

## 3-finger self centering gripperpneumatic - series MCL 3-Finger-Zentrischgreifer pneumatisch - Typ MCL



### Technische Eigenschaften:

- Betriebsdruck: pneumatisch 3 bis 8 bar; hydraulische version max. 25 bar
- Wiederholgenauigkeit: 0.1mm über 100 Schaltspiele
- Betriebstemperaturbereich von -10°C bis 90°C; bis 130°C und höher auf Anfrage
- Kinematik: Zahnstangen-Ritzel synchronisiert, Grundbacken in Flachführung
- Material : Gehäuse aus hochfester Aluminiumlegierung hartbeschichtet, Funktionsteile aus gehärtetem Stahl
- Betätigung : pneumatisch (PN) über gefilterte Druckluft (10µm), trocken oder geölt; hydraulisch (ID) über gefiltertes Öl (10µm) Viskosität 45 mm<sup>2</sup>/s bei 40° ISO VG, maximal 60°
- Wartungsfrei: bis 1.5 Mio. Schaltspiele
- Für Innen-und Außengreifen geeignet
- Schutzart IP40
- 24 Monate Garantie

### Technical data:

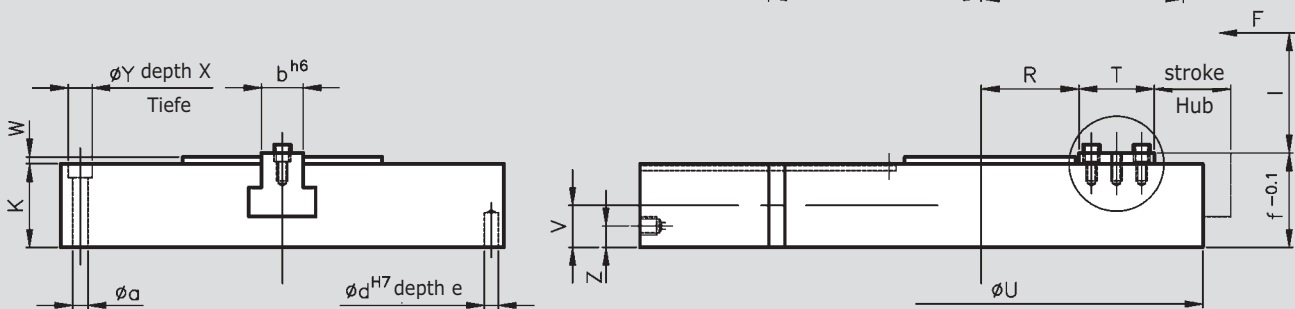
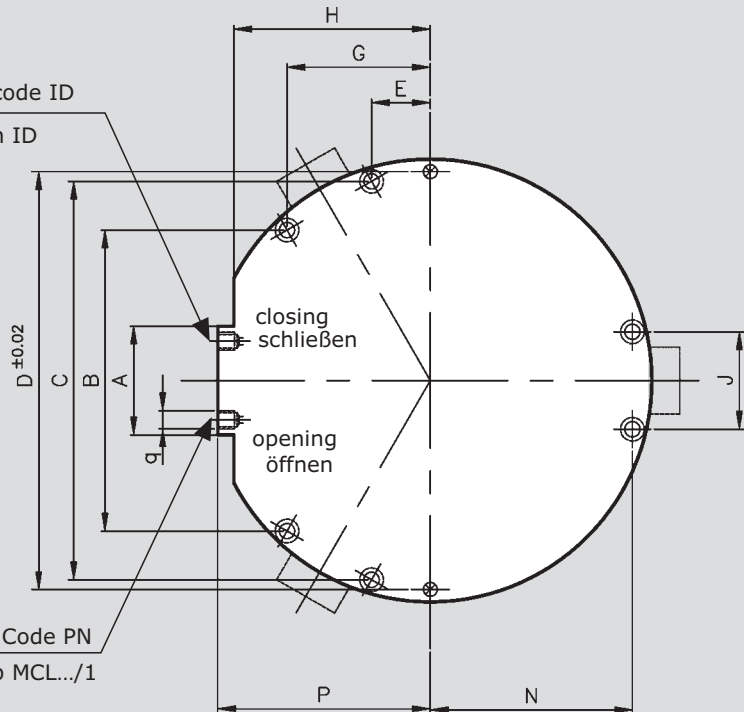
- Range of operating pressure : 3 - 8 bar, pneumatic max. 2.5 MPa hydraulic
- Repeatability accuracy: 0.1 mm; over 100 cycles
- Operating temperature: from -10°C to 90°C; version up to 130°C open request
- Operating principle: piston and synchronised opening/closing by toothed wheel
- Housing material: high tensile hard-coated aluminium alloy, hard-anodized
- Material of functional parts: treated ground steel
- Actuation : pneumatic (PN) by compressed air filtered (10 µm), dry or lubricated -hydraulic (ID) filtered oil (10 µm), viscosity 46 mm<sup>2</sup> / s at 40° ISO VG; max. 60°C
- Maintenance: no maintenance required for the first 1.5 million cycles
- Suitable for internal/external gripping
- Rating IP 40
- Warranty 24 months

