

Mini slides DGSC

FESTO



Key features

At a glance

Characteristics

- Smallest guided slide unit (width 8 mm), therefore high component density possible
- Precision ball bearing cage guide permits accurate linearity/parallelism
- Long service life thanks to housing made from high-alloy steel
- Low break-away pressure and uniform movement thanks to minimal friction of guide and seal
- Contact resistance $< 5 \Omega$
- Quick and easy assembly and commissioning
- Two variants available to order:
 - Mounting interface on the side, supply ports on the front
 - Mounting interface on the front, supply ports on the side

Range of applications

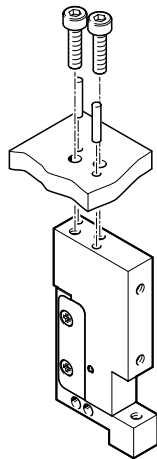
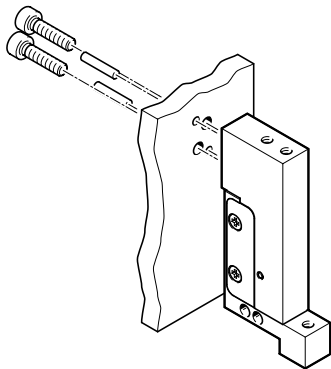
- Chip picking
- Slide or separating applications
- Pushing or stem applications

Mounting options

On the housing

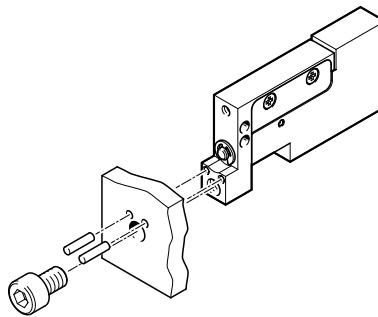
DGSC-6-10-P-L

DGSC-6-10-P-P



On the slide

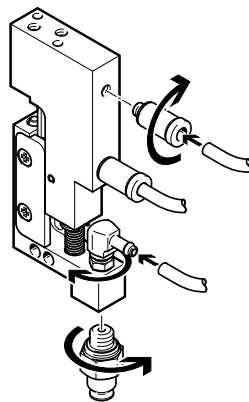
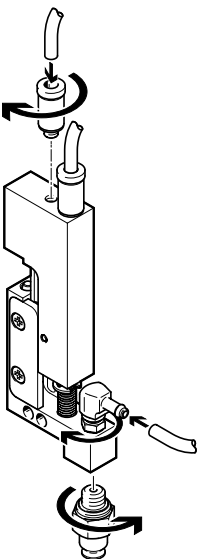
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Pneumatic connection

DGSC-6-10-P-L

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Type codes and peripherals overview

Type codes

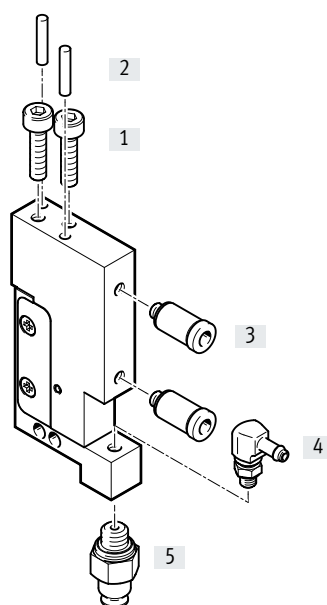
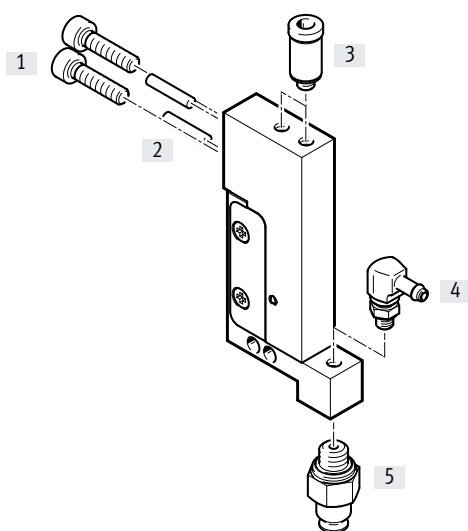
| | |
|------|---------------------------|
| 001 | Series |
| DGSC | Mini slide, double-acting |
| 002 | Size |
| 6 | 6 |
| 003 | Stroke |
| 10 | 10 |

| | |
|-----|---|
| 004 | Cushioning |
| P | Elastic cushioning rings/plates on both sides |
| 005 | Connection position |
| L | In the direction of motion |
| P | Perpendicular to direction of movement |

