

Mini slides DGSC



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Key features

At a glance

Properties

- 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 from guide and seal
- Contact resistance < 5 Ω
- Quick and easy assembly and commissioning

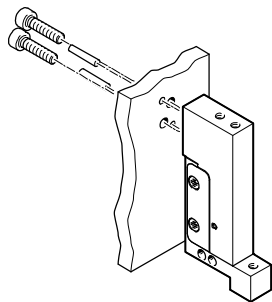
Range of applications

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

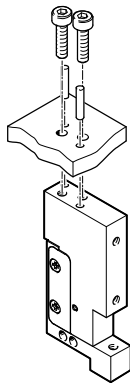
Mounting options

On the housing

DGSC-6-10-P-L

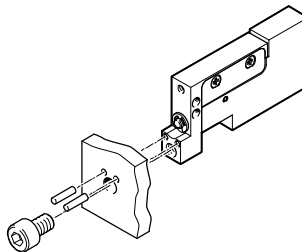


DGSC-6-10-P-P



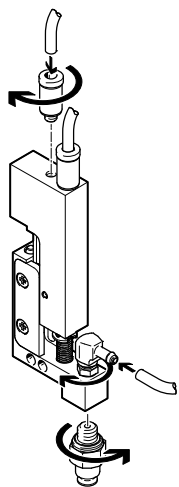
On the slide

DGSC-6-10-P-...

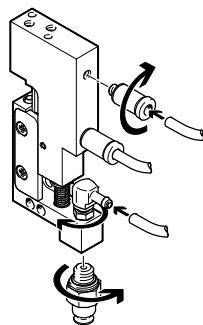


Pneumatic connection

DGSC-6-10-P-L



DGSC-6-10-P-P



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Type codes and peripherals overview

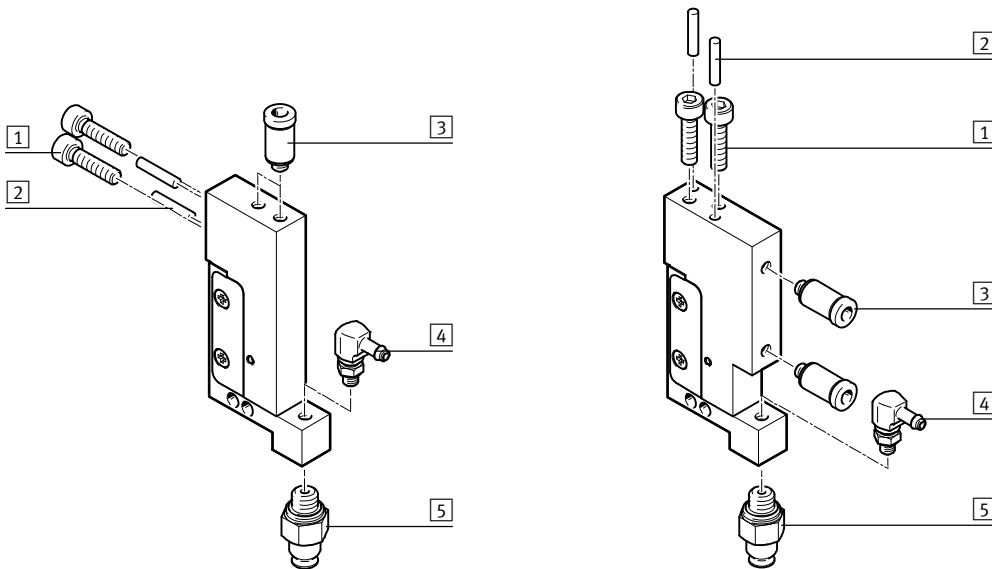
Type codes

| | | | | | | | | | | |
|---------------------|--|------|---|---|---|----|---|---|---|---|
| | | DGSC | - | 6 | - | 10 | - | P | - | P |
| Type | | | | | | | | | | |
| Double-acting | | | | | | | | | | |
| DGSC | Mini slide | | | | | | | | | |
| Size | | | | | | | | | | |
| Stroke [mm] | | | | | | | | | | |
| Cushioning | | | | | | | | | | |
| P | Elastic cushioning without metal end stop, both ends | | | | | | | | | |
| Supply ports | | | | | | | | | | |
| L | In the direction of movement of the slide | | | | | | | | | |
| P | On the side of the housing | | | | | | | | | |

