K | L | M | O | N | P | Q | R | R1 | S | L1 Spannen / Clamp | L2 Lösen / Unclamp | Gewicht Weight (kg) |
|---------------------------|-------------------------------------|--|--|--------------------|------------------------------------|-----------------------------------|---|-------|------|----|------|----|----|----|----------|-----|----|----|------|----|----|----|------|------|-----|----|-----------|--------------------|--------------------|------------------------|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1058-PLCU25 | 4-10 kgf/cm ² | -10° ~ +80° | Kopfflasch & Eijnschraubzylinder Upper Flange & Threaded Body | 22 | Ø 25 | Ø 14 | 27 | 128.5 | 86.5 | 25 | 61.5 | 50 | 17 | 16 | M40 x1.5 | 60 | 50 | 37 | 18 | 23 | 23 | 7 | 35 | 25 | 5.5 | 9 | M6 x1 | M5 x0.8 | 0.60 | |
| 1058-PLCU32 | | | | 28 | Ø 32 | Ø 16 | 40 | 149.5 | 97.5 | 25 | 72.5 | 57 | 20 | 18 | M50 x1.5 | 70 | 60 | 45 | 22 | 30 | 23 | 8 | 40 | 30 | 6.5 | 11 | M8 x1.25 | G 1/8 | 1.00 | |
| 1058-PLCU40 | | | | 30 | Ø 40 | Ø 16 | 66 | 157.5 | 97.5 | 25 | 72.5 | 60 | 25 | 20 | M55 x1.5 | 75 | 65 | 50 | 24 | 32 | 26 | 10 | 42.5 | 32.5 | 6.5 | 11 | M8 x1.25 | G 1/8 | 1.20 | |
| 1058-PLCU50 | | | | 30 | Ø 50 | Ø 20 | 105 | 174 | 104 | 25 | 79 | 65 | 30 | 22 | M65 x1.5 | 88 | 75 | 58 | 27.5 | 36 | 32 | 14 | 50.5 | 37.5 | 8.5 | 14 | M12 x1.75 | G 1/8 | 2.00 | |
| 1058-PLCU63 | | | | 30 | Ø 63 | Ø 20 | 166 | 179 | 105 | 25 | 80 | 69 | 30 | 22 | M80 x1.5 | 108 | 90 | 70 | 32 | 42 | 35 | 14 | 63 | 45 | 8.5 | 14 | M12 x1.75 | G 1/8 | 2.70 | |

1058



Mit Rohr / With Pipe



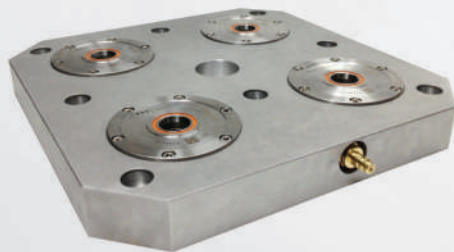
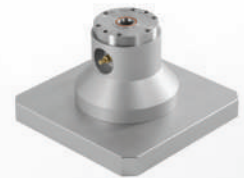
Zero Clamp Anwendung

ER-EL Zero Clamp Application

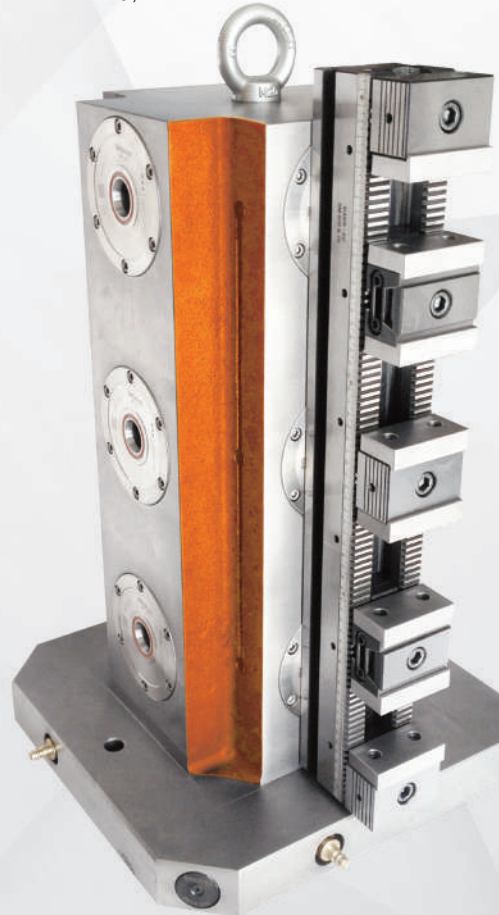


der Wiederholtoleranz
Höhepunkt

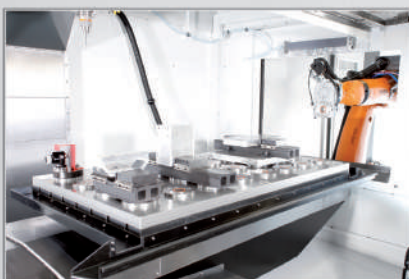
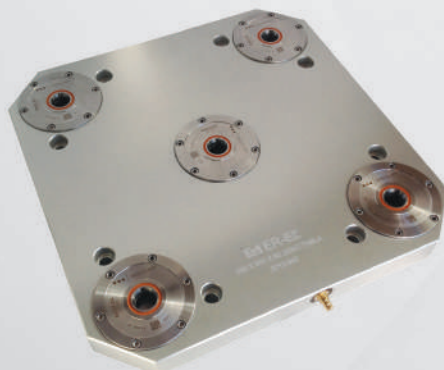
0,005 Wiederholtoleranz
0,005 repeating tolerance



Nr. 2475



Nr. 2480





ER-EL® ZERO CLAMP

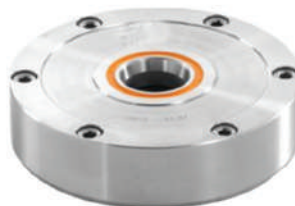
Null-Punkt-Spannsystem
Zero Point Clamping Systems



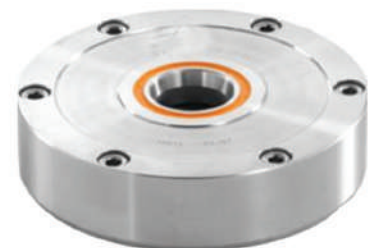
Ø90
1250 kgf



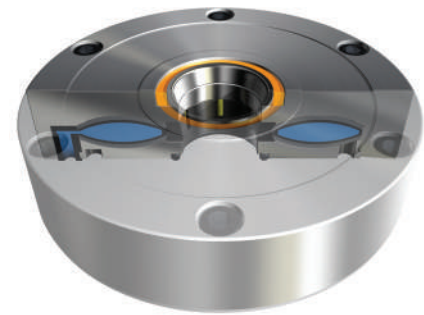
Ø120
2500 kgf



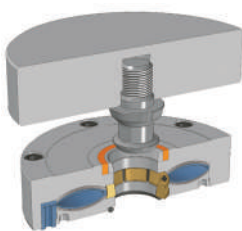
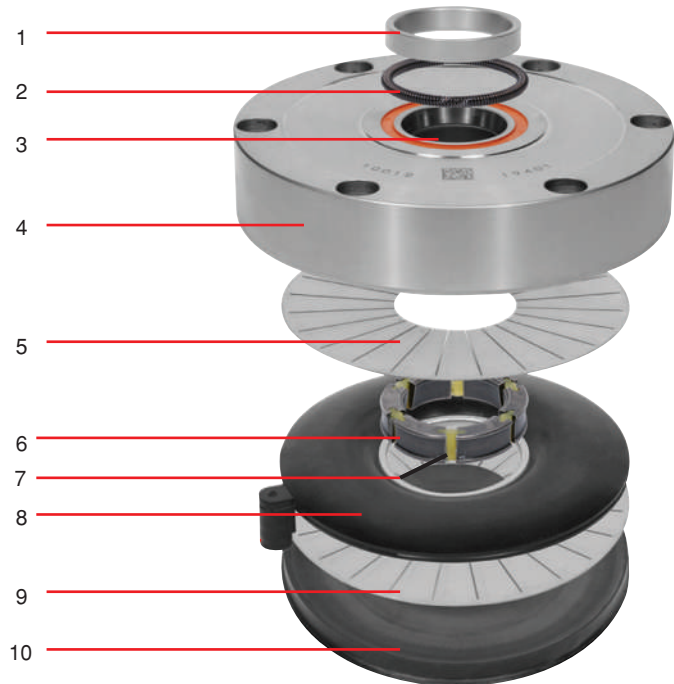
Ø138
4000 kgf



Ø190
6000 kgf

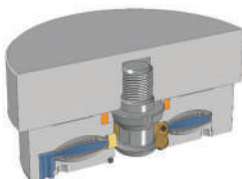

Beschreibung / Description

- 1- Gehärteter Stahlring / Hardened steel cone
- 2- Radiale Feder / Radial spring
- 3- Gummi NBR / NBR rubber
- 4- Spannfutter / Chuck housing
- 5- Spannplatte / Clamping sheets
- 6- Verriegelung / Locking unit
- 7- Distanzscheibe (Elastomer) / Spacer (Elastomer)
- 8- Druckluftschlauch / Air hose
- 9- Spannplatten / Clamping sheets
- 10- Gehäusedeckel / Housing cover



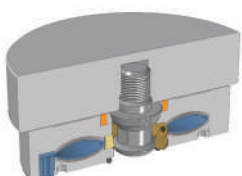
Palette wird einfach auf den geöffneten ZeroClamp Spanntopf aufgesetzt. Dabei besteht keine Gefahr der Verkantung

The pallet is placed on the opened ZeroClamp chuck.



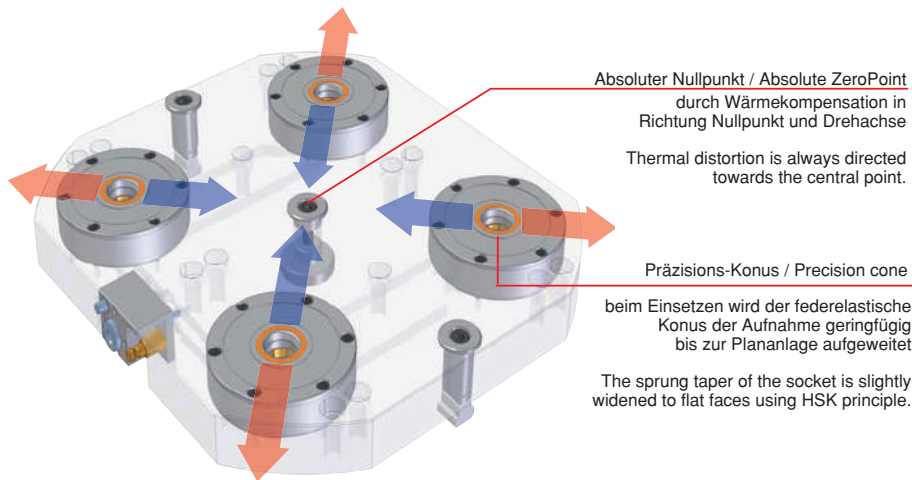
Die Federelemente halten durch den Luftdruck (6 bar) im Luftschlauch die Verriegelungseinheit (Klemmkeile) offen

The spring elements keep the locking unit (clamping wedges) open with the help of the air pressure inside the air hose.



Durch das Entlüften des Luftschlauchs positioniert der Spanntopf das Werkstück an die Plananlage mit einer Haltekraft von 25 kN (mit 2,5 µm Wiederholgenauigkeit)

Venting the air hose results in the positioning and clamping of the clamp bolt in the chuck.



Absoluter Nullpunkt / Absolute ZeroPoint
durch Wärmekompensation in Richtung Nullpunkt und Drehachse

Thermal distortion is always directed towards the central point.

Präzisions-Konus / Precision cone

beim Einsetzen wird der federelastische Konus der Aufnahme geringfügig bis zur Plananlage aufgeweitet

The sprung taper of the socket is slightly widened to flat faces using HSK principle.

- Der absolute Nullpunkt: Kompensation der Wärmeausdehnungen immer zur Mittelachse
- Ausgleich von Stichmaßfehlern bis zu max. ± 0,1 mm über 2 Spanntöpfe möglich
- Spielfreie Spezial-Spannkonus für vibrationsarmen Lauf
- Kein Einsatz von Schwert- und Wanderbolzen erforderlich

- Absolute ZeroPoint: Compensation for thermal change is always towards centre axis
- Clamping stud location errors of up to ±0.1mm can be compensated for
- Precision clamping cones are free from play for low-vibration operation
- Special sword studs or loose/sliding studs are not required

HSK-Prinzip

Klassische Systeme zentrieren entweder über eine zylindrische Passung oder über einen starren Kegel. Bei einer zylindrischen Passung ist immer eine Spielpassung (z. B. 25 H5 Aufnahme / 25 h5 Bolzen) erforderlich. Eine solche Kombination kann bis zu 18 µm Spiel aufweisen. Bei konischen Passungen muss der Konus extrem genau abgestimmt werden. Wenn nicht, tritt sofort ein Überstand der Palette auf (bei zu großen Bolzen), oder es kommt zu einer Spielpassung wie bei zylindrischen Systemen.

Das ZeroClamp Nullpunktspannsystem funktioniert vergleichbar dem HSK-Werkzeugkegel. Beim HSK-Werkzeugkegel wird beim Einziehen des Kegels in die Aufnahme der dünnwandige Kegel solange verformt bis die Planseite des Kegels an der Aufnahme anliegt.

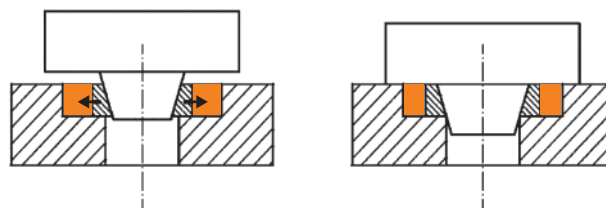
Im Prinzip arbeitet das Nullpunktspannsystem ähnlich: Der Konusring der Aufnahme wird beim Einziehen minimal aufgeweitet. Wenn die Palette oder das Werkstück an der Plananlage anliegen ist ein absolut spielfreier Sitz gewährleistet.

HSK Principle

Traditional systems use either a cylindrical seat or a rigid cone for centring. A cylindrical seat always requires some amount of play (i.e. 25 H5 holder / 25 h5 bolt). Play in such a combination may be as much as 0.018. With a conical fit the cone must be shaped precisely. Otherwise the pallet will protrude if the bolts are too large, or else the play will be the same as in a cylindrical system.

The function of the Zero Clamp zero point clamping system resembles that of a hollow cone HSK shank. In this system the thin-walled cone is deformed as it is drawn in until its surface exactly matches the contours of the seat.

Zero Clamp zero point clamping system works the same way, using face and taper contact. While the cone is being drawn in, the seat ring will be widened minimally. Within the pallet or the workpiece in contact with the plane seat and so any play is eliminated.



Vergleich der Prozesse / Comparison Processes

Installationsprozess

Setup Process

Benötigte Zeit / Required Time

%100

1. Reinigung der Kontaktflächen der Platte / Clean the table's contact surfaces
2. Einstellung der Befestigungsschrauben / Adjust the clamping bolts
3. Ausrichtung / Alignment
4. Befestigungsschrauben anziehen / Secure with clamping screws
5. Kontrolle der Nullpunkte / Check the zero points
6. Starten des Programms. Beenden des Programms / Start the program, End the program

Installationsprozess ER-EL Zero Clamp

ER-EL Zero Clamp installation process

Benötigte Zeit / Required Time

%10

1. Zero Clamp Reinigung der Kontaktflächen der Platte / Clean the Zero Clamp contact surfaces
- 2.
3. **Größter Zeitfaktor komplett eliminiert!**
4. **Biggest time factor completely omitted!**
- 5.
6. Starten des Programms. Beenden des Programms / Start the program, End the program

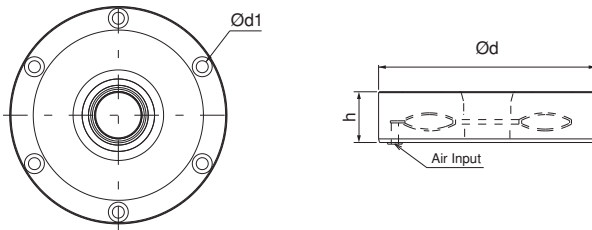
| ZeroClamp ZeroClamp Unique Features | Marktübliche Systeme Competitor Systems |
|--|---|
| <p>Patentiertes Design, einfacher Aufbau. Durch extrem wenige und einfache Bauteile wird eine hohe Zuverlässigkeit erreicht. Selbst Späne können dem Funktionsprinzip nichts anhaben.</p> <p>Patent-registered design with a simple layout. Just a few simple components provide an extremely reliable design. Even swarf will not affect the function of the clamping unit.</p> | <p>Komplexe Mechanik mit Kugellagern, Kolben, Schiebern und anderen Bauteilen. Bei Verschmutzung durch Späne besteht die Gefahr der Blockade oder fehlerhaften Funktion.</p> <p>Complex mechanics using ball cages, pistons, valves, etc. When contaminated with swarf there is a risk of blockage and/or malfunction.</p> |
| <p>Höchste Genauigkeit durch HSK-Prinzip. Beim Einzug des Spannbolzens wird der Konusring des Spanntopfes im elastischen Bereich leicht aufgeweitet. Dadurch ergibt sich ein absolut spielfreier hochgenauer Sitz, und eine Wiederholgenauigkeit von 0.005.</p> <p>High precision due to the HSK principle When retracting the clamping bolt, the elastic part of the taper ring of the chuck will be slightly expanded providing a perfect and extremely accurate fit with a repeatability of less than 0.005</p> | <p>Üblicherweise ist eine Fügepassung erforderlich (z. B. 32 mm h5/H5 für Bolzen und Aufnahme). Bei dieser genannten Kombination ist ein minimales Spiel von 0 µm und ein maximales von 0.022 möglich. Wie sollen dabei serienmäßige Wiederholgenauigkeiten bis zu 0.005 erreichbar werden?</p> <p>Normally a light sliding fit is required (e.g. 32 mm h5/H5 for bolts and mountings). In this particular case the minimum backlash is 0 µm whereas the maximum is 0.022 So the claimed repeatability (0.005) must be difficult to achieve.</p> |
| <p>Thermosymmetrie Ausgleich bei thermischen Einflüssen oder Stichmaßfehlern durch das HSK-Prinzip. Die Konusringe gleichen Fehler immer zur Mitte der Spannstellen aus. (Auf einem Rundtisch bleibt beispielsweise die Palettenmitte immer in Achsmitte).</p> <p>Thermal stability Thermal effects and/or micro deviations are compensated for by the hollow shank taper (HSK) principle. The taper rings always compensate for the errors to the centre of the clamping position. (On a rotary table the centre of a pallet always remains on the centre line of the machine).</p> | <p>Starres System mit 3 verschiedenen Bolzentypen. Thermische Einflüsse oder Stichmaßfehler führen zu einer unsymmetrischen Verschiebung ausgehend vom Nullbolzen. (Auf einem Rundtisch wird die Palettenmitte aus der Achsmitte gedrückt)</p> <p>Fixed system with three different bolt designs. Thermal effects and/or micro deviations will cause asymmetrical off sets originating from the zero bolt. (On a rotary table, the centre of a pallet will be pushed away from the centre line of the machine).</p> |
| <p>Nur ein Spannbolzentyp erforderlich. Logistisch einfach handhabbar da in die vorhandene Bolzenbohrung nur ein Bolzentyp eingeschraubt werden muss.</p> <p>Only one type of clamping bolt required. Far simpler to manage as only one type of bolt needs to be screwed into the pin bore.</p> | <p>Im Allgemeinen drei verschiedene Bolzentypen (Nullbolzen, Wander- oder Schwertbolzen, Freibolzen). Logistisch kompliziert. Es muss für jede Vorrichtung dokumentiert werden, welcher Bolzen an welcher Stelle in welcher Winkellage zu montieren ist. Hohe Fehlergefahr!</p> <p>Generally three different types of bolts required (zero bolt, floating or sword bolt, free bolt). Very complicated, each fixture needs to be documented with set up instructions, showing which bolt has to be mounted where and in which angular position. So there is a high risk of errors.</p> |
| <p>Keine Selbsthemmung Im Crashfall kann die Vorrichtung oder das Spannmittel nachgeben und damit möglicherweise die Maschinenspindel gerettet werden. Im Falle einer Beschädigung der Energiezufuhr ist es zum Beispiel über Abdruckschrauben möglich die Vorrichtung zu entfernen.</p> <p>No self-locking. In case of a crash, the fixture or the clamping device can give way, possibly saving the machine spindle. In the case of damage to the airways for energy supply, forcing screws will allow the removal of the fixture.</p> | <p>Bei selbsthemmenden Systemen wird im Falle eines Crashes der größtmögliche Schaden auftreten. Bei Beschädigung der Energiezufuhr muss die Vorrichtung in den meisten Fällen zerstört werden um die Palette zu entfernen.</p> <p>In case of a crash self-locking systems will cause the worst possible damage. In the case of a power loss, in most cases the fixture will have to be completely destroyed in order to be able to remove the pallet.</p> |
| <p>Kein Verkanten Durch konstruktive Maßnahmen kein Verkanten der Bolzen. Unkompliziertes Fügen und Entnehmen auch bei Schräglage oder großem Mittenversatz.</p> <p>No tilting Layout and design will prevent any tilting of the clamping bolts. Easy joining and removal even in inclined positions or with an unbalanced load with a large off set of the centre of gravity.</p> | <p>Teilweise muss ganz stellungsgenau und parallel gefügt oder entnommen werden, da zylindrische oder konische Spannbolzen mit minimaler Verjüngung verwendet werden. Speziell das Entnehmen von stark unsymmetrischen schweren Bauteilen ist sehr problematisch.</p> <p>Joining and removal must be carried out in precisely defined and parallel positions as the cylindrical or tapered clamping bolts used have a minimal taper. The removal of heavy asymmetric components will always cause problems.</p> |
| <p>Pneumatisches System mit geringer Bauhöhe Durch das patentierte Design des Federspeichers sind sehr hohe Haltekräfte gewährleistet. Bereits gängiger Werkstattdruck löst die Spannvorrichtung.</p> <p>Pneumatic system with low installation height Clamping via spring assembly, unclamping by means of compressed air. Patented design for very high clamping force even with standard air-pressures.</p> | <p>Hydraulische Systeme mit den systembedingten Nachteilen: Pumpe - Zuleitung - Kollision – Leckage - Entlüften etc. Bauhöhen der pneumatischen Systeme teils deutlich größer.</p> <p>Hydraulic systems have disadvantages determined by the system: pump, duct, collision, leakage, bleeding, etc. Also, installation costs tend to be more expensive compared to pneumatic systems.</p> |

| Referenz-Nr. Order No. | d | h | d1 | | Spannkraft clamping force Kgf | (g) |
|---------------------------|-----|----|----|----|-------------------------------------|---------|
| | | | | Nm | | |
| 1060-090 | 90 | 22 | M4 | 5 | 1250 | 730 |
| 1060-120 | 120 | 28 | M6 | 14 | 2500 | 1840 |
| 1060-138 | 138 | 33 | M8 | 35 | 4000 | 2860 |
| 1060-190 | 190 | 38 | M8 | 35 | 6000 | 5460 |



1060

- Min. Bar 5.5
- Max. Bar 8



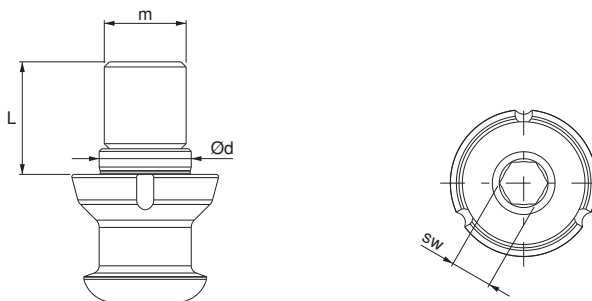
Spannbolzen

Pull Stud

| Referenz-Nr. Order No. | m | L | d | sw | Nm | (g) |
|---------------------------|-----|----|-------|----|-----|---------|
| | | | | | | |
| 1065-12016 | M16 | 22 | 18 k6 | 8 | 170 | 97 |
| 1065-13816 | M16 | 30 | 25 k6 | 8 | 170 | 235 |
| 1065-19024 | M24 | 36 | 30 k6 | 10 | 400 | 460 |



1065



Verschlussbolzen

Body Chip Protector

| Referenz-Nr. Order No. | Zero | (g) |
|---------------------------|------|---------|
| 1067-090 | 90 | 29 |
| 1067-120 | 120 | 85 |
| 1067-138 | 138 | 202 |
| 1067-190 | 190 | 398 |



1067

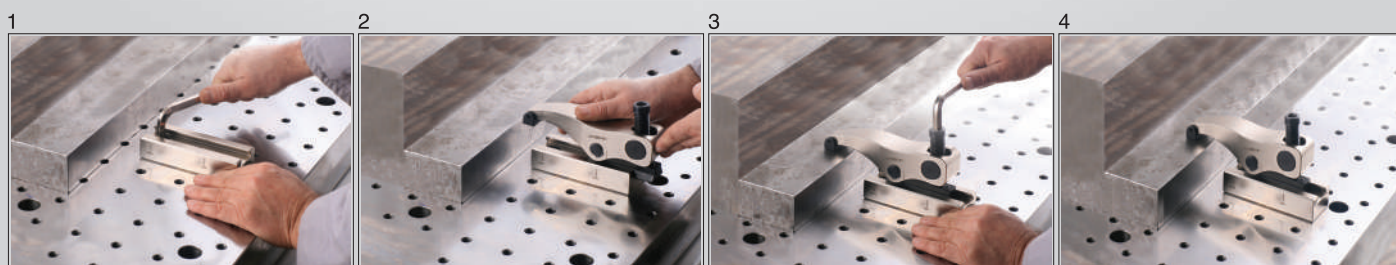
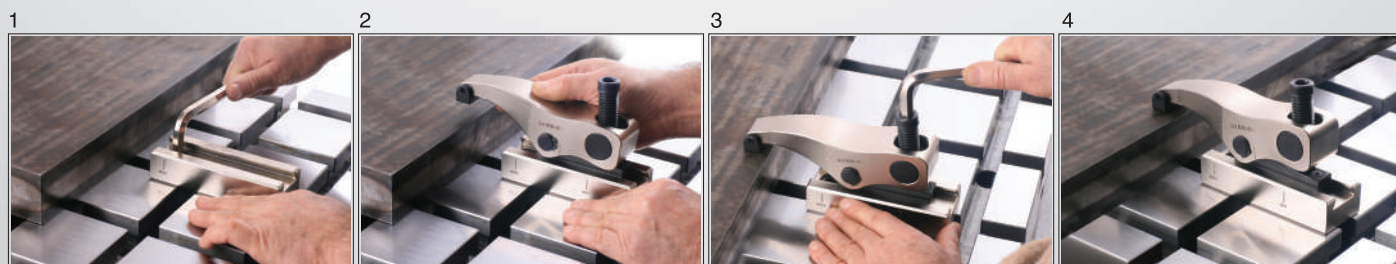
Spannelemente

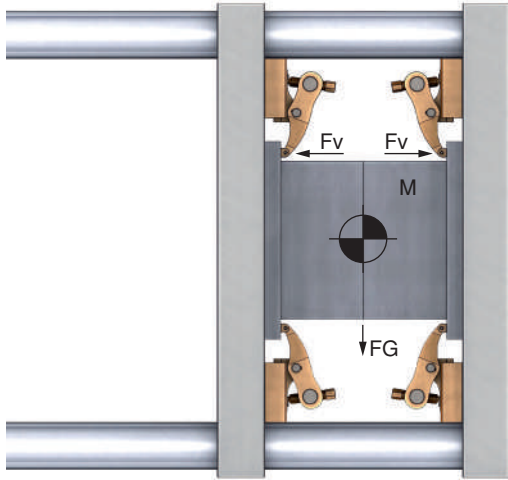
Clamping Equipment



Kraftspanner Verschiebbar

Combined Sliding Clamp





Anwendungsbeispiel für Spritzgusswerkzeuge
Power Clamp For Injection Moulding

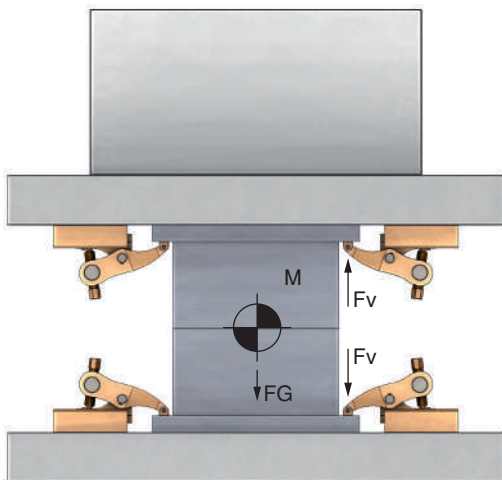
Rechenformel / Formula Calculator

$$\frac{M \times FG}{1000} = \text{kN} \quad \frac{2500 \times 9.81}{1000} = 24.52 \text{ kN}$$

$$\frac{\text{kN}}{\mu} = \text{Ergebnis / Result} \quad \frac{24.52}{0.14} = 175.14 \text{ kN}$$

$$\frac{\text{Ergebnis}}{F_v} = \text{Spann-Anzahl} \quad \frac{175.14 \text{ kN}}{25 \text{ kN}} = 7 \text{ Spannen / Clamp}$$

8 Stück verwenden
8 pcs Use



Anwendungsbeispiel für Presswerkzeuge
Power Clamp For Press Moulding

Rechenformel / Formula Calculator

$$\frac{M \times FG}{1000} = \text{kN} \quad \frac{5000 \times 9.81}{1000} = 49.050 \text{ kN}$$

$$\frac{\text{kN}}{\mu} = \text{Ergebnis / Result} \quad \frac{49.05}{0.14} = 350.35 \text{ kN}$$

(Oberes Werkzeug %60) (%60 Oberes Werkzeug= 210.21)
(Unteres Werkzeug %40) (%40 Unteres Werkzeug= 140.14)

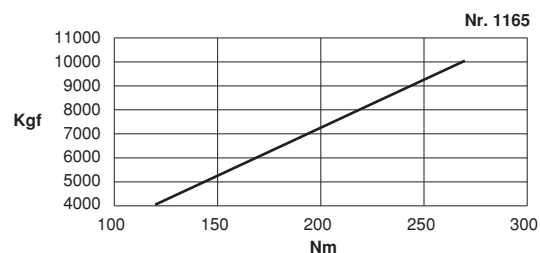
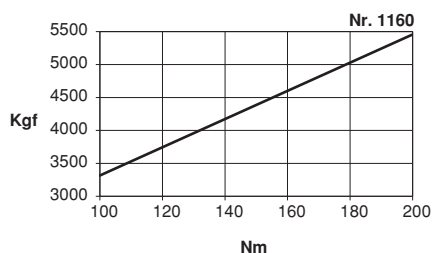
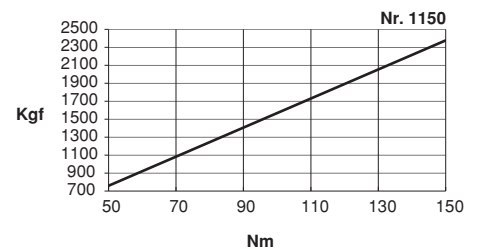
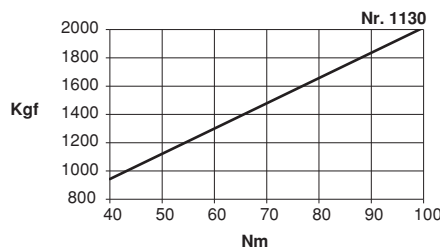
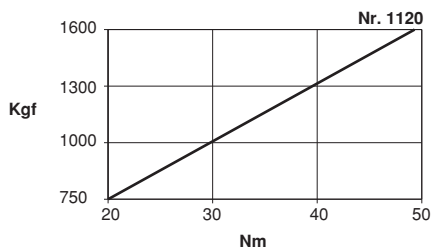
$$\frac{\text{Ergebnis}}{F_v} = \text{Spann-Anzahl} \quad \frac{210.21 \text{ kN}}{25 \text{ kN}} = 8 \text{ Spann-Anzahl}$$


Oberes Werkzeug 8 Stück verwenden
Unteres Werkzeug 8 Number of Clamp

$$\frac{\text{Ergebnis}}{F_v} = \text{Spann-Anzahl} \quad \frac{140.14 \text{ kN}}{25 \text{ kN}} = 5.6 \text{ Spannen / Clamp}$$

Oberes Werkzeug 6 Stück verwenden
Unteres Werkzeug 6 pcs Use

Kraftdiagramm / Force Diagram



| Referenz-Nr. Order No. | | m | h | | s | s1 | e1 | d | | L | e | b | c | Spannkraft Clamping Force Kgf | Nm |  |
|---------------------------|----|-----|-----|-----|-------|----|-----|-----|---|-----|------|----|----|-------------------------------------|----|---|
| | | | min | max | | | | | | | | | | | | |
| 1120-014 T | 14 | M12 | 0 | 50 | 12-66 | 25 | 100 | M14 | 8 | 104 | 35.5 | 38 | 13 | 1600 | 50 | 1740 |
| 1120-016 T | 16 | M12 | 0 | 50 | 12-66 | 25 | 100 | M14 | 8 | 104 | 35.5 | 38 | 13 | 1600 | 50 | 1755 |
| 1120-018 T | 18 | M12 | 0 | 50 | 12-66 | 25 | 100 | M14 | 8 | 104 | 35.5 | 38 | 13 | 1600 | 50 | 1785 |
| 1120-014 LT | 14 | M12 | 0 | 50 | 12-81 | 25 | 100 | M14 | 8 | 130 | 35.5 | 38 | 13 | 1600 | 50 | 1980 |
| 1120-016 LT | 16 | M12 | 0 | 50 | 12-81 | 25 | 100 | M14 | 8 | 130 | 35.5 | 38 | 13 | 1600 | 50 | 1995 |
| 1120-018 LT | 18 | M12 | 0 | 50 | 12-81 | 25 | 100 | M14 | 8 | 130 | 35.5 | 38 | 13 | 1600 | 50 | 2000 |

1120-(T)

- (a) 14-18 in T-Nut wird Inbusschraube M12 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 0-50 mm
- Spannweite 54 mm, Spannkraft 1600 kg.

1120-(LT)

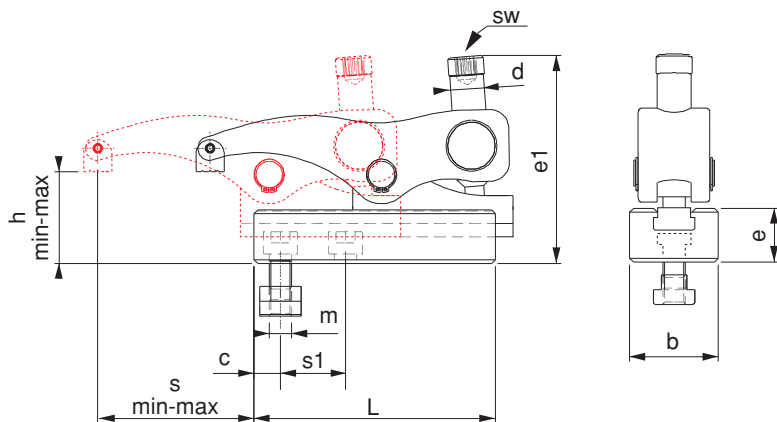
- (a) 14-18 in T-Nut wird Inbusschraube M12 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 0-50 mm
- Spannweite 69 mm, Spannkraft 1600 kg.

1120-(T)

- (a) 14-18 is used in T-Slot and M12 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 0-50mm
- Back and forth movement distance is 54mm. Clamping force is 1600 kgf.

1120-(LT)

- (a) 14-18 is used in T-Slot and M12 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 0-50mm
- Back and forth movement distance is 69mm. Clamping force is 1600 kgf.


ANWENDUNG;

- 1- Zwischenelement an Werkstück befestigen
- 2- Grundkörper auf Zwischenelement verschieben
- 3- Werkstück mit Inbusschraube befestigen
- 4- Werkstück ist zum Bearbeiten bereit

APPLICATION;

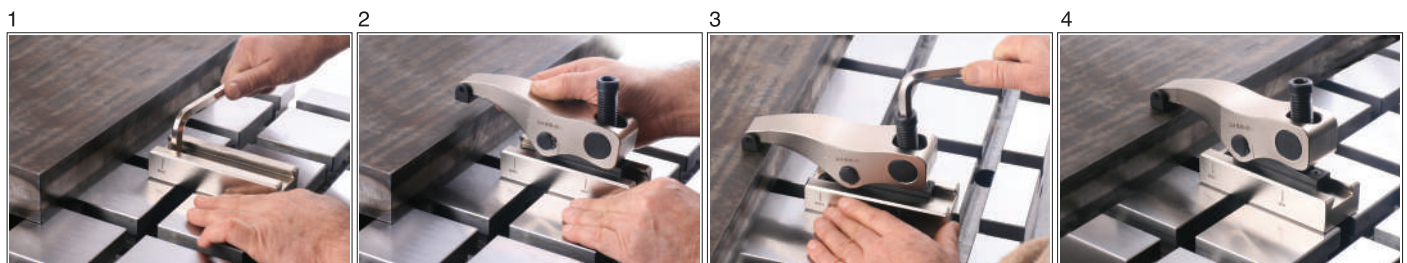
- 1- Slide cradle is brought to suitable form with the work piece and then it is fixed
- 2- Upper body is driven to the slide and it is brought to desired position
- 3- Work piece is fixed with the imbus bolt of the clamp
- 4- Then the work piece becomes ready to be machined.

Verwendung

Injektionsmaschinen, Pressen, Fräsmaschinen, Bohrzentren, verschiedene Industriemaschinen

Area of Use

Injection Machines, Presses, Milling Machines, Drilling Machines and various Industrial Machines



| Referenz-Nr. Order No. | a | m | h | | s | s1 | e1 | d | sw | L | e | b | c | Spannkraft Clamping Force Kgf | Nm | g |
|---------------------------|----|-----|-----|-----|--------|----|-----|-----|----|-----|----|----|------|-------------------------------------|-----|------|
| | | | min | max | | | | | | | | | | | | |
| 1130-014 T | 14 | M12 | 0 | 60 | 15-83 | 30 | 113 | M18 | 10 | 130 | 39 | 48 | 17,5 | 2000 | 100 | 3040 |
| 1130-016 T | 16 | M12 | 0 | 60 | 15-83 | 30 | 113 | M18 | 10 | 130 | 39 | 48 | 17,5 | 2000 | 100 | 3055 |
| 1130-018 T | 18 | M12 | 0 | 60 | 15-83 | 30 | 113 | M18 | 10 | 130 | 39 | 48 | 17,5 | 2000 | 100 | 3085 |
| 1130-020 T | 20 | M12 | 0 | 60 | 15-83 | 30 | 113 | M18 | 10 | 130 | 39 | 48 | 17,5 | 2000 | 100 | 3135 |
| 1130-022 T | 22 | M12 | 0 | 60 | 15-83 | 30 | 113 | M18 | 10 | 130 | 39 | 48 | 17,5 | 2000 | 100 | 3150 |
| 1130-014 LT | 14 | M12 | 0 | 60 | 15-107 | 30 | 113 | M18 | 10 | 170 | 39 | 48 | 17,5 | 2000 | 100 | 3820 |
| 1130-016 LT | 16 | M12 | 0 | 60 | 15-107 | 30 | 113 | M18 | 10 | 170 | 39 | 48 | 17,5 | 2000 | 100 | 3835 |
| 1130-018 LT | 18 | M12 | 0 | 60 | 15-107 | 30 | 113 | M18 | 10 | 170 | 39 | 48 | 17,5 | 2000 | 100 | 3865 |
| 1130-020 LT | 20 | M12 | 0 | 60 | 15-107 | 30 | 113 | M18 | 10 | 170 | 39 | 48 | 17,5 | 2000 | 100 | 3915 |
| 1130-022 LT | 22 | M12 | 0 | 60 | 15-107 | 30 | 113 | M18 | 10 | 170 | 39 | 48 | 17,5 | 2000 | 100 | 3930 |

1130-(T)

- (a) 14-22 in T-Nut wird Inbusschraube M12 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 0-60 mm
- Spannweite 68 mm, Spannkraft 2000 kg.

1130-(LT)

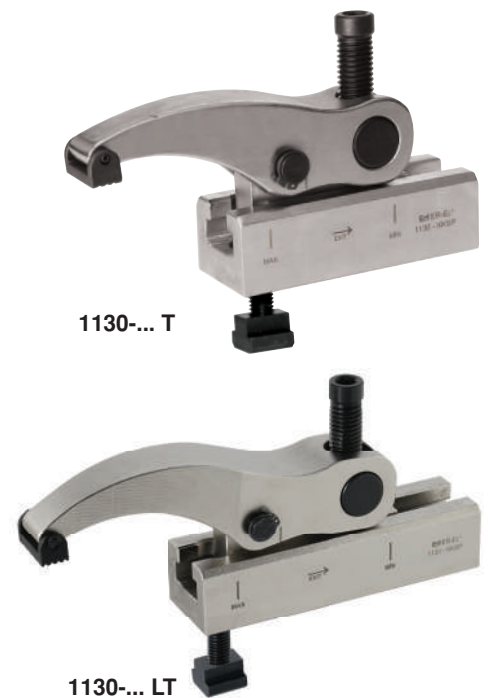
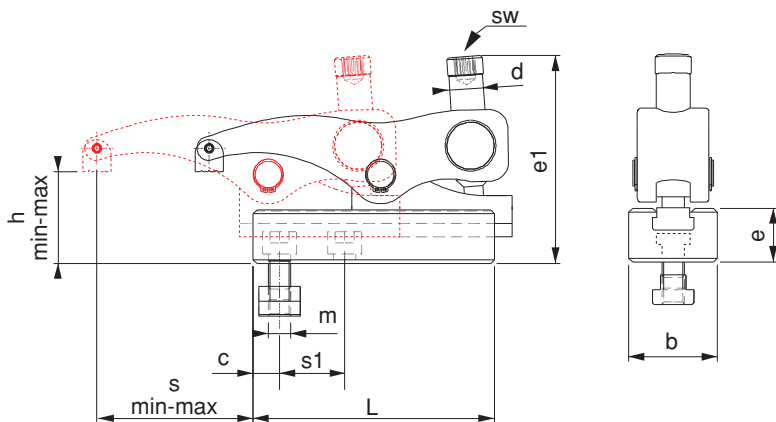
- (a) 14-22 in T-Nut wird Inbusschraube M12 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 0-60 mm
- Spannweite 92 mm, Spannkraft 2000 kg.

1130-(T)

- (a) 14-22 is used in T-Slot and M12 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 0-60mm.
- Back and forth movement distance is 68mm. Clamping force is 2000 kgf.

1130-(LT)

- (a) 14-22 is used in T-Slot and M12 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 0-60mm.
- Back and forth movement distance is 92mm. Clamping force is 2000 kgf.



ANWENDUNG;

- 1- Zwischenelement an Werkstück befestigen
- 2- Grundkörper auf Zwischenelement verschieben
- 3- Werkstück mit Inbusschraube befestigen
- 4- Werkstück ist zum Bearbeiten bereit

APPLICATION;

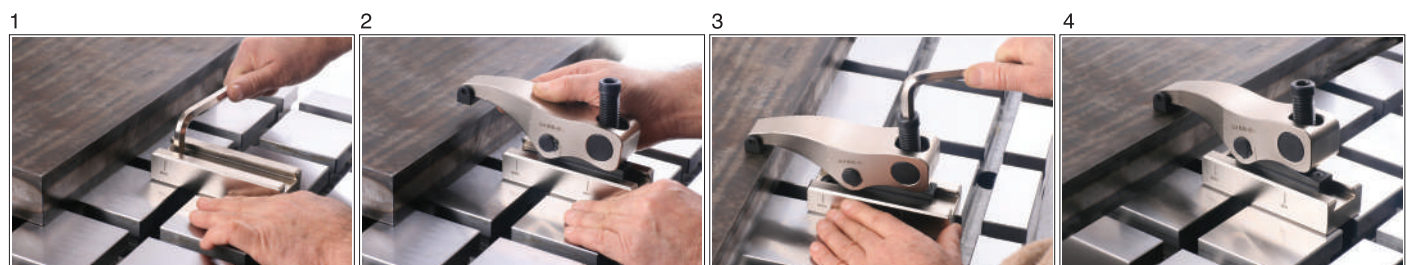
- 1- Slide cradle is brought to suitable form with the work piece and then it is fixed
- 2- Upper body is driven to the slide and it is brought to desired position
- 3- Work piece is fixed with the imbus bolt of the clamp
- 4- Then the work piece becomes ready to be machined.

Verwendung

Injektionsmaschinen, Pressen, Fräsmaschinen, Bohrzentren, verschiedene Industriemaschinen

Area of Use

Injection Machines, Presses, Milling Machines, Drilling Machines and various Industrial Machines



| Referenz-Nr. Order No. | | m | h | | s | s1 | e1 | d | sw | L | e | b | c | Spannkraft Clamping Force Kgf | Nm | |
|---------------------------|----|-----|-----|-----|--------|----|-----|-----|----|-----|----|----|------|-------------------------------------|-----|------|
| | | | min | max | | | | | | | | | | | | |
| 1150-118 T | 18 | M16 | 0 | 65 | 18-96 | 35 | 125 | M20 | 12 | 140 | 43 | 55 | 19,5 | 2500 | 150 | 4410 |
| 1150-120 T | 20 | M16 | 0 | 65 | 18-96 | 35 | 125 | M20 | 12 | 140 | 43 | 55 | 19,5 | 2500 | 150 | 4460 |
| 1150-122 T | 22 | M16 | 0 | 65 | 18-96 | 35 | 125 | M20 | 12 | 140 | 43 | 55 | 19,5 | 2500 | 150 | 4515 |
| 1150-124 T | 24 | M16 | 0 | 65 | 18-96 | 35 | 125 | M20 | 12 | 140 | 43 | 55 | 19,5 | 2500 | 150 | 4615 |
| 1150-128 T | 28 | M16 | 0 | 65 | 18-96 | 35 | 125 | M20 | 12 | 140 | 43 | 55 | 19,5 | 2500 | 150 | 4715 |
| 1150-118 LT | 18 | M16 | 0 | 65 | 18-128 | 35 | 125 | M20 | 12 | 200 | 43 | 55 | 19,5 | 2500 | 150 | 5770 |
| 1150-120 LT | 20 | M16 | 0 | 65 | 18-128 | 35 | 125 | M20 | 12 | 200 | 43 | 55 | 19,5 | 2500 | 150 | 5830 |
| 1150-122 LT | 22 | M16 | 0 | 65 | 18-128 | 35 | 125 | M20 | 12 | 200 | 43 | 55 | 19,5 | 2500 | 150 | 5885 |
| 1150-124 LT | 24 | M16 | 0 | 65 | 18-128 | 35 | 125 | M20 | 12 | 200 | 43 | 55 | 19,5 | 2500 | 150 | 5985 |
| 1150-128 LT | 28 | M16 | 0 | 65 | 18-128 | 35 | 125 | M20 | 12 | 200 | 43 | 55 | 19,5 | 2500 | 150 | 6000 |

1150-(T)

- (a) 18-28 in T-Nut wird Inbusschraube M16 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 0-65 mm
- Spannweite 78 mm, Spannkraft 2500 kg.

1150-(LT)

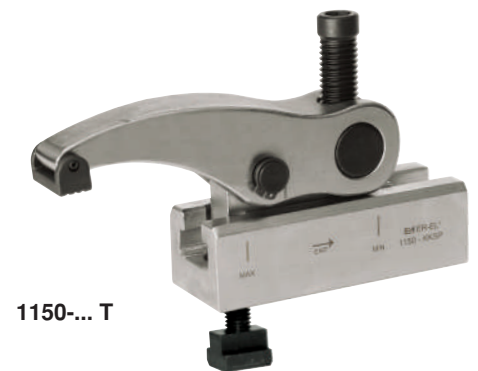
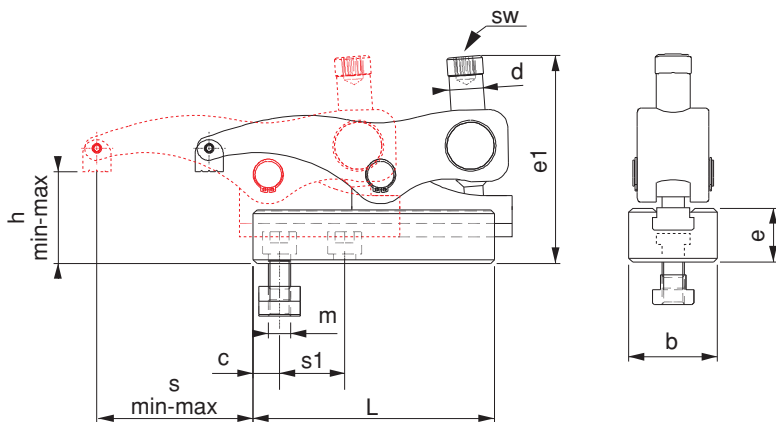
- (a) 18-28 in T-Nut wird Inbusschraube M16 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 0-65 mm
- Spannweite 110 mm, Spannkraft 2500 kg.

1150-(T)

- (a) 18-28 is used in T-Slot and M16 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 0-65mm.
- Back and forth movement distance is 78mm. Clamping force is 2500 kgf.

1150-(LT)

- (a) 18-28 is used in T-Slot and M16 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 0-65mm
- Back and forth movement. distance is 110mm. Clamping force is 2500 kgf.



1150... T



1150... LT

ANWENDUNG;

- 1- Zwischenelement an Werkstück befestigen
- 2- Grundkörper auf Zwischenelement verschieben
- 3- Werkstück mit Inbusschraube befestigen
- 4- Werkstück ist zum Bearbeiten bereit

APPLICATION;

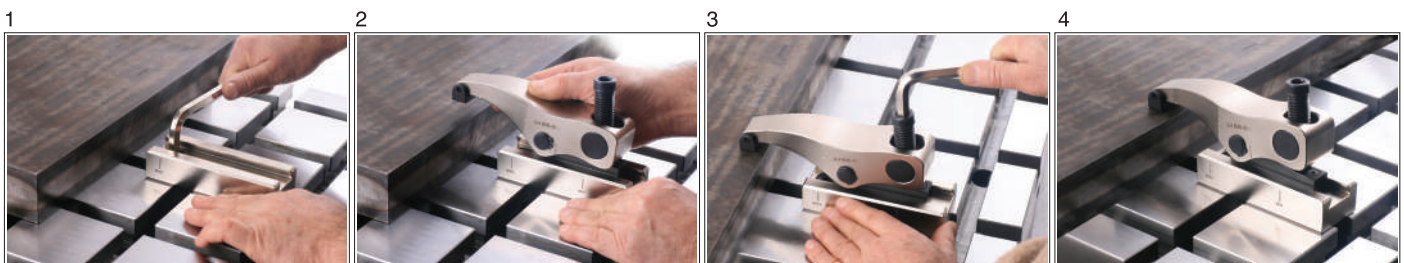
- 1- Slide cradle is brought to suitable form with the work piece and then it is fixed
- 2- Upper body is driven to the slide and it is brought to desired position
- 3- Work piece is fixed with the imbus bolt of the clamp
- 4- Then the work piece becomes ready to be machined.

Verwendung

Injektionsmaschinen, Pressen, Fräsmaschinen, Bohrzentren, verschiedene Industriemaschinen

Area of Use

Injection Machines, Presses, Milling Machines, Drilling Machines and various Industrial Machines



| Referenz-Nr. Order No. | | m | h | | s | s1 | e1 | d | SW | | L | e | b | c | Spannkraft Clamping Force Kgf | Nm | |
|---------------------------|----|-----|----|----|--------|------|-----|-----|----|----|-----|----|----|----|-------------------------------------|-----|-------|
| 1160-222 T | 22 | M20 | 20 | 80 | 17-92 | 41.5 | 175 | M24 | 12 | 24 | 178 | 55 | 74 | 24 | 5500 | 200 | 9030 |
| 1160-224 T | 24 | M20 | 20 | 80 | 17-92 | 41.5 | 175 | M24 | 12 | 24 | 178 | 55 | 74 | 24 | 5500 | 200 | 9120 |
| 1160-228 T | 28 | M24 | 20 | 80 | 17-92 | 41.5 | 175 | M24 | 12 | 24 | 178 | 55 | 74 | 24 | 5500 | 200 | 9180 |
| 1160-236 T | 36 | M24 | 20 | 80 | 17-92 | 41.5 | 175 | M24 | 12 | 24 | 178 | 55 | 74 | 24 | 5500 | 200 | 9600 |
| 1160-222 LT | 22 | M20 | 20 | 80 | 25-148 | 41.5 | 175 | M24 | 12 | 24 | 256 | 55 | 74 | 24 | 5500 | 280 | 12110 |
| 1160-224 LT | 24 | M20 | 20 | 80 | 25-148 | 41.5 | 175 | M24 | 12 | 24 | 256 | 55 | 74 | 24 | 5500 | 280 | 12210 |
| 1160-228 LT | 28 | M24 | 20 | 80 | 25-148 | 41.5 | 175 | M24 | 12 | 24 | 256 | 55 | 74 | 24 | 5500 | 280 | 12270 |
| 1160-236 LT | 36 | M24 | 20 | 80 | 25-148 | 41.5 | 175 | M24 | 12 | 24 | 256 | 55 | 74 | 24 | 5500 | 280 | 12310 |
| 1165-222 T | 22 | M20 | 30 | 80 | 34-92 | 41.5 | 194 | M24 | 12 | 24 | 205 | 55 | 85 | 24 | 10000 | 270 | 11820 |
| 1165-224 T | 24 | M20 | 30 | 80 | 34-92 | 41.5 | 194 | M24 | 12 | 24 | 205 | 55 | 85 | 24 | 10000 | 270 | 11900 |
| 1165-228 T | 28 | M24 | 30 | 80 | 34-92 | 41.5 | 194 | M24 | 12 | 24 | 205 | 55 | 85 | 24 | 10000 | 270 | 11960 |
| 1165-236 T | 36 | M24 | 30 | 80 | 34-92 | 41.5 | 194 | M24 | 12 | 24 | 205 | 55 | 85 | 24 | 10000 | 270 | 12000 |

1160-(T)

- (a) 22-36 in T-Nut wird Inbusschraube M20-M24 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 20-80 mm
- Spannweite 75 mm, Spannkraft 5500 kg.

1160-(LT)

- (a) 22-36 in T-Nut wird Inbusschraube M20-M24 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 20-80 mm
- Spannweite 123 mm, Spannkraft 5500 kg.

1165-(T)

- (a) 22-36 in T-Nut wird Inbusschraube M20-M24 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 30-80 mm
- Spannweite 58 mm, Spannkraft 10000 kg.

Product Nr. 1160-(T) Combined Sliding Clamp

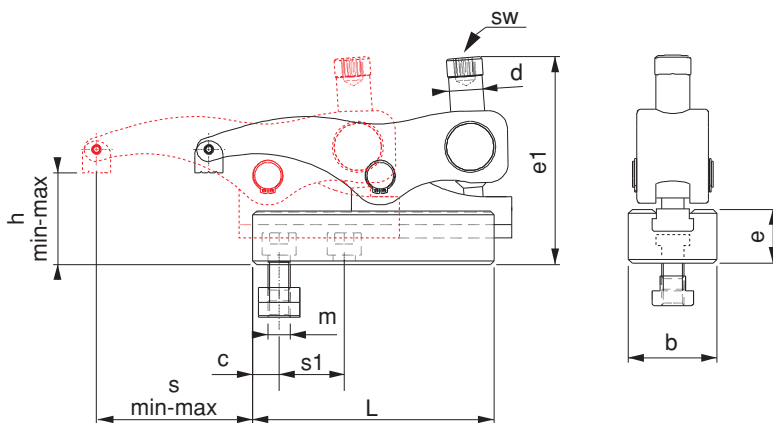
- (a) 22-36 is used in T-Slot and M20-M24 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 20-80mm.
- Back and forth movement distance is 75mm. Clamping force is 5500 kgf.

Product Nr. 1160-(LT) Combined Sliding Clamp

- (a) 22-36 is used in T-Slot and M20-M24 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 20-80mm.
- Back and forth movement distance is 123mm. Clamping force is 5500 kgf.

Product Nr. 1165-(T) Combined Sliding Clamp

- (a) 22-36 is used in T-Slot and M20-M24 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 30-80mm.
- Back and forth movement distance is 58mm. Clamping force is 10000 kgf.


ANWENDUNG;

- 1- Zwischenelement an Werkstück befestigen
- 2- Grundkörper auf Zwischenelement verschieben
- 3- Werkstück mit Inbusschraube befestigen
- 4- Werkstück ist zum Bearbeiten bereit

APPLICATION;

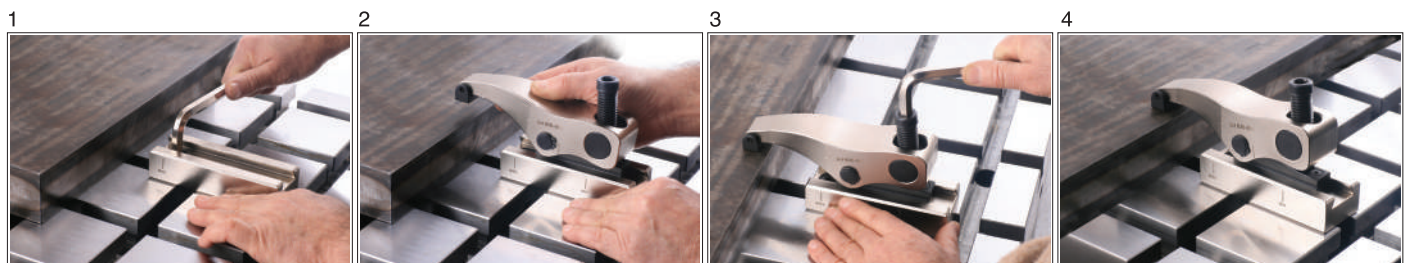
- 1- Slide cradle is brought to suitable form with the work piece and then it is fixed
- 2- Upper body is driven to the slide and it is brought to desired position
- 3- Work piece is fixed with the imbus bolt of the clamp
- 4- Then the work piece becomes ready to be machined.

Verwendung

Injektionsmaschinen, Pressen, Fräsmaschinen, Bohrzentren, verschiedene Industriemaschinen

Area of Use

Injection Machines, Presses, Milling Machines, Drilling Machines and various Industrial Machines



| Referenz-Nr. Order No. | | h | | s | s1 | e1 | d | sw | L | e | b | c | k | Spannkraft Clamping Force Kgf | Nm | |
|---------------------------|-----|-----|-----|-------|----|-----|-----|----|-----|------|----|----|----|-------------------------------------|----|------|
| | | min | max | | | | | | | | | | | | | |
| 1120-010 M | M10 | 0 | 50 | 12-66 | 25 | 100 | M14 | 8 | 104 | 35.5 | 38 | 13 | 20 | 1600 | 50 | 1740 |
| 1120-012 M | M12 | 0 | 0 | 12-66 | 25 | 100 | M14 | 8 | 104 | 35.5 | 38 | 13 | 20 | 1600 | 50 | 1755 |
| 1120-010 LM | M10 | 0 | 50 | 12-81 | 25 | 100 | M14 | 8 | 130 | 35.5 | 38 | 13 | 20 | 1600 | 50 | 1980 |
| 1120-012 LM | M12 | 0 | 50 | 12-81 | 25 | 100 | M14 | 8 | 130 | 35.5 | 38 | 13 | 20 | 1600 | 50 | 1995 |

1120-(M)

- Für Gewinde M12-M16 Inbusschrauben 1120-310 / 1120-312 verwenden
- Spannhöhe 0-50 mm
- Spannweite 54 mm, Spannkraft 1600 kg.

1120-(LM)

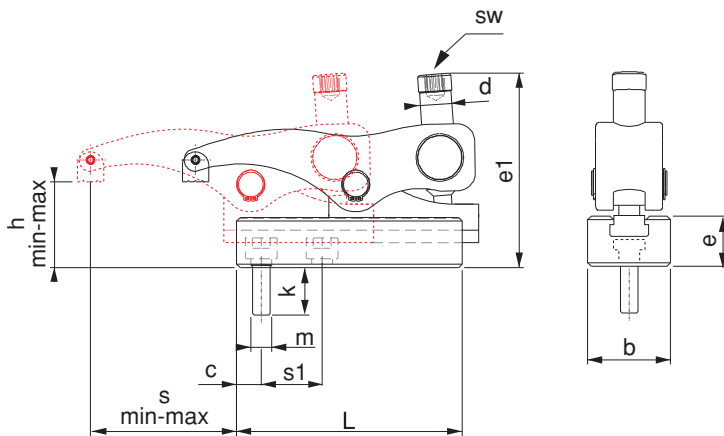
- Für Gewinde M12-M16 Inbusschrauben 1120-310 / 1120-312 verwenden
- Spannhöhe 0-50 mm
- Spannweite 69 mm, Spannkraft 1600 kg.

1120-(M)

- In the outer holes M10-M12 are used with the Reference Nr. imbus bolt (1120-310)-(1120-312)
- Height clamping gap of the piece is 0-50mm.
- Back and forth movement distance is 54mm. Clamping force is 1600 kgf.

1120-(LM)

- In the outer holes M10-M12 are used with the Reference Nr. imbus bolt (1120-310)-(1120-312)
- Height clamping gap of the piece is 0-50mm.
- Back and forth movement distance is 69mm. Clamping force is 1600 kgf.



1120... M



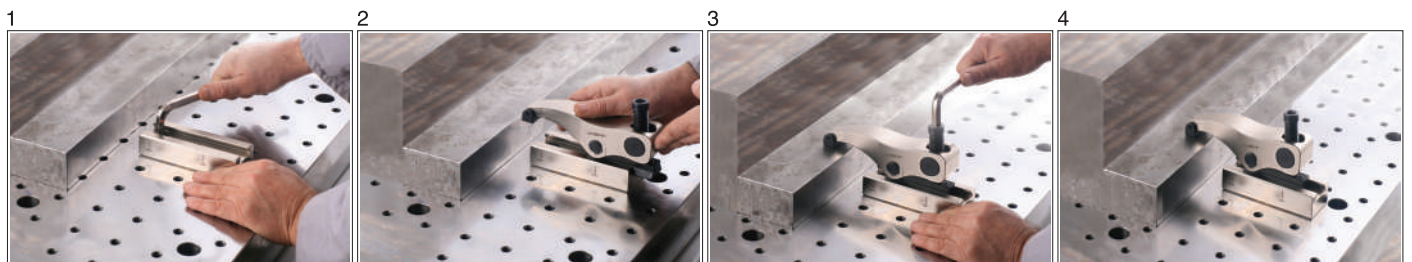
1120... LM

VORTEILE;

- Spannkraft 1600 kg - 2000 kg
- Verwendung in Löchern und T-Kanal
- Mit verschieben unterschiedliche Positionierungen möglich
- Unterschiedliche Spannweiten mittels Inbusschraube ohne Stütze
- Praktische Bauart ermöglicht einfaches und schnelles Spannen

ADVANTAGES

- 1600 kgf - 2000 kgf Clamping Force.
- Usings in the hole and T-Slot.
- Ability to be fixed in verious positions by sliding on the slide.
- It clamps high and low distances without support with the imbus bolt.
- It provides rapid and easy connection due to it's practical structure.



| Referenz-Nr. Order No. | | h | | s | s1 | e1 | d | sw | L | e | b | c | k | Spannkraft Clamping Force Kgf | Nm | |
|---------------------------|-----|-----|-----|--------|----|-----|-----|----|-----|----|----|------|----|-------------------------------------|-----|------|
| | | min | max | | | | | | | | | | | | | |
| 1130-012 M | M12 | 0 | 60 | 15-83 | 30 | 113 | M18 | 10 | 130 | 39 | 48 | 17,5 | 22 | 2000 | 100 | 3040 |
| 1130-016 M | M16 | 0 | 60 | 15-83 | 30 | 113 | M18 | 10 | 130 | 39 | 48 | 17,5 | 26 | 2000 | 100 | 3055 |
| 1130-012 LM | M12 | 0 | 60 | 15-107 | 30 | 113 | M18 | 10 | 170 | 39 | 48 | 17,5 | 22 | 2000 | 100 | 3820 |
| 1130-016 LM | M16 | 0 | 60 | 15-107 | 30 | 113 | M18 | 10 | 170 | 39 | 48 | 17,5 | 26 | 2000 | 100 | 3835 |

1130-(M)

- Für Gewinde M12-M16 Inbusschrauben 1130-412 / 1130-416 verwenden
- Spannhöhe 0-60 mm
- Spannweite 68 mm, Spannkraft 2000 kg.

1130-(LM)

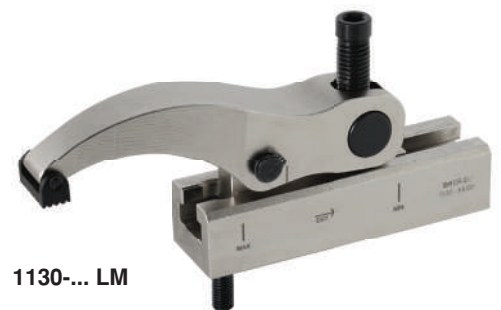
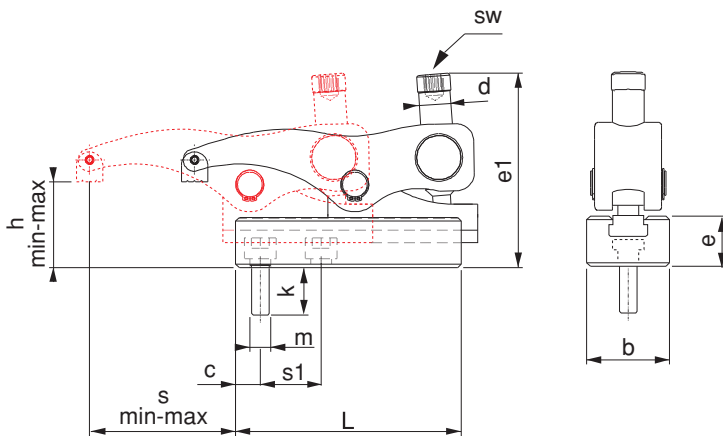
- Für Gewinde M12-M16 Inbusschrauben 1130-412 / 1130-416 verwenden
- Spannhöhe 0-60 mm
- Spannweite 92 mm, Spannkraft 2000 kg.

1130-(M)

- In the outer holes M12-M16 are used with the Reference Nr. imbus bolt (1130-412)-(1130-416)
- Height clamping gap of the piece is 0-60mm.
- Back and forth movement distance is 68mm. Clamping force is 2000 kgf.

1130-(LM)

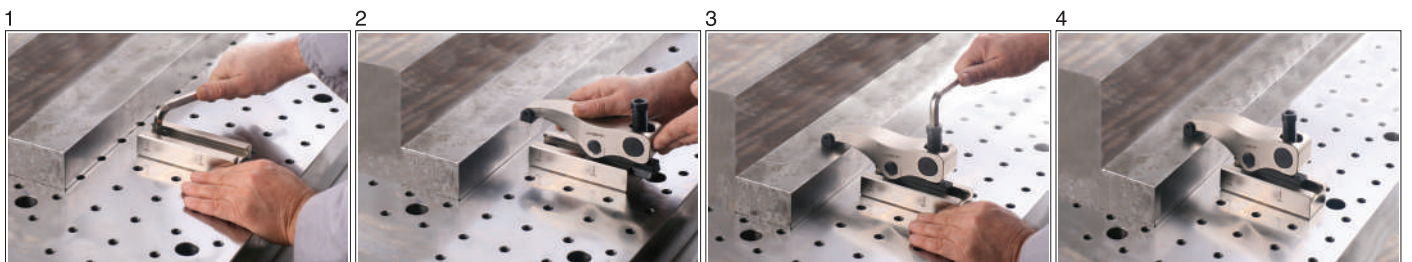
- In the outer holes M12-M16 are used with the Reference Nr. imbus bolt (1130-412)-(1130-416)
- Height clamping gap of the piece is 0-60mm.
- Back and forth movement. distance is 92mm. Clamping force is 2000 kgf.


VORTEILE;

- Spannkraft 1600 kg - 2000 kg
- Verwendung in Löchern und T-Kanal
- Mit verschieben unterschiedliche Positionierungen möglich
- Unterschiedliche Spannweiten mittels Inbusschraube ohne Stütze
- Praktische Bauart ermöglicht einfaches und schnelles Spannen

ADVANTAGES

- 1600 kgf - 2000 kgf Clamping Force.
- Usings in the hole and T-Slot.
- Ability to be fixed in verious positions by sliding on the slide.
- It clamps high and low distances without support with the imbus bolt.
- It provides rapid and easy connection due to it's practical structure.



| Referenz-Nr. Order No. | | h | | s | s1 | e1 | d | sw | L | e | b | c | k | Spannkraft Clamping Force Kgf | Nm | |
|---------------------------|-----|-----|-----|--------|----|-----|-----|----|-----|----|----|------|----|-------------------------------------|-----|------|
| | | min | max | | | | | | | | | | | | | |
| 1150-116 M | M16 | 0 | 65 | 18-96 | 35 | 125 | M20 | 12 | 140 | 43 | 55 | 19.5 | 26 | 2500 | 150 | 4340 |
| 1150-118 M | M18 | 0 | 65 | 18-96 | 35 | 125 | M20 | 12 | 140 | 43 | 55 | 19.5 | 30 | 2500 | 150 | 4360 |
| 1150-120 M | M20 | 0 | 65 | 18-96 | 35 | 125 | M20 | 12 | 140 | 43 | 55 | 19.5 | 30 | 2500 | 150 | 4370 |
| 1150-116 LM | M16 | 0 | 65 | 18-128 | 35 | 125 | M20 | 12 | 200 | 43 | 55 | 19.5 | 26 | 2500 | 150 | 5770 |
| 1150-118 LM | M18 | 0 | 65 | 18-128 | 35 | 125 | M20 | 12 | 200 | 43 | 55 | 19.5 | 30 | 2500 | 150 | 5830 |
| 1150-120 LM | M20 | 0 | 65 | 18-128 | 35 | 125 | M20 | 12 | 200 | 43 | 55 | 19.5 | 30 | 2500 | 150 | 5885 |

1150-(M)

- Für Gewinde M16-M18-M20 Inbusschrauben 1150-516 / 1150-518 / 1150-520 verwenden
- Spannhöhe 0-65 mm
- Spannweite 78 mm, Spannkraft 2500 kg.

1150-(LM)

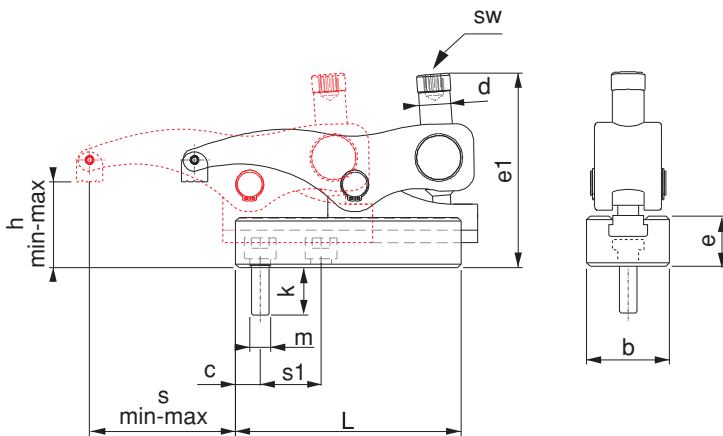
- Für Gewinde M16-M18-M20 Inbusschrauben 1150-516 / 1150-518 / 1150-520 verwenden
- Spannhöhe 0-65 mm
- Spannweite 110 mm, Spannkraft 2500 kg.

1150-(M)

- In the outer holes M16-M18-M20 are used with the Reference Nr. imbus bolt (1150-516)-(1150-518)-(1150-520).
- Height clamping gap of the piece is 0-65mm.
- Back and forth movement distance is 78mm. Clamping force is 2500 kgf.

1150-(LM)

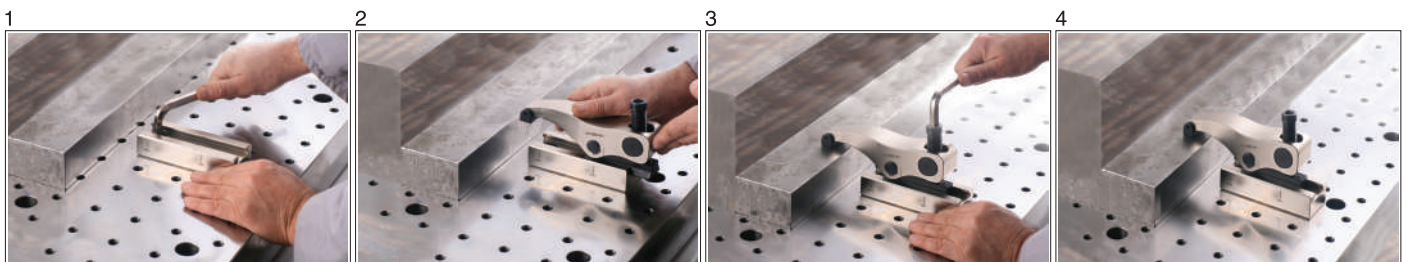
- In the outer holes M16-M18-M20 are used with the Reference Nr. imbus bolt (1150-516)-(1150-518)-(1150-520).
- Height clamping gap of the piece is 0-65mm.
- Back and forth movement distance is 110mm. Clamping force is 2500 kgf.


VORTEILE;

- Spannkraft 1600 kg - 2000 kg
- Verwendung in Löchern und T-Kanal
- Mit verschieben unterschiedliche Positionierungen möglich
- Unterschiedliche Spannweiten mittels Inbusschraube ohne Stütze
- Praktische Bauart ermöglicht einfaches und schnelles Spannen

ADVANTAGES

- 1600 kgf - 2000 kgf Clamping Force.
- Usings in the hole and T-Slot.
- Ability to be fixed in verious positions by sliding on the slide.
- It clamps high and low distances without support with the imbus bolt.
- It provides rapid and easy connection due to it's practical structure.



| Referenz-Nr. Order No. | | h | | s | s1 | e1 | d | | L | e | b | c | k | Spannkraft Clamping Force Kgf | Nm | | |
|---------------------------|------|-----|-----|--------|------|-----|-----|----|----|-----|----|----|----|-------------------------------------|-------|-----|-------|
| | | min | max | | | | | | | | | | | | | | |
| 1160-220 M | M20 | 20 | 80 | 17-92 | 41.5 | 175 | M24 | 12 | 24 | 178 | 55 | 74 | 24 | 34 | 5500 | 200 | 8880 |
| 1160-222 M | M22 | 20 | 80 | 17-92 | 41.5 | 175 | M24 | 12 | 24 | 178 | 55 | 74 | 24 | 38 | 5500 | 200 | 8900 |
| 1160-224 M | M24 | 20 | 80 | 17-92 | 41.5 | 175 | M24 | 12 | 24 | 178 | 55 | 74 | 24 | 44 | 5500 | 200 | 8920 |
| 1160-230 M | M30* | 20 | 80 | 17-92 | 41.5 | 175 | M24 | 12 | 24 | 178 | 55 | 74 | 24 | 51 | 5500 | 200 | 9110 |
| 1160-220 LM | M20 | 20 | 80 | 25-148 | 41.5 | 175 | M24 | 12 | 24 | 256 | 55 | 74 | 24 | 34 | 5500 | 280 | 12110 |
| 1160-222 LM | M22 | 20 | 80 | 25-148 | 41.5 | 175 | M24 | 12 | 24 | 256 | 55 | 74 | 24 | 38 | 5500 | 280 | 12210 |
| 1160-224 LM | M24 | 20 | 80 | 25-148 | 41.5 | 175 | M24 | 12 | 24 | 256 | 55 | 74 | 24 | 44 | 5500 | 280 | 12270 |
| 1160-230 LM | M30* | 20 | 80 | 25-148 | 41.5 | 175 | M24 | 12 | 24 | 256 | 55 | 74 | 24 | 51 | 5500 | 280 | 12310 |
| 1165-220 M | M20 | 30 | 80 | 34-92 | 41.5 | 215 | M24 | 12 | 24 | 205 | 55 | 85 | 24 | 34 | 10000 | 270 | 11820 |
| 1165-222 M | M22 | 30 | 80 | 34-92 | 41.5 | 215 | M24 | 12 | 24 | 205 | 55 | 85 | 24 | 38 | 10000 | 270 | 11900 |
| 1165-224 M | M24 | 30 | 80 | 34-92 | 41.5 | 215 | M24 | 12 | 24 | 205 | 55 | 85 | 24 | 44 | 10000 | 270 | 11960 |
| 1165-230 M | M30* | 30 | 80 | 34-92 | 41.5 | 215 | M24 | 12 | 24 | 205 | 55 | 85 | 24 | 51 | 10000 | 270 | 12000 |

1160-(M)

- Für Gewinde M20-M22-M24-M30 Inbusschrauben 1160-620 / 1160-622 / 1160-624 / 1160-724 / 1160-730 verwenden
- Spannhöhe 20-80 mm
- Spannweite 75 mm, Spannkraft 5500 kg.

1160-(LM)

- Für Gewinde M20-M22-M24-M30 Inbusschrauben 1160-620 / 1160-622 / 1160-624 / 1160-724 / 1160-730 verwenden
- Spannhöhe 20-80 mm
- Spannweite 123 mm, Spannkraft 5500 kg.

1165-(M)

- Für Gewinde M20-M22-M24-M30 Inbusschrauben 1160-620 / 1160-622 / 1160-624 / 1160-724 / 1160-730 verwenden
- Spannhöhe 30-80 mm
- Spannweite 58 mm, Spannkraft 10000 kg.

Hinweis: Die Bohrung für Zylinderschraube des Trägerelements von 1160-230M / Nr.1165-230M ist außerhalb der Standardabmessungen. Sie wird für diesen Artikel speziell gefertigt.

1160-(M)

- In the outer holes M20-M22-M24-M30 are used with the Reference Nr. imbus bolt (1160-620)-(1160-622)-(1160-624)-(1160-724)-(1160-730)
- Height clamping gap of the piece is 20-80mm.
- Back and forth movement distance is 75mm. Clamping force is 5500 kgf.

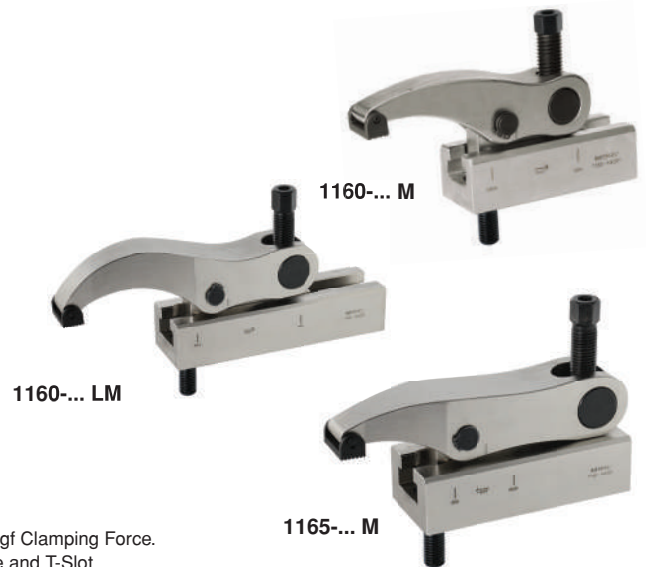
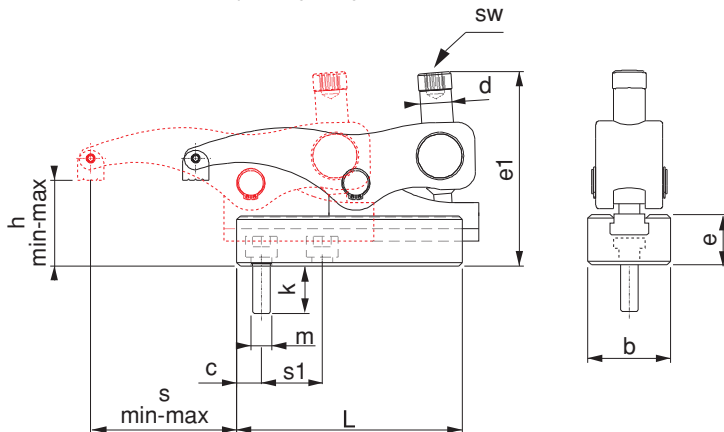
1160-(LM)

- In the outer holes M20-M22-M24-M30 are used with the Reference Nr. imbus bolt (1160-620)-(1160-622)-(1160-624)-(1160-724)-(1160-730)
- Height clamping gap of the piece is 20-80mm.
- Back and forth movement distance is 123mm. Clamping force is 5500 kgf.

1165-(M)

- In the outer holes M20-M22-M24-M30 are used with the Reference Nr. imbus bolt (1160-620)-(1160-622)-(1160-624)-(1160-724)-(1160-730)
- Height clamping gap of the piece is 30-80mm.
- Back and forth movement distance is 58mm. Clamping force is 10000 kgf.

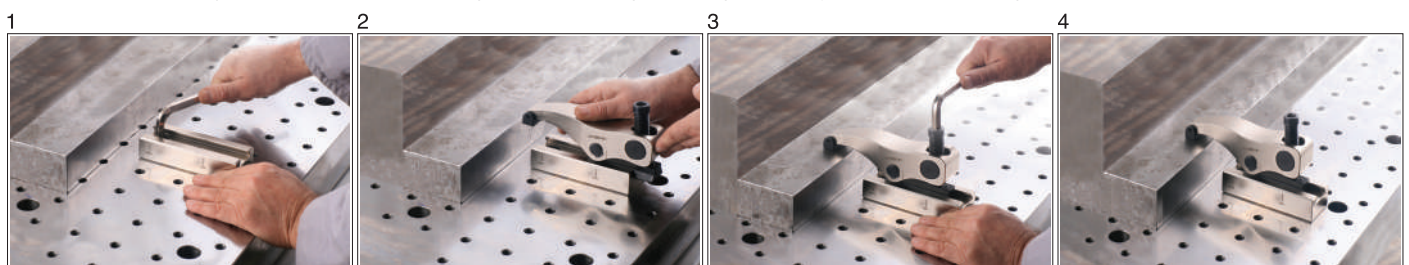
Note: The drilling for cylinder head screw of the support element for 1160-230M - Nr.1165-230M is not standard. It is specially manufactured for this product.


VORTEILE:

- Spannkraft 1600 kg - 2000 kg
- Verwendung in Löchern und T-Kanal
- Mit verschieben unterschiedliche Positionierungen möglich
- Unterschiedliche Spannweiten mittels Inbusschraube ohne Stütze
- Praktische Bauart ermöglicht einfaches und schnelles Spannen

ADVANTAGES

- 1600 kgf - 2000 kgf Clamping Force.
- Usings in the hole and T-Slot.
- Ability to be fixed in various positions by sliding on the slide.
- It clamps high and low distances without support with the imbus bolt.
- It provides rapid and easy connection due to it's practical structure.



| Referenz-Nr. Order No. | | m | h | | s | e1 | e2 | d | | L | b | e3 | c | |
|---------------------------|----|-----|-----|-----|-------|-----|------|-----|---|-----|----|----|----|------|
| | | | min | max | | | | | | | | | | |
| 1120-014 DT | 14 | M12 | 36 | 86 | 12-66 | 136 | 71.5 | M14 | 8 | 104 | 38 | 38 | 13 | 2540 |
| 1120-016 DT | 16 | M12 | 36 | 86 | 12-66 | 136 | 71.5 | M14 | 8 | 104 | 38 | 38 | 13 | 2540 |
| 1120-018 DT | 18 | M12 | 36 | 86 | 12-66 | 136 | 71.5 | M14 | 8 | 104 | 38 | 38 | 13 | 2540 |
| 1120-014 LDT | 14 | M12 | 36 | 86 | 12-81 | 136 | 71.5 | M14 | 8 | 130 | 38 | 38 | 13 | 2980 |
| 1120-016 LDT | 16 | M12 | 36 | 86 | 12-81 | 136 | 71.5 | M14 | 8 | 130 | 38 | 38 | 13 | 2995 |
| 1120-018 LDT | 18 | M12 | 36 | 86 | 12-81 | 136 | 71.5 | M14 | 8 | 130 | 38 | 38 | 13 | 3000 |

1120-(DT)

- M12 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 36-86 mm
- Spannweite 54 mm, Spannkraft 1600 kg.

1120-(DT)

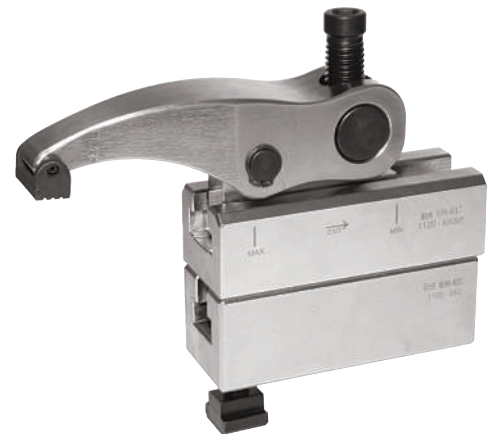
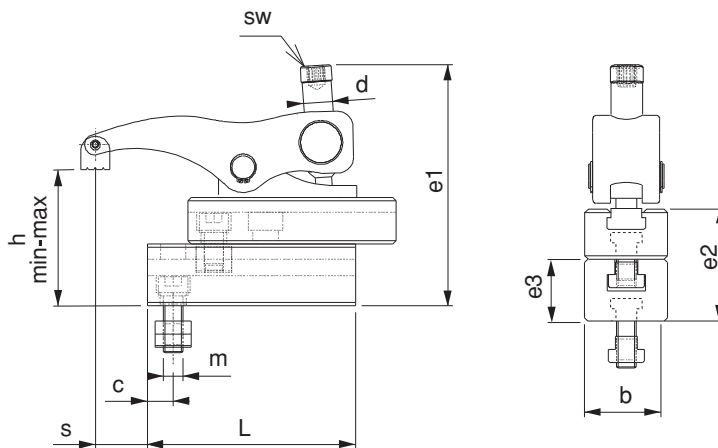
- M12 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 36-86mm
- Back and forth movement distance is 54mm. Clamping force is 1600 kgf.

1120-(LDT)

- M12 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 36-86 mm
- Spannweite 69 mm, Spannkraft 1600 kg.

1120-(LDT)

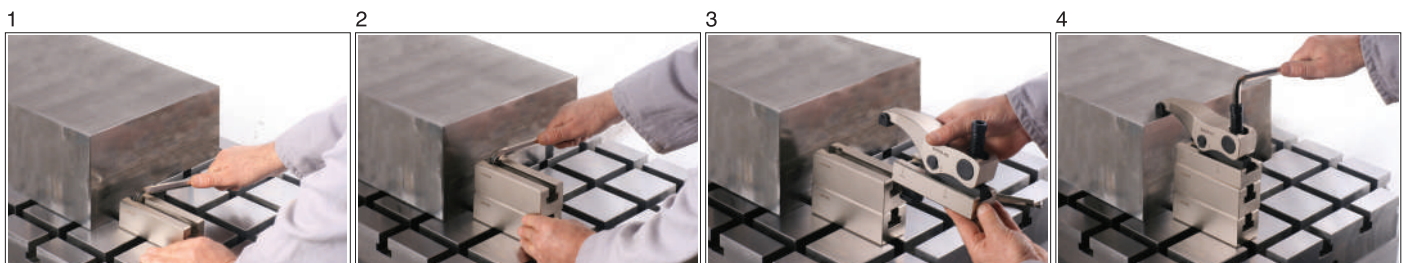
- M12 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 36-86mm.
- Back and forth movement distance is 69mm. Clamping force is 1600 kgf.


ANWENDUNG;

- 1- Zwischenstück an Werkstück befestigen
- 2- Höhen-Anpassung durch weitere Zwischenstücke
- 3- Grundkörper auf Zwischenstück schieben, Imbusschraube auf T-Nut positionieren
- 4- Werkstück mit Imbusschraube befestigen

APPLICATION

- 1- Bottom support is brought to suitable form with the work piece and then it is fixed.
- 2- Desired distance is reached by increasing K.K.S.P. supports
- 3- K.K.S.P. is applied in T-Slot with imbus bolt against T-Nut
- 4- Work piece is fixed with the imbus bolt of the clamp



| Referenz-Nr. Order No. | | m | h | | s | e1 | e2 | d | | L | b | e3 | c | |
|---------------------------|----|-----|-----|-----|--------|-----|----|-----|----|-----|----|----|------|------|
| | | | min | max | | | | | | | | | | |
| 1130-014 DT | 14 | M12 | 45 | 105 | 15-83 | 158 | 83 | M18 | 10 | 130 | 48 | 45 | 17.5 | 4750 |
| 1130-016 DT | 16 | M12 | 45 | 105 | 15-83 | 158 | 83 | M18 | 10 | 130 | 48 | 45 | 17.5 | 4775 |
| 1130-018 DT | 18 | M12 | 45 | 105 | 15-83 | 158 | 83 | M18 | 10 | 130 | 48 | 45 | 17.5 | 4805 |
| 1130-020 DT | 20 | M12 | 45 | 105 | 15-83 | 158 | 83 | M18 | 10 | 130 | 48 | 45 | 17.5 | 4885 |
| 1130-022 DT | 22 | M12 | 45 | 105 | 15-83 | 158 | 83 | M18 | 10 | 130 | 48 | 45 | 17.5 | 4905 |
| 1130-014 LDT | 14 | M12 | 45 | 105 | 15-107 | 158 | 83 | M18 | 10 | 170 | 48 | 45 | 17.5 | 5970 |
| 1130-016 LDT | 16 | M12 | 45 | 105 | 15-107 | 158 | 83 | M18 | 10 | 170 | 48 | 45 | 17.5 | 5985 |
| 1130-018 LDT | 18 | M12 | 45 | 105 | 15-107 | 158 | 83 | M18 | 10 | 170 | 48 | 45 | 17.5 | 6015 |
| 1130-020 LDT | 20 | M12 | 45 | 105 | 15-107 | 158 | 83 | M18 | 10 | 170 | 48 | 45 | 17.5 | 6045 |
| 1130-022 LDT | 22 | M12 | 45 | 105 | 15-107 | 158 | 83 | M18 | 10 | 170 | 48 | 45 | 17.5 | 6080 |

1130-(DT)

- M12 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 45-105 mm
- Spannweite 68 mm, Spannkraft 2000 kg.

1130-(LDT)

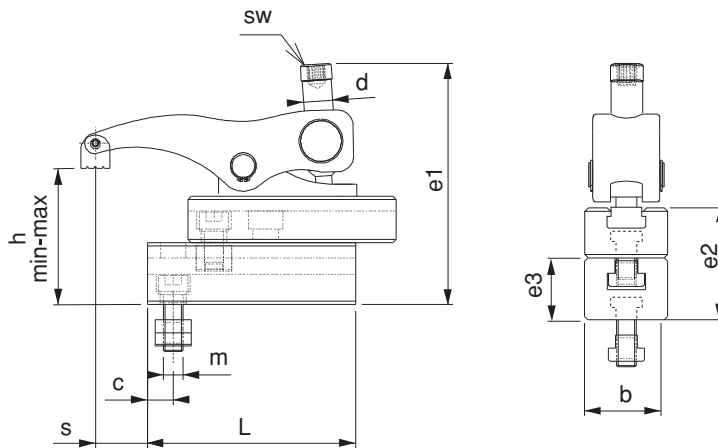
- M12 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 45-105 mm
- Spannweite 92 mm, Spannkraft 2000 kg.

1130-(DT)

- M12 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 45-105mm
- Back and forth movement distance is 68mm. Clamping force is 2000 kgf.

1130-(LDT)

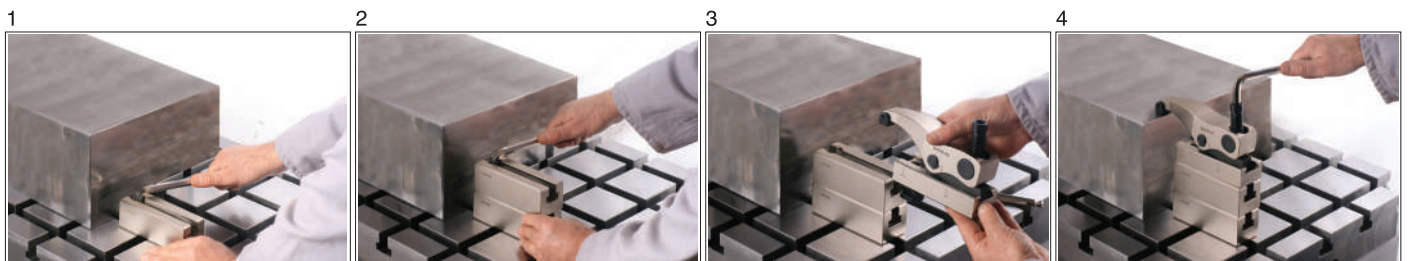
- M12 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 45-105mm
- Back and forth movement distance is 92mm. Clamping force is 2000 kgf.


ANWENDUNG;

- 1- Zwischenstück an Werkstück befestigen
- 2- Höhen-Anpassung durch weitere Zwischenstücke
- 3- Grundkörper auf Zwischenstück schieben, Inbusschraube auf T-Nut positionieren
- 4- Werkstück mit Inbusschraube befestigen

APPLICATION

- 1- Bottom support is brought to suitable form with the work piece and then it is fixed.
- 2- Desired distance is reached by increasing K.K.S.P. supports
- 3- K.K.S.P. is applied in T-Slot with imbus bolt against T-Nut
- 4- Work piece is fixed with the imbus bolt of the clamp



| Referenz-Nr. Order No. | | m | h | | s | e1 | e2 | d | | L | b | e3 | c | |
|---------------------------|----|-----|-----|-----|--------|-----|----|-----|----|-----|----|----|------|------|
| | | | min | max | | | | | | | | | | |
| 1150-118 DT | 18 | M16 | 48 | 113 | 18-96 | 173 | 90 | M20 | 12 | 140 | 55 | 48 | 19.5 | 6625 |
| 1150-120 DT | 20 | M16 | 48 | 113 | 18-96 | 173 | 90 | M20 | 12 | 140 | 55 | 48 | 19.5 | 6690 |
| 1150-122 DT | 22 | M16 | 48 | 113 | 18-96 | 173 | 90 | M20 | 12 | 140 | 55 | 48 | 19.5 | 6750 |
| 1150-124 DT | 24 | M16 | 48 | 113 | 18-96 | 173 | 90 | M20 | 12 | 140 | 55 | 48 | 19.5 | 6840 |
| 1150-128 DT | 28 | M16 | 48 | 113 | 18-96 | 173 | 90 | M20 | 12 | 140 | 55 | 48 | 19.5 | 6960 |
| 1150-118 LDT | 18 | M16 | 48 | 113 | 18-128 | 173 | 90 | M20 | 12 | 200 | 55 | 48 | 19.5 | 8770 |
| 1150-120 LDT | 20 | M16 | 48 | 113 | 18-128 | 173 | 90 | M20 | 12 | 200 | 55 | 48 | 19.5 | 8830 |
| 1150-122 LDT | 22 | M16 | 48 | 113 | 18-128 | 173 | 90 | M20 | 12 | 200 | 55 | 48 | 19.5 | 8885 |
| 1150-124 LDT | 24 | M16 | 48 | 113 | 18-128 | 173 | 90 | M20 | 12 | 200 | 55 | 48 | 19.5 | 8985 |
| 1150-128 LDT | 28 | M16 | 48 | 113 | 18-128 | 173 | 90 | M20 | 12 | 200 | 55 | 48 | 19.5 | 9000 |

1150-(DT)

- M16 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 48-113 mm
- Spannweite 78 mm, Spannkraft 2500 kg.

1150-(LDT)

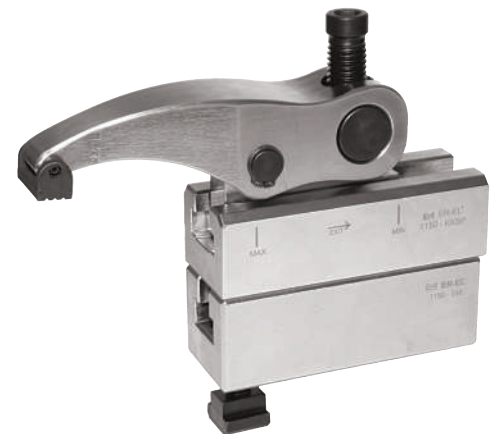
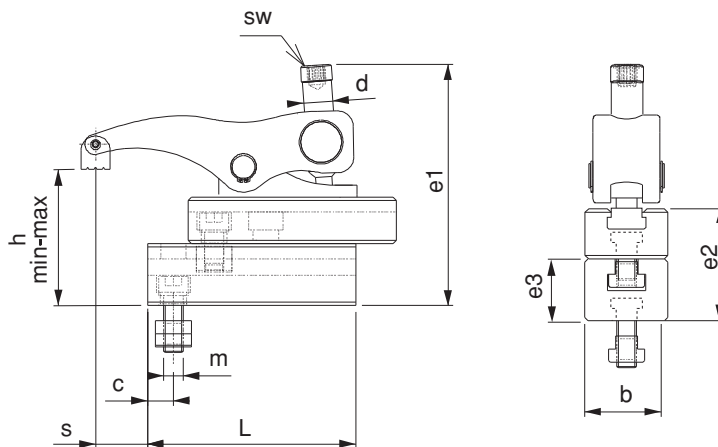
- M16 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 48-113 mm
- Spannweite 110 mm, Spannkraft 2500 kg.

Product Nr. 1150-(DT) Bottom Supported

- M16 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 48-113mm
- back-and- forth movement distance is 78mm. Clamping force is 2500 kgf.

Product Nr. 1150-(LDT) Bottom Supported

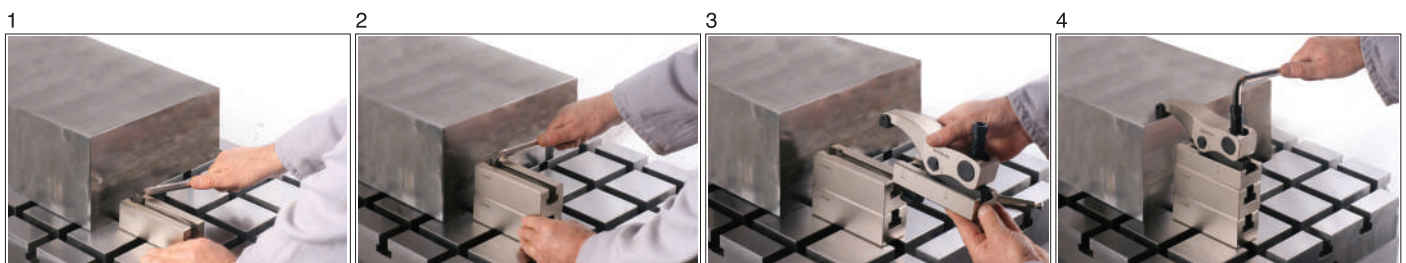
- M16 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 48-113mm
- back-and- forth movement distance is 110mm. Clamping force is 2500 kgf.


