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Important Note

The information shown in these documents is for guidance only. No liability is accepted for any errors or omissions. The designer or user is solely responsible for the safe and proper application of the parts, assemblies or equipment described.

Zylinder

Messing-Zylinder

Technische Daten

Cylinders

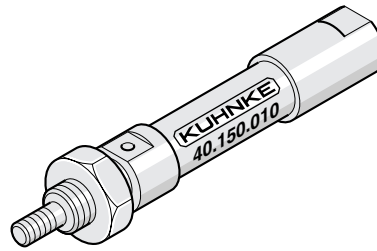
Brass Cylinders

Technical Data

Technische Daten:

Druckbereich:

| Kolben Ø mm | Betriebsdruck (bar) | |
|----------------|---------------------|----------|
| | ew | dw |
| 3 | 3 - 10 | – |
| 5 | 2,5 - 10 | 2 - 10 |
| 8 | 2 - 10 | 1,5 - 10 |
| 12 | 1,5 - 10 | 1 - 10 |
| 16 | 1,5 - 10 | 1 - 10 |
| 20 | 1,5 - 10 | 0,5 - 10 |
| 25 | 1,5 - 10 | 0,5 - 10 |



| | |
|----------------------|---|
| Umgebungstemperatur: | - 10 °C...+ 70 °C* |
| Werkstoffe: | Zylinderrohr: Ms Kolbenstange: CrNi-Stahl, korrosionsbeständig Dämpfungsscheibe: Elastomer, schlagfest |
| Dichtungen: | Perbunan, ölbeständig |
| Schmiermittel: | Shell Tellus Öl C10 oder gleichwertig |
| Medium: | Druckluft, gewartet* |
| Hubbegrenzung: | möglichst extern (optimale Lebensdauer) |
| Hubtoleranz: | max. + 1,5 mm |
| Federkraft: | ausgelegt für Rückbewegung des Kolbens, nicht für angekoppelte Massen. Flächenverhältnis der Kolben bei doppeltwirkenden Zylindern (bedingt durch Abzug der Kolbenstangenquerschnitte) |
| | Zylinder 8 mm 5:4 Zylinder 5, 12 mm 6:5 Zylinder 16, 20, 25 mm 7:6 |
| Befestigung: | Ausführung "S": Schraubbefestigung am Zylinderdeckel der Kolbenstangenseite Ausführung "U": Universalbefestigung (Schraubbefestigung an beiden Zylinderdeckeln, Schwenkbefestigung) |

Sonderzylinder nach Ihren Angaben und Zylinder mit doppelseitiger Kolbenstange, sowie Zylinder mit Zwischen- und Überlängen bitten wir anzufragen.

* Siehe Technische Information

Technical Data:

Pressure range:

| Piston dia. mm | Operating pressure (bar) | |
|-------------------|--------------------------|----------|
| | sa | da |
| 3 | 3 - 10 | – |
| 5 | 2.5 - 10 | 2 - 10 |
| 8 | 2 - 10 | 1.5 - 10 |
| 12 | 1.5 - 10 | 1 - 10 |
| 16 | 1.5 - 10 | 1 - 10 |
| 20 | 1.5 - 10 | 0.5 - 10 |
| 25 | 1.5 - 10 | 0.5 - 10 |

| | |
|----------------------------|---|
| Ambient temperature range: | - 10 °C...+ 70 °C* |
| Materials: | cylinder tube: brass piston rod: CrNi-steel, corrosion-resistant cushioning: plastic, impact-resistant |
| Seals: | Perbunan, oil-resistant |
| Lubricant: | Shell Tellus Oil C10 or equivalent |
| Operating medium: | compressed air, prepared* |
| Stroke limitation: | if possible external (for optimum life) |
| Stroke tolerance: | max. + 1.5 mm |
| Spring force: | designed for return of piston, not for any coupled mass. Area ratio of piston with double acting cylinders (due to reduction of piston rod sections) |
| | Cylinders 8 mm 5:4 Cylinders 5, 12 mm 6:5 Cylinders 16, 20, 25 mm 7:6 |
| Mounting: | version "S": threaded mounting on cylinder cover at piston rod end. version "U": universal mounting (threaded attachment on both cylinder covers, trunnion mounting) |

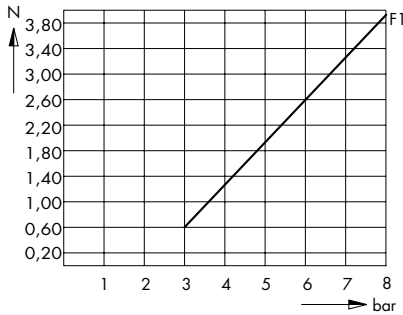
Please enquire about special cylinders to your own requirements and cylinders with double-sided piston rod as well as intermediate and extra long dimensions.