Peripherals overview

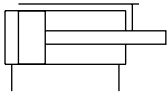
Supply ports in the direction of movement of the slide



Supply ports on the side of the housing

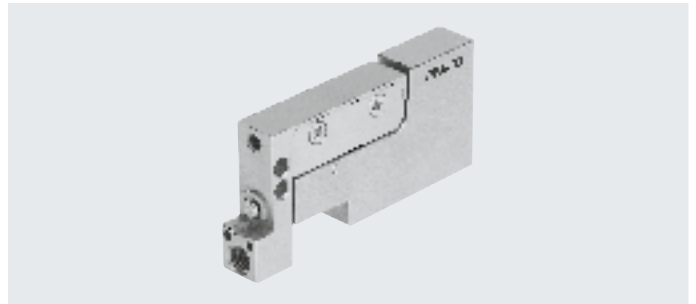


| Accessories | Description | → Page/Internet |
|---|--|-----------------|
| [1] Screw | For mounting the mini slide | - |
| [2] Centring pin ø 2, to EN ISO 2338 | For centring the mini slide during assembly | - |
| [3] Push-in fitting QSM | For supplying compressed air to the mini slide | 8 |
| [4] Push-in L-fitting QSML | For connecting vacuum or compressed air to the slide | 8 |
| [5] Suction cup with connection VAS | - | 9 |

Data sheet



-  Size
6
-  Stroke length
10 mm



| General technical data | | |
|----------------------------|------|--|
| Size | | 6 |
| Stroke ¹⁾ | [mm] | 10 |
| Pneumatic connection | | M3 |
| Design | | Scotch yoke system |
| Guide | | Ball bearing cage guide |
| Type of mounting | | With female thread and dowel pin |
| Cushioning | | Elastic cushioning rings/pads at both ends |
| Position sensing | | None |
| Mounting position | | Any |
| Max. payload ²⁾ | [g] | 30 |
| Max. operating frequency | [Hz] | < 4 |
| Contact resistance | [Ω] | < 5 |
| Repetition accuracy | [mm] | ±0.1 |

- 1) Valid at 6 bar. The complete stroke is not achieved at lower operating pressure due to the integrated cushioning components.
 2) For unthrottled operation.

| Operating and environmental conditions | | |
|--|-------|--|
| Operating medium | | Compressed air to ISO 8573-1:2010 [7:4:4] |
| Note on the operating/pilot medium | | Lubricated operation possible (in which case lubricated operation will always be required) |
| Operating pressure | [bar] | 1 ... 6 |
| Ambient temperature | [°C] | 10 ... 50 |
| Corrosion resistance class CRC ²⁾ | | 2 |

- 2) Corrosion resistance class 2 to Festo standard 940070
 Components subject to moderate corrosion stress. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

| Weight [g] | | |
|----------------|---------------|---------------|
| Type | DGSC-6-10-P-L | DGSC-6-10-P-P |
| Product weight | 42 | 52 |
| Moving mass | 17 | 17 |

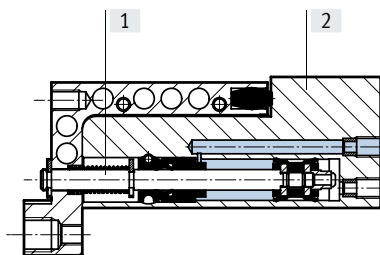
| Forces [N] | |
|--|------|
| Theoretical force at 6 bar, advancing | 17 |
| Theoretical force at 6 bar, retracting | 12.7 |
| Measured force at 6 bar, advancing | 15.5 |

| Travel times [ms] at 6 bar | |
|----------------------------|------|
| Advancing | 19 |
| Retracting | 16.5 |

Data sheet

Materials

Sectional view

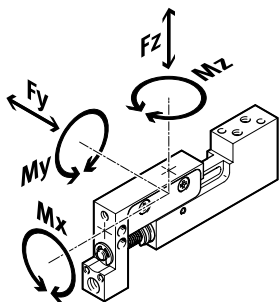


| Mini slide | |
|-------------------|----------------------------|
| [1] Piston rod | High-alloy stainless steel |
| [2] Housing | High-alloy stainless steel |
| - Seals | Nitrile rubber |
| Note on materials | Free of copper and PTFE |
| | RoHS-compliant |

Static characteristic load values

The indicated forces and torques refer to the guide.