# 3-finger self centering gripperpneumatic - series MCL

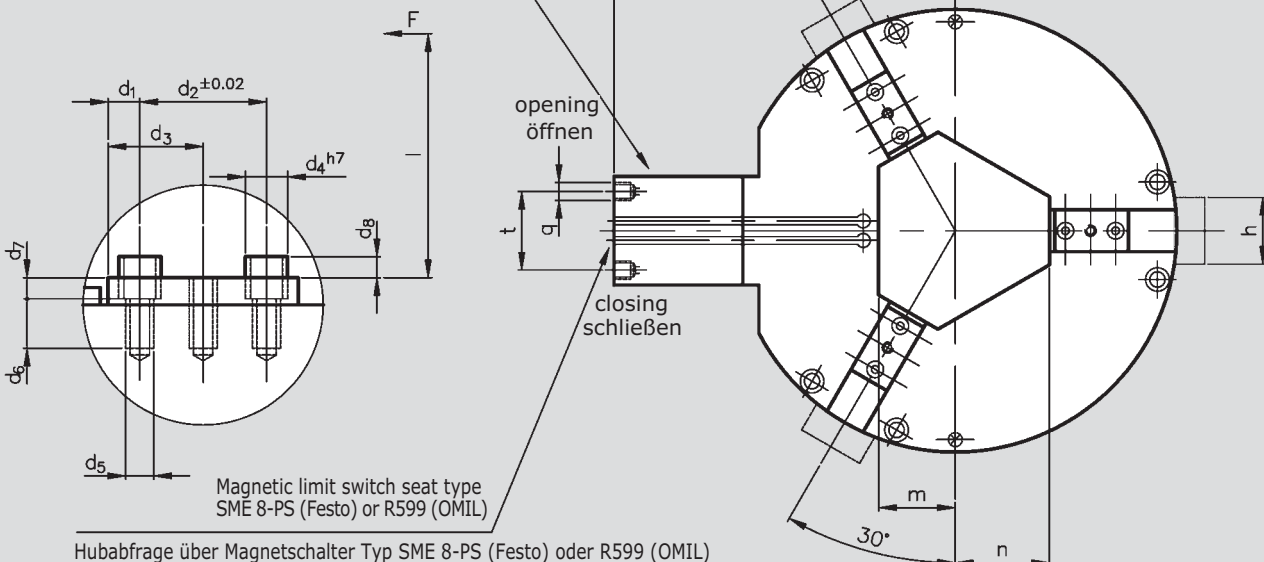
## 3-Finger-Zentrischgreifer pneumatisch - Typ MCL