* See Technical Information

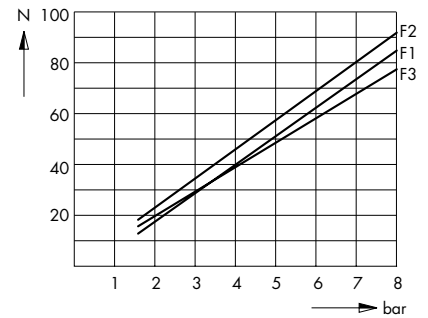
Statische Zylinderkennlinien*
Kolbendurchmesser

Static Cylinder Characteristics*
Piston Diameter

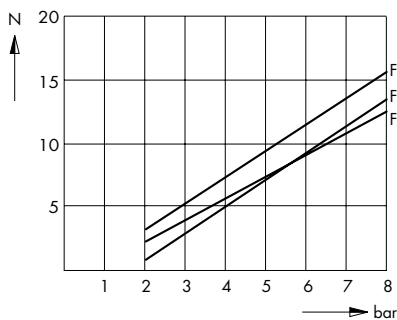
Ø 3 mm



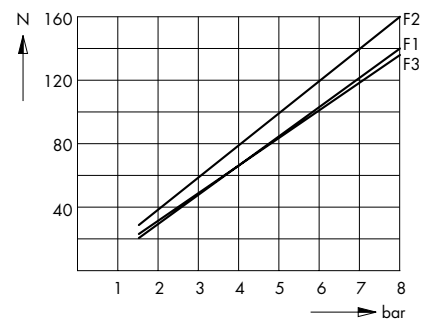
Ø 12 mm



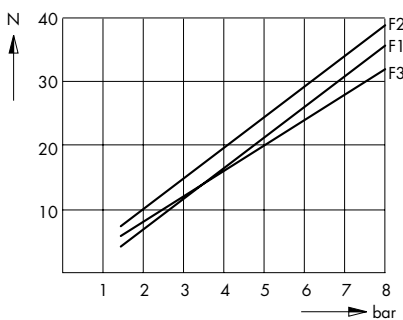
Ø 5 mm



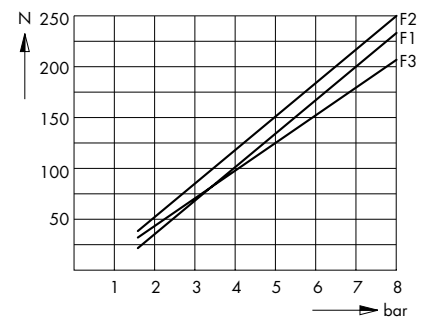
Ø 16 mm



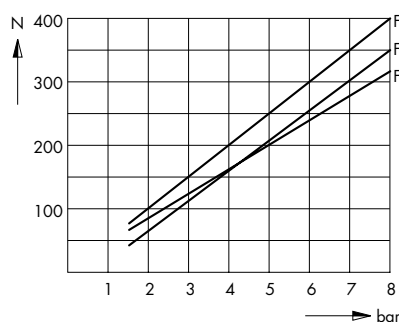
Ø 8 mm



Ø 20 mm



Ø 25 mm



* Für das dynamische Verhalten sind die Zylinderkennlinien mit dem Faktor 0,5 - 0,7 zu multiplizieren.

* The cylinder characteristics are to be multiplied by a factor of 0.5 - 0.7 for the dynamic behaviour.