These values must not be exceeded during dynamic operation. Special attention must be paid to the deceleration phase.



If the drive is subjected to two or more of the indicated forces and torques simultaneously, the following equation must be satisfied in addition to the indicated maximum loads:

$$f_v = \frac{|F_{y1}|}{F_{y2}} + \frac{|F_{z1}|}{F_{z2}} + \frac{|M_{x1}|}{M_{x2}} + \frac{|M_{y1}|}{M_{y2}} + \frac{|M_{z1}|}{M_{z2}} \leq 1$$

F1/M1 = dynamic value

F2/M2 = maximum value

Permissible forces and torques

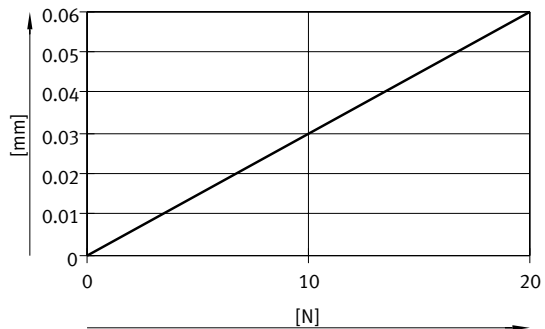
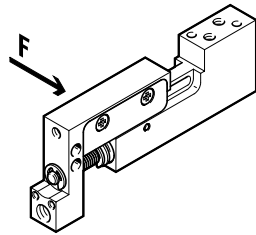
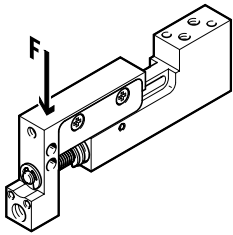
| | | |
|---------------|------|-----|
| $F_{y_{max}}$ | [N] | 20 |
| $F_{z_{max}}$ | [N] | 20 |
| $M_{x_{max}}$ | [Nm] | 0.3 |
| $M_{y_{max}}$ | [Nm] | 0.4 |
| $M_{z_{max}}$ | [Nm] | 0.4 |

Data sheet

Slide displacement at max. stroke

Axial load

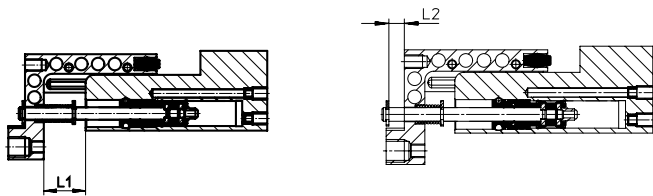
Lateral load



Stroke compensation

The integrated spring enables stroke compensation of 2.5 mm if there is a risk of collision in the advanced state. Only low spring forces then act on the yoke. This protects the mechanism from overload.

Stroke:
L1= 10 mm



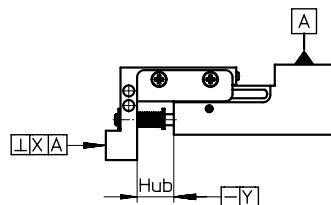
| | | | |
|--------------------------|------|-----|-----|
| Stroke compensation (L2) | [mm] | 0 | 2.5 |
| Spring force | [N] | 2.0 | 2.4 |

Parallelism/perpendicularity/linearity [mm]

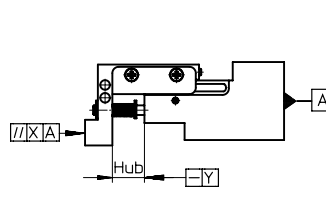
Parallelism/perpendicularity:

Accuracy of alignment between the housing mounting surface and the mounting interface on the yoke.

DGSC-6-10-P-L



DGSC-6-10-P-P



Linearity:

Maximum distance between individual points on the slide and the housing mounting surface with the drive in retracted and advanced state.