Hydraulic version - code ID  
Hydraulische version ID

Pneumatic version MCL.../1 - Code PN  
Pneumatische version PN Typ MCL.../1



Pneumatic version MCL.../2 - code PN  
Pneumatische version PN Typ MCL.../2



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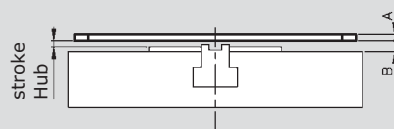
| Type<br>Typ | A   | B     | C     | D   | E     | G     | H   | J   | N   | P   | R   | T  | U   | V    | Z  | Y  | X  | K  | W | a    | b  |
|-------------|-----|-------|-------|-----|-------|-------|-----|-----|-----|-----|-----|----|-----|------|----|----|----|----|---|------|----|
| MCL 40      | 79  | 128.5 | 176.5 | 186 | 23    | 65    | 90  | 48  | 88  | 90  | 46  | 38 | 199 | 26   | 9  | 14 | 14 | 52 | 4 | 9    | 18 |
| MCL 50      | 94  | 216   | 286   | 300 | 42.2  | 102.8 | 126 | 70  | 145 | 142 | 70  | 54 | 318 | 33   | 14 | 17 | 22 | 66 | 4 | 11   | 30 |
| MCL 63      | 112 | 336   | 426   | 480 | 71    | 149   | 160 | 90  | 220 | 201 | 119 | 72 | 498 | 36   | 14 | 19 | 12 | 72 | 5 | 13   | 40 |
| MCL80       | 120 | 464.6 | 574.6 | 696 | 102.4 | 197.6 | 220 | 110 | 300 | 271 | 178 | 80 | 720 | 43.5 | 16 | 25 | 16 | 87 | 5 | 16,5 | 40 |

| Type<br>Typ | d  | d <sub>1</sub> | d <sub>2</sub> | d <sub>3</sub> | d <sub>4</sub> | d <sub>5</sub> | d <sub>6</sub> | d <sub>7</sub> | d <sub>8</sub> | e  | f  | h  | l  | m   | n   | r   | t  | Stroke x finger (mm)<br>Hub pro finger (mm) |
|-------------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----|----|----|-----|-----|-----|----|---|
| MCL 40      | 8  | 7              | 24             | 19             | 12             | M6             | 11             | 5              | 5              | 16 | 57 | 32 | 23 | 34  | 45  | 154 | 53 | 32  |
| MCL 50      | 10 | 9              | 36             | 27             | 13             | M8             | 15             | 6              | 6              | 19 | 73 | 48 | 40 | 50  | 69  | 242 | 67 | 55  |
| MCL 63      | 12 | 12             | 48             | 36             | 16             | M10            | 20             | 8              | 8              | 30 | 81 | 60 | 50 | 85  | 118 | 349 | 72 | 100   |
| MCL 80      | 16 | 12             | 56             | 40             | 16             | M10            | 20             | 8              | 8              | 35 | 96 | 60 | 55 | 119 | 177 | -   | 79 | 160   |

| Type<br>Typ | Version   | q      | Gripping force |      | Recommended weight of part for transport (kg)<br>Max. empfohlenes Werkstückgewicht (kg) | Gripper weight (kg)<br>Masse (Kg) | Approx. time (s)  |                      | Moment of inertia (Kgcm <sup>2</sup> )<br>Massen trägheitsmoment (Kgcm <sup>2</sup> ) | Max finger length / weight<br>Max. Fingerlänge Eigenmasse |
|-------------|-----------|--------|----------------|------|---|-----------------------------------|-------------------|----------------------|---|---|
|             |           |        | bar            | N    |   |                                   | opening<br>öffnen | closing<br>schließen |   |   |
| MCL 40/1    | Pneumatic | 1/8" G | 6              | 825  | 4.2   | 5.5                               | 100               | 0.3                  | 0.3   | 100/1.7   |
| MCL 40/2    | Pneumatic | 1/8" G | 6              | 1650 | 8.4   | 5.9                               | 200               | 0.4                  | 0.4   | 100/1.7   |
| MCL 40      | Hydraulic | 1/4" G | 25             | 2790 | 14.2  | 5.5                               | 100               | 1.4                  | 1.4   | 55/1.7  |
| MCL 50/1    | Pneumatic | 1/8" G | 6              | 1220 | 6.2   | 12                                | 250               | 0.5                  | 0.5   | 135/3.9   |
| MCL 50/2    | Pneumatic | 1/8" G | 6              | 2440 | 12.4  | 13                                | 500               | 0.5                  | 0.5   | 135/3.9   |
| MCL 50      | Hydraulic | 1/4" G | 25             | 4100 | 20.8  | 12                                | 250               | 2.1                  | 2.1   | 70/3.9  |
| MCL 63/1    | Pneumatic | 1/4" G | 6              | 1530 | 7.8   | 28                                | 600               | 0.6                  | 0.6   | 300/7   |
| MCL 63/2    | Pneumatic | 1/4" G | 6              | 3060 | 15.5  | 30                                | 1200              | 0.6                  | 0.6   | 300/7   |
| MCL 63      | Hydraulic | 3/8" G | 25             | 5160 | 26.3  | 28                                | 600               | 2.4                  | 2.4   | 150/7   |
| MCL 80/1    | Pneumatic | 1/4" G | 6              | 2600 | 13.2  | 75                                | 1550              | 1                    | 1   | 300/8   |