Overview of peripherals

Supply ports in the direction of movement of the slide

Supply ports on the side of the housing



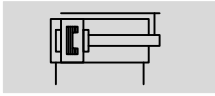
| Accessories | | Description | → Page/Internet |
|-------------|-------------------------------------|--|-----------------|
| 1 | Screw | For mounting the mini slide | - |
| 2 | Centring pin Ø 2, to EN ISO 2338 | For centring the mini slide during assembly | - |
| 3 | Push-in fitting QSM | For supplying 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 VAS | - | 9 |

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Technical data

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Function



○ - 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 | | Via female thread and dowel pin |
| Cushioning | | Elastic cushioning rings/pads at both ends |
| Position sensing | | None |
| Mounting position | | Any |
| Max. effective load 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 in accordance with ISO 8573-1:2010 [7:4:4] |
| Note on operating/pilot medium | Operation with lubricated medium possible (in which case lubricated operation will always be required) |
| Operating pressure | [bar] 1 ... 6 |
| Ambient temperature | [°C] 10 ... 50 |
| Corrosion resistance class CRC ¹⁾ | 2 |

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.1

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

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

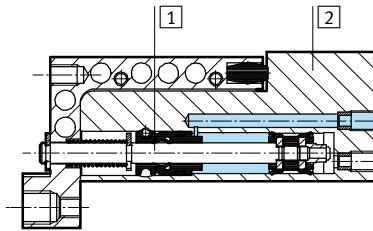
| Travel times [ms] at 6 bar | |
|----------------------------|------|
| Advancing | 19 |
| Retracting | 16.5 |

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Technical data

Materials

Sectional view

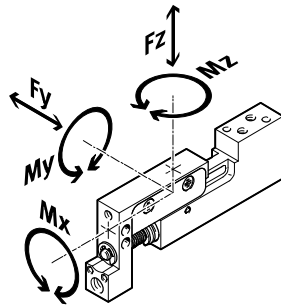


Mini slide

| | | |
|-------------------|------------|----------------------------|
| 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 cushioning phase.



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

$$\frac{F_y}{F_{y_{max}}} + \frac{F_z}{F_{z_{max}}} + \frac{M_x}{M_{x_{max}}} + \frac{M_y}{M_{y_{max}}} + \frac{M_z}{M_{z_{max}}} \leq 1$$

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 |

Mini slides DGSC

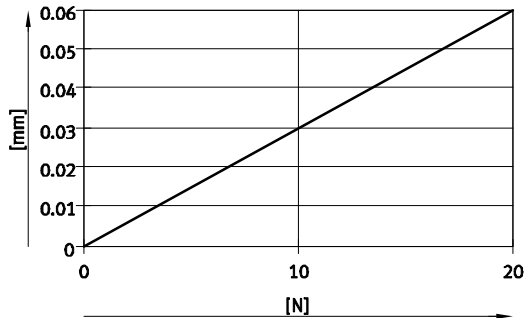
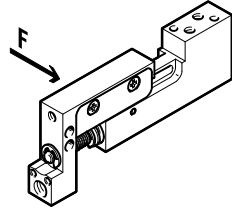
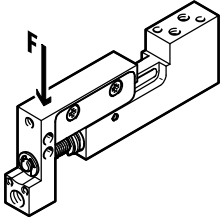
Technical data



Slide displacement at max. stroke

Longitudinal load

Transverse load



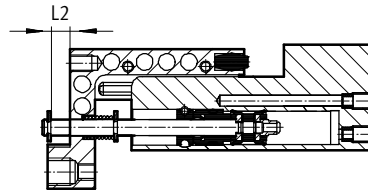
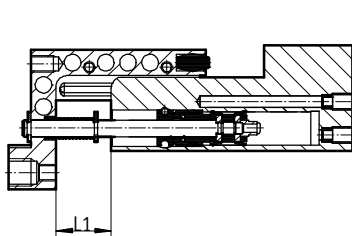
DGSC-6-10-P...