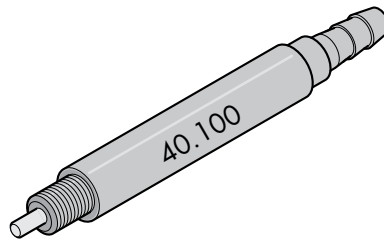
F1 = einfachwirkende Zylinder
F2 = doppeltwirkende Zylinder im Vorlauf
F3 = doppeltwirkende Zylinder im Rücklauf

F1 = single acting cylinders
F2 = double acting cylinders in forward stroke
F3 = double acting cylinders in return stroke

Zylinder
Messing-Zylinder
Einfachwirkend
Ø 3 mm

Cylinders
Brass Cylinders
Single Acting
Diameter 3 mm

Zur Lösung von Prüf- und Arbeitsvorgängen bei sehr beengten Raumverhältnissen (z. B. Kontaktieren im Rastermaß von 5 mm) ist der Miniatur-Zylinder mit Kolbendurchmesser 3 mm universell einzusetzen. Auch bei kleinen Abmessungen bietet dieser Zylinder die technischen Vorzüge der bewährten größeren Miniatur-Zylinderbaureihe.



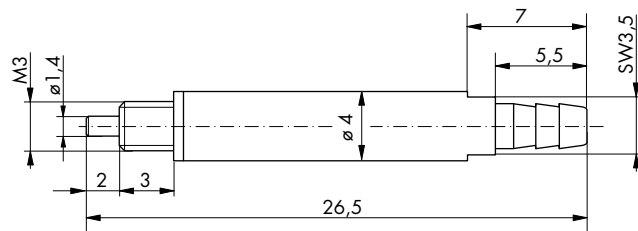
The miniature cylinder with a piston diameter of 3 mm is for general-purpose use in testing and other operations in very restricted spaces. Even with its small dimensions the cylinder offers the technical features of the proven series of larger miniature cylinders.

Technische Daten:

Hub: 6 mm
Befestigung: Schraubbefestigung M3 an Kolbenstangenseite
Druckmittelanschluss: Schlauchtülle für Schlauch 4 x 1*

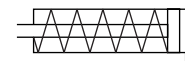
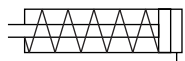
Technical Data:

Stroke: 6 mm
Mounting: M3 threaded mounting at piston rod end
Pneumatic connection: male fitting for 4 x 1* tubing



| | |
|-------------|--------|
| Bestell-Nr. | 40.100 |
|-------------|--------|

| | |
|-----------|--------|
| Order No. | 40.100 |
|-----------|--------|



* Die zum Anschluss notwendigen Schläuche und Armaturen siehe Katalog Pneumatik-Zubehör

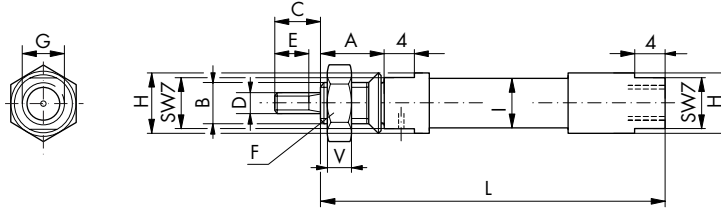
* See catalogue Pneumatic Accessories for tubing and fittings