Transportable weight calculated with  $\mu = 0.1$  and  $f_s = 2$ . With form-fit gripping the mass may be greater. The gripping force is the arithmetic sum of the individual forces created at the fingers at "l" mm at 6 bar. Finger weight in Kg.

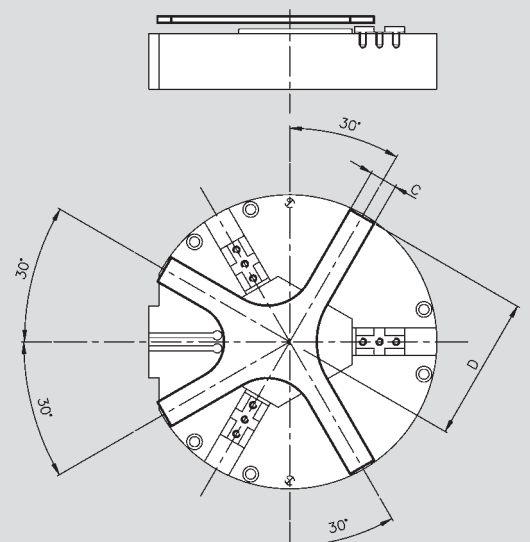
Empfehlung für max. Werkstückgewicht gerechnet mit  $\mu = 0.1$   $f_s = 2$ . Bei Formschluss sind größere Massen möglich. Die Greifkraft ist die arithmetische Summe der an den Greifbacken auftretenden Einzelkräfte im Abstand "l" in mm bei 6 bar. Eigenmasse in Kg



### Spring packaged pressure plate - code P

### Federnder Andrückstern P

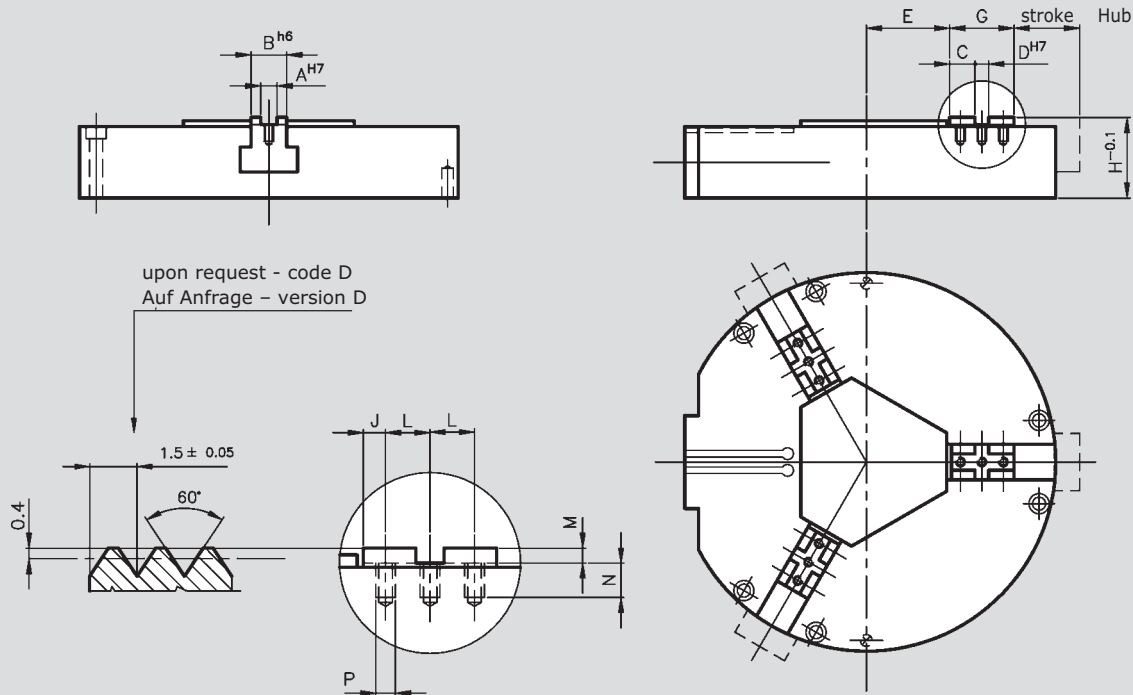
| Type<br>Typ | A  | B  | C  | D   | Corsa<br>Hub | Thrust<br>Kraft |
|-------------|----|----|----|-----|--------------|-----------------|
| MCL 40      | 8  | 10 | 20 | 99  | 5            | 160-330N        |
| MCL 50      | 9  | 13 | 24 | 142 | 6            | 220-370N        |
| MCL 63      | 11 | 16 | 32 | 224 | 7            | 410-640N        |