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



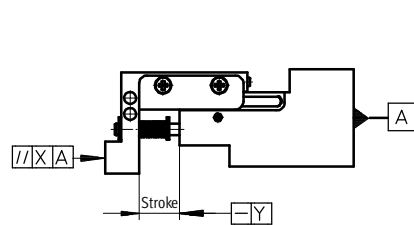
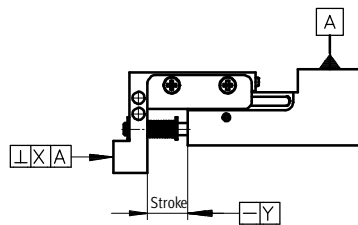
| | | | |
|--------------------------|------|-----|-----|
| Stroke compensation (L2) | [mm] | 0 | 2.5 |
| Spring force | [N] | 2.0 | 2.4 |

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 | - |

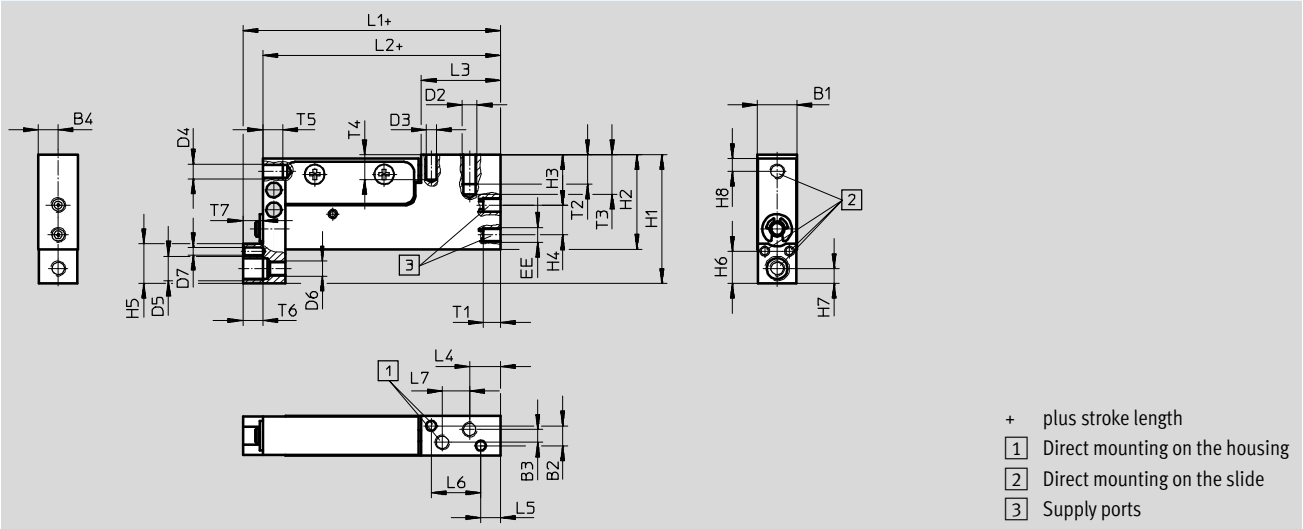
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Technical data