ANWENDUNG;

- 1- Zwischenstück an Werkstück befestigen
- 2- Höhen-Anpassung durch weitere Zwischenstücke
- 3- Grundkörper auf Zwischenstück schieben, Inbusschraube auf T-Nut positionieren
- 4- Werkstück mit Inbusschraube befestigen

APPLICATION

- 1- Bottom support is brought to suitable form with the work piece and then it is fixed.
- 2- Desired distance is reached by increasing K.K.S.P. supports
- 3- K.K.S.P. is applied in T-Slot with imbus bolt against T-Nut
- 4- Work piece is fixed with the imbus bolt of the clamp



| Referenz-Nr. Order No. | | m | h | | s | e1 | e2 | d | sw | | L | b | e3 | c | |
|---------------------------|----|-----|-----|-----|--------|-----|-----|-----|----|----|-----|----|----|----|-------|
| | | | min | max | | | | | | | | | | | |
| 1160-222 DT | 22 | M20 | 79 | 139 | 17-92 | 235 | 114 | M24 | 12 | 24 | 178 | 74 | 59 | 24 | 13330 |
| 1160-224 DT | 24 | M20 | 79 | 139 | 17-92 | 235 | 114 | M24 | 12 | 24 | 178 | 74 | 59 | 24 | 13465 |
| 1160-228 DT | 28 | M24 | 79 | 139 | 17-92 | 235 | 114 | M24 | 12 | 24 | 178 | 74 | 59 | 24 | 13580 |
| 1160-236 DT | 36 | M24 | 79 | 139 | 17-92 | 235 | 114 | M24 | 12 | 24 | 178 | 74 | 59 | 24 | 13890 |
| 1160-222 LDT | 22 | M20 | 79 | 139 | 25-148 | 235 | 114 | M24 | 12 | 24 | 256 | 74 | 59 | 24 | 17910 |
| 1160-224 LDT | 24 | M20 | 79 | 139 | 25-148 | 235 | 114 | M24 | 12 | 24 | 256 | 74 | 59 | 24 | 18210 |
| 1160-228 LDT | 28 | M24 | 79 | 139 | 25-148 | 235 | 114 | M24 | 12 | 24 | 256 | 74 | 59 | 24 | 18270 |
| 1160-236 LDT | 36 | M24 | 79 | 139 | 25-148 | 235 | 114 | M24 | 12 | 24 | 256 | 74 | 59 | 24 | 18310 |

1160-(DT)

- M20-M24 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 79-139 mm
- Spannweite 75 mm, Spannkraft 5500 kg.

1160-(LDT)

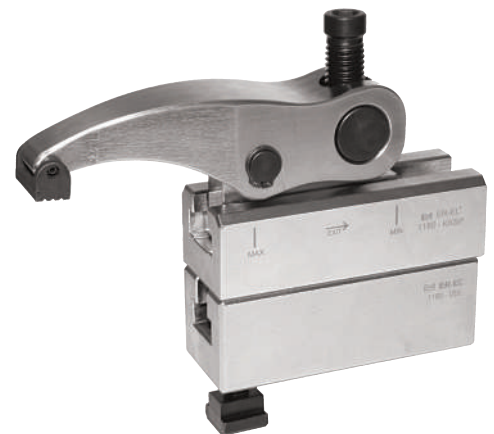
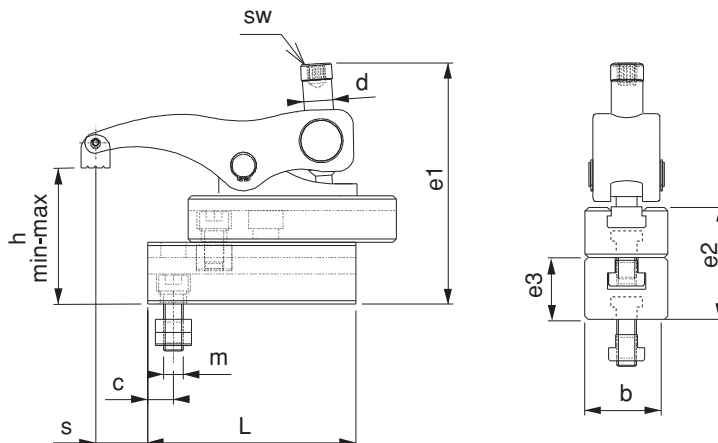
- M20-M24 DIN 508 mit T-Nutmutter verwendet.
- Spannhöhe 79-139 mm
- Spannweite 123 mm, Spannkraft 5500 kg.

Product Nr. 1160-(DT) Bottom Supported

- M20-M24 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 79-139mm
- Back and forth movement distance is 75mm. Clamping force is 5500 kgf.

Product Nr. 1160-(LDT) Bottom Supported

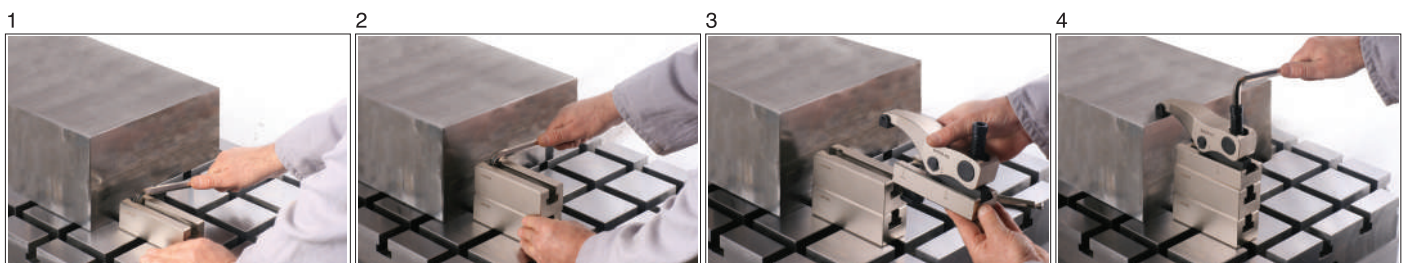
- M20-M24 imbus bolt is used with DIN 508 T-Nut.
- Height clamping gap of the piece is 79-139mm
- Back and forth movement distance is 123mm. Clamping force is 5500 kgf.


ANWENDUNG;

- 1- Zwischenstück an Werkstück befestigen
- 2- Höhen-Anpassung durch weitere Zwischenstücke
- 3- Grundkörper auf Zwischenstück schieben, Inbusschraube auf T-Nut positionieren
- 4- Werkstück mit Inbusschraube befestigen

APPLICATION

- 1- Bottom support is brought to suitable form with the work piece and then it is fixed.
- 2- Desired distance is reached by increasing K.K.S.P. supports
- 3- K.K.S.P. is applied in T-Slot with imbus bolt against T-Nut
- 4- Work piece is fixed with the imbus bolt of the clamp



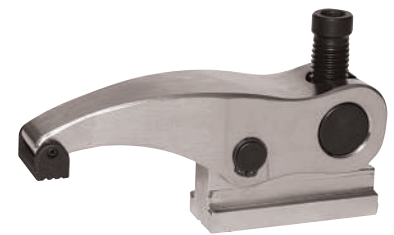
| Referenz-Nr. Order No. | | h | | SW | | |
|---------------------------|-------|-----|-----|----|----|------|
| | | min | max | | | |
| 1120-0050 | 14-18 | 0 | 50 | 8 | - | 860 |
| 1120-0051 | 14-18 | 0 | 50 | 8 | - | 1050 |
| 1130-0060 | 14-22 | 0 | 60 | 10 | - | 1680 |
| 1130-0061 | 14-22 | 0 | 60 | 10 | - | 2150 |
| 1150-0062 | 18-28 | 0 | 65 | 12 | - | 2565 |
| 1150-0063 | 18-28 | 0 | 65 | 12 | - | 3360 |
| 1160-2080 | 22-36 | 20 | 80 | 12 | 24 | 5050 |
| 1160-2081 | 22-36 | 20 | 80 | 12 | 24 | 6900 |
| 1165-3080 | 22-36 | 20 | 80 | - | 24 | 6850 |

1120-1130-1150-1160-1165

- Kraftspanner obere Gruppe: Stahl geschmiedet
- Gehärtet

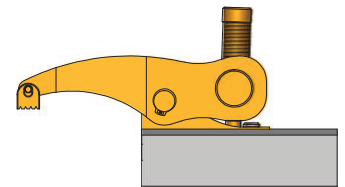
1120-1130-1150-1160-1165

- Upper Slide Group: Forged Steel
- Hardened



Kraftspanner Oberteil

Upper Slide Group



| Referenz-Nr. Order No. | g | | L | b | e | |
|---------------------------|-------------------|-------|-----|----|----|------|
| | | | | | | |
| 1120-145 | M10 M12 | 14-18 | 130 | 38 | 39 | 950 |
| 1130-047 | M12 M16 | 18-28 | 130 | 48 | 39 | 1275 |
| 1130-147 | M12 M16 | 18-28 | 170 | 48 | 39 | 1700 |
| 1150-053 | M16 M18 M20 | 18-28 | 140 | 55 | 42 | 1700 |
| 1150-153 | M16 M18 M20 | 18-28 | 200 | 55 | 42 | 2500 |
| 1160-074 | M20 M22 M24 | 22-28 | 178 | 74 | 55 | 3650 |
| 1160-075 | M30* | 36 | 178 | 74 | 55 | 3650 |
| 1160-174 | M20 M22 M24 | 22-28 | 256 | 74 | 55 | 5400 |
| 1160-175 | M30* | 36 | 256 | 74 | 55 | 5400 |
| 1165-085 | M20 M22 M24 | 36 | 205 | 85 | 55 | 5300 |
| 1165-086 | M30* | 36 | 205 | 85 | 55 | 5300 |

1120-1130-1150-1160-1165

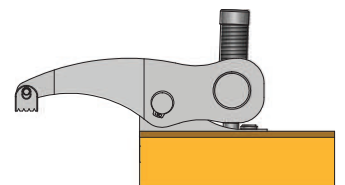
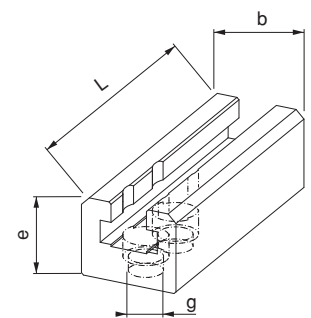
- Gehärtet

1120-1130-1150-1160-1165

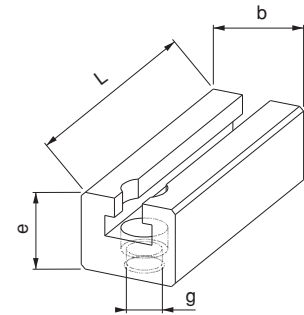
- Hardened

Kraftspanner Grundelement

Body with Bottom T-Slide

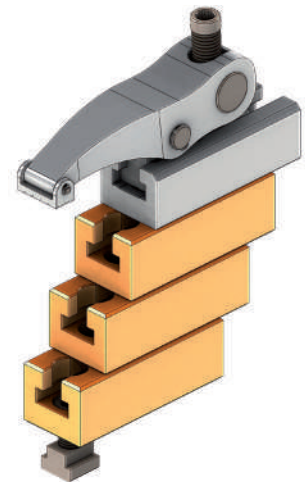


| Referenz-Nr. Order No. | g | | L | b | e | |
|---------------------------|-------------------|----|-----|----|----|------|
| 1120-040 | M10 M12 | 14 | 104 | 38 | 38 | 820 |
| 1120-140 | M10 M12 | 14 | 130 | 38 | 38 | 1030 |
| 1130-045 | M12 M16 | 14 | 130 | 48 | 45 | 1630 |
| 1130-145 | M12 M16 | 14 | 170 | 48 | 45 | 2150 |
| 1150-048 | M16 M18 M20 | 18 | 140 | 55 | 48 | 2070 |
| 1150-148 | M16 M18 M20 | 18 | 200 | 55 | 48 | 3000 |
| 1160-059 | M20 M22 M24 | 28 | 178 | 74 | 59 | 3980 |
| 1160-159 | M20 M22 M24 | 28 | 256 | 74 | 59 | 5800 |



1120-1130-1150-1160
• Gehärtet

1120-1130-1150-1160
• Hardened

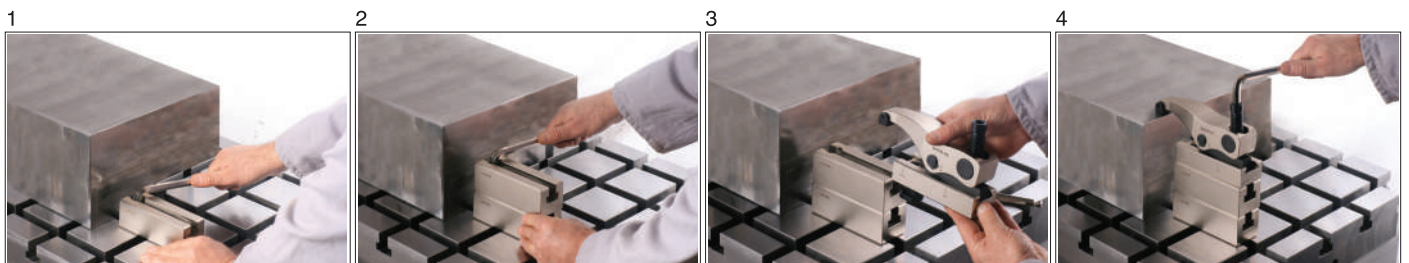
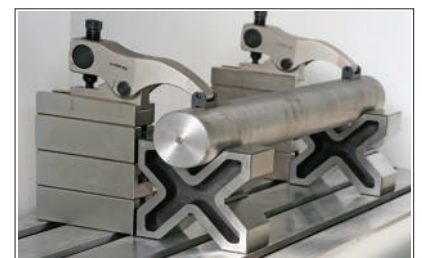


ANWENDUNG;

- 1- Zwischenstück an Werkstück befestigen
- 2- Höhen-Anpassung durch weitere Zwischenstücke
- 3- Grundkörper auf Zwischenstück schieben, Inbusschraube auf T-Nut positionieren
- 4- Werkstück mit Inbusschraube befestigen

APPLICATION

- 1- Bottom support is brought to suitable form with the work piece and then it is fixed.
- 2- Desired distance is reached by increasing K.K.S.P supports
- 3- K.K.S.P. is applied in T-Slot with imbus bolt against T-Nut
- 4- Work piece is fixed with the imbus bolt of the clamp



| Referenz-Nr. Order No. | m | L | SW | | |
|---------------------------|-----|-----|----|----|-----|
| 1120-0714 | M14 | 72 | 8 | - | 138 |
| 1130-0818 | M18 | 83 | 10 | - | 235 |
| 1150-0920 | M20 | 96 | 12 | - | 360 |
| 1160-1024 | M24 | 134 | 12 | 24 | 795 |
| 1165-1124 | M24 | 149 | - | 24 | 950 |

1120-1130-1150-1160-1165

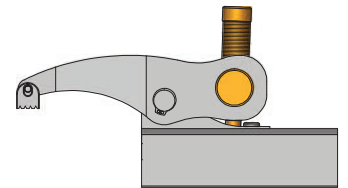
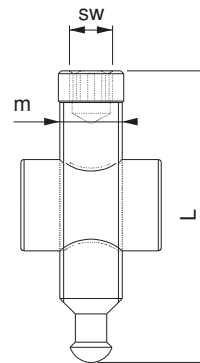
- Gehärtet
- Schwarz beschichtet

1120-1130-1150-1160-1165

- Hardened
- Black Coating

Pabuç Kaldırma Civata ve Somunu

Clamp Lifting Bolt and Nut



| Referenz-Nr. Order No. | m | L | d | sw | |
|---------------------------|------|----|------|----|-----|
| 1120-310 | M10 | 29 | 16.5 | 8 | 28 |
| 1120-312 | M12 | 29 | 16.5 | 8 | 34 |
| 1130-412 | M12 | 30 | 20.5 | 10 | 45 |
| 1130-416 | M16 | 34 | 20.5 | 10 | 75 |
| 1150-516 | M16 | 34 | 24.5 | 12 | 75 |
| 1150-518 | M18 | 38 | 24.5 | 12 | 90 |
| 1150-520 | M20 | 38 | 24.5 | 12 | 105 |
| 1160-620 | M20 | 45 | 34 | 12 | 170 |
| 1160-622 | M22 | 49 | 34 | 12 | 217 |
| 1160-624 | M24 | 45 | 34 | 12 | 390 |
| 1160-724 | M24 | 55 | 34 | 12 | 405 |
| 1160-730 | M30* | 66 | 38.5 | 12 | 450 |
| 1165-820 | M20 | 45 | 34 | 12 | 170 |
| 1165-822 | M22 | 49 | 34 | 12 | 217 |
| 1165-824 | M24 | 45 | 34 | 12 | 390 |
| 1165-924 | M24 | 55 | 34 | 12 | 405 |
| 1165-930 | M30* | 66 | 38.5 | 12 | 400 |

1120-1130-1150-1160-1165

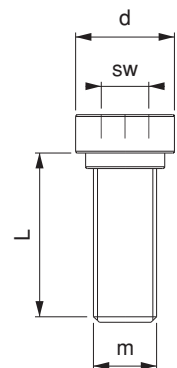
- Für Gewindelöcher M12-M16-M18-M20
- Qualität 10.9
- Schwarz beschichtet



1120-1130-1150-1160-1165

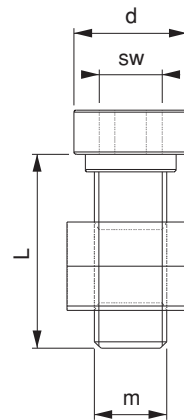
- For M12-M16-M18-M20 thread holes
- Quality 10.9
- Black Coating

Inbusschraube

Imbus Bolt for Fixing



| Referenz-Nr. Order No. |  | m | L | d | sw |  |
|---------------------------|---|-----|----|------|----|---|
| 1120-512 | 12 | M10 | 29 | 16.5 | 8 | 48 |
| 1120-514* | 14 | M12 | 29 | 16.5 | 8 | 54 |
| 1130-614* | 14 | M12 | 30 | 20.5 | 10 | 80 |
| 1130-616 | 16 | M12 | 30 | 20.5 | 10 | 100 |
| 1130-618 | 18 | M12 | 30 | 20.5 | 10 | 130 |
| 1130-620 | 20 | M12 | 36 | 20.5 | 10 | 180 |
| 1130-622 | 22 | M12 | 36 | 20.5 | 10 | 220 |
| 1150-718* | 18 | M16 | 34 | 24.5 | 12 | 145 |
| 1150-720 | 20 | M16 | 34 | 24.5 | 12 | 190 |
| 1150-722 | 22 | M16 | 42 | 24.5 | 12 | 260 |
| 1150-724 | 24 | M16 | 42 | 24.5 | 12 | 350 |
| 1150-728 | 28 | M16 | 42 | 24.5 | 12 | 470 |
| 1160-822 | 22 | M20 | 45 | 34 | 12 | 320 |
| 1160-824 | 24 | M20 | 45 | 34 | 12 | 410 |
| 1160-826* | 28 | M24 | 45 | 34 | 12 | 550 |
| 1160-828 | 28 | M24 | 55 | 34 | 12 | 580 |
| 1160-832 | 32 | M24 | 61 | 34 | 12 | 603 |
| 1160-836 | 36 | M24 | 66 | 38.5 | 12 | 865 |
| 1165-922 | 22 | M20 | 45 | 34 | 12 | 320 |
| 1165-924 | 24 | M20 | 45 | 34 | 12 | 410 |
| 1165-926* | 28 | M24 | 45 | 34 | 12 | 550 |
| 1165-928 | 28 | M24 | 55 | 34 | 12 | 580 |
| 1165-932 | 32 | M24 | 61 | 34 | 12 | 603 |
| 1165-936 | 36 | M24 | 66 | 38.5 | 12 | 865 |




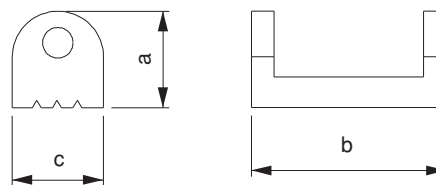
1120-1130-1150-1160-1165

- (a) 14-28 T-Nut Fixier-Imbusschraube und T-Nut DIN 508
- Qualität 10.9
- Schwarz beschichtet
- Stützschrauben unten

1120-1130-1150-1160-1165

- (a) 14-28 T-Slot fixing imbus bolt and T-Nut DIN 508
- Quality 10.9
- Black Coating
- Star-marked codes are bottom support bolts.

| Referenz-Nr. Order No. | a | b | c |  |
|---------------------------|------|------|----|---|
| 1120-DP | 13.5 | 26.5 | 12 | 15 |
| 1120-BSP | 15.5 | 26.5 | 12 | 18 |
| 1120-ESP | 18 | 26.5 | 12 | 21 |
| 1130-DP | 17 | 32 | 15 | 20 |
| 1130-BSP | 19 | 32 | 15 | 30 |
| 1130-ESP | 22 | 32 | 15 | 30 |
| 1150-DP | 19 | 38 | 18 | 40 |
| 1150-BSP | 21 | 38 | 18 | 40 |
| 1150-ESP | 25 | 38 | 18 | 50 |
| 1160-DP | 22 | 44 | 22 | 55 |
| 1160-BSP | 25 | 44 | 22 | 70 |
| 1160-ESP | 28 | 44 | 22 | 80 |
| 1165-DP | 22 | 44 | 22 | 55 |
| 1165-BSP | 25 | 44 | 22 | 70 |
| 1165-ESP | 28 | 44 | 22 | 80 |



Spannbacke

Front Press Clamp



1120-1130-1150-1160-1165

- DP: Spannen flacher Werkstücke
- BSP: zylindrisch spannen in der Länge
- ESP: zylindrisch spannen in der Breite
- Schwarz beschichtet

1120-1130-1150-1160-1165

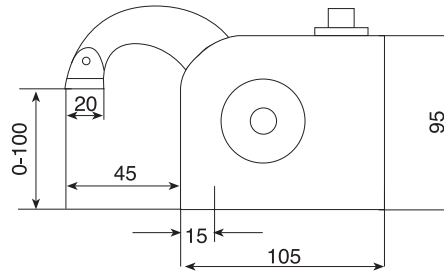
- Product DP : Straight piece clamping
- Product BSP: Longitudinal cylinder clamping
- Product ESP: Lateril cylinder clamping
- Black Coating

MIKSAN ist eine ER-EL Marke

Combined Clamp

| Referenz-Nr. Order No. | a | Spannkraft Clamping Force | (kg) |
|---------------------------|----|------------------------------|------|
| 1168-MB101112 | 12 | 1600 | 1.70 |
| 1168-MB101114 | 14 | 1600 | 1.70 |
| 1168-MB101116 | 16 | 1600 | 1.70 |
| 1168-MB101118 | 18 | 1600 | 1.70 |
| 1168-MB101120 | 20 | 1600 | 1.70 |

1168



Breite / Width 40 mm.

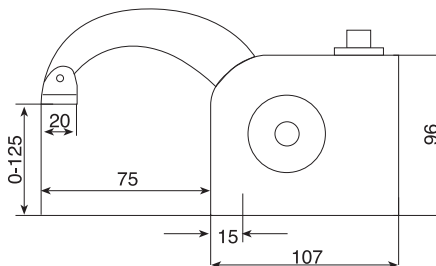


Kompaktspanner

Combined Clamp

| Referenz-Nr. Order No. | a | Spannkraft Clamping Force | (kg) |
|---------------------------|----|------------------------------|------|
| 1168-MBU103112 | 12 | 1600 | 1.80 |
| 1168-MBU103114 | 14 | 1600 | 1.80 |
| 1168-MBU103116 | 16 | 1600 | 1.80 |
| 1168-MBU103118 | 18 | 1600 | 1.80 |
| 1168-MBU103120 | 20 | 1600 | 1.80 |

1168



Breite / Width 40 mm.

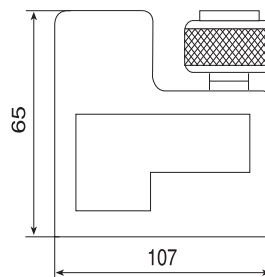


Kompaktspanner Unterteil

Combined Clamp Bottom Support

| Referenz-Nr. Order No. | a | (kg) |
|---------------------------|----|------|
| 1168-MK1021 | 16 | 1.80 |

1168



Breite / Width 40 mm.

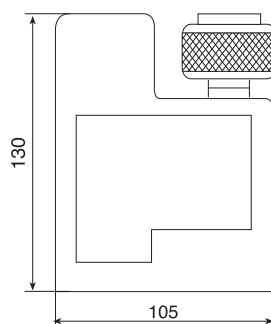


Kompaktspanner Unterteil

Combined Clamp Bottom Support

| Referenz-Nr. Order No. | a | (kg) |
|---------------------------|----|------|
| 1168-MK1022 | 16 | 1.10 |

1168



Breite / Width 40 mm.



Anwendungsbeispiel
Application Examples

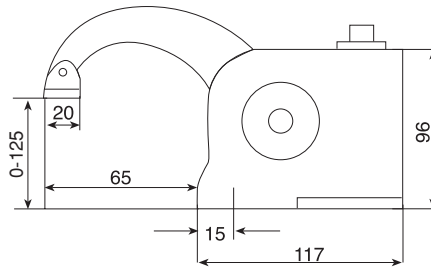


MIKSAN ist eine ER-EL Marke

Combined Clamp

| Referenz-Nr. Order No. | a | Spannkraft Clamping Force | (kg) |
|---------------------------|----|------------------------------|------|
| 1168-MFB204112 | 12 | 1600 | 1.70 |
| 1168-MFB204114 | 14 | 1600 | 1.70 |
| 1168-MFB204116 | 16 | 1600 | 1.70 |
| 1168-MFB204118 | 18 | 1600 | 1.70 |
| 1168-MFB204120 | 20 | 1600 | 1.70 |

1168



Breite / Width 40 mm.

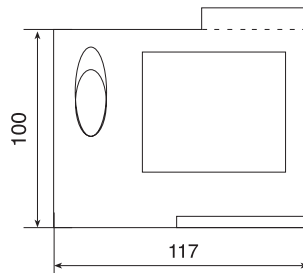


Kompaktspanner Unterteil

Combined Clamp Bottom Support

| Referenz-Nr. Order No. | a | Spannkraft Clamping Force | (kg) |
|---------------------------|----|------------------------------|------|
| 1168-MFK204212 | 12 | 1600 | 0.80 |
| 1168-MFK204214 | 14 | 1600 | 0.80 |
| 1168-MFK204216 | 16 | 1600 | 0.80 |
| 1168-MFK204218 | 18 | 1600 | 0.80 |
| 1168-MFK204220 | 20 | 1600 | 0.80 |

1168



Breite / Width 40 mm.

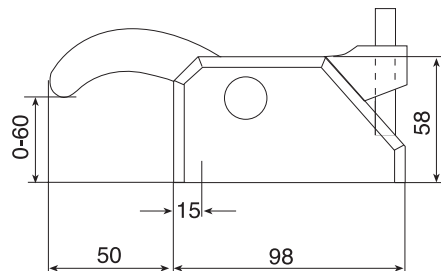


Anwendungsbeispiel
Application Examples



| Referenz-Nr. Order No. | a | Spannkraft Clamping Force | (kg) |
|---------------------------|----|------------------------------|------|
| 1168-MEP501116 | 16 | 5000 | 2.80 |
| 1168-MEP501118 | 18 | 5000 | 2.80 |
| 1168-MEP501120 | 20 | 5000 | 2.80 |
| 1168-MEP501122 | 22 | 5000 | 2.80 |
| 1168-MEP501124 | 24 | 5000 | 2.80 |

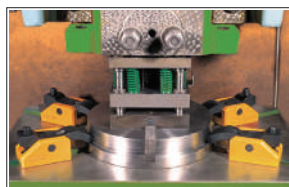
1168



Breite / Width 72 mm.

Kompaktspanner

Combined Clamp

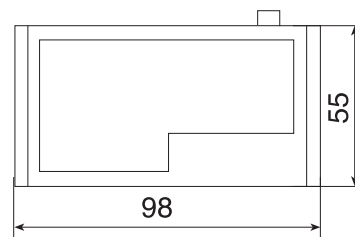


Kompaktspanner Unterteil

Combined Clamp Bottom Support

| Referenz-Nr. Order No. | a | (kg) |
|---------------------------|----|------|
| 1168-MPK5022 | 18 | 0.90 |

1168





Breite / Width 72 mm.



Anwendungsbeispiel
Application Examples



| Referenz-Nr. Order No. |  | Spannkraft Clamping Force |  |
|---------------------------|---|------------------------------|---|
| 1168-MP601214 | 14 | 2200 | 2.50 |
| 1168-MP601216 | 16 | 2200 | 2.50 |
| 1168-MP601218 | 18 | 2200 | 2.50 |
| 1168-MP601220 | 20 | 2200 | 2.50 |

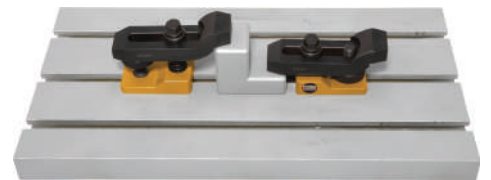
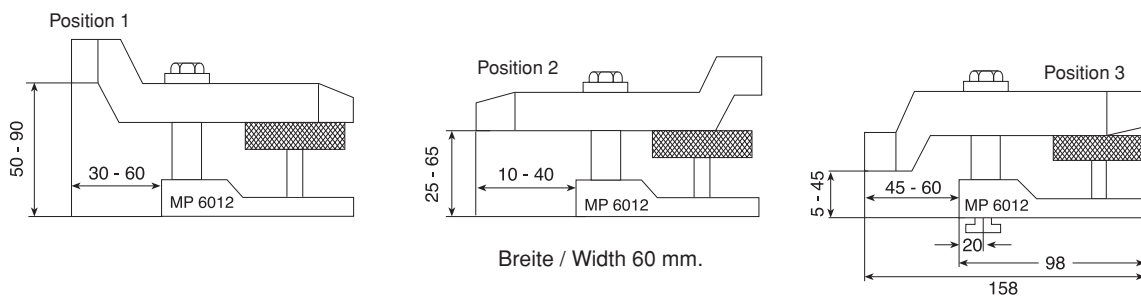


1168

- beidseitig verwendbar Feinabstufung der Rastentreppe ermöglicht Verwendung in engen Bereichen



1168

- Double-sided usage of the clamp and it's stepped lifter's provides using advantage in restricted areas



Kompaktspanner Unterteil

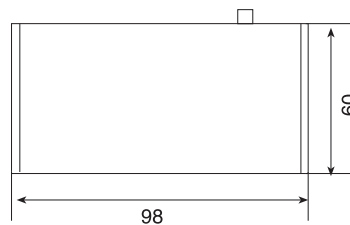
Combined Clamp Bottom Support

| Referenz-Nr. Order No. |  |  |
|---------------------------|---|---|
| 1168-MY602114 | 14 | 0.60 |
| 1168-MY602116 | 16 | 0.60 |
| 1168-MY602118 | 18 | 0.60 |
| 1168-MY602120 | 20 | 0.60 |

1168



Anwendungsbeispiel
Application Examples



Breite / Width 58 mm.

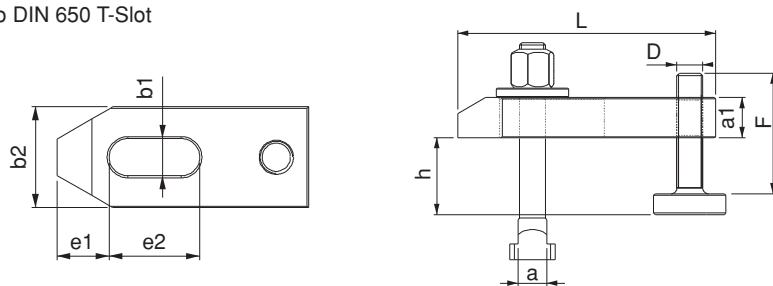
| Referenz-Nr. Order No. | | L | Nr.1330 | | e1 | e2 | b1 | Nr.1610 | h | Nr.1490 D x F | (g) |
|---------------------------|----|-----|---------|----|----|----|------|------------|-------|------------------|---------|
| | | | a1 | b2 | | | | | | | |
| 1170-1010080 | 10 | 80 | 15 | 30 | 15 | 30 | 11 | M10x10x80 | 10-35 | M10x42 | 370 |
| 1170-1212100 | 12 | 100 | 20 | 40 | 21 | 40 | 14.5 | M12x12x100 | 12-40 | M12x50 | 740 |
| 1170-1212125 | 12 | 125 | 20 | 40 | 21 | 50 | 14.5 | M12x12x160 | 12-85 | M12x95 | 940 |
| 1170-1214100 | 14 | 100 | 20 | 40 | 21 | 40 | 14.5 | M12x14x100 | 12-40 | M12x50 | 705 |
| 1170-1214125 | 14 | 125 | 20 | 40 | 21 | 50 | 14.5 | M12x14x160 | 12-85 | M12x95 | 965 |
| 1170-1616125 | 16 | 125 | 25 | 50 | 26 | 45 | 18.5 | M16x16x125 | 15-50 | M16x62 | 1115 |
| 1170-1616160 | 16 | 160 | 25 | 50 | 26 | 65 | 18.5 | M16x16x160 | 15-85 | M16x97 | 1870 |
| 1170-1618125 | 18 | 125 | 25 | 50 | 26 | 45 | 18.5 | M16x18x125 | 15-50 | M16x62 | 1540 |
| 1170-1618160 | 18 | 160 | 25 | 50 | 26 | 65 | 18.5 | M16x18x160 | 15-85 | M16x97 | 1900 |
| 1170-2020160 | 20 | 160 | 30 | 60 | 30 | 60 | 22.5 | M20x20x160 | 15-45 | M20x62 | 1675 |
| 1170-2020200 | 20 | 200 | 30 | 60 | 30 | 80 | 22.5 | M20x20x200 | 15-80 | M20x97 | 3295 |
| 1170-2022160 | 22 | 160 | 30 | 60 | 30 | 60 | 22.5 | M20x22x160 | 15-45 | M20x62 | 2730 |
| 1170-2022200 | 22 | 200 | 30 | 60 | 30 | 80 | 22.5 | M20x22x200 | 15-80 | M20x97 | 3340 |
| 1170-2424160 | 24 | 160 | 30 | 70 | 35 | 60 | 26.5 | M24x24x160 | 16-60 | M24x81 | 3465 |
| 1170-2424200 | 24 | 200 | 30 | 70 | 35 | 80 | 26.5 | M24x24x200 | 16-95 | M24x116 | 4660 |
| 1170-2428160 | 28 | 160 | 30 | 70 | 35 | 60 | 26.5 | M24x28x160 | 16-60 | M24x81 | 5560 |
| 1170-2428200 | 28 | 200 | 30 | 70 | 35 | 80 | 26.5 | M24x28x200 | 16-95 | M24x116 | 4755 |

1170

- kompatibel mit "T-Nut" DIN 650

1170

- Product is suitable to DIN 650 T-Slot



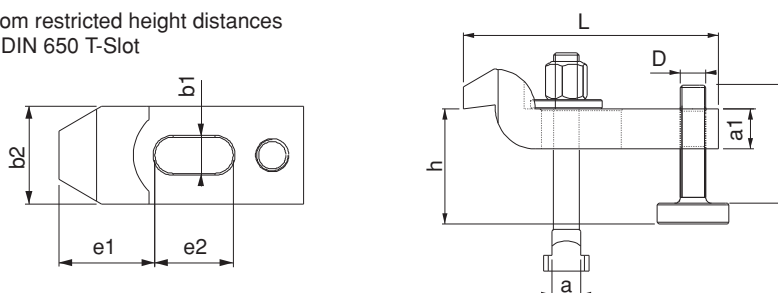
| Referenz-Nr. Order No. | | L | Nr.1450 | | e1 | e2 | b1 | Nr.1610 | h | Nr.1490 D x F | (g) |
|---------------------------|----|-----|---------|----|----|----|------|------------|-------|------------------|---------|
| | | | a1 | b2 | | | | | | | |
| 1190-1010100 | 10 | 100 | 15 | 30 | 32 | 32 | 11 | M10x10x80 | 26-50 | M10x42 | 405 |
| 1190-1212125 | 12 | 125 | 20 | 40 | 40 | 40 | 14.5 | M12x12x100 | 33-60 | M12x50 | 870 |
| 1190-1214125 | 14 | 125 | 20 | 40 | 40 | 40 | 14.5 | M12x14x100 | 37-60 | M12x50 | 890 |
| 1190-1616160 | 16 | 160 | 25 | 50 | 49 | 50 | 18.5 | M16x16x125 | 41-75 | M16x62 | 1785 |
| 1190-1618160 | 18 | 160 | 25 | 50 | 49 | 50 | 18.5 | M16x18x125 | 41-75 | M16x62 | 1810 |
| 1190-2020200 | 20 | 200 | 30 | 60 | 55 | 70 | 22.5 | M20x20x160 | 46-75 | M20x62 | 3105 |
| 1190-2022200 | 22 | 200 | 30 | 60 | 55 | 70 | 22.5 | M20x22x160 | 46-75 | M20x62 | 3155 |
| 1190-2424200 | 24 | 200 | 35 | 70 | 72 | 60 | 26 | M24x24x200 | 52-95 | M24x81 | 4695 |
| 1190-2428200 | 28 | 200 | 35 | 70 | 72 | 60 | 26 | M24x28x200 | 52-95 | M24x81 | 4790 |

1190

- Verwendung in engen Bereichen
- kompatibel mit "T-Nut" DIN 650

1190

- This is used to gain from restricted height distances
- Product is suitable to DIN 650 T-Slot



| Referenz-Nr. Order No. | | a1 | a2 | a3 | b2xL | b3 | e1 | e2 | h2 | k | b1 | m | h1 | kgf | |
|---------------------------|-------------|----|------|----|--------|----|----|----|------|----|----|-----|-------|------|------|
| 1195-44115 | 10-12-14 | 27 | 12.5 | 12 | 44x115 | 30 | 25 | 30 | 21 | 11 | 13 | M12 | 0-55 | 3000 | 506 |
| 1195-55150 | 12-14-16-18 | 36 | 18 | 17 | 55x150 | 41 | 35 | 36 | 23 | 12 | 17 | M16 | 0-70 | 4000 | 1382 |
| 1195-63187 | 16-18-20-22 | 42 | 25 | 20 | 63x187 | 30 | 44 | 44 | 32.5 | 14 | 21 | M20 | 0-80 | 6000 | 2241 |
| 1195-70235 | 20-22-24-28 | 51 | 36.5 | 24 | 70x235 | 30 | 60 | 47 | 34 | 17 | 25 | M20 | 0-100 | 7500 | 3550 |

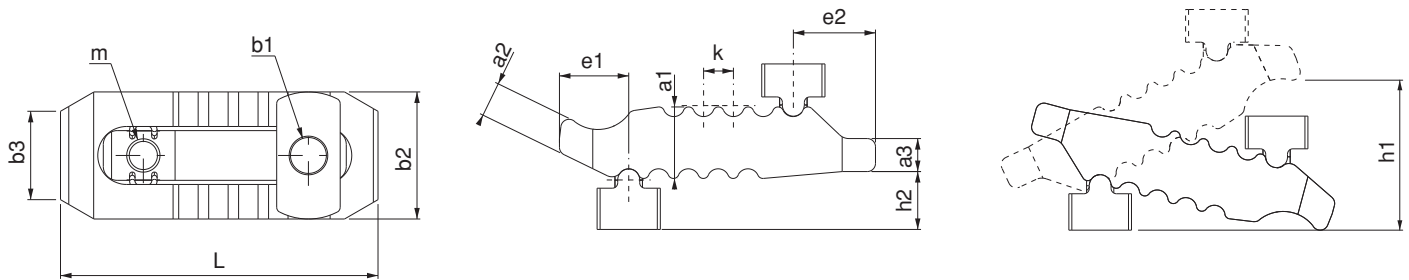
1195

- Material: Geschmiedeter Stahl
- Gehärtet
- Schwarz beschichtet



1195

- Material: Forged Steel
- Hardened
- Black coating



Spannpratze mit Gegenhalter, verstellbar

Combined Coupling Clamps Double Sided

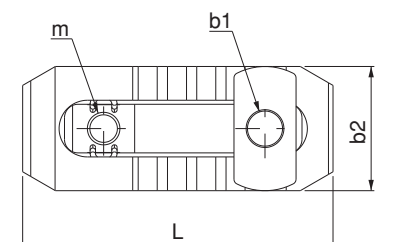
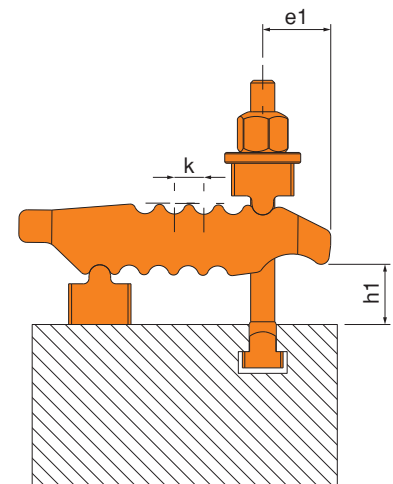
| Referenz-Nr. Order No. | b1 | b2xL | e1 | h1 | k | m | | | Spannkraft Clamping Force kgf | |
|---------------------------|----|--------|----|-------|----|-----|----|------------|-------------------------------------|------|
| 1195-1010100 | 13 | 44x115 | 25 | 0-55 | 11 | M12 | 10 | M10x10x100 | 2500 | 613 |
| 1195-1212125 | 13 | 44x115 | 25 | 0-55 | 11 | M12 | 12 | M12x12x125 | 3000 | 686 |
| 1195-1214125 | 13 | 44x115 | 25 | 0-55 | 11 | M12 | 14 | M12x14x125 | 3000 | 705 |
| 1195-1212160 | 17 | 55x150 | 35 | 0-70 | 12 | M16 | 12 | M12x12x160 | 3500 | 1591 |
| 1195-1214160 | 17 | 55x150 | 35 | 0-70 | 12 | M16 | 14 | M12x14x160 | 3500 | 1610 |
| 1195-1616160 | 17 | 55x150 | 35 | 0-70 | 12 | M16 | 16 | M16x16x160 | 4000 | 1798 |
| 1195-1618160 | 17 | 55x150 | 35 | 0-70 | 12 | M16 | 18 | M16x18x160 | 4000 | 1818 |
| 1195-1616200 | 21 | 63x187 | 44 | 0-80 | 14 | M20 | 16 | M16x16x200 | 5500 | 2715 |
| 1195-1618200 | 21 | 63x187 | 44 | 0-80 | 14 | M20 | 18 | M16x18x200 | 5500 | 3018 |
| 1195-2020200 | 21 | 63x187 | 44 | 0-80 | 14 | M20 | 20 | M20x20x200 | 6000 | 3018 |
| 1195-2022200 | 21 | 63x187 | 44 | 0-80 | 14 | M20 | 22 | M20x22x200 | 6000 | 3060 |
| 1195-2020250 | 25 | 70x235 | 60 | 0-100 | 17 | M20 | 20 | M20x20x250 | 7000 | 4368 |
| 1195-2022250 | 25 | 70x235 | 60 | 0-100 | 17 | M20 | 22 | M20x22x250 | 7000 | 4410 |
| 1195-2424250 | 25 | 70x235 | 60 | 0-100 | 17 | M20 | 24 | M24x24x250 | 7500 | 4895 |
| 1195-2428250 | 25 | 70x235 | 60 | 0-100 | 17 | M20 | 28 | M24x28x250 | 7500 | 4966 |

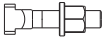
1195

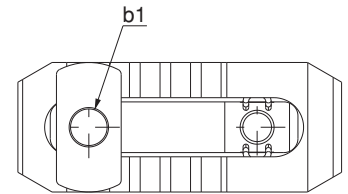
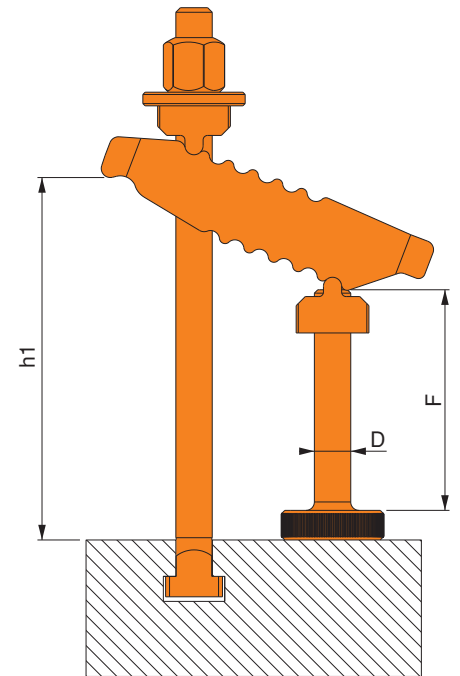
- kompatibel mit "T-Nut" DIN 650

1195

- Product is suitable to DIN 650 T-Slot



| Referenz-Nr. Order No. | B1 | D x F |  DIN 787 | h1 |
|---------------------------|----|--------|--|--------|
| 1195-10101005013 | 13 | M12x50 | M10x10x100 | 15-31 |
| 1195-12121605013 | 13 | M12x50 | M12x12x160 | 15-97 |
| 1195-12141605013 | 13 | M12x50 | M12x14x160 | 15-97 |
| 1195-12122006217 | 17 | M16x62 | M12x12x200 | 18-126 |
| 1195-12142006217 | 17 | M16x62 | M12x14x200 | 18-126 |
| 1195-16162006217 | 17 | M16x62 | M16x16x200 | 18-126 |
| 1195-16182006217 | 17 | M16x62 | M16x18x200 | 18-126 |
| 1195-12122009717 | 17 | M16x97 | M12x12x200 | 18-120 |
| 1195-12142009717 | 17 | M16x97 | M12x14x200 | 18-120 |
| 1195-16162509717 | 17 | M16x97 | M16x16x250 | 39-161 |
| 1195-16182509717 | 17 | M16x97 | M16x18x250 | 39-161 |
| 1195-16162506221 | 21 | M20x62 | M16x16x250 | 18-129 |
| 1195-16182506221 | 21 | M20x62 | M16x18x250 | 18-129 |
| 1195-20202506221 | 21 | M20x62 | M20x20x250 | 18-129 |
| 1195-20222506221 | 21 | M20x62 | M20x22x250 | 18-129 |
| 1195-16162509721 | 21 | M20x97 | M16x16x250 | 18-151 |
| 1195-16182509721 | 21 | M20x97 | M16x18x250 | 18-151 |
| 1195-20203159721 | 21 | M20x97 | M20x20x315 | 42-184 |
| 1195-20223159721 | 21 | M20x97 | M20x22x315 | 42-184 |
| 1195-20203156225 | 25 | M20x62 | M20x20x315 | 21-147 |
| 1195-20223156225 | 25 | M20x62 | M20x22x315 | 21-147 |
| 1195-24243156225 | 25 | M20x62 | M24x24x315 | 21-147 |
| 1195-24283156225 | 25 | M20x62 | M24x28x315 | 21-147 |
| 1195-20203159725 | 25 | M20x97 | M20x20x315 | 21-182 |
| 1195-20223159725 | 25 | M20x97 | M20x22x315 | 21-182 |
| 1195-24243159725 | 25 | M20x97 | M24x24x315 | 21-182 |
| 1195-24283159725 | 25 | M20x97 | M24x28x315 | 21-182 |






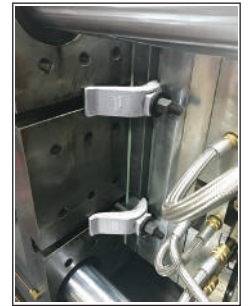
1195

- kompatibel mit "T-Nut" DIN 650

1195

- Product is suitable to DIN 650 T-Slot

| Referenz-Nr. Order No. |  |  | b1 | b2xL | d | e1 | e2 | h |  |
|---------------------------|---|---|----|--------|----|----|----|------|---|
| 1200-50140 | 16-18 | - | 17 | 50x140 | 60 | 30 | 55 | 75 | 900 |
| 1200-60175 | 20-22 | - | 21 | 60x175 | 80 | 40 | 70 | 85 | 1600 |
| 1200-12125 | 12 | M12x12x125 | 17 | 50x140 | 60 | 30 | 55 | 0-50 | 1070 |
| 1200-14125 | 14 | M12x14x125 | 17 | 50x140 | 60 | 30 | 55 | 0-55 | 1080 |
| 1200-16160 | 16 | M16x16x160 | 17 | 50x140 | 60 | 30 | 55 | 0-75 | 1270 |
| 1200-18160 | 18 | M16x18x160 | 17 | 50x140 | 60 | 30 | 55 | 0-75 | 1280 |
| 1200-20200 | 20 | M20x20x200 | 21 | 60x175 | 80 | 40 | 70 | 0-85 | 2300 |
| 1200-22200 | 22 | M20x22x200 | 21 | 60x175 | 80 | 40 | 70 | 0-85 | 2370 |

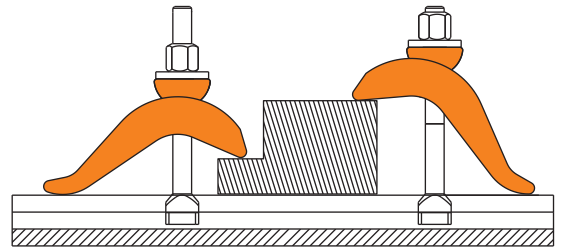
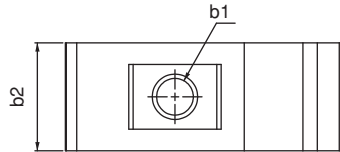
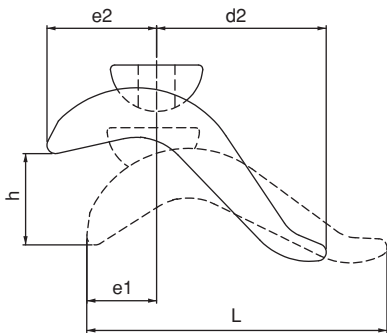


1200

- Material: Geschmiedeter Stahl
- Verzinkt




1200

- Material: Forged Steel
- Zinc Coating



Spannpratze

Stepped Coupling Clamp

| Referenz-Nr. Order No. | b1 |  |  | m | h | b x L | c | d | e1 | k x3 |  |
|---------------------------|----|---|---|-------|-------|--------|----|-----|----|------|---|
| 1205-017 | 17 | 16-18 | - | 93 | 15-50 | 65x165 | 39 | 128 | 30 | 17 | 2100 |
| 1205-021 | 21 | 20-22 | - | 111 | 20-65 | 75x189 | 43 | 146 | 33 | 19 | 3200 |
| 1205-025 | 25 | 24-28 | - | 126 | 20-75 | 85x213 | 49 | 164 | 39 | 21 | 4500 |
| 1205-031 | 31 | 36 | - | 143.5 | 20-85 | 95x238 | 56 | 182 | 46 | 23 | 6300 |
| 1205-016 | 17 | 16 | M16x16x125 | 93 | 15-50 | 65x165 | 39 | 128 | 30 | 17 | 2500 |
| 1205-018 | 17 | 18 | M16x18x125 | 93 | 15-50 | 65x165 | 39 | 128 | 30 | 17 | 2500 |
| 1205-020 | 21 | 20 | M20x20x160 | 111 | 20-65 | 75x189 | 43 | 146 | 33 | 19 | 3900 |
| 1205-022 | 21 | 22 | M20x22x160 | 111 | 20-65 | 75x189 | 43 | 146 | 33 | 19 | 3900 |
| 1205-024 | 25 | 24 | M24x24x200 | 126 | 20-75 | 85x213 | 49 | 164 | 39 | 21 | 5700 |
| 1205-028 | 25 | 28 | M24x28x200 | 126 | 20-75 | 85x213 | 49 | 164 | 39 | 21 | 5700 |
| 1205-036 | 31 | 36 | M30x36x250 | 143.5 | 20-85 | 95x238 | 56 | 182 | 46 | 23 | 8800 |

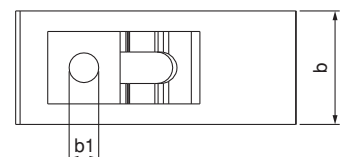
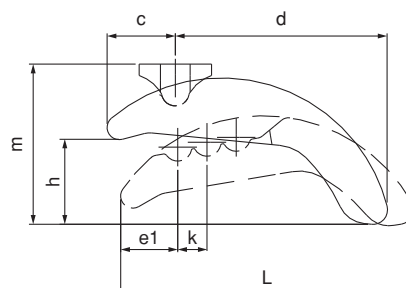


1205

- Verwendung im Bereich 15-85 mm ohne Stütze
- Material: Geschmiedeter Stahl
- Verzinkt

1205

- It provides using between 15-85 mm without supporting.
- Material: Forged Steel
- Zinc Coating

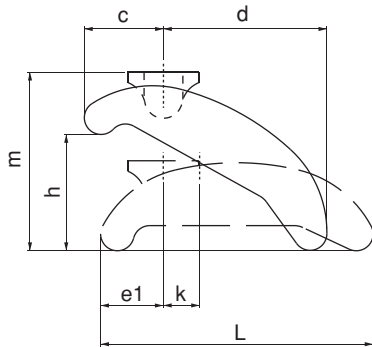


| Referenz-Nr. Order No. | b1 | a | DIN 787 | m | h | b x L | c | d | e1 | k x4 | (g) |
|---------------------------|----|-------|------------|-----|------|--------|----|-----|----|------|------|
| 1210-013 | 13 | 12-14 | - | 52 | 0-40 | 40x90 | 28 | 48 | 23 | 14 | 340 |
| 1210-017 | 17 | 16-18 | - | 80 | 0-60 | 58x130 | 38 | 74 | 29 | 18 | 990 |
| 1210-021 | 21 | 20-22 | - | 98 | 0-75 | 68x140 | 46 | 80 | 32 | 20 | 1450 |
| 1210-025 | 25 | 24-28 | - | 110 | 0-90 | 78x175 | 52 | 100 | 39 | 24 | 2360 |
| 1210-012 | 13 | 12 | M12x12x100 | 52 | 0-40 | 40x90 | 28 | 48 | 23 | 14 | 400 |
| 1210-014 | 13 | 14 | M12x14x100 | 52 | 0-40 | 40x90 | 28 | 48 | 23 | 14 | 420 |
| 1210-016 | 17 | 16 | M16x16x160 | 80 | 0-60 | 58x130 | 38 | 74 | 29 | 18 | 1140 |
| 1210-018 | 17 | 18 | M16x18x160 | 80 | 0-60 | 58x130 | 38 | 74 | 29 | 18 | 1145 |
| 1210-020 | 21 | 20 | M20x20x200 | 98 | 0-75 | 68x140 | 46 | 80 | 32 | 20 | 1560 |



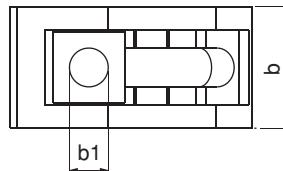
1210

- Verwendung im Bereich 0-75 mm ohne Stütze
- Material: Geschmiedeter Stahl
- Gehärtet
- Verzinkt



1210

- It provides using between 0-75 mm without supporting.
- Material: Forged Steel
- Hardened
- Zinc Coating



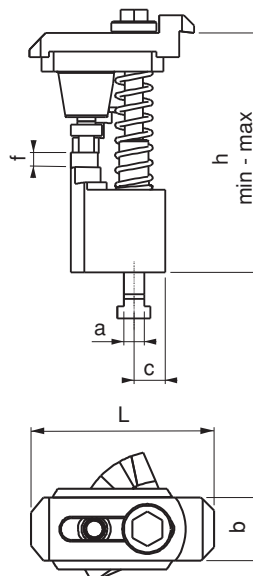
| Referenz-Nr. Order No. | a | h min - max | f | c | L | b | (g) |
|---------------------------|----------------|----------------|----|----|-----|----|------|
| 1230-01 | 14-16-18-20-22 | 40 - 80 | 5 | 16 | 110 | 38 | 1200 |
| 1230-02 | | 70 - 125 | 10 | 16 | 110 | 38 | 1490 |
| 1230-03 | | 120 - 175 | 10 | 18 | 110 | 38 | 2700 |
| 1230-04 | | 170 - 225 | 10 | 23 | 110 | 38 | 4260 |

1230

- beidseitig verwendbar Feinabstufung der Rastentreppe ermöglicht Verwendung in engen Bereichen
- kompatibel mit "T-Nut" DIN 650
- Spanneisen: gehärtet
- Schraube: 10.9
- Körper: statisch lackiert, Rest Schwarz beschichtet

1230

- Double-sided usage of the clamp provides using advantage in restricted areas
- Product is suitable to DIN 650 T-Slot
- Clamp Material: Hardened
- Bolt Quality: 10.9
- Body is statically painted and the other parts are black coated



Stufenpratze

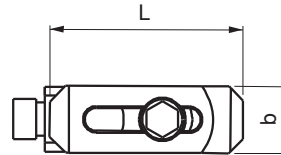
Stepped Combined Clamp



| Referenz-Nr. Order No. | | h min-max | f | c | L | b | m | sw | Spannkraft Clamping Force Kgf | Nm | |
|---------------------------|----------------|--------------|---|----|-----|----|-----|----|-------------------------------------|----|------|
| 1250 - 02 | 14-16-18-20-22 | 80-137 | 3 | 17 | 110 | 38 | M12 | 19 | 2250 | 85 | 2015 |
| 1250 - 03 | | 125-224 | 3 | 17 | 110 | 38 | M12 | 19 | 2250 | 85 | 2910 |
| 1250 - 04 | | 160-300 | 3 | 17 | 110 | 38 | M12 | 19 | 2250 | 85 | 3665 |

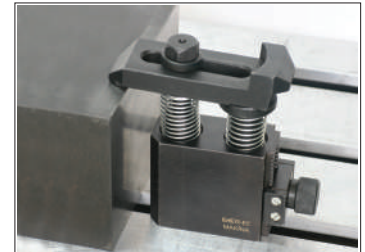
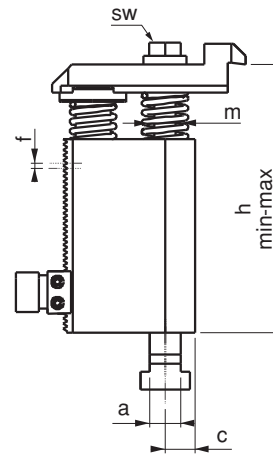
1250

- beidseitig verwendbar Feinabstufung der Rastentreppe ermöglicht Verwendung in engen Bereichen
- kompatibel mit "T-Nut" DIN 650
- Spanneisen: gehartet
- Schraube: 10.9
- Schwarz beschichtet



1250

- Double-sided usage of the clamp and it's stepped lifter's support provides using advantage in restricted areas
- It is suitable to DIN 650 T-Slot
- Clamp Hardness: Hardened
- Bolt Quality: 10.9
- Black coating



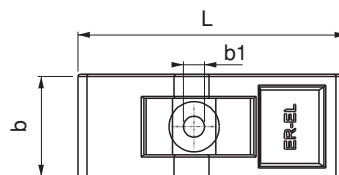
Spannpratze stufenlos verstellbar

Unsupported Suspension Clamp

| Referenz-Nr. Order No. | | h min-max | | b1 | e | z | L | b | |
|---------------------------|----|--------------|------------|----|----|----|-----|----|------|
| 1270-1012 | 12 | 0-45 | M10x12x125 | 11 | 48 | 61 | 109 | 40 | 660 |
| 1270-1214 | 14 | 0-45 | M12x14x125 | 13 | 48 | 61 | 109 | 40 | 705 |
| 1270-1416 | 16 | 0-55 | M14x16x125 | 15 | 57 | 72 | 129 | 50 | 1190 |
| 1270-1618 | 18 | 0-55 | M16x18x125 | 17 | 57 | 72 | 129 | 50 | 1265 |

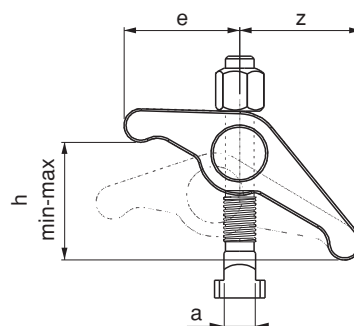
1270

- Verwendung ohne Stütze 0-55 mm
- Material: Geschmiedeter Stahl
- Spanneisen: gehartet
- Schraube: 12.9
- Verzinkt



1270

- Product provides using between 0-55 mm without using support
- Material: Forged Steel
- Clamp Hardness: Hardened
- Bolt Quality: 12.9
- Zinc Coating



| Referenz-Nr. Order No. | a | b | c | d | e | m | sw | m1 | İmbus | Spannkraft Clamping Force Kgf | Drehmoment Allowable Screw Torque (N-m) | (g) |
|---------------------------|----|----|----|----|----|-----|----|-----|-------|-------------------------------------|--|---------|
| 1275-3012 | 30 | 28 | 16 | 40 | 23 | M12 | 30 | M8 | M10 | 750 | 20 | 300 |
| 1275-5012 | 50 | 32 | 20 | 45 | 40 | M12 | 36 | M12 | M12 | 1000 | 30 | 500 |
| 1275-5016 | 50 | 32 | 20 | 45 | 40 | M16 | 36 | M12 | M12 | 1000 | 30 | 510 |
| 1275-6016 | 60 | 40 | 25 | 45 | 45 | M16 | 41 | M16 | M16 | 1250 | 45 | 750 |

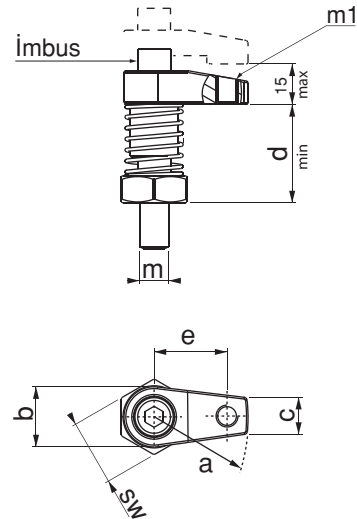
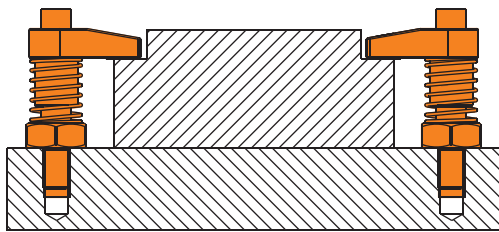


1275

- Verwendung in engen Bereichen
- Gehärtet
- Schwarz beschichtet

1275

- Function working in restricted areas
- Hardened
- Black coated



| Referenz-Nr. Order No. | a | Ø b h7 | c | d | e | f | g | m | m1 | j | Spannkraft Clamping Force Kgf | (g) |
|---------------------------|----|-----------|----|----|----|----|----|-----|-----|----|-------------------------------------|---------|
| 1280-3010 | 30 | 22 | 58 | 80 | 28 | 16 | 30 | M10 | M8 | 23 | 750 | 220 |
| 1280-5012 | 50 | 26 | 70 | 90 | 32 | 20 | 40 | M12 | M12 | 40 | 1100 | 400 |
| 1280-6016 | 60 | 32 | 74 | 95 | 40 | 25 | 40 | M16 | M16 | 45 | 1250 | 610 |

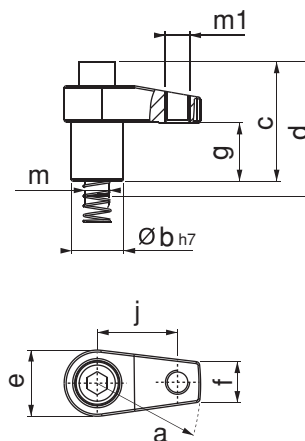


1280

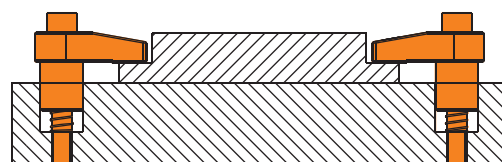
- Verwendung in engen Bereichen, auf Platten
- Gehärtet
- Schwarz beschichtet

1280

- Function working in restricted areas and variety application at plate
- Hardened
- Black coated



| Referenz-Nr. Order No. | a (F7) | b | c | m | |
|---------------------------|-----------|----|----|-----|--|
| 1280-3010 | 22 | 30 | 20 | M10 | |
| 1280-5012 | 26 | 40 | 25 | M12 | |
| 1280-6016 | 32 | 40 | 25 | M16 | |



| Referenz-Nr. Order No. | a | b | m | d | sw | (g) |
|---------------------------|----|----|-----|----|----|---------|
| 1282-0825 | 25 | 12 | M8 | 8 | 14 | 10 |
| 1282-1030 | 30 | 17 | M10 | 10 | 17 | 30 |
| 1282-1235 | 35 | 22 | M12 | 12 | 22 | 60 |
| 1282-1642 | 42 | 26 | M16 | 14 | 27 | 125 |

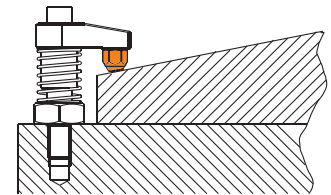
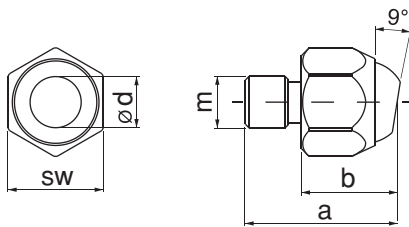


1282

- Für abgestufte saubere Flächen
- für plane und saubere Flächen, kompatibel mit Nr. 1275 und 1280
- Gehärtet
- Schwarz beschichtet

1282

- Graded clean surfaces.
- It is applicable with Nr. 1275 and 1280 for graded clean surfaces.
- Hardened
- Black coated



Druckschraube mit beweglichem Kopf (lang)

| Referenz-Nr. Order No. | D1 | D2 | L | L1 | SW | (g) |
|---------------------------|-----|----|------|----|----|---------|
| 1282-25D | M8 | 8 | 36.6 | 25 | 13 | 26 |
| 1282-30D | M10 | 10 | 45.7 | 30 | 17 | 42 |
| 1282-35D | M12 | 12 | 50.7 | 35 | 17 | 53 |
| 1282-40D | M16 | 14 | 60.7 | 40 | 24 | 117 |
| 1282-50D | M20 | 14 | 77.3 | 50 | 30 | 240 |

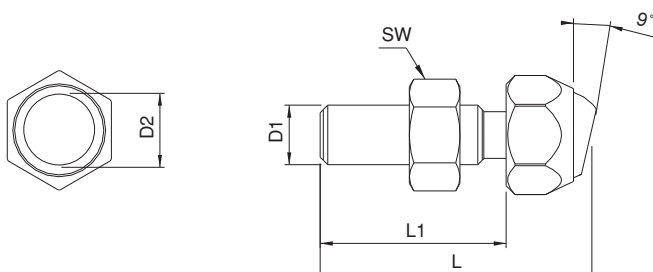



1282

- Für abgestufte saubere Flächen
- für plane und saubere Flächen, kompatibel mit Nr. 1275 und 1280
- Gehärtet
- Schwarz beschichtet

1282

- Graded clean surfaces.
- It is applicable with Nr. 1275 and 1280 for graded clean surfaces.
- Hardened
- Black coated



| Referenz-Nr. Order No. | a | b | m | d | sw |  (g) |
|---------------------------|----|----|-----|----|----|--|
| 1283-0825 | 25 | 12 | M8 | 8 | 14 | 10 |
| 1283-1030 | 30 | 17 | M10 | 10 | 17 | 30 |
| 1283-1235 | 35 | 22 | M12 | 12 | 22 | 60 |
| 1283-1642 | 42 | 26 | M16 | 14 | 27 | 120 |

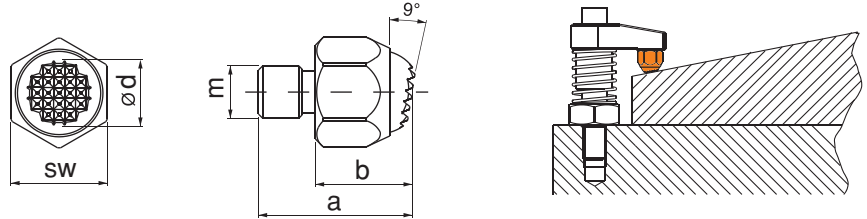


1283


- für plan-saubere Flächen
- Gehärtet
- Schwarz beschichtet

1283

- Its clamping surface is designed with bead graded bad surfaces.
- Hardened
- Black coated



Druckschraube mit beweglichem Kopf (lang)

| Referenz-Nr. Order No. | D1 | D2 | L | L1 | SW |  (g) |
|---------------------------|-----|----|------|----|----|--|
| 1283-25T | M8 | 8 | 36.6 | 25 | 13 | 26 |
| 1283-30T | M10 | 10 | 45.7 | 30 | 17 | 42 |
| 1283-35T | M12 | 12 | 50.7 | 35 | 17 | 53 |
| 1283-40T | M16 | 14 | 60.7 | 40 | 24 | 117 |
| 1283-50T | M20 | 14 | 77.3 | 50 | 30 | 240 |

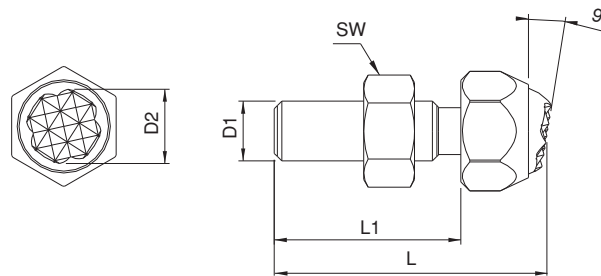


1283


- für plan-saubere Flächen
- Gehärtet
- Schwarz beschichtet

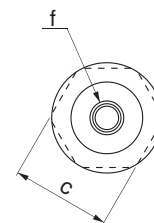
1283

- Its clamping surface is designed with bead graded bad surfaces.
- Hardened
- Black coated



Distanzhülse

| Referenz-Nr. Order No. | a | b F7 | c | d | e | f | m | h |  (g) |
|---------------------------|-----|---------|----|----|-----|-----|-----|----|--|
| 1285-12080 | 80 | 26 | 36 | 40 | 110 | M12 | M12 | 40 | 600 |
| 1285-12100 | 100 | 26 | 36 | 40 | 130 | M12 | M12 | 40 | 795 |
| 1285-16080 | 80 | 32 | 46 | 50 | 110 | M16 | M16 | 40 | 945 |
| 1285-16100 | 100 | 32 | 46 | 50 | 130 | M16 | M16 | 40 | 1230 |

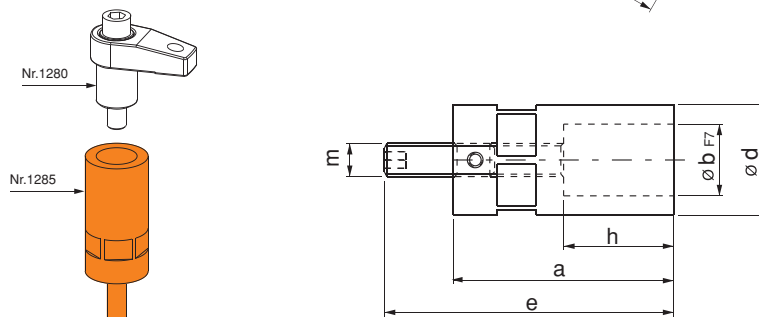


1285

- verwendbar mit Nr. 1280 zum Spannen hoher Werkstücke
- Gehärtet
- Schwarz beschichtet

1285

- It is used together with Nr. 1280 for clamping high pieces.
- Hardened
- Black coated



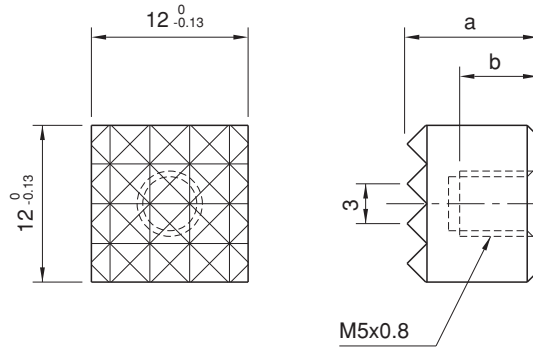
| Referenz-Nr. Order No. | a ($\begin{smallmatrix} 0 \\ -0.13 \end{smallmatrix}$) | b | (g) |
|---------------------------|---|-----|---------|
| 1287-CT9120 | 12 | 7.8 | 13 |

1287

- Gehärtet
- Schwarz beschichtet

1287

- Hardened
- Black coating



| Referenz-Nr. Order No. | a ($\begin{smallmatrix} 0 \\ -0.13 \end{smallmatrix}$) | b ($\begin{smallmatrix} 0 \\ -0.13 \end{smallmatrix}$) | d | p | (g) |
|---------------------------|---|---|--------|-----|---------|
| 1287-HS9102 | 10 | 12 | M5x0.8 | 2.3 | 7.5 |
| 1287-HS9122 | 12 | 12 | M5x0.8 | 3 | 11 |
| 1287-HS9160 | 16 | 12 | M6x1 | 3 | 17 |
| 1287-HS9202 | 20 | 12 | M5x0.8 | 3 | 33.5 |
| 1287-HS9252 | 25 | 12 | M6x1 | 3 | 53 |

1287

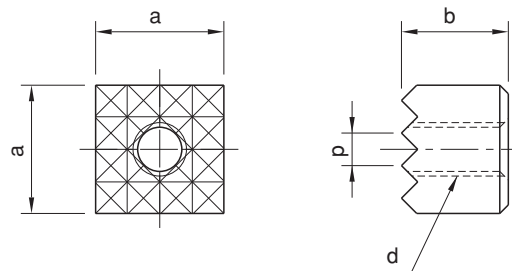
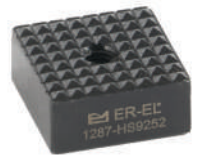
- Gehärtet
- Schwarz beschichtet

1287

- Hardened
- Black coating

Druckstück

Pressure Pad



| Referenz-Nr. Order No. | a ($\begin{smallmatrix} 0 \\ -0.13 \end{smallmatrix}$) | b ($\begin{smallmatrix} 0 \\ -0.13 \end{smallmatrix}$) | c | d | (g) |
|---------------------------|---|---|-----|----|---------|
| 1287-HS9122C | 12 | 12 | 6.5 | M4 | 10 |
| 1287-HS9160C | 16 | 12 | 4.5 | M4 | 16 |
| 1287-HS9202C | 20 | 12 | 5.5 | M5 | 31 |
| 1287-HS9252C | 25 | 12 | 4.5 | M6 | 49 |

1287

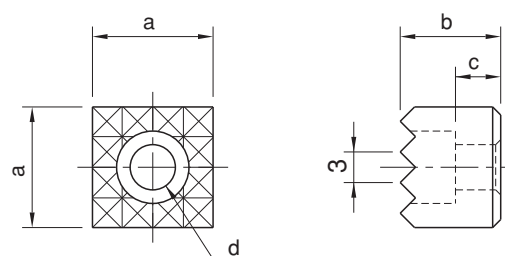
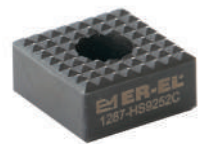
- Gehärtet
- Schwarz beschichtet

1287

- Hardened
- Black coating

Druckstück

Pressure Pad



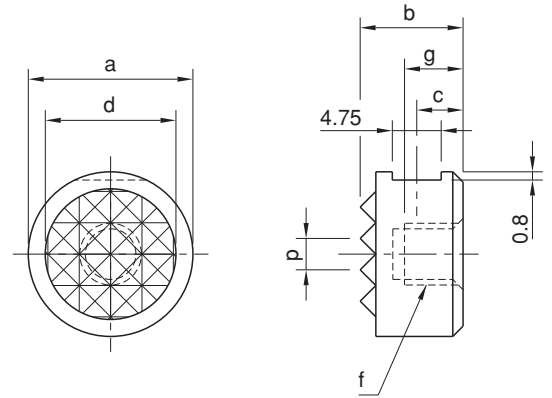
| Referenz-Nr. Order No. | a ($\begin{smallmatrix} 0 \\ -0.13 \end{smallmatrix}$) | b ($\begin{smallmatrix} 0 \\ -0.13 \end{smallmatrix}$) | c | d | f | g | p | (g) |
|---------------------------|---|---|---|------|--------|-----|-----|-----|
| 1288-CT102 | 10 | 12 | 6 | 7.9 | M5x0.8 | 8 | 2.3 | 6 |
| 1288-CT122 | 12 | 12 | 6 | 9.5 | M5x0.8 | 8 | 3 | 9 |
| 1288-CT162 | 16 | 12 | 6 | 12.7 | M6x1 | 7.8 | 3 | 17 |
| 1288-CT202 | 20 | 12 | 6 | 15.9 | M6x1 | 7.8 | 3 | 28 |
| 1288-CT252 | 25 | 12 | 6 | 19.1 | M6x1 | 7.8 | 3 | 43 |

1288

- Gehärtet
- Schwarz beschichtet

1288

- Hardened
- Black coating



Druckstück

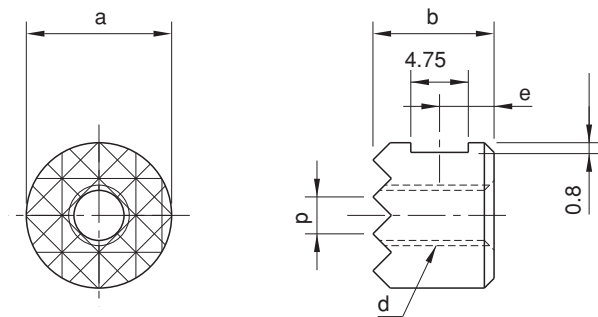
| Referenz-Nr. Order No. | a ($\begin{smallmatrix} 0 \\ -0.13 \end{smallmatrix}$) | b ($\begin{smallmatrix} 0 \\ -0.13 \end{smallmatrix}$) | d | e | p | (g) |
|---------------------------|---|---|--------|---|-----|-----|
| 1288-HS102 | 10 | 12 | M5x0.8 | 6 | 2.3 | 6 |
| 1288-HS122 | 12 | 12 | M5x0.8 | 6 | 3 | 9 |
| 1288-HS162 | 16 | 12 | M6x1 | 6 | 3 | 15 |
| 1288-HS202 | 20 | 12 | M6x1 | 6 | 3 | 25 |
| 1288-HS252 | 25 | 12 | M6x1 | 6 | 3 | 40 |

1288

- Gehärtet
- Schwarz beschichtet

1288

- Hardened
- Black coating



Druckstück

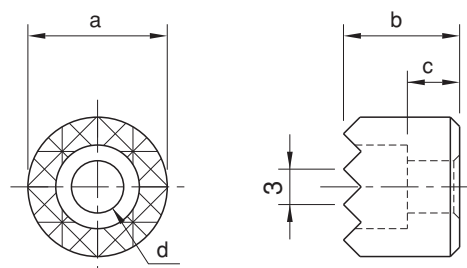
| Referenz-Nr. Order No. | a ($\begin{smallmatrix} 0 \\ -0.13 \end{smallmatrix}$) | b ($\begin{smallmatrix} 0 \\ -0.13 \end{smallmatrix}$) | c | d | (g) |
|---------------------------|---|---|-----|----|-----|
| 1288-HS122C | 12 | 12 | 6.5 | M4 | 8 |
| 1288-HS162C | 16 | 12 | 6.5 | M4 | 15 |
| 1288-HS202C | 20 | 12 | 6.5 | M5 | 23 |
| 1288-HS252C | 25 | 12 | 6.5 | M6 | 38 |

1288

- Gehärtet
- Schwarz beschichtet

1288

- Hardened
- Black coating

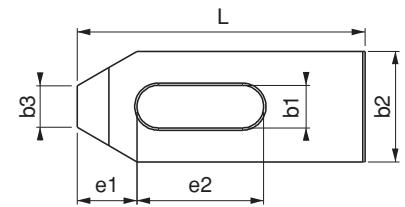


| Referenz-Nr. Order No. | L | b1 | Gewinde metric | Zollgewinde whitworth | a | b2 | b3 | e1 | e2 | (g) |
|---------------------------|-----|------|-------------------|--------------------------|----|----|----|----|----|------|
| 1290-06050 | 50 | 6.6 | M6 | 1/4 | 10 | 20 | 8 | 10 | 20 | 50 |
| 1290-06080 | 80 | | | | | | | | 30 | 95 |
| 1290-08060 | 60 | 9 | M8 | 5/16 | 12 | 25 | 10 | 13 | 22 | 100 |
| 1290-08100 | 100 | | | | | | | | 45 | 170 |
| 1290-10080 | 80 | 11 | M10 | 3/8 | 15 | 30 | 12 | 15 | 30 | 190 |
| 1290-10100 | 100 | | | | | | | | 45 | 225 |
| 1290-12100 | 100 | 14.5 | M12-M14 | 1/2 | 20 | 40 | 14 | 21 | 45 | 435 |
| 1290-12125 | 125 | | | | | | | | 55 | 580 |
| 1290-16125 | 125 | 18.5 | M16-M18 | 5/8 | 25 | 50 | 18 | 26 | 55 | 855 |
| 1290-16160 | 160 | | | | | | | | 65 | 1175 |



1290

- kompatibel mit Nr. 1310
- Gehärtet
- Schwarz beschichtet



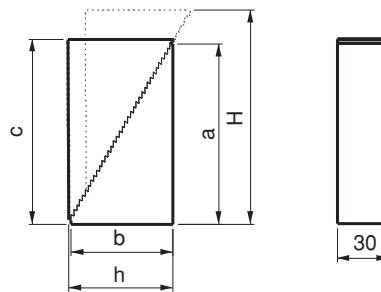
1290

- Product is used with Nr. 1310 Serrated Support
- Hardened
- Black Coating

Spannunterlagen mit Treppenzähnen

Serrated Thread Support

| Referenz-Nr. Order No. | h-H | a | b | c | min-max | (g) |
|---------------------------|--------|-----|----|-----|---------|------|
| 1310-01 | 37-85 | 57 | 35 | 60 | 0-40 | 505 |
| 1310-02 | 48-112 | 73 | 45 | 76 | 0-60 | 825 |
| 1310-03 | 58-139 | 90 | 55 | 93 | 0-75 | 1250 |
| 1310-04 | 66-165 | 108 | 64 | 111 | 0-90 | 685 |

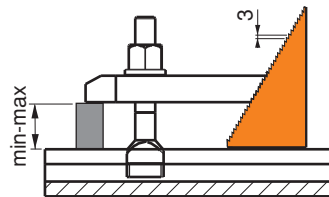


1310

- kompatibel mit Nr. 1290
- Schwarz beschichtet

1310

- Product is used with Nr. 1290 Serrated Thread Clamp
- Black Coating



Gabelspanneisen abgeschrägt

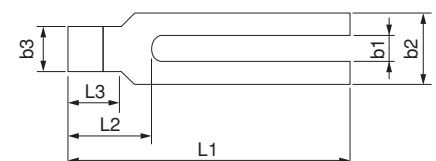
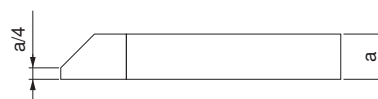
Bifurcated Clamp

| Referenz-Nr. Order No. | b1 | L1 | Gewinde metric | Zollgewinde whitworth | a | b2 | b3 | L2 | L3 | (g) |
|---------------------------|------|-----|-------------------|--------------------------|----|----|----|----|----|------|
| 1320-08100 | 9 | 100 | M8 | 5/16 | 15 | 30 | 16 | 32 | 18 | 240 |
| 1320-10125 | 11 | 125 | M10 | 3/8 | 20 | 30 | 20 | 38 | 24 | 380 |
| 1320-12160 | 14.5 | 160 | M12-M14 | 1/2 | 25 | 40 | 24 | 47 | 30 | 800 |
| 1320-12200 | 14.5 | 200 | M12-M14 | 1/2 | 25 | 40 | 24 | 47 | 30 | 950 |
| 1320-16200 | 18.5 | 200 | M16-M18 | 5/8 | 30 | 50 | 28 | 57 | 36 | 1500 |
| 1320-16250 | 18.5 | 250 | M16-M18 | 5/8 | 30 | 50 | 28 | 57 | 36 | 1850 |
| 1320-20250 | 22.5 | 250 | M20-M22 | 3/4 | 40 | 60 | 35 | 68 | 45 | 2900 |
| 1320-20315 | 22.5 | 315 | M20-M22 | 3/4 | 40 | 60 | 35 | 68 | 45 | 3600 |
| 1320-24250 | 26 | 250 | M24 | 1 | 40 | 70 | 43 | 83 | 56 | 3400 |
| 1320-24315 | 26 | 315 | M24 | 1 | 40 | 70 | 43 | 83 | 56 | 4300 |
| 1320-30315 | 33 | 315 | M30 | 1 1/4 | 50 | 80 | 50 | 88 | 56 | 6000 |
| 1320-30400 | 33 | 400 | M30 | 1 1/4 | 50 | 80 | 50 | 88 | 56 | 7300 |



1320

- Gehärtet
- Schwarz beschichtet



1320

- Hardened
- Black Coating

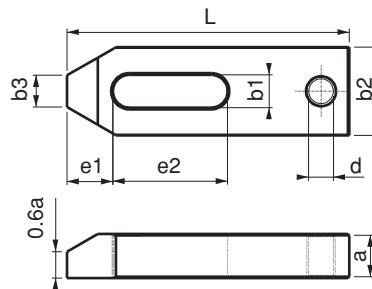
| Referenz-Nr. Order No. | L | b1 | Gewinde metric | Zollgewinde whitworth | a | b2 | b3 | e1 | e2 | d | (g) |
|---------------------------|-----|------|-------------------|--------------------------|----|-----|----|-----|-----|-----|-------|
| 1330-06050 | 50 | 6,6 | M6 | 1/4 | 10 | 20 | 8 | 10 | 20 | M8 | 50 |
| 1330-08060 | 60 | 9 | M8 | 5/16 | 12 | 25 | 10 | 13 | 22 | M8 | 105 |
| 1330-10080 | 80 | 11 | M10 | 3/8 | 15 | 30 | 12 | 15 | 30 | M10 | 210 |
| 1330-12100 | 100 | 14,5 | M12-M14 | 1/2 | 20 | 40 | 14 | 21 | 40 | M12 | 465 |
| 1330-12125 | 125 | | | | | | | 21 | 50 | | 590 |
| 1330-16125 | 125 | 18,5 | M16-M18 | 5/8 | 25 | 50 | 18 | 26 | 45 | M16 | 930 |
| 1330-16160 | 160 | | | | | | | 26 | 65 | | 1200 |
| 1330-20160 | 160 | 22,5 | M20-M22 | 3/4 | 30 | 60 | 22 | 30 | 60 | M20 | 1710 |
| 1330-20200 | 200 | | | | 30 | 60 | 22 | 30 | 80 | | 2170 |
| 1330-20250 | 250 | | | | 35 | 70 | 30 | | 100 | | 3885 |
| 1330-24160 | 160 | | | | 30 | 70 | 26 | | 60 | | 1965 |
| 1330-24200 | 200 | | | | 35 | 70 | 26 | | 80 | | 2920 |
| 1330-24250 | 250 | 26 | M24 | 1 | 35 | 70 | 26 | 35 | 100 | M24 | 3720 |
| 1330-24315 | 315 | | | | 40 | 80 | 35 | | 100 | | 6435 |
| 1330-30250 | 250 | 33 | M30 | 1 1/4 | 40 | 80 | 34 | 45 | 100 | M24 | 4825 |
| 1330-30315 | 315 | | | | 50 | | | | 130 | | 7665 |
| 1330-36400 | 400 | 43 | M36-M42 | 1 1/2 | 58 | 100 | 43 | 100 | 150 | M30 | 14490 |

1330

- Gehärtet
- Schwarz beschichtet

1330

- Hardened
- Black Coating



Spanneisen gerade

Straight Clamp

| Referenz-Nr. Order No. | L | b1 | Gewinde metric | Zollgewinde whitworth | a | b2 | b3 | e1 | e2 | (g) |
|---------------------------|-----|------|-------------------|--------------------------|----|-----|----|-----|-----|-------|
| 1350-06050 | 50 | 6,6 | M6 | 1/4 | 10 | 20 | 8 | 10 | 20 | 60 |
| 1350-08060 | 60 | 9 | M8 | 5/16 | 12 | 25 | 10 | 13 | 22 | 110 |
| 1350-10080 | 80 | 11 | M10 | 3/8 | 15 | 30 | 12 | 15 | 30 | 185 |
| 1350-12100 | 100 | 14,5 | M12-M14 | 1/2 | 20 | 40 | 14 | 21 | 40 | 480 |
| 1350-12125 | 125 | | | | | | | 21 | 50 | 610 |
| 1350-16125 | 125 | 18,5 | M16-M18 | 5/8 | 25 | 50 | 18 | 26 | 45 | 980 |
| 1350-16160 | 160 | | | | | | | 26 | 65 | 1240 |
| 1350-20160 | 160 | 22,5 | M20-M22 | 3/4 | 30 | 60 | 22 | 30 | 60 | 1795 |
| 1350-20200 | 200 | | | | 30 | 60 | 22 | 30 | 80 | 2255 |
| 1350-24200 | 200 | 26 | M24 | 1 | 30 | 70 | 26 | 35 | 80 | 2570 |
| 1350-24250 | 250 | | | | 35 | 70 | 26 | 35 | 100 | 3875 |
| 1350-30250 | 250 | 33 | M30 | 1 1/4 | 40 | 80 | 34 | 45 | 100 | 4990 |
| 1350-30315 | 315 | | | | 50 | | | | 130 | 7885 |
| 1350-36400 | 400 | 43 | M36-M42 | 1 1/2 | 60 | 100 | 43 | 100 | 150 | 14450 |

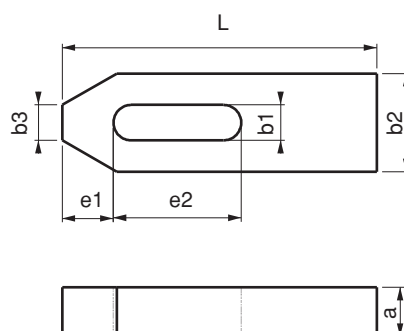
DIN 6314

1350

- Gehärtet
- Schwarz beschichtet

1350

- Hardened
- Black Coating



| Referenz-Nr. Order No. | L | b1 | Gewinde | | a | b2 | a1xa2 | b3 | e1 | e2 | d | |
|---------------------------|-----|------|---------|-----------|----|----|---------|----|----|-----|-----|------|
| | | | metric | whitworth | | | | | | | | |
| 1370-10080 | 80 | 11 | M10 | 3/8 | 15 | 30 | 5x8 | 12 | 15 | 30 | M10 | 180 |
| 1370-12100 | 100 | 14.5 | M12-14 | 1/2 | 20 | 40 | 8x10 | 14 | 21 | 40 | M12 | 410 |
| 1370-12125 | 125 | | | | | | | | | 50 | | 590 |
| 1370-16125 | 125 | 18.5 | M16-18 | 5/8 | 25 | 50 | 10x12.5 | 18 | 26 | 45 | M16 | 910 |
| 1370-16160 | 160 | | | | | | | | | 65 | | 1180 |
| 1370-20160 | 160 | 22.5 | M20-22 | 3/4 | 30 | 60 | 12x15 | 22 | 30 | 60 | M20 | 1575 |
| 1370-20200 | 200 | | | | | | | | | 80 | | 2150 |
| 1370-24160 | 160 | 26 | M24 | 1 | 30 | 70 | 12x15 | 26 | 35 | 60 | M24 | 1800 |
| 1370-24200 | 200 | | | | 35 | | 14x17 | | | 80 | | 2875 |
| 1370-24250 | 250 | | | | 35 | | 14x17 | | | 100 | | 3500 |

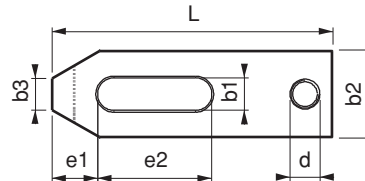
1370

- verwendbar in engen Bereichen
- Gehärtet
- Schwarz beschichtet



1370

- This product is used in restricted areas with the purpose of gaining height
- Hardened
- Black Coating



| Referenz-Nr. Order No. | L | b1 | Gewinde | | a | b2 | b3 | b4 | |
|---------------------------|------|------|---------|-----------|----|-----|-----|----|-------|
| | | | metric | whitworth | | | | | |
| 1390-06060 | 60 | 6.6 | M6 | 1/4 | 12 | 19 | 6.2 | 3 | 65 |
| 1390-08080 | 80 | 9 | M8 | 5/16 | 15 | 25 | 8 | 4 | 140 |
| 1390-10100 | 100 | 11 | M10 | 3/8 | 20 | 30 | 9.5 | 5 | 240 |
| 1390-12125 | 125 | 14.5 | M12-M14 | 1/2 | 25 | 38 | 12 | 6 | 700 |
| 1390-12160 | 160 | | | | | | | | 915 |
| 1390-12200 | 200 | 18.5 | M16-M18 | 5/8 | 27 | 48 | 15 | 8 | 945 |
| 1390-16160 | 160 | | | | 27 | | | | 1215 |
| 1390-16200 | 200 | | | | 37 | | | | 2000 |
| 1390-16250 | 250 | | | | 37 | | | | 2000 |
| 1390-20200 | 200 | 22.5 | M20-M22 | 3/4 | 37 | 52 | 15 | 10 | 1650 |
| 1390-20250 | 250 | | | | 37 | | | | 2765 |
| 1390-20315 | 315 | | | | 37 | | | | 3510 |
| 1390-20500 | 500 | | | | 47 | | | | 7200 |
| 1390-24200 | 200 | 26 | M24 | 1 | 37 | 66 | 20 | 10 | 2260 |
| 1390-24250 | 250 | | | | 37 | | | | 2740 |
| 1390-24315 | 315 | | | | 37 | | | | 3515 |
| 1390-24500 | 500 | | | | 47 | | | | 7100 |
| 1390-30250 | 250 | 33 | M30 | 1 1/4 | 47 | 73 | 20 | 12 | 3500 |
| 1390-30315 | 315 | | | | 47 | | | | 4190 |
| 1390-30400 | 400 | | | | 47 | | | | 5735 |
| 1390-30600 | 600 | | | | 46 | | | | 8455 |
| 1390-301000 | 1000 | 57 | 28000 | | | | | | |
| 1390-36400 | 400 | 40 | M36 | 1 1/2 | 57 | 100 | 30 | 12 | 10800 |
| 1390-36600 | 600 | | | | 57 | | | | 16500 |
| 1390-42600 | 600 | 43 | M42 | 1 1/2 | 77 | 123 | 40 | 12 | 28800 |

DIN 6315B

1390

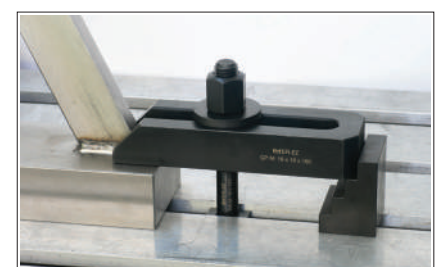
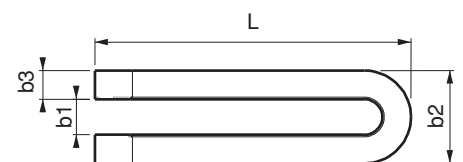
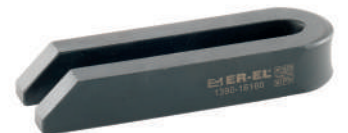
- Erleichterung bei Stufenspannen in engen Bereichen
- Gehärtet
- Schwarz beschichtet

1390

- Due to the structure of the clamp, this product provides convenience for the couplings of formed work pieces on graded surfaces
- Hardened
- Black Coating

Gabelspanneisen abgescrängt

Bifurcated Clamp



| Referenz-Nr. Order No. | L | b1 | Gewinde | | a | b2 | a1xa2 | e1 | e2 | h | (g) |
|---------------------------|----|----|----------------|-----------------------|------|----|-------|----|----|----|---------|
| | | | Gewinde metric | Zollgewinde whitworth | | | | | | | |
| 1387-12070 | 70 | 13 | M12 | 1/2 | 21.5 | 40 | 8x6 | 11 | 40 | 14 | 255 |
| 1387-16070 | 70 | 17 | M16 | 5/8 | 29.5 | 40 | 10x7 | 11 | 40 | 22 | 290 |

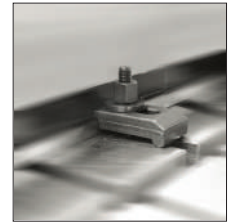
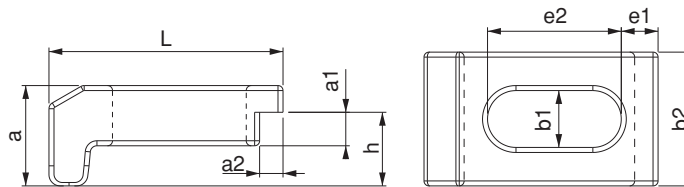


1387

- Vorteil : arbeitet ohne Heber
- Gehärtet
- Schwarz beschichtet

1387

- Provides the advantage of working without support.
- Hardened
- Black coated



Gabelspanneisen mit Stufe und Stützgewinde

Bifurcated Clamp with Stepped Support Hole

| Referenz-Nr. Order No. | L | b1 | Gewinde | | a | e2 | a1xa2 | b2 | d | (g) |
|---------------------------|-----|------|----------------|-----------------------|----|-----|-------|----|-----|---------|
| | | | Gewinde metric | Zollgewinde whitworth | | | | | | |
| 1400-10100 | 100 | 11 | M10 | 3/8 | 20 | 70 | 10x10 | 30 | M10 | 260 |
| 1400-12125 | 125 | 14.5 | M12-14 | 1/2 | 25 | 90 | 12x12 | 40 | M12 | 565 |
| 1400-16160 | 160 | 18.5 | M16-18 | 5/8 | 30 | 110 | 15x15 | 50 | M16 | 1235 |
| 1400-20200 | 200 | 22.5 | M20-22 | 3/4 | 40 | 135 | 20x20 | 60 | M20 | 2460 |



1400

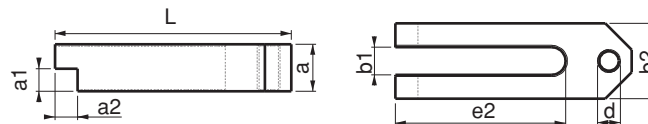
- Gehärtet
- Schwarz beschichtet

Erleichterung bei Stufenspannen in engen Bereichen.