Zylinder
Messing-Zylinder
Einfachwirkend/Ausführung S
Ø 5 ... 25 mm

Cylinders
Brass Cylinders
Single Acting/Type S
Diameter 5 ... 25 mm

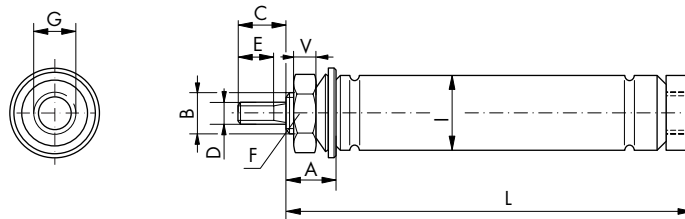
Kolben Ø 5 mm

Piston diameter 5 mm



Kolben Ø 8 mm

Piston diameter 8 mm

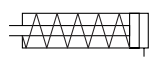


Maßtabelle

Dimensions

| Kolben Ø Piston dia. mm | Hub Stroke mm | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | V | |
|-------------------------------|---------------------|---|----------|-----|----|-----|----|----|---|-----|---|---|-------|---|---|---|---|---|---|---|---|---|---|
| 5 | 10 | 8 | M6 x 0,5 | 6 | M2 | 4,5 | 10 | M5 | 8 | 6,5 | | | 45,5 | | | | | | | | | | 3 |
| 5 | 25 | 8 | M6 x 0,5 | 6 | M2 | 4,5 | 10 | M5 | 8 | 6,5 | | | 60,5 | | | | | | | | | | 3 |
| 8 | 12,5 | 8 | M6 x 0,5 | 7,5 | M3 | 6 | 10 | M5 | | 10 | | | 52,5 | | | | | | | | | | 3 |
| 8 | 25 | 8 | M6 x 0,5 | 7,5 | M3 | 6 | 10 | M5 | | 10 | | | 73 | | | | | | | | | | 3 |
| 8 | 37,5 | 8 | M6 x 0,5 | 7,5 | M3 | 6 | 10 | M5 | | 10 | | | 94 | | | | | | | | | | 3 |
| 8 | 50 | 8 | M6 x 0,5 | 7,5 | M3 | 6 | 10 | M5 | | 10 | | | 114,5 | | | | | | | | | | 3 |

| Kolben Ø Piston dia. mm | Bestell-Nr. *) | | | | | | | | | | | | Order No. *) | | | |
|-------------------------------|--------------------|------------|----|------------|------------|----|------------|----|------|----|--|--|-----------------------|--|-----------------------|--|
| | Standard-Hübe (mm) | | | | | | | | | | | | Standard strokes (mm) | | | |
| | 10 | 12,5 | 20 | 25 | 37,5 | 40 | 50 | 60 | 62,5 | 80 | | | | | | |
| 5 | 40.150.010 | | | 40.150.025 | | | | | | | | | | | <- Max. Hub/Stroke 25 | |
| 8 | | 38.150.012 | | 38.150.025 | 38.150.037 | | 38.150.050 | | | | | | | | <- Max. Hub/Stroke 50 | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |



* Zwischenhübe sind auf Wunsch lieferbar bis zum max. Hub lt. Tabelle. Der Hub geht in die Bestell-Nr. in den letzten drei Ziffern ein.

* Intermediate strokes are optionally available up to a max. stroke (see techn. table). The stroke appears as the last three digits in the order no.

Beispiel:

38. 1 50. 025
Kennzahl ew S Hub
f. Kolben Ø mm

Example:

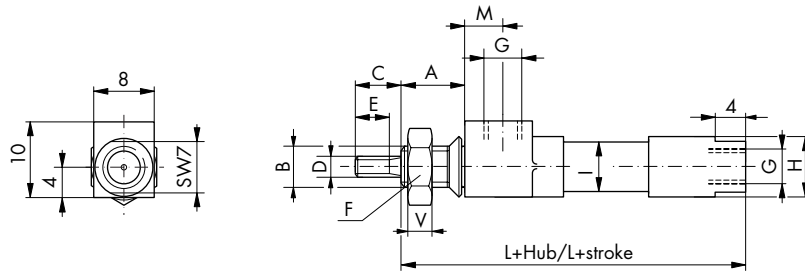
38. 1 50. 025
key for sa S stroke
piston dia. mm

Zylinder
Messing-Zylinder
Doppeltwirkend/Ausführung S
Ø 5 ... 25 mm

Cylinders
Brass Cylinders
Double Acting/Type S
Diameter 5 ... 25 mm

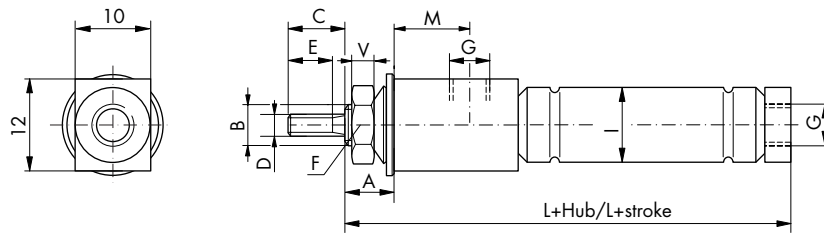
Kolben Ø 5 mm

Piston diameter 5 mm



Kolben Ø 8 mm

Piston diameter 8 mm

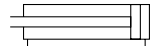


Maßtabelle

Dimensions

| Kolben Ø Piston dia. mm | A | B | C | D | E | F | G | H Ø | I Ø | J | K | L | M | N | O | P | Q | R | S | T | U | V | |
|-------------------------------|-----|--------|-----|----|-----|----|----|--------|--------|---|---|------|-----|---|---|---|---|---|---|---|---|---|---|
| 5 | 8 | M6x0,5 | 6 | M2 | 4,5 | 10 | M5 | 8 | 6,5 | | | 29,5 | 4,3 | | | | | | | | | | 3 |
| 8 | 6,5 | M6x0,5 | 7,5 | M3 | 6 | 10 | M5 | | 10 | | | 46,5 | 7,3 | | | | | | | | | | 3 |