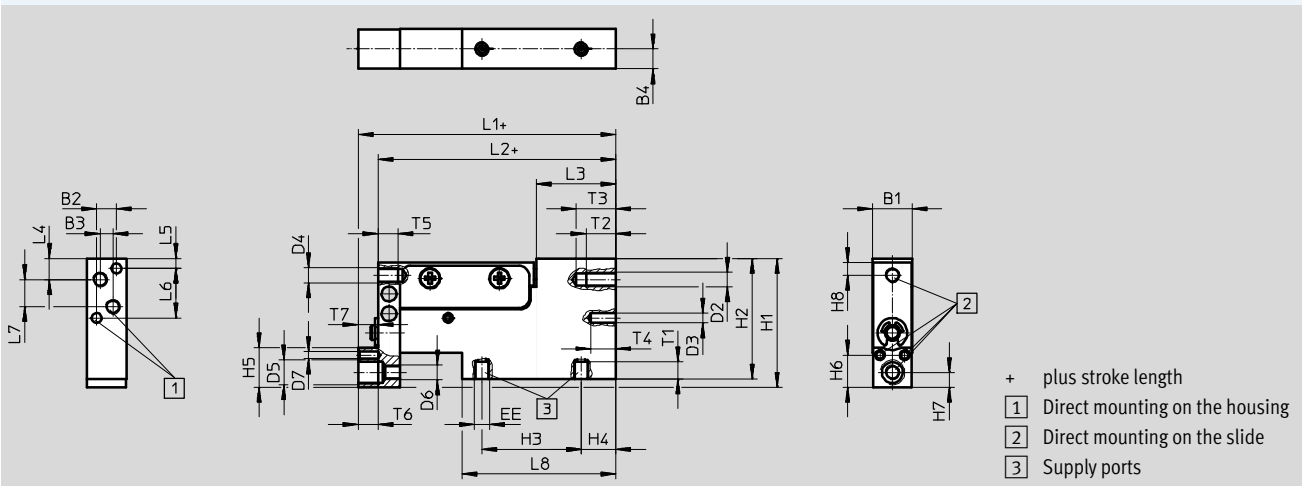
Dimensions

Download CAD data → www.festo.com

DGSC-6-10-P-L



DGSC-6-10-P-P



| Type | B1 | B2 | B3 | B4 | D2 | D3 | D4 | D5 | D6 | D7 | EE |
|---------------|-------------|-------|---------|----|----|---------|----|----|----|---------|----|
| | -0.05/-0.15 | ±0.02 | ±0.1 | | | ∅ 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 |

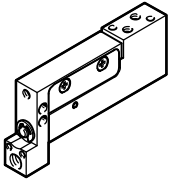
| Type | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | L1 | L2 | L3 |
|---------------|----|------|------|----|----|-------|----|-----|------|------|------|
| | | | | | | ±0.02 | | | | | |
| DGSC-6-10-P-L | 26 | 19.1 | 10.2 | 6 | 8 | 6.5 | 3 | 2.6 | 52.1 | 48.1 | 16.1 |
| DGSC-6-10-P-P | 26 | 24.3 | 20 | 7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






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Technical data

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| 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 | | Weight [g] | Part No. | Type | PU ¹⁾ |
| | Thread | For tubing Ø [mm] | | | | |
| For supplying compressed air to the mini slide | | | | | | |
| Push-in fitting QSM | | | Technical data → Internet: qsm | | | |
|  | M3 | 2 (outside) | 0.8 | 133026 | QSM-M3-2-I | 10 |
| | M3 | 3 (outside) | 3 | 133001 | QSM-M3-3-I-R | |
| Barbed fitting CN | | | Technical data → Internet: cn | | | |
|  | M3 | 2 (inside) | 3 | 15871 | CN-M3-PK-2 | 10 |
| | M3 | 3 (inside) | 3 | 15872 | CN-M3-PK-3 | |
| Barbed L-fitting LCN | | | Technical data → Internet: lcn | | | |
|  | M3 | 2 (inside) | 2 | 30491 | LCN-M3-PK-2-B | 10 |
| | M3 | 3 (inside) | 2 | 30982 | LCN-M3-PK-3 | |
| For connecting vacuum or compressed air to the slide | | | | | | |
| Push-in L-fitting QSML | | | Technical data → Internet: qsml | | | |
|  | M3 | 2 (outside) | 2 | 133030 | QSML-M3-2 | 10 |
| | M3 | 3 (outside) | 2 | 153330 | QSML-M3-3 | 10 |
| | M3 | 3 (outside) | 2 | 130768 | QSML-M3-3-100 | 100 |
| Barbed L-fitting LCN | | | Technical data → Internet: lcn | | | |
|  | M3 | 2 (inside) | 2 | 30491 | LCN-M3-PK-2-B | 10 |
| | M3 | 3 (inside) | 2 | 30982 | LCN-M3-PK-3 | |

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| Ordering data – One-way flow control valve | | | | | | |
|--|-------------|--------------------------|---------------|---------------|----------------|------------------|
| Type | Connection | Function | Weight [g] | Part No. | Type | PU ¹⁾ |
| | Male thread | | | | | |
| For supplying compressed air to the mini slide Technical data → 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 | | | | | | | |
|---|------------|---------------------------|----------------|---------------|----------------|-----------------------|------------------|
| Type | Connection | For suction cup Ø [mm] | Material | Weight [g] | Part No. | Type | PU ¹⁾ |
| | Thread | | | | | | |
|  | 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