It provides usage advantage in gradual and limited areas.

1400

- Hardened
- Black Coating



Gabelspanneisen mit Stützgewinde

Bifurcated Clamp with Support Hole

| Referenz-Nr. Order No. | L | b1 | Gewinde | | a | e1 | e2 | b2 | d | (g) |
|---------------------------|-----|------|----------------|-----------------------|----|----|-----|----|-----|---------|
| | | | Gewinde metric | Zollgewinde whitworth | | | | | | |
| 1410-10100 | 100 | 11 | M10 | 3/8 | 20 | 5 | 70 | 30 | M10 | 260 |
| 1410-12125 | 125 | 14.5 | M12-14 | 1/2 | 25 | 6 | 90 | 40 | M12 | 560 |
| 1410-16160 | 160 | 18.5 | M16-18 | 5/8 | 30 | 8 | 110 | 50 | M16 | 1230 |
| 1410-20200 | 200 | 22.5 | M20-22 | 3/4 | 40 | 10 | 135 | 60 | M20 | 1490 |



1410

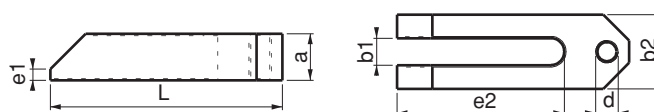
- Gehärtet
- Schwarz beschichtet

Erleichterung bei Stufenspannen in engen Bereichen.

It provides usage advantage for gradual parts during forward tightenings.

1410

- Hardened
- Black Coating



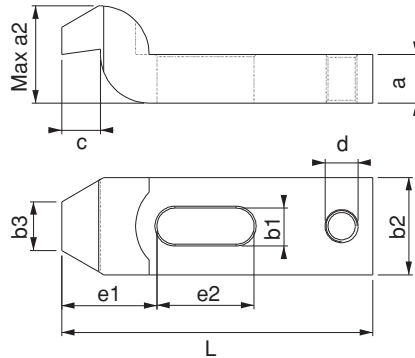
| Referenz-Nr. Order No. | L | b1 | Gewinde | | a | a2 | b2 | b3 | c | e1 | e2 | d | (g) |
|---------------------------|-----|------|----------------|-----------------------|----|-----|----|----|----|----|-----|-----|---------|
| | | | Gewinde metric | Zollgewinde whitworth | | | | | | | | | |
| 1450-06060 | 60 | 6.6 | M6 | 1/4 | 10 | 20 | 20 | 10 | 8 | 20 | 20 | M8 | 80 |
| 1450-08080 | 80 | 9 | M8 | 5/16 | 12 | 24 | 25 | 12 | 9 | 25 | 25 | M8 | 170 |
| 1450-10100 | 100 | 11 | M10 | 3/8 | 15 | 30 | 30 | 15 | 12 | 32 | 32 | M10 | 245 |
| 1450-12125 | 125 | 14.5 | M12-M14 | 1/2 | 19 | 40 | 38 | 20 | 16 | 40 | 40 | M12 | 600 |
| 1450-16125 | 125 | 18.5 | M16-M18 | 5/8 | 24 | 50 | 48 | 25 | 20 | 49 | 40 | M16 | 925 |
| 1450-16160 | 160 | | | | | | | | | | 50 | | 1205 |
| 1450-20160 | 160 | 22.5 | M20-M22 | 3/4 | 29 | 58 | 58 | 30 | 24 | 55 | 55 | M20 | 1705 |
| 1450-20200 | 200 | | | | | | | | | | 70 | | 2145 |
| 1450-24160 | 160 | | | | | | | | | 53 | 55 | | 2110 |
| 1450-24200 | 200 | 26 | M24 | 1 | 33 | 70 | 70 | 35 | 28 | 72 | 60 | M24 | 3070 |
| 1450-24250 | 250 | | | | | | | | | 72 | 80 | | 3710 |
| 1450-30250 | 250 | 33 | M30 | 1 1/4 | 38 | 80 | | | | | 80 | M24 | 4635 |
| 1450-30315 | 315 | | | | 48 | 100 | 77 | 40 | 40 | 91 | 100 | | 7050 |



DIN 6316

1450

- Dieses Produkt bietet den Vorteil, von der Höhe und den Durchgängen der Schraube zu profitieren.
- Gehärtet
- Schwarz beschichtet



1450

- This product provides advantage to gain from the height and in the passings of the bolt
- Hardened
- Black Coating



Gabelspanneisen mit rundem Spannansatz

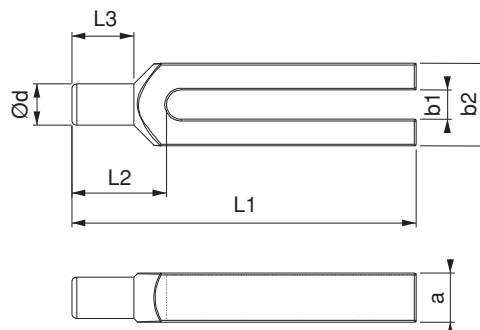
| Referenz-Nr. Order No. | L1 | b1 | Gewinde | | a | b2 | Ød | L2 | L3 | (g) |
|---------------------------|-----|------|----------------|-----------------------|----|----|----|----|----|---------|
| | | | Gewinde metric | Zollgewinde whitworth | | | | | | |
| 1470-08100 | 100 | 9 | M8 | 5/6 | 15 | 30 | 12 | 30 | 18 | 180 |
| 1470-10125 | 125 | 11 | M10 | 3/8 | 20 | 30 | 16 | 36 | 24 | 290 |
| 1470-12160 | 160 | 14.5 | M12-M14 | 1/2 | 25 | 40 | 20 | 45 | 30 | 715 |
| 1470-12200 | 200 | | | | | | | | | 815 |
| 1470-16200 | 200 | 18.5 | M16-M18 | 5/8 | 30 | 50 | 24 | 55 | 36 | 1210 |
| 1470-16250 | 250 | | | | | | | | | 1550 |
| 1470-20250 | 250 | 22.5 | M20-M22 | 3/4 | 40 | 60 | 30 | 65 | 45 | 2680 |
| 1470-20315 | 315 | | | | | | | | | 3435 |
| 1470-24250 | 250 | 26 | M24 | 1 | 40 | 70 | 38 | 80 | 56 | 3060 |
| 1470-24315 | 315 | | | | | | | | | 4120 |
| 1470-30315 | 315 | 34 | M30 | 1 1/4 | 50 | 80 | 45 | 85 | 56 | 5600 |
| 1470-30400 | 400 | | | | | | | | | 7135 |



DIN 6315C

1470

- Befestigung Werkstücke mit Loch in der Spannfläche
- Gehärtet
- Schwarz beschichtet





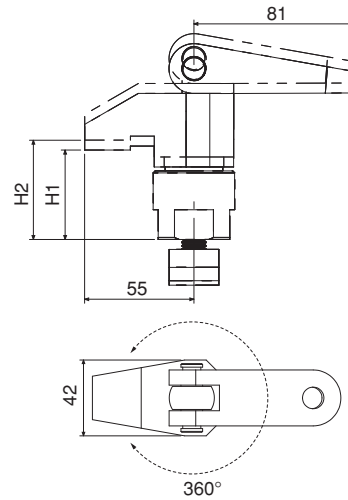
1470

- This product fixes the work pieces by entering in the holed surfaces of various work pieces
- Hardened
- Black Coating



Above Clamping

| Referenz-Nr. Order No. |  | H1 - H2 (mm) | Spannkraft Clamping Force Kgf |  (g) |
|---------------------------|---|-----------------|-------------------------------------|--|
| 1472-02530 | 14-16-18-20-22 | 25 - 30 | 1000 | 1000 |
| 1472-03035 | | 30 - 35 | 1000 | 1150 |
| 1472-03540 | | 35 - 40 | 1000 | 1225 |
| 1472-04045 | | 40 - 45 | 1000 | 1245 |
| 1472-04550 | | 45 - 50 | 1000 | 1275 |

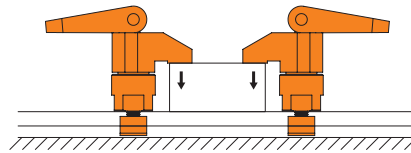



1472

- Gehärtet
- Schwarz beschichtet

1472

- Hardened
- Black Coating



| Referenz-Nr. Order No. | P(N) | D | H (0 -1) | D1 | H1 | A Bewegung Travel | d (+0.1 0) |  (g) |
|---------------------------|------|----|----------------|----|------|-------------------------|------------------|--|
| 1473-06001 | 76 | 10 | 11 | 6 | 10.7 | 1 | 10 | 4 |
| 1473-08001 | 102 | 12 | 13 | 8 | 13.9 | 1.3 | 12 | 8 |
| 1473-10001 | 204 | 16 | 17 | 10 | 16.7 | 1.6 | 16 | 16 |
| 1473-06002 | 76 | 10 | 11 | 6 | 10.7 | 1 | 10 | 4 |
| 1473-08002 | 102 | 12 | 13 | 8 | 13.9 | 1.3 | 12 | 8 |
| 1473-10002 | 204 | 16 | 17 | 10 | 16.7 | 1.6 | 16 | 16 |

Spannstift

Spring Locating Pins



473

Eigenschaft

- Ideal für temporäres Spannen.

Hinweis

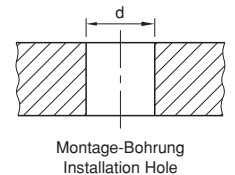
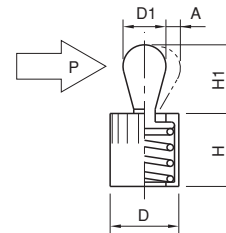
- Min. P-Wert für Stiftbewegung
- bis 90 °C

Features

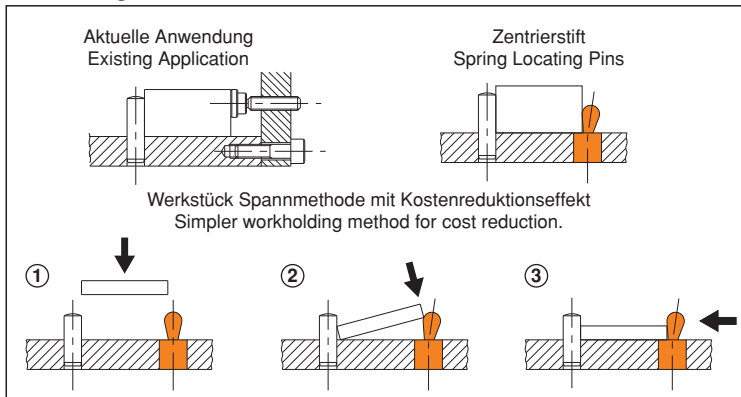
- Ideal for temporary clamping of low-profile workpieces.

Note

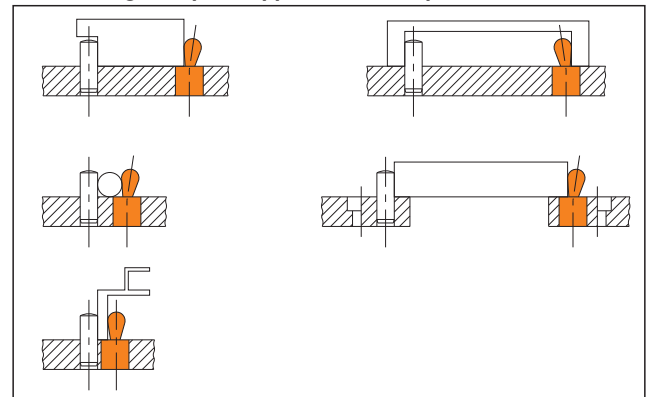
- The stated value "P" denotes the minimum force needed to move the pin.
- Heat resistance : 90 °C




Anwendung / How To Use

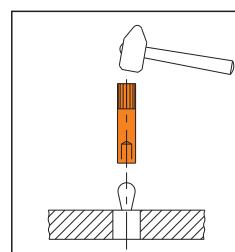
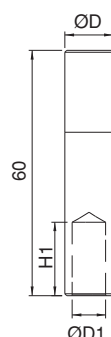


Anwendungsbeispiel / Application Examples



| Referenz-Nr. Order No. | ØD | ØD1 | H1 |  (g) |
|---------------------------|----|------|----|--|
| 1473-06 | 10 | 6,2 | 15 | 30 |
| 1473-08 | 12 | 8,2 | 18 | 45 |
| 1473-10 | 16 | 10,2 | 21 | 80 |

1473




Anwendung / How To Use

Montagehilfe für die Spannstifte

Spring Locating Pins Installation Tool



| Referenz-Nr. Order No. | S | d (F7) | H2 | D1 | H (±0.01) | D | M | Dp | R |
|---------------------------|-----|-----------|----|----|--------------|----|-----|----|-----|
| 1474-06000 | 2 | 12 | 10 | 28 | 50 | 65 | M8 | 40 | 160 |
| 1474-08000 | 2.5 | 16 | 12 | 34 | 63 | 80 | M10 | 50 | 180 |

| Referenz-Nr. Order No. | D2 | H1 | zulässige Belastung (N) Allowable Operating Load (N) | Spannkraft Clamping Force Kgf | empfohlene Toleranz für Werkstückstärke Recommended Workpiece Thickness Tolerance |  (kg) |
|---------------------------|----|----|--|--|---|---|
| 1474-06000 | 26 | 36 | 600 | 600 | ±0.5 | 1.2 |
| 1474-08000 | 28 | 45 | 600 | 800 | ±0.8 | 2.2 |

1474

- Schwarz beschichtet

1474

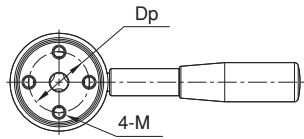
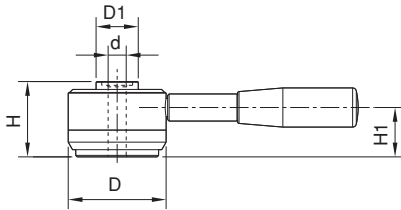
- Black coated

Hinweis 

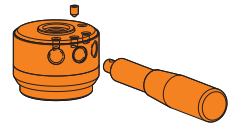
- Spannbolzen und Zugschrauben müssen extra bestellt werden.

Note 

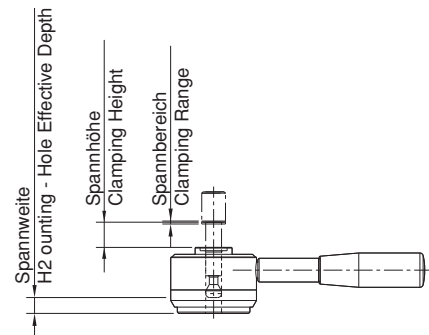
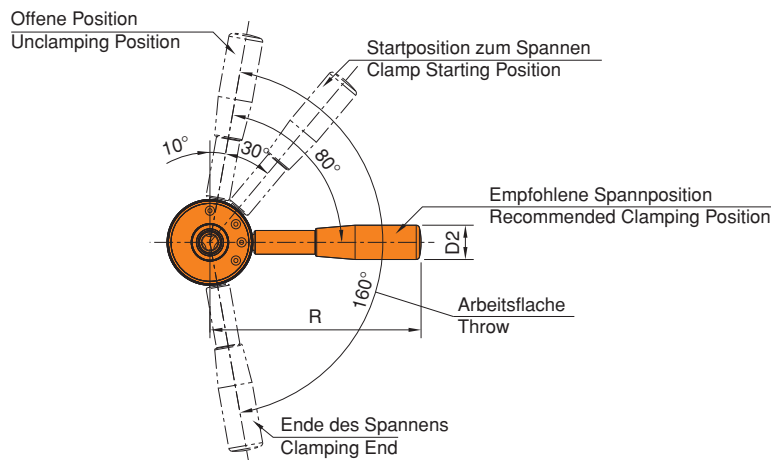
- Clamping Pins or Screws must be ordered separately.



3 mögliche Montagepositionen für den Griff



The handle can be removed by loosening the locking screw. To keep the handle mounted permanently, make sure that the locking screw is fully tightened. 3 options of handle mounting position.



| Referenz-Nr. Order No. | D2 (f7) | D1 (f7) | L (By 0.1mm) | D | L2 | L1 | L3 | D3 | M | M1 | (g) |
|---------------------------|------------|------------|-----------------|----|----|----|------|-----|----|----|-----------|
| 1475-00012 | 12 | 12 | 0<L<100 | 18 | 23 | 38 | 21.5 | 6.5 | M8 | M8 | 70 ~ 160 |
| 1475-00016 | 16 | 16 | 0<L<100 | 24 | 23 | 38 | 21.5 | 6.5 | M8 | M8 | 175 ~ 265 |

1475

Bolzen

- Härte: Induktion
- Geschliffen

Kopf

- Schwarz beschichtet

1475

Shank

- Hardness: Induction
- Precision ground

Head

- Black coated

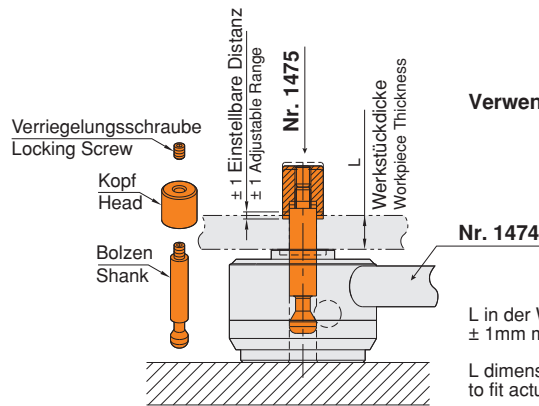
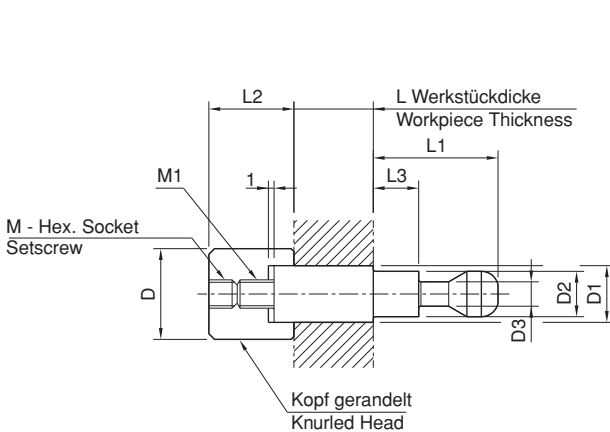


Hinweis

- Fertigung gem. Anforderung

Note

- Custom Clamping Pins are available on request.



Verwendung / How To Use

L in der Werkstückdicke ± 1mm mm einstellbar
L dimension is adjustable by ± 1mm to fit actual workpiece thickness.

Spannschraube

Clamping Screws

| Referenz-Nr. Order No. | D1 | M | L1 | L | D | L2 | L3 | D2 | W | L4 | (g) |
|---------------------------|----|-----|----|----|----|------|----|-----|----|----|-----|
| 1476-00012 | 12 | M12 | 13 | 38 | 20 | 21.5 | 2 | 6.5 | 10 | 4 | 40 |
| 1476-00016 | 12 | M16 | 17 | 38 | 20 | 21.5 | 2 | 6.5 | 10 | 4 | 55 |

1476

- Schwarz beschichtet

1476

- Black coated

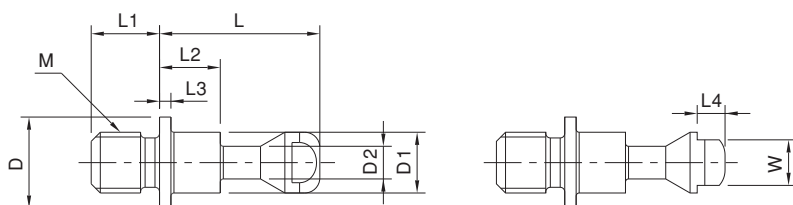


Hinweis

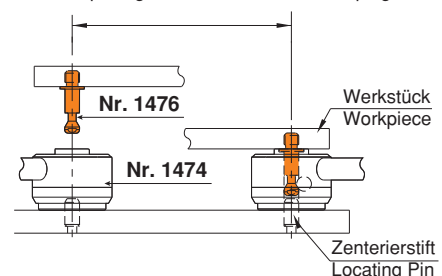
- Sonderlängen auf Anfrage

Note

- Custom Clamping Screws (different screw thread sizes) are available on request.

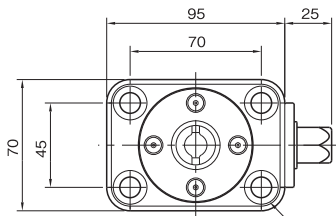


Zugschrauben müssen in den empfohlenen Abstandstoleranzen sein.
Recommended Spacing Tolerance in Use of Clamping Screws

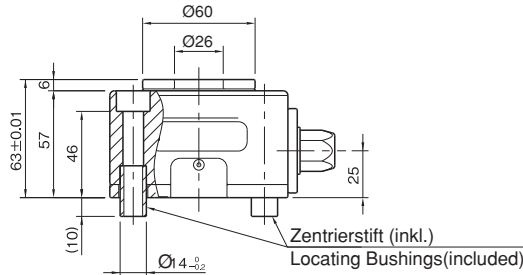


| Referenz-Nr. Order No. | Spannkraft Clamping Force Kgf | Tork N-m | (kg) |
|---------------------------|-------------------------------------|-------------|----------|
| 1477-00012 | 1200 | 40 | 2.3 |

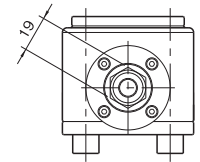
1477



Position Zentrierschraube
For M10 Cap Screws

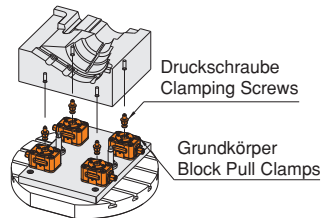


Zentrierstift (inkl.)
Locating Bushings (included)



1. Alle offenen Flächen des Werkstücks können bearbeitet werden.

1. Ideal for 5-Axis Machining
Block Pull Clamps mount under a workpiece making its surfaces to be machined fully open for the cutting tool. This allows completing multiple machining processes at a time.

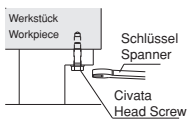


2. Mit Blockziehen ist das Spannen leichter und praktischer als das Konventionelle.

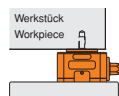
2. Better Workability
Block Pull Clamps allow fastening a workpiece easily, unlike the conventional method of fastening with hexagon head screws from below.

3. Bearbeitung mehrerer unterschiedlicher Werkstücke möglich

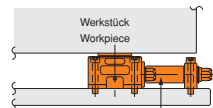
3. Actuated Remote-Control Units
If used in conjunction with Power-Tool Actuated Remote-Control Units, Block Pull Clamps can be installed at the best possible position under the workpiece.



Aktuelle Anwendung
Conventional Method

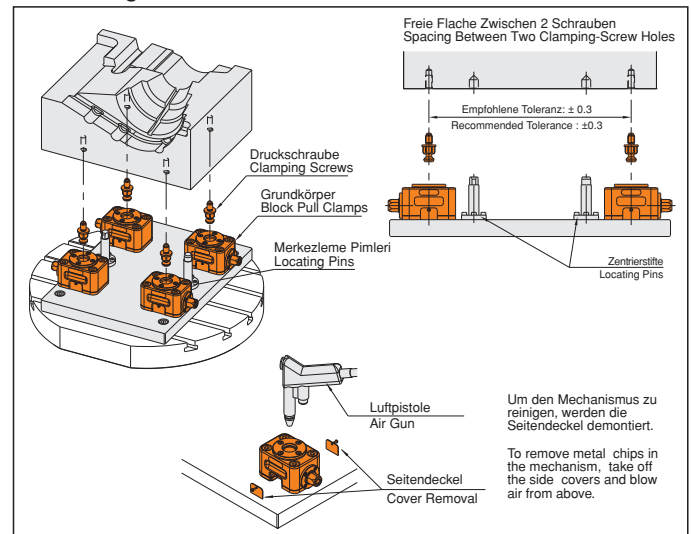


Anwendung mit Druckschraube
Application with pull stud



Elektrowerkzeugbetätigte Fernbedieneinheit
Power-Tool Actuated Remote-Control Unit

Verwendung / How To Use

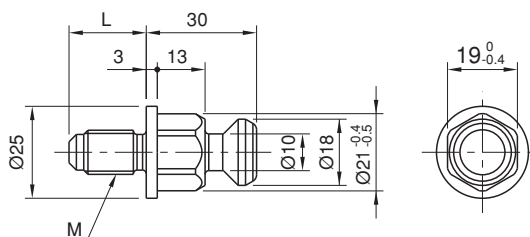


Spannbolzen
Clamping Screws


| Referenz-Nr. Order No. | M | L | (g) |
|---------------------------|------|----|---------|
| 1478-00012 | M12x | 21 | 75 |
| 1478-00016 | M16 | 28 | 98 |

1478
• Gehärtet
• Schwarz beschichtet

1478
• Hardened
• Black coated



| Referenz-Nr. Order No. | Spannhöhe Clamping Height | | | | Spannhub Clamping Stroke | L2 | L3 | L1 | L4 | W | L | H4 | B | Dp |
|---------------------------|--|---------------------|---|---------------------|--------------------------------|----|----|----|------|----|----|----|------|----|
| | Kontakt bearbeitete Fläche Finished Surface Contact | | Kontakt grobe Fläche Rough Surface Contact | | | | | | | | | | | |
| | Min. | Max. | Min. | Max. | | | | | | | | | | |
| 1479-0618 | 21.8 (21.8-24.8) | 23.8 (23.8-26.8) | 21.4 (21.4-24.4) | 23.4 (23.4-26.4) | 3 | 22 | 6 | 26 | 11.5 | 36 | 18 | 6 | 4.3 | 27 |
| 1479-0823 | 30.3 (30.3-34.3) | 32.3 (32.3-36.3) | 31.2 (31.2-35.2) | 33.2 (33.2-37.2) | 4 | 30 | 8 | 35 | 15.3 | 45 | 23 | 8 | 5.3 | 34 |
| 1479-1030 | 30.5 (30.5-34.5) | 37 (37-41) | 31.5 (31.5-35.5) | 38 (38-42) | 4 | 37 | 8 | 45 | 20.7 | 65 | 30 | 12 | 8.4 | 48 |
| 1479-1240 | 34.5 (34.5-39.5) | 44 (44-49) | 37 (37-42) | 46.5 (46.5-51.5) | 5 | 45 | 8 | 55 | 25.4 | 85 | 40 | 15 | 10.5 | 64 |

| Referenz-Nr. Order No. | H | D | W1 | W2 | H2 | H1 | M1 | H3 | W3 | M | Spannkraft Clamping Force Kgf | zulässiges Drehmoment Allowable Screw Torque (N-m) |  (g) |
|---------------------------|------|----|----|------|----|----|-----|------|----|-----|-------------------------------------|---|--|
| 1479-0618 | 56.5 | 18 | 8 | 4.3 | 10 | 29 | M4 | 22.8 | 10 | M6 | 230 | 6 | 94 |
| 1479-0823 | 73.5 | 23 | 10 | 5.3 | 14 | 39 | M5 | 28.5 | 13 | M8 | 360 | 10.5 | 210 |
| 1479-1030 | 91 | 30 | 16 | 8.4 | 18 | 48 | M8 | 45.5 | 17 | M10 | 600 | 30 | 515 |
| 1479-1240 | 114 | 40 | 20 | 10.4 | 22 | 58 | M10 | 57 | 19 | M12 | 750 | 45 | 1100 |

1479

Körper

- Gehärtet
- Schwarz beschichtet

Spannspindel

- Schwarz beschichtet

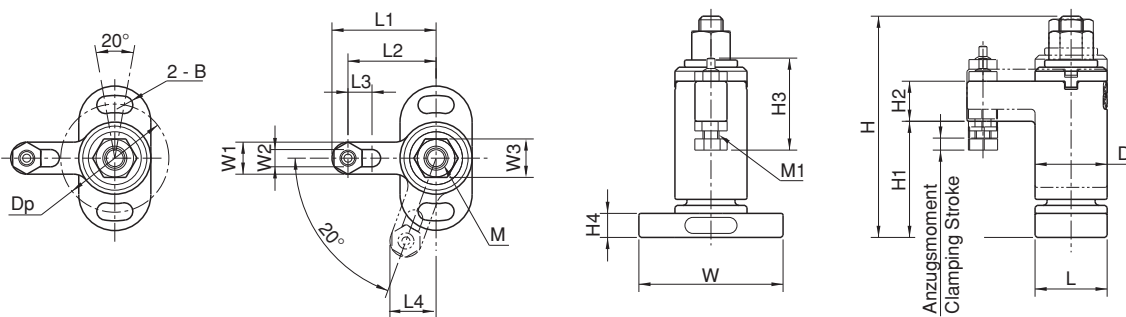
1479

Body

- Hardened
- Black coated

Clamping Spindle

- Black coated



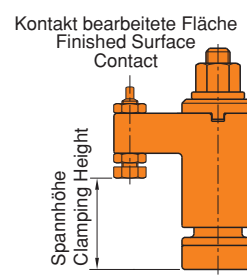
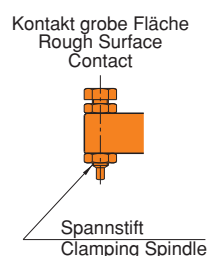
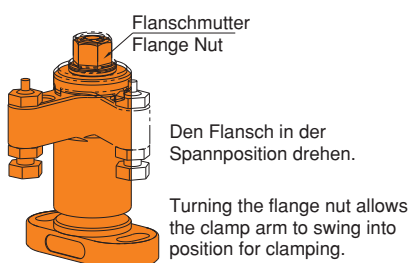
Hinweis

- Spannen mit Drehmomentschlüssel


Note

- Do not use a power tool (impact wrench etc.) to turn the flange nut, for damage prevention.

Verwendung / How To Use



| Referenz-Nr. Order No. | H1 | S | S1 | M | L2 | L1 | W | L | H4 | d | P | H | D | W1 | H2 | W2 | H3 |
|---------------------------|----|----|----|-----|----|----|-----|----|----|----|----|-----|----|----|----|----|----|
| 1480-00012 | 80 | 10 | 11 | M12 | 55 | 66 | 90 | 50 | 15 | 11 | 70 | 139 | 50 | 22 | 30 | 19 | 29 |
| 1480-00016 | 95 | 10 | 15 | M16 | 65 | 79 | 100 | 60 | 20 | 13 | 80 | 165 | 60 | 28 | 35 | 24 | 35 |

| Referenz-Nr. Order No. | Spannkraft Clamping Force Kgf | Drehmoment Allowable Screw Torque (N - m) | Spannrichtung Clamping Direction |  (kg) |
|---------------------------|-------------------------------------|---|-------------------------------------|--|
| 1480-00012 | 600 | 28 | im Uhrzeigersinn Clockwise | 1.6 |
| 1480-00016 | 1000 | 55 | im Uhrzeigersinn Clockwise | 2.9 |



1480

Körper

- Gehärtet
- Schwarz beschichtet

1480

Body

- Hardened
- Black coated

Spannbacke

- Gehärtet
- Schwarz beschichtet

Clamping Arm

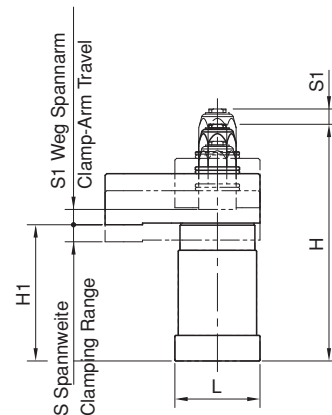
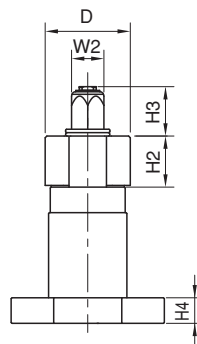
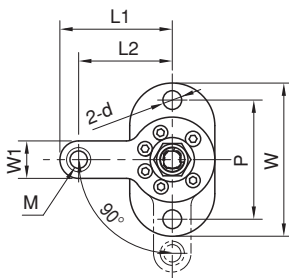
- Hardened
- Black coated

Eigenschaften

- Der Klemmarm schwenkt schnell auf die Drehgeschwindigkeit eines Schlagschraubers ein, um schnell zu klemmen.
- Spannt mit kurzer Bewegung

Features

- The clamp arm swings in swift response to the turning speed of an impact wrench, for quick clamping.
- A short clamp-arm travel allows quick clamping.



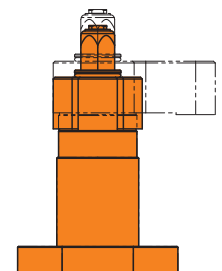
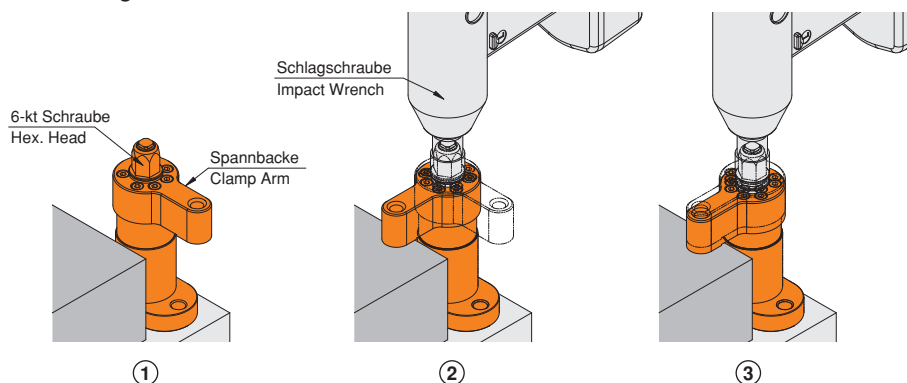
Hinweis

- Spannen unbedingt mit Drehmomentschlüssel

Note


- Do not use applying higher torque than allowable for a long period of time, to avoid damage. Using a torque-settable impact wrench is recommended.

Verwendung / How To Use



Spannen schwenkbar für Roboterfertigung
For robotized production lines, use Spiral-Acting Swing Clamps.

| Referenz-Nr. Order No. | Spannhöhe Clamping Height | | | | Spannhub Clamping Stroke | Vorhubphase Advance Stroke | L2 | L3 | L1 | L4 | W | L | H5 | B |
|---------------------------|--|---------------|---|---------------|-----------------------------|-------------------------------|----|----|----|------|----|----|----|------|
| | Kontakt bearbeitete Fläche Finished Surface Contact | | Kontakt grobe Fläche Rough Surface Contact | | | | | | | | | | | |
| | Min. | Max. | Min. | Max. | | | | | | | | | | |
| 1481-0100R | 22.8 | 24.8 | 22.4 | 24.4 | 1.0 | 0.8 | 22 | 6 | 26 | 11.5 | 36 | 18 | 6 | 4.3 |
| 1481-0100L | (22.3 - 23.3) | (24.3 - 25.3) | (21.9 - 22.9) | (23.9 - 24.9) | | | | | | | | | | |
| 1481-0150R | 31.3 | 33.3 | 32.2 | 34.2 | 1.4 | 1.1 | 30 | 8 | 35 | 15.3 | 45 | 23 | 8 | 5.3 |
| 1481-0150L | (30.6-32) | (32.6-34) | (31.5-32.9) | (33.5-34.9) | | | | | | | | | | |
| 1481-0200R | 32.5 | 39 | 33.5 | 40 | 1.5 | 1.4 | 37 | 8 | 45 | 20.7 | 65 | 30 | 12 | 8.4 |
| 1481-0200L | (31.7-33.2) | (38.2-39.7) | (32.7-34.2) | (39.2-40.7) | | | | | | | | | | |
| 1481-0300R | 36.5 | 46 | 39 | 48.5 | 1.9 | 1.7 | 45 | 8 | 55 | 25.4 | 85 | 40 | 15 | 10.5 |
| 1481-0300L | (33.5-37.4) | (45-46.9) | (38-39.9) | (47.5-49.4) | | | | | | | | | | |

| Referenz-Nr. Order No. | Dp | H | D | W1 | W2 | H3 | H2 | M | H4 | R | A | H1 | zulässige Betriebslast Allowable Operating Load (N) | Spannkraft Clamping Force Kgf |  |
|---------------------------|----|-----|----|----|------|----|----|-----|------|-----|----|------|--|----------------------------------|---|
| 1481-0100R | 27 | 49 | 18 | 8 | 4.3 | 10 | 30 | M4 | 22.8 | 50 | 15 | 45.8 | 100 | 110 | 112 |
| 1481-0100L | | | | | | | | | | | | | | | |
| 1481-0150R | 34 | 66 | 23 | 10 | 5.3 | 14 | 40 | M5 | 28.5 | 63 | 20 | 61.3 | 150 | 180 | 250 |
| 1481-0150L | | | | | | | | | | | | | | | |
| 1481-0200R | 48 | 82 | 30 | 16 | 8.4 | 18 | 50 | M8 | 45.5 | 80 | 26 | 76.5 | 200 | 220 | 570 |
| 1481-0200L | | | | | | | | | | | | | | | |
| 1481-0300R | 64 | 100 | 40 | 20 | 10.4 | 22 | 60 | M10 | 57 | 100 | 33 | 93 | 300 | 350 | 1200 |
| 1481-0300L | | | | | | | | | | | | | | | |

1481

Körper

- Gehärtet
- Schwarz beschichtet

Spannspindel

- Schwarz beschichtet

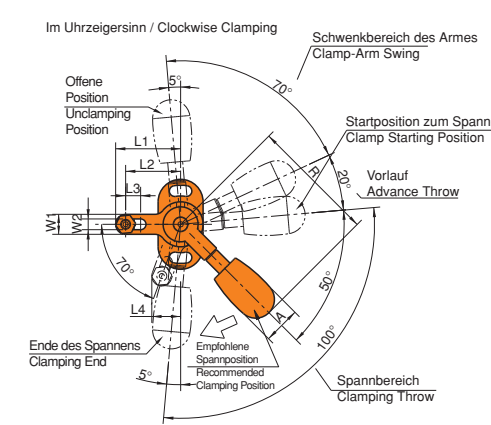
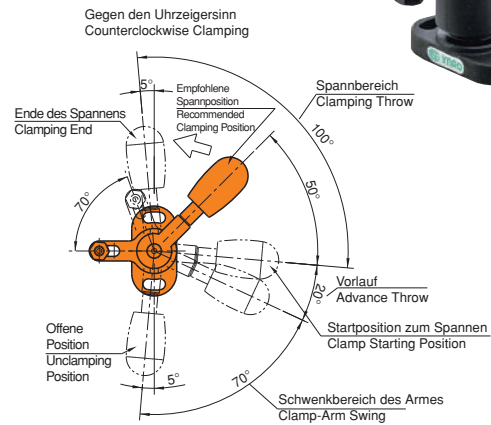
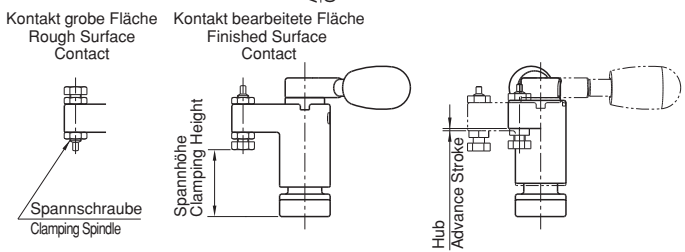
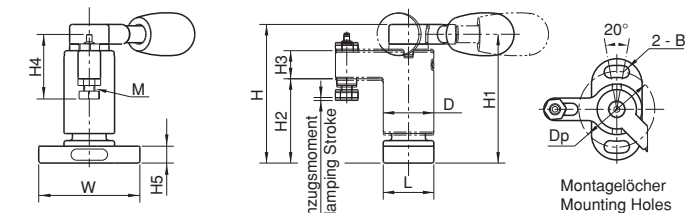
1481

Body

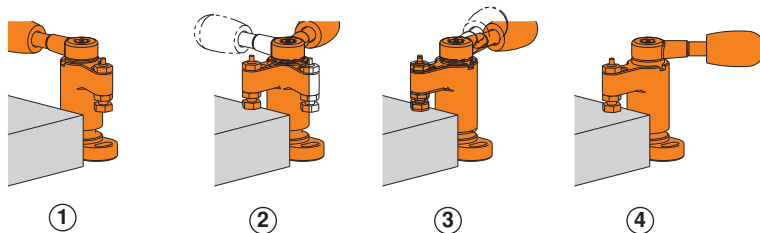
- Hardened
- Black coated

Clamping Spindle


- Black coated



Verwendung / How To Use



| Referenz-Nr. Order No. | Spannhöhe Clamping Height | | | | Spannhub Clamping Stroke | Vorhubphase Advance Stroke | L2 | L3 | L1 | L4 | W | L | H5 | B |
|---------------------------|--|---------------------|---|---------------------|-----------------------------|-------------------------------|----|----|----|------|----|----|----|------|
| | Kontakt bearbeitete Fläche Finished Surface Contact | | Kontakt grobe Fläche Rough Surface Contact | | | | | | | | | | | |
| | Min. | Max. | Min. | Max. | | | | | | | | | | |
| 1482-0150R | 31.3 (30.8-31.8) | 33.3 (32.8-33.8) | 32.2 (31.7-32.7) | 34.2 (33.7-34.7) | 1 | 1.5 | 30 | 8 | 35 | 15.3 | 45 | 23 | 8 | 5.3 |
| 1482-0150L | | | | | | | | | | | | | | |
| 1482-0200R | 32.5 (31.9-33.1) | 39 (38.4-39.6) | 33.5 (32.9-34.1) | 40 (39.4-40.6) | 1.2 | 1.8 | 37 | 8 | 45 | 20.7 | 65 | 30 | 12 | 8.4 |
| 1482-0200L | | | | | | | | | | | | | | |
| 1482-0300R | 36.5 (35.7-37.2) | 46 (45.2-46.7) | 39 (38.2-39.7) | 48.5 (47.7-39.2) | 1.5 | 2.3 | 45 | 8 | 55 | 25.4 | 85 | 40 | 15 | 10.5 |
| 1482-0300L | | | | | | | | | | | | | | |

| Referenz-Nr. Order No. | Dp | H | D | W1 | W2 | H3 | H2 | M | H4 | R | A | H1 | zulässige Betriebslast Allowable Operating Load (N) | Spannkraft Clamping Force Kgf |  |
|---------------------------|----|-----|----|----|------|----|----|-----|------|-----|----|-----|--|----------------------------------|---|
| 1482-0150R | 34 | 131 | 23 | 10 | 5.3 | 14 | 40 | M5 | 28.5 | 63 | 19 | 68 | 150 | 150 | 272 |
| 1482-0150L | | | | | | | | | | | | | | | |
| 1482-0200R | 48 | 167 | 30 | 16 | 8.4 | 18 | 50 | M8 | 45.5 | 80 | 24 | 87 | 200 | 210 | 625 |
| 1482-0200L | | | | | | | | | | | | | | | |
| 1482-0300R | 64 | 207 | 40 | 20 | 10.4 | 22 | 60 | M10 | 57 | 100 | 30 | 107 | 300 | 280 | 1340 |
| 1482-0300L | | | | | | | | | | | | | | | |

1482

Körper

- Gehärtet
- Schwarz beschichtet

1482

Body

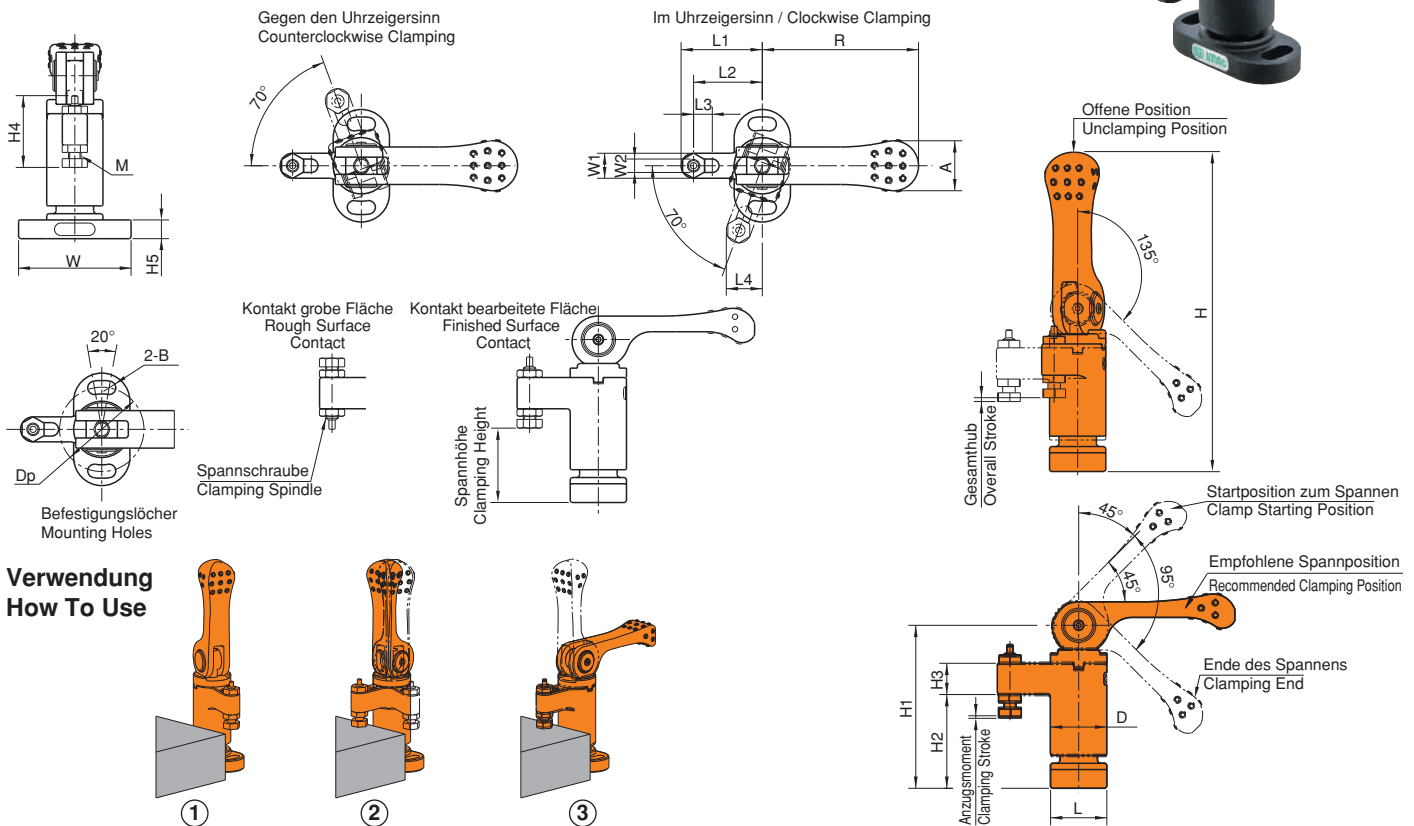
- Hardened
- Black coated

Spannspindel

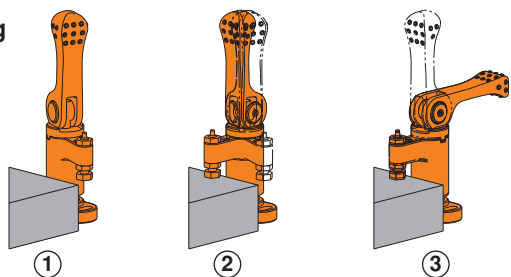
- Schwarz beschichtet

Clamping Spindle


- Black coated



**Verwendung
How To Use**



| Referenz-Nr. Order No. | Spannhöhe Clamping Height | | | | Spannhub Clamping Stroke | L2 | L5 | W | L | H4 | d | P | H | L1 | L3 | W1 |
|---------------------------|--|-----------------|---|-----------------|-----------------------------|----|----|----|----|----|-----|----|-----|------|----|----|
| | Kontakt bearbeitete Fläche Finished Surface Contact | | Kontakt grobe Fläche Rough Surface Contact | | | | | | | | | | | | | |
| | Min. | Max. | Min. | Max. | | | | | | | | | | | | |
| 1483-03240 | 32 (32-29.5) | 40 (40-37.5) | 35 (35-32.5) | 43 (43-40.5) | 2.5 | 20 | 11 | 42 | 18 | 8 | 5.5 | 32 | 81 | 25.5 | 25 | 26 |
| 1483-03748 | 37 (37-33.5) | 48 (48-44.5) | 42 (42-38.5) | 53 (53-49.5) | 3.5 | 25 | 14 | 52 | 22 | 10 | 6.6 | 40 | 100 | 32 | 31 | 32 |

| Referenz-Nr. Order No. | W2 | H2 | H1 | M | H3 | R | H5 | L4 | verstellbarer Griff Adjustable Handles | zulässige Betriebslast (N) Allowable Operating Load (N) | Spannkraft Clamping Force Kgf | Spannmechanismus Clamping Mechanism |  |
|---------------------------|----|----|----|----|------|----|----|----|---|--|----------------------------------|--|---|
| 1483-03240 | 22 | 10 | 45 | M6 | 24 | 40 | 47 | 16 | FKF8-BR | 170 | 240 | Schraube Screw | 242 |
| 1483-03748 | 28 | 12 | 55 | M8 | 30.5 | 65 | 63 | 20 | FKF8-BR | 210 | 420 | Schraube Screw | 490 |

1483

Körper

- Gehärtet
- Schwarz beschichtet

1483

Body

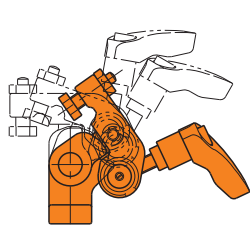
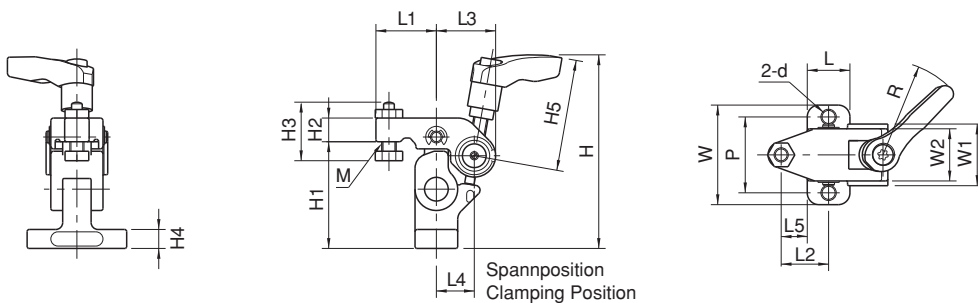
- Hardened
- Black coated

Spannspindel

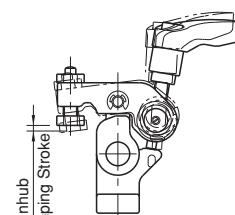
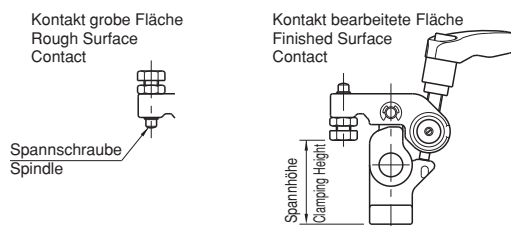
- Schwarz beschichtet

Clamping Spindle

- Black coated

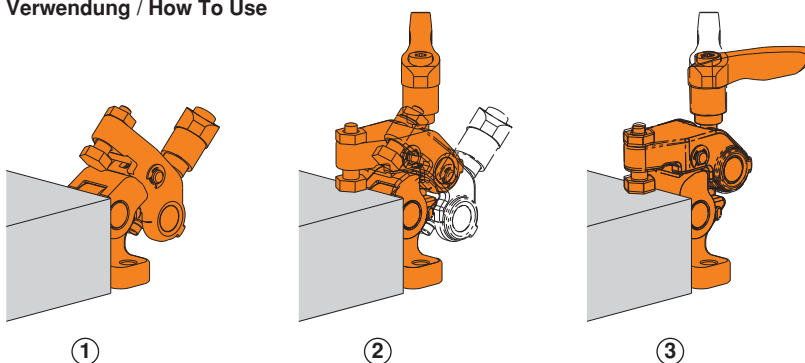


Geöffnete Stellung
Unclamped



Einstellbarer Bereich
Clamping Throw

Verwendung / How To Use




①

②

③

| Referenz-Nr. Order No. | A | B | C | D | E | F | G (g6) | H | J (h6) | K | L | M | N | P (±0.02) | Q | R |
|---------------------------|----|----|----|----|----|----|-----------|----|-----------|---|----|----|----|--------------|----|----|
| 1484-06501 | 65 | 57 | 10 | 47 | 39 | 70 | 28 | 12 | 6 | 5 | 19 | M6 | 42 | 26 | 32 | 25 |
| 1484-09001 | 90 | 72 | 15 | 57 | 46 | 95 | 42 | 14 | 8 | 7 | 23 | M8 | 60 | 36 | 38 | 28 |

| Referenz-Nr. Order No. | T | U | V | W | Z | Spannkraft Clamping Force Kgf | Drehmoment Allowable Screw Torque (N - m) |  (kg) |
|---------------------------|----|----|---|----|-----|-------------------------------------|---|---|
| 1484-06501 | 15 | 18 | 4 | M4 | M8 | 400 | 60 | 1.1 |
| 1484-09001 | 17 | 22 | 6 | M5 | M10 | 600 | 100 | 2.6 |

1484

Technische Daten

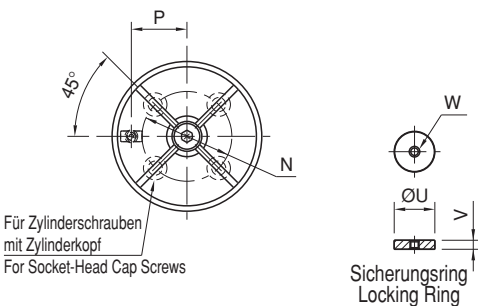
- Teile-Wiederholgenauigkeit: ±0.03
- Spannbacken Wiederholgenauigkeit : ±0.02

Hinweis

- Ohne Werkstück nicht spannen.
- Bearbeiten nur so weit es zulässig ist.

Inhalt

- 1 St. Sicherungsring
- 1 St. Diamantnadel
- 1 St. Inbusmutter



1484

Technical Data

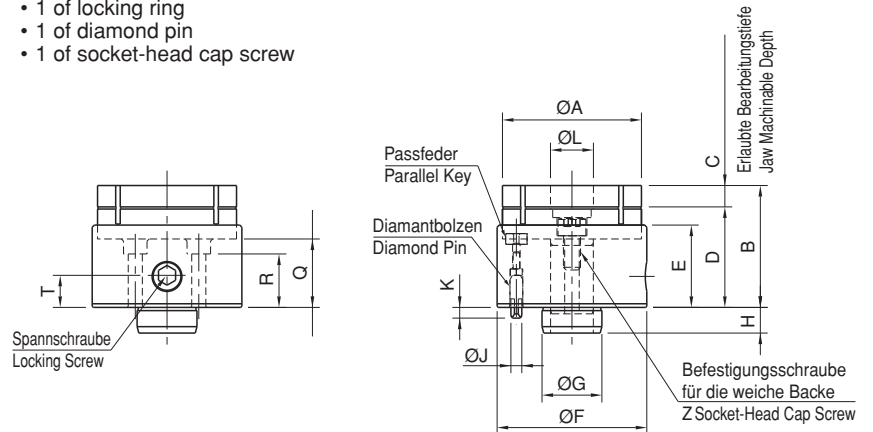
- Part locating repeatability: ±0.03
- Jaw locating repeatability: ±0.02

Notes

- Never tighten the locking screw without a part mounted, to avoid damage and deformation
- Do not machine the jaw deeper than allowed.


Included

- 1 of locking ring
- 1 of diamond pin
- 1 of socket-head cap screw



Spannbacken

Jaws

| Referenz-Nr. Order No. | A | B | C | D | E | F | G | H | J | K |  (g) |
|---------------------------|----|----|----|----|----|----|----|---|----|-----|--|
| 1485-06501 | 65 | 25 | 10 | 15 | 19 | 28 | 18 | 4 | M4 | M10 | 170 |
| 1485-09001 | 90 | 34 | 15 | 19 | 23 | 39 | 22 | 6 | M5 | M12 | 470 |

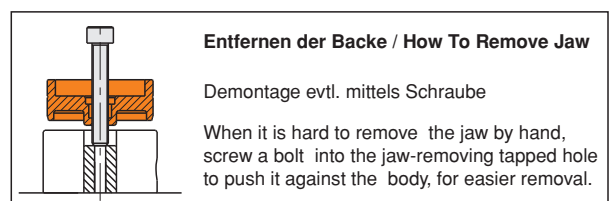
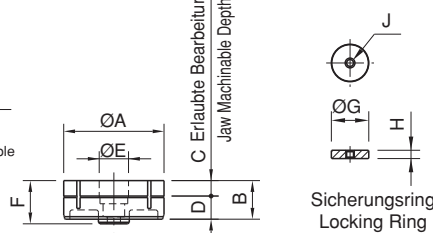
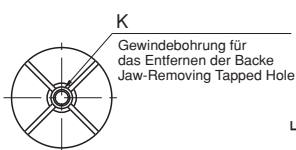
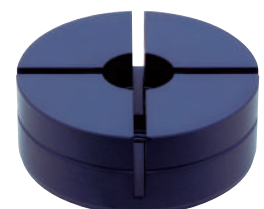
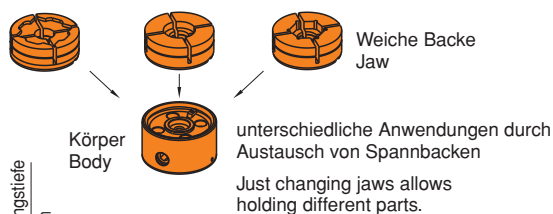
1485


- Material: A7075

1485

- Material: A7075

Eigenschaft / Feature



| Referenz-Nr. Order No. | d | h (±0.01) | d1 (g6) | h1 | M | h2 | dp | p (±0.02) | w | h3 | M1 | Drehmoment Allowable Screw Torque (N - m) |  (kg) |
|---------------------------|-----|--------------|------------|----|-----|----|-----|--------------|----|----|----------|---|---|
| 1486-CP125.06501 | 65 | 25 | 28 | 12 | M6 | 27 | 42 | 22 | 8 | 12 | M8x1.25 | 15 | 0.8 |
| 1486-CP125.09001 | 90 | 30 | 42 | 14 | M8 | 30 | 60 | 30 | 8 | 14 | M10x1.5 | 25 | 1.7 |
| 1486-CP125.12001 | 120 | 35 | 55 | 18 | M10 | 33 | 80 | 43 | 10 | 16 | M10x1.5 | 40 | 3.5 |
| 1486-CP125.16001 | 160 | 40 | 63 | 24 | M12 | 36 | 110 | 60 | 10 | 18 | M12x1.75 | 40 | 7.1 |

geeignete Spannbacken / Proper Jaws

| äußere Formen spannen / For External Form Holding | | | innere Formen spannen / For Internal Form Holding | | |
|---|-------------------------------------|--------------------------------|---|-------------------------------------|--------------------------------|
| Referenz-Nr. Order No. | Spannkraft Clamping Force Kgf | Klemmmoment Clamping Torque | Referenz-Nr. Order No. | Spannkraft Clamping Force Kgf | Klemmmoment Clamping Torque |
| 1486-CP126.06501 | 4.5 | Ø 0.3 | 1486-CP127.06501 | 4.5 | Ø 0.3 |
| 1486-CP126.09001 | 7 | | 1486-CP127.09001 | 7 | |
| 1486-CP126.12001 | 10 | | 1486-CP127.12001 | 10 | |
| 1486-CP126.16001 | 12 | | 1486-CP127.16001 | 10 | |



1486

- Nickelbeschichtung
- Werkstück Wiederholgenauigkeit ±0.03
- Weiche Backe Wiederholgenauigkeit ±0.03

1486

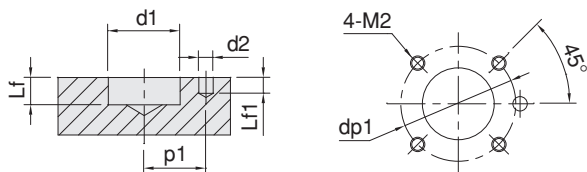
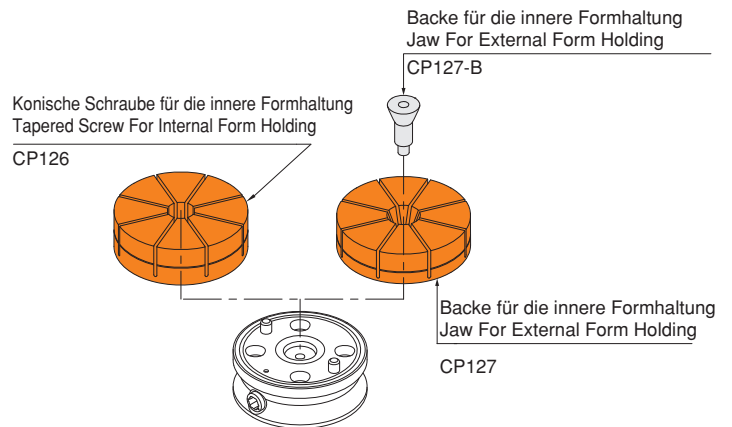
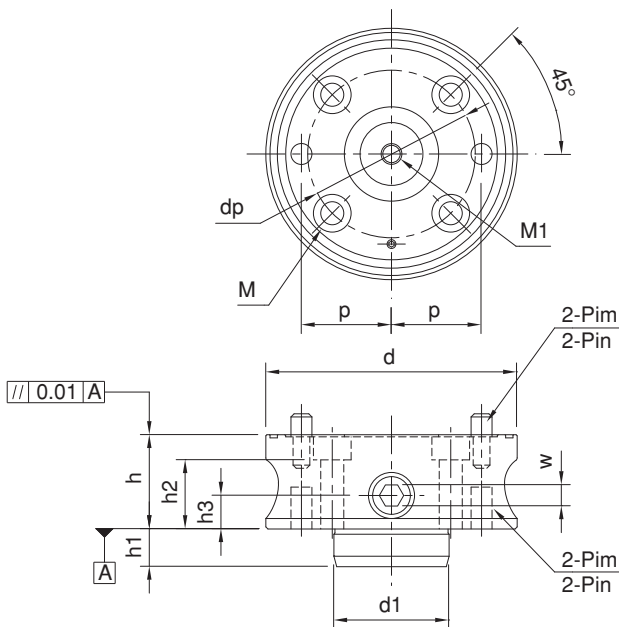
- Nickel Coating
- Part locating repeatability: ±0.03
- Jaw locating repeatability: ±0.03

Hinweis

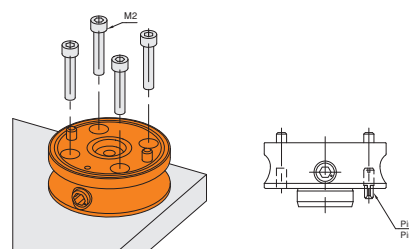
die Backen muss separat bestellt werden.

Note

Jaws must be ordered separately.




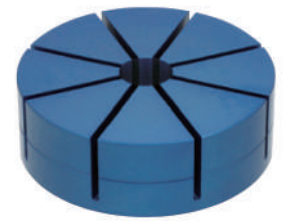
| Referenz-Nr. Order No. | d1 (H7) | Lf | d2 (G7) | Lf1 | p1 (±0.02) | M2 | dp1 |
|---------------------------|------------|----|------------|-----|---------------|----------|-----|
| 1486-CP125.06501 | 28 | 13 | 6 | 6 | 22 | M 6x1 | 42 |
| 1486-CP125.09001 | 42 | 15 | 8 | 8 | 30 | M 8x1.25 | 60 |
| 1486-CP125.12001 | 55 | 19 | 10 | 11 | 43 | M10x1.5 | 80 |
| 1486-CP125.16001 | 63 | 25 | 12 | 13 | 60 | M12x1.75 | 110 |



Stiftdurchmesser Pin Dimensions

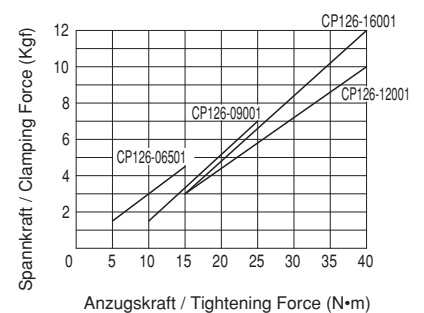
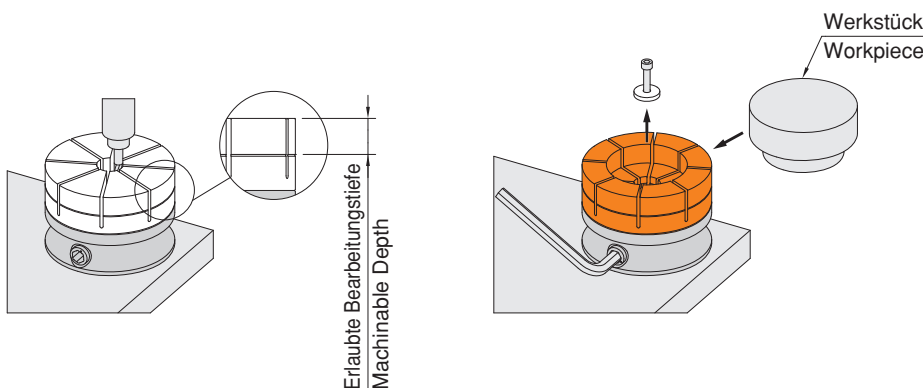
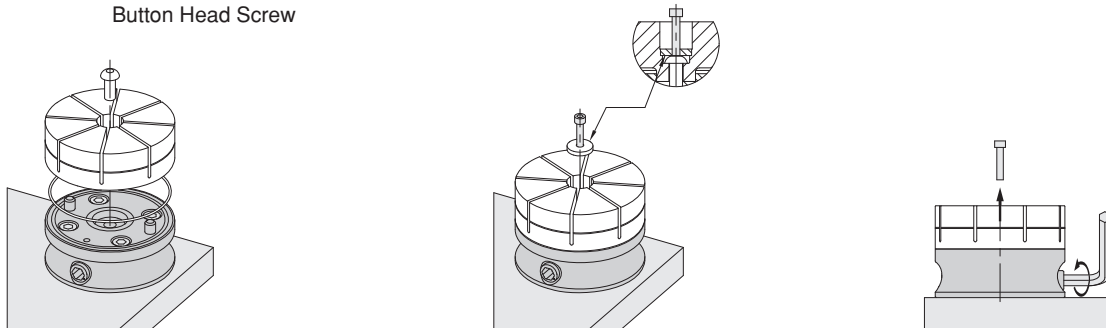
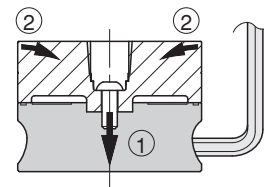
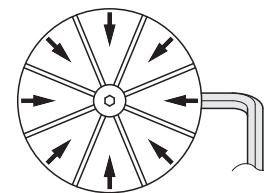
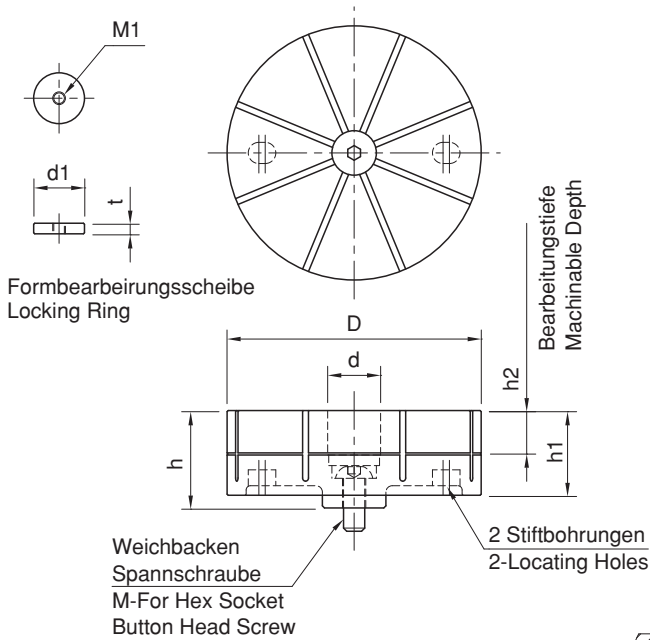
| Referenz-Nr. Order No. | Durchmesser Diameter |
|---------------------------|-------------------------|
| 1486-CP125.06501 | Ø 6h6 |
| 1486-CP125.09001 | Ø 8h6 |
| 1486-CP125.12001 | Ø 10h6 |
| 1486-CP125.16001 | Ø 12h6 |

| Referenz-Nr. Order No. | D | d | h1 | h2 | M | h | M | d1 | t |  (g) |
|---------------------------|-----|----|----|----|--------|----|----|----|---|---|
| 1486-CP126.06501 | 65 | 21 | 25 | 10 | M8x20 | 29 | M5 | 20 | 4 | 200 |
| 1486-CP126.09001 | 90 | 25 | 35 | 15 | M10x20 | 40 | M6 | 24 | 5 | 500 |
| 1486-CP126.12001 | 120 | 25 | 40 | 20 | M10x25 | 46 | M6 | 24 | 5 | 1100 |
| 1486-CP126.16001 | 160 | 29 | 45 | 25 | M12x25 | 52 | M8 | 28 | 6 | 2200 |



- 1486**
- Material: Aluminium A7075
 - Blau Beschichtet
 - Klemmmoment 0.15mm

- 1486**
- Material: Aluminum A7075
 - Blue coating
 - Clamping Torque 0.15mm



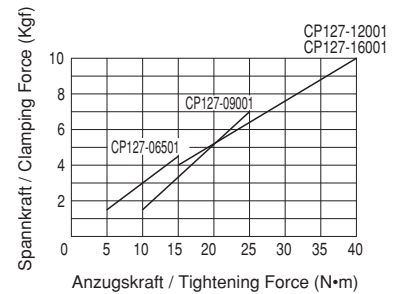
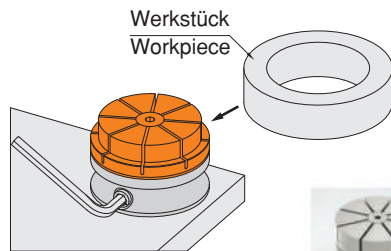
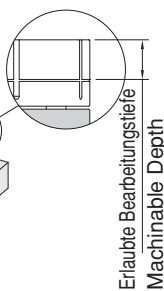
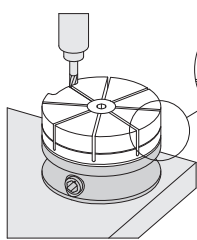
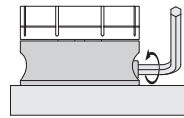
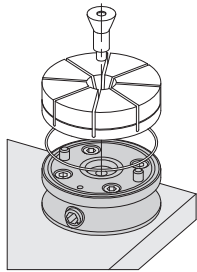
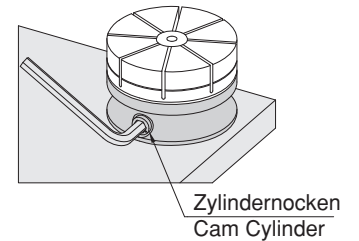
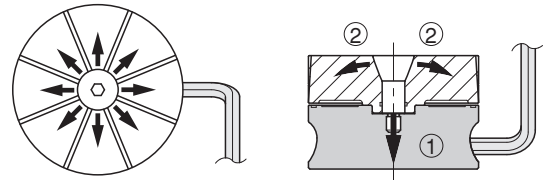
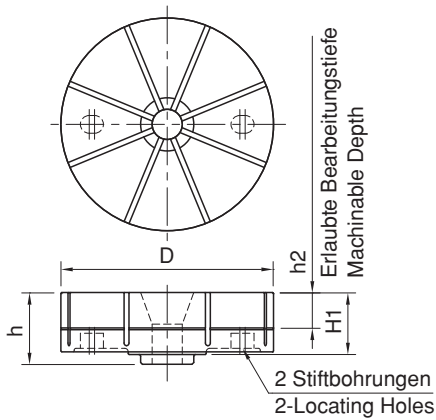
| Referenz-Nr. Order No. | D | h1 | h2 | h | (g) |
|---------------------------|-----|----|----|------|------|
| 1486-CP127.06501 | 65 | 25 | 10 | 28.5 | 200 |
| 1486-CP127.09001 | 90 | 30 | 15 | 34.5 | 400 |
| 1486-CP127.12001 | 120 | 35 | 20 | 40.5 | 900 |
| 1486-CP127.16001 | 160 | 40 | 25 | 46.5 | 1900 |

1486

- Material: Aluminium A7075
- SilberBeschichtet
- Klemmoment 0.15mm

1486

- Material: Aluminum A7075
- Silver coating
- Clamping Torque 0.15mm



Schraube für innere Spannbacken Außendurchmesser

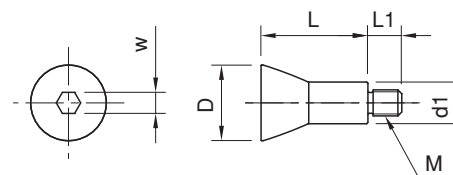
| Referenz-Nr. Order No. | D | L | M | L1 | d1 | w | (g) |
|---------------------------|------|----|-----|----|------|----|-----|
| 1486-CP127.06501B | 22.5 | 29 | M8 | 10 | 13.2 | 6 | 50 |
| 1486-CP127.09001B | 27 | 35 | M10 | 11 | 16 | 8 | 80 |
| 1486-CP127.12001B | 29 | 41 | M10 | 13 | 16 | 8 | 100 |
| 1486-CP127.16001B | 33 | 47 | M12 | 14 | 18 | 10 | 150 |


1486

- SilberBeschichtet

1486

- Silver coating



| Referenz-Nr. Order No. | D | | H | H1 | R | H2 | | L1 | geeignete Schrauben Proper Cap Screws | Spannkraft Clamping Force Kgf |  (g) |
|---------------------------|------|------|----|-----|-------|------|------|-----|--|--|--|
| | min. | max. | | | | min. | max. | | | | |
| 1487-04001 | 19.5 | 24 | 9 | 2.5 | R9.5 | 8 | 2.6 | 9.4 | M4 | 200 | 20 |
| 1487-06001 | 23.5 | 29 | 13 | 4 | R11.5 | 11.5 | 5 | 13 | M6 | 500 | 45 |
| 1487-08001 | 28.5 | 36 | 17 | 5.5 | R14 | 15 | 6 | 19 | M8 | 900 | 90 |

1487

- Gehärtet
- Schwarz beschichtet

1487

- Hardened
- Black coated

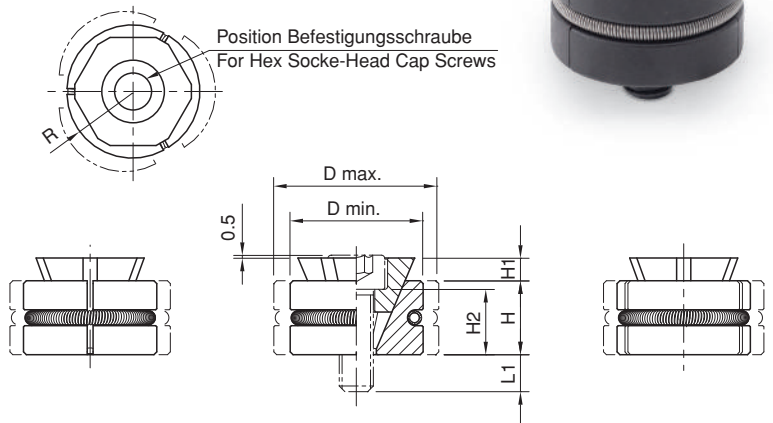


Eigenschaften

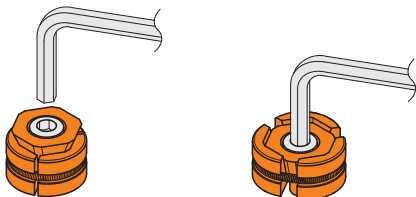
- Spannen im Innendurchmesser
- Konische Passfeder ermöglicht kräftiges Spannen.
- Einsatz in Gusslöchern und groben Löchern ist möglich durch langen Hub.

Feature

- These clamps hold the inside diameter of the workpiece.
- The wedge construction allows powerfully clamping the workpiece.
- Long clamping stroke is ideal for holding as-cast or roughly-finished holes.

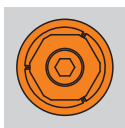


Verwendung / How To Use



Beim Werkstückspannen Kontakt in Linienform. Bei bearbeiteten Löchern nicht empfehlenswert, da sonst im Loch Deformationen entstehen können.

The clamp makes a line contact with the workpiece at the clamping mode. This contact can mar the surface of the workpiece depending on its materials, and using these clamps for accurately finished holes is not recommended.



Geöffnet
Unclamping Mode



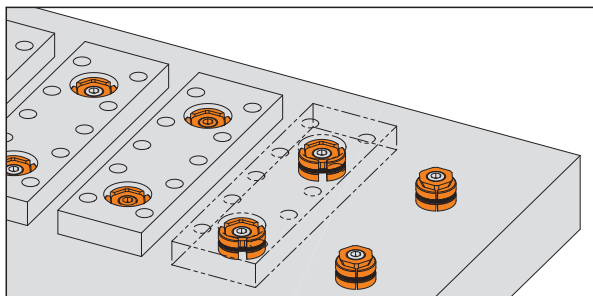
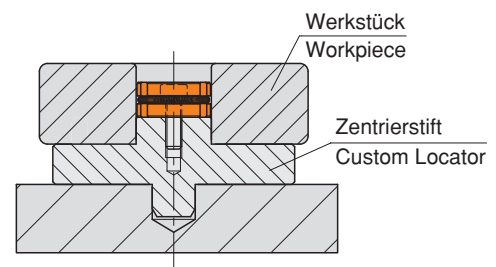
Geschlossen
Clamping Mode

Hinweis


- Richtige Zentrierung gem. Zeichnung unten

Notes

- For accurate locating, use these clamps with a locator as shown below.



Beispiel Spannen 2-fach.
Example of application where two I.D. Holding Clamps are used.

| Referenz-Nr. Order No. | d | | h | | h1 | M | L1 | W | Spannkraft Clamping Force kgf | Drehmoment Allowable Screw Torque (N - m) |  (g) |
|---------------------------|------|------|--------|--------|------|-------|------|-----|-------------------------------------|--|---|
| | min. | max. | d min. | d max. | | | | | | | |
| 1487-04001A | 8 | 10.3 | 5.5 | 4.6 | 0.9 | M4x12 | 7.3 | 2.5 | 900 | 2.1 | 3 |
| 1487-05001A | 10 | 12.3 | 6.4 | 5.6 | 1.1 | M5x15 | 9.1 | 3. | 1500 | 4.3 | 5 |
| 1487-06001A | 12 | 16.3 | 8.6 | 7 | 1.3 | M6x18 | 11.2 | 4. | 2100 | 7.3 | 9 |
| 1487-08001A | 16 | 22 | 11.5 | 9.4 | 1.6 | M8x25 | 16.2 | 5 | 4000 | 18 | 22 |
| 1487-04001B | 8 | 10.3 | 5.5 | 4.6 | 5.1 | M4x12 | 7.1 | 3 | 1500 | 2.7 | 4 |
| 1487-05001B | 10 | 12.3 | 6.4 | 5.6 | 6.2 | M5x15 | 9 | 4 | 2500 | 5.4 | 7 |
| 1487-06001B | 12 | 16.3 | 8.6 | 7 | 7.9 | M6x18 | 10.6 | 5 | 5000 | 9.1 | 11 |
| 1487-08001B | 16 | 22 | 11.5 | 9.4 | 10.4 | M8x25 | 15.4 | 6 | 9000 | 25 | 28 |



1487

- Gehärtet
- Schwarz beschichtet

1487

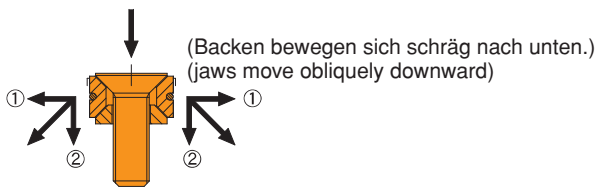
- Hardened
- Black Coated

Eigenschaften

- Diese Spannelemente greifen das Werkstück von innen.
- Nockkonstruktion ermöglicht starkes Spannen.
- Der langspannhub ist ideal zum halten der Gussteile oder grob fertige löcher.

Features

- These clamps hold the inside diameter of the workpiece.
- The wedge construction allows powerfully clamping in the workpiece.
- Long clamping stroke is ideal for holding as-cast or roughly-finished holes.



- ① Horizontaler Druck gegen Wertstück
Horizontal pressure against workpiece
- ② Vertikaler Druck verhindert, dass sich das Werkstück hebt.
Vertical pressure preventing workpiece lift

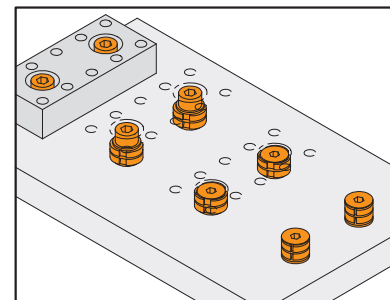
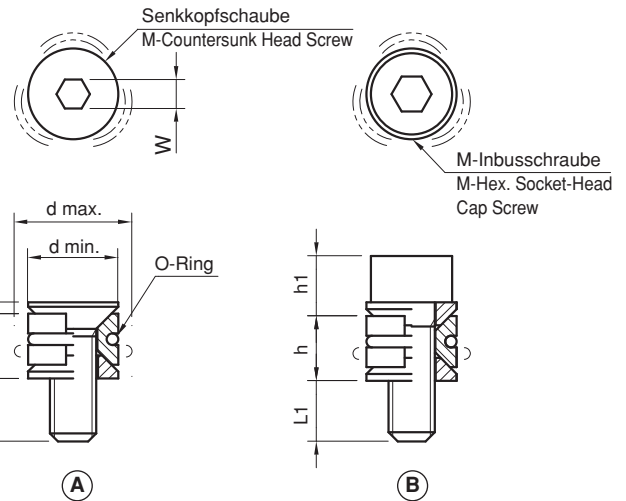
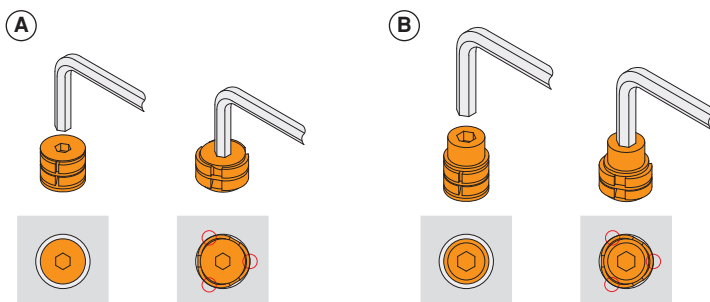
Verwendung / How To Use

Hinweis

- Klemm das Werkstück auf die Spannmodus der Verbindungsleitung .
Es ist nicht diese Klemme zu verwenden, für die Fertigbohrungen empfohlen.

Notes

- The clamp makes a line contact with the workpiece at the clamping mode.
This contact can mark the surface of the workpiece depending on its materials
and using these clamps for accurately finished holes is not recommended.



Beispiel: 2 kompakte Anwendungen für Spannen im Loch

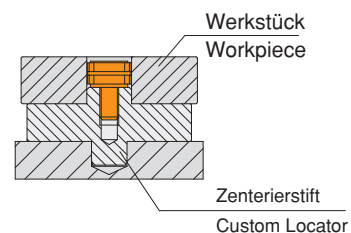
Example of applications where two compact ID holding clamps are used.

Hinweis

- Für eine genaue Ortung, verwenden Sie diese Klemmen mit einem Locator, wie unten gezeigt.

Notes

- For accurate locating, use these clamps with a locator as shown below.



| Referenz-Nr. Order No. | Durchmesser verstellbarer Werkstückdurchmesser Adaptable Workpiece Dia. | d1 | d2 | h2 | h1 | d (⁰ / _{0.05}) | h | M | L | w | M1 | L1 | dp | Spannkraft Clamping Force Kgf | Drehmoment Allowable Screw Torque (N - m) | zulässige Dehnung Recommended Range of Expansion of Dia | zulässiger Öffnungsdurchmesser Allowable Expansion of Dia | (g) |
|---------------------------|--|-------|------|------|------|---|------|-----|------|----|----|----|-------|--|---|---|--|------|
| 1488-00004 | Ø7.1-Ø12.4 | 12.4 | 7.1 | 15 | 16 | 29.72 | 21.8 | M4 | 7.2 | 3 | M3 | 6 | 21 | 420 | 5 | 0.07 | 0.13 | 45 |
| 1488-00006 | Ø12.2-Ø14.2 | 14.2 | 12.2 | 15 | 19 | 31.5 | 24.9 | M6 | 11.2 | 5 | M3 | 6 | 23.1 | 440 | 17 | 0.08 | 0.23 | 60 |
| 1488-00008 | Ø13.5-Ø20 | 20 | 13.5 | 15 | 19 | 37.5 | 24.9 | M8 | 13.2 | 6 | M3 | 6 | 29 | 1100 | 34 | 0.08 | 0.30 | 95 |
| 1488-00010 | Ø18-Ø27 | 27 | 18 | 17.5 | 22.2 | 50 | 28.6 | M10 | 16.3 | 8 | M4 | 7 | 39.4 | 2000 | 60 | 0.08 | 0.35 | 190 |
| 1488-00012 | Ø23-Ø35.3 | 35.3 | 23 | 20.6 | 25.4 | 56 | 31.8 | M12 | 20.3 | 10 | M4 | 7 | 45.5 | 2600 | 150 | 0.08 | 0.35 | 300 |
| 1488-0016A | Ø29.3-Ø42 | 42 | 29.3 | 27 | 31.8 | 69.5 | 39.6 | M16 | 21.4 | 14 | M5 | 13 | 55.9 | 4400 | 280 | 0.08 | 0.35 | 570 |
| 1488-0016B | Ø29.3-Ø51.5 | 51.5 | 29.3 | 27 | 31.8 | 75.5 | 39.6 | M16 | 21.4 | 14 | M5 | 13 | 63.9 | 4400 | 280 | 0.08 | 0.35 | 750 |
| 1488-0016C | Ø29.3-Ø77.7 | 77.7 | 29.3 | 32.3 | 37.6 | 107.5 | 45.5 | M16 | 19.3 | 14 | M6 | 14 | 92.6 | 4400 | 280 | 0.15-0.4 | 0.60 | 1800 |
| 1488-0016D | Ø29.3-Ø103 | 103 | 29.3 | 32.3 | 37.6 | 132.9 | 45.5 | M16 | 19.3 | 14 | M6 | 14 | 118.1 | 4400 | 280 | 0.15-0.4 | 0.60 | 2900 |
| 1488-0016E | Ø29.3-Ø175 | 175 | 29.3 | 32.3 | 37.6 | 132.9 | 45.5 | M16 | 19.3 | 14 | M6 | 14 | 118.1 | 4400 | 280 | 0.15-0.4 | 0.80 | 6500 |
| 1488-0016F | Ø29.3-Ø250.2 | 250.2 | 29.3 | 32.3 | 37.6 | 152.4 | 45.5 | M16 | 19.3 | 14 | M6 | 14 | 133.4 | 2600 | 170 | 0.15-0.4 | 0.80 | 4800 |

1488

Körper

- Schwarz beschichtet

Schraube

- Gehärtet

Eigenschaft

- Lochdurchmesser halten
- Durch perfekte Verwendung ist mehrfaches Spannen möglich.
- Spannen auch durch hydraulisches Ziehen möglich.
- Anpassung gem. Werkstück möglich.

Hinweis

- Kanten-/Eckenradius bearbeiteter Werkstücke muss mind. 0,5 mm sein.
- Wenn Kanten-/Eckenradius dem Werkstückloch entspricht, dann Buchse verwenden.

1488

Body

- Black coated

Tapered Screw

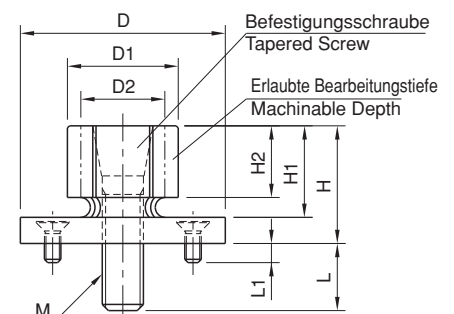
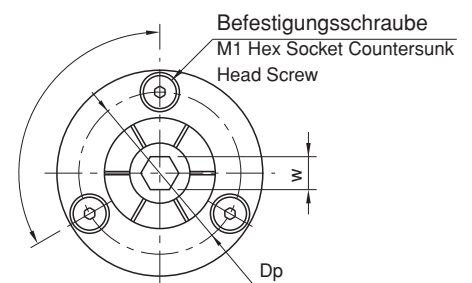
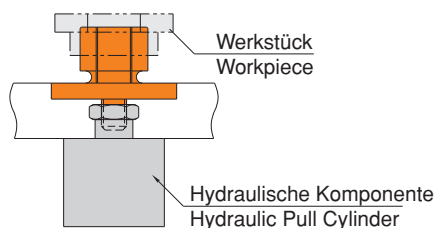
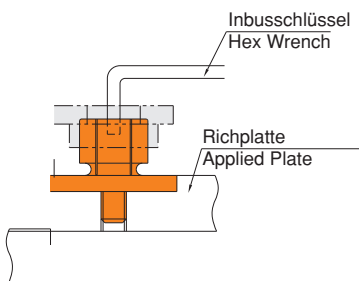
- Hardened

Features

- Can hold workpieces on an inside diameter.
- Perfect for multiple-parts holding arrangement.
- Using hydraulic pull cylinders to clamp instead of using hex wrenchs allows automation.
- Can be machinable to suit your workpieces.