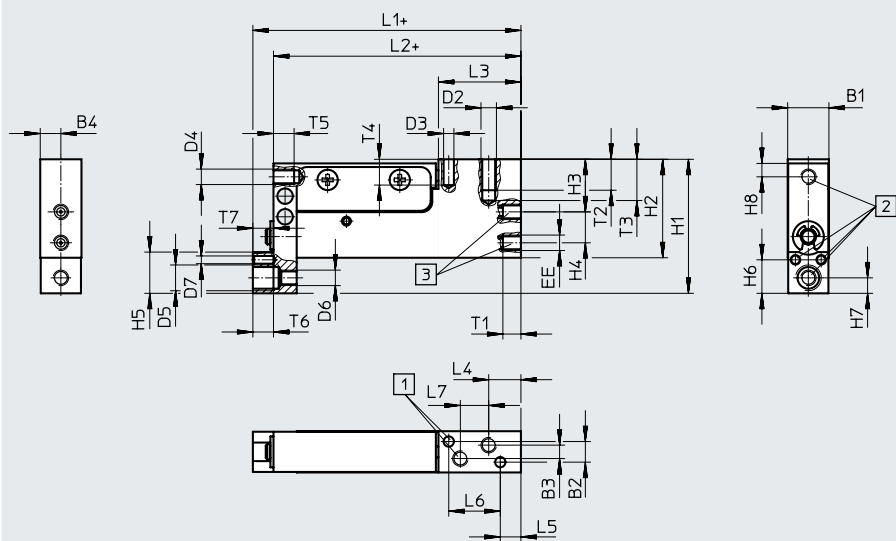
| Type | | DGSC-6-10-P-L | DGSC-6-10-P-P |
|------------------|------|---------------|---------------|
| Parallelism | [mm] | - | < 0.03 |
| Perpendicularity | [mm] | < 0.03 | - |
| Linearity | [mm] | < 0.01 | |

Data sheet

Dimensions

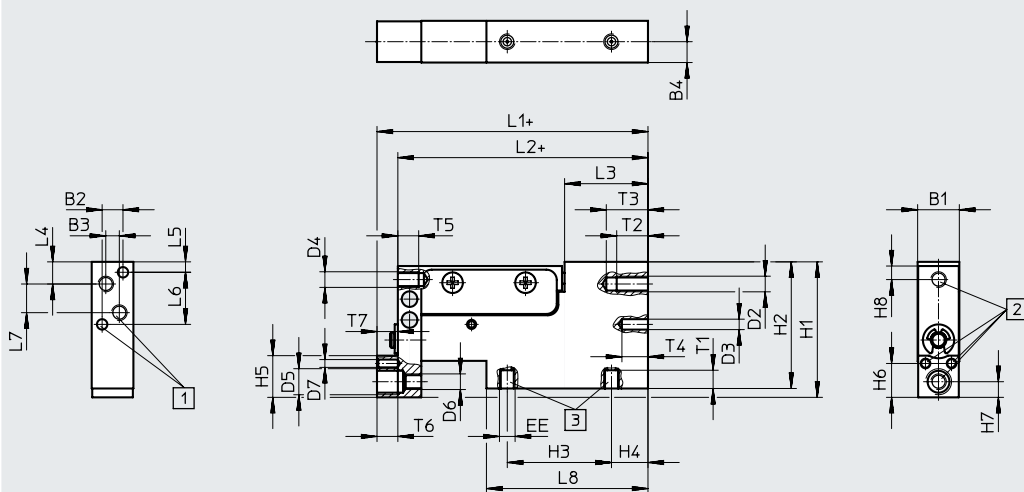
Download CAD data → www.festo.com

DGSC-6-10-P-L



- + plus stroke length
- [1] Direct mounting on the housing
- [2] Direct mounting on the slide
- [3] Supply ports

DGSC-6-10-P-P



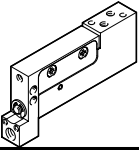
- + plus stroke length
- [1] Direct mounting on the housing
- [2] Direct mounting on the slide
- [3] Supply ports

| Type | B1 | B2 | B3 | B4 | D2 | D3 ∅ | D4 | D5 | D6 | D7 ∅ | EE |
|---------------|-------------|-------|---------|----|----|---------|----|----|----|---------|----|
| | -0.05/-0.15 | ±0.02 | | | | H8 | | | | H8 | |
| DGSC-6-10-P-L | 8 | 4 | 2.6±0.1 | 4 | M3 | 2 | M3 | M5 | M3 | 1.5 | M3 |
| DGSC-6-10-P-P | 8 | 4 | 2.6 | 4 | M3 | 2 | M3 | M5 | M3 | 1.5 | M3 |