| Kolben Ø Piston dia. mm | Bestell-Nr. *) | | | | | | | | | | Order No. *) | | | | | | | | | | | | | |
|-------------------------------|--------------------|------------|------------|------------|------------|------------|-----|-----|--|--|-----------------------|--|--|--|--|--|--|--|--|--|--|--|--|-----------------------|
| | Standard-Hübe (mm) | | | | | | | | | | Standard strokes (mm) | | | | | | | | | | | | | |
| | 10 | 12,5 | 25 | 50 | 75 | 100 | 125 | 150 | | | | | | | | | | | | | | | | |
| 5 | 40.250.010 | | 40.250.025 | 40.250.050 | | | | | | | | | | | | | | | | | | | | ← Max. Hub/stroke 50 |
| 8 | | 38.250.012 | 38.250.025 | 38.250.050 | 38.250.075 | 38.250.100 | | | | | | | | | | | | | | | | | | ← Max. Hub/stroke 150 |



* Zwischenhübe sind auf Wunsch lieferbar bis zum max. Hub lt. Tabelle. Der Hub geht in die Bestell-Nr. in den letzten drei Ziffern ein.

* Intermediate strokes are optionally available up to a max. stroke (see techn. table). The stroke appears as the last three digits in the order no.

Beispiel:

38. 2 50. 100
Kennzahl dw S Hub
f. Kolben Ø mm

Example:

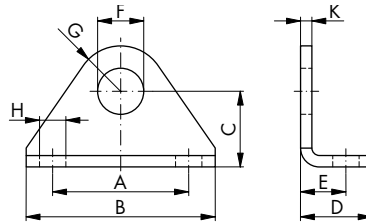
38. 2 50. 100
key for da S stroke
piston dia. mm

Zylinder
Messing-Zylinder
Zubehör
Befestigungszubehör Zylinder

Cylinders
Brass Cylinders
Accessories
Mounting Accessories Cylinders

Befestigungswinkel

Werkstoffe: Stahl, verzinkt



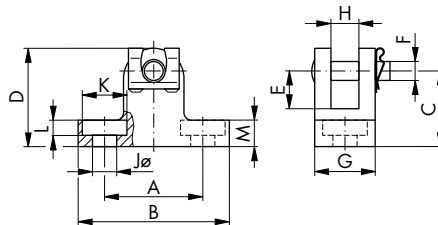
Mounting Bracket

Materials: steel, galvanized

| Best.-Nr. Order No. | Kolben Ø Piston dia. | A | B | C | D | E | F | G | H | I | K | L | M |
|------------------------|-------------------------|----|----|----|------|------|------|------|-----|---|-----|---|---|
| 38.302 | 5, 8 | 18 | 25 | 10 | 9,5 | 6 | 6,1 | 6 | 3,5 | | 1,5 | | |
| 37.302 | 12 | 24 | 33 | 15 | 12,5 | 8 | 10,1 | 8,5 | 4,5 | | 2 | | |
| 36.302 | 16 * | 32 | 45 | 22 | 18 | 11,5 | 14,1 | 13,5 | 6,6 | | 3 | | |
| 36.312 | 16 | 32 | 45 | 22 | 18 | 11,5 | 18,1 | 13,5 | 6,6 | | 3 | | |
| 35.302 | 20 | 40 | 53 | 30 | 25 | 17 | 22,1 | 17 | 6,6 | | 4,5 | | |
| 34.302 | 25 | 40 | 53 | 30 | 25 | 17 | 24,1 | 17 | 6,6 | | 4,5 | | |

Lagerbock

Werkstoffe: Lagerbock:
Stahl, verzinkt
Bolzen:
Stahl, phosphatiert
Sicherung:
Federstahl, phosphatiert