Notes

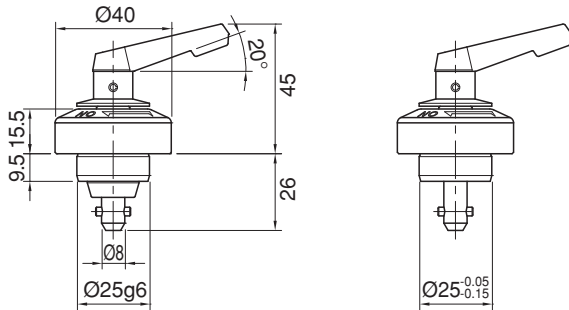
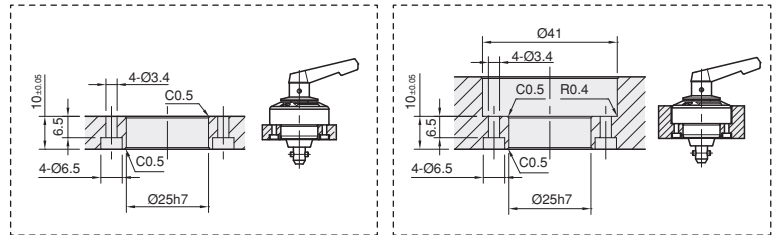
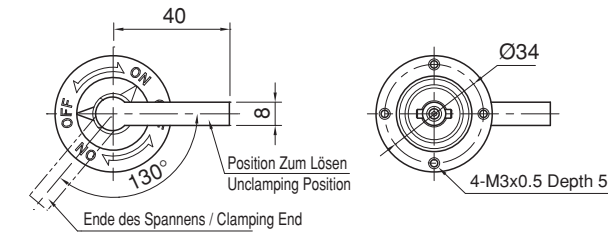
- The minimum radius of corners at the machined part should be 0.5mm for clamping small workpieces. To prevent stress concentration on these corners, make the radius as large as possible.
- If the radius will interfere with the bottom of the workpiece bore, we suggest a ring or rest-pads be fixed to the flange.



| Referenz-Nr. Order No. | Spannkraft Clamping Force (N) | Hubkraft Lifting Force (N) | (g) |
|---------------------------|-------------------------------------|----------------------------------|-----|
| 1489-0840R.06 | 600 | 100 | 220 |
| 1489-0840R.06N | 700 | - | 215 |

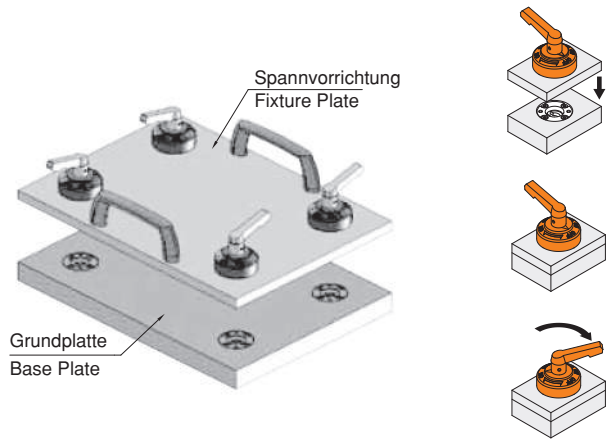


- 1489**
• Schwarz beschichtet
- 1489**
• Black coating



0840R.06

0840R.06N

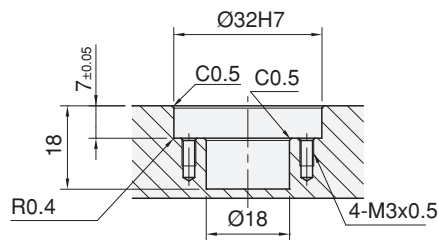
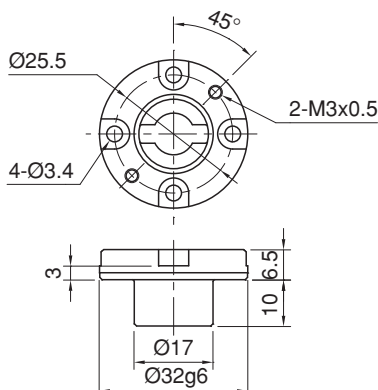


Buchse für Single-Touch Spanner

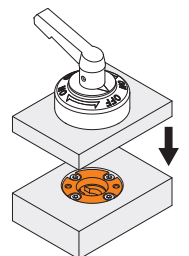
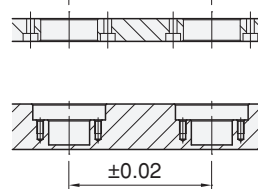
Single Touch Clamping Bush

| Referenz-Nr. Order No. | (g) |
|---------------------------|-----|
| 1489-0840R | 32 |

- 1489**
• Schwarz beschichtet
- 1489**
• Black coating



Toleranz / Tolerance ±0.02



| Referenz-Nr. Order No. | D (g6) | H | D1 | H1 | M | H2 | M1 | Dp | Hubkraft Lifting Force (N) | (g) |
|---------------------------|-----------|-----|----|----|----|----|--------|------|----------------------------------|---------|
| 1489-16032K | 32 | 6.5 | 20 | 7 | M3 | 3 | M3x0.5 | 25.5 | 110 | 60 |
| 1489-25050K | 50 | 10 | 32 | 9 | M4 | 5 | M4x0.7 | 42 | 180 | 160 |
| 1489-38070K | 70 | 15 | 48 | 14 | M5 | 9 | M5x0.8 | 60 | 400 | 508 |
| 1489-56095K | 95 | 22 | 70 | 21 | M6 | 15 | M6x1.0 | 84 | 690 | 1451 |

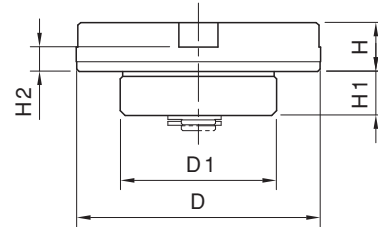
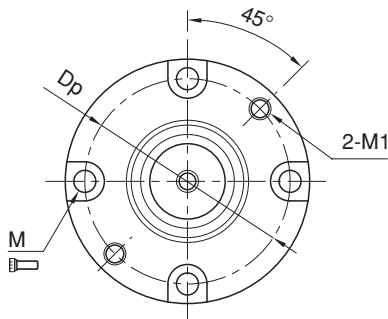


1489

- Die Auftriebskraft ist die Kraft der inneren Feder des Körper die bewegliche Konusbuchsen nach oben zu drücken. (N)
- Wenn die Schrauben nicht in der richtigen Reihenfolge angezogen werden, die Ortung Wiederholbarkeit 0.01 nicht überschreiten
- Wenn die Gesamtbelastung die maximale Ladekapazität überschreitet, die Ortung Wiederholbarkeit 0.01 nicht überschreiten

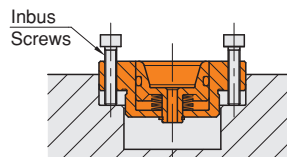
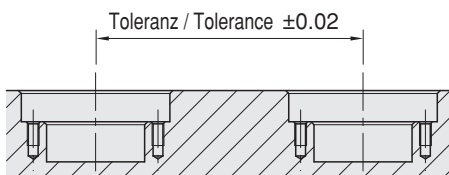
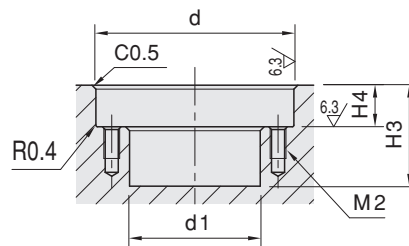
1489

- The lifting force is the power of the inner spring of the body to push up the movable tapered bushing.(N)
- If the screws are not tightened in the correct order, the locating repeatability may exceed 0.01
- If the total load exceeds the maximum loading capacity, the locating repeatability may exceed 0.01

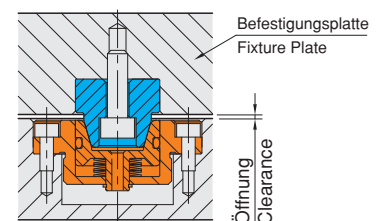
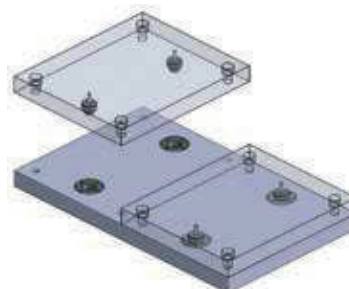
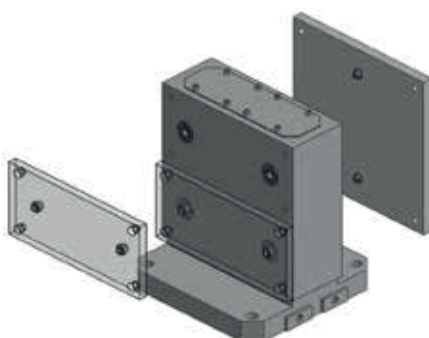



Montagedetails / Mounting Details

| Referenz-Nr. Order No. | d (H7) | H4 (±0.05) | d1 | H3 | M |
|---------------------------|-----------|---------------|----|----|--------|
| 1489-16032 | 32 | 7 | 21 | 18 | M3x0.5 |
| 1489-25050 | 50 | 10.5 | 33 | 24 | M4x0.7 |
| 1489-38070 | 70 | 15.5 | 49 | 35 | M5x0.8 |
| 1489-56095 | 95 | 22.5 | 71 | 51 | M6x1.0 |



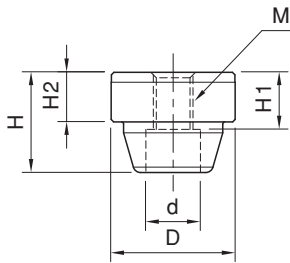
Anwendungsbeispiel / Application Examples



| Referenz-Nr. Order No. | D (g6) | H2 | H | M | H1 | d |  (g) |
|---------------------------|-----------|-----|------|----------|------|----|--|
| 1489-16032 | 16 | 5.5 | 11.5 | M5x0.80 | 6 | 8 | 18 |
| 1489-25050 | 25 | 10 | 20 | M8x1.25 | 11.5 | 11 | 49 |
| 1489-38070 | 38 | 15 | 29.5 | M10x1.50 | 18 | 14 | 176 |
| 1489-56095 | 56 | 22 | 43.5 | M16x2.00 | 28.5 | 20 | 569 |

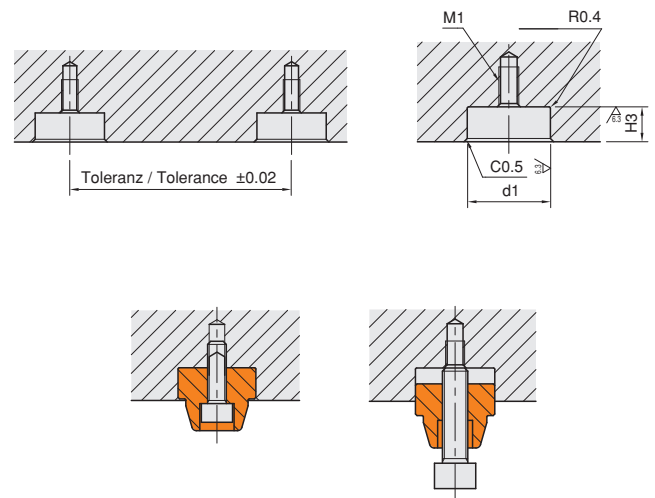


1489




Montagedetails / Mounting Details

| Referenz-Nr. Order No. | d1 (H7) | H3 (±0.05) | M1 |
|---------------------------|------------|---------------|----------|
| 1489-16032 | 16 | 6 | M4x0.7 |
| 1489-25050 | 25 | 10.5 | M6x1.00 |
| 1489-38070 | 38 | 15.5 | M8x1.25 |
| 1489-56095 | 56 | 22.5 | M12x1.75 |



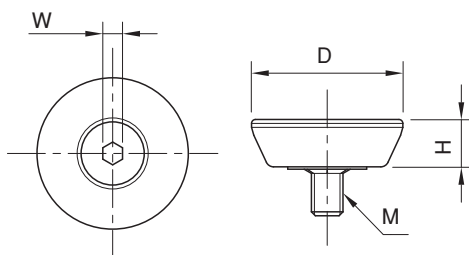
Zentrierschutzkappe

Flex Locator Protecting Covers

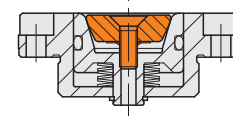
| Referenz-Nr. Order No. | D | H | M | W |  (g) |
|---------------------------|----|---|--------|-----|--|
| 1489-16032P | 12 | 4 | M3x0.5 | 2 | 3 |
| 1489-38070P | 19 | 6 | M4x0.7 | 2.5 | 5 |
| 1489-25050P | 29 | 7 | M5x0.8 | 3 | 14 |
| 1489-56095P | 44 | 8 | M6x1.0 | 4 | 35 |



1489



Montagedetails / Mounting Details





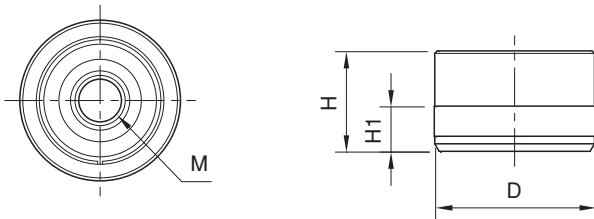
| Referenz-Nr. Order No. | D | H | H1 | M | Hubkraft Lifting Force (N) | (g) |
|---------------------------|--|----|----|----------|----------------------------------|---------|
| 1489-12025A | 25 ^{+0.028} / _{+0.018} | 16 | 8 | M8x1.25 | 540 | 46 |
| 1489-15032A | 32 ^{+0.031} / _{+0.021} | 20 | 9 | M10x1.50 | 600 | 92 |
| 1489-20045A | 45 ^{+0.031} / _{+0.021} | 26 | 11 | M14x1.50 | 780 | 230 |

1489

- Die Auftriebskraft ist die Kraft der inneren Feder des Körper die bewegliche Konusbuchsen nach oben zu drücken. (N)
- Wenn die Schrauben nicht in der richtigen Reihenfolge angezogen werden, die Ortung Wiederholbarkeit 0.01 nicht überschreiten
- Wenn die Gesamtbelastung die maximale Ladekapazität überschreitet, die Ortung Wiederholbarkeit 0.01 nicht überschreiten

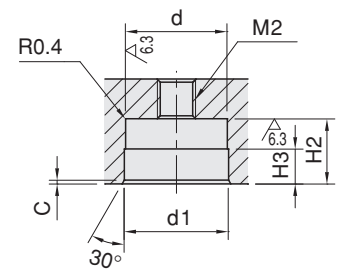
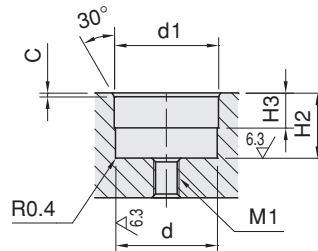
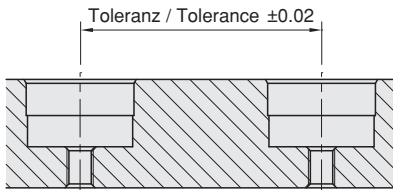
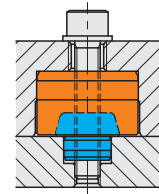
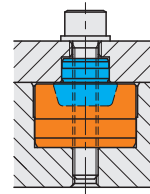
1489

- The lifting force is the power of the inner spring of the body to push up the movable tapered bushing. (N)
- If the screws are not tightened in the correct order, the locating repeatability may exceed 0.01
- If the total load exceeds the maximum loading capacity, the locating repeatability may exceed 0.01

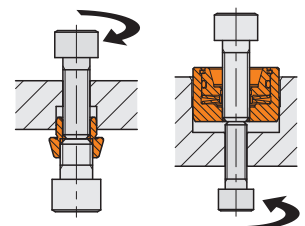
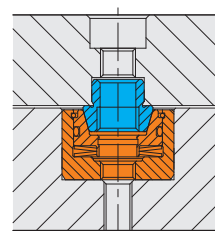
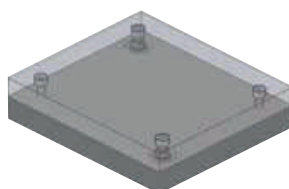
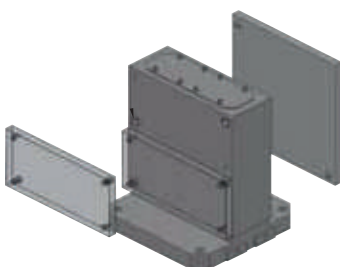



Montagedetails / Mounting Details

| Referenz-Nr. Order No. | d (H6) | H2 (±0.05) | d1 | H3 | M1 | M2 |
|---------------------------|-----------|---------------|------|----|----------|----------|
| 1489-12025 | 25 | 16.5 | 25.2 | 8 | M6x1.00 | M10x1.50 |
| 1489-15032 | 32 | 20.5 | 32.2 | 11 | M8x1.25 | M12x1.75 |
| 1489-20045 | 45 | 26.5 | 45.2 | 15 | M12x1.75 | M16x2.00 |



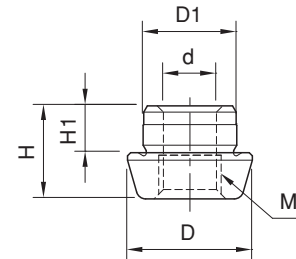
Anwendungsbeispiel / Application Examples



| Referenz-Nr. Order No. | D1 (p6) | H1 | D | H | M | d |  |
|---------------------------|------------|-----|----|----|----------|------|---|
| 1489-12025 | 12 | 4.5 | 15 | 10 | M10x1.50 | 8.5 | 6 |
| 1489-15032 | 15 | 7.5 | 20 | 15 | M12x1.75 | 10.2 | 16 |
| 1489-20045 | 20 | 10 | 30 | 20 | M16x2.00 | 14 | 47 |

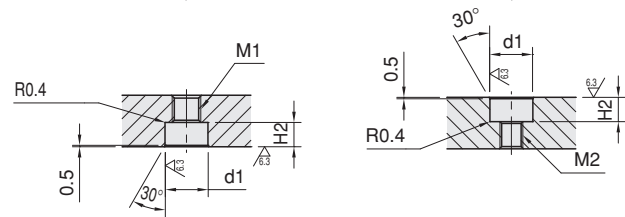
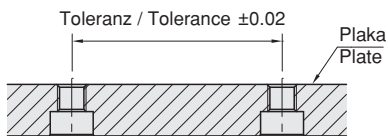



1489



Montagedetails / Mounting Details

| Referenz-Nr. Order No. | d (H6) | H2 | M1 | M2 |
|---------------------------|-----------|-----|----------|----------|
| 1489-12025 | 12 | 5.5 | M8x1.25 | M6x1.00 |
| 1489-15032 | 15 | 8.5 | M10x1.50 | M8x1.25 |
| 1489-20045 | 20 | 11 | M14x1.50 | M12x1.75 |



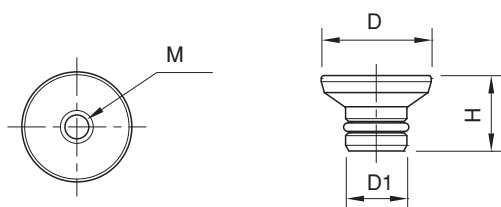
| Referenz-Nr. Order No. | D | H | D1 | M |  |
|---------------------------|----|----|----|--------|---|
| 1489-12025P | 15 | 10 | 9 | M4x0.7 | 2 |
| 1489-15032P | 19 | 13 | 11 | M5x0.8 | 5 |
| 1489-20045P | 29 | 18 | 16 | M6x1.0 | 17 |

Zentrierschutzkappe

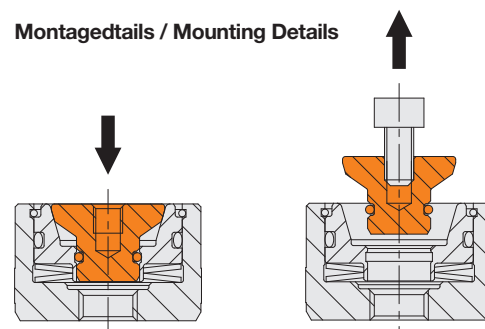
Flex Locator Protecting Covers



1489



Montagedetails / Mounting Details



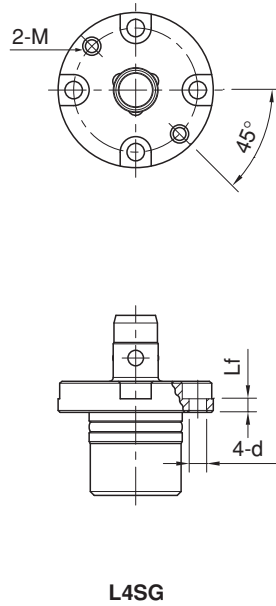
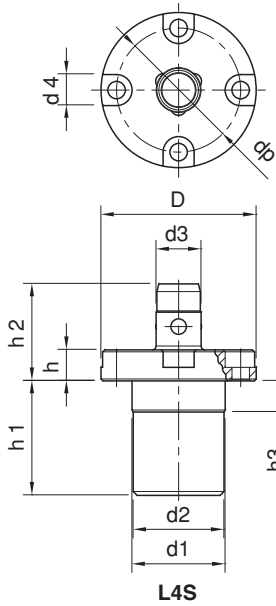
| Referenz-Nr. Order No. | d1 g6 | h3 | d2 | h1 | D | h | d3 (h8) | h2 | d | Lf | d4 | dp | M | Luftdruck Air Pressure (MPa) | Spannkraft Clamping Force (N) | (g) |
|---------------------------|----------|-----|------|------|----|-----|------------|----|-----|-----|-----|----|--------|------------------------------------|-------------------------------------|-----|
| 1489-18L4S | 24 | 8 | 23.4 | 29.5 | 40 | 8 | 12 | 11 | 4.5 | 3.5 | 8 | 32 | - | 0.5 | 250 | 154 |
| 1489-26L4S | 32 | 8.5 | 31.4 | 31.7 | 51 | 9.5 | 16 | 16 | 5.5 | 4 | 9.5 | 41 | - | 0.5 | 350 | 289 |
| 1489-18L4SG | 24 | 8 | 23.4 | 29.5 | 40 | 8 | 12 | 11 | 4.5 | 3.5 | 8 | 32 | M4x0.7 | 0.5 | 250 | 136 |
| 1489-26L4SG | 32 | 8.5 | 31.4 | 31.7 | 51 | 9.5 | 16 | 16 | 5.5 | 4 | 9.5 | 41 | M5x0.8 | 0.5 | 350 | 252 |

1489

- Nickel beschichtet
- Wiederholungsgenauigkeit $\pm 10\mu\text{m}$

1489

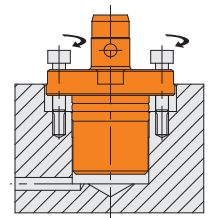
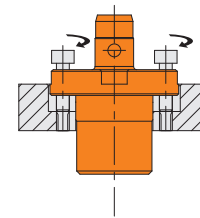
- Nickel Coating
- Repeat Accuracy $\pm 10\mu\text{m}$



L4S



L4SG



pneumatische Spannbuchse

Pneumatic Clamping Bush

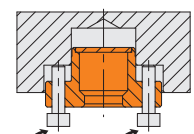
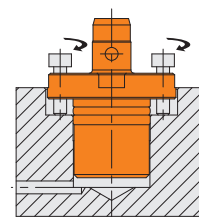
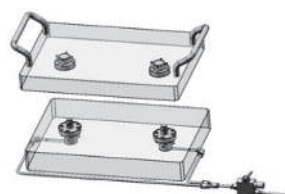
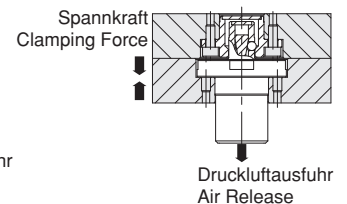
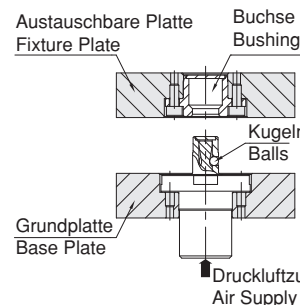
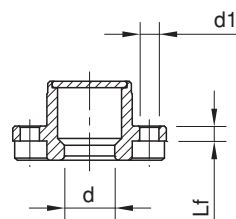
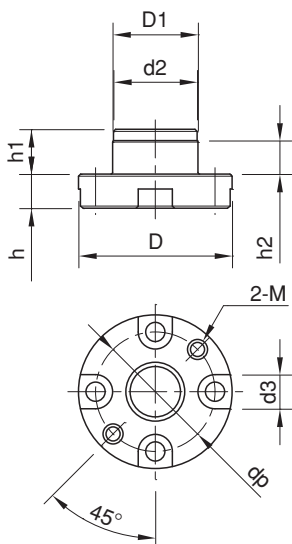
| Referenz-Nr. Order No. | D1 g6 | h2 | d2 | h1 | D | h | d e7 | d1 | Lf | d3 | M | dp | (g) |
|---------------------------|----------|-----|------|------|----|-----|---------|-----|-----|-----|--------|----|-----|
| 1489-18BU | 20 | 7.5 | 19.6 | 10.5 | 36 | 8 | 12.1 | 4.5 | 3.5 | 8 | M4x0.7 | 28 | 57 |
| 1489-26BU | 25 | 7 | 24.6 | 11 | 44 | 9.5 | 16.1 | 5.5 | 4 | 9.5 | M5x0.8 | 34 | 97 |

1489

- Nickel beschichtet
- Wiederholungsgenauigkeit $\pm 10\mu\text{m}$

1489


- Nickel Coating
- Repeat Accuracy $\pm 10\mu\text{m}$

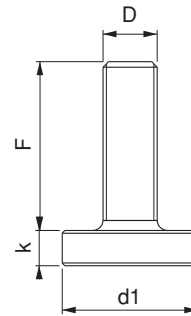


Stützelemente

Supports



| Referenz-Nr. Order No. | D x F | d1 | k |  (g) |
|---------------------------|---------|----|----|--|
| 1490-08032 | M8x32 | 25 | 8 | 40 |
| 1490-10042 | M10x42 | 30 | 8 | 60 |
| 1490-12050 | M12x50 | 36 | 10 | 110 |
| 1490-12095 | M12x95 | 36 | 10 | 150 |
| 1490-16062 | M16x62 | 45 | 13 | 240 |
| 1490-16097 | M16x97 | 45 | 13 | 285 |
| 1490-16117 | M16x117 | 45 | 13 | 310 |
| 1490-20062 | M20x62 | 50 | 13 | 320 |
| 1490-20097 | M20x97 | 50 | 13 | 390 |
| 1490-20117 | M20x117 | 50 | 13 | 430 |
| 1490-24081 | M24x81 | 50 | 14 | 445 |
| 1490-24116 | M24x116 | 50 | 14 | 555 |
| 1490-30180 | M30x180 | 70 | 24 | 1650 |

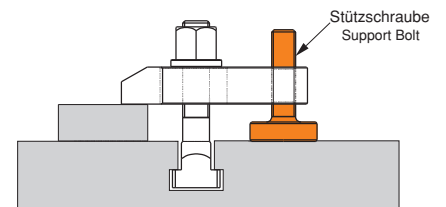


1490

- Schwarz beschichtet






1490

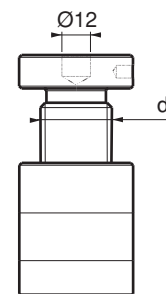
- Black Coating



Höhen-Richtschaubstock

Trapeze Thread Lifter Support

| Referenz-Nr. Order No. |  | d |  |  |  | kgf |  (g) |
|---------------------------|---|---------|---|---|---|------|--|
| 1510-023030 | 23-30 | M16 | 34 | 32 | 1000 | 140 | |
| 1510-040060 | 40-60 | M16 | 34 | 32 | 1800 | 250 | |
| 1510-042052 | 42-52 | Tr 30x4 | 50 | 50 | 6000 | 570 | |
| 1510-050070 | 50-70 | Tr 30x4 | 50 | 50 | 6000 | 680 | |
| 1510-070100 | 70-100 | Tr 30x4 | 50 | 50 | 6000 | 960 | |
| 1510-100140 | 100-140 | Tr 30x4 | 50 | 50 | 6000 | 1395 | |
| 1510-140220 | 140-220 | Tr 30x4 | 54 | 54 | 6000 | 2285 | |
| 1510-210330 | 210-330 | Tr 30x6 | 58 | 58 | 8000 | 3950 | |
| 1510-260430 | 260-430 | Tr 30x6 | 68 | 68 | 8000 | 7250 | |

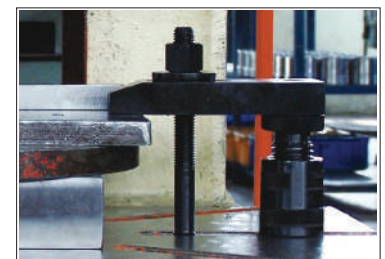


1510

- kompatibel mit Spannbacken DIN 6314-6315-6316
- Loch 12 mm auf beweglichem Werkstück verwendbar mit
- Nr. 1555-1560-1565-1570-1575 aufeinander zu unterschiedlichen Zwecken
- Schwarz beschichtet
- Stützschaube: gehärtet

1510

- Nr.1510 Lifters are used in DIN 6314-6315-6316 clamps as the lifter support
- Hole with Ø12mm taking place on the moving part are used with the lifters with the Reference Nr.1 555-1560-1565-1570-1575 on top of each other and also used with different purpose.
- Black Coating
- Support Bolt : Hardened



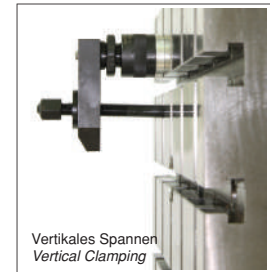
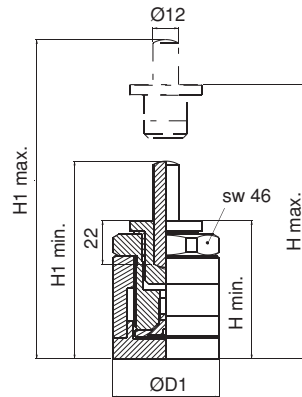
| Referenz-Nr. Order No. | H min. | H max. | D1 | Ø12x50 H1 min.- H1 max. | Ø12x80 H1 min.- H1 max. | ↓ Kgf | ⚖ (g) |
|---------------------------|--------|--------|----|-------------------------------|-------------------------------|-------|-------|
| 1515-065085 | 65 | 85 | 50 | 93-113 | 123-143 | 3000 | 810 |
| 1515-085125 | 85 | 125 | 50 | 113-153 | 143-183 | 3000 | 1050 |

1515

- Vorteil bei Horizontal-Spannen durch Magnet insbesondere bei Injektionsmaschinen
- Gehärtet
- Schwarz beschichtet

1515

- Because of magnetic it holds its own weight. Therefore it provides using advantage in horizontal clamping especially on injection machines.
- Hardened
- Black coating



Schraubbock mit flacher Auflage und Magnetfuß - Gewinde

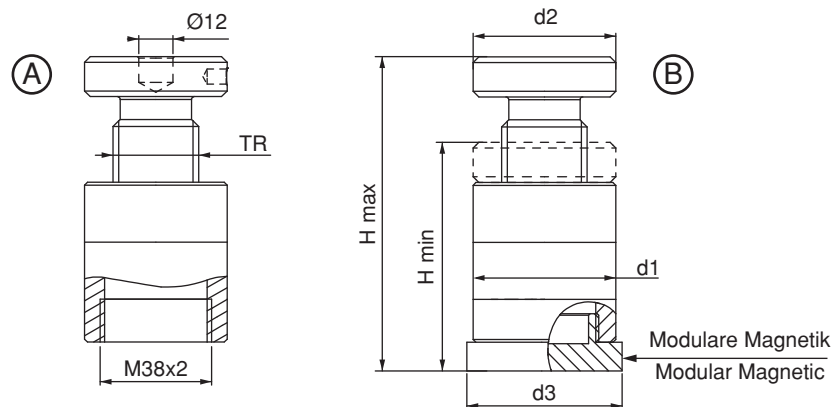
| Referenz-Nr. Order No. | H min-max. A | H min-max. B | TR | d1 | d2 | d3 | ↓ kgf | ⚖ (g) |
|---------------------------|-----------------|-----------------|------|----|----|------|-------|-------|
| 1517-04262 | 42-52 | 52-62 | 30x4 | 50 | 50 | 53.5 | 6000 | 700 |
| 1517-05080 | 50-70 | 60-80 | 30x4 | 50 | 50 | 53.5 | 6000 | 770 |
| 1517-70110 | 70-100 | 80-110 | 30x4 | 50 | 50 | 53.5 | 6000 | 1050 |

1517

- Schwarz beschichtet

1517

- Black coating



Modulare Magnetik
Modular Magnetic

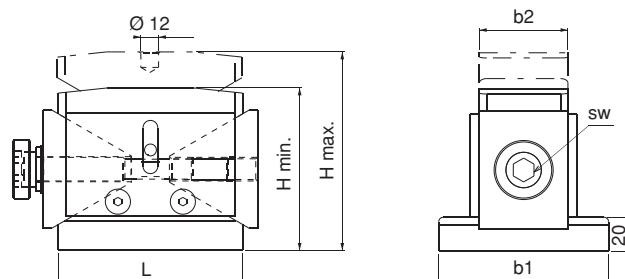
| Referenz-Nr. Order No. | H min. | H max. | b1 | b2 | L | sw | ↑ kgf | ⚖ (g) |
|---------------------------|--------|--------|-----|----|-----|----|-------|-------|
| 1520-050063 | 50 | 63 | - | 40 | 63 | 8 | 4000 | 1890 |
| 1520-100125 | 100 | 125 | 115 | 60 | 125 | 14 | 10000 | 9910 |
| 1520-170190 | 170 | 190 | 145 | 80 | 175 | 22 | 25000 | 28480 |

1520

- konstruiert für Stützen und Heben schwerer Werkstücke
- Gehärtet
- Schwarz beschichtet

1520

- Designed for supporting and lifting of heavy work pieces
- Hardened
- Black coating



Richtkeil Support Block



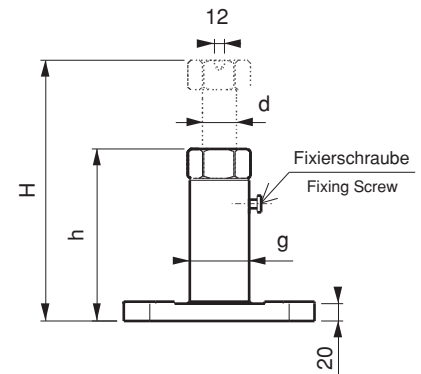
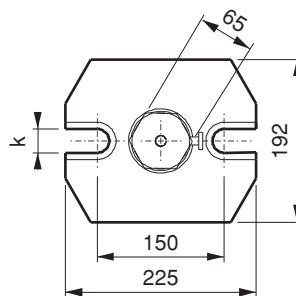
| Referenz-Nr. Order No. | | d | g | k | kgf | (kg) |
|---------------------------|----------|--------|----|----|------|------|
| 1530-200 | 200-300 | Tr40x7 | 69 | 28 | 8000 | 10.0 |
| 1530-280 | 280-460 | Tr40x7 | 69 | 28 | 6000 | 11.8 |
| 1530-430 | 430-750 | Tr40x7 | 69 | 28 | 5000 | 14.2 |
| 1530-710 | 710-1250 | Tr40x7 | 69 | 28 | 4000 | 20.9 |

1530

- Verwendung bei hohen Teilen
- Grundkörper: Statisch lackiert
- Es bietet verschiedene Nutzungsvorteile, wenn das Loch Ø12mm verwendet wird, während 1555-1560-1560-1565-1565-1570-1575 referenznummerierte Produkte verwendet werden.

1530

- This is a trapeze thread lifting support having the purpose of using with High Pieces.
- Body and statical painting. It provides different usage advantages when Ø12mm hole is used with 1555-1560-1565-1570-1575 reference numbered products taking place.



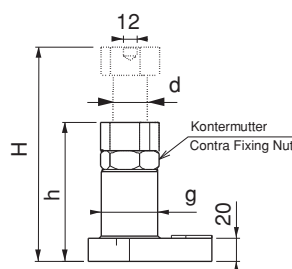
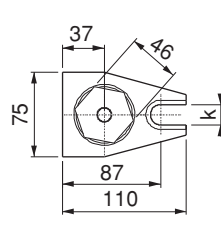
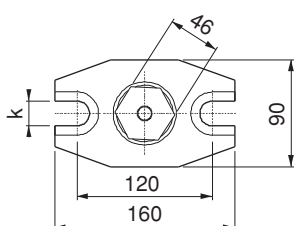
| Referenz-Nr. Order No. | | d | g | k | kgf | (kg) |
|---------------------------|---------|--------|----|----|------|------|
| 1550-100 | 100-140 | Tr30x6 | 49 | 18 | 6000 | 2.05 |
| 1550-140 | 140-200 | Tr30x6 | 49 | 18 | 6000 | 2.45 |
| 1550-200 | 200-320 | Tr30x6 | 49 | 22 | 4000 | 3.90 |
| 1550-320 | 320-550 | Tr30x6 | 49 | 22 | 2500 | 5.15 |

1550

- Verwendung bei hohen Teilen
- Grundkörper: Statisch lackiert
- Es bietet verschiedene Nutzungsvorteile, wenn das Loch Ø12mm verwendet wird, während 1555-1560-1560-1565-1565-1570-1575 referenznummerierte Produkte verwendet werden.

1550

- This is a trapeze thread lifting support having the purpose of using with High Pieces.
- Body and statical painting. It provides different usage advantages when Ø12mm hole is used with 1555-1560-1565-1570-1575 reference numbered products taking place.



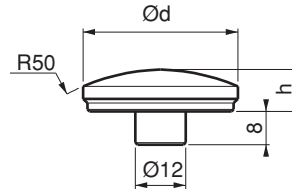
| Referenz-Nr. Order No. | h | Ø d | |
|---------------------------|----|-----|----|
| 1555 | 10 | 37 | 75 |

Zubehör für Richt- und Stützelemente kompatibel mit Nr. 1510 + 1517 + 1530 + 1550

These products are used with the product Nos 1510-1517-1530-1550 taking place.

- 1555**
- Vorteil bei winkligen Oberflächen
 - Schwarz beschichtet

- 1555**
- This part provides usage convenience on angled surfaces
 - Black Coating



Kugelaufsatz

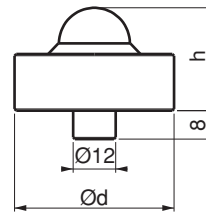
Rad-top Support



| Referenz-Nr. Order No. | h | Ø d | Kg | |
|---------------------------|----|-----|------|-----|
| 1560 | 25 | 45 | 3000 | 220 |

- 1560**
- Vorteil bei ungleichförmigen Oberflächen
 - Schwarz beschichtet

- 1560**
- This part provides usage convenience on irregular surfaces
 - Black Coating



Aufsatz mit drehbarer Kugel

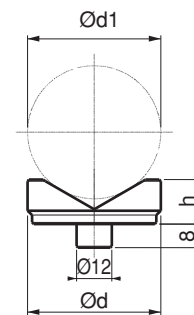
Ball Support



| Referenz-Nr. Order No. | h | Ø d | Ø d1 | | |
|---------------------------|----|-----|------|-----|-----|
| | | | min | max | |
| 1565 | 15 | 45 | 10 | 50 | 130 |

- 1565**
- Prisma für zylindrische Werkstücke
 - Schwarz beschichtet

- 1565**
- V clamping block support for cylindrical pieces
 - Black Coating



Prismaufsatz

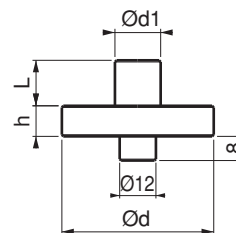
V-Clamping Block



| Referenz-Nr. Order No. | h | Ø d | Ø d1 | L | |
|---------------------------|----|-----|------|----|-----|
| 1570 | 12 | 50 | 15 | 20 | 220 |

- 1570**
- Stütze bei geformten Werkstücken
 - Schwarz beschichtet

- 1570**
- This part provides support for formed pieces by entering in between
 - Black Coating



Fixieraufsatz

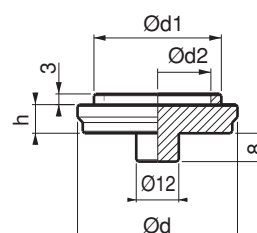
Pin Support



| Referenz-Nr. Order No. | h | Ø d | Ø d1 | Ø d2 | |
|---------------------------|---|-----|------|------|-----|
| 1575 | 8 | 45 | 35.8 | 30 | 105 |

- 1575**
- Verwendung bei Schraubstock
 - Schwarz beschichtet


- 1575**
- This part is used as Intermediary Centering Mean when used with Trapeze Thread Lifters
 - Black Coating



Zentrierplatte

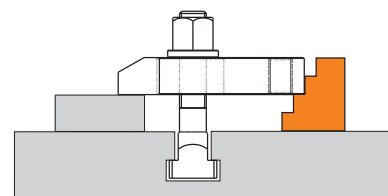
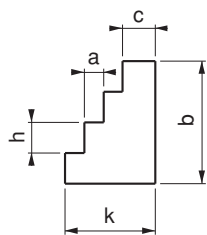
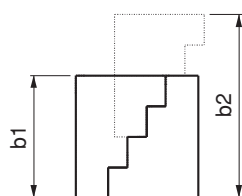
Intermediary Centering Mean





| Referenz-Nr. Order No. | h | a | c | k | b | L | b1 | b2 |  |
|---------------------------|----|----|----|----|----|----|----|-----|---|
| 1580-050 | 13 | 8 | 13 | 37 | 52 | 50 | 52 | 78 | 460 |
| 1580-060 | 16 | 10 | 17 | 47 | 64 | 60 | 64 | 96 | 860 |
| 1580-070 | 19 | 13 | 18 | 57 | 76 | 70 | 76 | 114 | 1420 |

1580
• Schwarz beschichtet

1580
• Black Coating



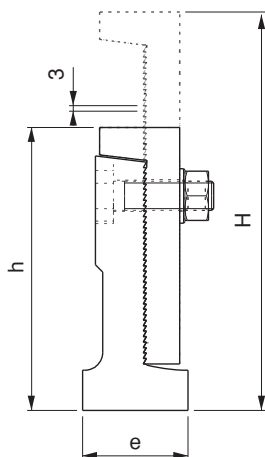
| Referenz-Nr. Order No. | h-H | e |  kgf |  |
|---------------------------|---------|-------|---|---|
| 1585-050 | 110-150 | 48x48 | 4000 | 1120 |
| 1585-060 | 155-220 | 60x58 | 5000 | 2710 |
| 1585-080 | 220-340 | 80x78 | 6000 | 6560 |

1585
• Stufenhöhe 3 mm
• Schwarz beschichtet

1585
• Lifting gap (screw pitch) is 3 millimeters
• Black Coating

gezahnte Spannunterlagen

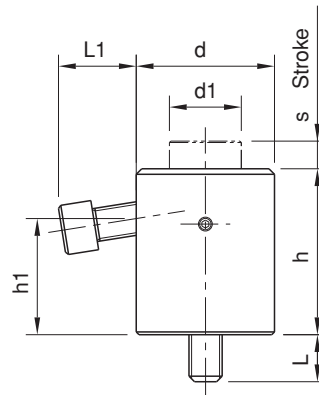
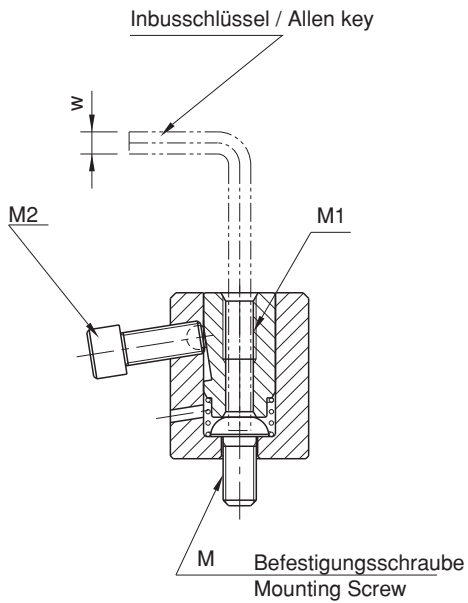
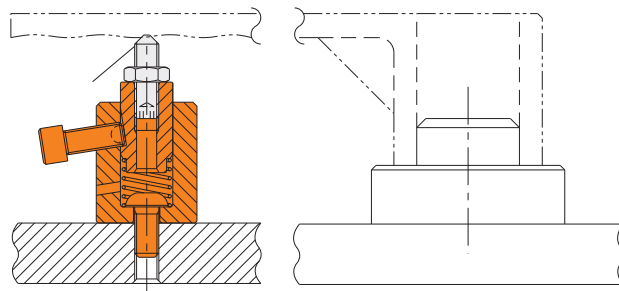
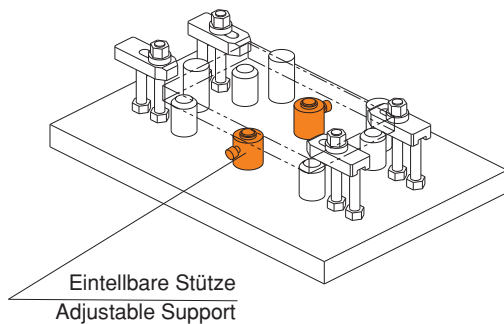
Serrated Thread Combined Support



| Referenz-Nr. Order No. | h | s | M1 | d1 | d | M | L | w | h1 | L1 | M2 | zulässiges Drehmoment Allowable Screw Torque(Nm) a | Stütze Kapazität Support Capacity (kgf) | Kolbenfederkraft Piston Spring Force (N) | (g) |
|---------------------------|----|----|--------|----|----|-----|----|----|------|------|--------|---|--|--|---------|
| 1588-060 | 33 | 6 | M6x12 | 14 | 28 | M6 | 10 | 4 | 22 | 14.1 | M6x16 | 7.5 | 400 | 10~22 | 150 |
| 1588-080 | 42 | 10 | M8x16 | 19 | 35 | M8 | 15 | 5 | 28.5 | 18.8 | M8x20 | 14 | 600 | 10~27 | 300 |
| 1588-100 | 50 | 10 | M10x20 | 22 | 42 | M10 | 14 | 6 | 34 | 23.8 | M10x25 | 18 | 750 | 14~28 | 540 |
| 1588-120 | 60 | 10 | M12x24 | 26 | 50 | M12 | 17 | 8 | 42 | 28.5 | M12x30 | 22 | 900 | 15~30 | 865 |
| 1588-160 | 70 | 10 | M16x32 | 33 | 60 | M16 | 22 | 10 | 47 | 26.5 | M12x30 | 25 | 900 | 15~35 | 1.390 |

1588
• Schwarz beschichtet

1588
• Black coating


Anwendungsbeispiel / Application Examples


Schrauben

Bolts



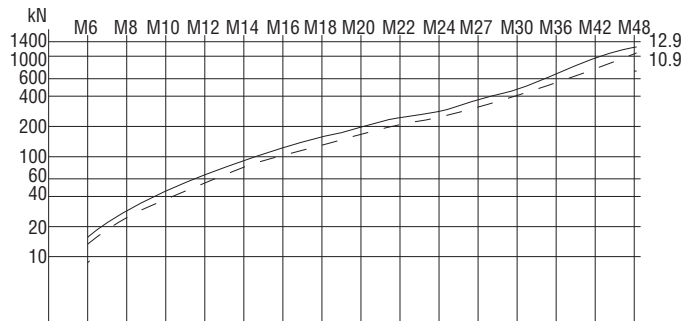
| | Festigkeitsklasse Quality Strength Classes | | |
|---|---|------|------|
| | 10 | 10.9 | 12.9 |
| DIN 787  | - | - | X |
| DIN 6379  | - | X | - |
| DIN 6330B DIN 6331 Nr. 1830  | X | - | - |
| Zugfestigkeit [N/mm ²] Nominal tensile strength [N/mm ²] | 1000 | 1000 | 1200 |
| Streckgrenze [N/mm ²] Minimum yield point [N/mm ²] | - | 900 | 1080 |

ERLÄUTERUNG ZUR TABELLE:

ZULÄSSIGE SCHRAUBENBELASTUNG ist die Zugbelastung, mit der die Schraube bei axial und zentrisch angreifender Betriebskraft durch die Summe aller wirkenden Kräfte maximal beansprucht werden darf. Die Streckgrenze wird zur Sicherheit üblicherweise nur zu 80% ausgenutzt.

ZULÄSSIGE VORSPANNKRAFT ist die Kraft, mit der die Schraube beim Anziehen der Mutter maximal vorgespannt werden darf. Die Tabellenwerte gelten bei einer Reibung von $\mu = 0,14$ an den Auflagflächen und im Gewinde, dies entspricht der Reibung bei mittlerer Oberfläche in gefettetem Zustand.

ERFORDERLICHE HEBELLÄNGEN: Diese Hebellängen werden mit dem Mittelwert der Handkräfte errechnet, die bei einer Versuchsreihe von verschiedenen Arbeitern erreicht wurden.



Festigkeit der passenden schrauben
Pre-stress Force With Standard Spanner

Explanation Of Table Characteristics:

- **Permissible Bolt Load:** is the maximum tension load, the screw can be stressed with taking into account all active forces. The yield point is only utilized to 80% for safety.
- **Permissible Pre-stress Force:** is the load, the screw can be pre-stressed at most, when tightening the matching nut. Figures of table are valid for a friction of $\mu = 0,14$ in thrust faces and thread, corresponding to the friction of greased medium faces.
- **Allowed pretension with oil calculation:** At an application with screws and nuts, the load must be calculated with a $\mu = 0,1$ frictional factor of the workpiece.

SCHRAUBEN- UND MUTTERN-FESTIGKEITEN UND ANZIEHDREHMOMENTE: / Strength Figures And Torques For Bolts And Nuts:

| Gewinde / Threads | Festigkeitsklasse Quality | M6 | M8 | M10 | M12 | M14 | M16 | M18 | M20 | M22 | M24 | M27 | M30 | M36 | M42 | M48 | |
|---|------------------------------|---------|---------|--------|--------|-----|--------|------|--------|------|--------|-----|--------|---------|--------|--------|---|
| Steigung / Pitch of thread | mm | 1 | 1.25 | 1.50 | 1.75 | 2 | 2 | 2.50 | 2.50 | 2.50 | 3 | 3 | 3.50 | 4 | 4.50 | 5 | |
| Muttern / Nuts | | | | | | | | | | | | | | | | | |
| Härte / Hardness DIN 6330 / 6331 / 6334 | HRC | 10 | | | | | | | | | | | | | | | |
| Prüfkraft (AS x Sp) Test force DIN EN 20898-2 | kN | 10 | 20.9 | 38.1 | 60 | 88 | 121 | 165 | 203 | 260 | 321 | 374 | 486 | 595 | 866 | - | - |
| Muttern für T-Nutten / Nuts for T-Slots DIN 508 / Nr. 1710 | | | | | | | | | | | | | | | | | |
| Größe / Size | | M6x8 | M8x10 | M10x12 | M12x14 | - | M16x18 | - | M20x22 | - | M24x28 | - | M30x36 | M36x42 | M42x48 | M48x54 | |
| Härte / Hardness | HRC | 22 - 30 | | | | | | | | | | | | | | | |
| Prüfkraft / Test Force | kN | 16 | 29 | 46 | 67 | - | 128 | - | 196 | - | 282 | - | 448 | 653 | 653 | 653 | |
| Schrauben / Bolts | | | | | | | | | | | | | | | | | |
| Härte / Hardness | HRC | 10.9 | 32 - 39 | | | | | | | | | | 12.9 | 39 - 44 | | | |

Anziehwerte / Tightening Data





| | | | | | | | | | | | | | | | | | |
|--|--|------|----------------------|----|------------------------|-----|---|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| Mindestbruchkraft Minimum Breaking Force (AS x Rm) | kN | 10.9 | 21 | 38 | 60 | 88 | (120) | (163) | (200) | (255) | (315) | (367) | (477) | (583) | (850) | (1165) | (1531) |
| Zulässige Schraubenbelastung max. 80% der Streckgrenze | Permissible bolt load max. 80% of yield point kN | 10.9 | 14 | 27 | 43 | 63 | 86 | 118 | 144 | 184 | 228 | 265 | 345 | 421 | 614 | 843 | 1107 |
| Prüfkraft (AS x Sp) nach DIN EN ISO 898, Teil 1 | Test force (AS x Sp) to DIN EN ISO 898, part 1 kN | 10.9 | 17 | 30 | 48 | 70 | (96) | (130) | (159) | (203) | (252) | (293) | (381) | (466) | (678) | (930) | (1222) |
| Zulässige Vorspannkraft bei 90% Streckgrenzerausnutzung und Reibung $\mu = 0,14$ | Permissible pre-stress force max. 90% of yield Point and friction $\mu = 0,14$ kN | 10.9 | 13 | 25 | 38 | 55 | 77 | 107 | 130 | 167 | 208 | 240 | 315 | 384 | 561 | 773 | 1018 |
| Erforderliches Anziehdrehmoment für zulässige Vorspannkraft mit der üblichen Handkraft | Required torque for permissible pre-stress Force and friction $\mu = 0,14$ Nm | 10.9 | 14 | 36 | 67 | 120 | 191 | 302 | 405 | 580 | 772 | 994 | 1455 | 1930 | 3378 | 5415 | 8162 |
| Erford. Hebellänge zum Erreichen der zulässigen Vorspannkraft mit der üblichen Handkraft | Required length for lever to achieve permissible pre-stress force mm | 10.9 | 42 | 90 | 175 | 300 | 450 | 700 | 920 | 1200 | 1560 | - | - | - | - | - | - |
| Mögl. Drehmoment mit normalen Ringschlüssel und Drehkraft. Daraus resultiert Vorspannkraft | Possible torque to obtain with standard spanner, resulting Prestress force Nm kN | - | 60 | 80 | 90 | 100 | 110 | 125 | 140 | 150 | 170 | 185 | 225 | 240 | 300 | 330 | 410 |
| Mit dieser Vorspannkraft | With this pre-stress force there is danger of | 10.9 | Bruchgefahr breakage | | Filegefahr deformation | | Gefahr des Lösens der gespannten Teile bei einsetzender Betriebskraft loosening of clamping unit at start of motive force | | | | | | | | | | |
| | | 12.9 | | | | | | | | | | | | | | | |

As = Nennspanquerdurchschnitt in mm²
As = Nominal cross section in mm²

Sp = Prüfspannung in N / mm²
Sp = min. Clamping force in N/mm²

Rm = Mindestzugfestigkeit in N/mm²
Rm = min. load factor in N/mm²

μ = Reibungszahl
 μ = friction

| Referenz-Nr. Order No. |  | x L | b | a | e | k | Spannwerte Tightening Data | |  | Referenz-Nr. Order No. |  | x L | b | a | e | k | Spannwerte Tightening Data | |  |
|---------------------------|---|------|--------------|------|-----|------|-------------------------------|-----|---|---------------------------|--|------|------|------|----|----|-------------------------------|-----|---|
| | | | | | | | Nm | kN | | | | | | | | | Nm | kN | |
| 1590-0606025 | M6x6 | x25 | 15 | 5.7 | 10 | 4 | 17 | 17 | 8 | 1590-2224080 | M22x24 | x80 | 55 | 23.7 | 40 | 16 | 903 | 266 | 465 |
| 1590-0606040 | | x40 | 28 | | | | | | | 1590-2224100 | | x100 | 65 | | | | | | 515 |
| 1590-0606063 | | x63 | 40 | | | | | | | 1590-2224125 | | x125 | 85 | | | | | | 580 |
| 1590-0808032 | M8x8 | x32 | 22 | 7.7 | 12 | 6 | 43 | 32 | 13 | 1590-2224160 | | x160 | 110 | | | | | | 660 |
| 1590-0808050 | | x50 | 35 | | | | | | | 1590-2224200 | | x200 | 125 | | | | | | 775 |
| 1590-0808080 | | x80 | 50 | | | | | | | 1590-2224250 | | x250 | 150 | | | | | | 805 |
| 1590-1010040 | M10x10 | x40 | 23 | 9.7 | 15 | 6 | 79 | 51 | 35 | 1590-2224315 | x315 | 190 | 1050 | | | | | | |
| 1590-1010063 | | x63 | 45 | | | | | | | 1590-2424100 | x100 | 70 | 550 | | | | | | |
| 1590-1010080 | | x80 | 50 | | | | | | | 1590-2424125 | x125 | 85 | 630 | | | | | | |
| 1590-1010100 | M10x12 | x100 | 60 | 11.7 | 18 | 7 | 79 | 51 | 70 | 1590-2424160 | x160 | 110 | 725 | | | | | | |
| 1590-1012050 | | x50 | 35 | | | | | | | 1590-2424200 | x200 | 125 | 850 | | | | | | |
| 1590-1012063 | | x63 | 40 | | | | | | | 1590-2424250 | x250 | 150 | 990 | | | | | | |
| 1590-1012080 | | x80 | 55 | | | | | | | 1590-2424315 | x315 | 190 | 1180 | | | | | | |
| 1590-1012100 | | x100 | 60 | | | | | | | 1590-2424400 | x400 | 240 | 1410 | | | | | | |
| 1590-1012125 | | x125 | 75 | | | | | | | 1590-2428100 | x100 | 70 | 660 | | | | | | |
| 1590-1012160 | x160 | 90 | 1590-2428125 | x125 | 85 | 730 | | | | | | | | | | | | | |
| 1590-1012200 | x200 | 120 | 1590-2428160 | x160 | 110 | 820 | | | | | | | | | | | | | |
| 1590-1212050 | M12x12 | x50 | 35 | 11.7 | 18 | 7 | 141 | 74 | 65 | 1590-2428200 | x200 | 125 | 950 | | | | | | |
| 1590-1212063 | | x63 | 40 | | | | | | | 1590-2428250 | x250 | 150 | 1090 | | | | | | |
| 1590-1212080 | | x80 | 55 | | | | | | | 1590-2428315 | x315 | 190 | 1300 | | | | | | |
| 1590-1212100 | | x100 | 65 | | | | | | | 1590-2428400 | x400 | 240 | 1530 | | | | | | |
| 1590-1212125 | | x125 | 75 | | | | | | | 1590-2428500 | x500 | 290 | 1800 | | | | | | |
| 1590-1212160 | | x160 | 100 | | | | | | | 1590-3036125 | x125 | 80 | 1280 | | | | | | |
| 1590-1212200 | x200 | 120 | 1590-3036160 | x160 | 110 | 1440 | | | | | | | | | | | | | |
| 1590-1214050 | M12x14 | x50 | 35 | 13.7 | 22 | 8 | 141 | 74 | 80 | 1590-3036200 | x200 | 135 | 1620 | | | | | | |
| 1590-1214063 | | x63 | 45 | | | | | | | 1590-3036250 | x250 | 150 | 1880 | | | | | | |
| 1590-1214080 | | x80 | 55 | | | | | | | 1590-3036315 | x315 | 200 | 2150 | | | | | | |
| 1590-1214100 | | x100 | 65 | | | | | | | 1590-3036500 | x500 | 300 | 3010 | | | | | | |
| 1590-1214125 | | x125 | 75 | | | | | | | 1590-3642160 | x160 | 100 | 2260 | | | | | | |
| 1590-1214160 | | x160 | 100 | | | | | | | 1590-3642250 | x250 | 175 | 2890 | | | | | | |
| 1590-1214200 | x200 | 120 | 1590-3642400 | x400 | 250 | 4010 | | | | | | | | | | | | | |
| 1590-1416063 | M14x16 | x63 | 45 | 15.7 | 25 | 9 | 223 | 101 | 115 | 1590-3642600 | x600 | 340 | 5900 | | | | | | |
| 1590-1416080 | | x80 | 55 | | | | | | | 1590-4248160 | x160 | 100 | 3550 | | | | | | |
| 1590-1416100 | | x100 | 65 | | | | | | | 1590-4248250 | x250 | 175 | 4530 | | | | | | |
| 1590-1416125 | | x125 | 75 | | | | | | | 1590-4248400 | x400 | 250 | 6160 | | | | | | |
| 1590-1416160 | | x160 | 100 | | | | | | | | | | | | | | | | |
| 1590-1416200 | | x200 | 120 | | | | | | | | | | | | | | | | |
| 1590-1416250 | x250 | 150 | | | | | | | | | | | | | | | | | |
| 1590-1616063 | M16x16 | x63 | 45 | 15.7 | 25 | 9 | 354 | 138 | 140 | | | | | | | | | | |
| 1590-1616080 | | x80 | 55 | | | | | | | | | | | | | | | | |
| 1590-1616100 | | x100 | 65 | | | | | | | | | | | | | | | | |
| 1590-1616125 | | x125 | 85 | | | | | | | | | | | | | | | | |
| 1590-1616160 | | x160 | 100 | | | | | | | | | | | | | | | | |
| 1590-1616200 | | x200 | 120 | | | | | | | | | | | | | | | | |
| 1590-1616250 | x250 | 150 | | | | | | | | | | | | | | | | | |
| 1590-1618063 | M16x18 | x63 | 45 | 17.7 | 28 | 10 | 354 | 138 | 170 | | | | | | | | | | |
| 1590-1618080 | | x80 | 55 | | | | | | | | | | | | | | | | |
| 1590-1618100 | | x100 | 65 | | | | | | | | | | | | | | | | |
| 1590-1618125 | | x125 | 85 | | | | | | | | | | | | | | | | |
| 1590-1618160 | | x160 | 100 | | | | | | | | | | | | | | | | |
| 1590-1618200 | | x200 | 120 | | | | | | | | | | | | | | | | |
| 1590-1618250 | x250 | 150 | | | | | | | | | | | | | | | | | |
| 1590-1820080 | M18x20 | x80 | 55 | 19.7 | 32 | 12 | 474 | 169 | 260 | | | | | | | | | | |
| 1590-1820100 | | x100 | 65 | | | | | | | | | | | | | | | | |
| 1590-1820125 | | x125 | 85 | | | | | | | | | | | | | | | | |
| 1590-1820160 | | x160 | 110 | | | | | | | | | | | | | | | | |
| 1590-1820200 | | x200 | 125 | | | | | | | | | | | | | | | | |
| 1590-1820250 | | x250 | 150 | | | | | | | | | | | | | | | | |
| 1590-1820315 | x315 | 190 | | | | | | | | | | | | | | | | | |
| 1590-2020080 | M20x20 | x80 | 55 | 19.7 | 32 | 12 | 679 | 215 | 300 | | | | | | | | | | |
| 1590-2020100 | | x100 | 65 | | | | | | | | | | | | | | | | |
| 1590-2020125 | | x125 | 85 | | | | | | | | | | | | | | | | |
| 1590-2020160 | | x160 | 110 | | | | | | | | | | | | | | | | |
| 1590-2020200 | | x200 | 125 | | | | | | | | | | | | | | | | |
| 1590-2020250 | | x250 | 160 | | | | | | | | | | | | | | | | |
| 1590-2020315 | x315 | 190 | | | | | | | | | | | | | | | | | |
| 1590-2022080 | M20x22 | x80 | 55 | 21.7 | 35 | 14 | 679 | 215 | 345 | | | | | | | | | | |
| 1590-2022100 | | x100 | 65 | | | | | | | | | | | | | | | | |
| 1590-2022125 | | x125 | 85 | | | | | | | | | | | | | | | | |
| 1590-2022160 | | x160 | 110 | | | | | | | | | | | | | | | | |
| 1590-2022200 | | x200 | 125 | | | | | | | | | | | | | | | | |
| 1590-2022250 | | x250 | 150 | | | | | | | | | | | | | | | | |
| 1590-2022315 | x315 | 190 | | | | | | | | | | | | | | | | | |

DIN 787
1590

- Qualität 12.9
- Schwarz beschichtet

1590

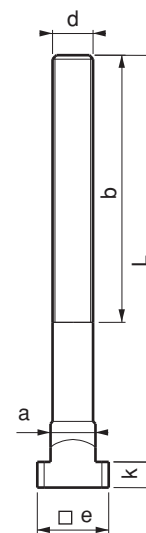
- Quality 12.9
- Black coating







Loctite 8150

Hinweis: Bei Anwendung über 150 C° ist auf das Gewinde Loctite 8150 aufzutragen.

Note: Environments on the 150 °C when clamping action on the thread Loctite 8150 is used.



| Referenz-Nr. Order No. | dx  | x L | b | a | e | k | Spannwerte Tightening Data | |  |
|---------------------------|--|------|------|------|----|----|-------------------------------|-----|---|
| | | | | | | | Nm | kN | |
| 1610-0606025 | M6x6 | x25 | 15 | 5.7 | 10 | 4 | 17 | 17 | 19 |
| 1610-0606040 | | x40 | 28 | | | | | | 25 |
| 1610-0606063 | | x63 | 40 | | | | | | 36 |
| 1610-0808032 | M8x8 | x32 | 22 | 7.7 | 12 | 6 | 43 | 32 | 39 |
| 1610-0808050 | | x50 | 35 | | | | | | 45 |
| 1610-0808080 | | x80 | 50 | | | | | | 56 |
| 1610-1010040 | M10x10 | x40 | 23 | 9.7 | 15 | 6 | 79 | 51 | 65 |
| 1610-1010063 | | x63 | 45 | | | | | | 80 |
| 1610-1010080 | | x80 | 50 | | | | | | 90 |
| 1610-1010100 | x100 | 60 | 110 | | | | | | |
| 1610-1012050 | M10x12 | x50 | 35 | 11.7 | 18 | 7 | 79 | 51 | 85 |
| 1610-1012063 | | x63 | 40 | | | | | | 95 |
| 1610-1012080 | | x80 | 55 | | | | | | 100 |
| 1610-1012100 | x100 | 60 | 110 | | | | | | |
| 1610-1012125 | x125 | 75 | 125 | | | | | | |
| 1610-1012160 | x160 | 90 | 140 | | | | | | |
| 1610-1012200 | x200 | 120 | 160 | | | | | | |
| 1610-1212050 | M12x12 | x50 | 35 | 11.7 | 18 | 7 | 141 | 74 | 120 |
| 1610-1212063 | | x63 | 40 | | | | | | 128 |
| 1610-1212080 | | x80 | 55 | | | | | | 140 |
| 1610-1212100 | x100 | 65 | 160 | | | | | | |
| 1610-1212125 | x125 | 75 | 170 | | | | | | |
| 1610-1212160 | x160 | 100 | 195 | | | | | | |
| 1610-1212200 | x200 | 120 | 220 | | | | | | |
| 1610-1214050 | M12x14 | x50 | 35 | 13.7 | 22 | 8 | 141 | 74 | 140 |
| 1610-1214063 | | x63 | 45 | | | | | | 150 |
| 1610-1214080 | | x80 | 55 | | | | | | 155 |
| 1610-1214100 | x100 | 65 | 175 | | | | | | |
| 1610-1214125 | x125 | 75 | 195 | | | | | | |
| 1610-1214160 | x160 | 100 | 220 | | | | | | |
| 1610-1214200 | x200 | 120 | 240 | | | | | | |
| 1610-1416063 | M14x16 | x63 | 45 | 15.7 | 25 | 9 | 223 | 101 | 200 |
| 1610-1416080 | | x80 | 55 | | | | | | 230 |
| 1610-1416100 | | x100 | 65 | | | | | | 245 |
| 1610-1416125 | x125 | 75 | 270 | | | | | | |
| 1610-1416160 | x160 | 100 | 310 | | | | | | |
| 1610-1416200 | x200 | 120 | 340 | | | | | | |
| 1610-1416250 | x250 | 150 | 390 | | | | | | |
| 1610-1616063 | M16x16 | x63 | 45 | 15.7 | 25 | 9 | 354 | 138 | 260 |
| 1610-1616080 | | x80 | 55 | | | | | | 285 |
| 1610-1616100 | | x100 | 65 | | | | | | 310 |
| 1610-1616125 | x125 | 85 | 345 | | | | | | |
| 1610-1616160 | x160 | 100 | 385 | | | | | | |
| 1610-1616200 | x200 | 120 | 435 | | | | | | |
| 1610-1616250 | x250 | 150 | 505 | | | | | | |
| 1610-1618063 | M16x18 | x63 | 45 | 17.7 | 28 | 10 | 354 | 138 | 290 |
| 1610-1618080 | | x80 | 55 | | | | | | 305 |
| 1610-1618100 | | x100 | 65 | | | | | | 340 |
| 1610-1618125 | x125 | 85 | 370 | | | | | | |
| 1610-1618160 | x160 | 100 | 415 | | | | | | |
| 1610-1618200 | x200 | 120 | 460 | | | | | | |
| 1610-1618250 | x250 | 150 | 525 | | | | | | |
| 1610-1820080 | M18x20 | x80 | 55 | 19.7 | 32 | 12 | 474 | 169 | 405 |
| 1610-1820100 | | x100 | 65 | | | | | | 435 |
| 1610-1820125 | | x125 | 85 | | | | | | 480 |
| 1610-1820160 | x160 | 110 | 535 | | | | | | |
| 1610-1820200 | x200 | 125 | 610 | | | | | | |
| 1610-1820250 | x250 | 150 | 680 | | | | | | |
| 1610-1820315 | x315 | 190 | 790 | | | | | | |
| 1610-2020080 | M20x20 | x80 | 55 | 19.7 | 32 | 12 | 679 | 215 | 480 |
| 1610-2020100 | | x100 | 65 | | | | | | 515 |
| 1610-2020125 | | x125 | 85 | | | | | | 570 |
| 1610-2020160 | x160 | 110 | 635 | | | | | | |
| 1610-2020200 | x200 | 125 | 725 | | | | | | |
| 1610-2020250 | x250 | 160 | 820 | | | | | | |
| 1610-2020315 | x315 | 190 | 950 | | | | | | |
| 1610-2022080 | M20x22 | x80 | 55 | 21.7 | 35 | 14 | 679 | 215 | 530 |
| 1610-2022100 | | x100 | 65 | | | | | | 565 |
| 1610-2022125 | | x125 | 85 | | | | | | 620 |
| 1610-2022160 | x160 | 110 | 690 | | | | | | |
| 1610-2022200 | x200 | 125 | 775 | | | | | | |
| 1610-2022250 | x250 | 150 | 880 | | | | | | |
| 1610-2022315 | x315 | 190 | 1050 | | | | | | |

| Referenz-Nr. Order No. | dx  | x L | b | a | e | k | Spannwerte Tightening Data | |  |
|---------------------------|---|------|------|------|----|----|-------------------------------|-----|---|
| | | | | | | | Nm | kN | |
| 1610-2224080 | M22x24 | x80 | 55 | 23.7 | 40 | 16 | 903 | 266 | 700 |
| 1610-2224100 | | x100 | 65 | | | | | | 740 |
| 1610-2224125 | | x125 | 85 | | | | | | 805 |
| 1610-2224160 | x160 | 110 | 890 | | | | | | |
| 1610-2224200 | x200 | 125 | 1000 | | | | | | |
| 1610-2224250 | x250 | 150 | 1115 | | | | | | |
| 1610-2224315 | x315 | 190 | 1280 | | | | | | |
| 1610-2424100 | M24x24 | x100 | 70 | 23.7 | 40 | 16 | 1163 | 310 | 885 |
| 1610-2424125 | | x125 | 85 | | | | | | 970 |
| 1610-2424160 | | x160 | 110 | | | | | | 1060 |
| 1610-2424200 | x200 | 125 | 1180 | | | | | | |
| 1610-2424250 | x250 | 150 | 1320 | | | | | | |
| 1610-2424315 | x315 | 190 | 1515 | | | | | | |
| 1610-2424400 | x400 | 240 | 1750 | | | | | | |
| 1610-2428100 | M24x28 | x100 | 70 | 27.7 | 44 | 18 | 1163 | 310 | 1000 |
| 1610-2428125 | | x125 | 85 | | | | | | 1065 |
| 1610-2428160 | | x160 | 110 | | | | | | 1150 |
| 1610-2428200 | x200 | 125 | 1280 | | | | | | |
| 1610-2428250 | x250 | 150 | 1425 | | | | | | |
| 1610-2428315 | x315 | 190 | 1640 | | | | | | |
| 1610-2428400 | x400 | 240 | 1870 | | | | | | |
| 1610-2428500 | x500 | 290 | 2170 | | | | | | |
| 1610-3036125 | M30x36 | x125 | 80 | 35.6 | 54 | 22 | 2258 | 493 | 1900 |
| 1610-3036160 | | x160 | 110 | | | | | | 2065 |
| 1610-3036200 | | x200 | 135 | | | | | | 2250 |
| 1610-3036250 | x250 | 150 | 2500 | | | | | | |
| 1610-3036315 | x315 | 200 | 2770 | | | | | | |
| 1610-3036500 | x500 | 300 | 3630 | | | | | | |
| 1610-3642160 | M36x42 | x160 | 100 | 41.6 | 65 | 26 | 3953 | 719 | 3310 |
| 1610-3642250 | | x250 | 175 | | | | | | 3930 |
| 1610-3642400 | | x400 | 250 | | | | | | 5010 |
| 1610-3642600 | x600 | 340 | 6900 | | | | | | |
| 1610-4248160 | M42x48 | x160 | 100 | 47.6 | 75 | 30 | 6337 | 986 | 4600 |
| 1610-4248250 | | x250 | 175 | | | | | | 5600 |
| 1610-4248400 | | x400 | 250 | | | | | | 7200 |

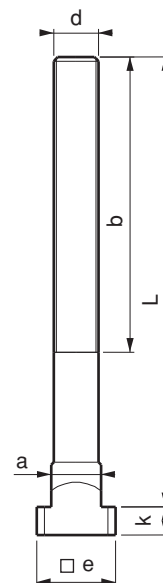
DIN 787

1610

- Qualität 12.9
- Schwarz beschichtet

1610

- Quality 12.9
- Black coating

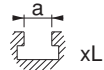



Hinweis: Bei Anwendung über 150 °C ist Auf das Gewinde Loctite 8150 aufzutragen.



Loctite 8150

Note: Environments on the 150 °C when clamping action on the thread Loctite 8150 is used.

| Referenz-Nr. Order No. | dx  xL | a | e | k | h-H | e1 | e2 | c | s | f | sw | Spannwerte Tightening Data | |  |
|---------------------------|---|------|----|----|--------|----|----|----|----|----|----|-------------------------------|-----|---|
| | | | | | | | | | | | | Nm | kN | |
| 1630-2022200 | M20x22x200 | 21.7 | 35 | 14 | 25-75 | 49 | 69 | 92 | 12 | 30 | 30 | 679 | 215 | 1635 |
| 1630-2022250 | M20x22x250 | 21.7 | 35 | 14 | 70-120 | 49 | 69 | 92 | 12 | 30 | 30 | 679 | 215 | 1720 |
| 1630-2424200 | M24x24x200 | 23.7 | 40 | 16 | 25-75 | 53 | 74 | 92 | 12 | 30 | 36 | 1163 | 310 | 2075 |
| 1630-2424250 | M24x24x250 | 23.7 | 40 | 16 | 70-120 | 53 | 74 | 92 | 12 | 30 | 36 | 1163 | 310 | 2250 |
| 1630-2428200 | M24x28x200 | 27.7 | 44 | 18 | 25-75 | 53 | 74 | 92 | 12 | 30 | 36 | 1163 | 310 | 2180 |
| 1630-2428250 | M24x28x250 | 27.7 | 44 | 18 | 70-120 | 53 | 74 | 92 | 12 | 30 | 36 | 1163 | 310 | 2340 |
| 1630-3036200 | M30x36x200 | 35.6 | 54 | 22 | 25-75 | 68 | 88 | 94 | 14 | 30 | 46 | 2258 | 493 | 3660 |
| 1630-3036250 | M30x36x250 | 35.6 | 54 | 22 | 70-120 | 68 | 88 | 94 | 14 | 30 | 46 | 2258 | 493 | 3910 |

1630

- Verwendung bei schweren Pressen, großen Werkzeugen
Lockerungen aufgrund Vibrationen werden durch Konterspannen verhindert
- Qualität 12.9
- Schwarz beschichtet

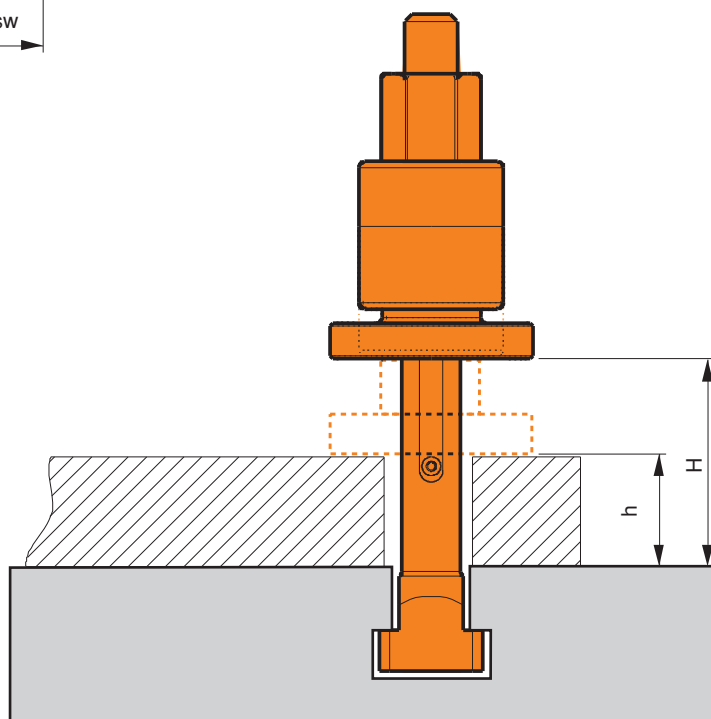
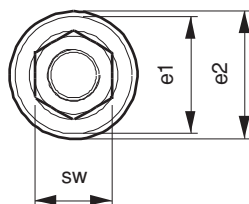
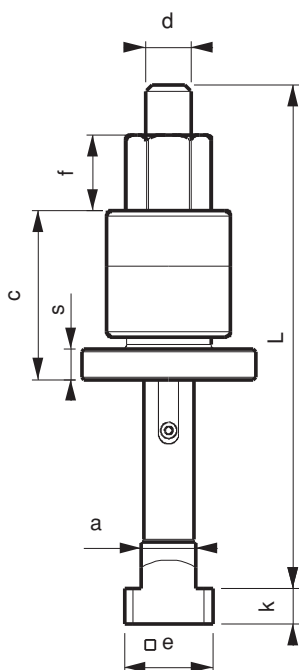
1630

- Because of it's contra tightening structure, it prevents loosening which may be generated by the vibration during working with heavy presses and big moulds.
- Quality 12.9
- Black coating





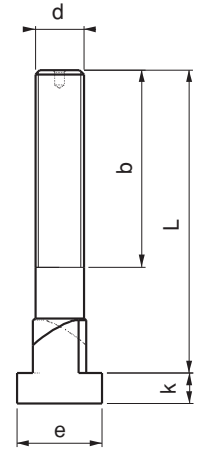
Hinweis: Bei Anwendung über 150 °C ist Auf das Gewinde Loctite 8150 aufzutragen.

Note: Environments on the 150 °C when clamping action on the thread Loctite 8150 is used.



Loctite 8150

| Referenz-Nr. Order No. | dx  x L | b | a | e | k | Spannwerte Tightening Data | |  |
|---------------------------|--|-----|------|----|----|-------------------------------|-----|---|
| | | | | | | Nm | kN | |
| 1650-1214050 | x50 | 35 | | | | | | 70 |
| 1650-1214080 | M12x14 x80 | 55 | 13.7 | 22 | 8 | 141 | 74 | 100 |
| 1650-1214125 | x125 | 75 | | | | | | 120 |
| 1650-1618063 | x63 | 45 | | | | | | 160 |
| 1650-1618100 | M16x18 x100 | 65 | 17.7 | 28 | 10 | 354 | 138 | 220 |
| 1650-1618160 | x160 | 100 | | | | | | 280 |
| 1650-2022080 | x80 | 55 | | | | | | 330 |
| 1650-2022125 | M20x22 x125 | 85 | 21.7 | 35 | 14 | 679 | 215 | 430 |
| 1650-2022200 | x200 | 120 | | | | | | 570 |
| 1650-2428100 | x100 | 70 | | | | | | 650 |
| 1650-2428125 | M24x28 x125 | 85 | 27.7 | 44 | 18 | 1163 | 310 | 770 |
| 1650-2428250 | x250 | 150 | | | | | | 1150 |

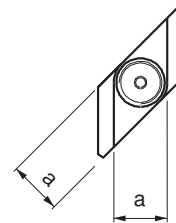


1650

- Eigenschaft: Bei Platten mit T-Nut von oben stecken und spannen
- Qualität 12.9
- Schwarz beschichtet

1650

- In "T" slot plates it has the feature of making the coupling by entering "T" from the top.
- Quality 12.9
- Black Coating




Hinweis: Verwenden Sie die Marke Loctite Produktcode 8150 auf dem Bolzengewinde während Werkstück Umgebung oberhalb von 150 ° C Klemm

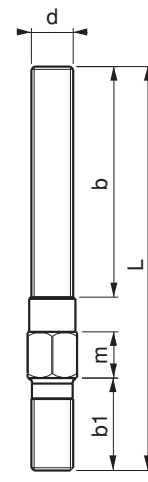


Note: Use Loctite brand product code 8150 on the bolt thread while clamping workpiece environment above 150 ° C

Schraube mit Schlüsselweite für T-Nut

Wrench Mouth Stud

| Referenz-Nr. Order No. | d | L | b | b1 | m | sw | Spannwerte Tightening Data | |  |
|---------------------------|-----|-----|-----|----|----|----|-------------------------------|-----|---|
| | | | | | | | Nm | kN | |
| 1670-12130 | M12 | 130 | 65 | 24 | 14 | 14 | 120 | 63 | 160 |
| 1670-12160 | | 160 | 90 | | | | | | 185 |
| 1670-14130 | M14 | 130 | 65 | 28 | 15 | 15 | 191 | 86 | 216 |
| 1670-14160 | | 160 | 90 | | | | | | 246 |
| 1670-16140 | M16 | 140 | 70 | 32 | 16 | 17 | 302 | 118 | 310 |
| 1670-16160 | | 160 | 95 | | | | | | 340 |
| 1670-18150 | M18 | 150 | 70 | 35 | 19 | 19 | 405 | 144 | 395 |
| 1670-18180 | | 180 | 95 | | | | | | 450 |
| 1670-20150 | M20 | 150 | 70 | 40 | 22 | 22 | 580 | 184 | 520 |
| 1670-20180 | | 180 | 95 | | | | | | 575 |
| 1670-22150 | M22 | 150 | 70 | 40 | 22 | 24 | 772 | 228 | 610 |
| 1670-22180 | | 180 | 95 | | | | | | 705 |
| 1670-24170 | M24 | 170 | 75 | 47 | 22 | 27 | 994 | 265 | 875 |
| 1670-24205 | | 205 | 105 | | | | | | 990 |
| 1670-24250 | | 250 | 140 | | | | | | 1125 |
| 1670-30250 | M30 | 250 | 135 | 55 | 32 | 36 | 1930 | 421 | 1950 |
| 1670-30315 | | 315 | 195 | | | | | | 2260 |



1670

- Verwendung bei Injektionsmaschinen und Platten mit Gewinde
- Qualität 10.9
- Schwarz beschichtet

1670

- Area of Use: This stud is used in injection machines and in plates with M12-14-16-18-20-22-24-30 threads
- Quality 10.9
- Black Coating

Hinweis: Verwenden Sie die Marke Loctite Produktcode 8150 auf dem Bolzengewinde während Werkstück Umgebung oberhalb von 150 ° C Klemm

Note: Use Loctite brand product code 8150 on the bolt thread while clamping workpiece environment above 150 ° C



| Referenz-Nr. Order No. | d x L | b1 | b | Spannwerte Tightening Data | | |
|--|---|----|---|-------------------------------|-----|--|
| | | | | Nm | kN | |
| 1690-08040 1690-08063 1690-08080 1690-08100 1690-08125 1690-08160 | M8 x40 x63 x80 x100 x125 x160 | 11 | 20 40 50 63 75 100 | 36 | 27 | 10 15 20 30 35 45 |
| 1690-10050 1690-10063 1690-10080 1690-10100 1690-10125 1690-10160 1690-10200 | M10 x50 x63 x80 x100 x125 x160 x200 | 13 | 25 32 50 63 75 100 125 | 67 | 43 | 20 25 35 45 55 70 95 |
| 1690-12050 1690-12063 1690-12080 1690-12100 1690-12125 1690-12160 1690-12200 | M12 x50 x63 x80 x100 x125 x160 x200 | 15 | 25 32 50 63 75 100 125 | 120 | 63 | 35 40 55 70 90 115 140 |
| 1690-14063 1690-14080 1690-14100 1690-14125 1690-14160 1690-14200 1690-14250 | M14 x63 x80 x100 x125 x160 x200 x250 | 17 | 32 50 63 75 100 125 160 | 191 | 86 | 60 75 95 120 150 195 240 |
| 1690-16063 1690-16080 1690-16100 1690-16125 1690-16160 1690-16200 1690-16250 1690-16315 1690-16500 | M16 x63 x80 x100 x125 x160 x200 x250 x315 x500 | 19 | 32 50 63 75 100 125 160 180 315 | 302 | 118 | 85 105 130 160 205 260 325 405 650 |
| 1690-18080 1690-18100 1690-18125 1690-18160 1690-18200 1690-18250 1690-18315 | M18 x80 x100 x125 x160 x200 x250 x315 | 23 | 50 60 75 100 125 150 180 | 405 | 144 | 130 160 200 260 320 400 510 |
| 1690-20080 1690-20100 1690-20125 1690-20160 1690-20200 1690-20250 1690-20315 1690-20400 1690-20500 | M20 x80 x100 x125 x160 x200 x250 x315 x400 x500 | 27 | 32 60 70 100 125 160 200 250 315 | 580 | 184 | 155 200 250 330 400 510 640 815 1020 |
| 1690-22100 1690-22125 1690-22160 1690-22200 1690-22250 1690-22315 1690-22400 | M22 x100 x125 x160 x200 x250 x315 x400 | 31 | 45 70 100 125 160 180 250 | 772 | 228 | 250 305 400 500 620 780 1010 |
| 1690-24100 1690-24125 1690-24160 1690-24200 1690-24250 1690-24315 1690-24400 1690-24500 1690-24630 | M24 x100 x125 x160 x200 x250 x315 x400 x500 x630 | 35 | 45 70 100 125 160 200 250 315 315 | 994 | 265 | 290 365 470 580 730 920 1170 1470 1860 |
| 1690-30125 1690-30200 1690-30250 1690-30315 1690-30500 1690-30700 1690-301000 | M30 x125 x200 x250 x315 x500 x700 x1000 | 43 | 56 125 160 200 315 400 400 | 1930 | 421 | 570 910 1150 1435 2315 3215 4700 |

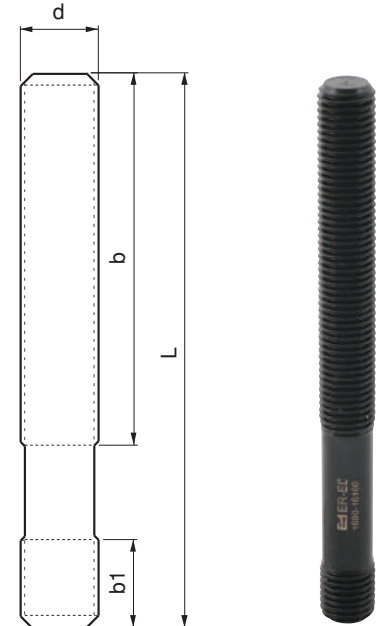
| Referenz-Nr. Order No. | d x L | b1 | b | Spannwerte Tightening Data | | |
|--|---|----|--|-------------------------------|-----|--|
| | | | | Nm | kN | |
| 1690-36160 1690-36200 1690-36250 1690-36315 1690-36400 1690-36500 1690-36700 | M36 x160 x200 x250 x315 x400 x500 x700 | 51 | 80 125 160 200 250 315 400 | 3378 | 614 | 1100 1340 1710 2150 2700 3450 4750 |
| 1690-42315 1690-42400 1690-42500 | M42 x315 x400 x500 | 59 | 200 250 315 | 5415 | 843 | 2950 3750 4690 |

DIN 6379
1690

- Qualität 10.9
- Schwarz beschichtet

1690

- Quality 10.9
- Black coating



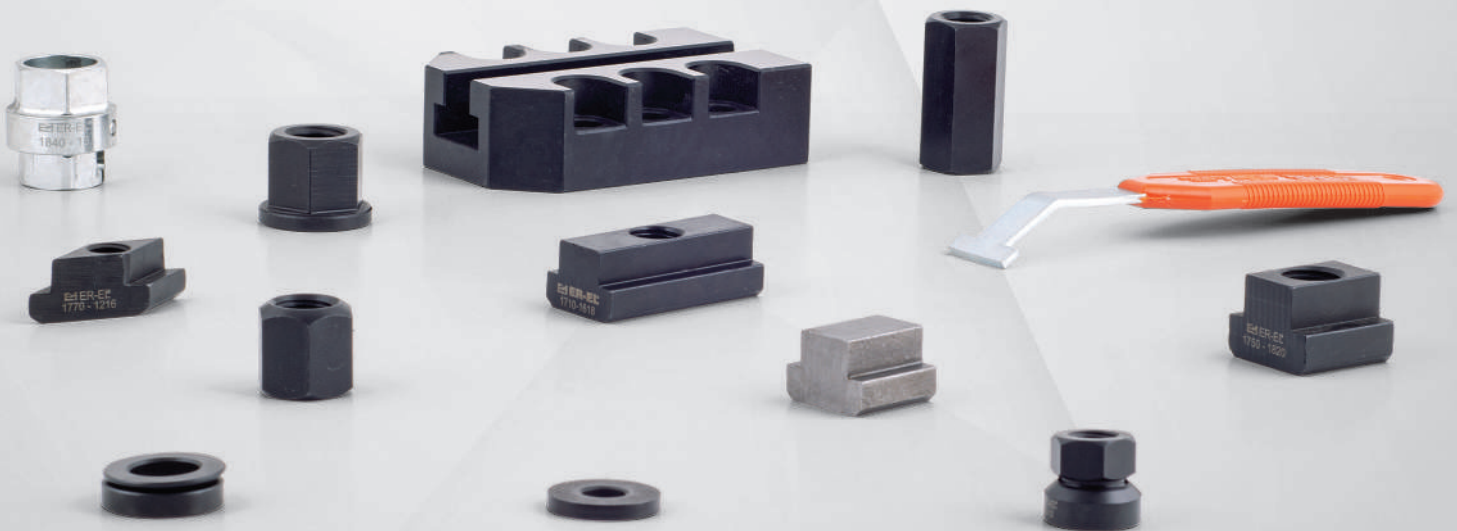
Hinweis: Bei Anwendung über 150 °C ist Auf das Gewinde Loctite 8150 aufzutragen.

Note: Environments on the 150 °C when clamping action on the thread Loctite 8150 is used.


 Loctite
8150

Sechskantmutter, Scheibe, Zubehör

Nut, Washer, Accessories



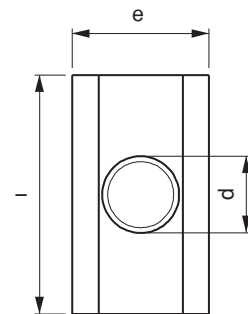
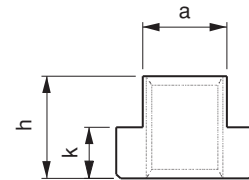
| Referenz-Nr. Order No. | | a | e | l | h | k | |
|---------------------------|--------|------|----|-----|----|----|------|
| 1710-0608 | M6x8 | 7.7 | 13 | 26 | 10 | 6 | 14 |
| 1710-0810 | M8x10 | 9.7 | 15 | 30 | 12 | 6 | 25 |
| 1710-1012 | M10x12 | 11.7 | 18 | 36 | 14 | 7 | 49 |
| 1710-1214 | M12x14 | 13.7 | 22 | 44 | 16 | 8 | 82 |
| 1710-1416 | M14x16 | 15.7 | 25 | 50 | 18 | 9 | 120 |
| 1710-1618 | M16x18 | 17.7 | 28 | 56 | 20 | 10 | 165 |
| 1710-1820 | M18x20 | 19.7 | 32 | 64 | 24 | 12 | 260 |
| 1710-2022 | M20x22 | 21.7 | 35 | 70 | 28 | 14 | 365 |
| 1710-2224 | M22x24 | 23.7 | 40 | 80 | 32 | 16 | 535 |
| 1710-2428 | M24x28 | 27.7 | 44 | 88 | 36 | 18 | 745 |
| 1710-3036 | M30x36 | 35.6 | 54 | 108 | 44 | 22 | 1390 |

1710

- schützt T-Kanal bei empfindlichen Maschinenplatten
- Gehärtet
- Schwarz beschichtet
- Qualität 10.

1710

- This clamp protects T-Slot in sensitive machine plates
- Hardened
- Black coating
- Quality 10



Muttern-Rohling für T-Nuten

T-Nut without Hole

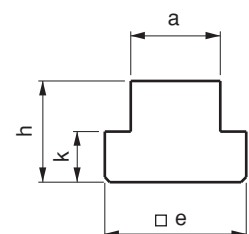
| Referenz-Nr. Order No. | | a | e | h | k | |
|---------------------------|----|------|----|----|----|------|
| 1730-06 | 6 | 5.7 | 10 | 8 | 4 | 4 |
| 1730-08 | 8 | 7.7 | 13 | 10 | 6 | 10 |
| 1730-10 | 10 | 9.7 | 15 | 12 | 6 | 16 |
| 1730-12 | 12 | 11.7 | 18 | 14 | 7 | 27 |
| 1730-14 | 14 | 13.7 | 22 | 16 | 8 | 50 |
| 1730-16 | 16 | 15.7 | 25 | 18 | 9 | 70 |
| 1730-18 | 18 | 17.7 | 28 | 20 | 10 | 95 |
| 1730-20 | 20 | 19.7 | 32 | 24 | 12 | 150 |
| 1730-22 | 22 | 21.7 | 35 | 28 | 14 | 210 |
| 1730-24 | 24 | 23.7 | 40 | 32 | 16 | 310 |
| 1730-28 | 28 | 27.7 | 44 | 36 | 18 | 430 |
| 1730-36 | 36 | 35.6 | 54 | 44 | 22 | 800 |
| 1730-42 | 42 | 41.6 | 65 | 52 | 26 | 1400 |

1730

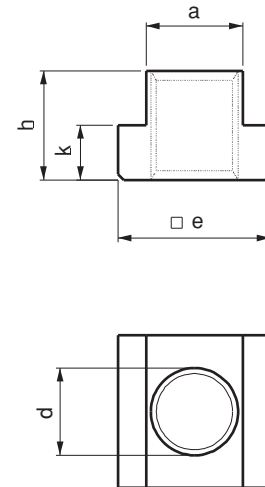
- Gewindebohren und lochen nach Bedarf

1730

- Arbitrary thread cutting can be applied



| Referenz-Nr. Order No. | dx | a | e | h | k | (g) |
|---------------------------|---------|------|----|----|----|---------|
| 1750-0506 | M5x6 | 5.7 | 10 | 8 | 4 | 4 |
| 1750-0608 | M6x8 | 7.7 | 13 | 10 | 6 | 10 |
| 1750-0810 | M8x10 | 9.7 | 15 | 12 | 6 | 12 |
| 1750-0812 | M8x12* | 11.7 | 18 | 14 | 7 | 22 |
| 1750-1012 | M10x12 | | | | | 20 |
| 1750-0814 | M8x14* | 13.7 | 22 | 16 | 8 | 40 |
| 1750-1014 | M10x14* | | | | | 37 |
| 1750-1214 | M12x14 | | | | | 30 |
| 1750-0816 | M8x16* | 15.7 | 25 | 18 | 9 | 60 |
| 1750-1016 | M10x16* | | | | | 55 |
| 1750-1216 | M12x16* | | | | | 55 |
| 1750-1416 | M14x16 | | | | | 45 |
| 1750-0818 | M8x18* | 17.7 | 28 | 20 | 10 | 90 |
| 1750-1018 | M10x18* | | | | | 87 |
| 1750-1218 | M12x18* | | | | | 80 |
| 1750-1418 | M14x18* | | | | | 75 |
| 1750-1618 | M16x18 | | | | | 65 |
| 1750-1620 | M16x20* | 19.7 | 32 | 24 | 12 | 115 |
| 1750-1820 | M18x20 | | | | | 105 |
| 1750-1622 | M16x22* | 21.7 | 35 | 28 | 14 | 170 |
| 1750-1822 | M18x22* | | | | | 160 |
| 1750-2022 | M20x22 | | | | | 150 |
| 1750-1624 | M16x24* | 23.7 | 40 | 32 | 16 | 260 |
| 1750-2024 | M20x24* | | | | | 240 |
| 1750-2224 | M22x24 | | | | | 220 |
| 1750-1628 | M16x28* | 27.7 | 44 | 36 | 18 | 375 |
| 1750-2028 | M20x28* | | | | | 350 |
| 1750-2228 | M22x28* | | | | | 330 |
| 1750-2428 | M24x28 | | | | | 330 |
| 1750-2436 | M24x36* | 35.6 | 54 | 44 | 22 | 665 |
| 1750-3036 | M30x36 | | | | | 585 |
| 1750-3642 | M36x42 | 41.6 | 65 | 52 | 26 | 1025 |
| 1750-4248 | M42x48 | 47.6 | 75 | 60 | 30 | 1600 |


DIN 508
1750

- Für die Lebensdauer der T-Nutenstein muss das gesamte Gewindeteil genutzt werden.
- Gehärtet
- Schwarz beschichtet
- Qualität 10.

1750

- Screwing must be done on the entire thread part for the endurance of T-Nut
- Hardened
- Black coating
- Quality 10

| Referenz-Nr. Order No. | dx | a | e | h | k | (g) |
|---------------------------|---------|------|----|----|----|---------|
| 1770-0810 | M8x10 | 9.7 | 15 | 12 | 6 | 10 |
| 1770-1012 | M10x12 | 11.7 | 18 | 14 | 7 | 15 |
| 1770-1014 | M10x14* | 13.7 | 22 | 16 | 8 | 30 |
| 1770-1214 | M12x14 | | | | | 25 |
| 1770-1416 | M14x16 | 15.7 | 25 | 18 | 9 | 40 |
| 1770-1018 | M10x18* | 17.7 | 28 | 20 | 10 | 70 |
| 1770-1618 | M16x18 | | | | | 60 |
| 1770-1620 | M16x20* | 19.7 | 32 | 24 | 12 | 95 |
| 1770-1820 | M18x20 | | | | | 90 |
| 1770-1622 | M16x22* | 21.7 | 35 | 28 | 14 | 135 |
| 1770-2022 | M20x22 | | | | | 125 |
| 1770-1628 | M16x28* | 27.7 | 44 | 36 | 18 | 330 |
| 1770-2028 | M20x28* | | | | | 295 |
| 1770-2428 | M24x28 | | | | | 265 |

1770

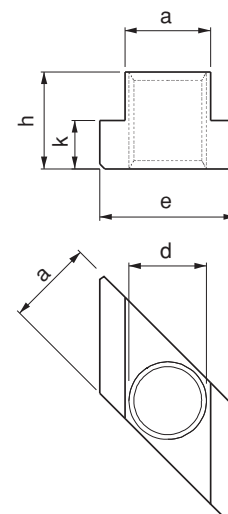
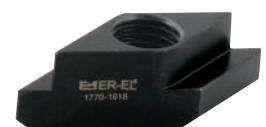
- Vorteil: Stecken von oben und spannen bei Platten mit T-Nuten
- Gehärtet
- Schwarz beschichtet
- Qualität 10.

1770

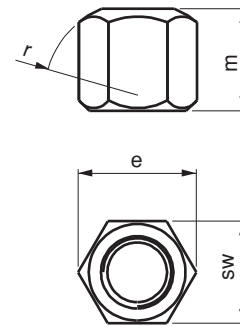
- It has the feature of making the coupling by entering T-Slot plates from the top
- Hardened
- Black coating
- Quality 10

Mutter für T-Nut "Rhombus"

Graded T-Nut



| Referenz-Nr. Order No. | | sw | e | m | r | |
|---------------------------|-----|----|------|----|----|------|
| 1790-06 | M6 | 10 | 11.5 | 9 | 9 | 5 |
| 1790-08 | M8 | 13 | 15 | 12 | 12 | 9 |
| 1790-10 | M10 | 17 | 19.6 | 15 | 15 | 20 |
| 1790-12 | M12 | 19 | 21.9 | 18 | 17 | 25 |
| 1790-14 | M14 | 22 | 25.4 | 21 | 20 | 40 |
| 1790-16 | M16 | 24 | 27.7 | 24 | 22 | 55 |
| 1790-18 | M18 | 27 | 31.2 | 27 | 24 | 80 |
| 1790-20 | M20 | 30 | 34.6 | 30 | 27 | 110 |
| 1790-22 | M22 | 32 | 36.9 | 33 | 30 | 130 |
| 1790-24 | M24 | 36 | 41.5 | 36 | 32 | 190 |
| 1790-30 | M30 | 46 | 53.1 | 45 | 41 | 400 |
| 1790-36 | M36 | 55 | 63.5 | 54 | 50 | 680 |
| 1790-42 | M42 | 65 | 75 | 63 | 58 | 1150 |



DIN 6330B 1790

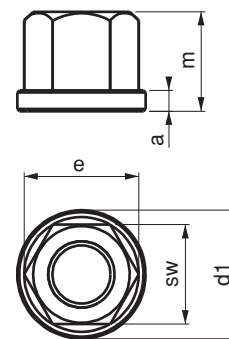
- bei flachen Oberflächen verwendbar mit Scheibe DIN 6340
- bei Radius-Oberflächen verwendbar mit Scheiben DIN 6319D und DIN 6319G
- Gehärtet
- Schwarz beschichtet
- Qualität 10.

1790

- Flat surface is used with DIN 6340 Washer
- This nut is used with Rad-top surface DIN 6319D and DIN 6319G washers
- Hardened
- Black Coating
- Quality 10

| Referenz-Nr. Order No. | | sw | e | m | a | d1 | |
|---------------------------|-----|----|------|----|-----|----|------|
| 1810-08 | M8 | 13 | 14.7 | 12 | 3.5 | 18 | 12 |
| 1810-10 | M10 | 17 | 19.2 | 15 | 4 | 22 | 25 |
| 1810-12 | M12 | 19 | 21.5 | 18 | 4 | 25 | 30 |
| 1810-14 | M14 | 22 | 24.9 | 21 | 4.5 | 28 | 50 |
| 1810-16 | M16 | 24 | 27.2 | 24 | 5 | 31 | 65 |
| 1810-18 | M18 | 27 | 30.6 | 27 | 5 | 34 | 90 |
| 1810-20 | M20 | 30 | 34 | 30 | 6 | 37 | 130 |
| 1810-22 | M22 | 32 | 36.3 | 33 | 6 | 40 | 155 |
| 1810-24 | M24 | 36 | 40.8 | 36 | 6 | 45 | 220 |
| 1810-30 | M30 | 46 | 52.3 | 45 | 8 | 58 | 465 |
| 1810-36 | M36 | 55 | 62 | 54 | 10 | 68 | 500 |
| 1810-42 | M42 | 65 | 75 | 63 | 12 | 80 | 1340 |

Sechskantmutter mit Bund Nut with Washer



DIN 6331 1810

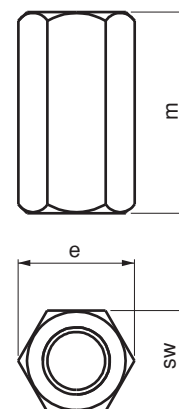
- Gehärtet
- Schwarz beschichtet
- Qualität 10.

1810

- Hardened
- Black Coating
- Quality 10

| Referenz-Nr. Order No. | | sw | e | m | |
|---------------------------|-----|----|------|-----|------|
| 1830-06 | M6 | 10 | 11.7 | 18 | 8 |
| 1830-08 | M8 | 13 | 15 | 24 | 19 |
| 1830-10 | M10 | 17 | 19.6 | 30 | 40 |
| 1830-12 | M12 | 19 | 21.6 | 36 | 55 |
| 1830-14 | M14 | 22 | 25.4 | 42 | 90 |
| 1830-16 | M16 | 24 | 27.7 | 48 | 115 |
| 1830-18 | M18 | 27 | 31.2 | 54 | 165 |
| 1830-20 | M20 | 30 | 34.6 | 60 | 230 |
| 1830-22 | M22 | 32 | 36.9 | 66 | 245 |
| 1830-24 | M24 | 36 | 41.5 | 72 | 400 |
| 1830-30 | M30 | 46 | 53.1 | 90 | 840 |
| 1830-36 | M36 | 55 | 63.5 | 108 | 1430 |
| 1830-42 | M42 | 65 | 75 | 126 | 2330 |

Verlängerungsmutter Extension Nut



DIN 6334 1830

- Verwendung zur Verlängerung von Stift-/Schrauben für T-Nuten DIN 787 / DIN 6379
- Gehärtet
- Schwarz beschichtet
- Qualität 10.

1830

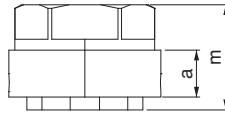
- It is used in DIN 787 T-Studs and DIN 6379 Straight Studs as extension
- Hardened
- Black Coating
- Quality 10

| Referenz-Nr. Order No. | Gewinde metric | a | d1 | e | m | sw | (g) |
|---------------------------|-------------------|------|------|------|------|----|-----|
| 1840-16 | M16 | 11.5 | 34 | 30.7 | 27.5 | 27 | 105 |
| 1840-20 | M20 | 14 | 44 | 38.8 | 33 | 34 | 210 |
| 1840-24 | M24 | 18.5 | 50.4 | 46 | 35 | 41 | 365 |



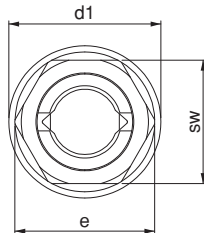
1840

- Ermöglicht schnelles Gleiten bei langen Gewinden, mit Mutter in geöffneten Position.
- Gehärtet
- Verzinkt
- Qualität 10.