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## Fingers with key - code CH

## Version mit Kreuzversatz oder Spitzverzahnung - Version CH

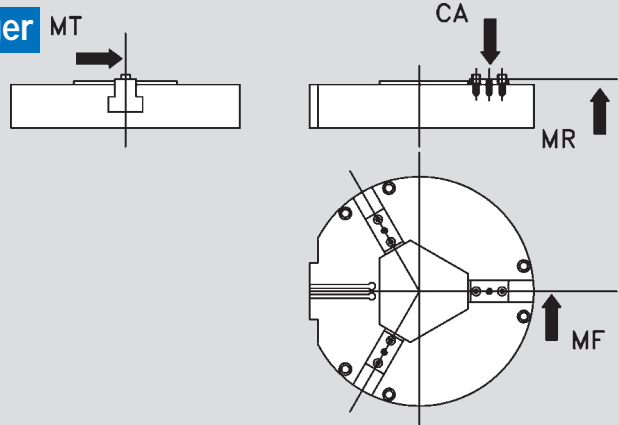


| Type   | A  | B  | C  | D  | E   | G  | H  | J  | L  | M | N  | P   |
|--------|----|----|----|----|-----|----|----|----|----|---|----|-----|
| Typ    |    |    |    |    |     |    |    |    |    |   |    |     |
| MCL 40 | 12 | 18 | 13 | 12 | 46  | 38 | 57 | 7  | 12 | 5 | 11 | M6  |
| MCL 50 | 14 | 30 | 20 | 14 | 70  | 54 | 73 | 9  | 18 | 6 | 15 | M8  |
| MCL 63 | 16 | 40 | 28 | 16 | 119 | 72 | 81 | 12 | 24 | 8 | 20 | M10 |

## Maximal zul. Kräfte und Momente am Finger

## Allowed load data

| Type   | CA (N) | MR (Nm) | MF (Nm) | MT (Nm) |
|--------|--------|---------|---------|---------|
| Typ    |        |         |         |         |
| MCL 40 | 1300   | 65      | 85      | 85      |
| MCL 50 | 2900   | 105     | 155     | 290     |
| MCL 63 | 4600   | 155     | 230     | 450     |
| MCL 80 | 5000   | 180     | 260     | 500     |



## Ordering example

## Bestellbeispiel

| Type   | PN (pneumatic) or ID (hydraulic) | For plate indicate code P | For finger with key indicate code CH | For serrated version indicate code D       |
|--------|----------------------------------|---------------------------|--------------------------------------|--|
| Typ    | PN (pneumatic) or ID (hydraulic) | Ausführung mit feder P    | Ausführung mit Kreuzversatz CH       | Ausführung mit spitzverzahnten Fingern - D |
| MCL 50 | PN                               | /                         | /                                    | /  |