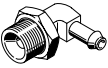
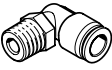
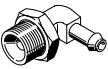
| Type | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | L1 | L2 | L3 |
|---------------|----|------|------|----|----|-------|----|-----|------|------|------|
| | | | | | | ±0.02 | | | | | |
| DGSC-6-10-P-L | 26 | 19.1 | 10.2 | 6 | 8 | 6.5 | 3 | 2.6 | 52.1 | 48.1 | 16.1 |
| DGSC-6-10-P-P | 26 | 24.3 | 20 | 7 | 8 | 6.5 | 3 | 2.6 | 52 | 48 | 16 |

| Type | L4 | L5 | L6 | L7 | L8 | T1 | T2 | T3 | T4 | T5 | T6 | T7 |
|---------------|------|-----|-------|------|----|------|------|----|----|------|------|----|
| | | | ±0.02 | ±0.1 | | max. | min. | +1 | +1 | min. | min. | +1 |
| DGSC-6-10-P-L | 6.35 | 4.1 | 10 | 5.5 | - | 3.5 | 6 | 8 | 5 | 4 | 4 | 4 |
| DGSC-6-10-P-P | 4.25 | 2 | 10 | 5.5 | 31 | 3.5 | 6 | 8 | 5 | 4 | 4 | 4 |

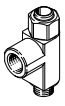

Data sheet

| Ordering data | | | | |
|--|-------------------|--|--------|---------------|
| Type | Brief description | Part no. | Type | |
|  | DGSC-6-10-P-L | Supply ports in the direction of movement of the slide | 569793 | DGSC-6-10-P-L |
| | DGSC-6-10-P-P | Supply ports on the side of the housing | 569792 | DGSC-6-10-P-P |

Accessories

| Ordering data – Fitting | | | | | | |
|--|-------------------|-------------------------------|------------------------------|----------|---------------|------------------|
| Type | Connection Thread | For tubing \varnothing [mm] | Weight [g] | Part no. | Type | PU ¹⁾ |
| For supplying compressed air to the mini slide | | | | | | |
| Push-in fitting QSM | | | Data sheets → Internet: qsm | | | |
|  | M3 | 2 (male) | 0.8 | 133026 | QSM-M3-2-I | 10 |
| | M3 | 3 (male) | 3 | 133001 | QSM-M3-3-I-R | |
| Barbed fitting CN | | | Data sheets → Internet: cn | | | |
|  | M3 | 2 (female) | 3 | 15871 | CN-M3-PK-2 | 10 |
| | M3 | 3 (female) | 3 | 15872 | CN-M3-PK-3 | |
| Barbed elbow fitting LCN | | | Data sheets → Internet: lcn | | | |
|  | M3 | 2 (female) | 2 | 30491 | LCN-M3-PK-2-B | 10 |
| | M3 | 3 (female) | 2 | 30982 | LCN-M3-PK-3 | |
| For connecting vacuum or compressed air to the slide | | | | | | |
| Push-in L-fitting QSML | | | Data sheets → Internet: qsml | | | |
|  | M3 | 2 (male) | 2 | 133030 | QSML-M3-2 | 10 |
| | M3 | 3 (male) | 2 | 153330 | QSML-M3-3 | 10 |
| | M3 | 3 (male) | 2 | 130768 | QSML-M3-3-100 | 100 |
| Barbed elbow fitting LCN | | | Data sheets → Internet: lcn | | | |
|  | M3 | 2 (female) | 2 | 30491 | LCN-M3-PK-2-B | 10 |
| | M3 | 3 (female) | 2 | 30982 | LCN-M3-PK-3 | |

Data sheet

| Ordering data – One-way flow control valve | | | | | | | |
|---|-------------|--------------------------|-----------------------------|---------------|----------------|-----------------------|------------------|
| Type | Connection | Function | Weight | Part no. | Type | PU ¹⁾ | |
| | Male thread | | [g] | | | | |
| For supplying compressed air to the mini slide | | | Data sheets → Internet: grl | | | | |
|  | M3 | Exhaust air flow control | 3 | 175038 | GRLA-M3 | 1 | |
| | M3 | Supply air flow control | 3 | 175040 | GRLZ-M3 | | |
| Ordering data – Suction cup with connection | | | | | | | |
| Type | Connection | | Material | Weight | Part no. | Type | PU ¹⁾ |
| | Thread | For suction cup ø [mm] | | | | | |
|  | M5 | 8 | Nitrile rubber | 4 | 34588 | VAS-8-M5-NBR | 1 |
| | M5 | 8 | Polyurethane | 4 | 1396086 | VAS-8-M5-PUR-B | |
| | M5 | 8 | Silicone | 2 | 1377781 | VAS-8-M5-SI-B | |

1) Packaging unit