1840

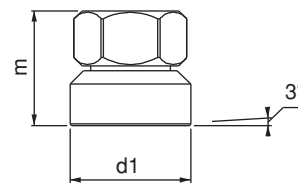
- Enables fast sliding on long threads, with nut at open position.
- Hardened
- Zinc Coating
- Quality 10



Sechskantmutterereinheit mit beweglichem Kopf

Ball Head Nut

| Referenz-Nr. Order No. | sw | d1 | m | (g) | |
|---------------------------|-----|----|----|-----|-----|
| 1850-08 | M8 | 13 | 17 | 14 | 10 |
| 1850-10 | M10 | 17 | 21 | 18 | 30 |
| 1850-12 | M12 | 19 | 24 | 22 | 40 |
| 1850-16 | M16 | 24 | 30 | 28 | 70 |
| 1850-20 | M20 | 30 | 36 | 35 | 140 |
| 1850-24 | M24 | 36 | 44 | 43 | 260 |

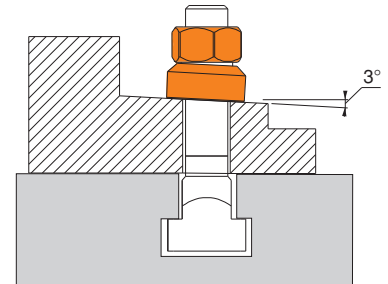
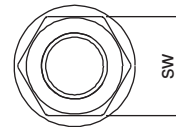


1850

- Vorteil bei winkligen Auflageflächen durch bewegliche Eigenschaft
- Gehärtet
- Schwarz beschichtet
- Qualität 10.

1850

- It provides advantage for using on angled surfaces due to the movement of the washer within itself
- Hardened
- Black Coating
- Quality 10



| Referenz-Nr. Order No. | Gewinde metric | Zollgewinde whitworth | d1 | d2 | s | (g) |
|---------------------------|-------------------|--------------------------|------|----|----|-----|
| 1870-06 | M6 | 1/4 | 6.4 | 17 | 3 | 6 |
| 1870-08 | M8 | 5/16 | 8.4 | 23 | 4 | 10 |
| 1870-10 | M10 | 3/8 | 10.5 | 28 | 4 | 16 |
| 1870-12 | M12 | 1/2 | 13 | 35 | 5 | 30 |
| 1870-14 | M14 | - | 15 | 40 | 5 | 40 |
| 1870-16 | M16 | 5/8 | 17 | 45 | 6 | 60 |
| 1870-18 | M18 | - | 19 | 45 | 6 | 60 |
| 1870-20 | M20 | 3/4 | 21 | 50 | 6 | 70 |
| 1870-22 | M22 | 7/8 | 23 | 50 | 8 | 90 |
| 1870-24 | M24 | 7/8 | 25 | 60 | 8 | 140 |
| 1870-30 | M30 | 1 1/8 | 31 | 68 | 10 | 215 |
| 1870-36 | M36 | 1 1/4 | 38 | 80 | 12 | 360 |
| 1870-42 | M42 | 1 1/2 | 44 | 98 | 15 | 640 |

DIN 6340 1870

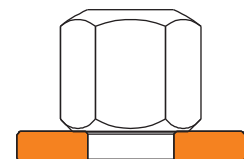
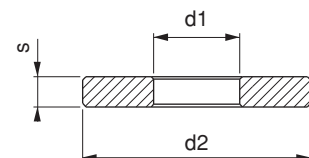
- Gehärtet
- Schwarz beschichtet

DIN 6340 1870

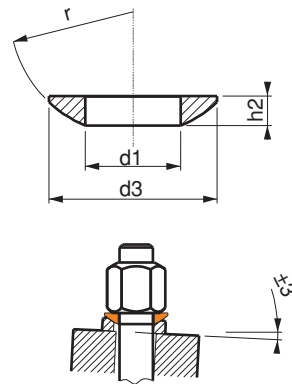
- Hardened
- Black Coating

Scheibe

Washer



| Referenz-Nr. Order No. | | d1 | d3 | h2 | r | |
|---------------------------|-----|------|----|------|----|-----|
| 1890-06 | M6 | 6.4 | 12 | 2.3 | 9 | 1.5 |
| 1890-08 | M8 | 8.4 | 17 | 3.2 | 12 | 2.5 |
| 1890-10 | M10 | 10.5 | 21 | 4.0 | 15 | 5 |
| 1890-12 | M12 | 13 | 24 | 4.6 | 17 | 7 |
| 1890-14 | M14 | 15 | 28 | 5.0 | 22 | 10 |
| 1890-16 | M16 | 17 | 30 | 5.3 | 22 | 15 |
| 1890-20 | M20 | 21 | 36 | 6.3 | 27 | 20 |
| 1890-24 | M24 | 25 | 44 | 8.2 | 32 | 40 |
| 1890-30 | M30 | 31 | 56 | 11.2 | 41 | 95 |
| 1890-36 | M36 | 37 | 68 | 14.0 | 50 | 190 |
| 1890-42 | M42 | 43 | 78 | 17.0 | 58 | 297 |



DIN 6319C

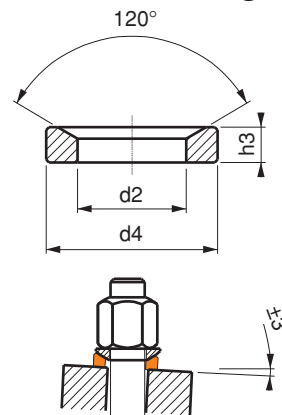
1890

- kompatibel mit Scheiben DIN 6319D und DIN 6319G auf winkelförmigen Flächen
- Gehärtet
- Schwarz beschichtet

1890

- This washer is used with DIN 6319G washers on angled surfaces
- Hardened
- Black Coating

| Referenz-Nr. Order No. | | max. KN | d2 | d4 | h3 | |
|---------------------------|-----|---------|------|----|-----|-----|
| 1910-06 | M6 | 9 | 7.1 | 12 | 2.8 | 2 |
| 1910-08 | M8 | 17 | 9.6 | 17 | 3.5 | 4 |
| 1910-10 | M10 | 26 | 12 | 21 | 4.2 | 6.5 |
| 1910-12 | M12 | 38 | 14.2 | 24 | 5 | 10 |
| 1910-14 | M14 | 53 | 16.5 | 28 | 5.6 | 10 |
| 1910-16 | M16 | 73 | 19 | 30 | 6.2 | 15 |
| 1910-20 | M20 | 117 | 23.2 | 36 | 7.5 | 25 |
| 1910-24 | M24 | 168 | 28 | 44 | 9.5 | 55 |
| 1910-30 | M30 | 269 | 35 | 56 | 12 | 120 |
| 1910-36 | M36 | 394 | 42 | 68 | 15 | 220 |
| 1910-42 | M42 | 542 | 49 | 78 | 18 | 365 |



DIN 6319D

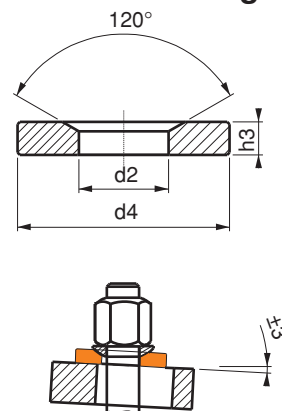
1910

- verwendbar mit Kugelscheibe DIN6319C auf winkelförmigen Flächen
- Gehärtet
- Schwarz beschichtet

1910

- This washer is used with DIN 6319C rad-top washers on angled surfaces
- Hardened
- Black Coating

| Referenz-Nr. Order No. | | d2 | d4 | h3 | |
|---------------------------|-----|------|-----|----|-----|
| 1930-06 | M6 | 7.1 | 17 | 4 | 5.5 |
| 1930-08 | M8 | 9.6 | 24 | 5 | 13 |
| 1930-10 | M10 | 12 | 30 | 5 | 19 |
| 1930-12 | M12 | 14.2 | 36 | 6 | 32 |
| 1930-14 | M14 | 16.5 | 40 | 6 | 45 |
| 1930-16 | M16 | 19 | 44 | 7 | 65 |
| 1930-20 | M20 | 23.2 | 50 | 8 | 90 |
| 1930-24 | M24 | 28 | 59 | 10 | 150 |
| 1930-30 | M30 | 35 | 68 | 10 | 180 |
| 1930-36 | M36 | 42 | 79 | 12 | 285 |
| 1930-42 | M42 | 49 | 100 | 15 | 640 |



DIN 6319G



1930

- verwendbar mit Kugelscheibe DIN6319C auf winkelförmigen Flächen
- im Vergleich zu 6319D verwendbar bei größeren Löchern
- Gehärtet
- Schwarz beschichtet

1930

- This washer is used with DIN 6319C rad-top washers on angled surfaces
- According to DIN 6319D, it is used in the holes with bigger diameter
- Hardened
- Black Coating



| Referenz-Nr. Order No. |  |  |
|---------------------------|---|---|
| 1950-1214 | 12-14 | 25 |
| 1950-1618 | 16-18 | 45 |
| 1950-2022 | 20-22 | 45 |
| 1950-2428 | 24-28 | 70 |



1950

- zur Reinigung von T-Nuten

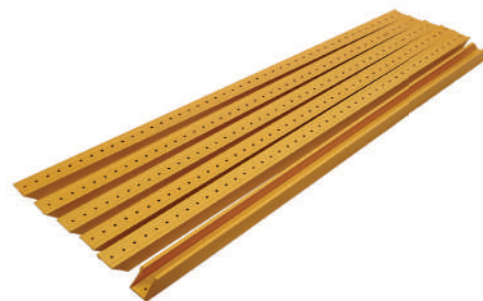
1950

- This scraper is used to clean T-Slots

| Referenz-Nr. Order No. | Breite Width (mm) | Länge Length (mm) | Anzahl Quantity |
|---------------------------|----------------------|----------------------|--------------------|
| 1955-T010 | 10 | 300 | 6 |
| 1955-T012 | 12 | 400 | 6 |
| 1955-T014 | 14 | 400 | 6 |
| 1955-T016 | 16 | 400 | 6 |
| 1955-T018 | 18 | 450 | 6 |
| 1955-T181 | 18 | 1000 | 5 |
| 1955-T205 | 20 | 500 | 10 |
| 1955-T020 | 20 | 1000 | 5 |
| 1955-T022 | 22 | 1000 | 5 |
| 1955-T024 | 24 | 1000 | 5 |
| 1955-T028 | 28 | 1000 | 5 |
| 1955-T036 | 36 | 1000 | 5 |

T-Nut Abdeckung

Milling T-Slot Cover

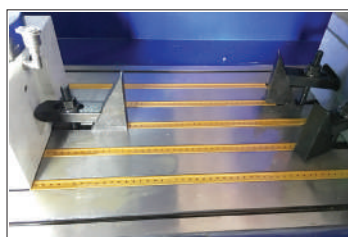


1955

- Es verhindert, dass unnötige Späne abfließen und verschmutzen.
Es wird zur Reinigung von T-Nuten verwendet.
- Material: Aluminium

1955

- It prevents unnecessary shavings filling and become dirty.
It is used to clean T-Slots.
- Material: Aluminum



| | | |
|---------------------------|-------------|------|
| Referenz-Nr. Order No. | | |
| 1960-110 | 14-16-18-20 | 1160 |

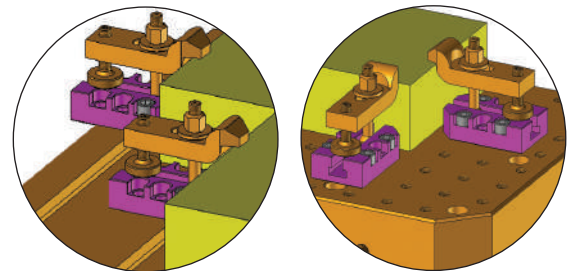
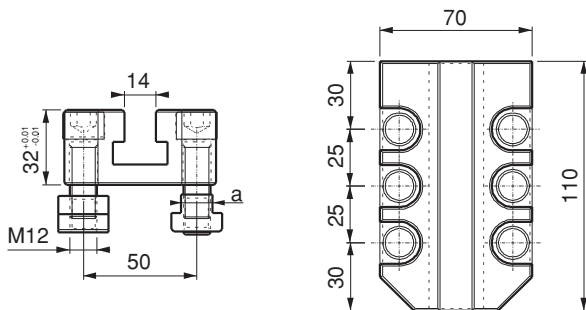
- 1960**
- Gehärtet
 - Schwarz beschichtet

Es bietet die Möglichkeit, das Werkstück an einer geeigneten Stelle der Platte während des nichtproportionalen Anschlags des Werkstücks zu befestigen.



- 1960**
- Hardened
 - Black coating

It provides convenience to fix the work piece on a suitable place of the plate during the non-proportional stopping of the work piece to be applied on the plate of the bench



| Referenz-Nr. Order No. | | Ø D | Ø d | L | L1 | |
|---------------------------|-----|-----|------|----|----|-----|
| 1970-10 | M10 | 27 | 10.5 | 35 | 20 | 65 |
| 1970-12 | M12 | 27 | 12.5 | 40 | 33 | 70 |
| 1970-14 | M14 | 28 | 14.5 | 40 | 30 | 60 |
| 1970-16 | M16 | 37 | 16.5 | 45 | 30 | 110 |
| 1970-18 | M18 | 37 | 18.5 | 45 | 40 | 115 |
| 1970-20 | M20 | 37 | 21 | 45 | 42 | 105 |
| 1970-22 | M22 | 37 | 23 | 45 | 45 | 120 |
| 1970-24 | M24 | 45 | 25 | 50 | 45 | 170 |

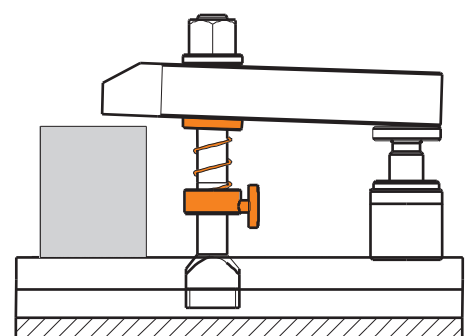
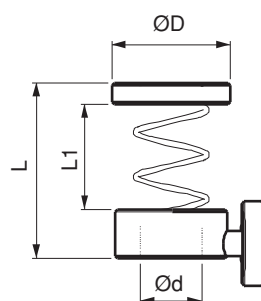
Spanneisenhalter federnd

for Lifting the Washer

- 1970**
- Arbeitserleichterung durch Stützen bei Werkstückaufnahme bzw. -abnahme
 - Schnelles und sicheres Entspannen wird gewährleistet.
 - Schwarz beschichtet



- 1970**
- This washer provides convenience of using in coupling and dismantling processes by lifting the clamp evenly
 - Black coating

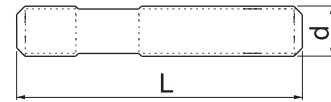


Sets

Sets



| Referenz-Nr. Order No. | | | | d x L DIN 6379 |
|---------------------------|--------|---------|-------|---------------------|
| 1990-1012 | M10x12 | 265x255 | 6.44 | M10x80-100-160-200 |
| 1990-1214 | M12x14 | 305x255 | 8.72 | M12x80-100-160-200 |
| 1990-1416 | M14x16 | 435-255 | 12.98 | M14x80-100-160-200 |
| 1990-1618 | M16x18 | 435-255 | 16.30 | M16x80-100-160-200 |
| 1990-1820 | M18x20 | 495x255 | 17.82 | M18x80-100-160-200 |
| 1990-2022 | M20x22 | 540x255 | 23.10 | M20x100-125-160-200 |



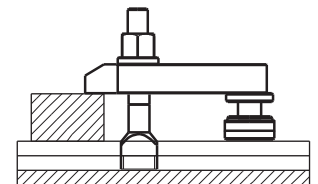
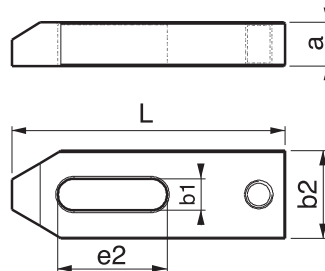
1990

• Dies ist ein aus Stahl hergestellte Spannelemente-Satz, um das Werkstück oder die Vorrichtungen schnell und sicher auf dem Tisch zu spannen.

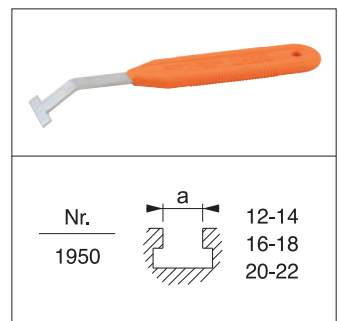
1990

• This is the coupling set produced from steel product in order to couple the work piece or apparatuses on the table in a rapid and safe way.

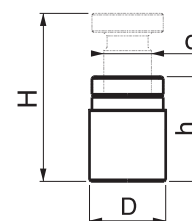
| Nr. | L | b1 | | a | e2 | b2 |
|------|-----|------|---------|----|----|----|
| 1330 | 80 | 11 | M10 | 15 | 30 | 30 |
| 1330 | 100 | 14.5 | M12-M14 | 20 | 40 | 40 |
| 1330 | 125 | | | | | |
| 1330 | 125 | 18.5 | M16-M18 | 25 | 45 | 50 |
| 1330 | 160 | | | | | |
| 1330 | 160 | 22.5 | M20-M22 | 30 | 60 | 60 |
| 1330 | 200 | | | | | |



| | DIN 508 | DIN 6330 B | Nr 1830 | DIN 6331 | DIN 6340 |
|----|---------|------------|---------|----------|----------|
| 12 | M10 | M10 | M10 | M10 | M10 |
| 14 | M12 | M12 | M12 | M12 | M12 |
| 16 | M14 | M14 | M14 | M14 | M14 |
| 18 | M16 | M16 | M16 | M16 | M16 |
| 20 | M18 | M18 | M18 | M18 | M18 |
| 22 | M20 | M20 | M20 | M20 | M20 |



| Nr. | h | H | d | D |
|------|-----|-----|---------|----|
| 1510 | 23 | 30 | M16 | 34 |
| 1510 | 40 | 60 | M16 | 34 |
| 1510 | 70 | 100 | Tr 30x4 | 50 |
| 1510 | 100 | 140 | Tr 30x4 | 50 |







Set-Inhalt

- 6 St T-Backen DIN 508 (M20x22 4 St)
- 16 St Bolzen DIN 6379
- 6 St Mutter DIN 6330B
- 4 St Mutter mit Scheibe DIN 6331
- 2 St Verlängerungsmutter Nr. 1830
- 4 St Scheibe DIN 6340
- 4 St. Backen Nr. 1330
- 8 St. Höhen-Richtsraubstock Nr. 1510
- 1 St. Nutenräumer 1950
- 1 St Stahlset lackiert
- Hinweis : 1990-2022= 6kt-Mutter und Scheibe = 4 St
- 1990-1012 und 1990-1214= 6 St. Höhen-Richtsraubstock 1510

Product: 52 piece set

- 6 pieces of DIN 508 T-Nut (M20x22 4 piece)
- 16 pieces of DIN 6379 Stud
- 6 pieces of DIN 6330B Supported Nut
- 4 pieces of DIN 6331 Nut with Washer
- 2 pieces of No. 1830 Extension Nut
- 4 pieces of DIN 6340 Thick Washer
- 4 pieces of No. 1330 Clamp with Support Hole
- 8 pieces of No. 1510 Screw Thread Lifter Support
- 1 piece of No. 1950 T-Slot Scraper
- 1 piece of Steel Set with Statical Paint
- Note: 1990-2022= Hexagon nut and washer = 4 pcs
- 1990-1012 and 1990-1214= 1510 support 6 pcs

| Referenz-Nr. Order No. |  |  |  | DIN 6379 d x L  |
|---------------------------|---|---|---|---|
| 2010-1012 | M10x12 | 330x255 | 7.27 | M10x80-100-160-200 |
| 2010-1214 | M12x14 | 380x255 | 9.26 | M12x80-100-160-200 |
| 2010-1416 | M14x16 | 435x255 | 12.29 | M14x80-100-160-200 |
| 2010-1618 | M16x18 | 435x255 | 15.62 | M16x80-100-160-200 |
| 2010-1820 | M18x20 | 495x255 | 18.00 | M18x80-100-160-200 |

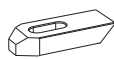


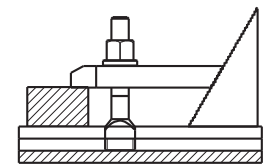
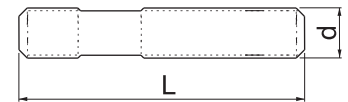
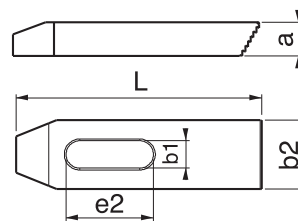
2010

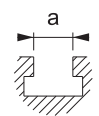
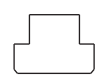

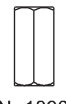


- Dies ist ein aus Stahl hergestellte Spannelemente-Satz, um das Werkstück oder die Vorrichtungen schnell und sicher auf dem Tisch zu spannen.

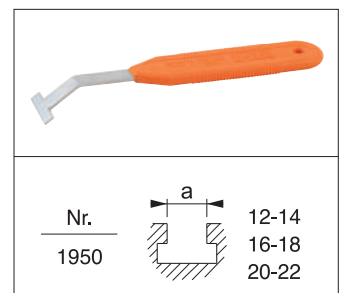
2010

- This is the coupling set produced from steel product in order to couple the work piece or apparatuses on the table in a rapid and safe way.

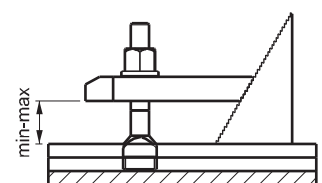
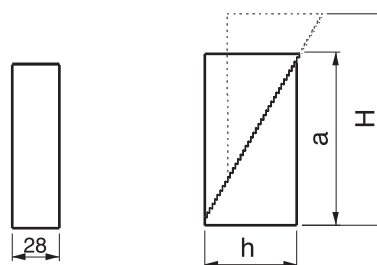
| Nr. | L | b1 |  | a | e2 | b2 |
|------|------------|------|---|----|----------|----|
| 1290 | 80 100 | 11 | M10 | 15 | 30 45 | 30 |
| 1290 | 100 125 | 14.5 | M12-M14 | 20 | 45 55 | 40 |
| 1290 | 125 160 | 185 | M16-M18 | 25 | 65 65 | 50 |



|  |  |  |  |  |  |
|---|---|---|---|---|---|
| a | DIN 508 | DIN 6330 B | Nr 1830 | DIN 6331 | DIN 6340 |
| 12 | M10 | M10 | M10 | M10 | M10 |
| 14 | M12 | M12 | M12 | M12 | M12 |
| 16 | M14 | M14 | M14 | M14 | M14 |
| 18 | M16 | M16 | M16 | M16 | M16 |
| 20 | M18 | M18 | M18 | M18 | M18 |



| Nr. | h-H | a | min-max |
|------|--------|-----|---------|
| 1310 | 37-85 | 57 | 0-40 |
| 1310 | 48-112 | 73 | 0-60 |
| 1310 | 58-139 | 90 | 0-75 |
| 1310 | 66-165 | 108 | 0-90 |



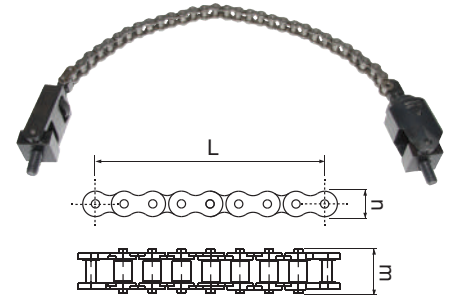
Set-Inhalt

- 6 St T-Backen DIN 508 (M20x22 4 St)
- 16 St Bolzen DIN 6379
- 6 St Mutter DIN 6330B
- 4 St Mutter mit Scheibe DIN 6331
- 2 St Verlängerungsmutter Nr. 1830
- 4 St Scheibe DIN 6340
- 4 St Spanneisen mit Treppenzähnen Nr. 1290
- 8 St Spannunterlagen mit Treppenzähnen Nr. 1310
- 1 St. Nutenräumer 1950
- 1 St Stahlset lackiert

Product: 52 piece set

- 6 pieces of DIN 508 T-Nut (M20x22 4 piece)
- 16 pieces of DIN 6379 Stud
- 6 pieces of DIN 6330B Supported Nut
- 4 pieces of DIN 6331 Nut with Washer
- 2 pieces of No. 1830 Extension Nut
- 4 pieces of DIN 6340 Thick Washer
- 4 pieces of No. 1290 Serrated Clamp
- 8 pieces of No. 1310 Clamp with Support Hole
- 1 piece of No. 1950 T-Slot Scraper
- 1 piece of Steel Set with Statical Paint

| Referenz-Nr. Order No. | | | Tork Torque Nm | Spannkraft clamping force kgf | L | m | n | |
|---------------------------|-----|-------------|----------------------|-------------------------------------|------|----|----|------|
| 2020-120125 | M12 | 14-16-18 | 45 | 1500 | 125 | 20 | 15 | 1414 |
| 2020-120250 | M12 | | 45 | 1500 | 250 | 20 | 15 | 1528 |
| 2020-120500 | M12 | | 45 | 1500 | 500 | 20 | 15 | 1755 |
| 2020-121000 | M12 | | 45 | 1500 | 1000 | 20 | 15 | 2210 |
| 2020-160125 | M16 | 18-20-22-24 | 90 | 4000 | 125 | 33 | 21 | 3495 |
| 2020-160250 | M16 | | 90 | 4000 | 250 | 33 | 21 | 3810 |
| 2020-160500 | M16 | | 90 | 4000 | 500 | 33 | 21 | 4480 |
| 2020-161000 | M16 | | 90 | 4000 | 1000 | 33 | 21 | 5820 |



2020

- konstruiert für zylindrische und ovale Werkstücke
- Gehärtet
- Schwarz beschichtet

2020

- It is designed for clamping of cylinder and oval workpieces.
- Hardened
- Black coating

Verstelleinheit

Setting Unit

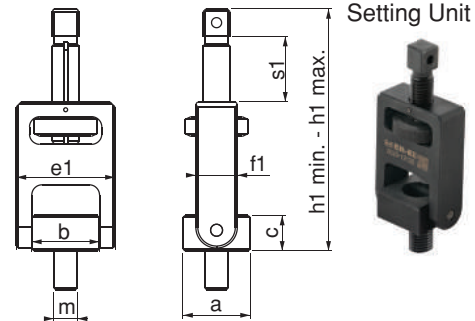
| Referenz-Nr. Order No. | | a | b | c | e1 | f1 | h1 min | h1 max | m | s1 | Spannkraft clamping force kgf | |
|---------------------------|-------------|----|----|----|----|----|-----------|-----------|-----|----|-------------------------------------|------|
| 2020-12125 | 14-16-18 | 36 | 36 | 18 | 49 | 21 | 96 | 125 | M12 | 35 | 1500 | 580 |
| 2020-16162 | 18-20-22-24 | 37 | 44 | 25 | 64 | 29 | 117 | 162 | M16 | 45 | 4000 | 1275 |

2020

- Gehärtet
- Schwarz beschichtet

2020

- Hardened
- Black coating



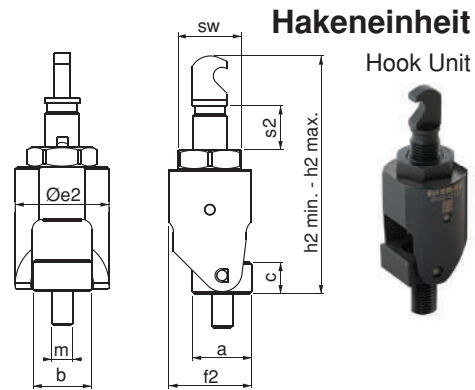
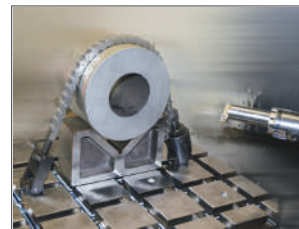
| Referenz-Nr. Order No. | | a | b | c | e2 | f2 | h2 min | h2 max | m | s2 | sw | Tork Torque Nm | Spannkraft clamping force kgf | |
|---------------------------|-------------|----|----|----|----|----|-----------|-----------|-----|----|----|----------------------|-------------------------------------|------|
| 2020-12127 | 14-16-18 | 36 | 36 | 18 | 54 | 49 | 111 | 127 | M12 | 16 | 36 | 45 | 1500 | 945 |
| 2020-16170 | 18-20-22-24 | 37 | 44 | 25 | 70 | 62 | 140 | 170 | M16 | 30 | 46 | 90 | 4000 | 1890 |

2020

- Gehärtet
- Schwarz beschichtet

2020

- Hardened
- Black coating



Hakeneinheit

Hook Unit

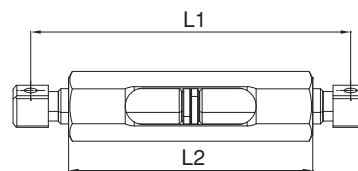
| Referenz-Nr. Order No. | L1 | L2 | |
|---------------------------|---------|-----|-----|
| 2020-127 | 127-173 | 97 | 350 |
| 2020-164 | 164-225 | 126 | 800 |

2020

- Zur Vorbeugung Kettenknick
- Gehärtet
- Schwarz beschichtet

2020

- Used to prevent chain buckling.
- Hardened
- Black coating



Kettenbuchse

Chain Socket

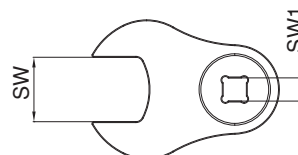
| Referenz-Nr. Order No. | SW | SW1 | |
|---------------------------|----|-----|-----|
| 2020-36 | 36 | 1/2 | 320 |
| 2020-46 | 46 | 1/2 | 520 |

2020

- Sertleştirilmiş
- Siyah kaplama

2020

- Hardened
- Black coating



Schraubenschlüssel

Torque Wrench Socket

Seitenspanner

Side Clamps



| Referenz-Nr. Order No. | | c | L | b | n | k | k1 | k2 | L1 | d | d1 | d2 | sw | Spannkraft clamping force kgf | Drehmoment Allowable Screw Torque (N-m) | (g) |
|---------------------------|----|---|----|----|----|----|----|----|----|-----|-----|-----|----|-------------------------------------|---|---------|
| 2030-14 | 14 | 5 | 90 | 23 | 47 | 47 | 26 | 26 | 65 | M12 | M12 | M12 | 10 | 2000 | 35 | 3490 |
| 2030-16 | 16 | | | | | | | | | | | | | | | 3670 |
| 2030-18 | 18 | | | | | | | | | | | | | | | 5000 |
| 2030-20 | 20 | | | | | | | | | | | | | | | 5355 |
| 2030-22 | 22 | | | | | | | | | | | | | | | 5720 |
| 2030-24 | 24 | | | | | | | | | | | | | | | 6190 |
| 2030-28 | 28 | | | | | | | | | | | | | | | 6650 |

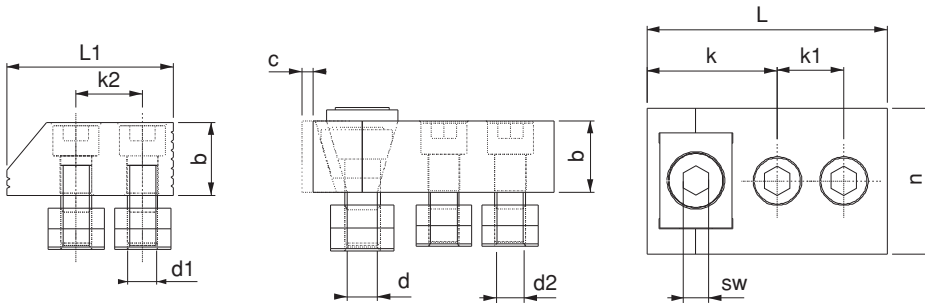


2030

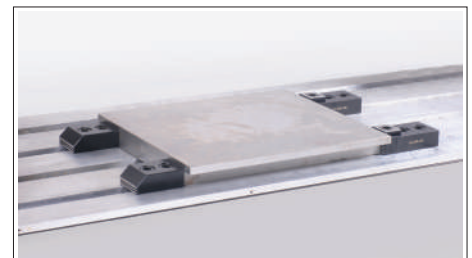
- Wenn das Produkt das Werkstück in spannt, führt dies nicht zu einer Veränderung der ursprünglichen Form des Werkstücks.
- Gehärtet
- Schwarz beschichtet
- Set in Plastikbox

2030

- When the product clamps the work piece in the direction of rest, it does not cause alteration in the genuine structure of the piece.
- Hardened
- Black coating
- Set is in the plastic box



| Set-Inhalt / The set consists of | | | | | | |
|----------------------------------|---|---|----|----|---|---|
| Teil Part | | | | | | |
| Menge Quantity | 2 | 2 | 10 | 10 | 1 | 1 |



Abgeschrägter Seitenspannbacke

Graded side Wrench Body

| Referenz-Nr. Order No. | |
|---------------------------|----|
| 2035-14 | 14 |
| 2035-16 | 16 |
| 2035-18 | 18 |
| 2035-20 | 20 |
| 2035-22 | 22 |
| 2035-24 | 24 |
| 2035-28 | 28 |



Anschlag für abgeschrägter Seitenspannbacke

Graded side Wrench Pluggable

| Referenz-Nr. Order No. | |
|---------------------------|----|
| 2040-14 | 14 |
| 2040-16 | 16 |
| 2040-18 | 18 |
| 2040-20 | 20 |
| 2040-22 | 22 |
| 2040-24 | 24 |
| 2040-28 | 28 |

Die Winkelauage äche ist für dünne Werkstücke und die gerade Fläche für dicke Werkstücke.
 Note: Fixed rest can be used as two different ways: Graded side is used for thin pieces and the Straight side is used with thick pieces.



| Referenz-Nr. Order No. | | c | L | L1 | L2 | L3 | b | b1 ±0.01 | n | k | k1 | k2 | d | d1 | d2 | sw | Spannkraft clamping force Kgf | Drehmoment Allowable Screw Torque (N-m) | |
|---------------------------|----|---|-----|----|----|----|----|-------------|----|----|----|----|-----|-----|-----|----|-------------------------------------|---|-------|
| 2050-14 | 14 | 5 | 110 | 90 | 85 | 65 | 41 | 18 | 47 | 47 | 26 | 26 | M12 | M12 | M12 | 6 | 1000 | 15 | 5920 |
| 2050-16 | 16 | | | | | | | | | | | | | | | | | | 6210 |
| 2050-18 | 18 | | | | | | | | | | | | | | | | | | 8090 |
| 2050-20 | 20 | | | | | | | | | | | | | | | | | | 8440 |
| 2050-22 | 22 | | | | | | | | | | | | | | | | | | 8825 |
| 2050-24 | 24 | | | | | | | | | | | | | | | | | | 10080 |
| 2050-28 | 28 | | | | | | | | | | | | | | | | | | 10750 |

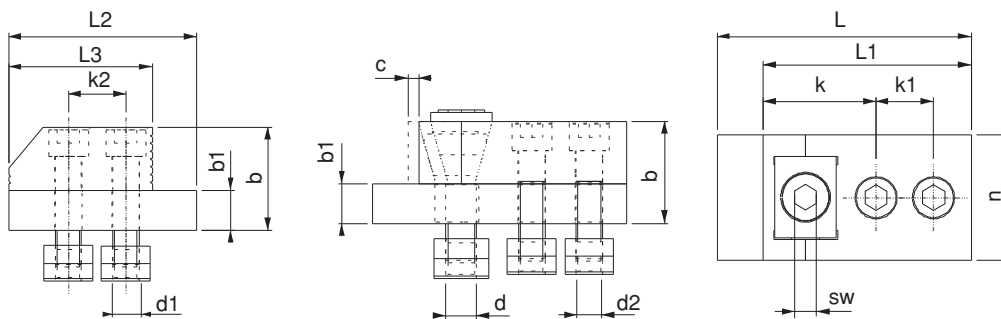


2050

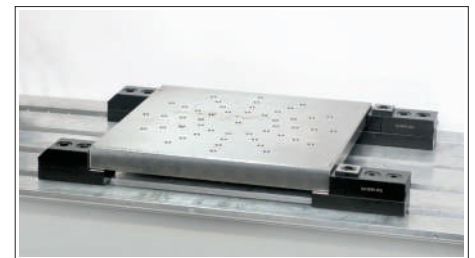
- Wenn das Produkt das Werkstück in spannt, führt dies nicht zu einer Veränderung der ursprünglichen Form des Werkstücks. Aufgrund der Parallelität kann der Bohrprozess auf das bearbeitete Teil angewendet werden.
- Gehärtet
- Schwarz beschichtet
- Set in Plastikbox

2050

- When the product clamps the work piece in the direction of rest, it does not cause alteration in the genuine structure of the piece. Because of being with parallel, hole process can be applied on the machined piece.
- Hardened
- Black coating
- Set is in the plastic box



| Teil Part | | | | | | |
|-------------------|---|---|----|----|---|---|
| Menge Quantity | 2 | 2 | 10 | 10 | 2 | 1 |



Abgeschrägter Seitenspannbacke (Parallel)

Graded side Wrench (Parallel) Body

| Referenz-Nr. Order No. | |
|---------------------------|----|
| 2055-14 | 14 |
| 2055-16 | 16 |
| 2055-18 | 18 |
| 2055-20 | 20 |
| 2055-22 | 22 |
| 2055-24 | 24 |
| 2055-28 | 28 |



Anschlag für Seitenspannbacke (Parallel)

Graded side Wrench (Parallel) Pluggable

| Referenz-Nr. Order No. | |
|---------------------------|----|
| 2060-14 | 14 |
| 2060-16 | 16 |
| 2060-18 | 18 |
| 2060-20 | 20 |
| 2060-22 | 22 |
| 2060-24 | 24 |
| 2060-28 | 28 |

Die Winkelauage äche ist für dünne Werkstücke und die gerade Fläche für dicke Werkstücke.

Note: Fixed rest can be used as two different ways: Graded side is used for thin pieces and the Straight side is used with thick pieces.



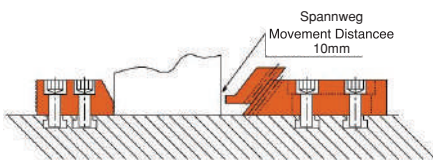
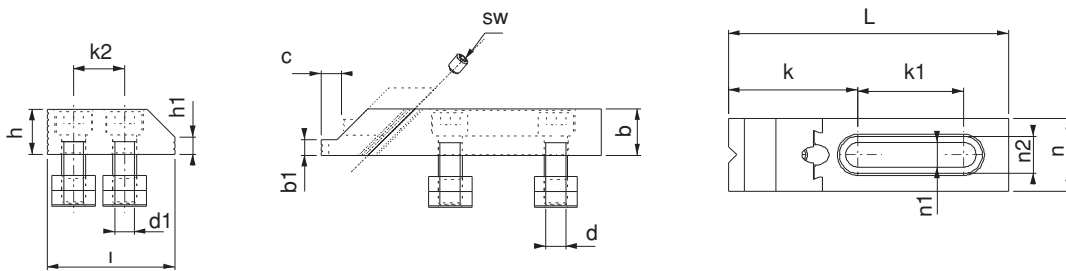
| Referenz-Nr. Order No. | | c | L | b | b1 | n | n1 | n2 | k | k1 | k2 | sw | i | h | h1 | d | d1 | Spannkraft clamping force Kgf | Drehmoment Allowable Screw Torque (N-m) | |
|---------------------------|----|----|-----|----|----|----|------|------|----|----|----|----|----|----|----|-----|-----|-------------------------------------|---|------|
| 2070-14 | 14 | 10 | 142 | 24 | 8 | 37 | 12.5 | 18.5 | 65 | 54 | 26 | 6 | 65 | 23 | 10 | M12 | M12 | 850 | 15 | 3575 |
| 2070-16 | 16 | | | | | | | | | | | | | | | | | | | 3710 |
| 2070-18 | 18 | 14 | 145 | 28 | 10 | 48 | 12.5 | 18.5 | 74 | 56 | 26 | 8 | 65 | 28 | 11 | M12 | M12 | 1000 | 35 | 5215 |
| 2070-20 | 20 | | | | | | | | | | | | | | | | | | | 5400 |
| 2070-22 | 22 | | | | | | | | | | | | | | | | | | | 5610 |

2070

- Durch die Gleitstruktur der beweglichen Backe spannt sie das Werkstück in Richtung Auflage und Platte. Die breite Bewegung der Backe bietet Komfort beim Spannen und Entspannen des Werkstücks.
- geeignet für T-Nut DIN 650
- Gehärtete Backen
- Schwarz beschichtet
- Set in Plastikbox

2070

- Because of the sliding structure of the moving jaw it clamps the work piece in the direction of resting and plate. Wide movement of the jaw provides convenience in coupling and dismantling of the workpiece.
- It is in compliance with DIN 650 T-Slot
- Hardness of jaw: Hardened
- Black coating
- Set is in the plastic box



Die Winkelauflagefläche ist für dünne Werkstücke und die gerade Fläche für dicke Werkstücke.

Note: Fixed rest can be used as two different ways: Graded side is used for thin pieces and the Straight side is used with thick pieces.

| Set-Inhalt / The set consists of | | | | | | |
|----------------------------------|---|---|---|---|---|---|
| Teil Part | | | | | | |
| Menge Quantity | 2 | 2 | 8 | 8 | 2 | 1 |



Gleitender Seitenspannbacke

Sliding Side Wrench Body

| Referenz-Nr. Order No. | |
|---------------------------|----|
| 2075-14 | 14 |
| 2075-16 | 16 |
| 2075-18 | 18 |
| 2075-20 | 20 |
| 2075-22 | 22 |
| 2075-24 | 24 |
| 2075-28 | 28 |



Anschlag für gleitender Seitenspannbacke

Sliding Side Wrench Pluggable

| Referenz-Nr. Order No. | |
|---------------------------|----|
| 2040-14 | 14 |
| 2040-16 | 16 |
| 2040-18 | 18 |
| 2040-20 | 20 |
| 2040-22 | 22 |
| 2040-24 | 24 |
| 2040-28 | 28 |



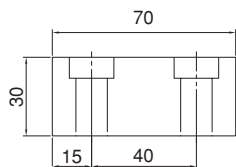
| Referenz-Nr. Order No. | | Spannkraft Clamping Force | |
|---------------------------|----|------------------------------|------|
| 2070-MBS701214 | 14 | 2500 | 3.14 |
| 2070-MBS701216 | 16 | 2500 | 3.14 |
| 2070-MBS701218 | 18 | 2500 | 3.14 |
| 2070-MBS701220 | 20 | 2500 | 3.14 |

2070

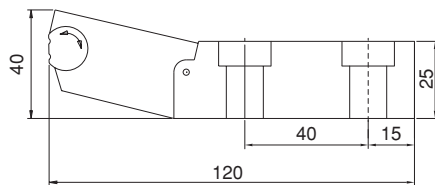
- Durch die bewegliche Konstruktion passt es sich auch den unebenen Flächen an und sorgt für sicheres Einspannen.

2070

- With its articulated design, it makes safe bonding even on uneven surfaces by taking the existing surface shape.



Breite / Width 40 mm.



Breite/ Width 40 mm.



Seitenspannbacken-Anschlag

Side Press Body

| Referenz-Nr. Order No. | | |
|---------------------------|----|------|
| 2070-MS701114 | 14 | 0.87 |
| 2070-MS701116 | 16 | 0.87 |
| 2070-MS701118 | 18 | 0.87 |
| 2070-MS701120 | 20 | 0.87 |

2070

- Durch die bewegliche Konstruktion passt es sich auch den unebenen Flächen an und sorgt für sicheres Einspannen.

2070

- With its articulated design, it makes safe bonding even on uneven surfaces by taking the existing surface shape.





Anschlag für Seitenspannbacke

Side Press Stopper

| Referenz-Nr. Order No. | | |
|---------------------------|----|------|
| 2070-MD702114 | 14 | 0.65 |
| 2070-MD702116 | 16 | 0.65 |
| 2070-MD702118 | 18 | 0.65 |
| 2070-MD702120 | 20 | 0.65 |

2070



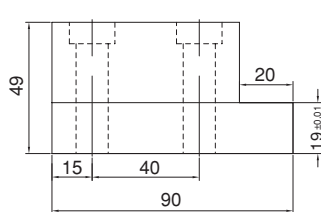
| Referenz-Nr. Order No. |  | Spannkraft Clamping Force |  |
|---------------------------|---|------------------------------|---|
| 2070-MBS801114 | 14 | 2500 | 6.15 |
| 2070-MBS801116 | 16 | 2500 | 6.15 |
| 2070-MBS801118 | 18 | 2500 | 6.15 |
| 2070-MBS801120 | 20 | 2500 | 6.15 |

2070

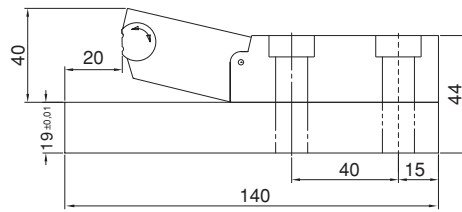
- Mafsallı tasarımıyla düz olmayan yüzeylerde dahi mevcut yüzey şeklini alarak emniyetli bağlama yapar.

2070

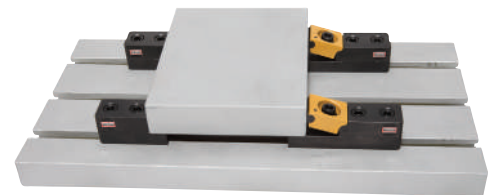
- With its articulated design, it makes safe bonding even on uneven surfaces by taking the existing surface shape.





Breite / Width 40 mm.



Breite / Width 40 mm.



Seitenspannbacken-Anschlag

| Referenz-Nr. Order No. |  |  |
|---------------------------|---|---|
| 2070-MS801214 | 14 | 1.86 |
| 2070-MS801216 | 16 | 1.86 |
| 2070-MS801218 | 18 | 1.86 |
| 2070-MS801220 | 20 | 1.86 |

2070



- Mafsallı tasarımıyla düz olmayan yüzeylerde dahi mevcut yüzey şeklini alarak emniyetli bağlama yapar.

2070

- With its articulated design, it makes safe bonding even on uneven surfaces by taking the existing surface shape.




Anschlag für Seitenspannbacke

| Referenz-Nr. Order No. |  |  |
|---------------------------|---|---|
| 2070-MD802214 | 14 | 1.18 |
| 2070-MD802216 | 16 | 1.18 |
| 2070-MD802218 | 18 | 1.18 |
| 2070-MD802220 | 20 | 1.18 |

2070



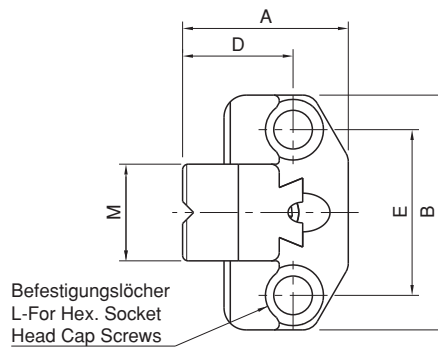
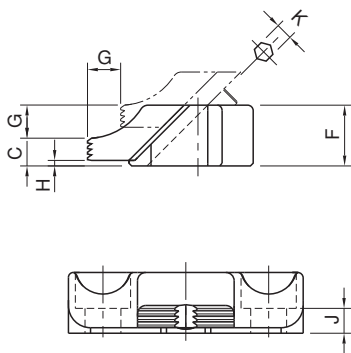
| Referenz-Nr. Order No. | A | B | C | D | E | F | G | H | J | K | L | M | Spannkraft Clamping Force Kgf | Drehmoment Allowable Screw Torque (N-m) |  |
|---------------------------|------|-----|-----|----|----|----|----|-----|----|---|-----|----|--|---|---|
| 2072-08016 | 39.5 | 65 | 7.5 | 25 | 45 | 16 | 7 | 1.5 | 7 | 4 | M8 | 25 | 400 | 8 | 160 |
| 2072-12022 | 60 | 85 | 10 | 40 | 60 | 22 | 12 | 2 | 9 | 6 | M12 | 35 | 900 | 26 | 450 |
| 2072-16030 | 77 | 100 | 14 | 50 | 70 | 30 | 14 | 2 | 13 | 8 | M16 | 40 | 1700 | 60 | 900 |

2072


- Schwarz beschichtet

2072

- Black Coating



Seitenspannbacke

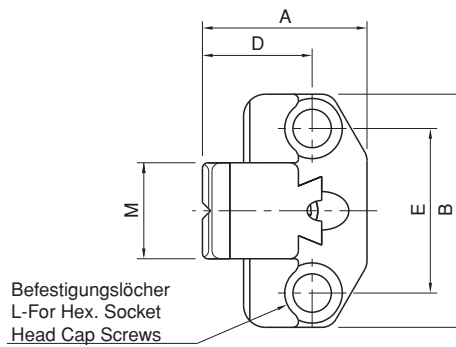
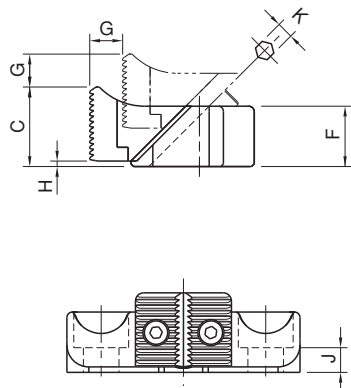
| Referenz-Nr. Order No. | A | B | C | D | E | F | G | H | J | K | L | M | Spannkraft Clamping Force Kgf | Drehmoment Allowable Screw Torque (N-m) |  |
|---------------------------|------|-----|------|----|----|----|----|-----|----|---|-----|----|--|---|---|
| 2073-08016 | 39.5 | 65 | 19.5 | 25 | 45 | 16 | 7 | 1.5 | 7 | 4 | M8 | 25 | 400 | 8 | 180 |
| 2073-12022 | 60 | 85 | 29 | 40 | 60 | 22 | 12 | 2 | 9 | 6 | M12 | 35 | 900 | 26 | 500 |
| 2073-16030 | 77 | 100 | 38 | 50 | 70 | 30 | 14 | 2 | 13 | 8 | M16 | 40 | 1700 | 60 | 1010 |

2073


- Gehärtete Backen
- Schwarz beschichtet

2073

- Hardness of jaw: Hardened
- Black Coating



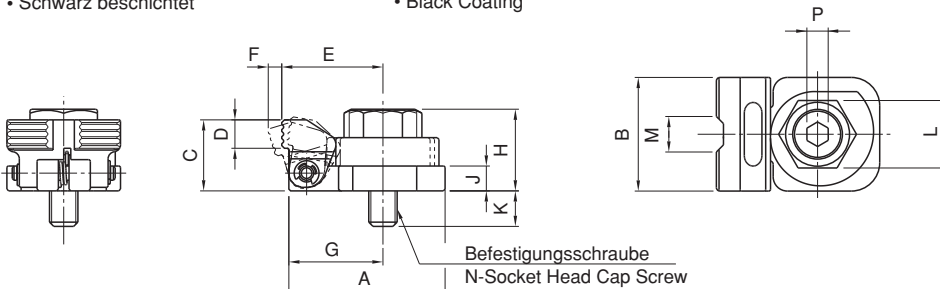
| Referenz-Nr. / Order No. | A | B | C | D | E | F | G | H | J | K | L | M | N |
|--------------------------|----|----|----|----|------|-----|------|----|----|----|----|----|----------|
| 2077-08001 | 44 | 32 | 20 | 8 | 28.5 | 4 | 26.5 | 23 | 7 | 15 | 19 | 10 | M8x1.25 |
| 2077-10001 | 54 | 40 | 25 | 10 | 35 | 5 | 33 | 29 | 9 | 16 | 24 | 12 | M10x1.5 |
| 2077-12001 | 62 | 46 | 30 | 12 | 39.5 | 5.5 | 37.5 | 35 | 11 | 17 | 27 | 14 | M12x1.75 |

| Referenz-Nr. / Order No. | P | Spannkraft Clamping Force Kgf | Drehmoment Allowable Screw Torque (N-m) |  (g) |
|--------------------------|----|-------------------------------------|---|--|
| 2077-08001 | 6 | 350 | 45 | 160 |
| 2077-10001 | 8 | 550 | 55 | 310 |
| 2077-12001 | 10 | 700 | 70 | 490 |



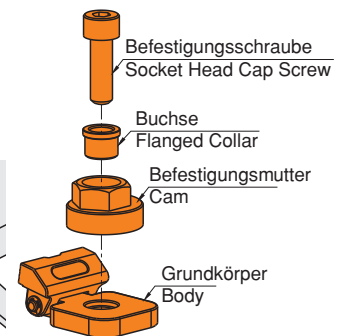
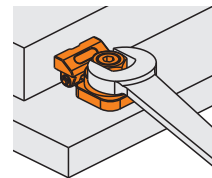
2077
• Schwarz beschichtet

2077
• Black Coating





Verwendung / How To Use

- Zuerst die Seitenspannbacke platzieren und dann mit einem Schraubenschlüssel spannen.
- Secure the body and the flanged collar with a socket head cap screw, and then turn the the cam with a wrench to clamp a workpiece.



Seitenspannbacke

Side Clamps

| Referenz-Nr. / Order No. |  | A | H | L | S | Spannkraft Clamping Force Kgf |  (g) |
|--------------------------|---|----|----|-----|---|-------------------------------------|--|
| 2080-014 | 14 | 61 | 57 | 108 | 5 | 1500 | 1850 |
| 2080-016 | 16 | 61 | 57 | 108 | 5 | 1500 | 1850 |
| 2080-018 | 18 | 61 | 57 | 108 | 5 | 1500 | 1850 |
| 2080-020 | 20 | 61 | 57 | 108 | 5 | 1500 | 1850 |
| 2080-022 | 22 | 61 | 57 | 108 | 5 | 1500 | 1850 |
| 2080-024 | 24 | 61 | 57 | 108 | 5 | 1500 | 1850 |
| 2080-028 | 28 | 61 | 57 | 108 | 5 | 1500 | 1850 |

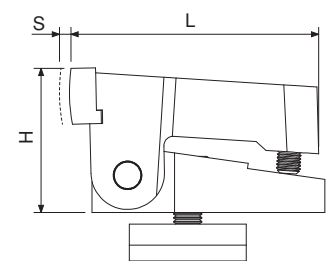
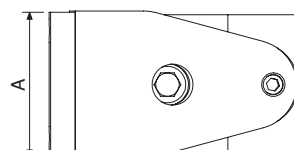
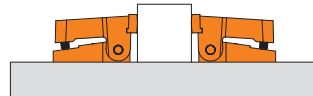
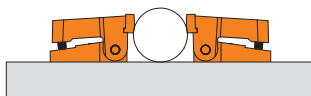


2080
• Spannen horizontal und vertikal möglich

2080
• Vertical down thrust and horizontal clamping force available simultaneously with the operation of leverage screw

Körper
• Statische Lackierung
Backe
• Gehärtet

Body
• Statical Painting
Jaw
• Hardened



| Referenz-Nr. Order No. | | c | b | k1 | k2 | k3 | k4 | L | h | h1 | d | d1 | Spannkraft clamping force kgf | (g) |
|---------------------------|----|-----|----|----|----|----|----|----|----|----|-----|-----|-------------------------------------|---------|
| 2090-14 | 14 | 3.5 | 30 | 95 | 99 | 26 | 26 | 65 | 28 | 10 | M12 | M12 | 3500 | 7925 |
| 2090-16 | 16 | | | | | | | | | | | | | 8490 |
| 2090-18 | 18 | | | | | | | | | | | | | 4610 |
| 2090-20 | 20 | | | | | | | | | | | | | 8850 |
| 2090-22 | 22 | | | | | | | | | | | | | 9030 |
| 2090-24 | 24 | | | | | | | | | | | | | 9490 |
| 2090-28 | 28 | | | | | | | | | | | | | 9800 |



2090

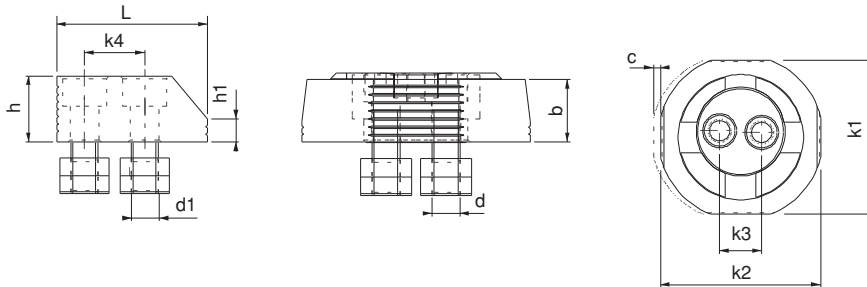
- Ürünün eksantrik çalışma sistemi saat yönünde sıkıldığında iş parçasını dayama ve pleyt yönüne özel dizayn anahtarları ile yüksek kuvvette sıkar.

1. Spannweite 3,5 mm
 2. Werkstückdistanz bis 1,5-2 mm
 3. Befestigung mit 10 mm Allen und Inbuschraube
 4. Befestigung des Werkstücks durch Drehen im Uhrzeigersinn
- geeignet für T-Nut DIN 650
 - Mutter: gehartet
 - Schwarz beschichtet
 - Set in Plastikbox

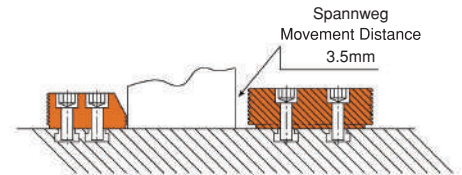
2090

- When the eccentric working system of the product is tightened clockwise, it clamps the work piece with high force in the direction of resting and plate with it's special designed wrench.

- 1-Eccentric movement of Armed Side Clamp 3.5 mm.
 - 2-It brings the product 1.5 - 2mm close to the work piece
 - 3-Imbus bolts are fixed with 10mm allen.
 - 4-Fixing of the work piece is implemented by turning the product clockwise with the wrench.
- It is in compliance with DIN 650 T-Slot
 - Hardness of nut: Hardened
 - Black coating
 - Set is in the plastic box



| Set-Inhalt / The set consists of | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|
| Teil Part | | | | | | | |
| Menge Quantity | 2 | 2 | 1 | 8 | 8 | 1 | 1 |



Die Winkelauftragfläche ist für dünne Werkstücke und die gerade Fläche für dicke Werkstücke.
Note: Fixed rest can be used as two different ways: Graded side is used for thin pieces and the Straight side is used with thick pieces.

Hebel-Seitenspannbacke

Armed Side Press Body



| Referenz-Nr. Order No. | |
|---------------------------|----|
| 2090-114 | 14 |
| 2090-116 | 16 |
| 2090-118 | 18 |
| 2090-120 | 20 |
| 2090-122 | 22 |
| 2090-124 | 24 |
| 2090-128 | 28 |

Anschlag für Hebel-Seitenspannbacke

Armed Side Press Pluggable

| Referenz-Nr. Order No. | |
|---------------------------|----|
| 2040-14 | 14 |
| 2040-16 | 16 |
| 2040-18 | 18 |
| 2040-20 | 20 |
| 2040-22 | 22 |
| 2040-24 | 24 |
| 2040-28 | 28 |

Die Winkelauftragfläche ist für dünne Werkstücke und die gerade Fläche für dicke Werkstücke.
Note: Fixed rest can be used as two different ways: Graded side is used for thin pieces and the Straight side is used with thick pieces.



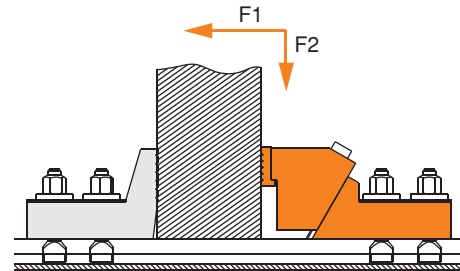
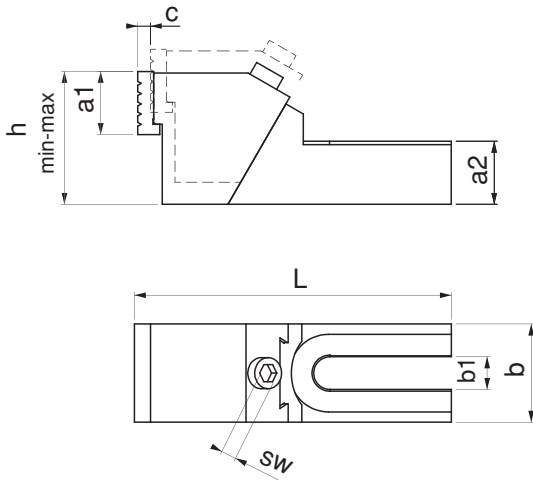
| Referenz-Nr Order No. | | a1 | a2 | b | b1 | c | h min-max | L | SW | F1 Spannkraft clamping force kgf | F2 Spannkraft clamping force kgf | (kg) |
|--------------------------|-------------|----|----|----|----|----|--------------|-----|----|---|---|----------|
| 2095-571 | 14-16-18 | 37 | 37 | 57 | 19 | 8 | 78-98 | 185 | 10 | 2250 | 350 | 3.68 |
| 2095-761 | 20-22-24-28 | 37 | 45 | 76 | 26 | 11 | 98-118 | 240 | 14 | 3000 | 450 | 7.66 |

2095

- Er spannt die Werkstücke in Spannauflagen- und Plattenrichtung, er ist speziell für hohe Werkstücke ausgelegt.
- Gehärtete Backen
- Schwarz beschichtet

2095

- It clamps the workpieces in clamp rest direction and plate direction, it is designed especially for high workpieces.
- Hardness of jaw: Hardened
- Black coating



Stabilspannbacken

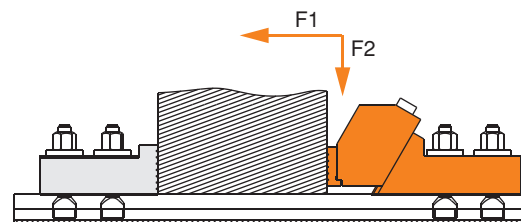
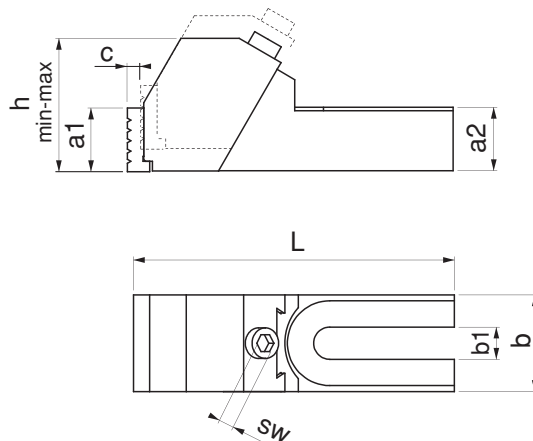
| Referenz-Nr Order No. | | a1 | a2 | b | b1 | c | h min-max | L | SW | F1 Spannkraft clamping force kgf | F2 Spannkraft clamping force kgf | (kg) |
|--------------------------|-------------|----|----|----|----|----|--------------|-----|----|---|---|----------|
| 2095-572 | 14-16-18 | 37 | 37 | 57 | 19 | 8 | 78-98 | 185 | 10 | 2250 | 350 | 3.6 |
| 2095-762 | 20-22-24-28 | 37 | 45 | 76 | 26 | 11 | 98-118 | 240 | 14 | 3000 | 450 | 6.7 |

2095

- Er spannt die Werkstücke in Spannauflagen- und Plattenrichtung, er ist zum Spannen großer Platten ausgelegt.
- Gehärtete Backen
- Schwarz beschichtet

2095

- It clamps the workpieces in clamp rest direction and plate direction, it is designed for clamping big plates.
- Hardness of jaw: Hardened
- Black coated



| Referenz-Nr. Order No. | | a2 | b | b1 | h | L | (kg) |
|---------------------------|-------------|----|----|----|-----|-----|----------|
| 2098-571 | 14-16-18 | 37 | 57 | 19 | 85 | 124 | 2.025 |
| 2098-761 | 20-22-24-28 | 45 | 76 | 26 | 105 | 154 | 4.185 |

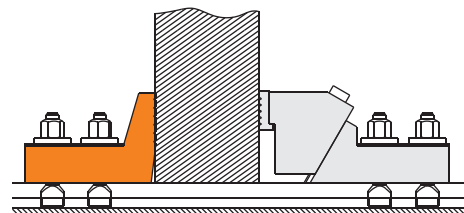
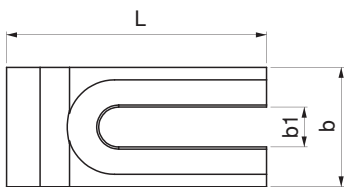
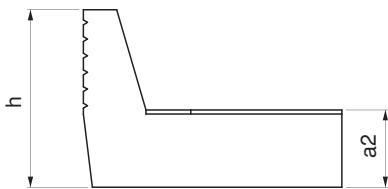


2098

- passend zu 2095-571 und 2095-761
- Schwarz beschichtet

2098

- It is designed as clamp rest for clamps 2095-571 and 761.
- Black coating



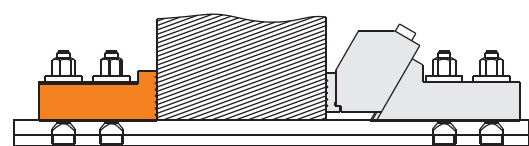
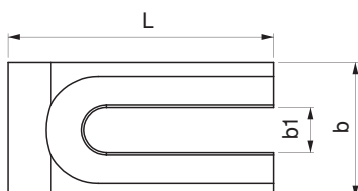
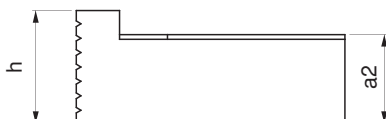
| Referenz-Nr. Order No. | | a2 | b | b1 | h | L | (kg) |
|---------------------------|-------------|----|----|----|----|-----|----------|
| 2098-572 | 14-16-18 | 37 | 57 | 19 | 47 | 112 | 2.800 |
| 2098-762 | 20-22-24-28 | 45 | 76 | 26 | 49 | 140 | 4.185 |



2098

- passend zu 2095-572 und 2095-762
- Schwarz beschichtet

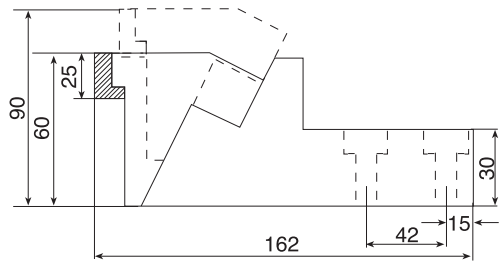
2098

- It is designed as clamp rest for clamps 2095-572 and 762.
- Black coating





| Referenz-Nr. Order No. |  | Spannkraft Clamping Force |  |
|---------------------------|---|------------------------------|---|
| 2105-MYB404114 | 14 | 3000 | 2.80 |
| 2105-MYB404116 | 16 | 3000 | 2.80 |
| 2105-MYB404118 | 18 | 3000 | 2.80 |
| 2105-MYB404120 | 20 | 3000 | 2.80 |
| 2105-MYB404122 | 22 | 3000 | 2.80 |
| 2105-MYB404124 | 24 | 3000 | 2.80 |

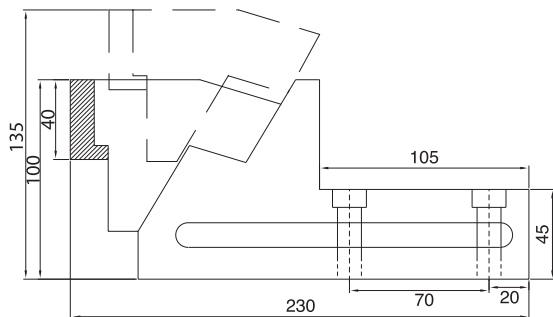
2105





Breite / Width 54 mm.

| Referenz-Nr. Order No. |  | Spannkraft Clamping Force |  |
|---------------------------|---|------------------------------|---|
| 2105-MYB901120 | 20 | 3000 | 6.85 |
| 2105-MYB901122 | 22 | 3000 | 6.85 |
| 2105-MYB901124 | 24 | 3000 | 6.85 |
| 2105-MYB901128 | 28 | 3000 | 6.85 |

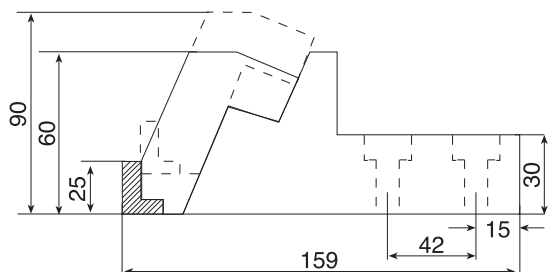
2105



Breite / Width 68 mm.

| Referenz-Nr. Order No. |  | Spannkraft Clamping Force |  |
|---------------------------|---|------------------------------|---|
| 2105-MYB303114 | 14 | 3000 | 2.80 |
| 2105-MYB303116 | 16 | 3000 | 2.80 |
| 2105-MYB303118 | 18 | 3000 | 2.80 |
| 2105-MYB303120 | 20 | 3000 | 2.80 |
| 2105-MYB303122 | 22 | 3000 | 2.80 |
| 2105-MYB303124 | 24 | 3000 | 2.80 |

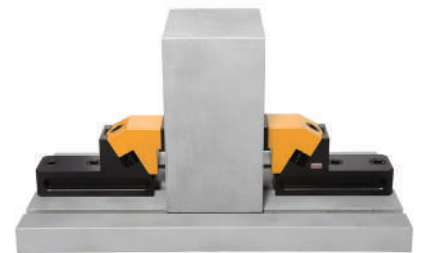
2105



Breite / Width 54 mm.



Stabilspannbacken

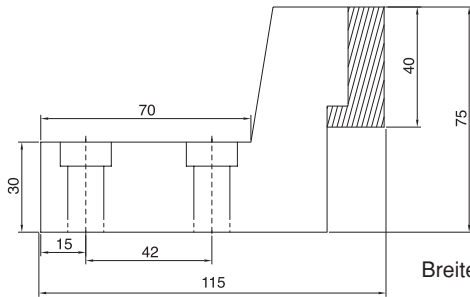


Stabilspannbacken

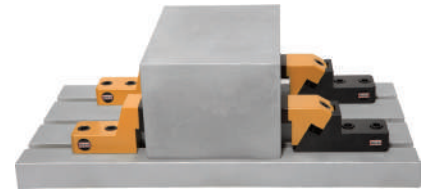


| Referenz-Nr. Order No. | a | (kg) |
|---------------------------|----|------|
| 2105-MD404214 | 14 | 1.86 |
| 2105-MD404216 | 16 | 1.86 |
| 2105-MD404218 | 18 | 1.86 |
| 2105-MD404220 | 20 | 1.86 |
| 2105-MD404222 | 22 | 1.86 |
| 2105-MD404224 | 24 | 1.86 |

2105

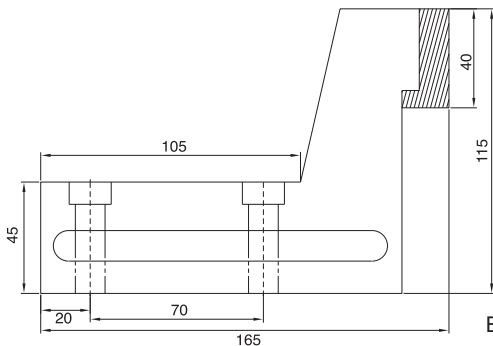


Breite / Width 54 mm.

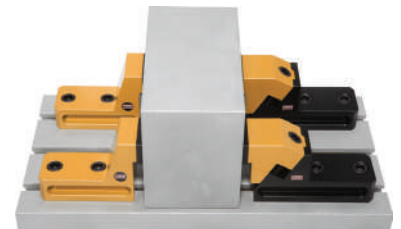


| Referenz-Nr. Order No. | a | (kg) |
|---------------------------|----|------|
| 2105-MD902120 | 20 | 4.50 |
| 2105-MD902122 | 22 | 4.50 |
| 2105-MD902124 | 24 | 4.50 |
| 2105-MD902128 | 28 | 4.50 |

2105

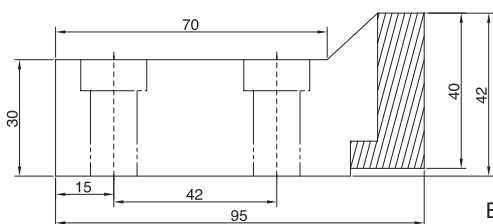


Breite / Width 68 mm.



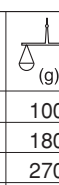
| Referenz-Nr. Order No. | a | (kg) |
|---------------------------|----|------|
| 2105-MD303214 | 14 | 1.17 |
| 2105-MD303216 | 16 | 1.17 |
| 2105-MD303218 | 18 | 1.17 |
| 2105-MD303220 | 20 | 1.17 |
| 2105-MD303222 | 22 | 1.17 |
| 2105-MD303224 | 24 | 1.17 |

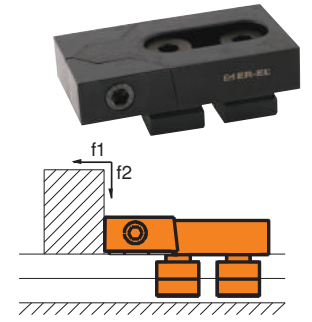
2105



Breite / Width 54 mm.

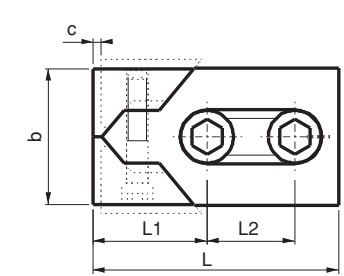
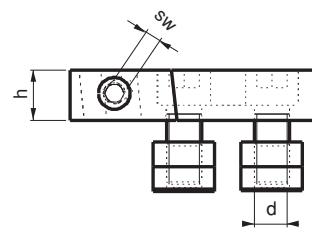


| Referenz-Nr. Order No. | a | c | h | b | L | L1 | L2 | sw | d | Spannkraft Clamping Force | |  |
|---------------------------|----|---|------|----|-----|----|----|----|-----|------------------------------|-----------|---|
| | | | | | | | | | | f1 Kgf | f2 Kgf | |
| 2110-12 | 12 | 3 | 20 | 40 | 80 | 39 | 26 | 6 | M10 | 1600 | 60 | 415 |
| 2110-14 | 14 | | | | | | | | | 2200 | 90 | 425 |
| 2110-16 | 16 | | | | | | | | | 3200 | 120 | 785 |
| 2110-18 | 18 | 4 | 25 | 50 | 100 | 46 | 34 | 8 | M14 | 3600 | 140 | 810 |
| 2110-20 | 20 | | | | | | | | | 3600 | 140 | 850 |
| 2110-22 | 22 | | | | | | | | | 3600 | 140 | 2275 |
| 2110-24 | 24 | 5 | 28.5 | 78 | 140 | 65 | 50 | 10 | M20 | 3600 | 140 | 2360 |
| 2110-28 | 28 | | | | | | | | | 4000 | 160 | 2500 |



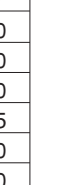
2110

- Das Produkt spannt das Werkstück in Spannauflagen- und Plattenrichtung. Durch die Struktur der Klemme wird eine kraftvolle Spannung erreicht.
- Gehärtet
- Schwarz beschichtet



2110

- Product clamps the work piece in the direction of rest and plate. It achieves powerful clamping because of the clamp's structure.
- Hardened
- Black coating

| Referenz-Nr. Order No. | a | a h6 | b -0.6 | c DIN 650 | d ±0.01 | h1 ±0.01 | h1 ±0.02 | h2 | h3 | ISO 4762 |  |
|---------------------------|----|---------|--------|--------------|---------|----------|----------|----|----|----------|---|
| | | | | | | | | | | | |
| 2120-1425 | 14 | 0-0.011 | 14 | 24 | 32 | 25 | - | 9 | 8 | M8x35 | 200 |
| 2120-1450 | 14 | 0-0.011 | 14 | 24 | 32 | - | 50 | 9 | 8 | M8x60 | 355 |
| 2120-1825 | 18 | 0-0.011 | 18 | 30 | 40 | 25 | - | 15 | 10 | M10x40 | 360 |
| 2120-1850 | 18 | 0-0.011 | 18 | 30 | 40 | - | 50 | 15 | 10 | M10x65 | 600 |
| 2120-2225 | 22 | 0-0.013 | 22 | 38 | 40 | 25 | - | 15 | 14 | M10x50 | 410 |
| 2120-2250 | 22 | 0-0.013 | 22 | 38 | 40 | - | 50 | 15 | 14 | M10x75 | 650 |

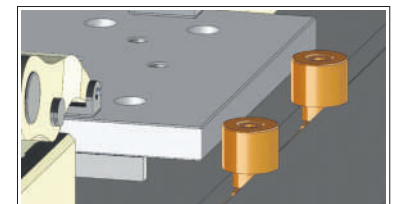
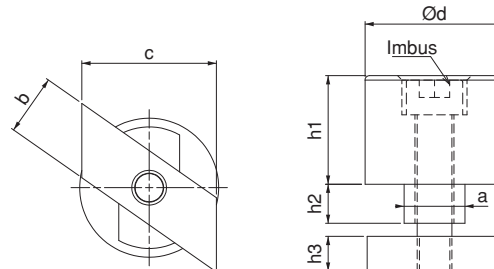
Anschlagstück

Cylinder Pluggable



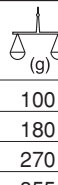
2120

- Gehärtet
- Schwarz beschichtet



2120

- Hardened
- Black coating

| Referenz-Nr. Order No. | a | n | e | c | d | b | h | k | L | sw |  |
|---------------------------|----|------|----|----|-----|------|---|----|----|----|---|
| | | | | | | | | | | | |
| 2130-12 | 12 | 11.7 | 18 | 18 | M8 | 9 | 3 | 7 | 36 | 6 | 100 |
| 2130-14 | 14 | 13.7 | 22 | 22 | M8 | 11 | 4 | 8 | 44 | 6 | 180 |
| 2130-16 | 16 | 15.7 | 25 | 25 | M12 | 12.5 | 5 | 9 | 50 | 10 | 270 |
| 2130-18 | 18 | 17.7 | 28 | 28 | M12 | 14 | 5 | 10 | 56 | 10 | 355 |
| 2130-20 | 20 | 19.7 | 32 | 32 | M16 | 16 | 5 | 12 | 64 | 14 | 570 |
| 2130-22 | 22 | 21.7 | 35 | 35 | M16 | 17.5 | 6 | 14 | 70 | 14 | 770 |
| 2130-24 | 24 | 23.7 | 40 | 40 | M20 | 20 | 6 | 16 | 80 | 17 | 1180 |
| 2130-28 | 28 | 27.7 | 44 | 44 | M20 | 22 | 6 | 18 | 88 | 17 | 1560 |

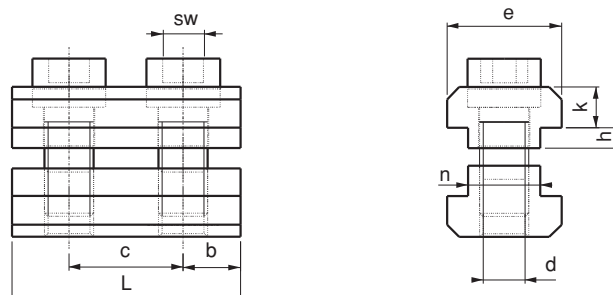
Nutenschlag

Clamp Rest



2130

- Verwendung für Referenzen in der Länge/Breite
- Gehärtet
- Schwarz beschichtet



2130

- Clamp Rest is used for reference taking, longitudinal and cross-wise.
- Hardened
- Black coating

| Referenz-Nr. Order No. | Verwendung ohne Anschlag In Use Without Slip Stopper | | Verwendung mit Anschlag In Use With Slip Stopper | | (kg) |
|---------------------------|---|---|---|---|----------|
| | Spannkraft Clamping Force Kgf | Drehmoment Allowable Screw Torque (N-m) | Spannkraft Clamping Force Kgf | Drehmoment Allowable Screw Torque (N-m) | |
| 2135-1260 | 2900 | 38 | 6900 | 90 | 2.4 |

inkl. Schraub M12 und 4 Beilagscheiben
4 washers for M12 bolts are included.

2135

Grundkörper

- Material: Stahlguss
- Schwarz beschichtet

Backe

- Gehärtet
- Schwarz beschichtet

Schraube

- Gehärtet: Induktion
- Schwarz beschichtet

2135

Body

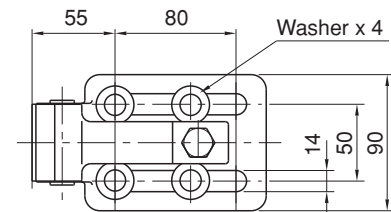
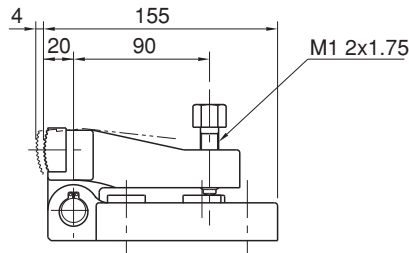
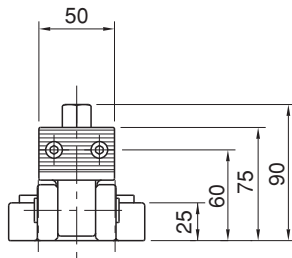
- Material: Cast Iron
- Black coating

Jaw

- Hardened
- Black coating

Bolt

- Hardness: Induktion
- Black coating



Seitenspannbacke

| Referenz-Nr. Order No. | Spannkraft Clamping Force Kgf | Drehmoment Allowable Screw Torque (N-m) | (kg) |
|---------------------------|-------------------------------------|---|----------|
| 2137-16060 | 5800 | 150 | 2.9 |

inkl. 2 Beilagscheiben für Schrauben M12 und M16
2 spherical washers for both M12 and M16 screws are included.

2137

Grundkörper

- Material: Stahlguss
- Schwarz beschichtet

Backe

- Gehärtet
- Schwarz beschichtet

Schraube

- Gehärtet: Induktion
- Schwarz beschichtet

2137

Body

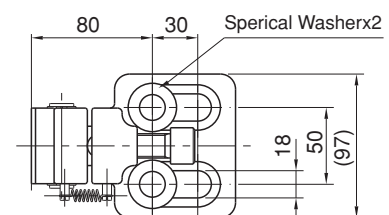
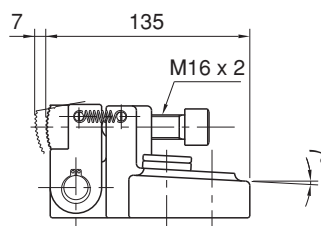
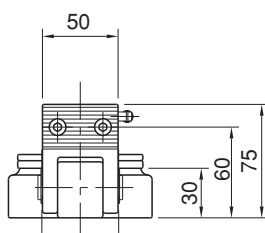
- Material: Cast Iron
- Black coating

Jaw

- Hardened
- Black coating


Bolt

- Hardness: Induktion
- Black coating



| Referenz-Nr. Order No. | W1 | W2 | H1 | H2 | M | P1 | H4 | L4 | W | L3 | H5 | d | L5 | P |
|---------------------------|----|----|----|----|--------|----|----|----|-----|----|----|-----|----|----|
| 2139-32150 | 45 | 15 | 27 | 18 | M4x0.7 | 30 | 18 | 13 | 75 | 20 | 8 | 6.6 | 3 | 60 |
| 2139-40200 | 60 | 20 | 33 | 22 | M5x0.8 | 40 | 22 | 17 | 100 | 26 | 10 | 8.6 | 4 | 80 |

| Referenz-Nr. Order No. | H | L | L2 | R | L1 | H3 | M1 |
|---------------------------|----|----|----|----|------|----|--------|
| 2139-32150 | 32 | 51 | 48 | 63 | 51.5 | 18 | M4x0.7 |
| 2139-40200 | 40 | 67 | 63 | 80 | 67 | 22 | M5x0.8 |

| Referenz-Nr. Order No. | A | Spannhub Clamping Stroke | Betriebslast Operating Load (N) | Spannkraft Clamping Force Kgf |  (g) |
|---------------------------|----|-----------------------------|------------------------------------|----------------------------------|--|
| 2139-32150 | 19 | 1.6 | 150 | 200 | 620 |
| 2139-40200 | 24 | 2.2 | 200 | 300 | 1360 |

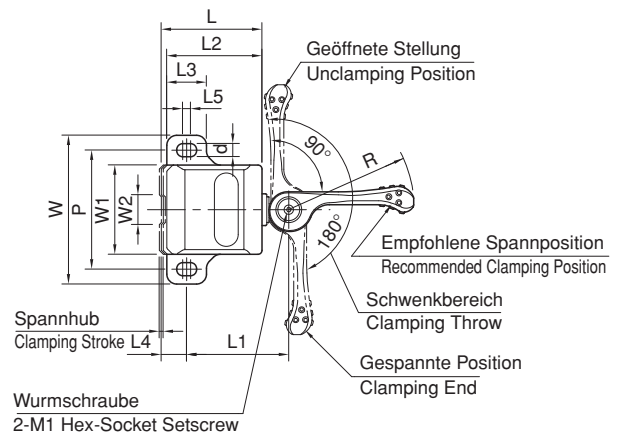
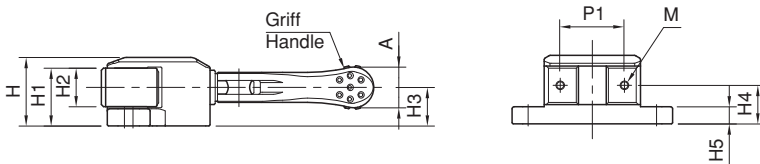


2139

• Schwarz beschichtet

2139

• Black coating



Eigenschaft

- Spannen mit Griff mit 1-Touch
- Perfektes Spannen bei Bearbeitung
- Perfekter Halt durch den Druck nach unten und nach vorne

Features

- The cam handle allows fast clamping in single operation.
- Precision-ground jaw is perfect for clamping the workpiece on its finished surface.
- In clamping, the jaw provides downward force to prevent part lift.



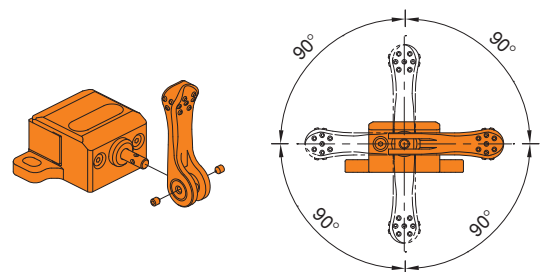
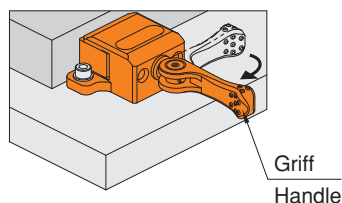
Wechsel der Griffposition

Griff mit 4 Optionen


Changing Handle Position

The handle shaft has 4 countersinks which are provided every 90° for 4 options of handle position

**Verwendung
How To Use**



| Referenz-Nr. Order No. | Spannhub Clamping Stroke | W1 | W2 | H3 | H4 | L2 | W | L | H2 | d | P | H5 | L1 |
|---------------------------|-----------------------------|----|----|----|----|----|----|------|----|-----|----|----|------|
| 2141-00010 | 1 | 38 | 8 | 6 | 3 | 15 | 45 | 33.5 | 10 | 5.2 | 36 | 5 | 30.5 |
| 2141-00015 | 2 | 60 | 12 | 9 | 5 | 22 | 70 | 50 | 15 | 8.2 | 55 | 7 | 46 |

| Referenz-Nr. Order No. | H | D | H1 | R | A | W3 | M1 | zulässiges Drehmoment Allowable Screw Torque (N m) | Spannkraft Clamping Force Kgf |  (g) |
|---------------------------|----|----|----|-----|----|----|--------|---|-------------------------------------|--|
| 2141-00010 | 30 | 13 | 20 | 63 | 12 | 6 | M4x0.7 | 10 | 400 | 85 |
| 2141-00015 | 46 | 19 | 30 | 100 | 18 | 10 | M5x0.8 | 27 | 600 | 290 |

2141

Grundkörper

- Schwarz beschichtet

Backe

- Gehärtet
- Schwarz beschichtet

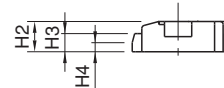
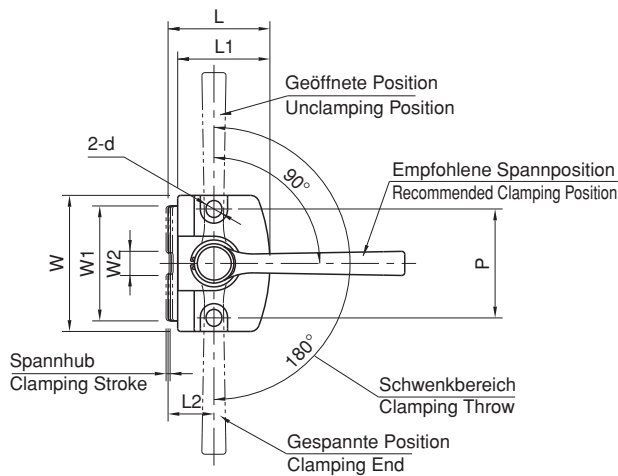
2141

Body

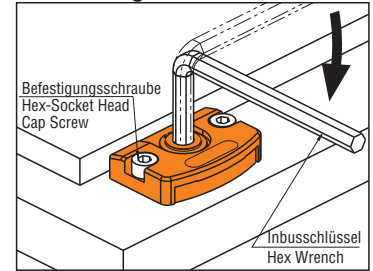
- Black coating

Jaw


- Hardened
- Black coating



Verwendung / How To Use



Seitenspannbacke

| Referenz-Nr. Order No. | S | W | W1 | H1 | L1 | P | D (h7) | H2 | M | L | H | T | Spannkraft Clamping Force Kgf | Drehmoment Allowable Screw Torque (N-m) |  (g) |
|---------------------------|---|----|----|----|------|----|-----------|----|-----|----|----|-----|--|--|--|
| 2143-08015 | 3 | 25 | 10 | 25 | 21.5 | 10 | 6 | 7 | M8 | 32 | 15 | 1.6 | 700 | 25 | 115 |
| 2143-10019 | 4 | 30 | 11 | 32 | 26 | 12 | 6 | 7 | M10 | 40 | 19 | 2 | 850 | 50 | 225 |
| 2143-12023 | 5 | 35 | 12 | 38 | 33 | 16 | 8 | 10 | M12 | 50 | 23 | 2.3 | 2000 | 90 | 390 |
| 2143-16025 | 6 | 40 | 14 | 45 | 40 | 20 | 10 | 10 | M16 | 60 | 25 | 3.2 | 3000 | 150 | 640 |

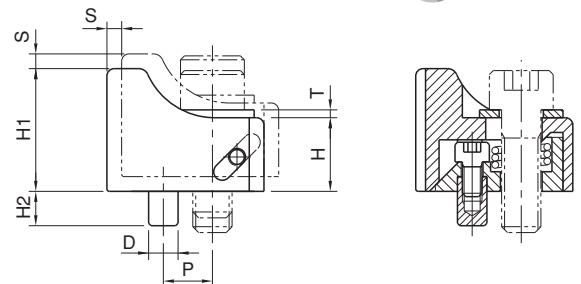


2143

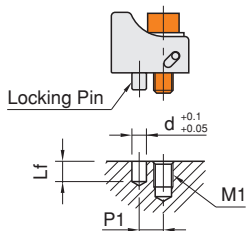
- Gehärtet
- Schwarz beschichtet

2143

- Hardened
- Black coating

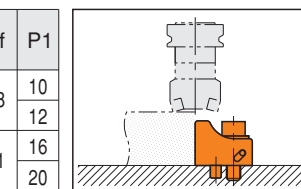


Montage und Verwendung / How To Use and Install

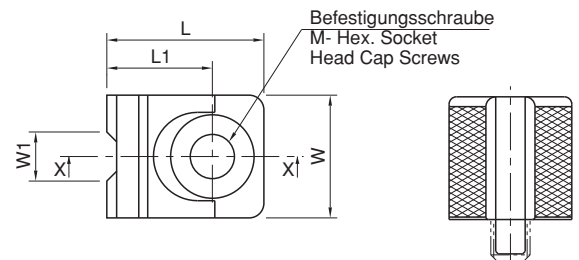


| Nr. | M1 | d | Lf | P1 |
|-------------|-----|----|----|----|
| CP107-08015 | M 8 | 6 | 8 | 10 |
| CP107-10019 | M10 | 8 | 11 | 12 |
| CP107-12023 | M12 | 10 | 14 | 16 |
| CP107-16025 | M16 | 14 | 18 | 20 |

1 Stift und 1 Schraube erforderlich



Drill a cap-screw hole and a locking-pin hole as specified on the up.