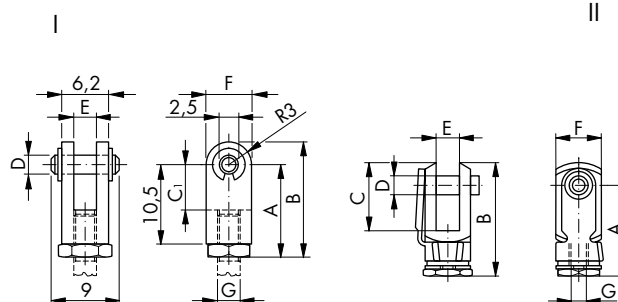
Trunnion

Materials: trunnion:
steel, galvanized
bolt:
steel, phosphorized
safety:
spring steel, phosphorized

| Best.-Nr. Order No. | Kolben Ø Piston dia. | A | B | C | D | E | F | G | H | I | K | L | M |
|------------------------|-------------------------|----|----|----|----|----|-----|----|-----|-----|-----|-----|-----|
| 38.303 | 5, 8 | 13 | 20 | 10 | 13 | 5 | 2,5 | 8 | 3,7 | 3,2 | 5,9 | 2 | 3,5 |
| 37.303 | 12 | 20 | 30 | 15 | 20 | 8 | 5 | 11 | 6,1 | 4,5 | 8 | 3,4 | 5,5 |
| 36.303 | 16 | 27 | 45 | 22 | 29 | 11 | 6 | 16 | 9 | 7 | 11 | 5 | 9 |
| 34.303 | 20 u. 25 | 27 | 45 | 30 | 40 | 17 | 8 | 28 | 14 | 7 | 11 | 4,8 | 12 |

Gabelkopf

Werkstoffe: Gabelkopf:
Stahl, verzinkt
Bolzen:
Stahl,
phosphatiert



Clevis

Materials: clevis:
steel, galvanized
bolt:
steel, phosphorized

| Best.-Nr. Order No. | Kolben Ø Piston dia. | A | B | C | D | E | F | G | C1 | I | K | L | M |
|------------------------|-------------------------|----|----|----|-----|-----|----|-----|----|---|---|---|---|
| 40.304 I | 5** | 12 | 15 | 6 | 2,5 | 3,1 | 6 | M2 | 6 | | | | |
| 38.304 I | 8** | 12 | 15 | 6 | 2,5 | 3,1 | 6 | M3 | 6 | | | | |
| 37.304 II | 12** | 20 | 26 | 16 | 5 | 5 | 10 | M5 | | | | | |
| 19.008.07 II | 16 | 27 | 34 | 19 | 6 | 6 | 12 | M6 | | | | | |
| 19.008.08 II | 20 | 32 | 42 | 26 | 8 | 8 | 16 | M8 | | | | | |
| 34.304 II | 25 | 40 | 52 | 32 | 10 | 10 | 20 | M10 | | | | | |

* Schwenklagerseite

** werden mit Mutter geliefert

* Swivel-bearing side

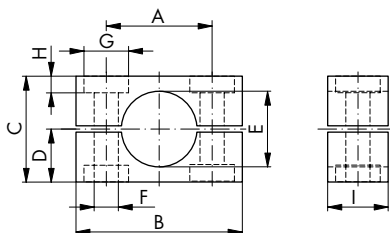
** supplied with nut

Zylinder
 Messing-Zylinder
 Zubehör
 Befestigungszubehör Zylinder

Cylinders
 Brass Cylinders
 Accessories
 Mounting Accessories Cylinders

Klemmhalter

Werkstoffe: Stahl, verzinkt



Clamp

Materials: steel, galvanized

| Best.-Nr. Order No. | Kolben Ø Piston dia. | A | B | C | D | E | Ø F | Ø G | H | I | K | L | M |
|------------------------|-------------------------|----|----|----|------|----|-----|-----|-----|----|---|---|---|
| 38.300 | 8 | 14 | 22 | 14 | 7 | 10 | 3,2 | 6 | 2,2 | 8 | | | |
| 37.310 | 12 | 22 | 32 | 21 | 10,5 | 16 | 4,3 | 8 | 3 | 10 | | | |
| 36.300 | 16 | 26 | 40 | 25 | 12,5 | 20 | 5,3 | 10 | 3,7 | 15 | | | |
| 35.300 | 20 | 32 | 45 | 33 | 16,5 | 24 | 6,4 | 11 | 6,5 | 16 | | | |
| 34.300 | 25 | 37 | 50 | 41 | 20,5 | 29 | 6,4 | 11 | 6,5 | 20 | | | |

* Schwenklagerseite

* Swivel-bearing side