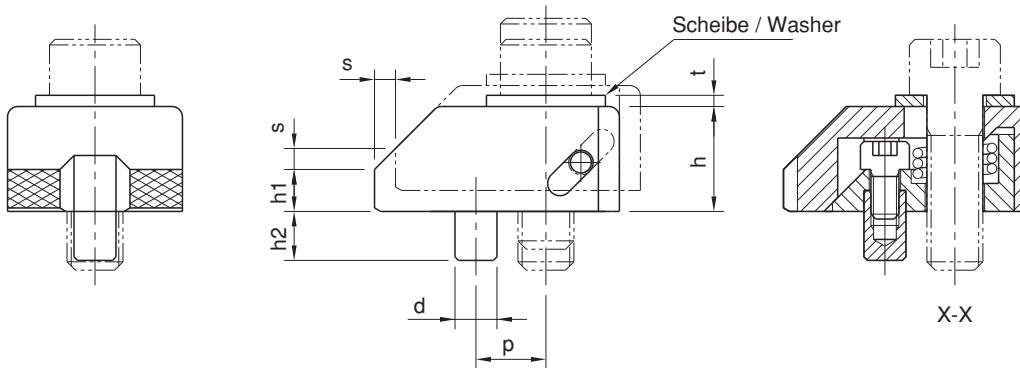
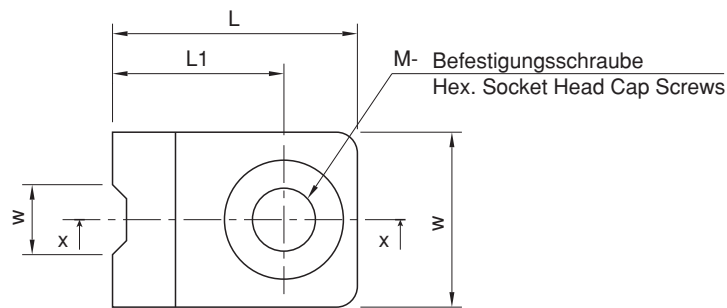
| Referenz-Nr. Order No. | s | w | w1 | h1 | L1 | P | d (h7) | h2 | M | L | h | t | Spannkraft Clamping Force (N) | zulässiges Drehmoment Allowable Screw Torque (N·m) | (g) |
|---------------------------|---|----|----|----|------|----|-----------|----|-----|----|----|-----|-------------------------------------|--|---------|
| 2144-08015 | 3 | 25 | 10 | 6 | 24.5 | 10 | 6 | 7 | M8 | 35 | 15 | 1.6 | 7.000 | 25 | 100 |
| 2144-10019 | 4 | 30 | 11 | 8 | 29 | 12 | 6 | 7 | M10 | 43 | 19 | 2 | 8.500 | 50 | 185 |
| 2144-12023 | 5 | 35 | 12 | 9 | 37 | 16 | 8 | 10 | M12 | 54 | 23 | 2.3 | 20.000 | 90 | 320 |
| 2144-16025 | 6 | 40 | 14 | 10 | 45 | 20 | 10 | 10 | M16 | 65 | 25 | 3.2 | 30.000 | 150 | 520 |

2144

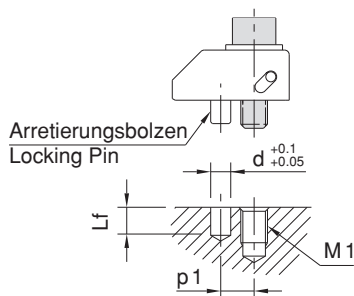
- Gehärtet
- Schwarz beschichtet

2144

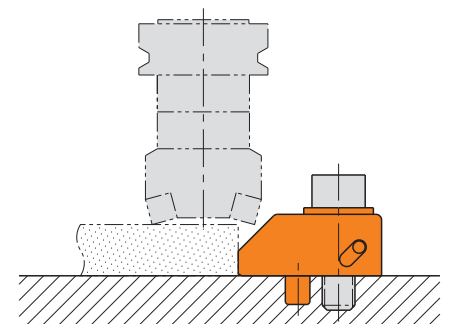
- Hardened
- Black coating



Anwendungsbeispiel / Application Examples



| Referenz-Nr. Order No. | M1 | d | Lf | p1 |
|---------------------------|-----|----|----|----|
| 2144-08015 | M 8 | 6 | 8 | 10 |
| 2144-10019 | M10 | 6 | 8 | 12 |
| 2144-12023 | M12 | 8 | 11 | 16 |
| 2144-16025 | M16 | 10 | 11 | 20 |



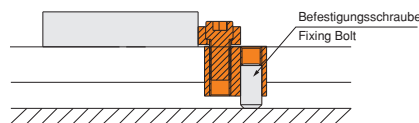
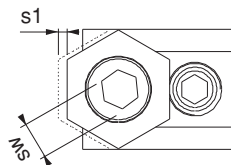
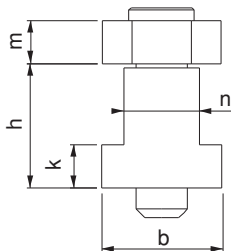
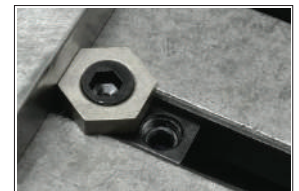
| Referenz-Nr. Order No. | | s1 | m | sw | L | h | k | n | b | Spannkraft Clamping Force kgf | |
|---------------------------|----|-----|----|----|----|-----|----|------|----|-------------------------------------|-----|
| | | | | | | | | | | | (g) |
| 2150-08 | 8 | 1.4 | 5 | 4 | 23 | 9.5 | 6 | 7.7 | 13 | 310 | 25 |
| 2150-10 | 10 | 1.4 | 5 | 4 | 23 | 14 | 6 | 9.7 | 15 | 310 | 35 |
| 2150-12 | 12 | 1.2 | 7 | 5 | 28 | 15 | 7 | 11.7 | 18 | 340 | 60 |
| 2150-14 | 14 | 1.7 | 7 | 7 | 30 | 22 | 8 | 13.7 | 22 | 800 | 95 |
| 2150-16 | 16 | 1.7 | 10 | 8 | 30 | 22 | 9 | 15.7 | 25 | 1500 | 130 |
| 2150-18 | 18 | 2 | 10 | 8 | 35 | 28 | 10 | 17.7 | 28 | 1500 | 190 |
| 2150-20 | 20 | 2.5 | 13 | 10 | 40 | 32 | 12 | 19.7 | 32 | 2000 | 290 |
| 2150-22 | 22 | 2.5 | 13 | 12 | 45 | 38 | 14 | 21.7 | 35 | 2000 | 390 |

2150

- Die T-Nut des Produkts tritt vollständig in die Nut der Tischplatte ein. Da nur der exzentrische Kopfstück auf der Tischoberfläche verbleibt, ist ein einfaches Spannen der dünnen Teile möglich.
- geeignet für T-Nut DIN 650
- Gehärtet
- Schwarz beschichtet

2150

- T-Slot of the product enters in the slot of the bench completely. Since only the eccentric headpiece remains on the surface of the table, this provides easy clampings of the thin pieces.
- It is in compliance with DIN 650 T-Slot
- Hardened
- Black coating



Flachspanner

Jaw Clamp

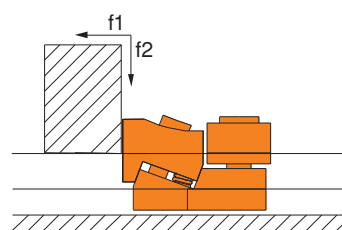
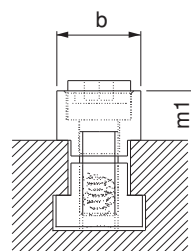
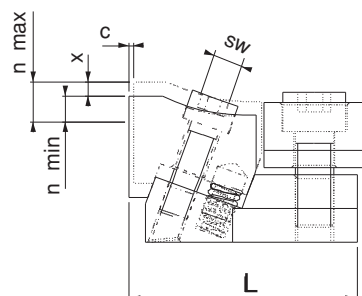
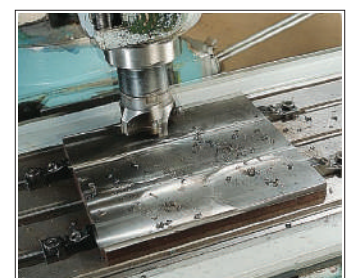
| Referenz-Nr. Order No. | | c | n | | x | L | b | m1 | sw | Spannkraft clamping force | | |
|---------------------------|----|-----|-----|-----|-----|----|------|------|----|------------------------------|-----|-----|
| | | | min | max | | | | | | f1 | f2 | |
| | | | kgf | kgf | | | | | | (g) | | |
| 2170-12 | 12 | 2 | 2 | 6 | 4 | 46 | 21 | 10 | 5 | 500 | 60 | 120 |
| 2170-14 | 14 | 2.5 | 2.5 | 7.5 | 5 | 51 | 26 | 10 | 6 | 550 | 70 | 200 |
| 2170-16 | 16 | 3 | 2.5 | 8.5 | 6 | 61 | 27.5 | 12 | 6 | 800 | 90 | 290 |
| 2170-18 | 18 | 3 | 2 | 8 | 6 | 67 | 35 | 13 | 8 | 900 | 100 | 420 |
| 2170-20 | 20 | 4 | 2.5 | 11 | 8.5 | 78 | 38 | 13 | 10 | 1200 | 140 | 640 |
| 2170-22 | 22 | 4.5 | 2.5 | 12 | 9.5 | 87 | 39 | 16.5 | 10 | 1600 | 190 | 830 |

2170

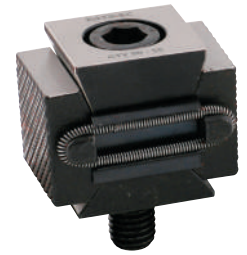
- Spannt das Werkstück gegen die Anlagefläche und Richtung Platte
- Arbeiten in T-Nut verschafft Höhenvorteil
- DIN 650 T-Nut konform
- Gehärtet
- Schwarz beschichtet

2170

- This product clamps the workpiece in the direction of resting and plate
- It's working in T-Slot provides height advantage
- It is in compliance with DIN 650 T-Slot
- Hardened
- Black coating



| Referenz-Nr. Order No. | c | | | m | k | b | L | e DIN 912 | Sikma Kuvveti Clamping Force kgf | |
|---------------------------|-----|-----|----------------|----|---|----|----|--------------|--|-----|
| | min | max | | | | | | | | |
| 2190-5055 | 50 | 55 | 14-16-18-20-22 | 35 | 4 | 30 | 42 | M12 | 1750 | 390 |

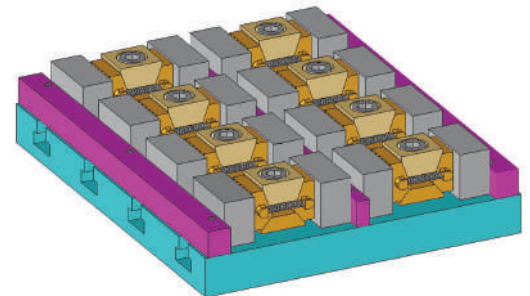
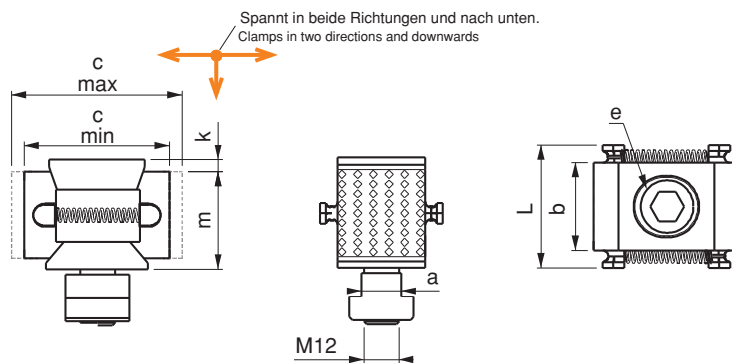


2190

- Spannen von einem Punkt in beide Richtungen und Plattenrichtung
- passend zu M12 Gewinde auf Platten und (a) 14-16-18-20-22
- Verwendung für T-Nuten
- Gehärtet
- Schwarz beschichtet

2190

- This product makes press process from one point to two directions and towards the direction of the plate.
- It is used in M12 thread plates and (a) 14-16-18-20-22
- T-Slot measurings
- Hardened
- Black coating



| Referenz-Nr. Order No. | c | | | m | k | b | L | e DIN 912 | Spannkraft clamping force kgf | |
|---------------------------|-----|-----|----------------|----|---|----|----|--------------|-------------------------------------|-----|
| | min | max | | | | | | | | |
| 2210-4954 | 49 | 54 | 14-16-18-20-22 | 23 | 4 | 30 | 42 | M12 | 1500 | 280 |

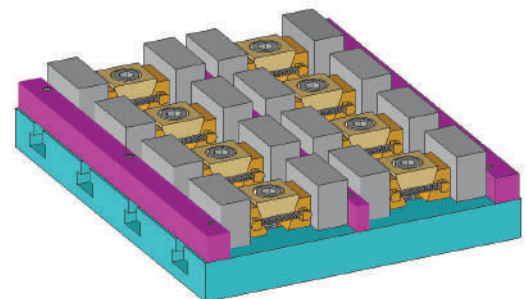
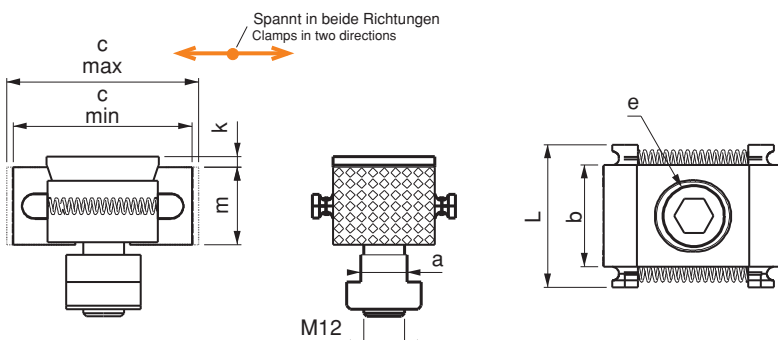


2210

- Spannen von einem Punkt in beide Richtungen und Plattenrichtung
- passend zu M12 Gewinde auf Platten und (a) 14-16-18-20-22
- Verwendung für T-Nuten
- Gehärtet
- Schwarz beschichtet

2210

- This product makes press process from one point to two directions.
- It is used in M12 thread plates and (a) 14-16-18-20-22
- T-Slot measurings
- Hardened
- Black coating

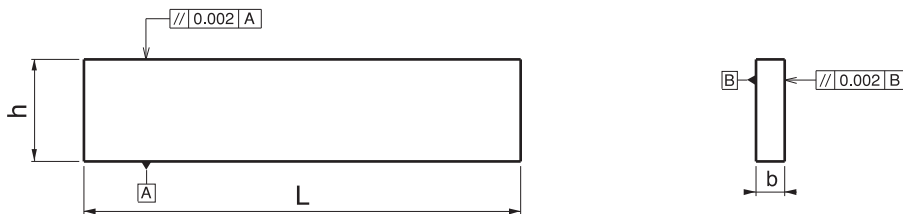


| Referenz-Nr. Order No. | h x b x L | toleranz tolerance h | toleranz tolerance b | (kg) | Stück Piece |
|---------------------------|-----------|----------------------------|----------------------------|----------|----------------|
| 2230-028 | 14x10x150 | ±0.01 | ±0.01 | 10.8 | 2 |
| | 16x10x150 | | | | 2 |
| | 18x10x150 | | | | 2 |
| | 20x10x150 | | | | 2 |
| | 22x10x150 | | | | 2 |
| | 24x10x150 | | | | 2 |
| | 26x10x150 | | | | 2 |
| | 28x10x150 | | | | 2 |
| | 30x10x150 | | | | 2 |
| | 32x10x150 | | | | 2 |
| | 35x10x150 | | | | 2 |
| | 40x10x150 | | | | 2 |
| | 45x10x150 | | | | 2 |
| 50x10x150 | 2 | | | | |



- 2230**
- Als Unterlage beim Parallel- Spannen und Feinbearbeitung
 - 28 Stück.
 - Gehärtet
 - Set in Holzkiste

- 2230**
- This product is used for parallel coupling of the workpieces and as the base for sensitive machinings of the work pieces.
 - 28 pieces.
 - Hardened
 - Set is in the wooden box

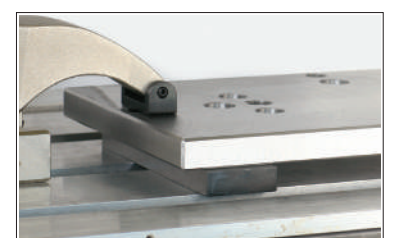
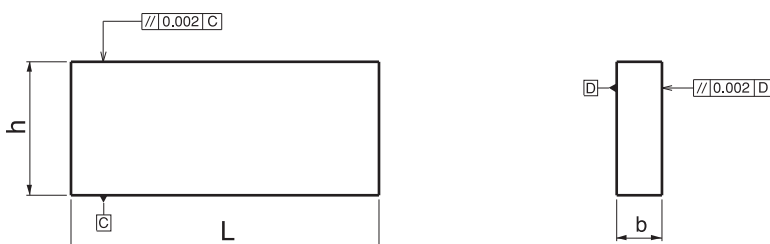



| Referenz-Nr. Order No. | h x b x L | toleranz tolerance h | toleranz tolerance b | (kg) | Stück Piece |
|---------------------------|-----------|----------------------------|----------------------------|----------|----------------|
| 2250-016 | 20x6x100 | ±0.01 | ±0.01 | 10.6 | 2 |
| | 23x8x100 | | | | 2 |
| | 28x10x100 | | | | 2 |
| | 36x12x150 | | | | 2 |
| | 42x14x150 | | | | 2 |
| | 48x16x150 | | | | 2 |
| | 58x18x150 | | | | 2 |
| | 65x22x150 | | | | 2 |

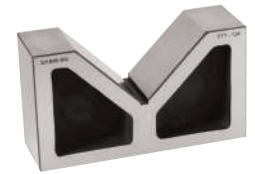


- 2250**
- Als Unterlage beim Parallel- Spannen und Feinbearbeitung
 - 16 Stück.
 - Gehärtet
 - Set in Holzkiste

- 2250**
- This product is used for parallel coupling of the workpieces and as the base for sensitive machinings of the work pieces.
 - 16 pieces.
 - Hardened
 - Set is in the wooden box



| Referenz-Nr. Order No. | a | b | c | Øv | |  (g) |
|---------------------------|-----|-----|----|-----|-----|--|
| | | | | min | max | |
| 2270-140 | 140 | 82 | 40 | 20 | 110 | 1980 |
| 2270-204 | 204 | 115 | 66 | 15 | 150 | 6150 |

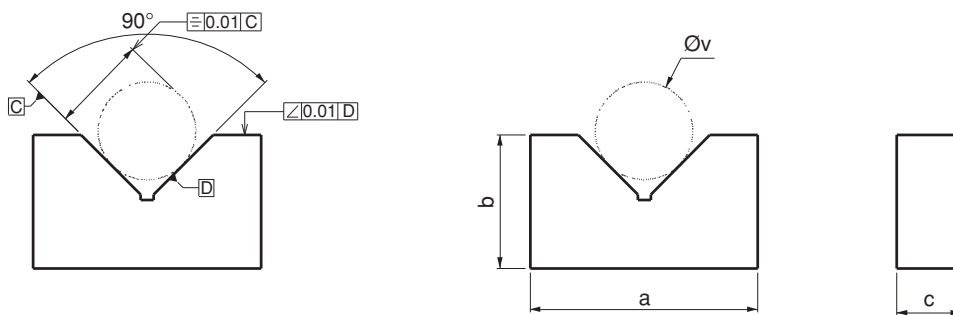


2270

- Material: Guss
- Verwendung als Unterlage bei Spannen zylindrischer Werkstücke und Feinbearbeitung
- 2-er Set


2270

- Material: Casting
- This product is used in parallel couplings of cylindrical pieces and it is also used as the base for sensitive machinings of the workpieces.
- Set of two pieces



“X V” Spannblock

XV-Clamping Block

| Referenz-Nr. Order No. | a | b | c | Øv1 | | Øv2 | | Øv3 | | Øv4 | |  (g) |
|---------------------------|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|---|
| | | | | min | max | min | max | min | max | min | max | |
| 2290-120 | 120 | 100 | 60 | 12 | 40 | 12 | 60 | 12 | 75 | 12 | 90 | 2840 |
| 2290-150 | 152 | 132 | 74 | 15 | 80 | 15 | 95 | 15 | 110 | 15 | 120 | 4975 |



2290

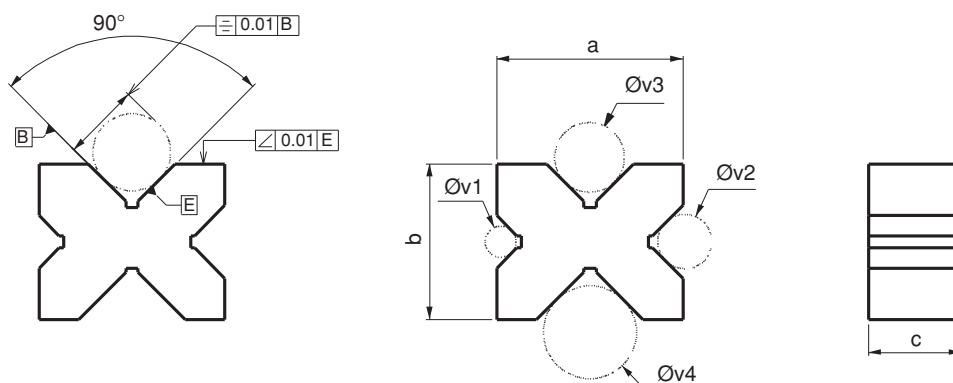
- Material: Guss
- Verwendung als Unterlage beim Spannen der Zylinderwerkstücke und Feinbearbeitung. Aufgrund X-Form kann man alle 4 Flächen verwenden.


- 2-er Set

2290

- Material: Casting
- This product is used in parallel couplings of cylindrical pieces and it is also used as the base for sensitive machinings of the workpieces. It provides using advantage in 4 different surfaces because of being in X form.

- Set of two pieces



| Referenz-Nr. Order No. | L | h | a | a1 | b | b1 | sw |  (g) |
|---------------------------|-----|----|----|------|-----|-------|----|--|
| 2295-090 | 90 | 39 | 55 | 73 | 7 | 21-35 | 8 | 1480 |
| 2295-115 | 115 | 49 | 65 | 82.5 | 8.5 | 31-42 | 10 | 2690 |
| 2295-130 | 130 | 56 | 75 | 98 | 10 | 37-48 | 12 | 4160 |

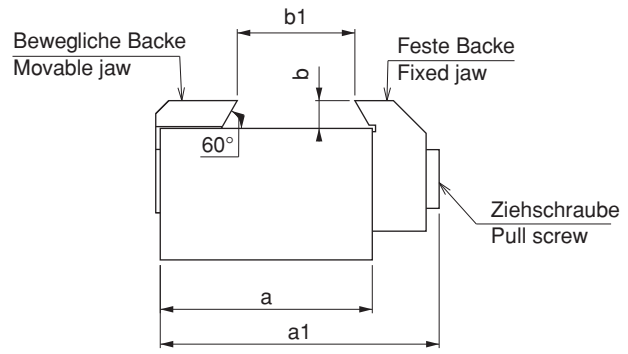
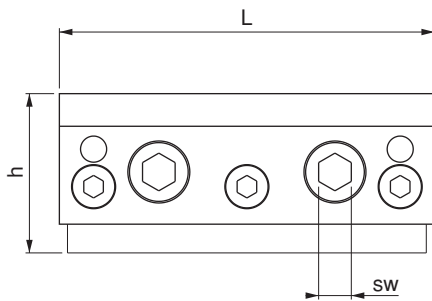



2295

- Durch Einfräsung eines, Vogelnestes kann das Werkstück gespannt werden.
- Gehärtet
- Schwarz beschichtet

2295

- Apparatus is connected at workpiece, swallow nest opening.
- Hardened
- Black coating



| Referenz-Nr. Order No. | a | h | L | d |  (g) |
|---------------------------|----|----|-------|-----|--|
| 2297-090 | 55 | 58 | 87 | M10 | 2110 |
| 2297-115 | 65 | 68 | 110 | M12 | 3750 |
| 2297-130 | 75 | 80 | 126.5 | M12 | 5830 |

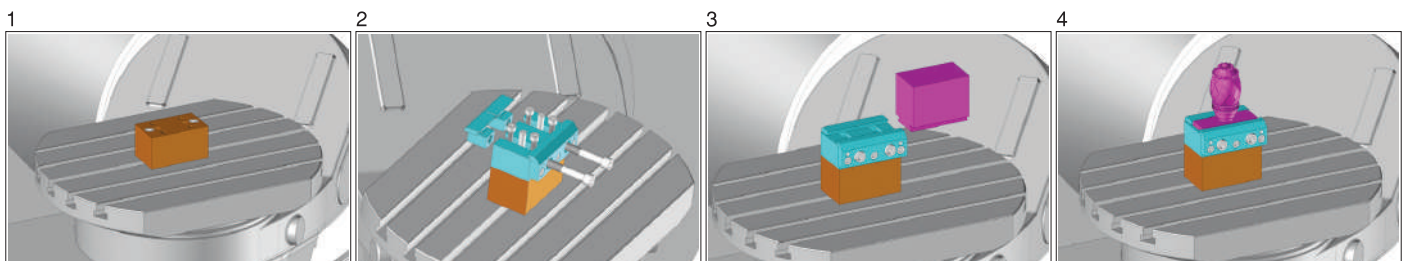
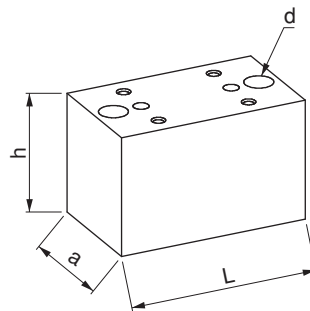


2297

- Gehärtet
- Schwarz beschichtet

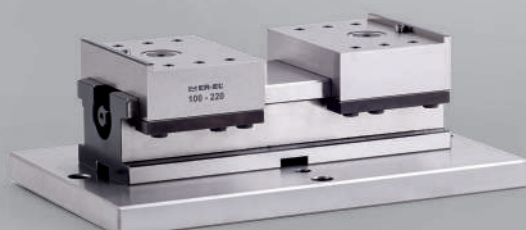
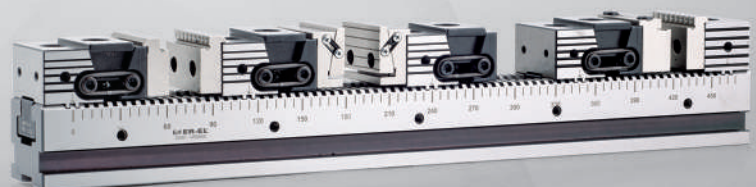
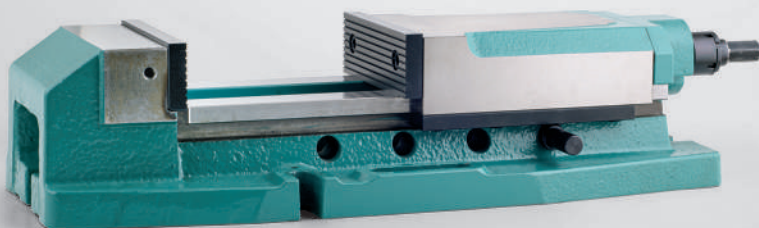
2297

- Hardened
- Black coating



Schraubstöcke

Vices



Mechanischer Schraubstock

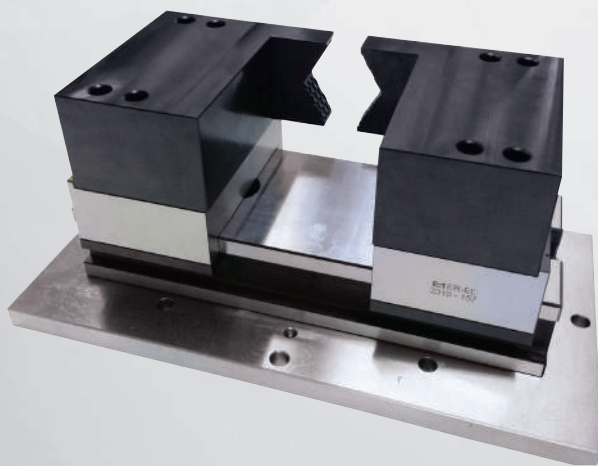
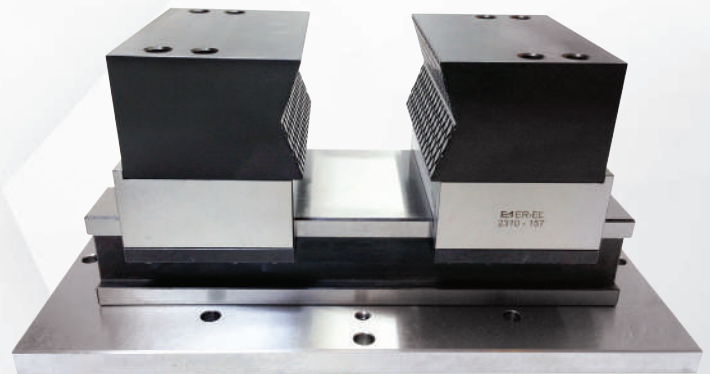
Anwendungsbeispiel

Mechanical Steel Vice Application

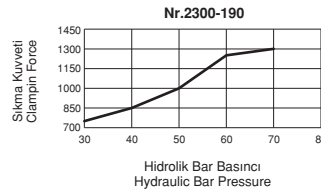
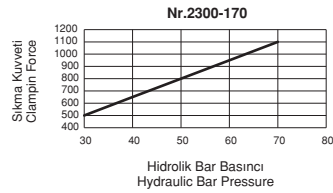
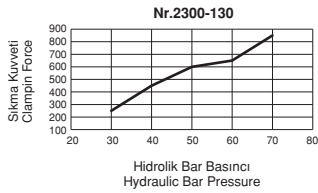


Schraubstock Anwendung

Vise Applications



| Referenz-Nr. Order No. | A min-max | Strok | B | C | D | E | F | ØG | H | K | K1 | N | N1 | S | S1 | M | Q1 | Q2 | |
|---------------------------|--------------|-------|-----|-----|----|-----|----|-----|-----|----|----|-----|----|-----|-----|-----|----|----|------|
| 2300-130 | 142-162 | 10x2 | 90 | 83 | 60 | 130 | 10 | 86 | 143 | 9 | 22 | 76 | 64 | 106 | 60 | M8 | 11 | 6 | 8.50 |
| 2300-170 | 170-210 | 20x2 | 100 | 96 | 78 | 170 | 12 | 98 | 174 | 11 | 30 | 136 | 74 | 106 | 80 | M10 | 11 | 8 | 14 |
| 2300-190 | 202-242 | 20x2 | 125 | 101 | 80 | 190 | 16 | 121 | 181 | 11 | 36 | 144 | 96 | 110 | 100 | M12 | 13 | 8 | 21 |

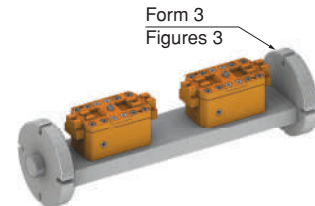
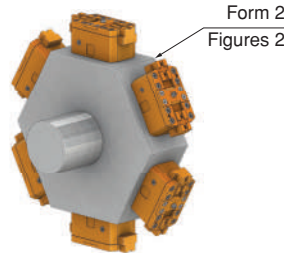
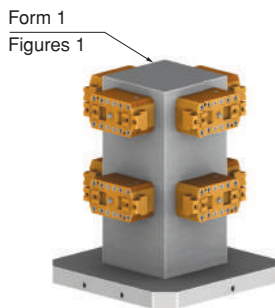
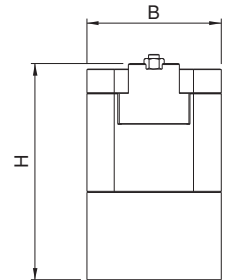
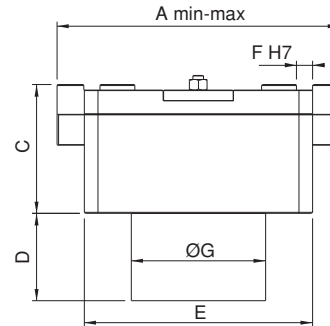
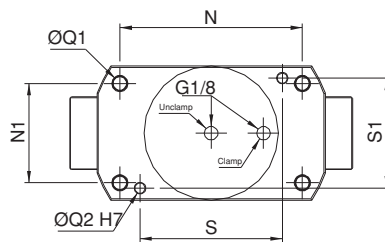
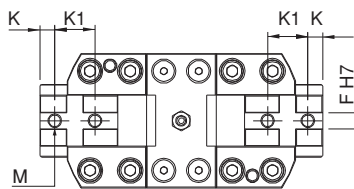


2305

- Beim Werkstückspannen wird gleichzeitig zentriert. Der Vorteil dieses Systems ist, dass besonders bei unterschiedlichen Außendurchmessern ohne zusätzliches Zentrieren bearbeitet werden kann.
- Weiterer Vorteil: Weichbacken können dem Werkstück angepasst werden (siehe Bild 1-2-3-4)
- Sämtliche bewegliche Flächen sind feingeschliffen.
- System hydraulisch betrieben
- Ölzufluss - Ölauflus
- Schwarz beschichtet

2305

- This product fixes the material to be processes and at the same time it makes centering. The advantage of this system specially shows itself when making machinings of the materials having different outer diameter measurements as it implements this process without changing the center. It's other characteristic is to apply the form of the piece to be machined with soft claws (as seen in Figures: 1-2-3-4-5 and 6).
- Entire moving surface is sensitively grinded and hardened.
- Hydraulic system works
- Oil inlet - Oil outlet
- Black coating



Pneumatischer Zentrierschraubstock

Pneumatic Centering Vice

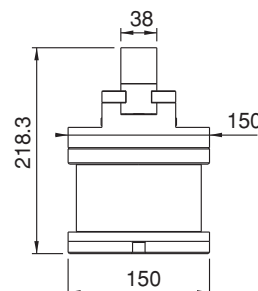
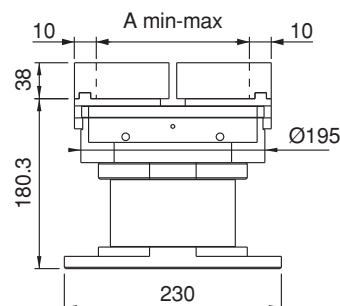
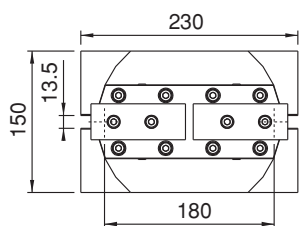
| Referenz-Nr. Order No. | A min-max | Strok | pneumatisch pneumatic Bar | Spannkraft Clamping Force kgf | |
|---------------------------|-----------|-------|---------------------------------|-------------------------------------|------|
| 2307-0188 | 0-188 | 8.5x2 | 6 | 750 | 18.5 |

2307

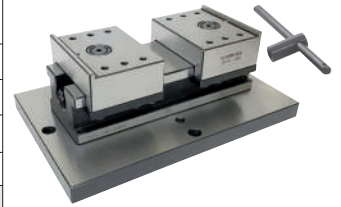
- Pneumatikbetrieb

2307

- Pneumatic system works



| Ref.-Nr. Order No. | a | L | c/2 | öffnen opens 2 x mm | Werkstückspannkapa- zität work piece coupling capacity (mm) | b | b1 | b2 ±0,02 | b3 | p1 | p2 | s1 | s2 | Spannkraft Clamping Force kgf | Drehmoment Allowable Screw Torque (N-m) | SW | (kg) |
|-----------------------|-----|-----|-----|---------------------------|---|------|------|-------------|-----|-----|-----|-----|-----|--|---|----|------|
| 2310-060 | 60 | 120 | 90 | 20 | 120 | 23.5 | 70.5 | 67.5 | 91 | 174 | 124 | 150 | 100 | 800 | 45 | 9 | 7 |
| 2310-078 | 78 | 180 | 130 | 30 | 180 | 33 | 97 | 93 | 126 | 224 | 124 | 200 | 100 | 1500 | 110 | 12 | 14 |
| 2310-100 | 100 | 220 | 154 | 38 | 220 | 35 | 99 | 95 | 130 | 274 | 174 | 250 | 150 | 1500 | 110 | 12 | 22 |
| 2310-125 | 125 | 260 | 174 | 47 | 260 | 38 | 108 | 103 | 141 | 324 | 174 | 300 | 150 | 2000 | 190 | 14 | 35 |
| 2310-157 | 157 | 350 | 208 | 75 | 350 | 46 | 123 | 118 | 164 | 424 | 224 | 400 | 200 | 2200 | 210 | 17 | 65 |

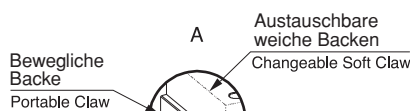
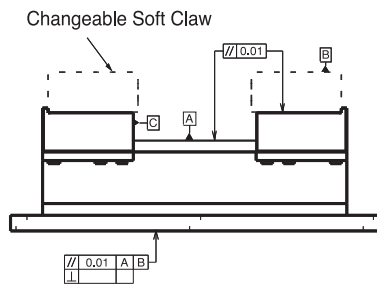
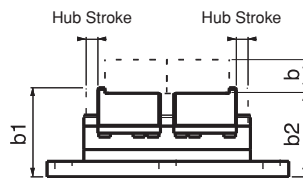
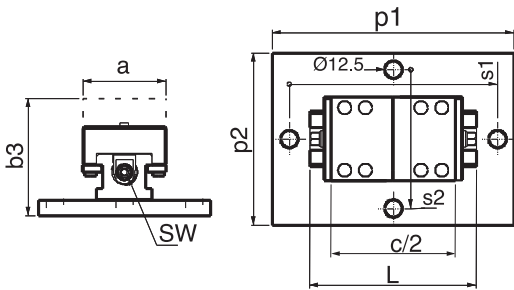
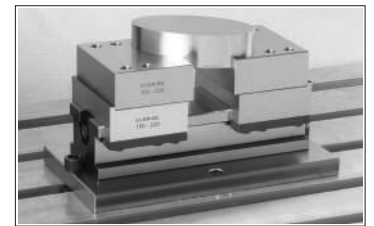


2310

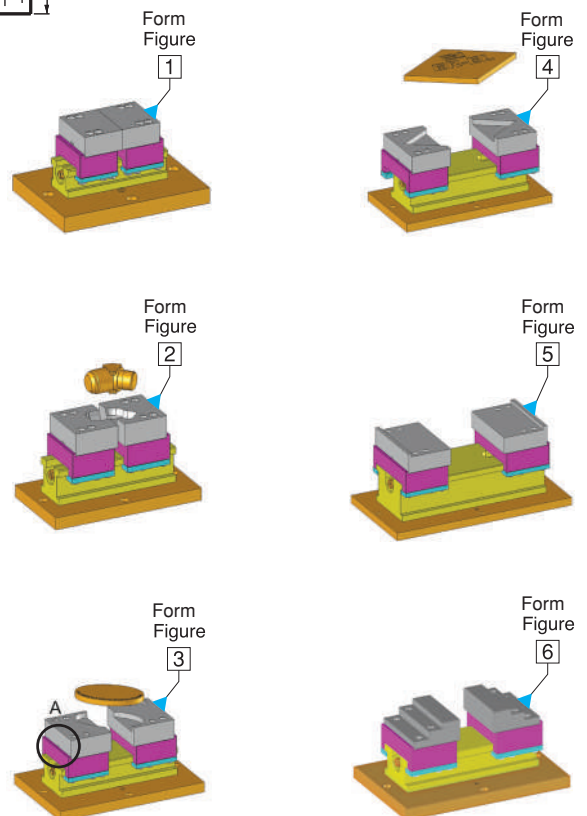
- Zentrieren automatisch beim Spannen
- Vorteil: verwendbar auch bei unterschiedlichen Abmessungen (siehe Abb. 1-2-3-4-5-6)
- Verwendung: Fräsen CNC und mechanisch, Schleifen und sonstige Industriemaschinen
- Backen müssen separat bestellt werden.
- Schwarz beschichtet

2310

- This product fixes the material to be processes and at the same time it makes centering. The advantage of this system specially shows itself when making machinings of the materials having different outer diameter measurements as it implements this process without changing the center. It's other characteristic is to apply the form of the piece to be machined with soft claws (as seen in Figures: 1-2-3-4-5 and 6).
- Area of Using: This product is used in various industry machines such as CNC and mechanical milling machines, grinding and auger.
- Entire moving surface is sensitively grinded and hardened.
- You need to purchase jaws separate.
- Black coating



Wiederholgenauigkeit Demontage und Montage von weichen Backen ist ± 0.02 .
Demounting and mounting of portable jaw wedge soft claws is ± 0.02 .



| Ref.-Nr. Order No. | a | L | c/2 | öffnen opens 2 x mm | b1 | b2 ±0,02 | p1 | p2 | s1 | Spannkraft Clamping Force kgf | Drehmoment Allowable Screw Torque (N-m) | sw | (kg) |
|-----------------------|-----|-----|-----|---------------------------|-------|-------------|-----|------|-----|--|---|----|----------|
| 2315-060 | 60 | 120 | 90 | 20 | 117.5 | 114.5 | 174 | 56 | 150 | 800 | 45 | 9 | 4.1 |
| 2315-078 | 78 | 180 | 130 | 30 | 159 | 155 | 224 | 73.5 | 200 | 1500 | 110 | 12 | 10 |
| 2315-100 | 100 | 220 | 154 | 38 | 159 | 155 | 274 | 95 | 250 | 1500 | 110 | 12 | 17.2 |

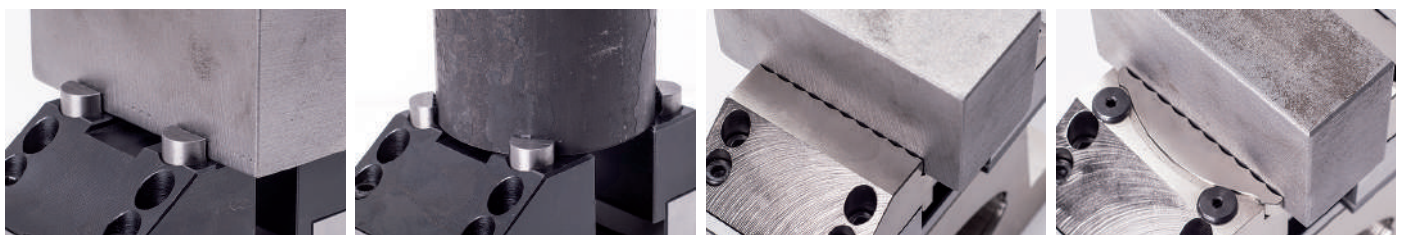
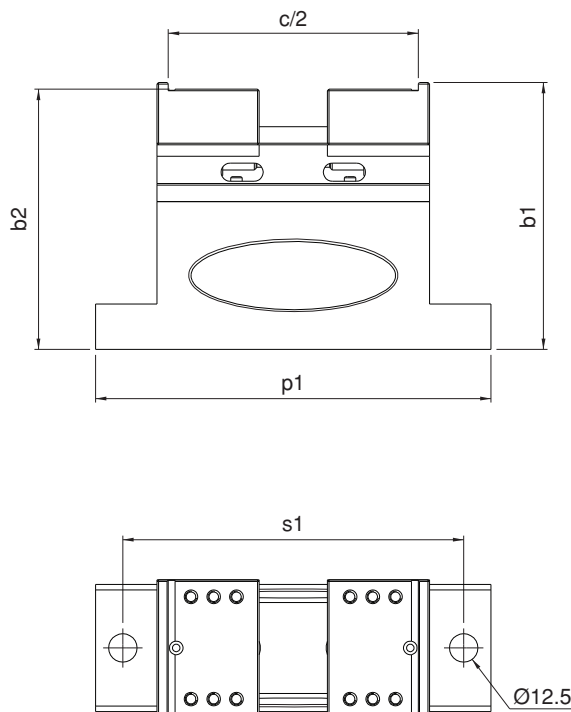


2315

- Dieses Produkt fixiert das zu bearbeitende Werkstück und führt gleichzeitig eine Zentrierung durch.
Der Vorteil dieses Systems zeigt sich besonders bei der Bearbeitung von Materialien mit unterschiedlichen Außendurchmessern, da es diesen Prozess ohne Wechsel des Zentrums durchführt.
- Anwendungsbereiche: CNC Maschinen und 5-Achs Bearbeitungszentren
- Die gesamte Lauffläche ist fein geschliffen und gehärtet.
- Backen müssen separat bestellt werden.
- Schwarz beschichtet

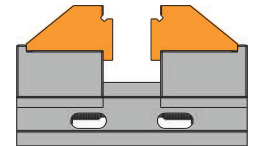
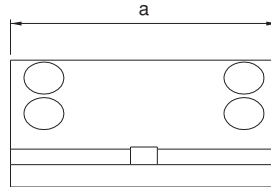
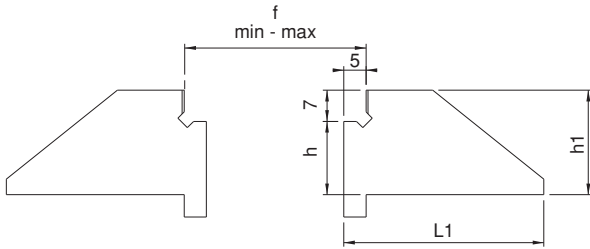
2315

- This product fixes the material to be processes and at the same time it makes centering. The advantage of this system specially shows itself when making machinings of the materials having different outer diameter measurements as it implements this process without changing the center.
- Area of Using: This product is used in various industry machines such as CNC and CNC 5-Axis mechanical milling machines,
- Entire moving surface is sensitevely grinded and hardened.
- You need to purchase jaws separate.
- Black coating



| Referenz-Nr. Order No. | f min-max | h | h1 | L1 | a |
|---------------------------|--------------|------|------|-----|-----|
| 2310-23150601 | 10-50 | 16.5 | 23.5 | 45 | 60 |
| 2310-23150781 | 10-70 | 26 | 33 | 65 | 78 |
| 2310-23151001 | 10-86 | 28 | 35 | 77 | 100 |
| 2310-23151251 | 10-104 | 31 | 38 | 87 | 125 |
| 2310-23151571 | 10-160 | 39 | 46 | 104 | 157 |

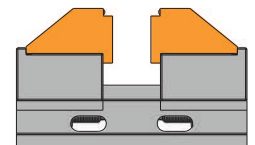
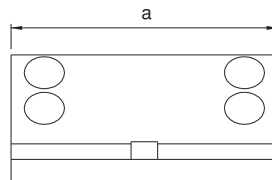
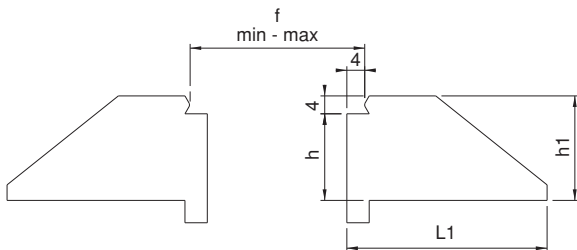
- Gehärtet
- Nickelbeschichtung
- Hardened
- Nickel Coating



Passend für Produktnr.
2310 und 2315

| Referenz-Nr. Order No. | f min-max | h | h1 | L1 | a |
|---------------------------|--------------|------|------|-----|-----|
| 2310-23150602 | 8-48 | 20.5 | 23.5 | 45 | 60 |
| 2310-23150782 | 8-68 | 29 | 33 | 65 | 78 |
| 2310-23151002 | 8-84 | 31 | 35 | 77 | 100 |
| 2310-23151252 | 8-102 | 34 | 38 | 87 | 125 |
| 2310-23151572 | 8-158 | 46 | 46 | 104 | 157 |

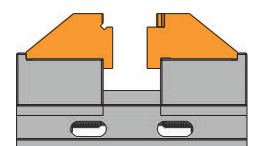
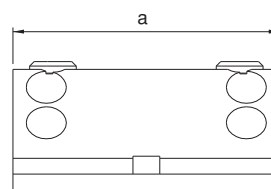
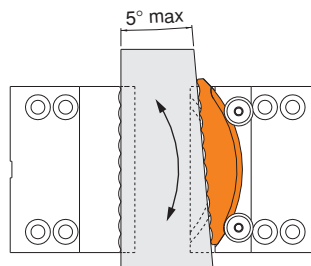
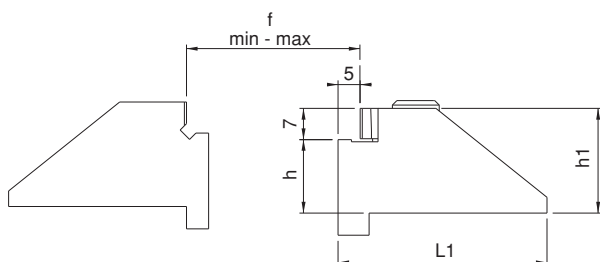
- Gehärtet
- Nickelbeschichtung
- Hardened
- Nickel Coating



Passend für Produktnr.
2310 und 2315

| Referenz-Nr. Order No. | f min-max | h | h1 | L1 | a |
|---------------------------|--------------|------|------|----|-----|
| 2310-23150603 | 10-50 | 16.5 | 23.5 | 47 | 60 |
| 2310-23150783 | 10-70 | 26 | 33 | 67 | 78 |
| 2310-23151003 | 10-86 | 28 | 35 | 79 | 100 |

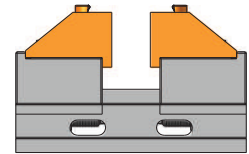
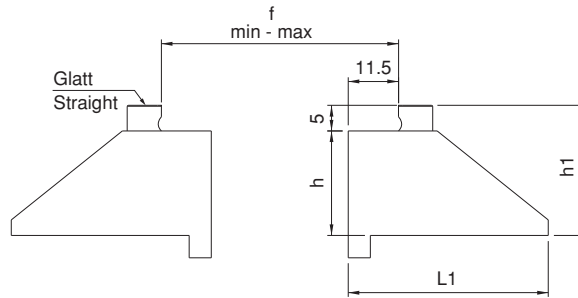
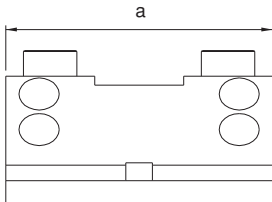
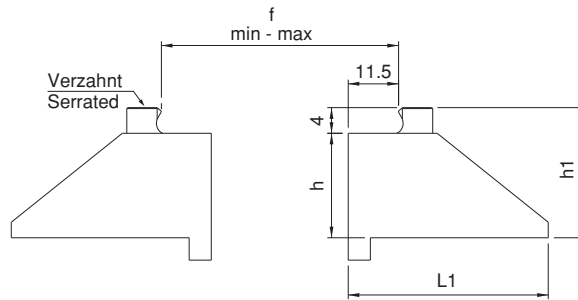
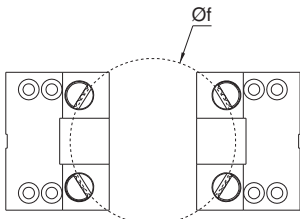
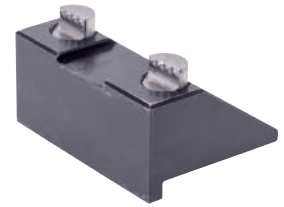
- Gehärtet
- Nickelbeschichtung
- Hardened
- Nickel Coating



Passend für Produktnr.
2310 und 2315

| Referenz-Nr. Order No. | f min-max | | h | h1 | L1 | a |
|---------------------------|--------------|-------|------|------|----|-----|
| | ● | ■ | | | | |
| 2310-23150604 | 46-72 | 23-63 | 23.5 | 27.5 | 45 | 60 |
| 2310-23150784 | 59-95 | 23-83 | 33 | 37 | 65 | 78 |
| 2310-23151004 | 77-124 | 23-99 | 35 | 39 | 77 | 100 |

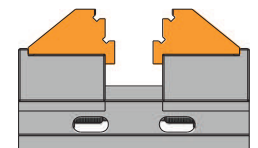
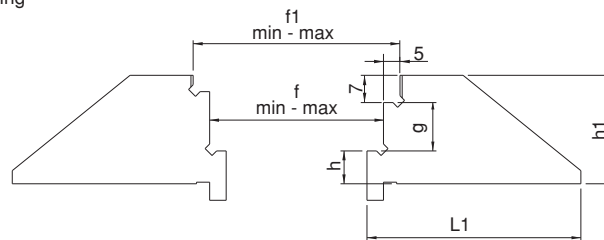
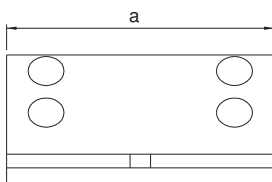
- Vor dem Kauf bitte die Backeneigenschaft angeben. (Verzahnt oder Glatt)
- Gehärtet
- Schwarz beschichtet
- You should specify the jaw feature before make purchase. (Serrated or Straight)
- Hardened
- Black Coating



Passend für Produktnr. 2310 und 2315

| Referenz-Nr. Order No. | f min-max | f1 min-max | h | h1 | g | L1 | a |
|---------------------------|--------------|---------------|----|------|-----|-----|-----|
| 2310-23150605 | 10-50 | 20-60 | 7 | 23.5 | 9.5 | 45 | 60 |
| 2310-23150785 | 10-70 | 20-80 | 10 | 33 | 16 | 65 | 78 |
| 2310-23151005 | 10-86 | 20-96 | 10 | 35 | 18 | 77 | 100 |
| 2310-23151255 | 10-104 | 20-114 | 10 | 38 | 21 | 87 | 125 |
| 2310-23151575 | 10-160 | 20-170 | 10 | 46 | 29 | 104 | 157 |

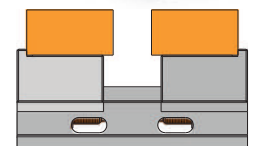
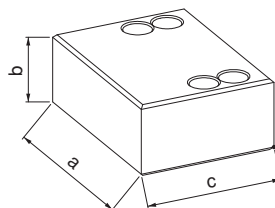
- Gehärtet
- Schwarz beschichtet
- Hardened
- Nickel Coating




Passend für Produktnr. 2310 und 2315

| Referenz-Nr. Order No. | a | b | c |
|---------------------------|-----|------|-----|
| 2310-23150606 | 60 | 23.5 | 45 |
| 2310-23150786 | 78 | 33 | 65 |
| 2310-23151006 | 100 | 35 | 77 |
| 2310-23151256 | 125 | 38 | 87 |
| 2310-23151576 | 157 | 46 | 104 |

Weiche Backe
Soft Jaw

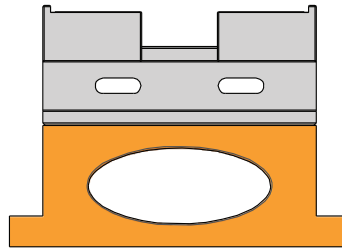
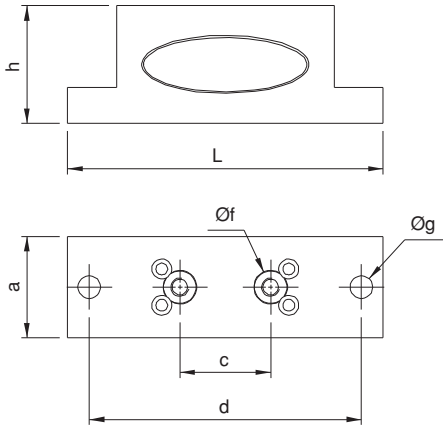


Passend für Produktnr. 2310 und 2315

| Referenz-Nr. Order No. | a | h | L | c | Øf H7 | d | Øg |  (kg) |
|---------------------------|----|----|-----|-----|-------|-----|------|---|
| 2310-060P | 56 | 65 | 174 | 50 | 18 | 150 | 12.5 | 2.4 |
| 2310-078P | 74 | 80 | 224 | 100 | 18 | 200 | 12.5 | 4.9 |
| 2310-100P | 96 | 80 | 274 | 100 | 18 | 250 | 12.5 | 8.7 |

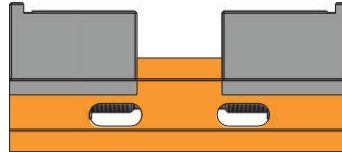


**Untere Plattenerhöhung
Lower Raising Plate**



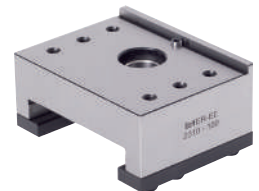
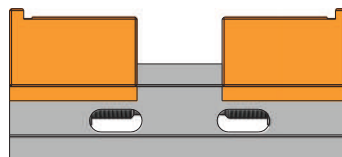
| Referenz-Nr. Order No. |
|---------------------------|
| 2310-2315-060AG |
| 2310-2315078AG |
| 2310-2315100AG |
| 2310-2315125AG |
| 2310-2315157AG |

**Grundkörper
Sub-body**



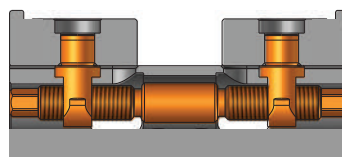
| Referenz-Nr. Order No. |
|---------------------------|
| 2310-2315060GÇ |
| 2310-2315078GÇ |
| 2310-2315100GÇ |
| 2310-2315125GÇ |
| 2310-2315157GÇ |

**Bewegliche Backe
Portable Jaw**



| Referenz-Nr. Order No. |
|---------------------------|
| 2310-2315060M |
| 2310-2315078M |
| 2310-2315100M |
| 2310-2315125M |
| 2310-2315157M |

**Spindel
Pin**



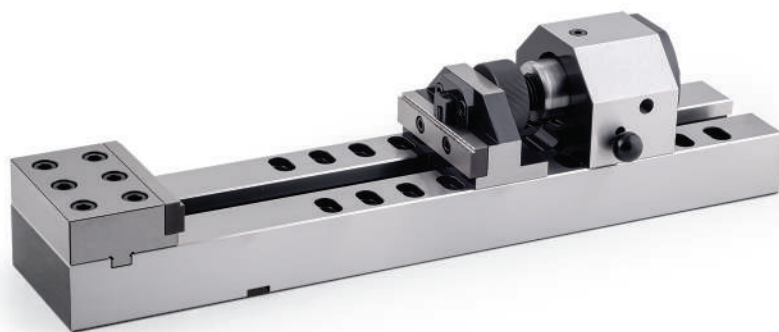
5-Achs-Schraubstock 5-Axis Vice

5-Seiten-Bearbeitung von Werkstücken möglich Ideale Handhabung durch die Kompaktheit Die Spannbacken können um 180° gedreht werden und ermöglichen dadurch eine höhere Spannkapazität.

5-face-machining of workpieces possible Ideal handling by compactness The clamping jaws can be turned 180° and thereby enable a higher clamping capacity.

- 5-Seiten-Bearbeitung
- Minimaler Materialschrott
- Höchste Haltekräfte bei niedrigem Spanndruck durch formschlüssiges Spannen
- Hohe Wiederholgenauigkeit in Kombination mit ER-EL Point Clamp
- Einfache und flexible Anwendung

- 5-face-machining
- Minimal scrap
- Highest holding power at low actuation forces through form-closure clamping
- High repeatability in combination with ER-EL Point Clamp
- Easy and flexible application



VORPRESS-SCHRAUBSTOCK PRE-FORM VICE

Bei Werkstücken mit hohem Haltekraft-Bedarf wird Vorpress-Schraubstock empfohlen. Spannweite beträgt 6-355 mm.

For workpieces needed higher holding power is recommended Pre-Form Vice. Clamping range is 6-355 mm.

ER-EL POINT CLAMP

Anwendung für Horizontalbearbeitungszentrum, Vertikalbearbeitungszentrum, 3-4-5 Achs CNC-Maschinen und CNC-Divisor.
Mit ER-EL Point Clamp kann man die Präzisionsschraubstöcke und die Richtung der Schraubstöcke in wenigen Sekunden wechseln.
Apparatewechsel ebenfalls möglich.

Kombinationen:

Nr.2315-052 mit Nr.2315-046
Nr.2315-052 mit Nr.2315-077
Nr.2315-052 mit Nr.2315-097

Nr.2315-096 mit Nr.2315-125
Nr.2315-096 mit Nr.2315-5296

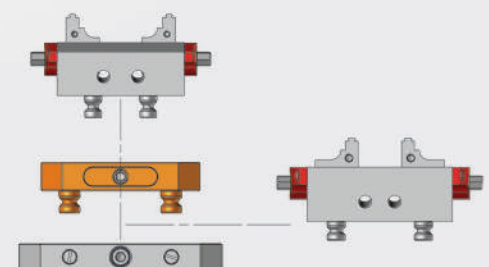
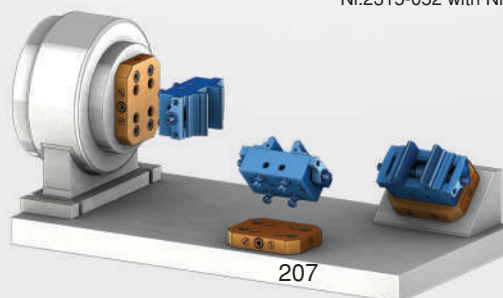
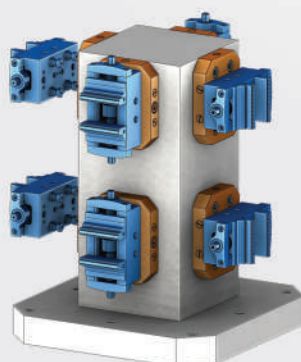


Application for horizontal machining center, vertical machining center, 3-4-5 axis CNC machines and CNC-Divisor. With ER-EL Point Clamp you can change your precision vices and the direction of the vices in a few seconds. Device change is also possible.

Combinations:

Nr.2315-052 with Nr.2315-046
Nr.2315-052 with Nr.2315-077
Nr.2315-052 with Nr.2315-097

Nr.2315-096 with Nr.2315-125
Nr.2315-096 with Nr.2315-5296



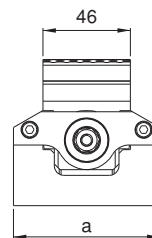
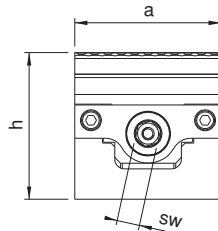
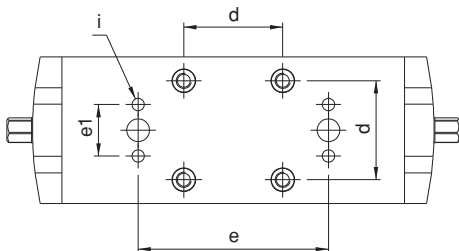
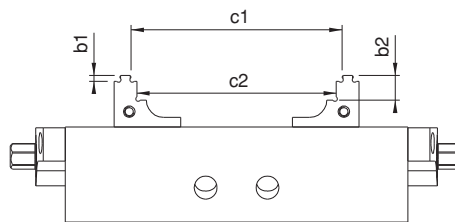
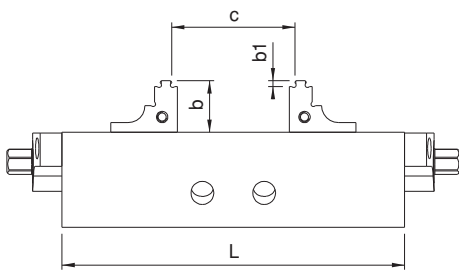
| Referenz-Nr. Order No. | a | h | L | c | c1 | c2 | b | b1 | b2 | e | e1 | i | d | Kombination Combination | Kombination Combination | Spannkraft Clamping Force Kgf | Nm | sw | (kg) |
|---------------------------|-----|----|-----|-------|--------|--------|----|----|----|-----|----|----|----|----------------------------|----------------------------|-------------------------------------|-----|----|-------|
| 2315-046120 | 77 | 77 | 120 | 6-63 | 45-100 | 39-95 | 27 | 3 | 13 | 100 | 25 | M5 | 52 | 2315-08 | 2315-052 | 1400 | 70 | 12 | 3.00 |
| 2315-046160 | 77 | 77 | 160 | 6-103 | 45-140 | 39-135 | 27 | 3 | 13 | 100 | 25 | M5 | 52 | 2315-08 | 2315-052 | 1400 | 70 | 12 | 3.90 |
| 2315-077105 | 77 | 77 | 105 | 6-40 | 72-85 | 66-80 | 27 | 3 | 13 | 80 | 27 | M6 | 52 | 2315-08 | 2315-052 | 1400 | 70 | 12 | 3.30 |
| 2315-077130 | 77 | 77 | 130 | 6-65 | 72-110 | 66-105 | 27 | 3 | 13 | 100 | 27 | M6 | 52 | 2315-08 | 2315-052 | 1400 | 70 | 12 | 3.50 |
| 2315-077160 | 77 | 77 | 160 | 6-95 | 72-140 | 66-135 | 27 | 3 | 13 | 100 | 27 | M6 | 52 | 2315-08 | 2315-052 | 1400 | 70 | 12 | 4.40 |
| 2315-077180 | 77 | 77 | 180 | 6-115 | 72-160 | 66-155 | 27 | 3 | 13 | 100 | 27 | M6 | 52 | 2315-08 | 2315-052 | 1400 | 70 | 12 | 4.80 |
| 2315-077210 | 77 | 77 | 210 | 6-145 | 72-190 | 66-185 | 27 | 3 | 13 | 100 | 27 | M6 | 52 | 2315-08 | 2315-052 | 1400 | 70 | 12 | 5.50 |
| 2315-097105 | 97 | 77 | 105 | 6-40 | 72-85 | 66-80 | 27 | 3 | 13 | 80 | 27 | M6 | 52 | 2315-08 | 2315-052 | 1400 | 70 | 12 | 6.50 |
| 2315-097130 | 97 | 77 | 130 | 6-65 | 72-110 | 66-105 | 27 | 3 | 13 | 100 | 27 | M6 | 52 | 2315-08 | 2315-052 | 1400 | 70 | 12 | 6.70 |
| 2315-097160 | 97 | 77 | 160 | 6-95 | 72-140 | 66-135 | 27 | 3 | 13 | 100 | 27 | M6 | 52 | 2315-08 | 2315-052 | 1400 | 70 | 12 | 7.60 |
| 2315-097180 | 97 | 77 | 180 | 6-115 | 72-160 | 66-155 | 27 | 3 | 13 | 100 | 27 | M6 | 52 | 2315-08 | 2315-052 | 1400 | 70 | 12 | 8.00 |
| 2315-097210 | 97 | 77 | 210 | 6-145 | 72-190 | 66-185 | 27 | 3 | 13 | 100 | 27 | M6 | 52 | 2315-08 | 2315-052 | 1400 | 70 | 12 | 8.70 |
| 2315-125160 | 125 | 92 | 160 | 6-70 | 92-138 | 86-130 | 32 | 3 | 13 | 100 | 35 | M8 | 96 | 2315-10 | 2315-096 | 2000 | 100 | 14 | 9.50 |
| 2315-125210 | 125 | 92 | 210 | 6-120 | 92-188 | 86-180 | 32 | 3 | 13 | 100 | 35 | M8 | 96 | 2315-10 | 2315-096 | 2000 | 100 | 14 | 11.50 |
| 2315-125260 | 125 | 92 | 260 | 6-170 | 92-238 | 86-230 | 32 | 3 | 13 | 150 | 35 | M8 | 96 | 2315-10 | 2315-096 | 2000 | 100 | 14 | 13.70 |
| 2315-125310 | 125 | 92 | 310 | 6-220 | 92-288 | 86-280 | 32 | 3 | 13 | 150 | 35 | M8 | 96 | 2315-10 | 2315-096 | 2000 | 100 | 14 | 15.80 |
| 2315-125360 | 125 | 92 | 360 | 6-270 | 92-338 | 86-330 | 32 | 3 | 13 | 150 | 35 | M8 | 96 | 2315-10 | 2315-096 | 2000 | 100 | 14 | 17.50 |

2315

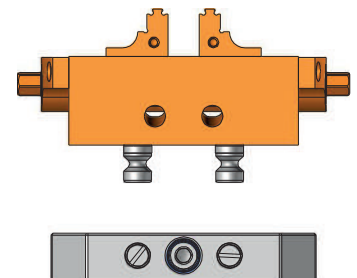
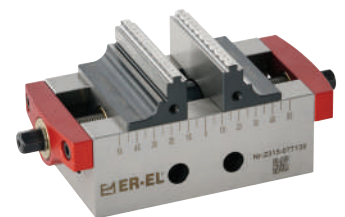
- Dieses Produkt fixiert das zu bearbeitende Material und nimmt gleichzeitig die Zentrierung vor. Der Vorteil dieses Systems zeigt sich besonders bei der Bearbeitung von Materialien mit unterschiedlichen Außendurchmessern, da es diesen Prozess ohne Zentrierwechsel durchführt.
- Einsatzgebiet: Dieses Produkt wird in verschiedenen Industriemaschinen wie z.B. CNC und CNC 5-Achsen Fräsmaschinen eingesetzt.
- Die gesamte bewegliche Oberfläche ist fein geschliffen und gehärtet.
- Da die Krallenbacken bei einer Höhe von 3mm Spannen, ist es möglich 5 Seiten des Werkstückes zu bearbeiten. 5-Achs-Bearbeitung von Werkstücken ermöglicht ideale Handhabung durch kompakte Bauweise. Die Spannbacken können um 180° gedreht werden und ermöglichen so eine höhere Spannbreite.
- Schwarze Beschichtung

2315

- This product fixes the material to be processes and at the same time it makes centering. The advantage of this system specially shows itself when making machinings of the materials having different outer diametermeasurements as it implements this process without changing the center.
- Area of Using: This product is used in various industry machines such as CNC and CNC 5-Axis mechanical milling machines,
- Entire moving surface is sensitevely grinded and hardened.
- 5-face-machining of workpieces possible Ideal handling by compact ness The clamping jaws can be turned 180° and thereby enable a higher clamping capacity.
- Black coating



Nr.2315-046120
 Nr.2315-046160



| Referenz-Nr. Order No. | a | L | h | b | b1 | b2 | c | sw | d | Kombination Combination | Nm | (kg) |
|---------------------------|-----|-----|----|-----|----|-----|----|----|----|----------------------------|----|------|
| 2315-052 | 116 | 150 | 27 | 100 | 50 | - | 52 | 8 | 12 | 2315-08 | 30 | 2.9 |
| 2315-096 | 156 | 192 | 27 | 150 | 50 | 100 | 96 | 8 | 12 | 2315-10 | 30 | 5.5 |



2316

• Anwendung für Horizontalbearbeitungszentrum, Vertikalbearbeitungszentrum, 3-4-5 Achs CNC-Maschinen und CNC-Divisor. Mit ER-EL Point Clamp kann man die Präzisionsschraubstöcke und die Richtung der Schraubstöcke in wenigen Sekunden wechseln. Apparatwechsel ebenfalls möglich.

Kombinationen:

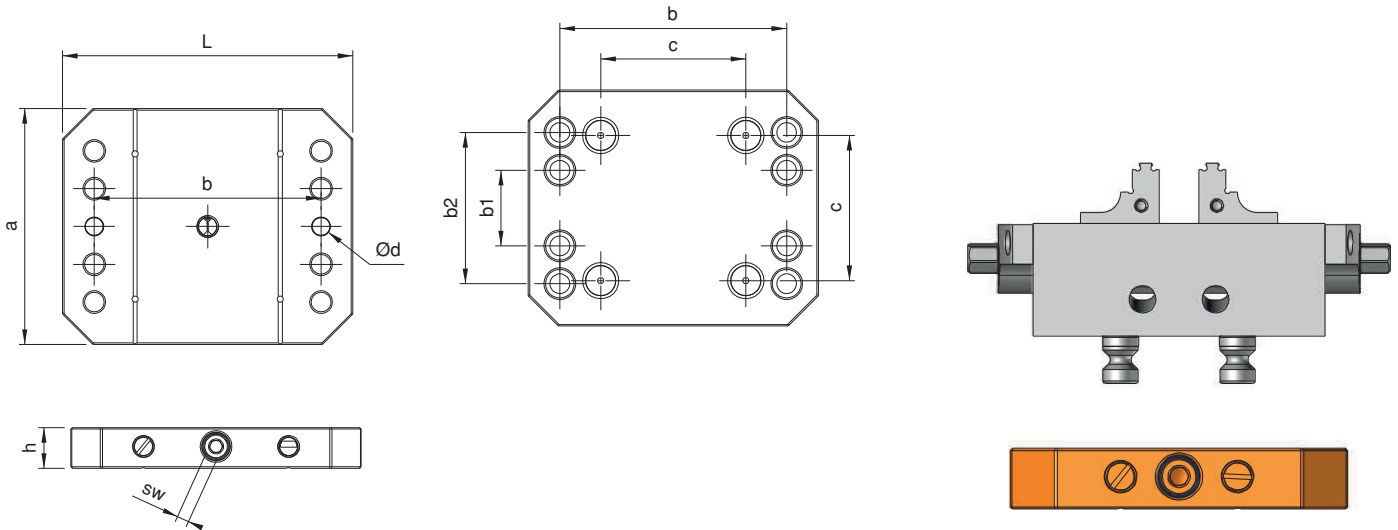
Nr.2315-052 mit Nr.2315-046
 Nr.2315-052 mit Nr.2315-077
 Nr.2315-052 mit Nr.2315-097
 Nr.2315-096 mit Nr.2315-125
 Nr.2315-096 mit Nr.2315-5296

2316

• Application for horizontal machining center, vertical machining center, 3-4-5 axis CNC machines and CNC-Divisor. With ER-EL Point Clamp you can change your precision vices and the direction of the vices in a few seconds. Device change is also possible.

Combinations:

Nr.2315-052 with Nr.2315-046
 Nr.2315-052 with Nr.2315-077
 Nr.2315-052 with Nr.2315-097
 Nr.2315-096 with Nr.2315-125
 Nr.2315-096 with Nr.2315-5296



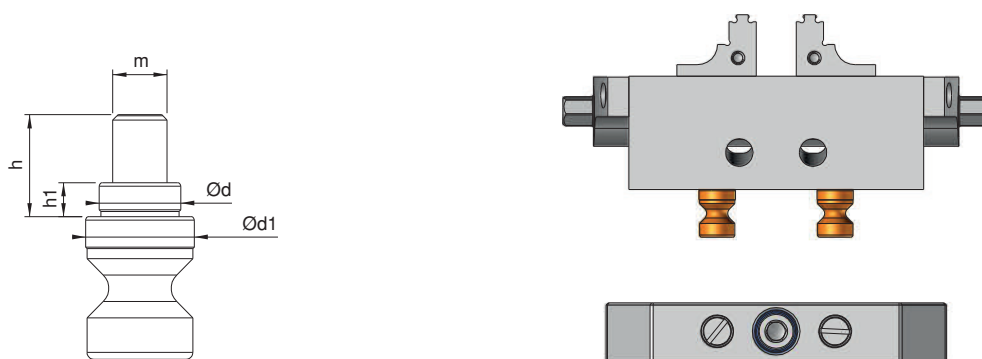
| Referenz-Nr. Order No. | m | h | h1 | d | d1 | Kombination Combination | (g) |
|---------------------------|-----|----|----|----|----|----------------------------|-----|
| 2315-08 | M8 | 20 | 5 | 12 | 16 | 2315-052 | 35 |
| 2315-10 | M10 | 20 | 5 | 16 | 20 | 2315-096 | 50 |

Spannbolzen

Pull Stud



2316



| Referenz-Nr. Order No. | a | L | h | c | c1 | sw | Nm | Kombination Combination | (kg) |
|---------------------------|-----|-----|----|----|----|----|----|----------------------------|------|
| 2315-5296 | 116 | 150 | 27 | 52 | 96 | 8 | 30 | 2315-096 | 2.90 |



2315

• Mit Kombination von 2315-096 Point Clamp und 2315-5296 ER-EL Point Stichmaß Adapter kann der Schraubstock 046-077-097 gespannt werden.

Kombination:

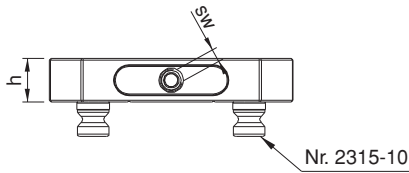
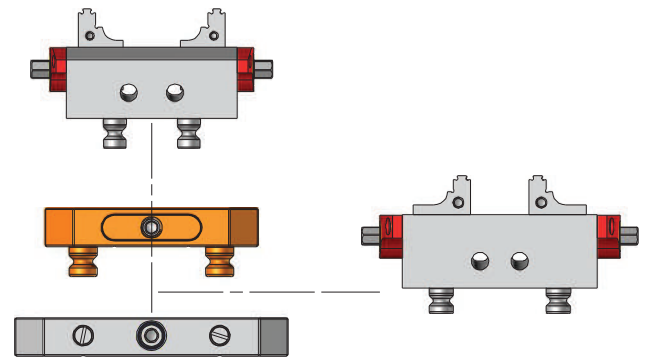
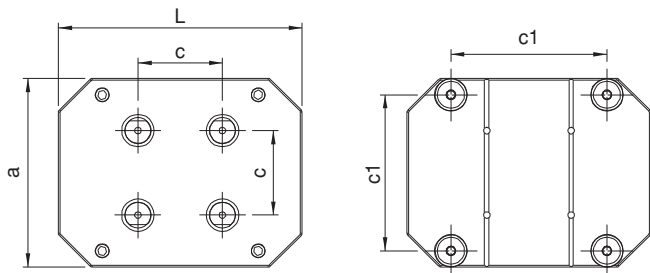
Nr.2315-096 und Nr.2315-125
Nr.2315-096 und Nr.2315-5296

2315

• Device change is also possible.

Combinations:

Nr.2315-096 with Nr.2315-125
Nr.2315-096 with Nr.2315-5296



| Referenz-Nr. Order No. | h | a | L | b | g | c | f Kombination Combination | Kombination Combination | d | e | (kg) |
|---------------------------|----|-----|-----|-----|------|----|---------------------------------|----------------------------|-----|----|------|
| 2315-04680 | 80 | 97 | 226 | 200 | 12,5 | 52 | 2315-08 | 2315-046 | 100 | 18 | 6.8 |
| 2315-07780 | 80 | 97 | 226 | 200 | 12,5 | 52 | 2315-08 | 2315-077 | 100 | 18 | 7 |
| 2315-09780 | 80 | 117 | 226 | 200 | 12,5 | 52 | 2315-08 | 2315-097 | 100 | 18 | 8.6 |
| 2315-12580 | 80 | 145 | 278 | 250 | 12,5 | 96 | 2315-10 | *2315-125 | 150 | 18 | 13.3 |
| 2315-12581 | 80 | 145 | 380 | 350 | 12,5 | 96 | 2315-10 | **2315-125 | 150 | 18 | 21.3 |

Erhöhung für 5-Achs Schraubstock

5-Axis Vice Bottom Support



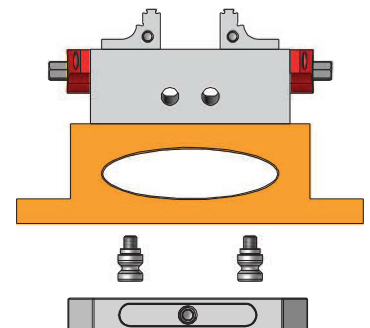
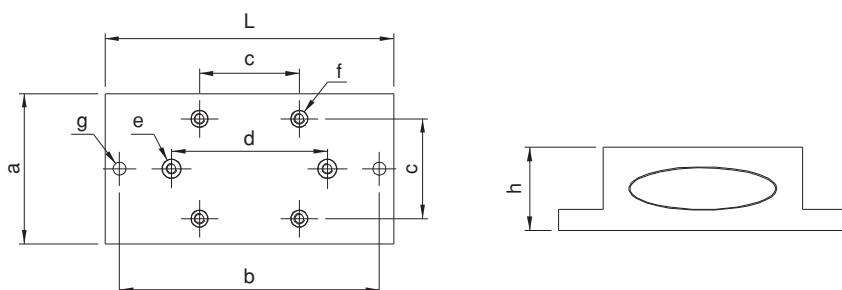
2315

Kombinationen:

Nr.2315-12580 wird benötigt für den Schraubstock
*Nr.2315-125160 und Nr.2315-125210
Nr.2315-12581 Erhöhung für 5-Achs Schraubstock
**wird für Nr.2315-125260, Nr.2315-125310 und Nr.2315-125360 verwendet.

Combinations:

Nr.2315-12580 is needed for the vice
*Nr.2315-125160 and Nr.2315-125210
Nr.2315-12581 is needed for the vice
**Nr.2315-125260, Nr.2315-125310 and Nr.2315-125360



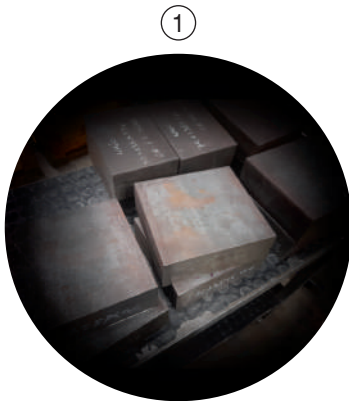
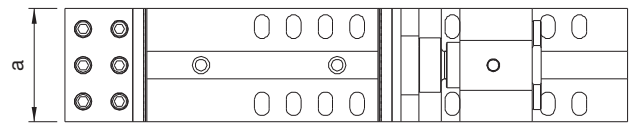
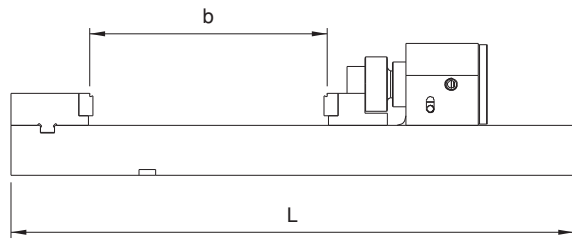
| Referenz-Nr. Order No. | a | b | L | (kg) |
|---------------------------|-----|-----|-----|------|
| 2315-340 | 125 | 340 | 620 | 44 |

2315

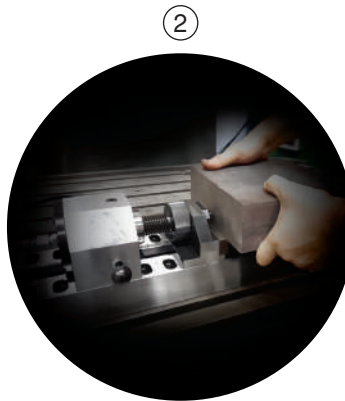
• Bei Werkstücken mit hohem Haltekraft-Bedarf wird Vorpress-Schraubstock empfohlen. Spannweite beträgt 6-355 mm.

2315

• For workpieces needed higher holding power is recommended Pre-Form Vice. Clamping range is 6-355 mm.



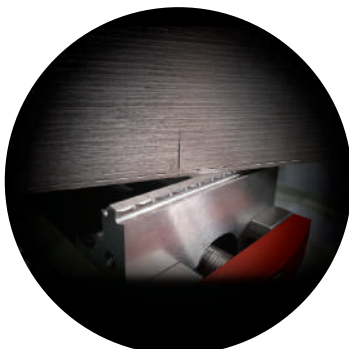
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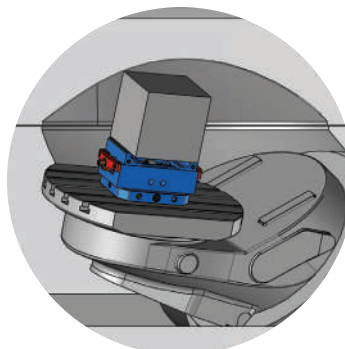
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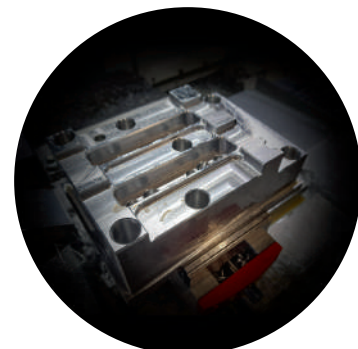
③






④



⑤



⑥

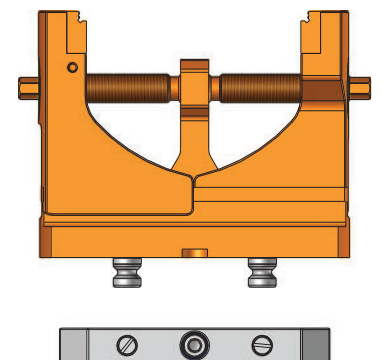
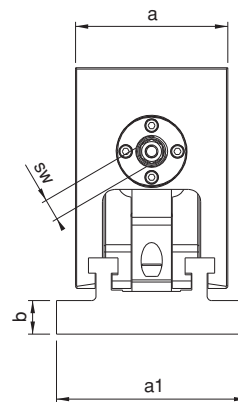
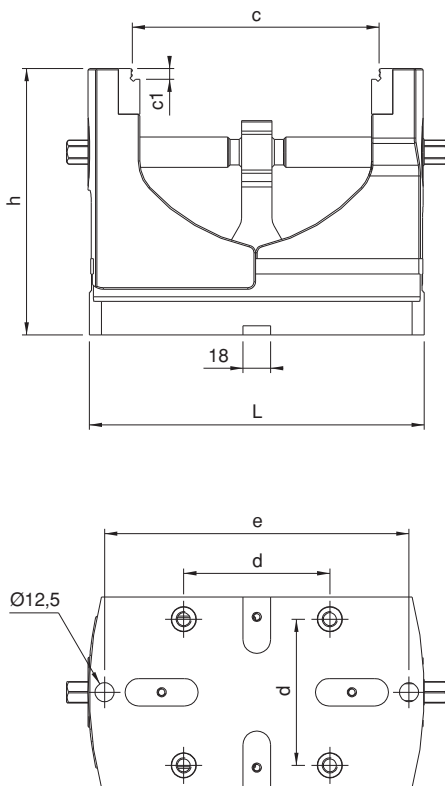
| Referenz-Nr. Order No. | a | a1 | h | L | c | c1 | b | e | d | Spannkraft Clamping Force Kgf | Nm | sw |  Kombination Combination |  Kombination Combination |  (kg) |
|---------------------------|-----|-----|-----|-----|--------|----|----|-----|----|-------------------------------------|-----|----|--|--|--|
| 2315-100160 | 100 | 125 | 175 | 220 | 30-160 | 7 | 22 | 200 | 96 | 3000 | 130 | 14 | 2315-10 | 2315-096 | 13.70 |
| 2315-130225 | 130 | 155 | 175 | 285 | 30-225 | 7 | 22 | 250 | 96 | 3000 | 130 | 14 | 2315-10 | 2315-096 | 20.50 |


2315

- Dieses Produkt fixiert das zu bearbeitende Werkstück und führt gleichzeitig eine Zentrierung durch.
Der Vorteil dieses Systems zeigt sich besonders bei der Bearbeitung von Materialien mit unterschiedlichen Außendurchmessern, da es diesen Prozess ohne Wechsel des Zentrums durchführt.
- Anwendungsbereiche: CNC Maschinen und 5-Achs Bearbeitungszentren
- Die gesamte Lauffläche ist fein geschliffen und gehärtet.
- Schwarz beschichtet

2315

- This product fixes the material to be processes and at the same time it makes centering.
The advantage of this system specially shows itself when making machinings of the materials having different outer diameter measurements as it implements this process without changing the center.
- Area of Using: This product is used in various industry machines such as CNC and CNC 5-Axis mechanical milling machines,
- Entire moving surface is sensitevely grinded and hardened.
- Black coating



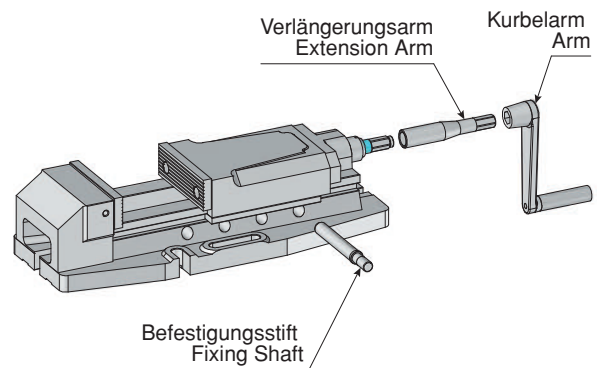
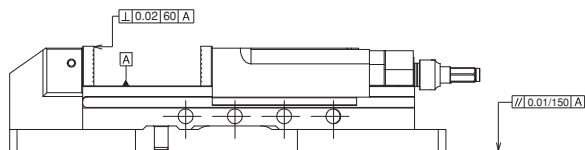
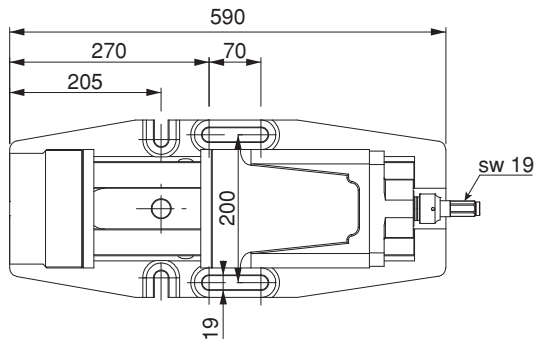
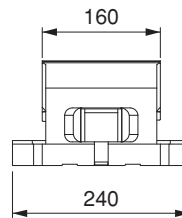
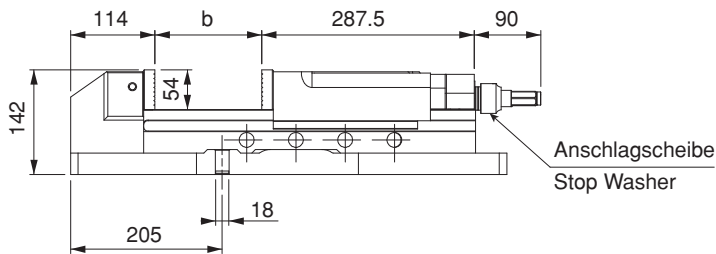
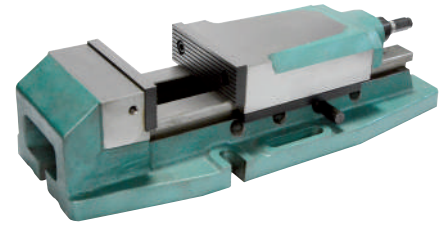
| Referenz-Nr. Order No. | b | Spannkraft Clamping Force kgf |  (kg) |
|---------------------------|-------|-------------------------------------|---|
| 2320-160200 | 0-200 | 4500 | 60 |


2320

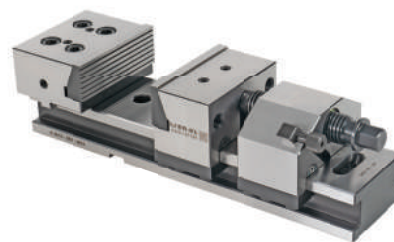
- Verwendung: Fräsen CNC und mechanisch, Schleifen und sonstige Industriemaschinen
- Aktivflächen komplett feingeschliffe und feingehärtet

2320

- Area of Using: CNC and mechanical milling machines, drilling machines, various industrial machines
- Entire moving surface is sensitively grinded and hardened.



| Referenz-Nr. Order No. | a | b | c | L | d | e | f | h | i | n | s | Spannkraft clamping force kgf | Drehmoment Allowable Screw Torque (N·m) |  (kg) |
|---------------------------|-----|-------|----|-----|----|----|-----|-----|-----|----|---------|-------------------------------------|--|---|
| 2330-127160 | 127 | 0-160 | 60 | 422 | 99 | 78 | 160 | 115 | 125 | 55 | 200 | 4500 | 170 | 28 |
| 2330-157200 | 157 | 0-200 | 60 | 462 | 99 | 78 | 160 | 115 | 150 | 55 | 200 | 4500 | 170 | 46 |
| 2330-157300 | 157 | 0-300 | 60 | 562 | 99 | 78 | 160 | 115 | 150 | 55 | 250 | 4500 | 170 | 51 |
| 2330-197300 | 197 | 0-300 | 60 | 562 | 99 | 78 | 160 | 115 | 150 | 55 | 250 | 4500 | 170 | 66 |
| 2330-197400 | 197 | 0-400 | 60 | 662 | 99 | 78 | 160 | 115 | 150 | 55 | 350 | 4500 | 170 | 73 |
| 2330-197500 | 197 | 0-500 | 60 | 762 | 99 | 78 | 160 | 115 | 150 | 55 | 250/250 | 4500 | 170 | 80 |
| 2330-197600 | 197 | 0-600 | 60 | 862 | 99 | 78 | 160 | 115 | 150 | 55 | 250-250 | 4500 | 170 | 86 |

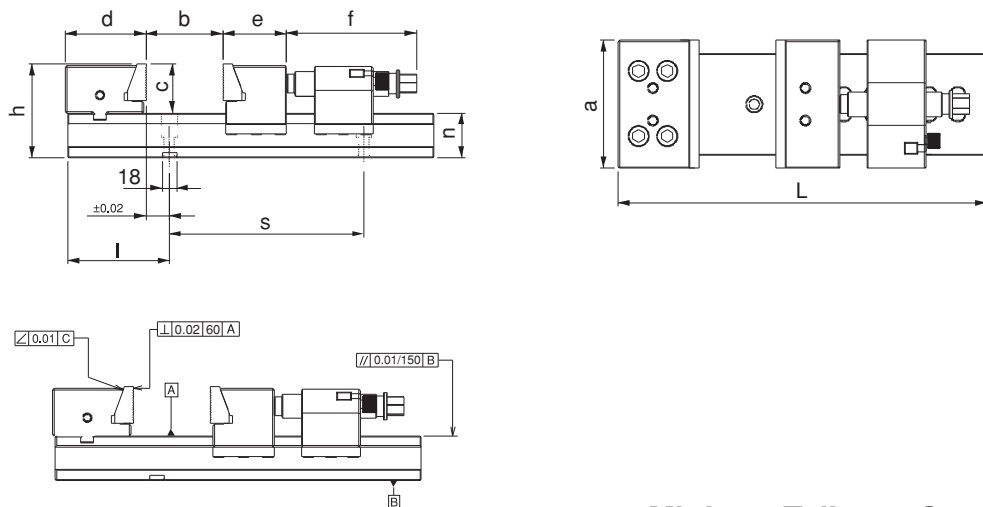


2330

- gehärtet und feingeschliffen Aufgrund Federsystem wird das Werkstück nach unten gespannt
Aktivflächen komplett fein geschliffen
- Verwendung: Fräsen CNC und mechanisch, Schleifen und sonstige Industriemaschinen
- Aktivflächen komplett feingeschliffen und feingehärtet


2330

- Mechanical Steel Vice is hardened and it has excellent way of using because of being sensitively grinded. It's usage characteristic fixes the material to be machined and at the same time it pulls the material to the base of the vice because of having springed system of modular jaws taking place in the moving jaws. Entire moving surface is sensitively grinded. With it's wedged fixing characteristic, moving jaw distance can be adjusted rapidly and can be used with convenience.
- Area of Using: CNC and mechanical milling machines, grinding and drilling machines, various industrial machines
- Entire moving surface is sensitively grinded and hardened.

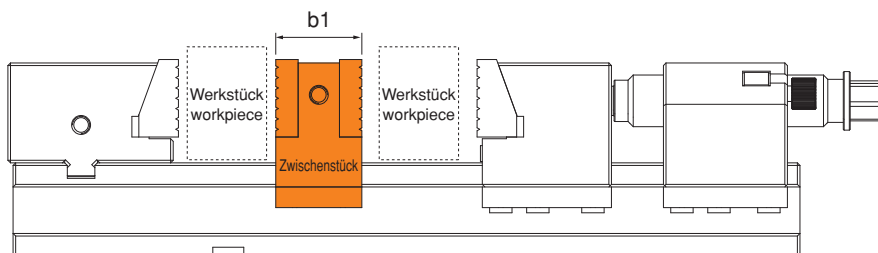



Mittlerer Teil zum Spannen von zwei Werkstücken

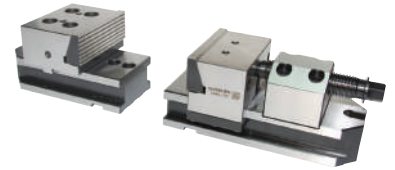
Medium Part to Connect Two Work Piece

| Referenz-Nr. Order No. | b1 |  (kg) |
|---------------------------|----|---|
| 2330-127 | 50 | 3.1 |
| 2330-157 | 50 | 3.8 |
| 2330-197 | 50 | 4.7 |

Hinweis: Um mehrere Werkstücke spannen zu können, werden Zwischenstücke benötigt.
Notes: To be able to clamp several workpieces, intermediate pieces are required.



| Referenz-Nr. Order No. | a | L | L1 | b1 | b | c | h | i | n | Ød | Spannkraft clamping force kgf | Drehmoment Allowable Screw Torque (N-m) |  (kg) |
|---------------------------|-----|-----|-----|----|------|----|-----|-------|----|------|-------------------------------------|--|---|
| 2345-127 | 127 | 202 | 260 | 53 | 0-58 | 60 | 115 | 163.5 | 55 | 12.5 | 4500 | 170 | 28 |

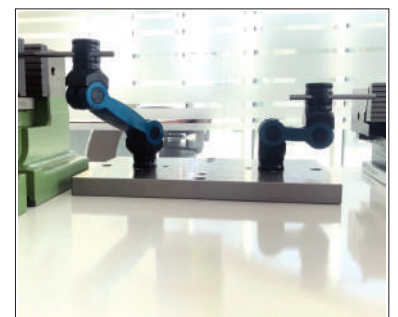
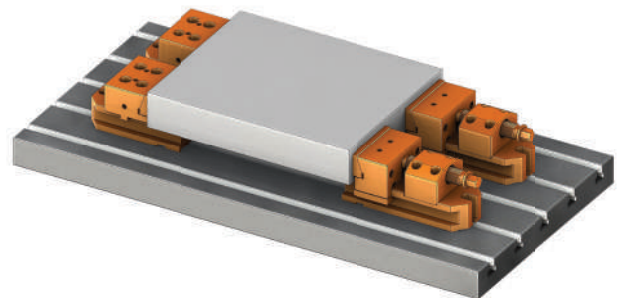
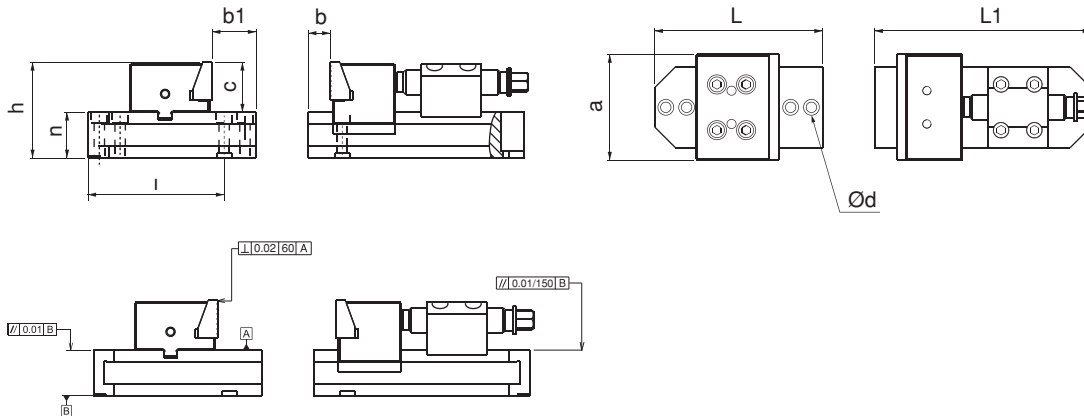


2345

- bestehend aus 2 beweglichen Teilen
- Werkstück wird nach unten gespannt
- Aktivflächen komplett feingeschliffen und feingehärtet

2345

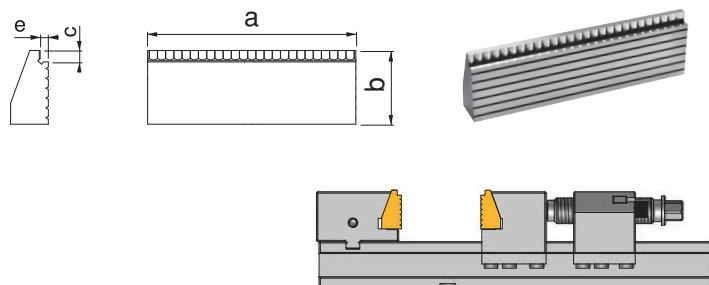
- Because of sliding clamping jaws it clamps the workpieces in opposite direction and down. The vice consists of two parts and it is parallel which provides clamping big tools, threading and similar processes easy.
- Entire moving surface is sensitively grinded and hardened.



| Referenz-Nr. Order No. | a | b | c | d | e | f | |
|---------------------------|-----|----|---|---|---|---|------|
| 2333-127 | 127 | 45 | 7 | - | 5 | - | 760 |
| 2333-157 | 157 | 45 | 7 | - | 5 | - | 935 |
| 2333-197 | 197 | 45 | 7 | - | 5 | - | 1180 |

2333
• Gehärtet

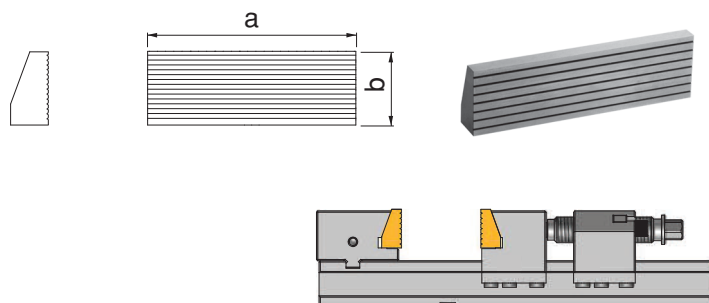
2333
• Hardened



| Referenz-Nr. Order No. | a | b | c | d | e | f | |
|---------------------------|-----|----|---|---|---|---|------|
| 2334-127 | 127 | 45 | - | - | - | - | 765 |
| 2334-157 | 157 | 45 | - | - | - | - | 960 |
| 2334-197 | 197 | 45 | - | - | - | - | 1185 |

2334
• Gehärtet

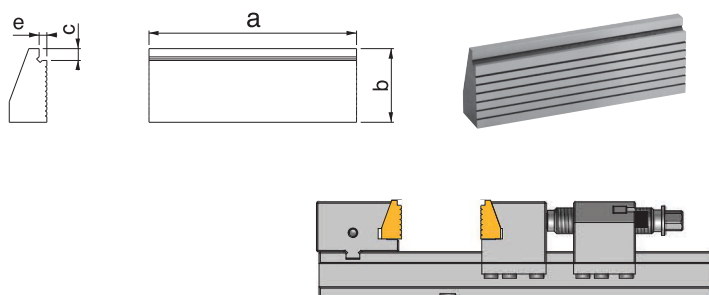
2334
• Hardened



| Referenz-Nr. Order No. | a | b | c | d | e | f | |
|---------------------------|-----|----|---|---|---|---|------|
| 2335-127 | 127 | 45 | 7 | - | 5 | - | 760 |
| 2335-157 | 157 | 45 | 7 | - | 5 | - | 935 |
| 2335-197 | 197 | 45 | 7 | - | 5 | - | 1180 |

2335
• Gehärtet

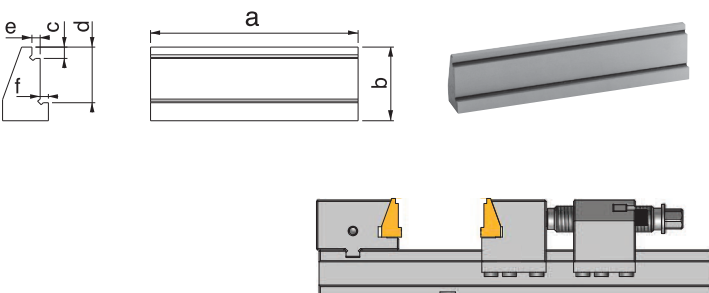
2335
• Hardened



| Referenz-Nr. Order No. | a | b | c | d | e | f | |
|---------------------------|-----|----|---|----|---|---|------|
| 2340-127 | 127 | 45 | 7 | 34 | 5 | 5 | 950 |
| 2340-157 | 157 | 45 | 7 | 34 | 5 | 5 | 1010 |
| 2340-197 | 197 | 45 | 7 | 34 | 5 | 5 | 1290 |

2340
• Gehärtet

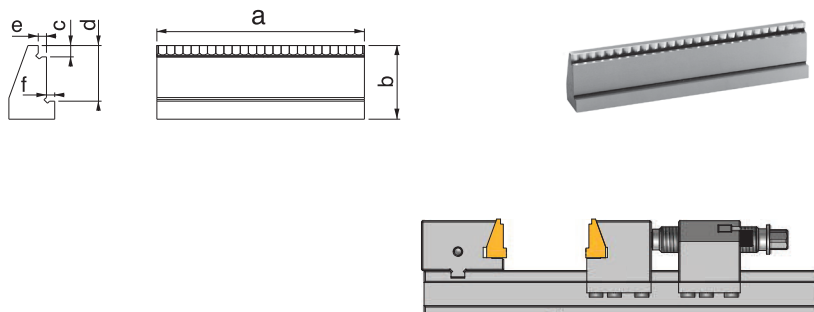
2340
• Hardened



| Referenz-Nr. Order No. | a | b | c | d | e | f | |
|---------------------------|-----|----|---|----|---|---|------|
| 2336-127 | 127 | 45 | 7 | 34 | 5 | 5 | 950 |
| 2336-157 | 157 | 45 | 7 | 34 | 5 | 5 | 1010 |
| 2336-197 | 197 | 45 | 7 | 34 | 5 | 5 | 1290 |

2336
• Gehärtet

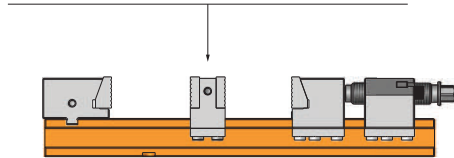
2336
• Hardened



| |
|---------------------------|
| Referenz-Nr. Order No. |
| 2330-127160AG |
| 2330-157200AG |
| 2330-157300AG |
| 2330-197300AG |
| 2330-197400AG |
| 2330-197500AG |

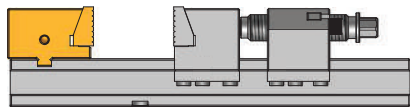
**2330
Grundkörper
Sub-body**

Hinweis: Um mehrere Werkstücke spannen zu können,
werden Zwischenstücke benötigt.
Notes: To be able to clamp several workpieces,
intermediate pieces are required.



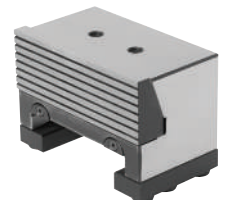
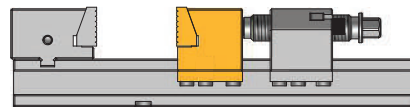
| |
|---------------------------|
| Referenz-Nr. Order No. |
| 2330-127SÇ |
| 2330-157SÇ |
| 2330-197SÇ |

**2330
Fixe Backe
Fixed Jaw**



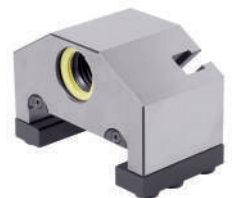
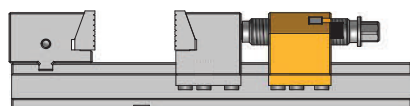
| |
|---------------------------|
| Referenz-Nr. Order No. |
| 2330-127GÇ |
| 2330-157GÇ |
| 2330-197GÇ |

**2330
Bewegliche Backe
Portable Jaw**



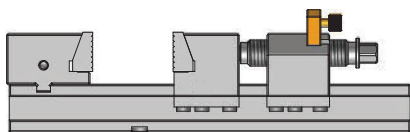
| |
|---------------------------|
| Referenz-Nr. Order No. |
| 2330-127GS |
| 2330-157GS |
| 2330-197GS |

**2330
Bewegliche Mutter
Portable nut**



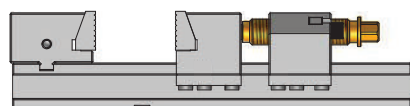
| |
|---------------------------|
| Referenz-Nr. Order No. |
| 2330-127SK |
| 2330-157SK |
| 2330-197SK |

**2330
Anschlag
Wedge of Stop**



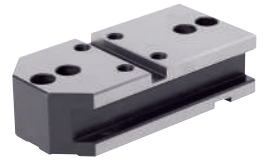
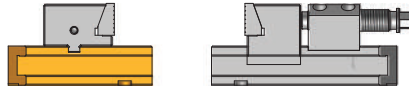
| |
|---------------------------|
| Referenz-Nr. Order No. |
| 2330-127157197M |

**2330
Spindel
Pin**



Referenz-Nr.
Order No.
2345-127SAG

2345
Grundkörper
Fixed Sub-body



Referenz-Nr.
Order No.
2345-127GAG

2345
Beweglicher Grundkörper
Portable Sub-body



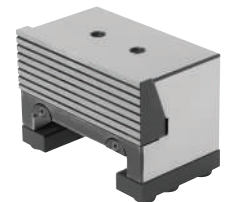
Referenz-Nr.
Order No.
2345-127SÇ

2345
Fixe Backe
Fixed Jaw



Referenz-Nr.
Order No.
2345-127GÇ

2345
Bewegliche Backe
Portable Jaw



Referenz-Nr.
Order No.
2345-127SS

2345
Bewegliche Mutter
Fixed Nut



Referenz-Nr.
Order No.
2330-127157197M

2330
Spindel
Pin



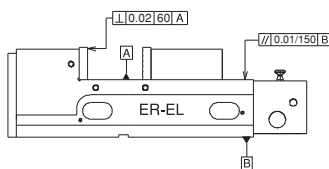
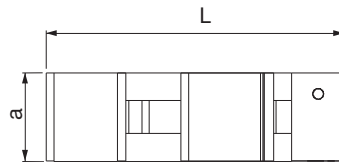
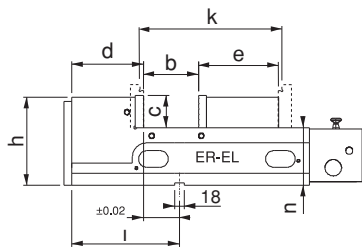
| Referenz-Nr. Order No. | a | b | c | k | L | d | e | h | i | n ±0.01 | Spannkraft clamping force kgf | Bewegungsstrecke Moving Distance Torque | (kg) |
|---------------------------|-----|-----|----|-----|-----|-----|-----|-----|-----|------------|--|--|------|
| 2350-160E | 160 | 160 | 58 | 310 | 530 | 130 | 145 | 160 | 190 | 105 | 2000 | 4 | 62 |

2350

- 6 bar
- Spannkraft 2000 kg, verstellbar
- Verwendung: Fräsen CNC und mechanisch undsonstige Industriemaschinen
- Aktivflächen komplett feingeschliffen und feingehärtet

2350

- It works with 6 Bar Air. It provides speed in clamping-opening processes because of it's pneumatic structure.
- It fixes the workpiece with it's 2000 kgf clamping force. Clamping force can be adjusted with it arbitrary bar adjustment button.
- Area of Using: CNC and mechanical milling machines, drilling machines, various industrial machines
- Entire moving surface is sensitively grinded and hardened.



• Ersatzbacken sind nicht enthalten

• "k" measurement is reached by the spare jaws. The spare jaws are not included in the set.



| Referenz-Nr. Order No. | a | a1 | b | c | k | L | d | e | h | i | n ±0.01 | Spannkraft clamping force kgf | Bewegungsstrecke Moving Distance Torque | (kg) |
|---------------------------|-----|-----|-----|----|-----|-----|----|-----|-----|-----|------------|--|--|------|
| 2370-051 | 130 | 188 | 60 | 58 | 135 | 327 | 64 | 209 | 160 | - | 105 | 1100 | 4 | 37 |
| 2370-052 | 130 | 185 | 140 | 63 | 225 | 400 | 69 | 300 | 160 | 173 | 105 | 2200 | 4 | 44 |
| 2370-053 | 160 | 201 | 200 | 63 | 300 | 485 | 93 | 353 | 166 | 170 | 105 | 3300 | 4 | 63 |
| 2370-054 | 200 | 240 | 250 | 63 | 360 | 530 | 93 | 410 | 166 | 185 | 105 | 4100 | 4 | 81 |

2370

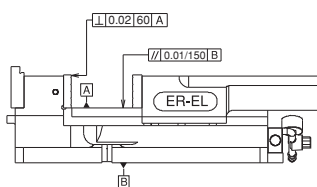
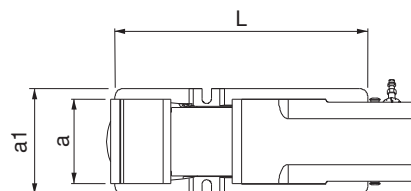
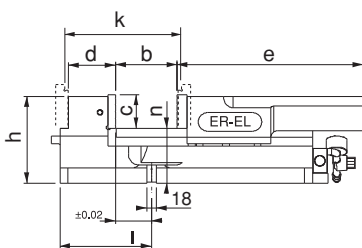
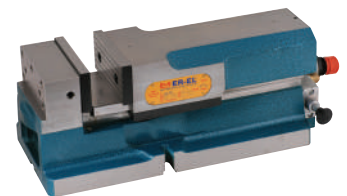
- 6 bar
- Spannkraft 1100 - 4100 kg, einstellbar
- Verwendung: Fräsen CNC und mechanisch und sonstige Industriemaschinen
- Aktivflächen komplett feingeschliffen und feingehärtet

2370

- It works with 6 Bar Air. It provides speed in clamping-opening processes because of it's pneumatic structure.
- It fixes the workpiece with it's 1100 kgf and 4100 kgf clamping force. Clamping force can be adjusted with it arbitrary bar adjustment button.
- Area of Using: CNC and mechanical milling machines, drilling machines, various industrial machines
- Entire moving surface is sensitively grinded and hardened.

Pneumatischer Schraubstock

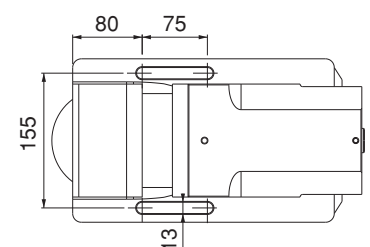
Pneumatic Vice




• Ersatzbacken sind nicht enthalten

• "k" measurement is reached by the spare jaws. The spare jaws are not included in the set.

2370-051 Detail



| Referenz-Nr. Order No. | a | H min. - max. | L | ØD | S min. - max. | B | M |  |
|---------------------------|----|------------------|----|----|------------------|----|-----|---|
| 2377-12512 | 12 | 85-125 | 90 | 6 | 30-50 | 37 | M10 | 780 |
| 2377-12514 | 14 | 85-125 | 90 | 6 | 30-50 | 37 | M10 | 780 |
| 2377-12516 | 16 | 85-125 | 90 | 6 | 30-50 | 37 | M10 | 780 |
| 2377-12518 | 18 | 85-125 | 90 | 6 | 30-50 | 37 | M10 | 780 |
| 2377-16512 | 12 | 85-165 | 90 | 6 | 50-95 | 37 | M10 | 865 |
| 2377-16514 | 14 | 85-165 | 90 | 6 | 50-95 | 37 | M10 | 865 |
| 2377-16516 | 16 | 85-165 | 90 | 6 | 50-95 | 37 | M10 | 865 |
| 2377-16518 | 18 | 85-165 | 90 | 6 | 50-95 | 37 | M10 | 865 |

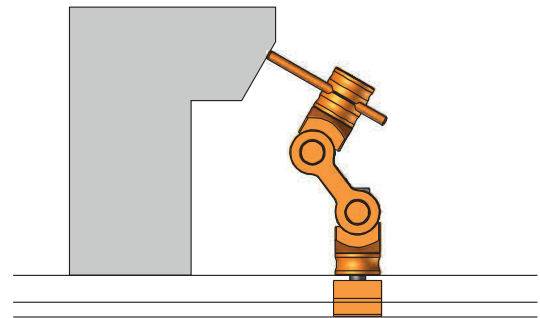
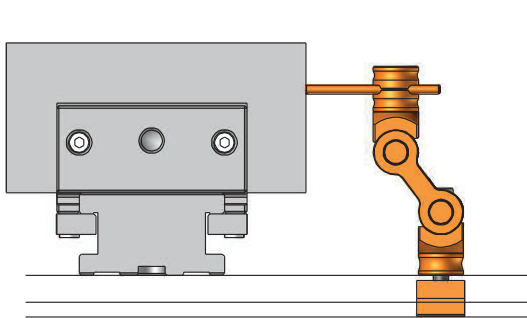
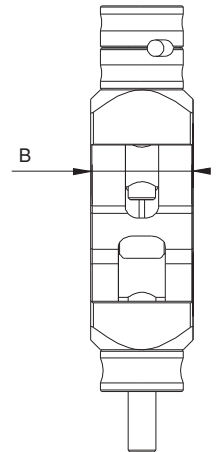
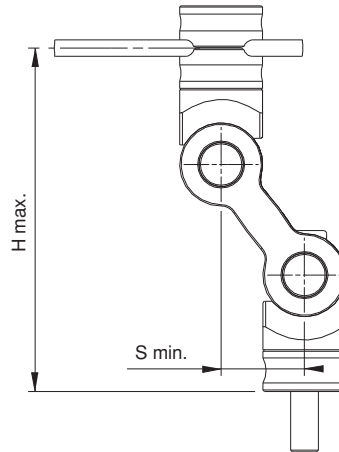
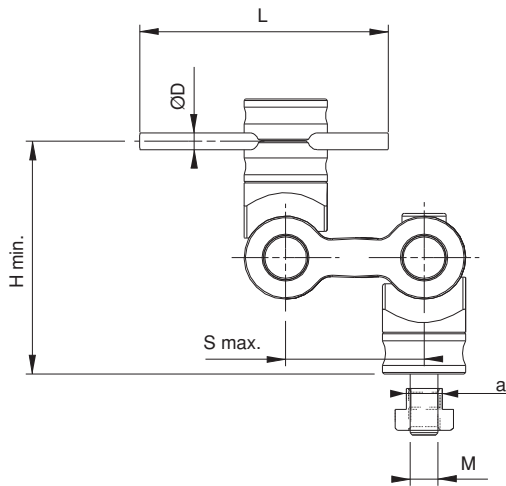


2377

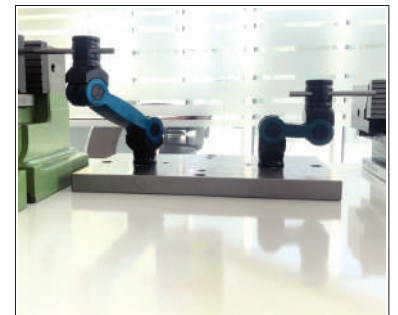
- 5-Achs verstellbare Eigenschaft ermöglicht eine flexible und einfache Anwendung bei Maschinen und Montagearbeiten.

2377

- With its 5 axis adjustment feature, it provides fast and flexible usage in machines and assembly works.




Anwendungsbeispiel / Application Examples



Hydraulische Spannvorrichtung Anwendungsbeispiele

Hydraulic Fixture Application



| Referenz-Nr. Order No. | d | d1 | h | h1 | L |  (kg) |
|---------------------------|----|----|----|----|-----|---|
| 2385-130 | 48 | 32 | 91 | 60 | 151 | 3.05 |

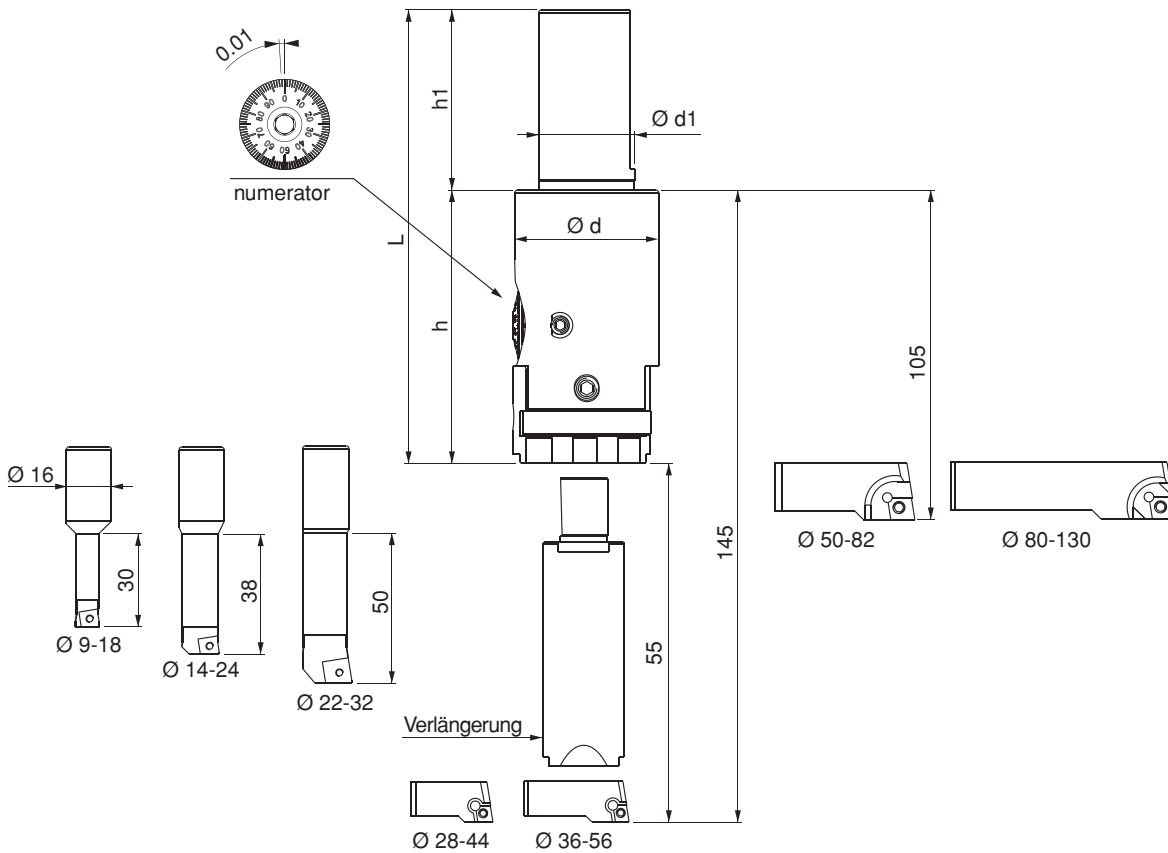


2385

- Präzision 0,01 Bearbeitung Durchmesser 9-130 mm und Tiefe 170 mm

2385

- It works with 0.01 sensitivity in diameter 9-130 mm and 145 mm depth. Because of replaceable function kater and cartouche it is perfect in using.



Hinweis :
ab 52 mm Durchmesser
kann mit dem
Grundkörper 105 mm
Tiefe und mit Verlängerung
eine Tiefe von 145 mm
erreicht werden

| Referenz-Nr. Order No. | Type | Einsatz-Type Type of Inserts | Rotation | Progress | ap |
|---------------------------|------------------|---------------------------------|------------|----------|--------------|
| 2386-00918 | 09-18 Einsatz | CCMT 06 | 2700 d/dk. | F 75 | 0.1 - 0.5 mm |
| 2386-01424 | 14-24 Einsatz | CCMT 06 | 2500 d/dk. | F 75 | 0.1 - 0.5 mm |
| 2386-02232 | 22-32 Einsatz | CCMT 09 | 2000 d/dk. | F 50 | 0.1 - 1 mm |
| 2386-02844 | 28-44 Kartusche | CCMT 06 | 1800 d/dk. | F 60 | 0.1 - 1 mm |
| 2386-03656 | 36-56 Kartusche | CCMT 06 | 1500 d/dk. | F 65 | 0.1 - 1.5 mm |
| 2386-05082 | 50-82 Kartusche | CCMT 09 | 1500 d/dk. | F 70 | 0.1 - 2 mm |
| 2386-80130 | 80-130 Kartusche | CCMT 09 | 360 d/dk. | F 75 | 2 mm |
| 2386-00055 | Verlängerung | - | 400 d/dk. | F 75 | 1.5 mm |

Note; from diameter 52: It reaches 105 mm depth with its slot and 145 mm depth with its extended kate

| Referenz-Nr. Order No. | J x M | k | h | h1 | e | L | L1 | L2 | (g) |
|---------------------------|------------------|----|----|----|----|------|------|----|---------|
| 2390-010 | ISO30-M12 | 83 | 99 | 35 | 18 | 85 | 128 | 26 | 6030 |
| 2390-015 | ISO40-M16 | | | | | | | | 6555 |
| 2390-020 | ISO50-M24 | | | | | | | | 9110 |
| 2390-025 | BT40 -M16 | | | | | | | | 6900 |
| 2390-030 | BT50 - M24 | | | | | | | | 9840 |
| 2390-035 | SK40- M16 | | | | | | | | 6750 |
| 2390-040 | SK50- M24 | | | | | 8970 | | | |
| 2390-045 | MK4 - M16 | | | | | 132 | 6180 | | |
| 2390-050 | MK4 Keil / wedge | | | | | 6880 | | | |
| 2390-055 | MK5 - M20 | | | | | 7785 | | | |
| 2390-060 | MK5 Keil / wedge | | | | | 7450 | | | |

2390

- Präzision 0,01 Bearbeitung 18-210 mm
beinhaltet 4 Lochensätze und 1 Nutenräumer in Holzkiste
wechselbare Einsätze: ISO 30-40; BT 40-50; SK40-50; MK4-5

2390

- Product has 0.02 machining sensitivity and it can implement processes from 18mm to 210mm.
It's modular system structure provides convenience in using.
It provides the possibility of using in CNC and Mechanical benches by changing the holder.
The product takes place in a wooden box with it's 4 hole bar, 1 T-Slot scraper.
Changeable Holders:
Possibility to be used with ISO30-40-50 BT 40-50 SK40-50 MK4-5.

| Referenz-Nr. Order No. | L | L1 | e | Kanten Schneid-Typ Cutting Edge type | (g) |
|---------------------------|-----|-----|----|---|---------|
| 2395-1 | 85 | - | 18 | DCMT | 112 |
| 2395-2 | 95 | - | 18 | DCMT | 130 |
| 2395-3 | 132 | - | 18 | DCMT | 200 |
| 2395-4 | - | 128 | 18 | - | 360 |

| min | Ø | max | c1 | Umdrehung / Min Revolution per minute |
|-----|---|-----|-----|--|
| 18 | | 95 | 50 | 400-450 |
| 18 | | 95 | 63 | 400-450 |
| 20 | | 100 | 100 | 170-220 |



- Bei Montage der Einsätze ist Bearbeitung 18-100 mm Durchmesser und 0-100 mm Tiefe möglich
- It is possible to have enlargement from 18mm to 100mm by attaching bars to the bottom holes taking place in the slide of the product and it can go down to depth up to 0-100mm.

| min | Ø | max | c2 | Umdrehung / Min Revolution per minute |
|-----|---|-----|----|--|
| 95 | | 210 | 55 | 90-170 |
| 95 | | 210 | 65 | 90-170 |

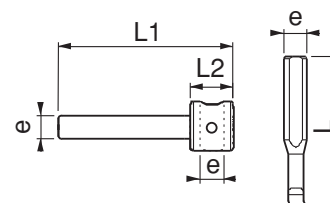
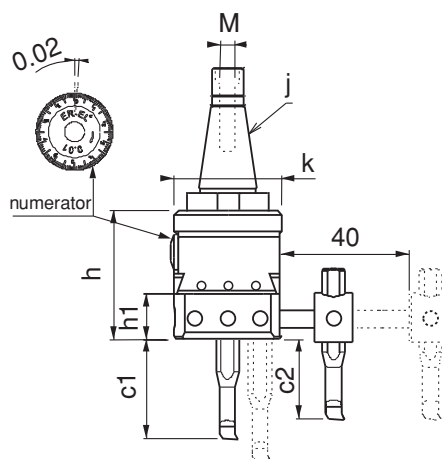
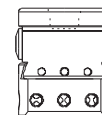
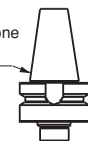


- Bei Montage der Zwischeneinsätze ist Bearbeitung Durchmesser 95-210 mm und Tiefe 0-65 mm möglich
- By applying intermediary means to the side hole of the product's slide, it is possible to have enlargement from 95mm to 210mm and it can go down to depth up to 0-65mm as seen in the figure.



Es ist modular aufgebaut.
Befestigung erfolgt durch im
Uhrzeigersinn in den Prozess
zu schrauben.

It is modular. Fixing process is done
screwing towards clockwise



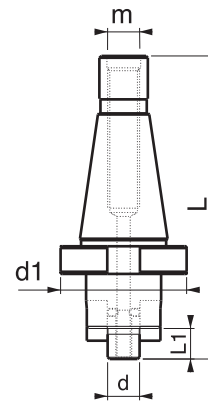
| Referenz-Nr. Order No. | ISO | d | d1 | L | L1 | m | |
|---------------------------|--------|----|------|-----|----|-----|------|
| 2410-3016 | ISO 30 | 16 | 48 | 125 | 17 | M12 | 665 |
| 2410-3022 | ISO 30 | 22 | 48 | 125 | 19 | M12 | 760 |
| 2410-3027 | ISO 30 | 27 | 48 | 125 | 21 | M12 | 790 |
| 2410-3032 | ISO 30 | 32 | 63.5 | 125 | 22 | M12 | 1020 |
| 2410-4016 | ISO 40 | 16 | 63.5 | 153 | 17 | M16 | 1170 |
| 2410-4027 | ISO 40 | 27 | 63.5 | 153 | 19 | M16 | 1360 |
| 2410-4032 | ISO 40 | 32 | 63.5 | 153 | 24 | M16 | 1605 |
| 2410-4040 | ISO 40 | 40 | 73.5 | 153 | 27 | M16 | 1795 |
| 2410-5016 | ISO 50 | 16 | 98 | 195 | 17 | M24 | 3250 |
| 2410-5022 | ISO 50 | 22 | 98 | 195 | 19 | M24 | 3350 |
| 2410-5027 | ISO 50 | 27 | 98 | 195 | 21 | M24 | 3400 |
| 2410-5032 | ISO 50 | 32 | 98 | 195 | 24 | M24 | 3590 |
| 2410-5040 | ISO 50 | 40 | 98 | 195 | 27 | M24 | 3750 |

2410 ISO 30-40-50

- Gehärtet
- Fein geschliffen

2410 ISO 30-40-50

- Hardened
- Sensitive Grinding



Werkzeugaufnahme

Milling Machine Hatching Headpiece Holder

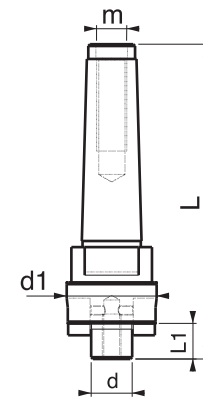
| Referenz-Nr. Order No. | MK | d | d1 | L | L1 | m | |
|---------------------------|------|----|------|-----|----|-----|------|
| 2415-0416 | MK 4 | 16 | 40 | 168 | 17 | M16 | 945 |
| 2415-0422 | MK 4 | 22 | 48 | 168 | 19 | M16 | 1010 |
| 2415-0427 | MK 4 | 27 | 53 | 168 | 21 | M16 | 1135 |
| 2415-0432 | MK 4 | 32 | 63.5 | 168 | 24 | M16 | 1255 |
| 2415-0516 | MK 5 | 16 | 63.5 | 208 | 17 | M20 | 2145 |
| 2415-0522 | MK 5 | 22 | 63.5 | 208 | 19 | M20 | 2375 |
| 2415-0527 | MK 5 | 27 | 63.5 | 208 | 21 | M20 | 2360 |
| 2415-0532 | MK 5 | 32 | 63.5 | 208 | 24 | M20 | 2500 |
| 2415-0540 | MK 5 | 40 | 73.5 | 208 | 27 | M20 | 2700 |

2415 MK4-MK5

- Gehärtet
- Fein geschliffen

2415 MK4-MK5

- Hardened
- Sensitive Grinding



Fräskopf

Milling Machine Hatching Headpiece

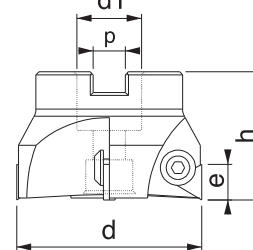
| Referenz-Nr. Order No. | d | h | d1 | p | e | | Kanten Schneid-Typ Cutting Edge type | |
|---------------------------|-----|----|----|------|----|---|---|------|
| 2420-0804 | 80 | 52 | 32 | 14.5 | 22 | 4 | TPKN | 800 |
| 2420-1005 | 100 | 52 | 32 | 14.5 | 22 | 5 | TPKN | 1320 |

2420

- Gehärtet
- Schwarz beschichtet

2420

- Hardened
- Black Coating



| Referenz-Nr. Order No. | d | Gewinde Thread | Allen |
|---------------------------|----------|-------------------|-------|
| 2420-06 | 40-50-63 | M6x0.75 | 4 |
| 2420-08 | 80-100 | M8x1 | 5 |

2420

- Gehärtet
- Schwarz beschichtet

2420

- Hardened
- Black Coating

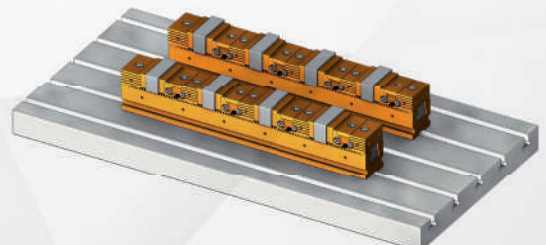
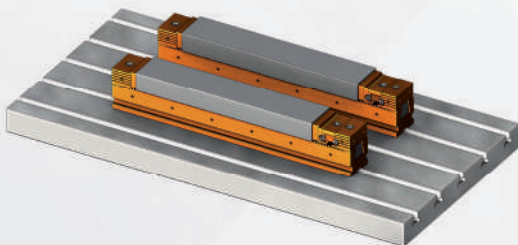


Montage und unterschiedliche Anwendungen

Mounting and Various Applications

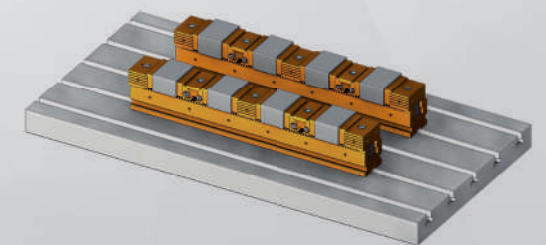
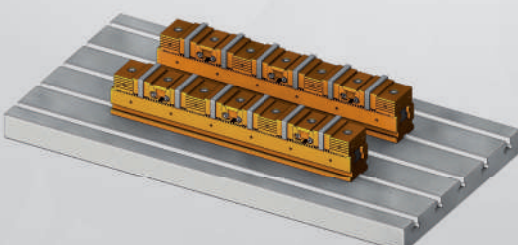
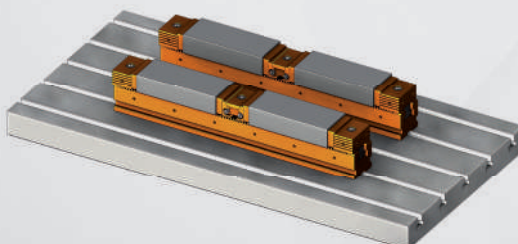
Mehrfachspanner eine Richtung

One Direction Clamping of Multi Jawed Wrench Tooling



Mehrfachspanner beide Richtungen

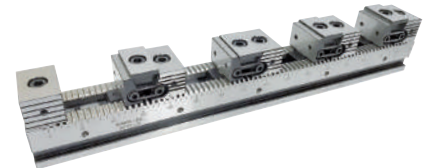
Two Direction Clamping of Multi Jawed Wrench Tooling



| Referenz-Nr. Order No. | L | n | h1 | h2 | h | o | e | f | b | c | k | i | p H7 | Spannmenge Coupling Piece | Spannkraft clamping force kgf | Drehmoment Allowable Screw Torque (N-m) | (kg) |
|---------------------------|-----|-----|----|----|-----|------|----|----|-----|----|-----|-----|------|---------------------------------|-------------------------------------|--|------|
| 2430-055300 | 300 | 55 | 50 | 32 | 72 | 12.5 | 36 | 65 | 100 | 50 | 100 | 100 | 18 | 2 | 1750 | 25 | 9 |
| 2430-055500 | 500 | 55 | 50 | 32 | 72 | 12.5 | 36 | 65 | 100 | 50 | 100 | 300 | 18 | 4 | | | 15 |
| 2430-075400 | 400 | 75 | 65 | 37 | 102 | 12.5 | 48 | 77 | 100 | 50 | 100 | 200 | 18 | 2 | 2000 | 35 | 20 |
| 2430-075600 | 600 | 75 | 65 | 37 | 102 | 12.5 | 48 | 77 | 100 | 50 | 100 | 400 | 18 | 4 | | | 33 |
| 2430-100400 | 400 | 100 | 65 | 37 | 102 | 12.5 | 48 | 80 | 100 | 50 | 100 | 200 | 18 | 2 | 2500 | 50 | 27 |
| 2430-100600 | 600 | 100 | 65 | 37 | 102 | 12.5 | 48 | 80 | 100 | 50 | 100 | 400 | 18 | 3 | | | 41 |

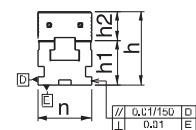
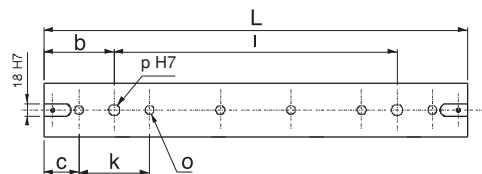
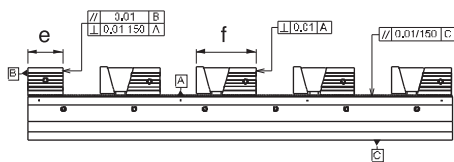
2430

- Spannen mehrer Werkstücke möglich
- Formanpassung möglich
- Feinbeschichtung
- Backen müssen separat bestellt werden.



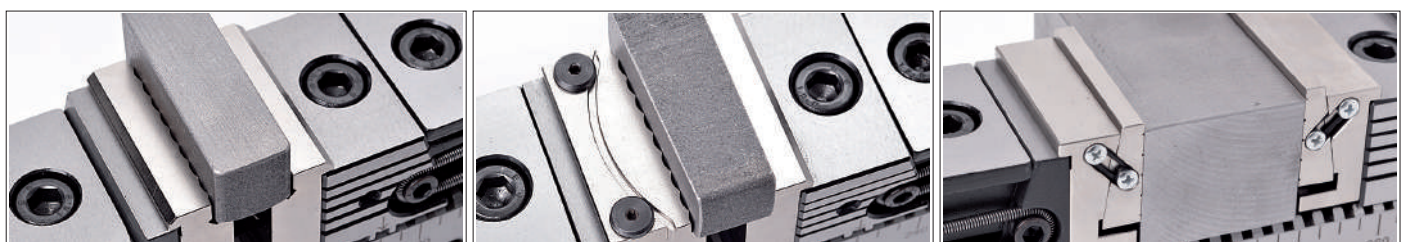
2430

- It provides the attachments of more than one workpieces to the product. Jaws are modular and can be adjusted to the desired measurement.
- Form of the workpiece can be applied on the soft legs connected to the groups.
- Sensitive Grinding
- You need to purchase jaws separate.



| Referenz-Nr. Order No. | Spannmengen / Numbers of Portable Jaw with Workpiece Couplings | | | | |
|---------------------------|--|----------------------------|----------------------------|----------------------------|----------------------------|
| | 1 Werkstück 1 Workpiece | 2 Werkstück 2 Workpiece | 3 Werkstück 3 Workpiece | 4 Werkstück 4 Workpiece | 5 Werkstück 5 Workpiece |
| 2430-055300 | 196mm | 65mm | 22mm | - | - |
| 2430-055500 | 394mm | 165mm | 88mm | 50mm | 26mm |
| 2430-075400 | 268mm | 95mm | 38mm | - | - |
| 2430-075600 | 472mm | 197mm | 106mm | 60mm | 32mm |
| 2430-100400 | 265mm | 93mm | 35mm | - | - |
| 2430-100600 | 469mm | 195mm | 103mm | 57mm | 30mm |

Hinweis: Bei den Werkstückmaßen sind die weichen Backen nicht inkludiert. **Note:** It does not include binding units of measure soft feet in business.



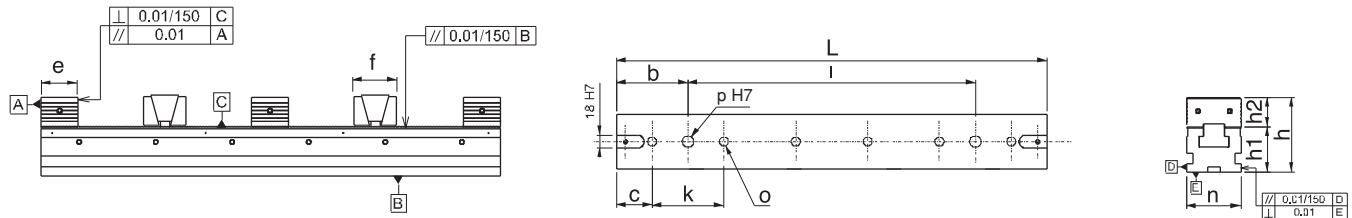
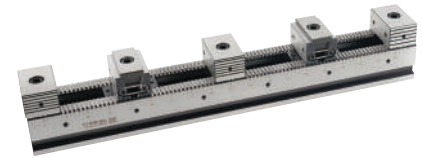
| Referenz-Nr. Order No. | L | n | h1 | h2 | h | o | e | f | b | c | k | i | p H7 | Spannkraft Clamping Force Kgf | Drehmoment Allowable Screw Torque (N-m) |
|---------------------------|-----|-----|----|----|-----|------|----|----|-----|----|-----|-----|------|-------------------------------------|--|
| 2435-055300 | 300 | 55 | 50 | 32 | 82 | 12.5 | 32 | 37 | 100 | 50 | 100 | 100 | 18 | 1750 | 25 |
| 2435-055500 | 500 | 55 | 50 | 32 | 82 | 12.5 | 32 | 37 | 100 | 50 | 100 | 300 | 18 | | |
| 2435-075400 | 400 | 75 | 65 | 37 | 102 | 12.5 | 37 | 57 | 100 | 50 | 100 | 200 | 18 | 2000 | 35 |
| 2435-075600 | 600 | 75 | 65 | 37 | 102 | 12.5 | 37 | 57 | 100 | 50 | 100 | 400 | 18 | | |
| 2435-100400 | 400 | 100 | 65 | 37 | 102 | 12.5 | 37 | 57 | 100 | 50 | 100 | 200 | 18 | 2500 | 50 |
| 2435-100600 | 600 | 100 | 65 | 37 | 102 | 12.5 | 37 | 57 | 100 | 50 | 100 | 400 | 18 | | |

2435

- Spannt doppelseitig
- Backen müssen separat bestellt werden.

2435

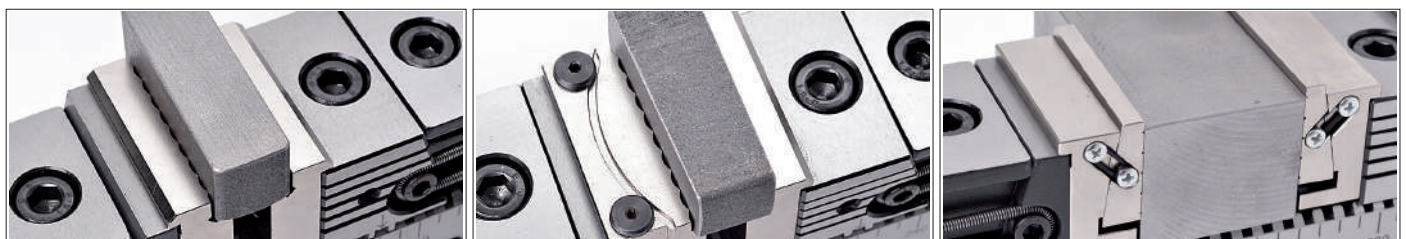
- Double Opening
- You need to purchase jaws separate.



| Referenz-Nr. Order No. | Spannmengen / Numbers of Double Opening Jaw with Workpiece Couplings | | |
|---------------------------|--|-------------------------|-------------------------|
| | 2 Werkstück 2 Workpiece | 3 Werkstück 3 Workpiece | 4 Werkstück 4 Workpiece |
| 2435-055300 | 75mm | 37mm | 16mm |
| 2435-055500 | 173mm | 103mm | 66mm |
| 2435-075400 | 107mm | 55mm | 28mm |
| 2435-075600 | 209mm | 123mm | 79mm |
| 2435-100400 | 104mm | 53mm | 26mm |
| 2435-100600 | 206mm | 121mm | 77mm |
| | 5 Werkstück 5 Workpiece | 6 Werkstück 6 Workpiece | 7 Werkstück 7 Workpiece |
| 2435-055300 | - | - | - |
| 2435-055500 | 45mm | 30mm | 20mm |
| 2435-075400 | 13mm | - | - |
| 2435-075600 | 54mm | 45mm | 24mm |
| 2435-100400 | 12mm | - | - |
| 2435-100600 | 52mm | 34mm | 22mm |

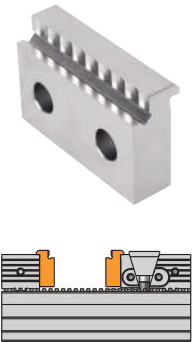
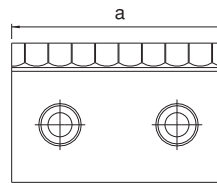
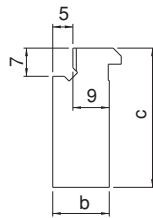
Hinweis: Bei den Werkstückmaßen sind die weichen Backen nicht inkludiert.

Note: It does not include binding units of measure soft feet in business.



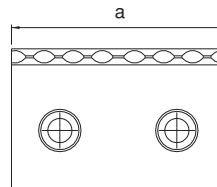
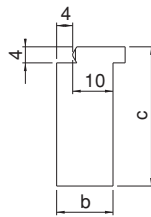
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|----|----|----|
| 2430-24350551 | 53 | 14 | 34 |
| 2430-24350751 | 73 | 14 | 39 |
| 2430-24351001 | 98 | 14 | 39 |

- Gehärtet
- Vernickelt
- Hardened
- Nickel Coating



| Referenz-Nr. Order No. | a | b | c |
|---------------------------|----|----|----|
| 2430-24350552 | 53 | 14 | 34 |
| 2430-24350752 | 73 | 14 | 39 |
| 2430-24351002 | 98 | 14 | 39 |

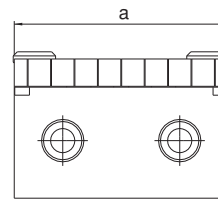
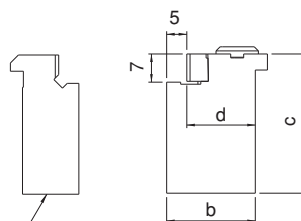
- Gehärtet
- Vernickelt
- Hardened
- Nickel Coating



| Referenz-Nr. Order No. | a | b | c | d |
|---------------------------|----|----|----|----|
| 2430-24350553 | 53 | 22 | 34 | 17 |
| 2430-24350753 | 73 | 25 | 39 | 20 |
| 2430-24351003 | 98 | 25 | 39 | 20 |

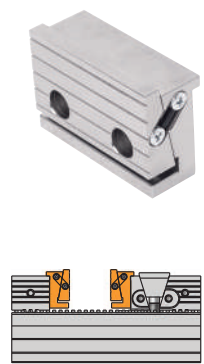
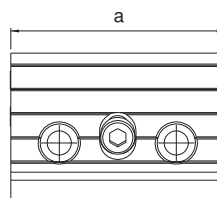
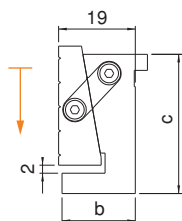
- Gehärtet
- Vernickelt
- Hardened
- Nickel Coating

2430-24350551
2430-24350751
2430-24351001



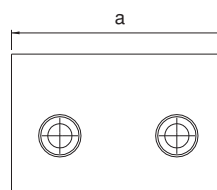
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|----|----|----|
| 2430-24350554 | 53 | 19 | 34 |
| 2430-24350754 | 73 | 19 | 39 |
| 2430-24351004 | 98 | 19 | 39 |

- Gehärtet
- Vernickelt
- Hardened
- Nickel Coating



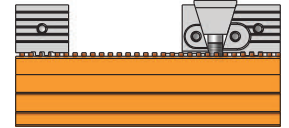
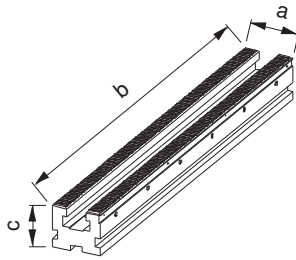
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|----|----|----|
| 2430-24350555 | 53 | 14 | 34 |
| 2430-24350755 | 73 | 14 | 39 |
| 2430-24351005 | 98 | 14 | 39 |

- Weiche Backen für Mehrfachspanner**
Serial Vice Soft Jaw



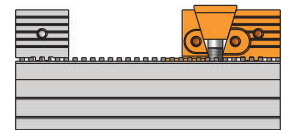
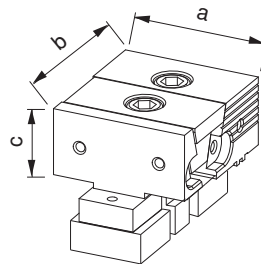
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|-----|-----|----|
| 2430-2435055300AG | 55 | 300 | 50 |
| 2430-2435055500AG | 55 | 500 | 50 |
| 2430-2435075400AG | 75 | 400 | 65 |
| 2430-2435075600AG | 75 | 600 | 65 |
| 2430-2435100400AG | 100 | 400 | 65 |
| 2430-2435100600AG | 100 | 600 | 65 |

Mehrfachspanner Grundkörper
Serial Vice Sub-Body



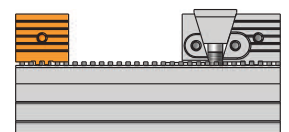
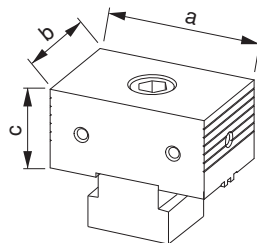
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|----|----|----|
| 2430-2435055GÇ | 54 | 65 | 32 |
| 2430-2435075GÇ | 74 | 77 | 37 |
| 2430-2435100GÇ | 99 | 80 | 37 |

Mehrfachspanner bewegliche Backe
Serial Vice Portable Jaw



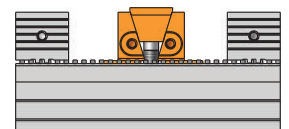
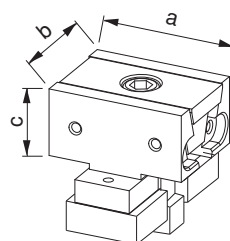
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|----|----|----|
| 2430-2435055DA | 54 | 36 | 32 |
| 2430-2435075DA | 74 | 48 | 37 |
| 2430-2435100DA | 99 | 48 | 37 |

Mehrfachspanner feste Backe
Serial Vice Resting



| Referenz-Nr. Order No. | a | b | c |
|---------------------------|----|----|----|
| 2430-2435055ÇA | 54 | 36 | 32 |
| 2430-2435075ÇA | 74 | 48 | 37 |
| 2430-2435100ÇA | 99 | 48 | 37 |

Keilspanner
Serial Vice Double Opening



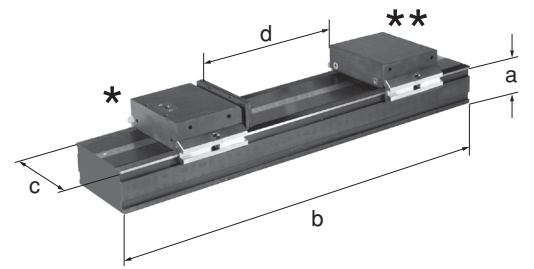
Das modulare Mehrfachspannsystem

Serial Vice



| Referenz-Nr. Order No. | a | b | c | d |
|---------------------------|----|-----|----|-------|
| 2440-SL080400 | 35 | 400 | 80 | 0-289 |
| 2440-SL080500 | 35 | 500 | 80 | 0-389 |
| 2440-SL080600 | 35 | 600 | 80 | 0-489 |

2440



bewegliche Backen / Portable Jaw Types



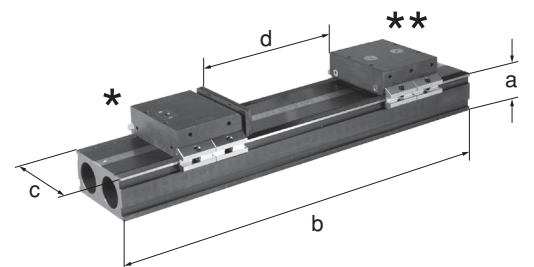
Stütze / Stopper Types



Das modulare Mehrfachspannsystem

| Referenz-Nr. Order No. | a | b | c | d |
|---------------------------|----|-----|-----|-------|
| 2440-SL120300 | 60 | 300 | 120 | 0-90 |
| 2440-SL120600 | 60 | 600 | 120 | 0-390 |
| 2440-SL120800 | 60 | 800 | 120 | 0-590 |

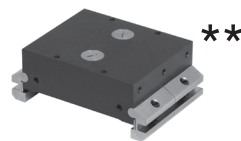
2440



bewegliche Backen / Portable Jaw Types



Stütze / Stopper Types



Werkstückanschlag fest

| Referenz-Nr. Order No. |
|---------------------------|
| 2440-SL80120 |

2440



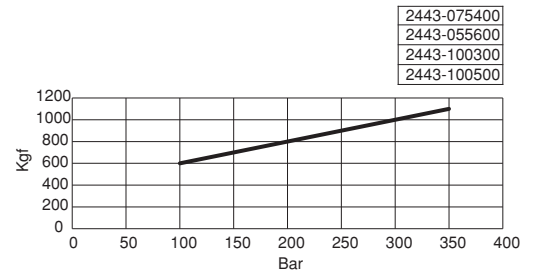
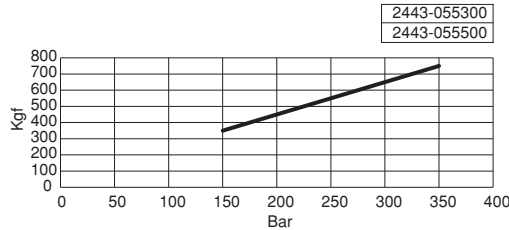
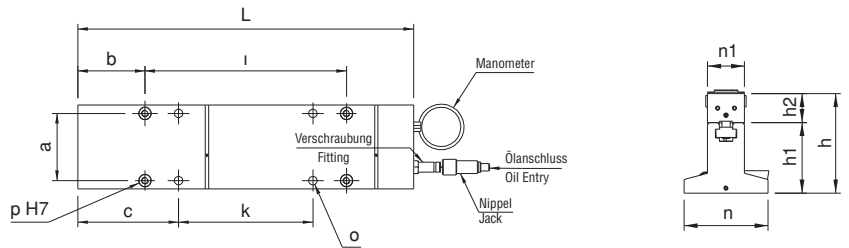
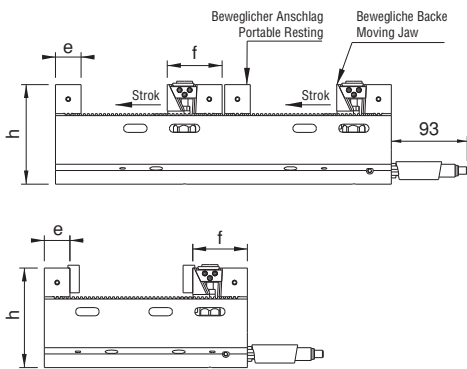
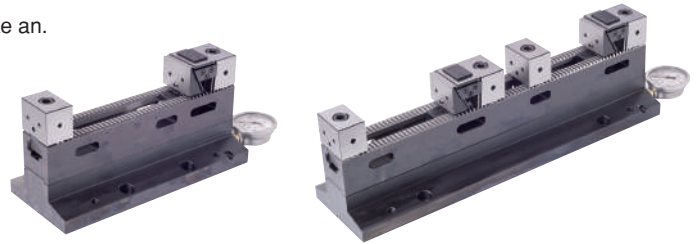
| Referenz-Nr. Order No. | L | n | n1 | h | h1 | h2 | o | e | f | a | b | c | k | i | p H7 | Spannmenge Coupling Piece | Stroke | Spannkraft Clamping Force Kgf |
|---------------------------|-----|-----|-----|-----|-----|----|------|----|------|-----|-----|-----|-----|-----|------|---------------------------------|--------|-------------------------------------|
| 2443-055300 | 300 | 125 | 55 | 148 | 105 | 43 | 12.5 | 38 | 81.5 | 100 | 50 | 100 | 100 | 200 | 18 | 1 | 8 | 750 |
| 2443-055500 | 500 | 125 | 55 | 148 | 105 | 43 | 12.5 | 38 | 81.5 | 100 | 100 | 150 | 200 | 300 | 18 | 2 | 8 | 750 |
| 2443-075400 | 400 | 175 | 75 | 158 | 115 | 43 | 12.5 | 48 | 88 | 150 | 50 | 100 | 200 | 300 | 18 | 2 | 8 | 1100 |
| 2443-075600 | 600 | 175 | 75 | 158 | 115 | 43 | 12.5 | 48 | 88 | 150 | 100 | 150 | 300 | 400 | 18 | - | 8 | 1100 |
| 2443-100400 | 400 | 175 | 100 | 158 | 115 | 43 | 12.5 | 48 | 88 | 150 | 50 | 100 | 200 | 300 | 18 | 2 | 8 | 1100 |
| 2443-100600 | 600 | 175 | 100 | 158 | 115 | 43 | 12.5 | 48 | 88 | 150 | 100 | 150 | 300 | 400 | 18 | - | 8 | 1100 |

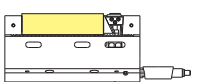
2443

- Bitte geben Sie vor dem Kauf die Anzahl der zu spannenden Werkstücke an.
- Backen müssen separat bestellt werden.

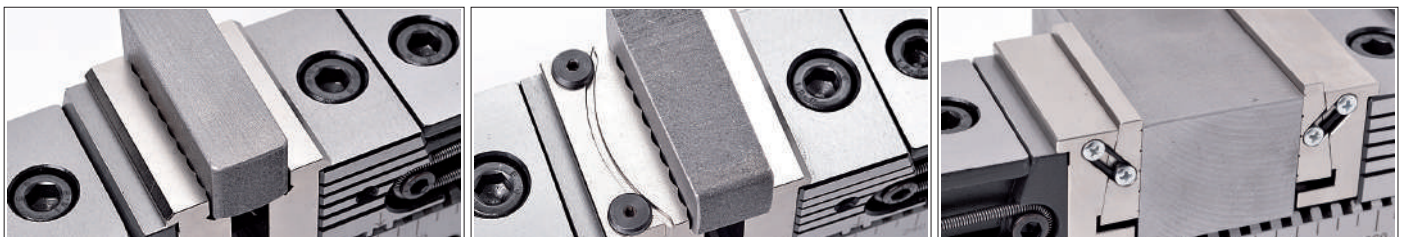
2443

- Please, you specify about number of clamping before you make purchase.
- You need to purchase jaws separate.



| Referenz-Nr. Order No. | Spannmengen / Numbers of Portable Jaw with Workpiece Couplings | | |
|---------------------------|---|-------------------------|-------------------------|
| | 1 Werkstück 1 Workpiece | 2 Werkstück 2 Workpiece | 3 Werkstück 3 Workpiece |
| 2443-055300 |  182 mm | - | - |
| 2443-055500 | - | 128 mm | - |
| 2443-075400 | - | 68 mm | - |
| 2443-075600 | - | 170 mm | 68 mm |
| 2443-100400 | - | 68 mm | - |
| 2443-100600 | - | 170 mm | 68 mm |

Hinweis: Bei den Werkstückmaßen sind die weichen Backen nicht inkludiert. **Note:** It does not include binding units of measure soft feet in business.



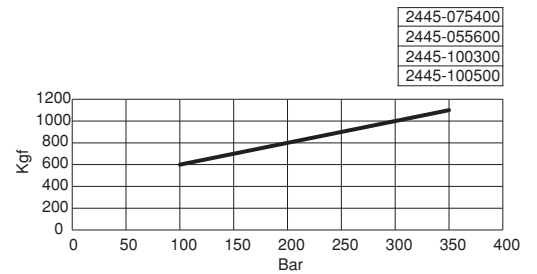
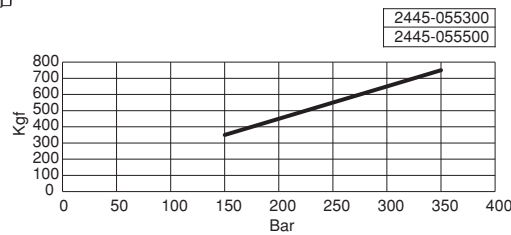
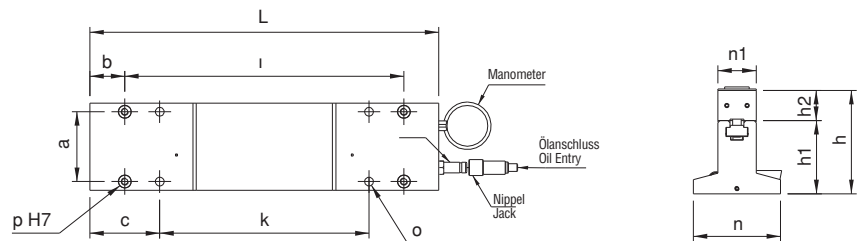
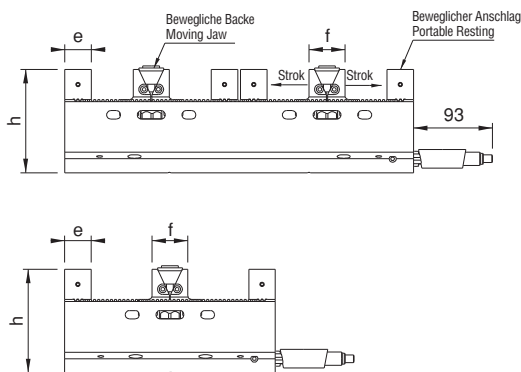
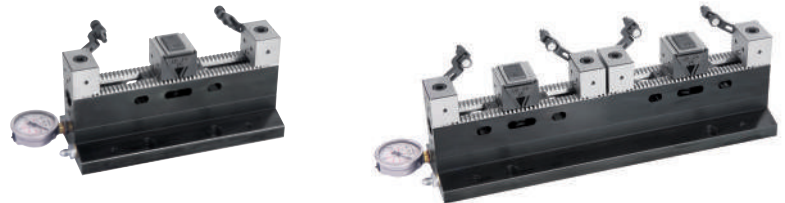
| Referenz-Nr. Order No. | L | n | n1 | h | h1 | h2 | o | e | f | a | b | c | k | i | p H7 | Spannmenge Coupling Piece | Stroke | Spannkraft Clamping Force Kgf |
|---------------------------|-----|-----|-----|-----|-----|----|------|----|------|-----|-----|-----|-----|-----|------|---------------------------------|--------|-------------------------------------|
| 2445-055300 | 300 | 125 | 55 | 148 | 105 | 43 | 12.5 | 38 | 51.5 | 100 | 50 | 100 | 100 | 200 | 18 | 2 | 8x2 | 750 |
| 2445-055500 | 500 | 125 | 55 | 148 | 105 | 43 | 12.5 | 38 | 51.5 | 100 | 100 | 150 | 200 | 400 | 18 | 4 | 8x2 | 750 |
| 2445-075400 | 400 | 175 | 75 | 158 | 115 | 43 | 12.5 | 48 | 51.5 | 150 | 50 | 100 | 200 | 300 | 18 | 2 | 8x2 | 1100 |
| 2445-075600 | 600 | 175 | 75 | 158 | 115 | 43 | 12.5 | 48 | 51.5 | 150 | 100 | 150 | 300 | 500 | 18 | 4 | 8x2 | 1100 |
| 2445-100400 | 400 | 175 | 100 | 158 | 115 | 43 | 12.5 | 48 | 51.5 | 150 | 50 | 100 | 200 | 300 | 18 | 2 | 8x2 | 1100 |
| 2445-100600 | 600 | 175 | 100 | 158 | 115 | 43 | 12.5 | 48 | 51.5 | 150 | 100 | 150 | 300 | 500 | 18 | 4 | 8x2 | 1100 |

2445

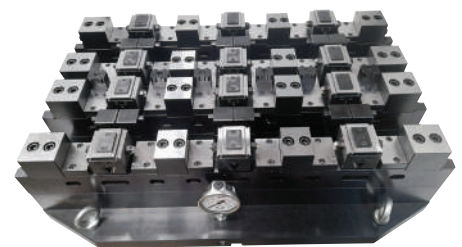
• Backen müssen separat bestellt werden.

2445

• You need to purchase jaws separate.

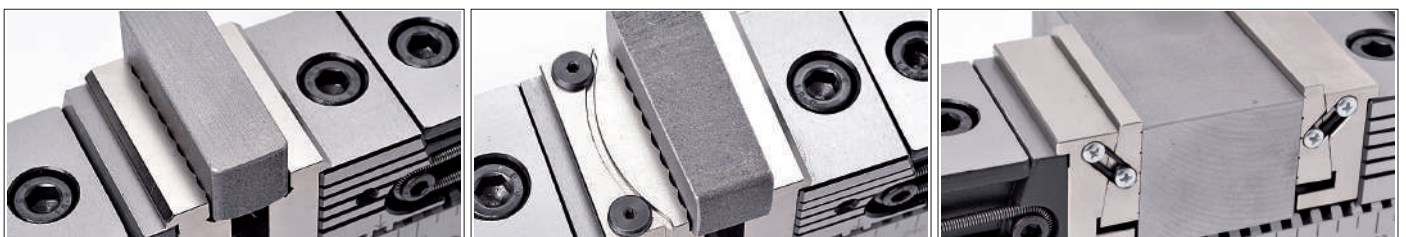


| Referenz-Nr. Order No. | Spannmengen Numbers of Double Opening Jaw with Workpiece Couplings | |
|---------------------------|---|-------------------------|
| | 2 Werkstück 2 Workpiece | 4 Werkstück 4 Workpiece |
| 2445-055300 | 87 mm | - |
| 2445-055500 | - | 60 mm |
| 2445-075400 | 125 mm | - |
| 2445-075600 | - | 75 mm |
| 2445-100400 | 125 mm | - |
| 2445-100600 | - | 75 mm |



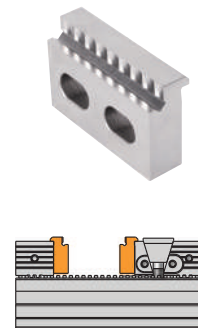
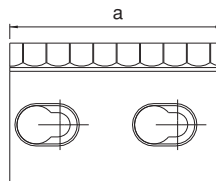
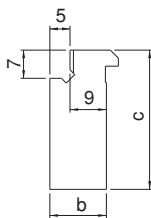
Hinweis: Bei den Werkstückmaßen sind die weichen Backen nicht inkludiert.

Note: It does not include binding units of measure soft feet in business.



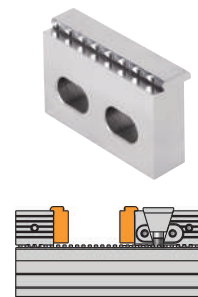
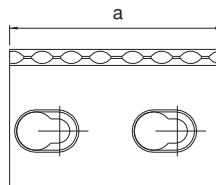
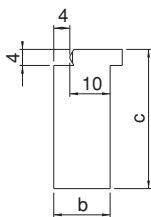
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|-----|----|----|
| 2443-24450551 | 55 | 14 | 38 |
| 2443-24450751 | 75 | 14 | 38 |
| 2443-24451001 | 100 | 14 | 38 |

- Gehärtet
- Vernickelt
- Hardened
- Nickel Coating



| Referenz-Nr. Order No. | a | b | c |
|---------------------------|-----|----|----|
| 2443-24450552 | 55 | 14 | 38 |
| 2443-24450752 | 75 | 14 | 38 |
| 2443-24451002 | 100 | 14 | 38 |

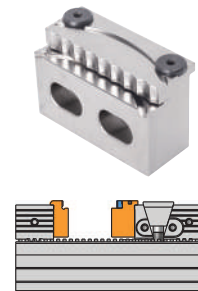
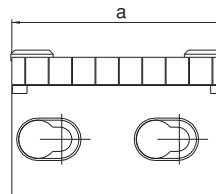
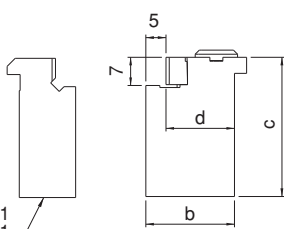
- Gehärtet
- Vernickelt
- Hardened
- Nickel Coating



| Referenz-Nr. Order No. | a | b | c | d |
|---------------------------|-----|----|----|----|
| 2443-24450553 | 55 | 22 | 38 | 17 |
| 2443-24450753 | 75 | 25 | 38 | 20 |
| 2443-24451003 | 100 | 25 | 38 | 20 |

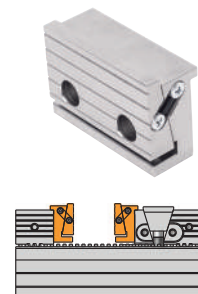
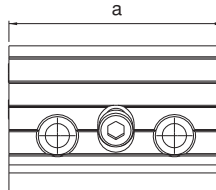
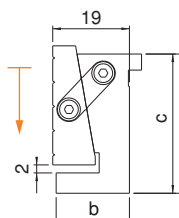
- Gehärtet
- Vernickelt
- Hardened
- Nickel Coating

2443-24450551
2443-24450751
2443-24451001



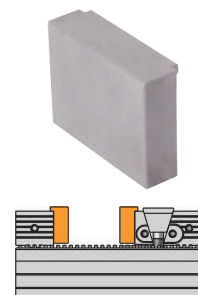
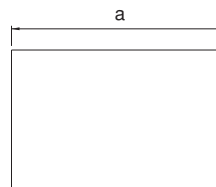
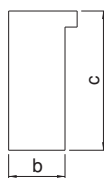
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|-----|----|----|
| 2443-24450554 | 55 | 19 | 38 |
| 2443-24450754 | 75 | 19 | 38 |
| 2443-24451004 | 100 | 19 | 38 |

- Gehärtet
- Vernickelt
- Hardened
- Nickel Coating



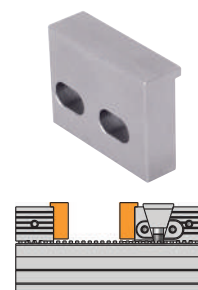
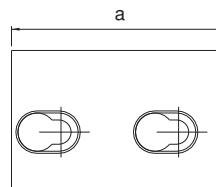
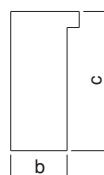
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|-----|----|----|
| 2443-24450555 | 55 | 14 | 38 |
| 2443-24450755 | 75 | 14 | 38 |
| 2443-24451005 | 100 | 14 | 38 |

Weiche Backe Soft Jaw



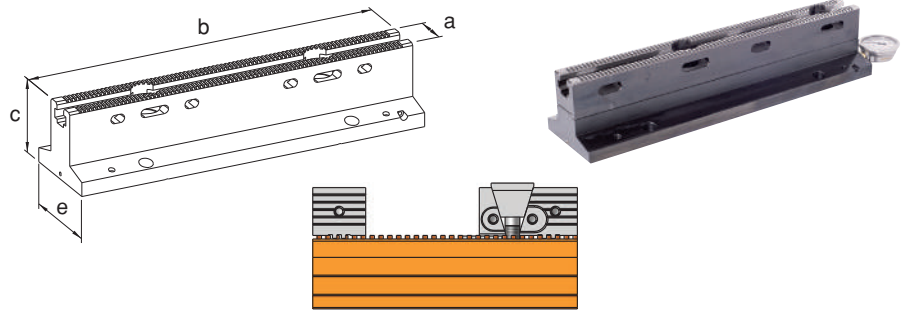
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|-----|----|----|
| 2443-24450556 | 55 | 14 | 38 |
| 2443-24450756 | 75 | 14 | 38 |
| 2443-24451006 | 100 | 14 | 38 |

Weiche Backe Soft Jaw



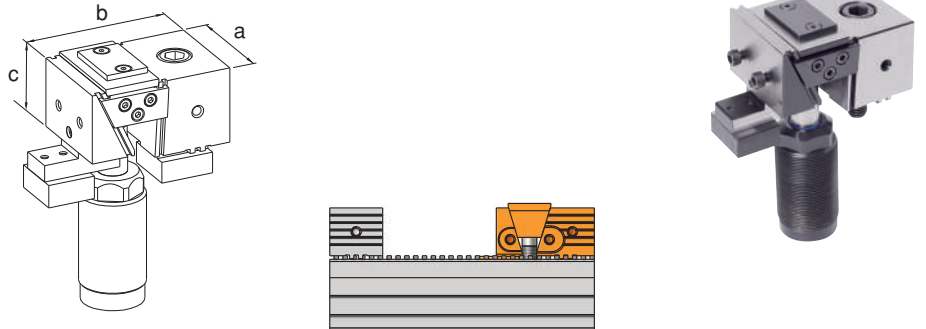
| Referenz-Nr. Order No. | a | b | c | e |
|---------------------------|-----|-----|-----|-----|
| 2443-055300AG | 55 | 300 | 105 | 125 |
| 2443-055500AG | 55 | 500 | 105 | 125 |
| 2443-075400AG | 75 | 400 | 115 | 175 |
| 2443-075600AG | 75 | 600 | 115 | 175 |
| 2443-100400AG | 100 | 400 | 115 | 175 |
| 2443-100600AG | 100 | 600 | 115 | 175 |

Hydraulischer Grundkörper
Hydraulic Sub-body



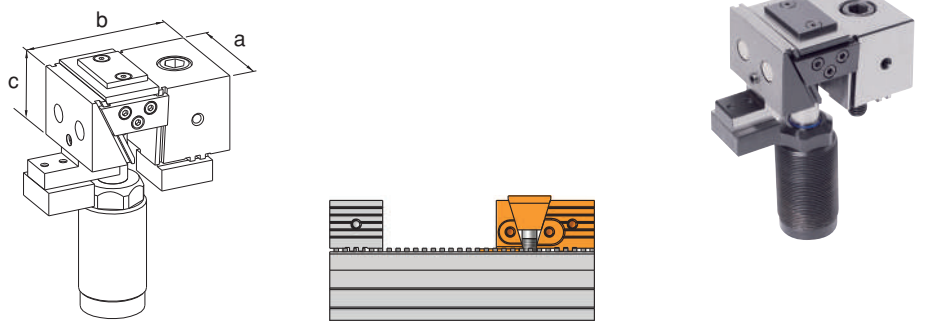
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|-----|------|----|
| 2443-055HÇ | 55 | 81.5 | 43 |
| 2443-075HÇ | 75 | 88 | 43 |
| 2443-100HÇ | 100 | 88 | 43 |

Bewegliche Backe
Moving Jaw



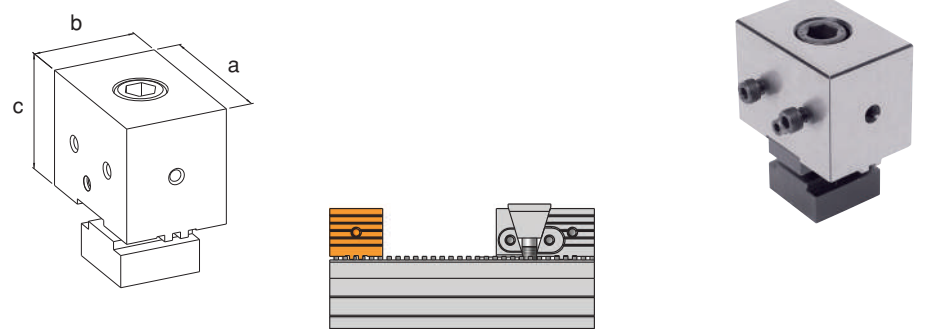
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|-----|------|----|
| 2443-055MHÇ | 55 | 81.5 | 43 |
| 2443-075MHÇ | 75 | 88 | 43 |
| 2443-100MHÇ | 100 | 88 | 43 |

Magnetische bewegliche Backe
Moving Jaw



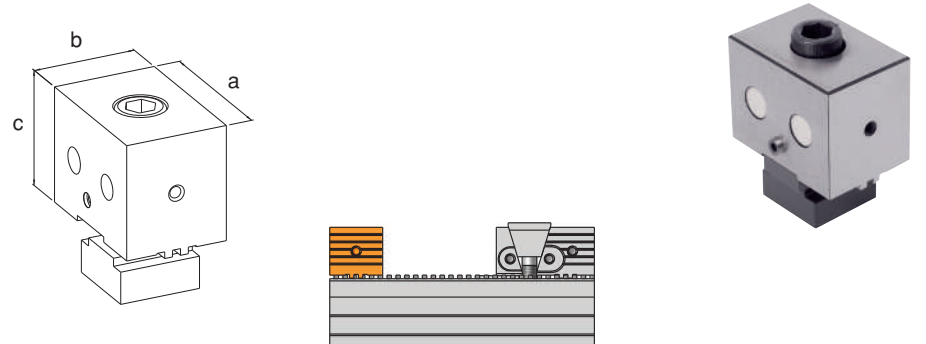
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|-----|----|----|
| 2443-2445055GD | 55 | 38 | 43 |
| 2443-2445075GD | 75 | 48 | 43 |
| 2443-2445100GD | 100 | 48 | 43 |

Beweglicher Anschlag
Portable Resting



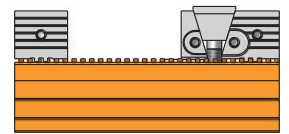
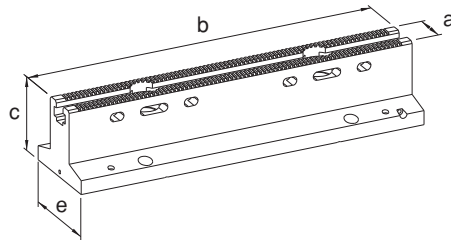
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|-----|----|----|
| 2443-2445055MGD | 55 | 38 | 43 |
| 2443-2445075MGD | 75 | 48 | 43 |
| 2443-2445100MGD | 100 | 48 | 43 |

Magnetischer beweglicher Anschlag
Magnetic Portable Resting



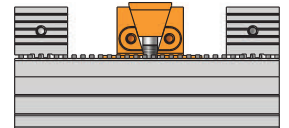
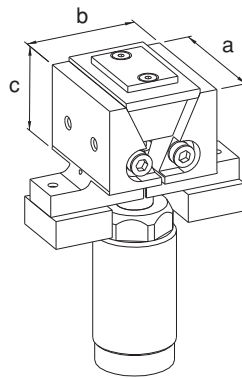
| Referenz-Nr. Order No. | a | b | c | e |
|---------------------------|-----|-----|-----|-----|
| 2445-055300AG | 55 | 300 | 105 | 125 |
| 2445-055500AG | 55 | 500 | 105 | 125 |
| 2445-075400AG | 75 | 400 | 115 | 175 |
| 2445-075600AG | 75 | 600 | 115 | 175 |
| 2445-100400AG | 100 | 400 | 115 | 175 |
| 2445-100600AG | 100 | 600 | 115 | 175 |

Hydraulischer Grundkörper
Hydraulic Sub-body



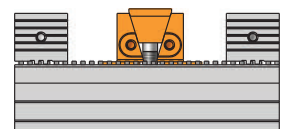
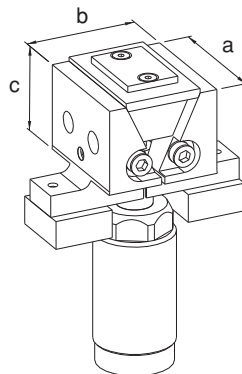
| Referenz-Nr. Order No. | a | b | c |
|---------------------------|-----|------|----|
| 2445-055HÇ | 55 | 51.5 | 43 |
| 2445-075HÇ | 75 | 51.5 | 43 |
| 2445-100HÇ | 100 | 51.5 | 43 |

Bewegliche Backe
Moving Jaw



| Referenz-Nr. Order No. | a | b | c |
|---------------------------|-----|------|----|
| 2445-055MHÇ | 55 | 51.5 | 43 |
| 2445-075MHÇ | 75 | 51.5 | 43 |
| 2445-100MHÇ | 100 | 51.5 | 43 |

Magnetische bewegliche Backe
Moving Jaw



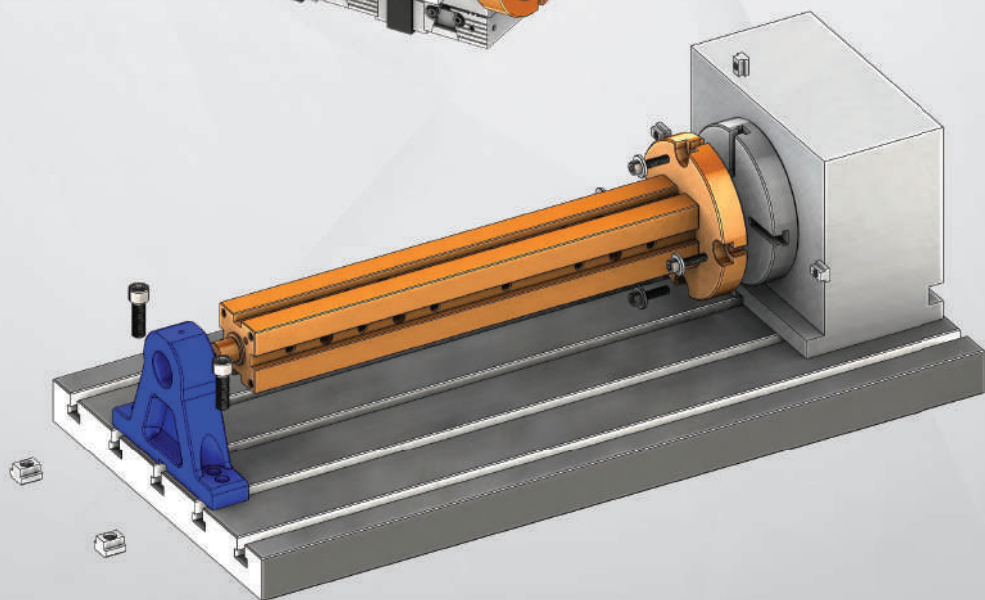
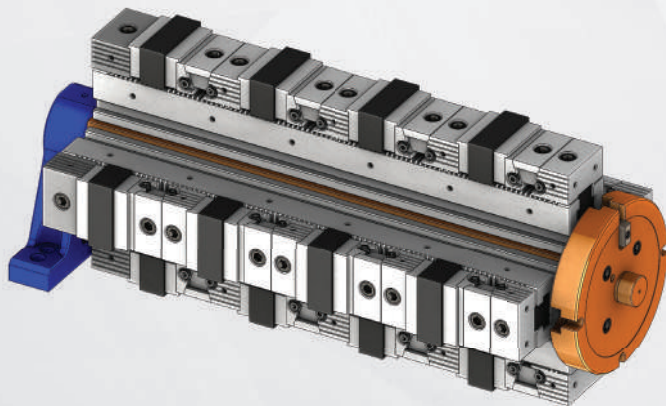
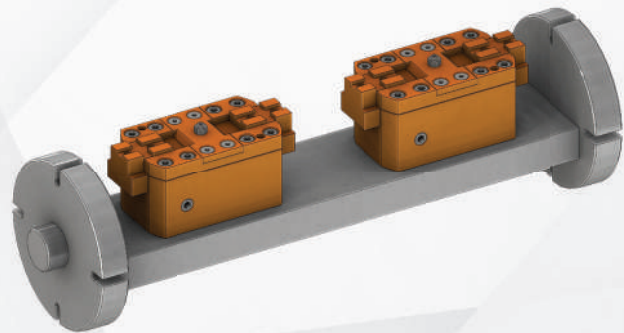
Hydraulisches Zubehör

Hydraulic Equipment



Spannbalken

Index Table Turrets



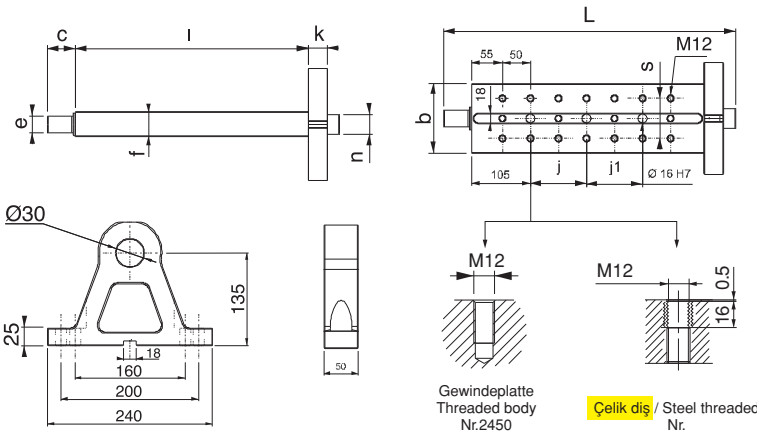
| Referenz-Nr. Order No. | L | l | f | n | b | k | c | e | s | Ø16H7 j | Ø16H7 j1 | (kg) |
|---------------------------|-------|-----|----|---|-----|----|----|----|----|------------|-------------|-------|
| 2450-415L | 503.5 | 415 | 45 | - | 125 | 35 | 31 | 30 | 72 | 100 | 100 | 29.25 |
| 2450-615L | 703.5 | 615 | 50 | - | 160 | 35 | 31 | 30 | 90 | 100 | 300 | 46.75 |

2450

- Verwendung bei vertikalen Maschinen, vierte Achse Bearbeitung 360 Grad möglich
- Spannen der Werkstücke direkt am Divisor möglich, kompatibel mit Schraubstocksystemen und unsterschiedlichen Apparaten
- Benachrichtigen Sie Ihre divizörü Marke und Modellnummer bei der Bestellung.
- Die untere Platte ist für die mittlere Höhe zur Verfügung.
- Material: Guss

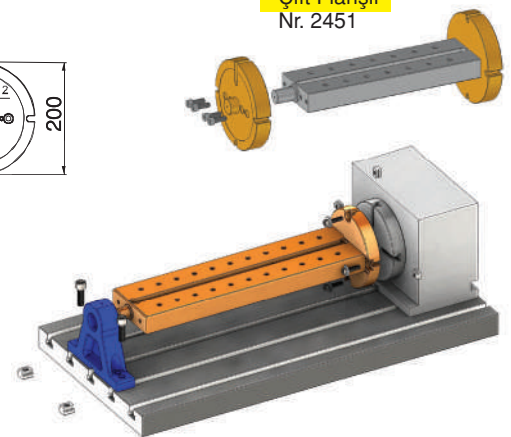
2450

- Index Table Turret is connected to the index table of vertical machining benches and this application provides the possibility to use the fourth axis in 360 degrees.
- Workpiece taking place on the Index Table Turret can be applied directly and at the same time it can be used in vice groups and with different apparatuses.
- Please, let the dividing brand, model number in the order.
- The lower plate is available for the center height.
- Material : Casting



Einsatz = Nr.2460

Çift Flanşlı
Nr. 2451



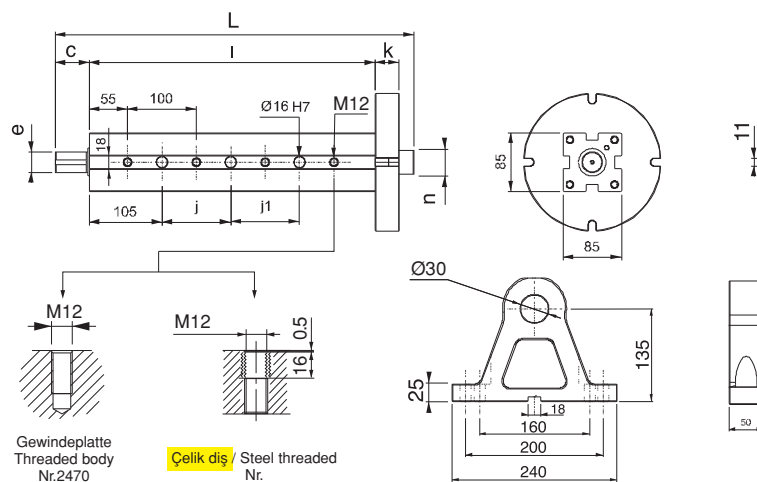
| Referenz-Nr. Order No. | L | l | n | k | e | c | Ø16H7 j | Ø16H7 j1 | (kg) |
|---------------------------|-----|-----|---|----|----|----|------------|-------------|------|
| 2470-415K | 502 | 415 | - | 35 | 30 | 31 | 100 | 100 | 33 |
| 2470-615K | 702 | 615 | - | 35 | 30 | 31 | 100 | 300 | 42 |

2470

- Verwendung bei vertikalen Maschinen, vierte Achse Bearbeitung 360 Grad möglich
- Spannen der Werkstücke direkt am Divisor möglich, kompatibel mit Schraubstocksystemen und unsterschiedlichen Apparaten
- Benachrichtigen Sie Ihre divizörü Marke und Modellnummer bei der Bestellung.
- Die untere Platte ist für die mittlere Höhe zur Verfügung.
- Material: Guss

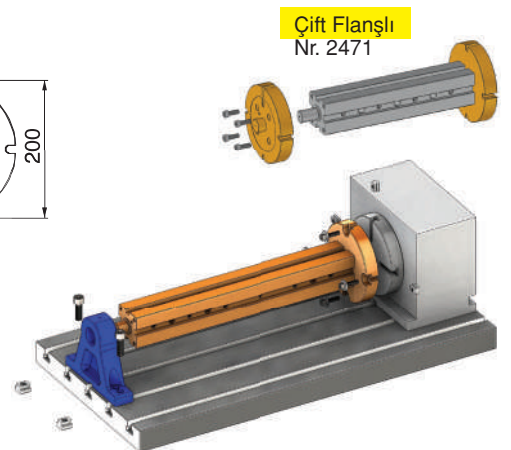
2470

- Index Table Turret is connected to the index table of vertical machining benches and this application provides the possibility to use the fourth axis with 360 degrees.
- Workpiece taking place on the Index Table Turret can be applied directly and at the same time it can be used in vice groups and with different apparatuses.
- Material : Casting



Einsatz = Nr.2460

Çift Flanşlı
Nr. 2471



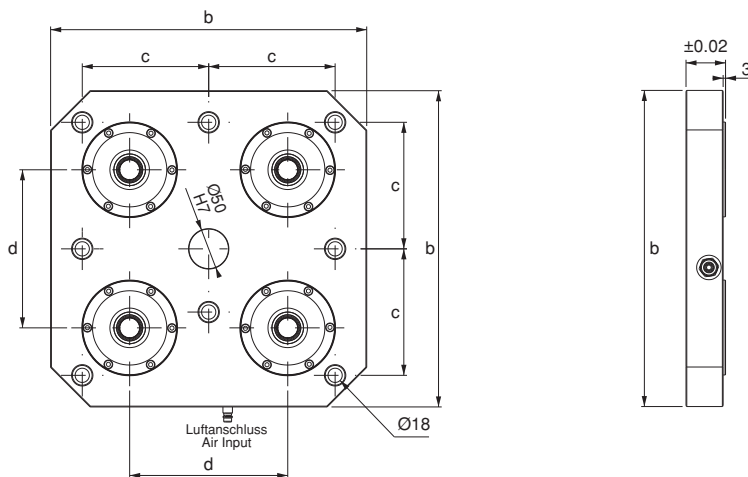
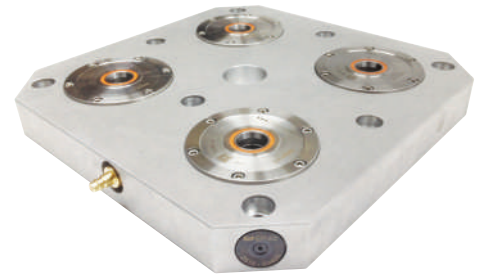
| Referenz-Nr. Order No. | a | b | c | d | Zero Clamp Menge / pcs. | | Spannkraft clamping force Kgf | (kg) |
|---------------------------|----|-----|-----|-----|----------------------------|--|-------------------------------------|----------|
| 2475-50400 | 50 | 400 | 160 | 200 | 4 | | 4x2500=10000 kgf | 24 |
| 2475-50500 | 50 | 500 | 200 | 350 | 4 | | 4x2500=10000 kgf | 30 |
| 2475-50630 | 50 | 630 | 250 | 200 | 6 | | 6x2500=15000 kgf | 44 |

2475

- Material: Aluminium

2475

- Material: Aluminium



- Unterschiedliche Anwendungen möglich
- Product application area is not limited to the alues given in tables. Various applications are possible.

Turm mit Anwendung ZeroClamp

ER-EL Zero Clamp Turret Application

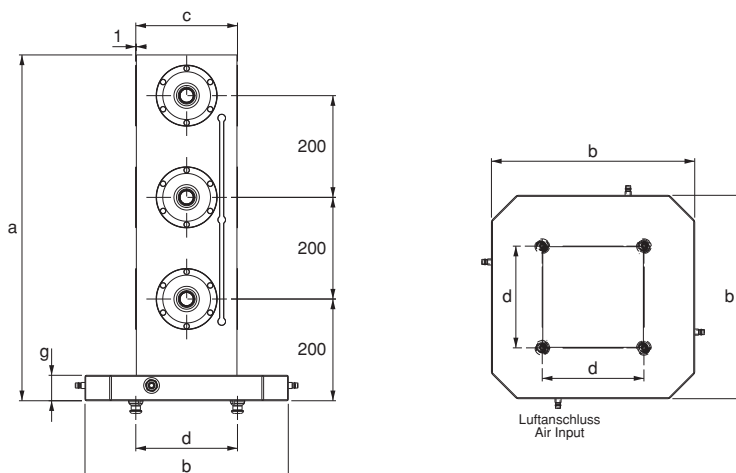
| Referenz-Nr. Order No. | a | b | c | d | g | Zero Clamp Menge / pcs. | | Spannkraft clamping force Kgf | (kg) |
|---------------------------|-----|-----|-----|-----|----|----------------------------|--|-------------------------------------|----------|
| 2480-400200 | 680 | 400 | 200 | 200 | 50 | 12 | | 3x2500=7500 kgf | 100 |
| 2480-500200 | 680 | 500 | 200 | 350 | 50 | 12 | | 3x2500=7500 kgf | 111 |
| 2480-630250 | 680 | 630 | 250 | 200 | 50 | 12 | | 3x4000=12000 kgf | 178 |

2480



- Material: Aluminium

2480

- Material: Aluminium



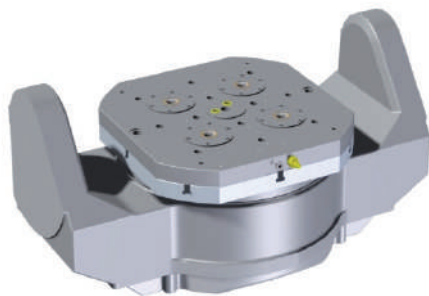
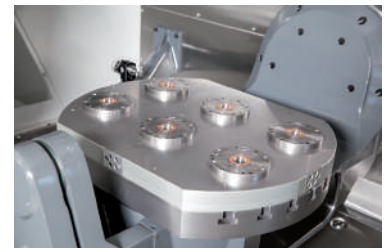
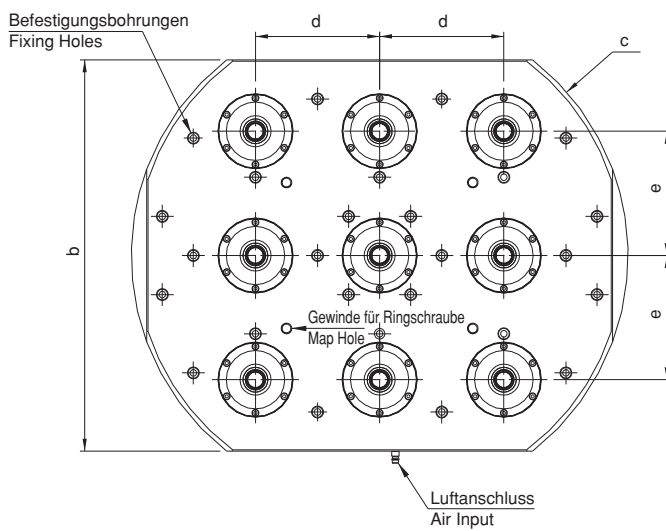
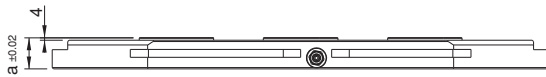
- Unterschiedliche Anwendungen möglich
- Product application area is not limited to the alues given in tables. Various applications are possible.

| Referenz-Nr. Order No. | a | b | c | d | e |  |  (kg) |
|---------------------------|----|-----|-----|-----|-----|---|---|
| 2481-50630 | 50 | 630 | 800 | 200 | 200 | Ø120 | 60 |

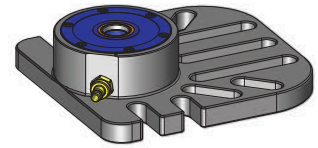


2481
• Material: Aluminium

2481
• Material: Aluminium

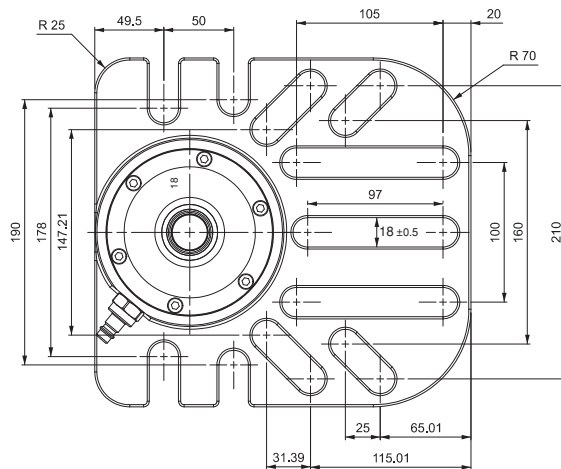
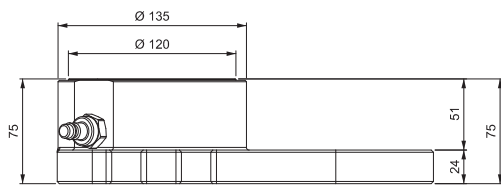



| Referenz-Nr. Order No. | Spannkraft clamping force kgf |  (kg) |
|---------------------------|-------------------------------------|---|
| 2482-0120 | 2500 | 13.4 |



- 2482**
- Schwarz beschichtet
 - Geschliffen

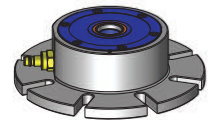
- 2482**
- Black coating
 - Stoning



| Referenz-Nr. Order No. | a | b | c | d | e | h | h1 | Spannkraft clamping force kgf |  (kg) |
|---------------------------|-----|-----|-----|-----|----|----|----|-------------------------------------|---|
| 2483-0090 | 105 | 90 | 220 | 160 | 13 | 50 | 36 | 1250 | 4.2 |
| 2483-0120 | 135 | 120 | 180 | 130 | 13 | 65 | 51 | 2500 | 8.4 |
| 2483-0138 | 160 | 138 | 250 | 200 | 17 | 80 | 61 | 4000 | 15.7 |

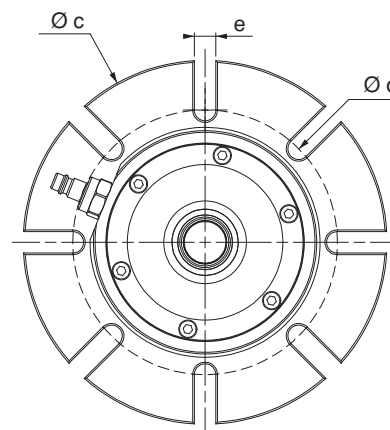
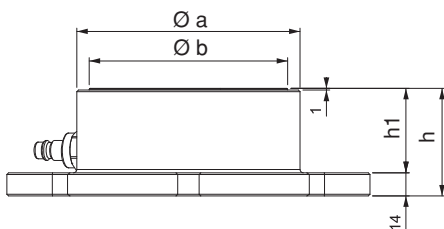
Modular Zero Clamp

Modular Zero Clamp



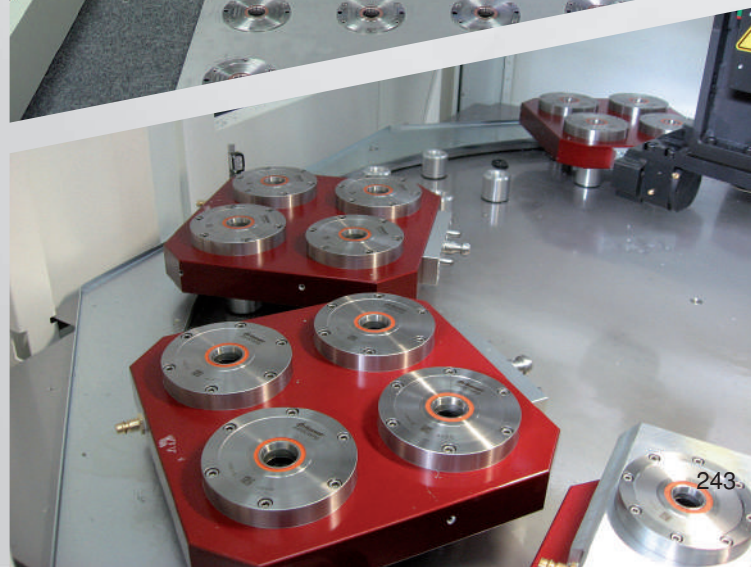
- 2483**
- Schwarz beschichtet
 - Geschliffen

- 2483**
- Black coating
 - Stoning



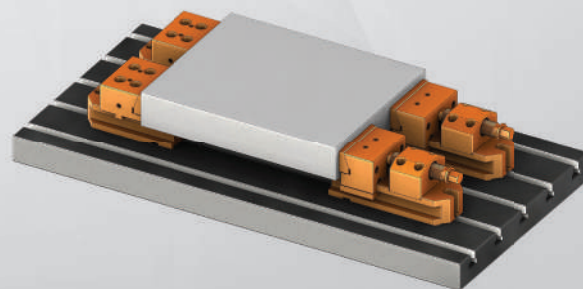
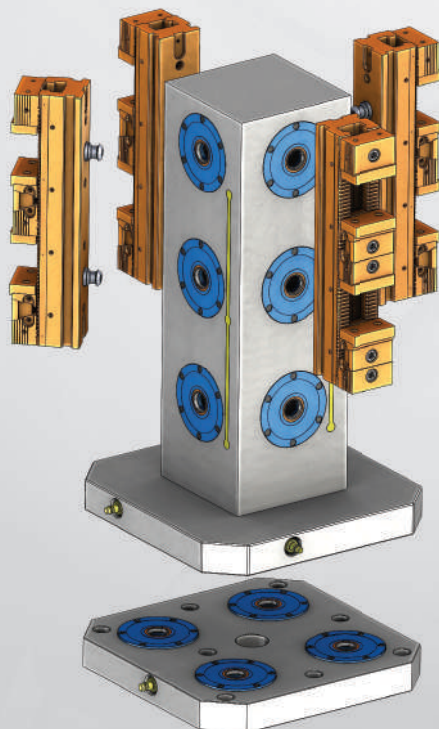
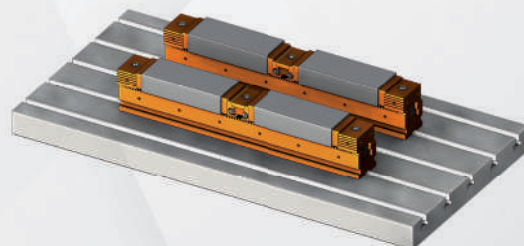
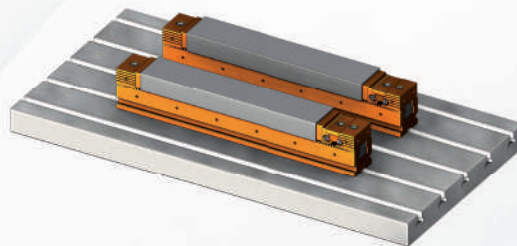
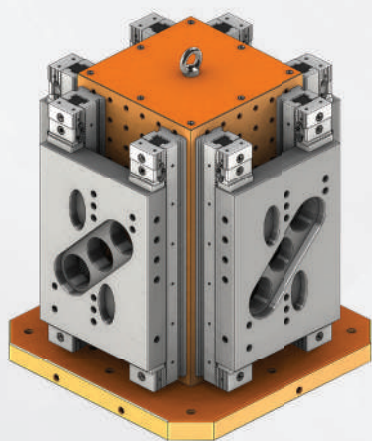
ZERO CLAMP Anwendungsbeispiele

ZERO CLAMP Application Examples

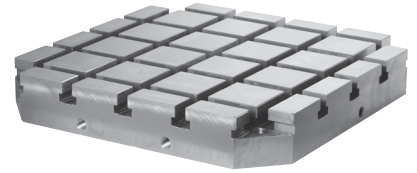


Aufspanntürme und Mehrfachspanner

Tower And Multi Jawed Wrench Tooling Applications



| Referenz-Nr. Order No. | a ±0.02 | b | c | d | e | f | g | h ±0.02 | (kg) |
|---------------------------|------------|-----|-----|----|-----|----|-----|------------|----------|
| 2490-7540014 | 75 | 400 | 320 | 14 | 55 | 18 | 160 | 80 | 71 |
| 2490-7550014 | 75 | 500 | 400 | 14 | 75 | 18 | 200 | 100 | 115 |
| 2490-7563014 | 75 | 630 | 500 | 14 | 100 | 18 | 250 | 125 | 188 |
| 2490-7540018 | 75 | 400 | 320 | 18 | 55 | 18 | 160 | 80 | 65 |
| 2490-7550018 | 75 | 500 | 400 | 18 | 75 | 18 | 200 | 100 | 107 |
| 2490-7563018 | 75 | 630 | 500 | 18 | 100 | 18 | 250 | 125 | 178 |

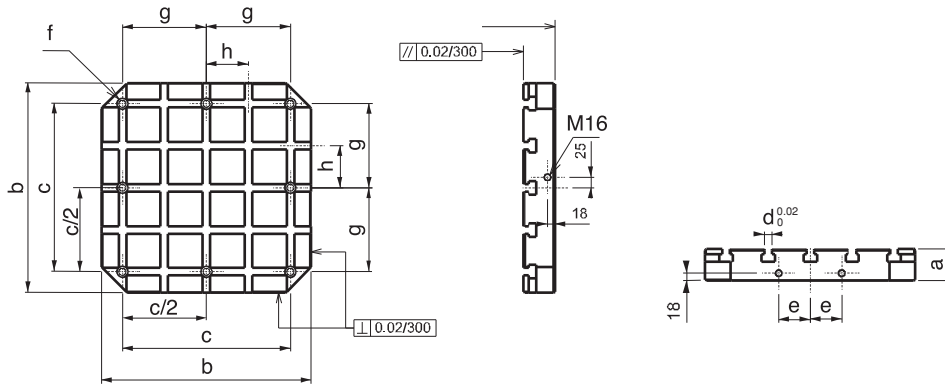


2490

- Material: Guss
- kompatibel mit Standard-Spannelementen
- T-Nuten 14 mm - 18 mm DIN 650

2490

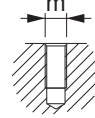
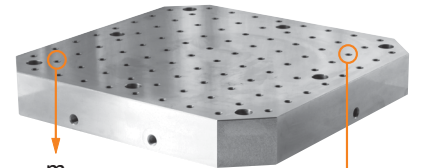
- Material : Casting
- It is in compliance with Standard Coupling Equipment.
- T-Slot measurement of 14mm - 18mm is in DIN 650 Standard.



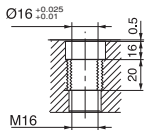
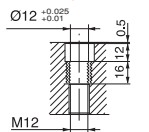
| Referenz-Nr. Order No. | a ±0.02 | b | c | d | e | m | (kg) |
|---------------------------|------------|-----|-----|-----|----|-------|----------|
| 2510-7540012 | 75 | 400 | 320 | 55 | 25 | M12 | 80 |
| 2510-7550012 | 75 | 500 | 400 | 75 | 25 | M12 | 127 |
| 2510-7563012 | 75 | 630 | 500 | 100 | 40 | M12 | 204 |
| 2510-7540016 | 75 | 400 | 320 | 55 | 25 | M16 | 79 |
| 2510-7550016 | 75 | 500 | 400 | 75 | 25 | M16 | 125 |
| 2510-7563016 | 75 | 630 | 500 | 100 | 40 | M16 | 200 |

CNC Horizontale Aufspann-Palette

CNC Horizontal Clamping Pallet



Gewindekörper
Nr. 2510
Threaded body
Reference No. 2510



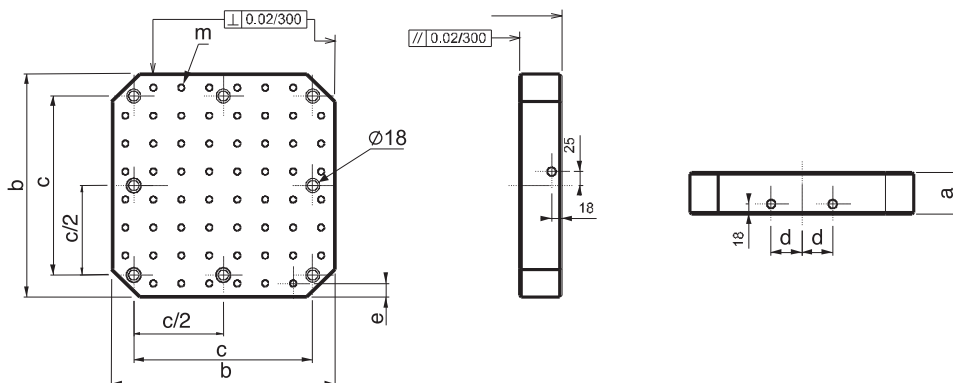
| Referenz-Nr. Order No. | a ±0.02 | b | c | d | e | m | (kg) |
|---------------------------|------------|-----|-----|-----|----|-------|----------|
| 2520-7540012 | 75 | 400 | 320 | 55 | 25 | M12 | 80 |
| 2520-7550012 | 75 | 500 | 400 | 75 | 25 | M12 | 127 |
| 2520-7563012 | 75 | 630 | 500 | 100 | 40 | M12 | 204 |
| 2520-7540016 | 75 | 400 | 320 | 55 | 25 | M16 | 79 |
| 2520-7550016 | 75 | 500 | 400 | 75 | 25 | M16 | 125 |
| 2520-7563016 | 75 | 630 | 500 | 100 | 40 | M16 | 200 |

2510

- Material: Guss
- kompatibel mit Standard-Spannelementen
- M12-M16, Gewindeabstand 50 ± 0,02
- Auf Anfrage mit gehärteten Stahlbuchsen erhältlich

2510

- Material : Casting
- It is in compliance with Standard Coupling Equipment.
- M12 - M16 thread gap on it's surface is 50 ± 0.02.
- It's steel bush threads are hardened.



mit Stahlbuchse
Nr. 2520
Steel bush
Reference No. 2520

| Referenz-Nr. Order No. | a | b | Ød | e | f | t | (kg) |
|---------------------------|-----|------|----|---|---|-----|------|
| 2530-040012 | 400 | 600 | 18 | - | - | M12 | 73 |
| 2530-050012 | 500 | 600 | 18 | - | - | M12 | 112 |
| 2530-060012 | 600 | 800 | 18 | - | - | M12 | 162 |
| 2530-140012 | 400 | 800 | 18 | - | - | M12 | 119 |
| 2530-145012 | 450 | 900 | 18 | - | - | M12 | 151 |
| 2530-150012 | 500 | 1000 | 18 | - | - | M12 | 173 |

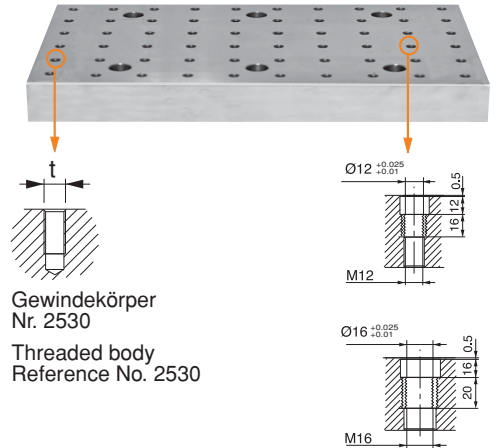
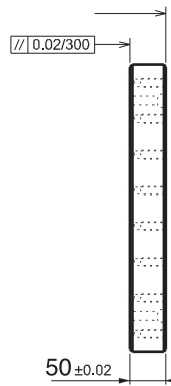
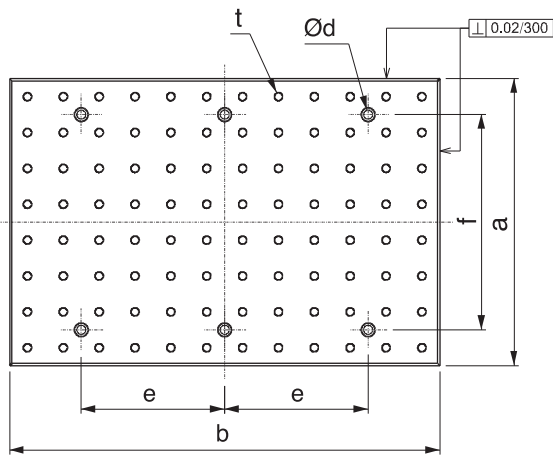
| Referenz-Nr. Order No. | a | b | Ød | e | f | t | (kg) |
|---------------------------|-----|------|----|---|---|-----|------|
| 2530-040016 | 400 | 600 | 18 | - | - | M16 | 87 |
| 2530-050016 | 500 | 600 | 18 | - | - | M16 | 108 |
| 2530-060016 | 600 | 800 | 18 | - | - | M16 | 155 |
| 2530-140016 | 400 | 800 | 18 | - | - | M16 | 115 |
| 2530-145016 | 450 | 900 | 18 | - | - | M16 | 146 |
| 2530-150016 | 500 | 1000 | 18 | - | - | M12 | 171 |

2530

- Material: Guss
- kompatibel mit Standard-Spannelementen
- M12-M16, Gewindeabstand $50 \pm 0,02$
- Auf Anfrage mit gehärteten Stahlbuchsen erhältlich

2530

- Material : Casting
- It is in compliance with Standard Coupling Equipment.
- M12 - M16 thread gap on it's surface is 50 ± 0.02 .
- It's steel bush threads are hardened.



Gewindekörper
Nr. 2530
Threaded body
Reference No. 2530

mit Stahlbuchse
= Nr. 2540
Steel bush
Reference No. 2540

CNC Vertikale Aufspann-Platte

CNC Vertical Processing Plate

| Referenz-Nr. Order No. | a | b | c | d | e | f | Øg | h | i | j | (kg) |
|---------------------------|-----|------|----|----|----|-----|----|---|---|----|------|
| 2550-040014 | 400 | 600 | 60 | 14 | 50 | 100 | 18 | - | - | 50 | 90 |
| 2550-050014 | 500 | 600 | 60 | 14 | 50 | 100 | 18 | - | - | 50 | 115 |
| 2550-060014 | 600 | 800 | 60 | 14 | 50 | 100 | 18 | - | - | 50 | 198 |
| 2550-140014 | 400 | 800 | 60 | 14 | 50 | 100 | 18 | - | - | 50 | 120 |
| 2550-145014 | 450 | 900 | 60 | 14 | 75 | 100 | 18 | - | - | 50 | 162 |
| 2550-150014 | 500 | 1000 | 60 | 14 | 50 | 100 | 18 | - | - | 50 | 199 |

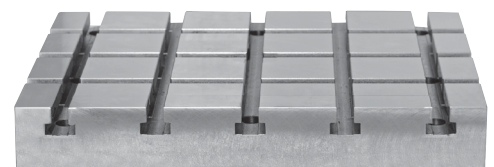
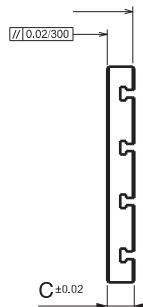
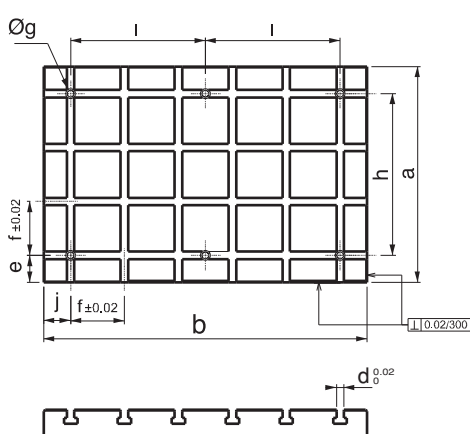
| Referenz-Nr. Order No. | a | b | c | d | e | f | Øg | h | i | j | (kg) |
|---------------------------|-----|------|----|----|----|-----|----|---|---|----|------|
| 2550-040018 | 400 | 600 | 75 | 18 | 50 | 100 | 18 | - | - | 50 | 108 |
| 2550-050018 | 500 | 600 | 75 | 18 | 50 | 100 | 18 | - | - | 50 | 135 |
| 2550-060018 | 600 | 800 | 75 | 18 | 50 | 100 | 18 | - | - | 50 | 216 |
| 2550-140018 | 400 | 800 | 75 | 18 | 50 | 100 | 18 | - | - | 50 | 143 |
| 2550-145018 | 450 | 900 | 75 | 18 | 75 | 100 | 18 | - | - | 50 | 183 |
| 2550-150018 | 500 | 1000 | 75 | 18 | 50 | 100 | 18 | - | - | 50 | 225 |

2550

- Material: Guss
- kompatibel mit Standard-Spannelementen
- T-Nuten 14 mm - 18 mm DIN 650

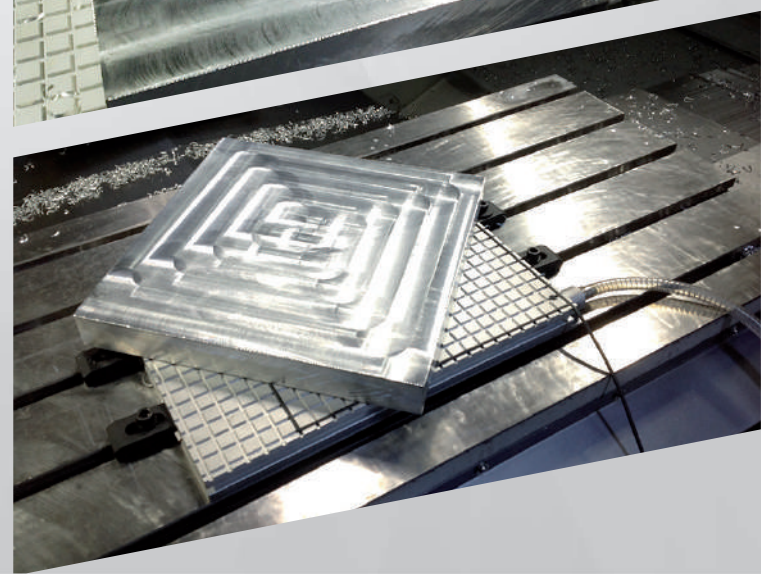
2550


- Material : Casting
- It is in compliance with Standard Coupling Equipment.
- T-Slot is in the standard of 14mm - 18mm DIN 650.



Vakuumpplatten-Anwendungen

Vacuum Plate Application



| Referenz-Nr. Order No. | m ³ /h | Volt | Vakuu-Leistung vacuum power | Kw | Hz | A | B | C |  (kg) |
|---------------------------|-------------------|------|--------------------------------|------|----|-----|-----|------|---|
| 2557-022 | 22 | 400 | 150-50 mbar | 0.83 | 50 | 463 | 432 | 602 | 45.5 |
| 2557-045 | 45 | 400 | 150-50 mbar | 1.20 | 50 | 515 | 572 | 743 | 57 |
| 2557-065 | 65 | 400 | 150-50 mbar | 2.40 | 50 | 515 | 572 | 743 | 72 |
| 2557-100 | 100 | 400 | 150-50 mbar | 3.85 | 50 | 525 | 620 | 920 | 110 |
| 2557-150 | 150 | 400 | 150-50 mbar | 4.00 | 50 | 710 | 845 | 1100 | 200 |
| 2557-198 | 198 | 400 | 150-50 mbar | 5.50 | 50 | 710 | 845 | 1100 | 220 |
| 2557-232 | 232 | 400 | 150-50 mbar | 7.50 | 50 | 710 | 845 | 1100 | 240 |

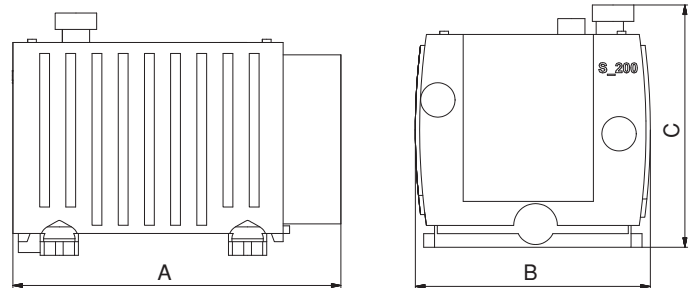


2557

• Wasser und Span-Trennsystem

2557

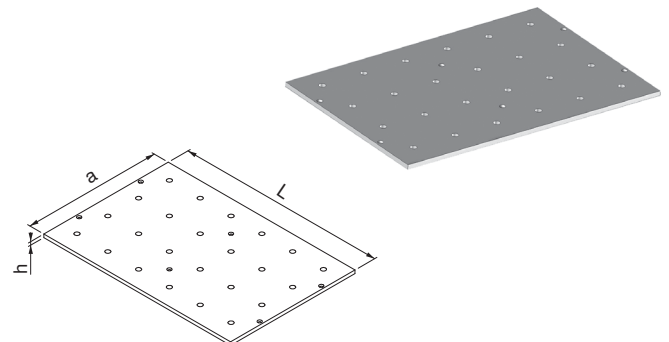
• Water and chip parser system



Adapterplatte

Adaption Plate


| Referenz-Nr. Order No. | a | L | h |
|---------------------------|-----|-----|----|
| 2560-200300 | 200 | 300 | 10 |
| 2560-300400 | 300 | 400 | 10 |
| 2560-400400 | 400 | 400 | 10 |
| 2560-400600 | 400 | 600 | 10 |
| 2560-600900 | 600 | 900 | 10 |



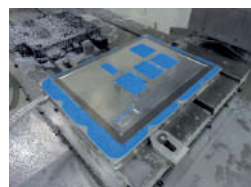
2560

blau Saugertellers

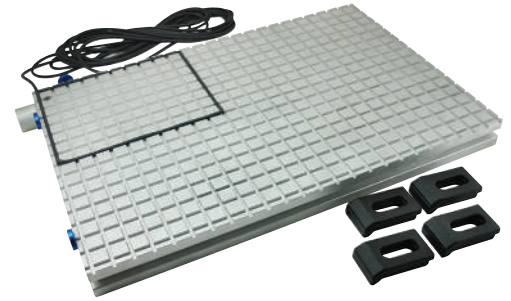
Blue Vacuum Pad

| Referenz-Nr. Order No. |  |
|---------------------------|---|
| 2563-200300 | 200x300 |

2563



| Referenz-Nr. Order No. | A | L | quadratische Fläche Square Range | Pumpeneinheit / Pump Unit | | (kg) |
|---------------------------|-----|-----|--|---------------------------|--------------|----------|
| | | | | Nr. | Nr. | |
| 2565-200300 | 200 | 300 | 20 | *2557-022 | *2567-095969 | 6.20 |
| 2565-300400 | 300 | 400 | 20 | *2557-022 | *2567-095969 | 12.30 |
| 2565-400400 | 400 | 400 | 20 | *2557-022 | *2567-082105 | 16.40 |
| 2565-400600 | 400 | 600 | 20 | *2557-022 | *2567-082105 | 24.60 |
| 2565-600900 | 600 | 900 | 20 | *2557-022 | *2567-080156 | 55.40 |

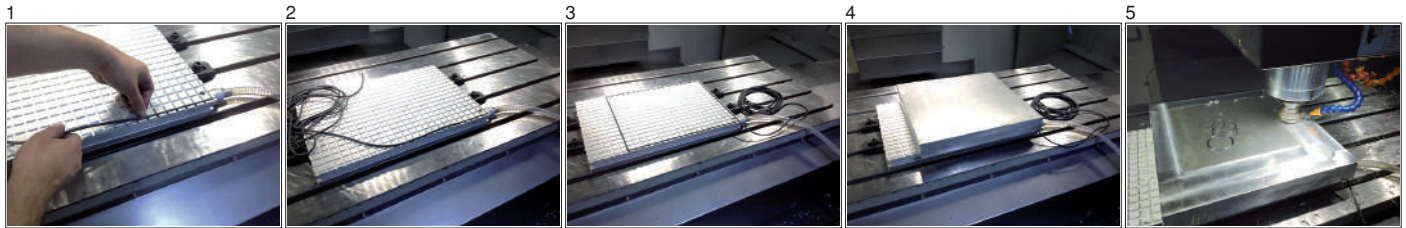
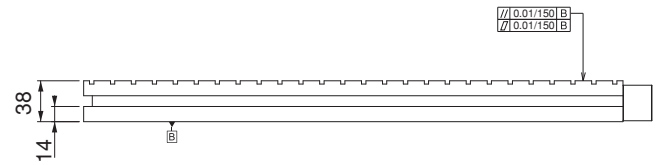
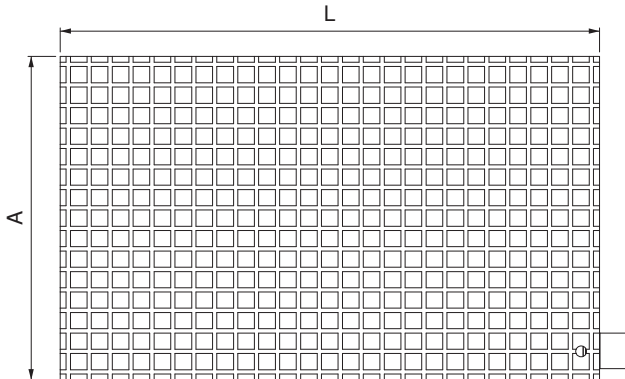


2565

- Material: Aluminium
- *Pumpenelement ist nicht enthalten, muss separat gekauft werden

2565

- Material : Aluminium
- *You need to purchase Pump unit separate.



Vakuumpumpe

Vacuum Pump

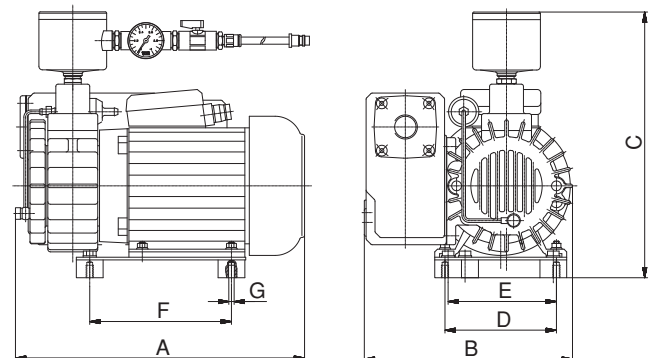
| Referenz-Nr. Order No. | m³/h | Volt | Hz | Vakuum-Leistung vacuum power | Kw | RPM | DB | Oil | A | B | C | D | E | F | G | (kg) |
|---------------------------|------|------|----|---------------------------------|------|------------------------------------|----|------|-----|-----|-----|-----|-----|-----|----|----------|
| 2567-095969 | 10 | 230 | 50 | 20 mbar | 0.37 | 3000 ¹ / _{min} | 59 | 0.3l | 301 | 234 | 297 | 100 | 83 | 150 | M8 | 24 |
| 2567-281548 | 10 | 400 | 50 | 20 mbar | 0.37 | 3000 ¹ / _{min} | 59 | 0.3l | 301 | 234 | 297 | 100 | 83 | 150 | M8 | 24 |
| 2567-082115 | 16 | 230 | 50 | 20 mbar | 0.55 | 3000 ¹ / _{min} | 60 | 0.3l | 301 | 234 | 297 | 100 | 83 | 150 | M8 | 10.3 |
| 2567-082116 | 16 | 400 | 50 | 20 mbar | 0.55 | 3000 ¹ / _{min} | 60 | 0.3l | 301 | 234 | 297 | 100 | 83 | 150 | M8 | 10.3 |
| 2567-080156 | 21 | 230 | 50 | 20 mbar | 0.75 | 3000 ¹ / _{min} | 62 | 0.5l | 401 | 223 | 254 | 131 | 127 | 210 | M8 | 22 |
| 2567-080078 | 21 | 400 | 50 | 20 mbar | 0.75 | 3000 ¹ / _{min} | 62 | 0.5l | 401 | 223 | 254 | 131 | 127 | 210 | M8 | 22 |

2567

- Trockensystem

2567

- Dry system

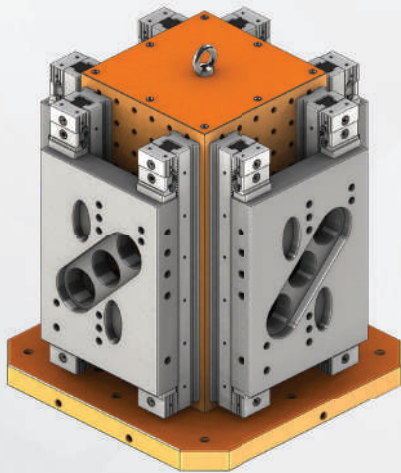
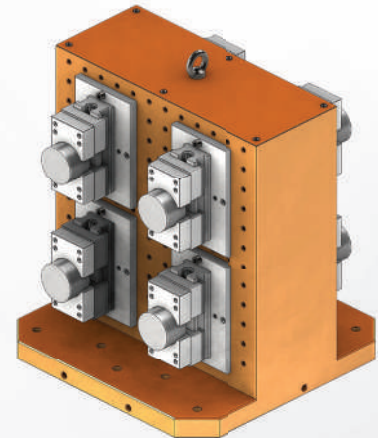


CNC Horizontalbearbeitungstürme

CNC Horizontal Clamping Cube

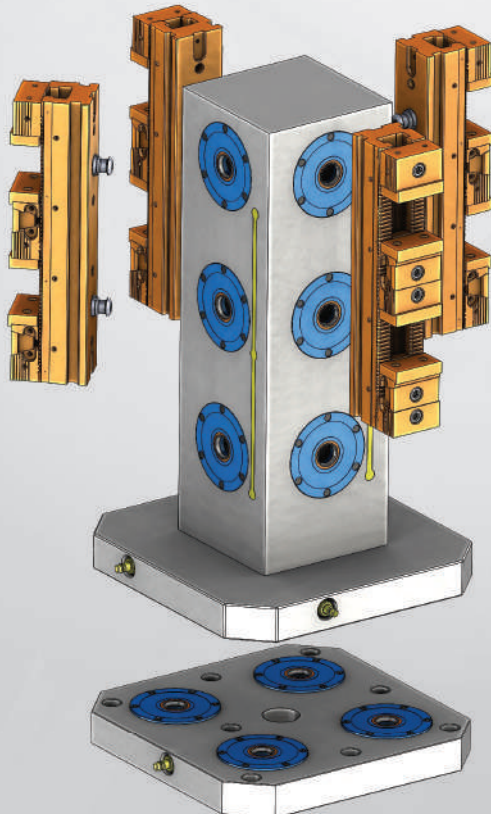
Werkstücke spannen mit Nr. 2310 Schraubstock beidseitig beweglich auf Nr. 2670 CNC Horizontaler Aufspannturm

Nr.2670 clamping cube with Nr.2310 vice applications



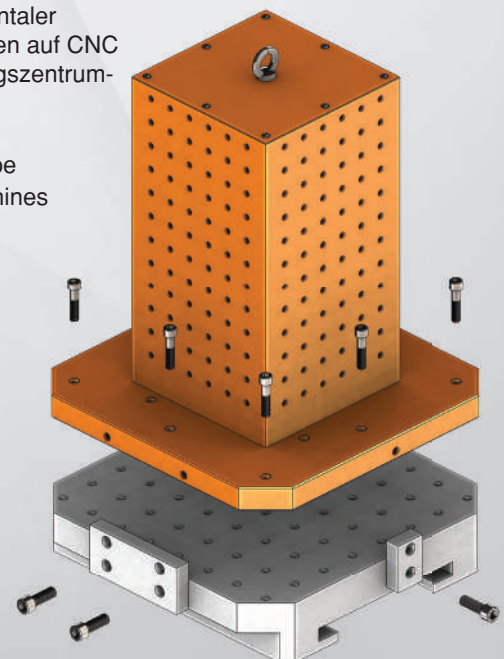
Werkstücke spannen mit Nr. 2430 Mehrfachspanner auf Nr. 2650 CNC Horizontaler Aufspannturm

Nr.2650 clamping cube with Nr.2430 vice applications




Nr. 2650 CNC Horizontaler Aufspannturm spannen auf CNC Horizontalbearbeitungszentrum-Platte

Nr.2650 clamping cube CNC Horizontal machines applications



| Referenz-Nr. Order No. | a | b | c | d | e | f | g | h | ØI | j | k | s | s1 | (kg) |
|---------------------------|-----|-----|-----|-----|-----|-----|----|----|----|-----|-----|----|-----|------|
| 2570-30012 | 300 | 300 | 220 | 100 | 250 | 90 | 40 | 30 | 18 | M12 | 75 | 25 | 170 | 50 |
| 2570-40012 | 400 | 400 | 280 | 160 | 320 | 90 | 40 | 30 | 18 | M12 | 75 | 30 | 240 | 88 |
| 2570-50012 | 500 | 500 | 345 | 200 | 400 | 90 | 50 | 35 | 18 | M12 | 75 | 35 | 300 | 175 |
| 2570-63012 | 630 | 630 | 435 | 250 | 500 | 100 | 50 | 40 | 18 | M12 | 105 | 40 | 360 | 298 |
| 2570-30016 | 300 | 300 | 220 | 100 | 250 | 90 | 40 | 30 | 18 | M16 | 75 | 25 | 170 | 45 |
| 2570-40016 | 400 | 400 | 280 | 160 | 320 | 90 | 40 | 30 | 18 | M16 | 75 | 30 | 240 | 84 |
| 2570-50016 | 500 | 500 | 345 | 200 | 400 | 90 | 50 | 35 | 18 | M16 | 75 | 35 | 300 | 170 |
| 2570-63016 | 630 | 630 | 435 | 250 | 500 | 100 | 50 | 40 | 18 | M16 | 105 | 40 | 360 | 293 |

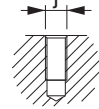
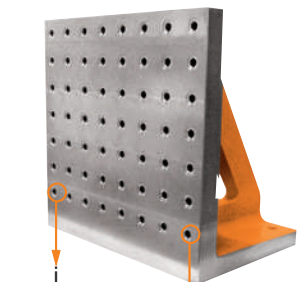
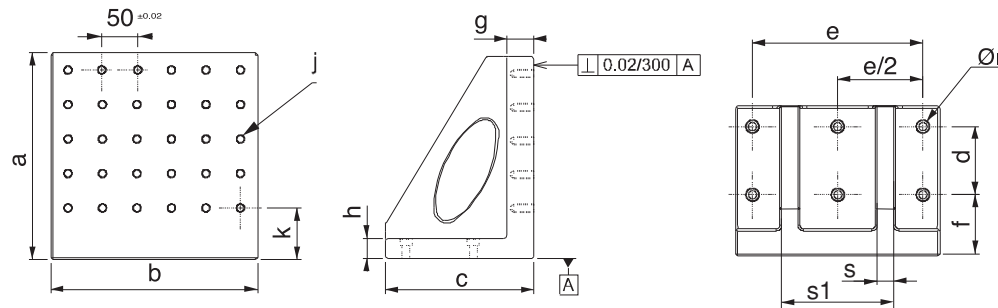
| Referenz-Nr. Order No. | a | b | c | d | e | f | g | h | ØI |  | k | s | s1 | (kg) |
|---------------------------|-----|-----|-----|-----|-----|-----|----|----|----|---|-----|----|-----|------|
| 2575-30012 | 300 | 300 | 220 | 100 | 250 | 90 | 40 | 30 | 18 | M12 | 75 | 25 | 170 | 50 |
| 2575-40012 | 400 | 400 | 280 | 160 | 320 | 90 | 40 | 30 | 18 | M12 | 75 | 30 | 240 | 88 |
| 2575-50012 | 500 | 500 | 345 | 200 | 400 | 90 | 50 | 35 | 18 | M12 | 75 | 35 | 300 | 175 |
| 2575-63012 | 630 | 630 | 435 | 250 | 500 | 100 | 50 | 40 | 18 | M12 | 105 | 40 | 360 | 298 |
| 2575-30016 | 300 | 300 | 220 | 100 | 250 | 90 | 60 | 30 | 18 | M16 | 75 | 25 | 170 | 60 |
| 2575-40016 | 400 | 400 | 280 | 160 | 320 | 90 | 60 | 30 | 18 | M16 | 75 | 30 | 240 | 111 |
| 2575-50016 | 500 | 500 | 345 | 200 | 400 | 90 | 60 | 35 | 18 | M16 | 75 | 35 | 300 | 176 |
| 2575-63016 | 630 | 630 | 435 | 250 | 500 | 100 | 65 | 40 | 18 | M16 | 105 | 40 | 360 | 313 |

2570

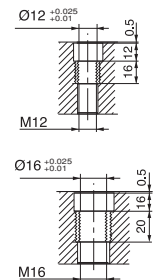
- Material: Guss
- verwendbar bei horizontalen und vertikalen Bearbeitungszentren
- kompatibel mit Standard-Spannelementen
- M12-M16, Gewindeabstand 50 ± 0.02
- Auf Anfrage mit gehärteten Stahlbuchsen erhältlich

2570

- Material : Casting
- It is used in CNC Horizontal end Vertical processing benches.
- It is in compliance with Standard Coupling Equipment.
- M12 - M16 thread gap on it's surface is 50 ± 0.02.
- It's steel bush threads are hardened.



Gewindekörper
Nr. 2570
Threaded body
Reference No.
2570



mit Stahlbuchse
Nr. 2575
Steel bush
Reference No. 2575

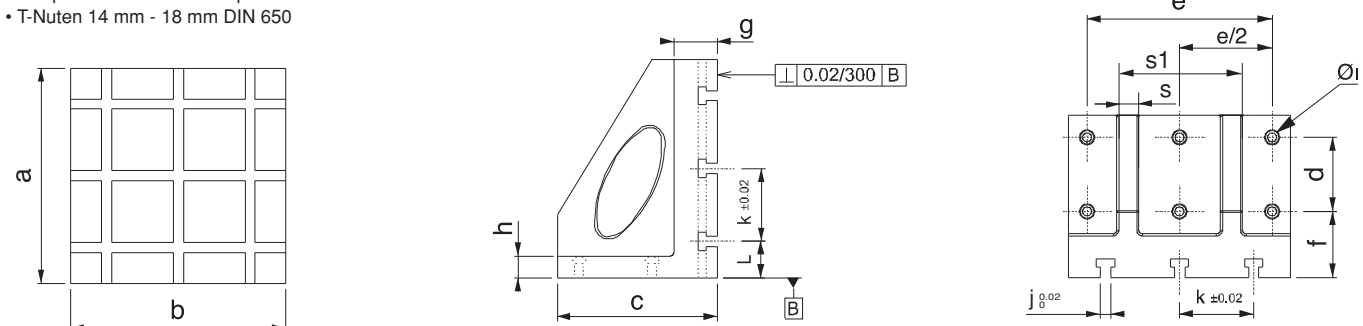
| Referenz-Nr. Order No. | a | b | c | d | e | f | g | h | ØI | j | k | L | s | s1 | (kg) |
|---------------------------|-----|-----|-----|-----|-----|-----|----|----|----|----|-----|----|----|-----|------|
| 2590-30014 | 300 | 300 | 220 | 100 | 250 | 90 | 60 | 30 | 18 | 14 | 100 | 50 | 25 | 170 | 50 |
| 2590-40014 | 400 | 400 | 300 | 160 | 320 | 90 | 60 | 30 | 18 | 14 | 100 | 50 | 30 | 240 | 100 |
| 2590-50014 | 500 | 500 | 350 | 200 | 400 | 90 | 60 | 35 | 18 | 14 | 100 | 50 | 35 | 300 | 185 |
| 2590-63014 | 630 | 630 | 450 | 250 | 500 | 100 | 65 | 40 | 18 | 14 | 125 | 65 | 40 | 360 | 315 |
| 2590-30018 | 300 | 300 | 220 | 100 | 250 | 90 | 60 | 30 | 18 | 18 | 100 | 50 | 25 | 170 | 50 |
| 2590-40018 | 400 | 400 | 300 | 160 | 320 | 90 | 60 | 30 | 18 | 18 | 100 | 50 | 30 | 240 | 98 |
| 2590-50018 | 500 | 500 | 350 | 200 | 400 | 90 | 60 | 35 | 18 | 18 | 100 | 50 | 35 | 300 | 174 |
| 2590-63018 | 630 | 630 | 450 | 250 | 500 | 100 | 65 | 40 | 18 | 18 | 125 | 65 | 40 | 360 | 286 |

2590

- Material: Guss
- verwendbar bei horizontalen und vertikalen Bearbeitungszentren
- kompatibel mit Standard-Spannelementen
- T-Nuten 14 mm - 18 mm DIN 650

2590

- Material : Casting
- It is used in CNC Horizontal end Vertical processing benches.
- It is in compliance with Standard Coupling Equipment.
- T-Slot is in the standard of 14mm - 18mm DIN 650.



Aufspann-Winkel

L Setsquare



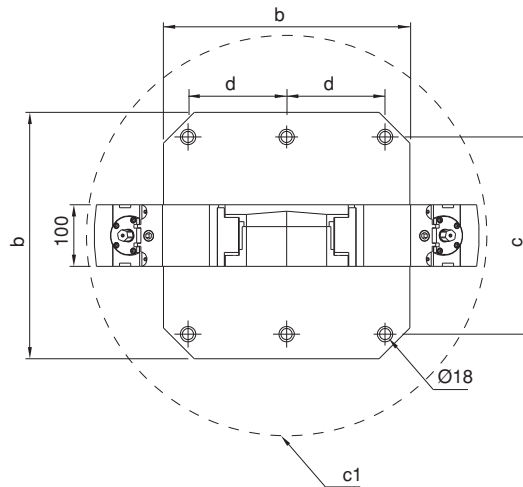
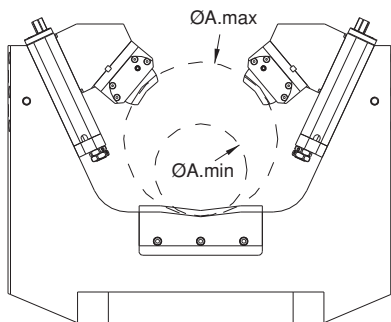
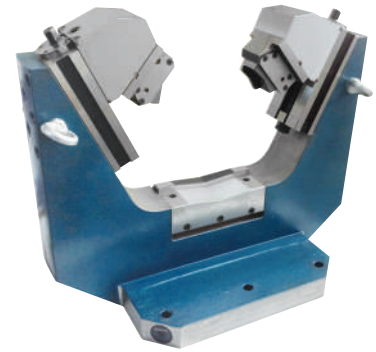
| Referenz-Nr. Order No. | b | d | c | c1 | A min. | A max. | Spannkraft clamping force kgf | Nm |
|---------------------------|-----|-----|-----|----|--------|--------|-------------------------------------|-----|
| 2600-400400 | 400 | 160 | 320 | - | - | - | 5000 | 135 |
| 2600-500500 | 500 | 200 | 400 | - | - | - | 5000 | 135 |
| 2600-630630 | 630 | 250 | 500 | - | - | - | 5000 | 135 |

2600

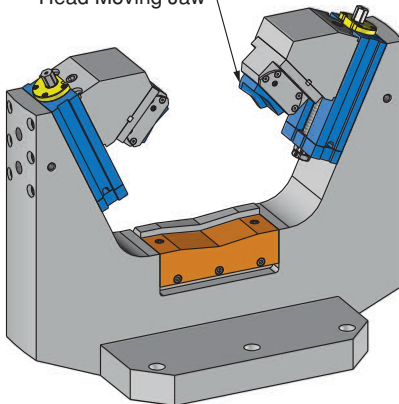
- Verwendung: CNC Horizontalbearbeitung, Erleichterung bei Bearbeitung von 2 Flächen der Zylinderwerkstücke auf Bohrwerkmaschinen
- Bewegliche Fläche sind komplett feingeschliffen und gehärtet.

2600

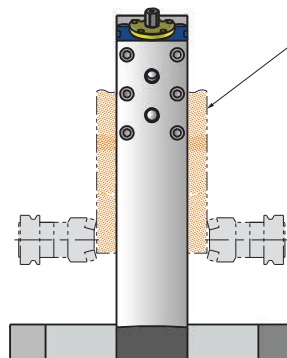
- Application area: Provides better operation on both sides of cylindric workpieces on cnc horizontal machines and bohrwerks.
- Entire moving surface is sensitively grinded and hardened.



Backe mit beweglichem Kopf
Head Moving Jaw



Werkstück
Workpiece



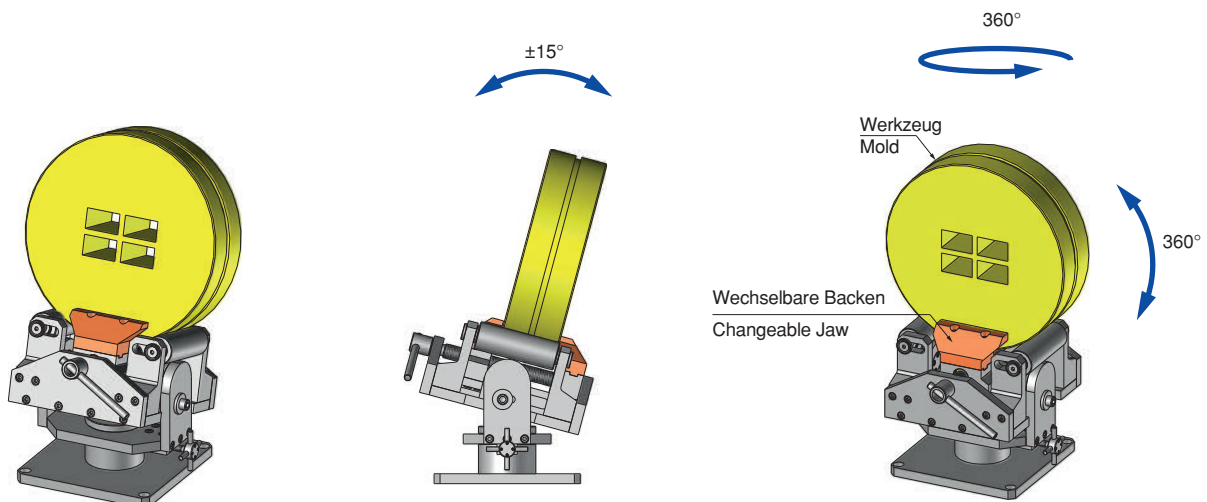
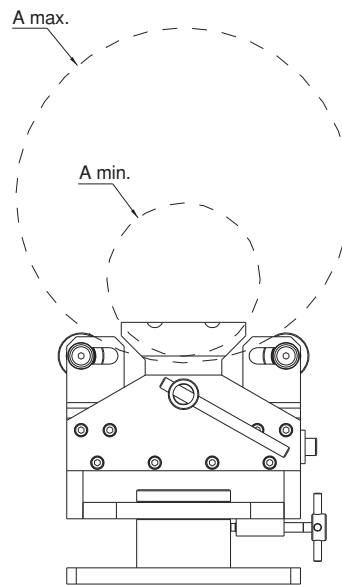
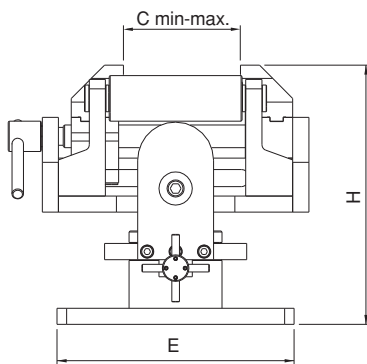
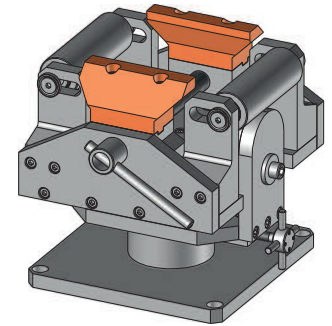
| Referenz-Nr. Order No. | E | H | C min. | C max. | A min. | A max. | Spannkraft Clamping Force kgf |
|---------------------------|-----|-----|--------|--------|--------|--------|----------------------------------|
| 2600-160350 | 250 | 275 | 0 | 130 | 160 | 350 | 2500 |

2600

• Eigenschaften: Erhebliche Arbeitserleichterung beim Richten der Extrusionswerkzeuge. Durch 360° Drehen des Werkzeuges um die eigene Achse wird im Vergleich zu anderen Schraubstöcken das Drehen des Werkstücks und Eingriff ermöglicht.

2600

• Specifications: Significantly reduces operator strain when smoothing extrusion mould. The 360° rotation of the mold on its own axis makes it easy to rotate the part and intervene in all parts relative to other fixed vices.



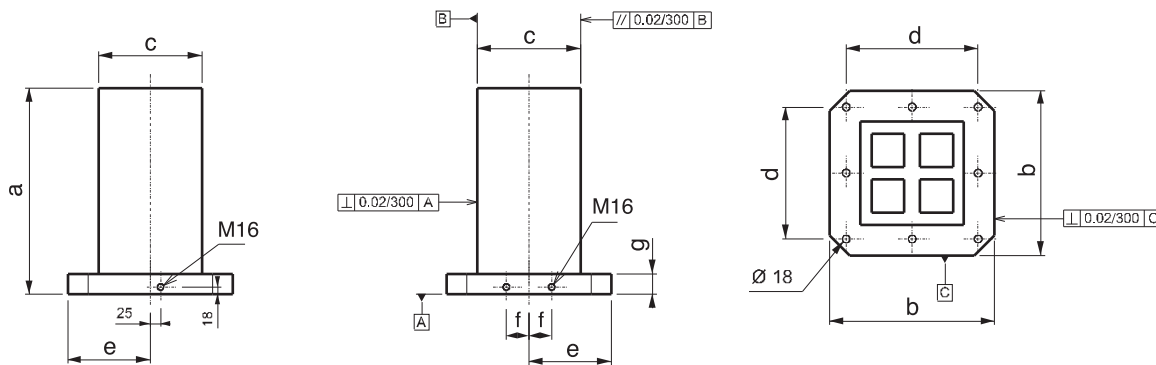
| Referenz-Nr. Order No. | a | b | c | d | e | f | g | (kg) |
|---------------------------|-----|-----|-----|-----|-----|-----|----|------|
| 2610-400250 | 500 | 400 | 250 | 320 | 200 | 55 | 50 | 180 |
| 2610-500300 | 600 | 500 | 300 | 400 | 250 | 75 | 50 | 240 |
| 2610-630350 | 700 | 630 | 350 | 500 | 315 | 100 | 50 | 390 |

2610

- Anwendung Fläche nach Bedarf
- Material: Guss

2610

- Application on the surface according to desired way.
- Material : Casting



CNC Horizontaler Aufspannturm

CNC Horizontal Processing Cube

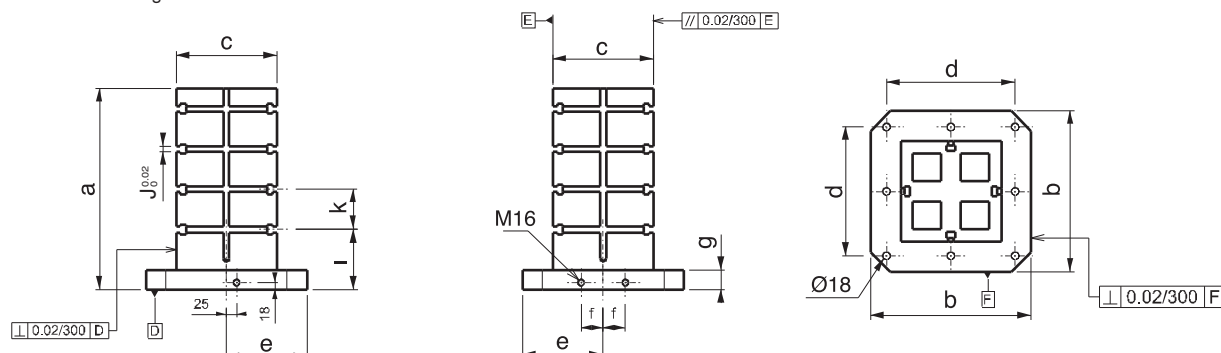
| Referenz-Nr. Order No. | a | b | c | d | e | f | g | i | k | J (^{0,02}) | (kg) |
|---------------------------|-----|-----|-----|-----|-----|-----|----|-----|-----|--------------------------|------|
| 2630-40025014 | 500 | 400 | 250 | 320 | 200 | 55 | 50 | 150 | 100 | 14 | 165 |
| 2630-50030014 | 600 | 500 | 300 | 400 | 250 | 75 | 50 | 150 | 100 | 14 | 227 |
| 2630-63035014 | 700 | 630 | 350 | 500 | 315 | 100 | 50 | 150 | 125 | 14 | 375 |
| 2630-40025018 | 500 | 400 | 250 | 320 | 200 | 55 | 50 | 150 | 100 | 18 | 155 |
| 2630-50030018 | 600 | 500 | 300 | 400 | 250 | 75 | 50 | 150 | 100 | 18 | 223 |
| 2630-63035018 | 700 | 630 | 350 | 500 | 315 | 100 | 50 | 150 | 125 | 18 | 370 |

2630

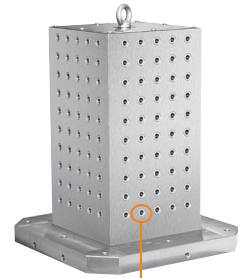
- Spannen Werkstücke auf 4 Flächen möglich
- kompatibel mit Standard-Spannelementen
- T-Nuten 14 mm - 18 mm DIN 650
- Material: Guss

2630

- Workpiece can be applied on four faces.
- It is in compliance with Standard Coupling Equipment.
- T-Slot is in the standard of 14mm - 18mm DIN 650.
- Material : Casting



| Referenz-Nr. Order No. | a | b | c | d | e | f | g | | |
|---------------------------|-----|-----|-----|-----|-----|-----|----|-----|-----|
| 2650-40025012 | 500 | 400 | 250 | 320 | 200 | 55 | 50 | M12 | 170 |
| 2650-50030012 | 600 | 500 | 300 | 400 | 250 | 75 | 50 | M12 | 230 |
| 2650-63035012 | 700 | 630 | 350 | 500 | 315 | 100 | 50 | M12 | 380 |
| 2650-40025016 | 500 | 400 | 250 | 320 | 200 | 55 | 50 | M16 | 168 |
| 2650-50030016 | 600 | 500 | 300 | 400 | 250 | 75 | 50 | M16 | 228 |
| 2650-63035016 | 700 | 630 | 350 | 500 | 315 | 100 | 50 | M16 | 376 |

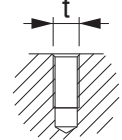
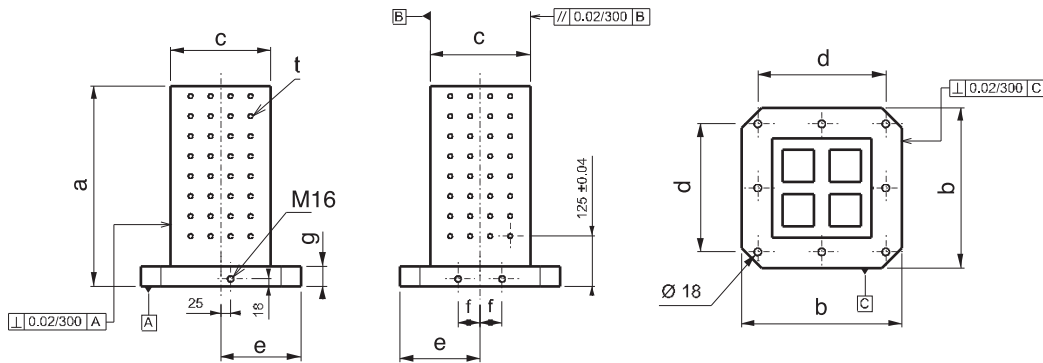


2650

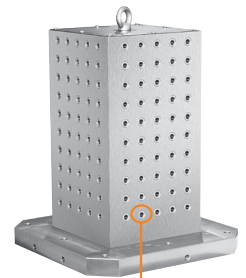
- Material: Guss
- Spannen Werkstücke auf 4 Flächen möglich
- kompatibel mit Standard-Spannelementen
- auf allen Flächen M12-M16, Gewindeabstand $50 \pm 0,02$

2650

- Material : Casting
- Workpiece can be applied on four faces.
- It is in compliance with Standard Coupling Equipment.
- M12 - M16 thread gap on it's surface is 50 ± 0.02 .



| Referenz-Nr. Order No. | a | b | c | d | e | f | g | | |
|---------------------------|-----|-----|-----|-----|-----|-----|----|-----|-----|
| 2660-40025012 | 500 | 400 | 250 | 320 | 200 | 55 | 50 | M12 | 170 |
| 2660-50030012 | 600 | 500 | 300 | 400 | 250 | 75 | 50 | M12 | 230 |
| 2660-63035012 | 700 | 630 | 350 | 500 | 315 | 100 | 50 | M12 | 380 |
| 2660-40025016 | 500 | 400 | 250 | 320 | 200 | 55 | 50 | M16 | 168 |
| 2660-50030016 | 600 | 500 | 300 | 400 | 250 | 75 | 50 | M16 | 228 |
| 2660-63035016 | 700 | 630 | 350 | 500 | 315 | 100 | 50 | M16 | 376 |

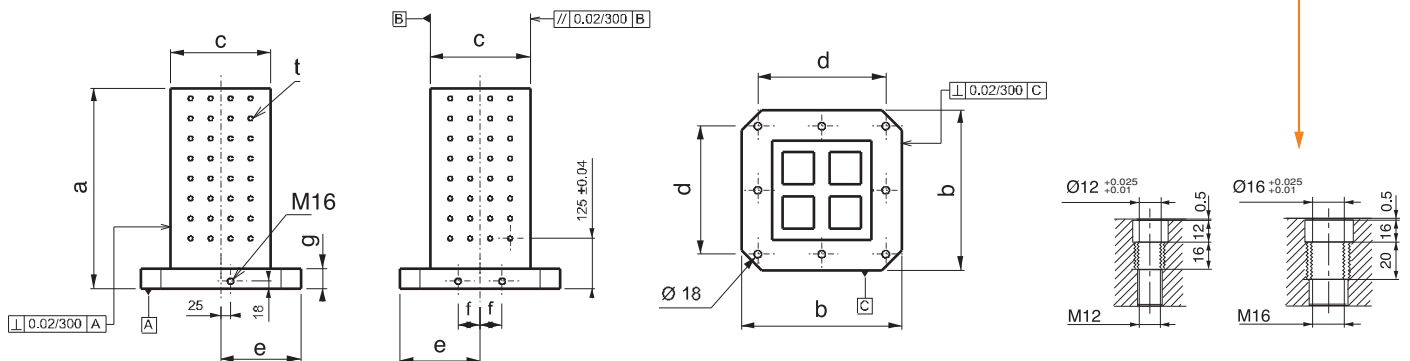



2660

- Material: Guss
- Spannen Werkstücke auf 4 Flächen möglich
- kompatibel mit Standard-Spannelementen
- auf allen Flächen M12-M16, Gewindeabstand $50 \pm 0,02$
- Auf Anfrage mit gehärteten Stahlbuchsen erhältlich

2660

- Material : Casting
- Workpiece can be applied on four faces.
- It is in compliance with Standard Coupling Equipment.
- M12 - M16 thread gap on it's surface is 50 ± 0.02 .
- It's steel bush threads are hardened.



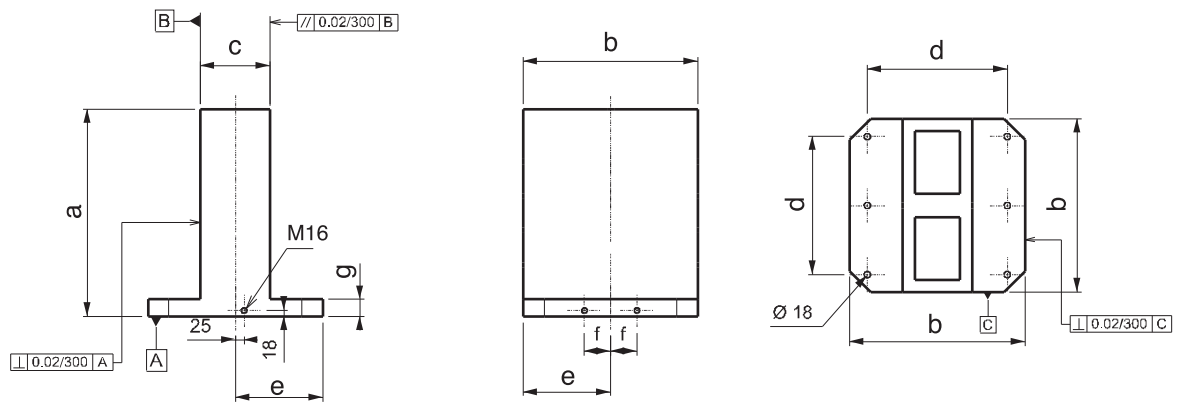
| Referenz-Nr. Order No. | a | b | c | d | e | f | g |  |
|---------------------------|-----|-----|-----|-----|-----|-----|----|---|
| 2670-400150 | 500 | 400 | 150 | 320 | 200 | 55 | 50 | 175 |
| 2670-500200 | 600 | 500 | 200 | 400 | 250 | 75 | 50 | 265 |
| 2670-630250 | 700 | 630 | 250 | 500 | 315 | 100 | 50 | 484 |

2670


- Anwendung Fläche nach Bedarf
- Material: Guss

2670

- Application on the surface according to desired way.
- Material : Casting



CNC Horizontaler Aufspannturm

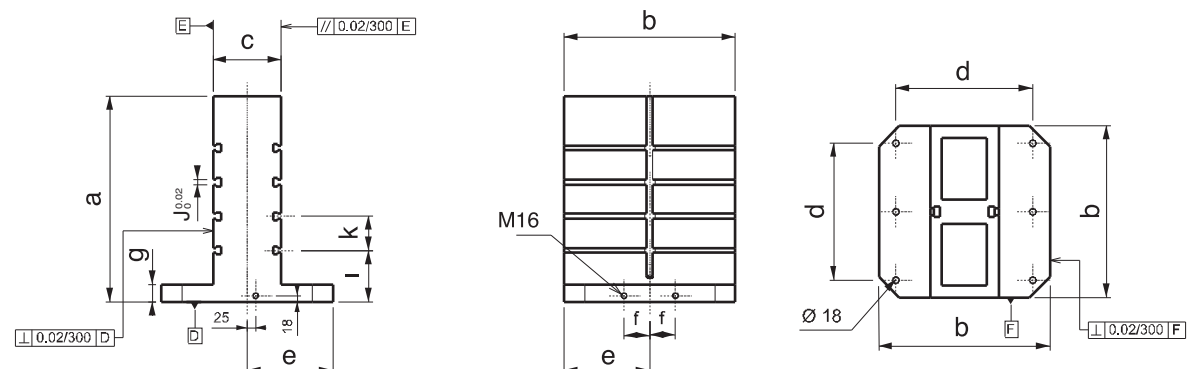
| Referenz-Nr. Order No. | a | b | c | d | e | f | g | i | k (±0.02) | J ($\frac{0.02}{0}$) |  |
|---------------------------|-----|-----|-----|-----|-----|-----|----|-----|--------------|---------------------------|--|
| 2690-40015014 | 500 | 400 | 150 | 320 | 200 | 55 | 50 | 150 | 100 | 14 | 165 |
| 2690-50020014 | 600 | 500 | 200 | 400 | 250 | 75 | 50 | 150 | 100 | 14 | 240 |
| 2690-63025014 | 700 | 630 | 250 | 500 | 315 | 100 | 50 | 150 | 125 | 14 | 455 |
| 2690-40015018 | 500 | 400 | 150 | 320 | 200 | 55 | 50 | 150 | 100 | 18 | 152 |
| 2690-50020018 | 600 | 500 | 200 | 400 | 250 | 75 | 50 | 150 | 100 | 18 | 238 |
| 2690-63025018 | 700 | 630 | 250 | 500 | 315 | 100 | 50 | 150 | 125 | 18 | 450 |

2690

- Spannen Werkstücke auf beiden Flächen möglich
- kompatibel mit Standard-Spannelementen
- T-Nuten 14 mm - 18 mm DIN 650
- Material: Guss

2690

- Workpiece can be applied on four faces.
- It is in compliance with Standard Coupling Equipment.
- T-Slot is in the standard of 14mm - 18mm DIN 650.
- Material : Casting



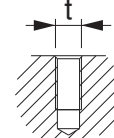
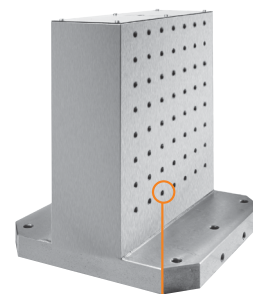
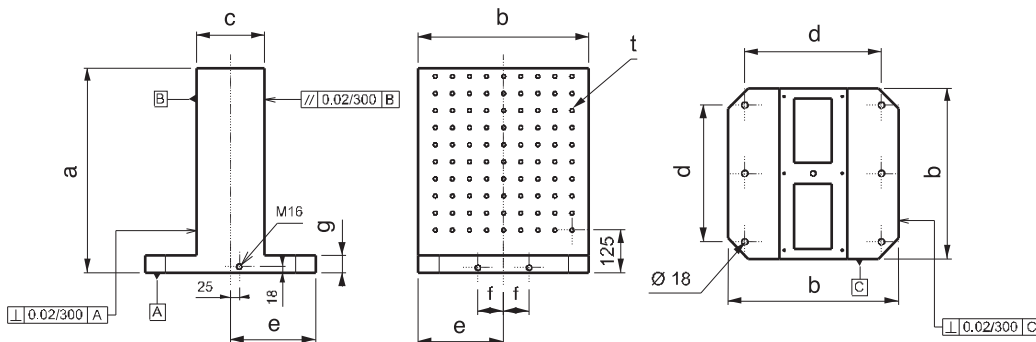
| Referenz-Nr. Order No. | a | b | c | d | e | f | g | | (kg) |
|---------------------------|-----|-----|-----|-----|-----|-----|----|-----|----------|
| 2710-40015012 | 500 | 400 | 150 | 320 | 200 | 55 | 50 | M12 | 170 |
| 2710-50020012 | 600 | 500 | 200 | 400 | 250 | 75 | 50 | M12 | 250 |
| 2710-63025012 | 700 | 630 | 250 | 500 | 315 | 100 | 50 | M12 | 475 |
| 2710-40015016 | 500 | 400 | 150 | 320 | 200 | 55 | 50 | M16 | 164 |
| 2710-50020016 | 600 | 500 | 200 | 400 | 250 | 75 | 50 | M16 | 248 |
| 2710-63025016 | 700 | 630 | 250 | 500 | 315 | 100 | 50 | M16 | 470 |

2710

- Material: Guss
- Spannen Werkstücke auf beiden Flächen möglich
- kompatibel mit Standard-Spannelementen
- auf beiden Flächen M12-M16, Gewindeabstand $50 \pm 0,02$

2710

- Material : Casting
- Workpiece can be applied on two faces.
- It is in compliance with Standard Coupling Equipment.
- M12 - M16 thread gap on it's surface is 50 ± 0.02 .



CNC Horizontaler Aufspannturm

CNC Horizontal Processing Cube

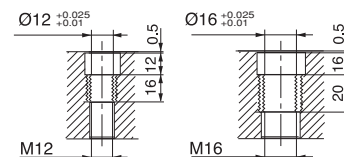
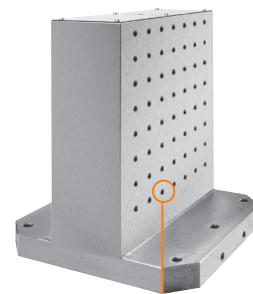
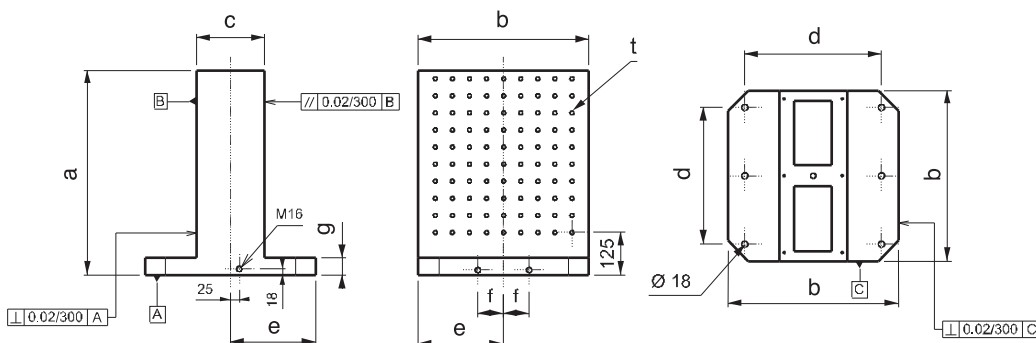
| Referenz-Nr. Order No. | a | b | c | d | e | f | g | | (kg) |
|---------------------------|-----|-----|-----|-----|-----|-----|----|-----|----------|
| 2720-40015012 | 500 | 400 | 150 | 320 | 200 | 55 | 50 | M12 | 170 |
| 2720-50020012 | 600 | 500 | 200 | 400 | 250 | 75 | 50 | M12 | 250 |
| 2720-63025012 | 700 | 630 | 250 | 500 | 315 | 100 | 50 | M12 | 475 |
| 2720-40015016 | 500 | 400 | 150 | 320 | 200 | 55 | 50 | M16 | 164 |
| 2720-50020016 | 600 | 500 | 200 | 400 | 250 | 75 | 50 | M16 | 248 |
| 2720-63025016 | 700 | 630 | 250 | 500 | 315 | 100 | 50 | M16 | 470 |

2720

- Material: Guss
- Spannen Werkstücke auf beiden Flächen möglich
- kompatibel mit Standard-Spannelementen
- auf beiden Flächen M12-M16, Gewindeabstand $50 \pm 0,02$
- Auf Anfrage mit gehärteten Stahlbuchsen erhältlich

2720

- Material : Casting
- Workpiece can be applied on two faces.
- It is in compliance with Standard Coupling Equipment.
- M12 - M16 thread gap on it's surface is 50 ± 0.02 .
- It's steel bush threads are hardened.



| Referenz-Nr. Order No. | m | a | b | c | sw | e | g | h | Tragkraft Lifting Force of one Ringbolt Kgf | (g) |
|---------------------------|-----|----|----|----|----|----|----|----|---|---------|
| 2730-016 | M16 | 39 | 85 | 35 | 30 | 30 | 45 | 10 | 660 | 370 |
| 2730-020 | M20 | 39 | 85 | 35 | 30 | 30 | 45 | 10 | 1000 | 390 |

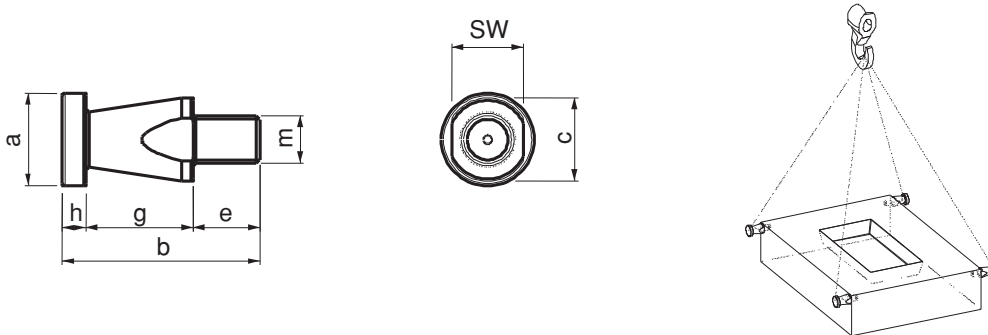


2730

- Spannmaß M16-M20
- Schwarz beschichtet

2730

- Coupling Measurement: M16 - M20
- Black Coating



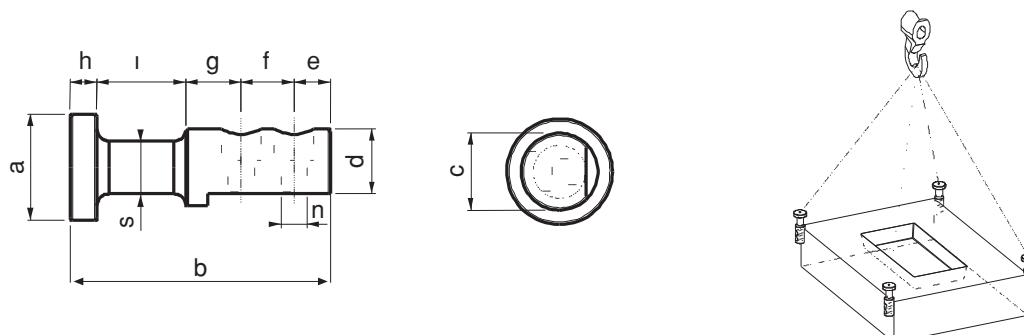
| Referenz-Nr. Order No. | a | b | c | d | e | f | g | h | i | n | s | Tragkraft Lifting Force of one Ringbolt Kgf | (g) |
|---------------------------|----|-----|----|----|----|----|----|----|----|----|----|---|---------|
| 2750-044 | 44 | 108 | 32 | 27 | 15 | 22 | 23 | 11 | 37 | 11 | 22 | 400 | 525 |

2750

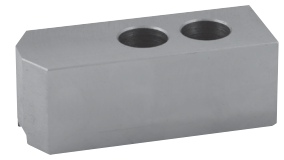
- Spannmaß DIN 912 M10x35 Inbus
- Schwarz beschichtet

2750

- Coupling Bolt Measurement: DIN 912 M10x35 Inbus
- Black Coating



| Referenz-Nr. Order No. | inch | Tonhöhe pitch | L | b | h | n t7 | c | k | j | e | m | s | Ø min | (g) |
|---------------------------|----------|------------------|-----|----|----|---------|---|----|----|----|----|----|----------|-------|
| 2770-0612 | 6" inch | 1.5x60 | 72 | 32 | 32 | 12 | 5 | 15 | 20 | 11 | 22 | 10 | 6.5 | 1460 |
| 2770-0814 | 8" inch | 1.5x60 | 98 | 37 | 37 | 14 | 5 | 24 | 25 | 13 | 22 | 14 | 8.5 | 2785 |
| 2770-1016 | 10" inch | 1.5x60 | 110 | 42 | 42 | 16 | 5 | 30 | 30 | 13 | 29 | 14 | 10 | 4060 |
| 2770-1218 | 12" inch | 1.5x60 | 130 | 50 | 52 | 18 | 5 | 39 | 30 | 15 | 32 | 17 | 12 | 6510 |
| 2770-1221 | 12" inch | 1.5x60 | 130 | 50 | 52 | 21 | 5 | 39 | 30 | 17 | 32 | 19 | 12 | 6575 |
| 2775-0612 | 6" inch | 1.5x60 | 72 | 28 | 37 | 12 | 5 | 15 | 20 | 11 | 17 | 10 | 6.5 | 1415 |
| 2775-0814 | 8" inch | 1.5x60 | 95 | 35 | 67 | 14 | 5 | 24 | 25 | 13 | 19 | 14 | 8.5 | 4465 |
| 2775-1016 | 10" inch | 1.5x60 | 110 | 38 | 77 | 16 | 5 | 30 | 30 | 13 | 19 | 14 | 10 | 6850 |
| 2775-1218 | 12" inch | 1.5x60 | 130 | 48 | 77 | 18 | 5 | 39 | 30 | 15 | 23 | 17 | 12 | 10075 |
| 2775-1221 | 12" inch | 1.5x60 | 130 | 48 | 77 | 21 | 5 | 39 | 30 | 17 | 23 | 19 | 12 | 9600 |

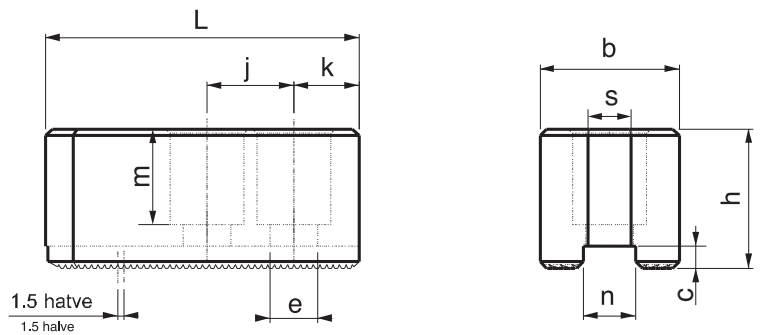


2770 - 2775

- für 6" - 8" - 10" - 12" Spannfutter

2770 - 2775

- For chucks of 6" - 8" - 10" and 12"



Doppelter T-Nutenstein

CNC Soft Podous T-Nut

| Referenz-Nr. Order No. | inch | L | h | n T6 | n1 | h1 | d | j | (g) |
|---------------------------|----------|----|------|---------|------|------|-----|----|-----|
| 2790-0610 | 6" inch | 38 | 18.5 | 12 | 18 | 7.5 | M10 | 20 | 55 |
| 2790-0812 | 8" inch | 45 | 21.5 | 14 | 21 | 8.5 | M12 | 25 | 85 |
| 2790-1012 | 10" inch | 52 | 21.5 | 16 | 22 | 8.5 | M12 | 30 | 115 |
| 2790-1214 | 12" inch | 55 | 33.5 | 18 | 26.5 | 13.5 | M14 | 30 | 225 |
| 2790-1216 | 12" inch | 55 | 27 | 21 | 29 | 13.5 | M16 | 30 | 210 |

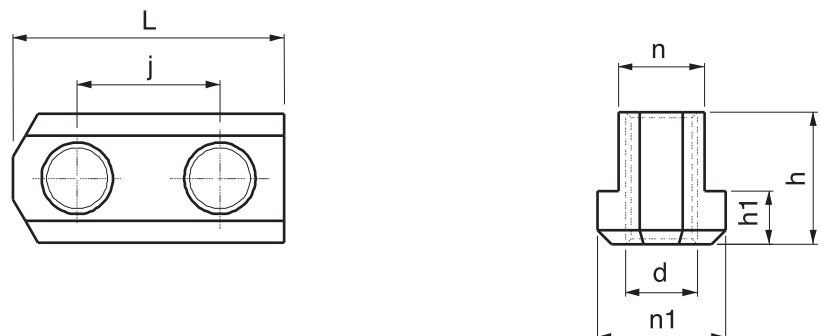


2790

- für 6" - 8" - 10" - 12" Spannfutter
- Gehärtet
- Schwarz beschichtet

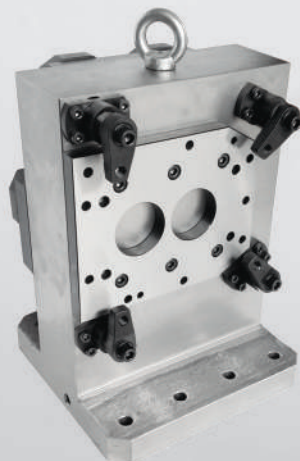
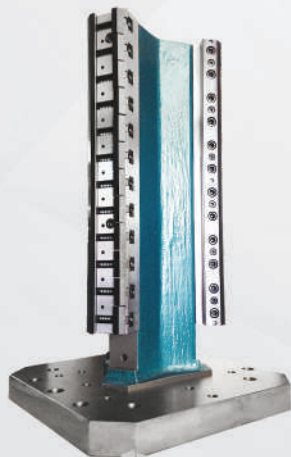
2790

- For chucks of 6" - 8" - 10" and 12"
- Hardened
- Black Coating



Spezial-Projektanwendungen

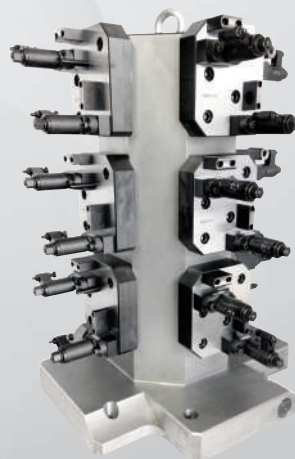
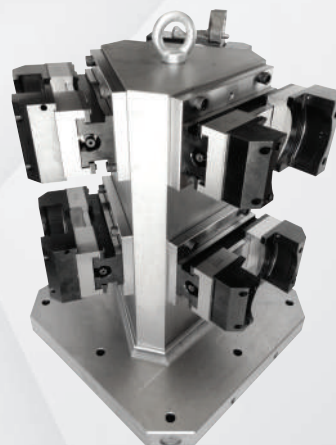
Special Project Based Applications



Hinweis: Um alle Arten von Werkstücken zu verbinden, werden mechanische, pneumatische und hydraulische Vorrichtungsanwendungen durchgeführt.
Note : To connect all kinds of workpiece, mechanical, pneumatic and hydraulic fixture applications are made.

Spezial-Projektanwendungen

Special Project Based Applications

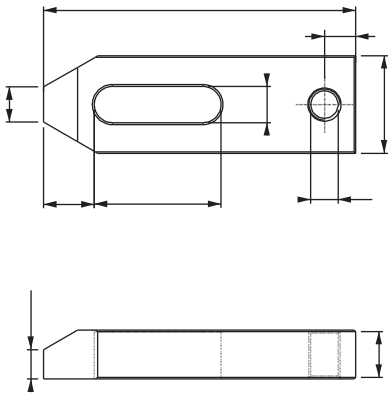


Hinweis: Um alle Arten von Werkstücken zu verbinden, werden mechanische, pneumatische und hydraulische Vorrichtungsanwendungen durchgeführt.
Note : To connect all kinds of workpiece, mechanical, pneumatic and hydraulic fixture applications are made.

Erstellen Sie eine spezielle Auftragsvorlage / Create A Special Order Template

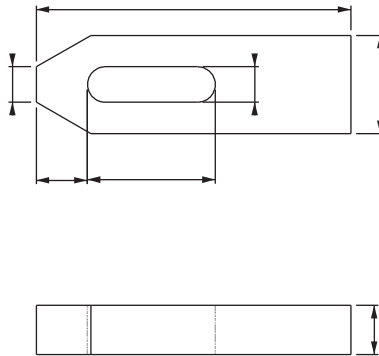
1330

Spanneisen mit Stützgewinde
Straight Clamp with Support Hole



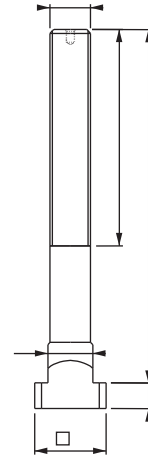
1350

Spanneisen gerade
Straight Clamp



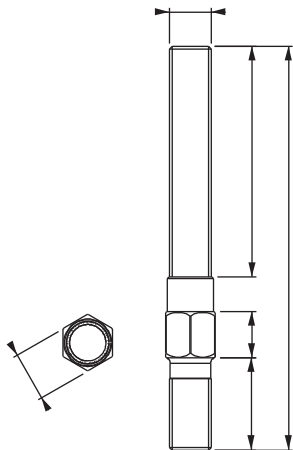
1590

Schraube für T-Nut
T-Slot Bolt



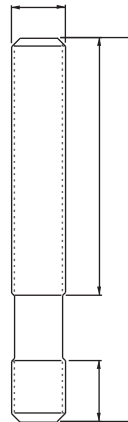
1670

Schraube mit Schlüsselweite für T-Nut
Wrench Mouth Stud



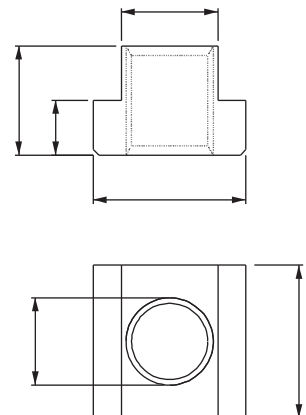
1690

Stiftschraube
Straight Stud



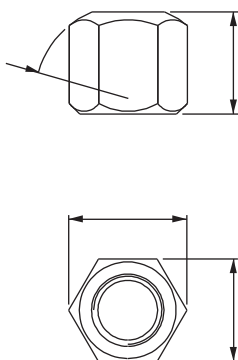
1750

Mutter für T-Nuten
"T" Clamp



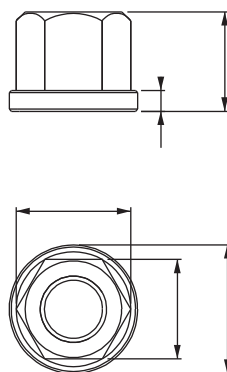
1790

Sechskantmutter
Hexagon Nut



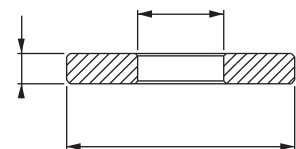
1810

Sechskantmutter mit Bund
Nut with Washer



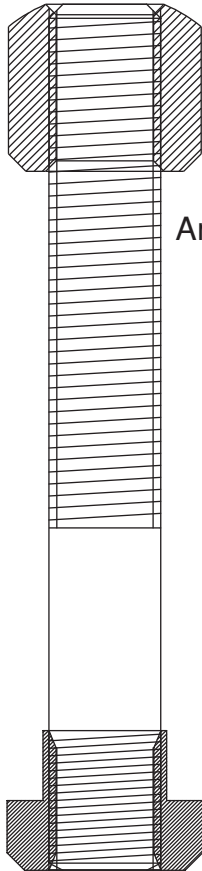
1870

Scheibe
Washer



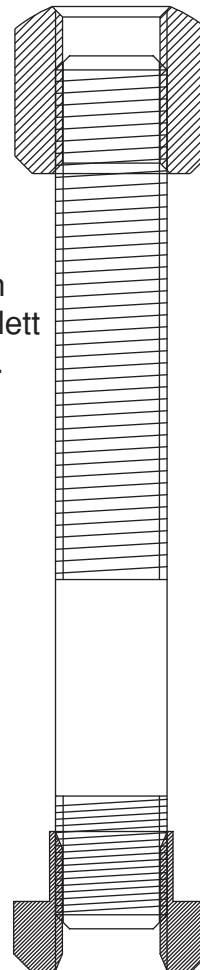
Anwendung Richtig-Falsch

Right - Wrong Use



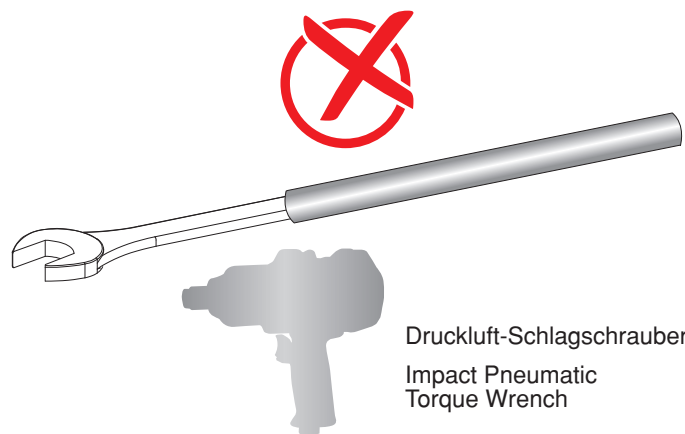
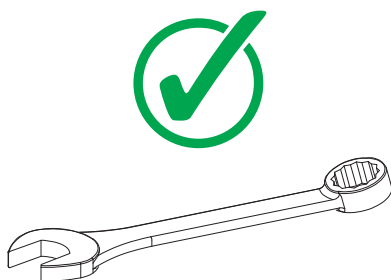
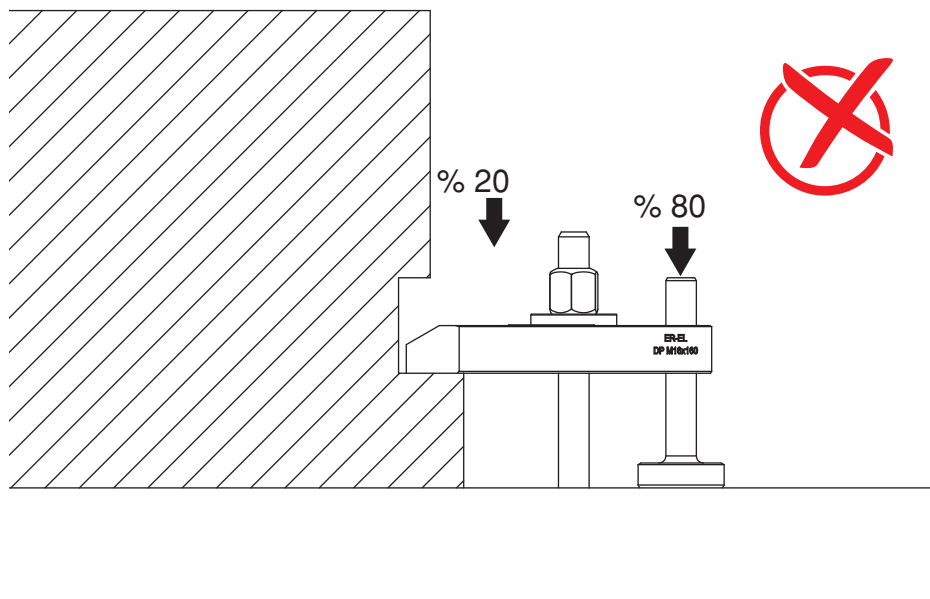
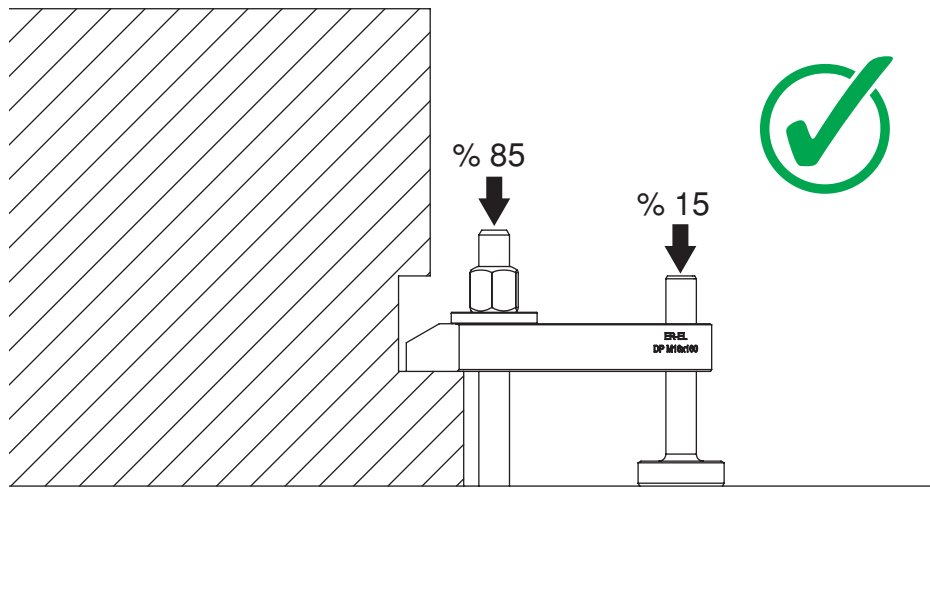
Seien Sie sicher, das bei modularen Anwendungen die Stiftschraube komplett in den Nutzenstein eingeschraubt ist.

Make sure that in the use of modular Hexagon Nut and T-Nut is screwed fully into the Stud.



Anwendung Richtig-Falsch

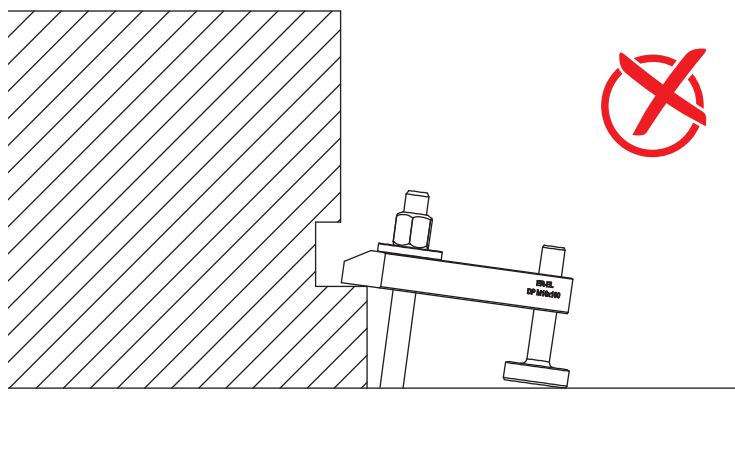
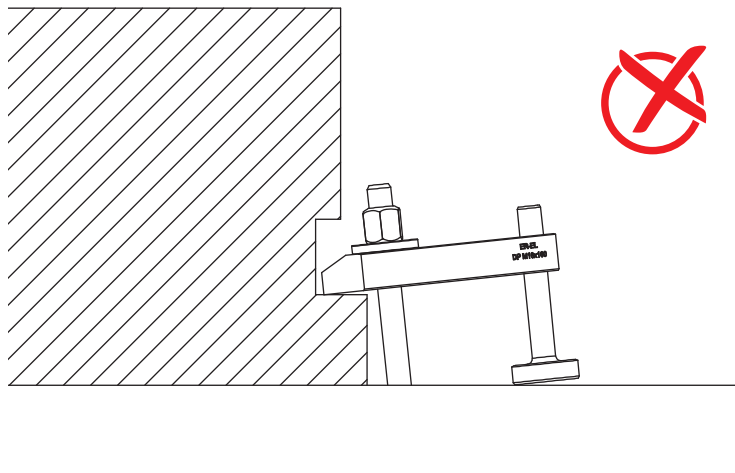
Right - Wrong Use



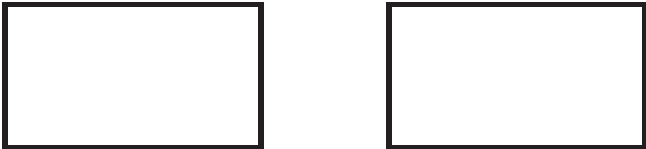
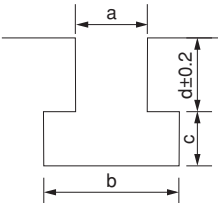
Druckluft-Schlagschrauber
Impact Pneumatic
Torque Wrench

Anwendung Richtig-Falsch



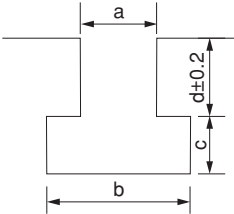
Right - Wrong Use



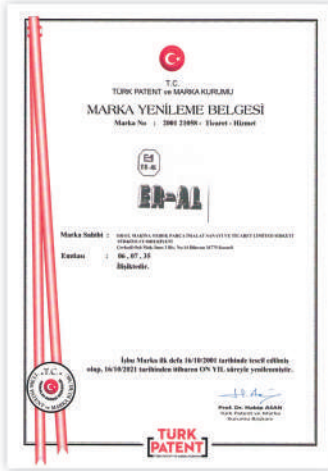
Datum / Date:...../...../.....

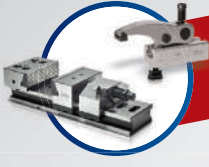
| | | | |
|--|---|--|--------------------------------------|
| Firmenname : Company Name : | | | |
| Telefonnummer & Adresse : Contact tel & address : | | | |
| Kontaktperson : Authorized Person : | | | |
| Presskraft / Press tonnage : | | | |
| Marke/Modell/Type Marke/Modell/Type | | Werkzeug-Referenznr. Mold Reference No: | |
| Maße des Pressentisches : Press Plate Measurements : | Oben Top X:..... Y:..... | Unten Bottom X:..... Y:..... | |
| Pres Tork Mesafesi : | | | |
| Sind U-Kanäle in der Presse vorhanden? Is there U channel in Press? | Ja Yes | Nein No | Maße its measure |
| T-Nutform der Presse T-channel shape of Press | Unten Bottom | Oben Top | |
| Maße der T-Nut : T-channel measure of Press : |  | | |
| Untere Platte Top Table: | A:..... | B:..... | C:..... D:..... |
| Obere Platte Bottom Table: | A:..... | B:..... | C:..... D:..... |
| Nutabstand : Channel Center Distance : |  | | |
| Arbeitstemperatur des Werkzeugs / Mold Working Heat : | | Handhabung des Werkzeugs / Mold Transportation Shape : | |
| Informationen zum hydraulischen Spannelement / Hydraulic Clamp Information | | | |
| Auswahl des Spannelementes Selection of clamp : | Höhe der Werkzeugplatte Plate Thickness | Unten Bottom H:.... | Oben Top H:.... |
| Informationen zum hydraulischen Werkzeugheber Die Lifter Hydraulic Information | | | |
| Werkzeuggewicht Mold Weight | Werkzeugmaße Mold Size: | X:..... | Y:..... Z:..... |
| Informationen zum Werkzeugschiebearm Die Arm Informations: | | | |
| Das zu tragende Gewicht Load Capacity : | Schweres Modell Heavy Model | <input type="checkbox"/> | Leichtes Modell Light Model |
| Mit Unterstützer? Supported? | Ja Yes | Nein No | |
| Modell RS : Modell RS : | L= Werkzeuglänge Mold Length | H= Bodenhöhe Ground Height | W= Werkzeuggewicht Mold Weight |
| Wird ein komplettes System benötigt? Company wants whole system setup? | Ja Yes | Nein No | |
| Dieser Abschnitt wird seitens ER-EL ausgefüllt This part will be filled in by ER-EL | | | |
| Für dieses System geeignete Modelle / Codes der Elemente: Model / code information of the equipment to be used in the system: | | | |

Datum / Date:...../...../.....

| | | | |
|---|---------|---|-------------------------|
| Firmenname : <i>Company Name</i> : | | | |
| Telefonnummer & Adresse : <i>Contact tel & address</i> : | | | |
| Kontaktperson : <i>Authorized Person</i> : | | | |
| Einspritzmenge / <i>Injection tonnage</i> : | | | |
| Marke/Modell/Type <i>Marke/Modell/Type</i> | | Werkzeug-Referenznr. <i>Mold Reference No:</i> | |
| Informationen zur Injektion <i>Injection working information:</i> | | | |
| Abmessungen der Maschinenplatte <i>Injection Plate Measurements</i> | | Links <i>Left</i> | Rechts <i>Right</i> |
| X:..... | Y:..... | X:..... | Y:..... |
| Entfernung des Einspritzmomentes <i>Injection Torque Distance:</i> | | | |
| Auf der Platte *Zahn* <i>*THREAD* in Machine</i> | | Ja <i>Yes</i> | Nein <i>No</i> |
| Wenn ja, Abstand zum Mittelpunkt: <i>If there is thread in the machine, center interval :</i> | | Maße <i>its measure</i> | |
| T-Nutform der Maschine <i>T-channel shape of Injection</i> | | Links <i>Left</i> | Rechts <i>Right</i> |
|  | |  | |
| Maße der T-Nut <i>T-channel measure of Injection:</i> | | | |
| Linke Platte <i>Left Table:</i> | | A:..... | B:..... |
| Rechte Platte <i>Right Table:</i> | | A:..... | B:..... |
| | | C:..... | D:..... |
| | | C:..... | D:..... |
| Nutabstand <i>Center interval of channel :</i> | |  | |
| Arbeitstemperatur <i>Working Heat :</i> | | | |
| Informationen zum hydraulischen Spannelement <i>Hydraulic Clamp Informations:</i> | | | |
| Werkzeuggewicht <i>Weight of Mold :</i> | | Links <i>Left</i> | Rechts <i>Right</i> |
| Höhe der Werkzeugplatte <i>Mold Plate Thickness:</i> | | H:.... | H:.... |
| Wird ein komplettes System benötigt? <i>Company wants whole system setup?</i> | | Ja <i>Yes</i> | Nein <i>No</i> |
| Dieser Abschnitt wird seitens ER-EL ausgefüllt <i>This part will be filled in by ER-EL</i> | | | |
| Für dieses System geeignete Modelle / Codes der Elemente: <i>Model / code information of the equipment to be used in the system:</i> | | | |

A series of horizontal dotted lines for writing, spanning the width of the page.





Standard Produkte
Standard Products



Hydraulik-Komponenten
Hydraulic Components



5-Achs Basismodul
5-Axis Clamping Block System



Spezial-Projektanwendungen
Project Based Fixture Applications



Werkzeug-Schnellwechselsystem
Quick Mold Change System



MIKSAN Standard Produkte
MIKSAN Standard Products



ER-EL Zero Clamp
ER-EL Zero Point Clamping System

“Wir produzieren Qualität”

“We produce quality in clamping equipment”

Wir exportieren in mehr als 35 Länder...

We export to more than 35 countries



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ŞTİ. Çerkeşli OSB Mah. İMES 3 Blv. No: 14 Dilovası - Kocaeli
Tel: +90 262 502 11 60 Pbx Fax: +90 262 502 11 59
info@er-el.com.tr www.er-el.com.tr



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