

Rotary indexing tables DHTG

FESTO



Characteristics

At a glance

- Sturdy mechanical system
- Easy project engineering and commissioning
- Indexing stations: 2, 3, 4, 6, 8, 12, 24
- Integrated functions:
 - Overload protection
 - Sensing
 - Cushioning adjustment
- Speed setting
- Changing the direction of rotation

The technology in detail



- [1] Through-hole for energy through-feed
- [2] Thread for position sensing
- [3] One-way flow control valve for regulating speed
- [4] Compressed air supply port for reciprocating motion
- [5] Compressed air supply port for clockwise or anticlockwise rotation
- [6] Adjusting screw for cushioning adjustment

Operating modes

Clockwise

Anticlockwise

Reciprocating motion

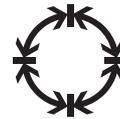
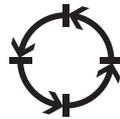
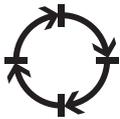
Flexible control: Clockwise, anticlockwise, reciprocating motion

- Just one valve required

- Just one valve required

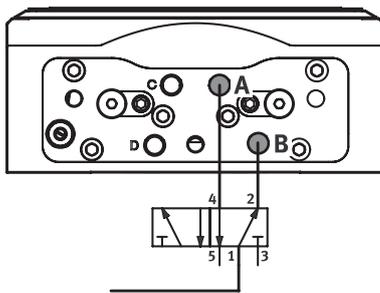
- After conversion with a reciprocating motion kit
- Two valves required

- After conversion with a reciprocating motion kit
- Two valves required

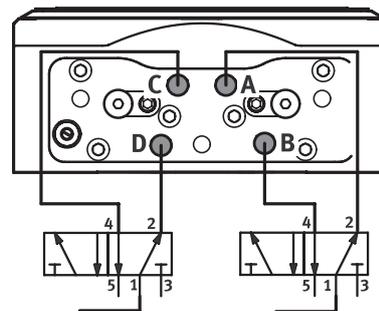


Examples of easy connections

Clockwise/anticlockwise



Reciprocating motion/flexible control



Characteristics

The technology in detail

Overload protection

To prevent the rotary indexing table from being damaged by an excessive mass moment of inertia, e.g. during setting operation or in the event of shock absorber failure, sizes 140 and 220 feature overload protection.

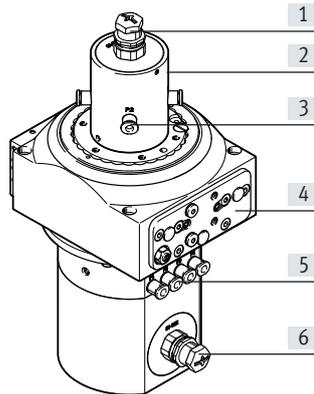
If the mass moment of inertia is too large, the securing pin is pressed against the spring force by the resulting radial force. It then slides forward on the toothed segment.

This shift in position between the index plate and toothed segment means that the securing pin can no longer engage and the rotary indexing table does not move. The table can be made ready for use again by turning it back.

Energy through-feed

The energy through-feed can be used to transfer electrical signals or compressed air through the hollow shaft. This enables the fast and easy supply of the parts mounted on the rotating plate.

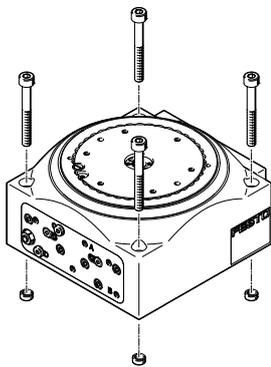
Also suitable for IO-Link signal data transfer.



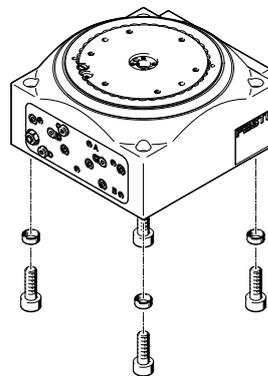
- [1] Electrical connection (output)
- [2] Energy through-feed housing
- [3] Compressed air supply port (output)
- [4] Rotary indexing table
- [5] Compressed air supply port (input)
- [6] Electrical connection (input)

Mounting options

Direct mounting from above



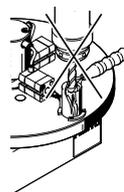
Direct mounting from below



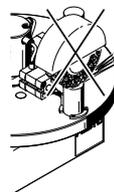
Note

The rotary indexing tables are not designed for the following or similar application examples.

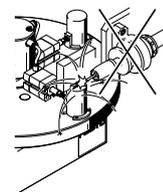
- Machining
- Aggressive media



- Grinding dust



- Welding spatter

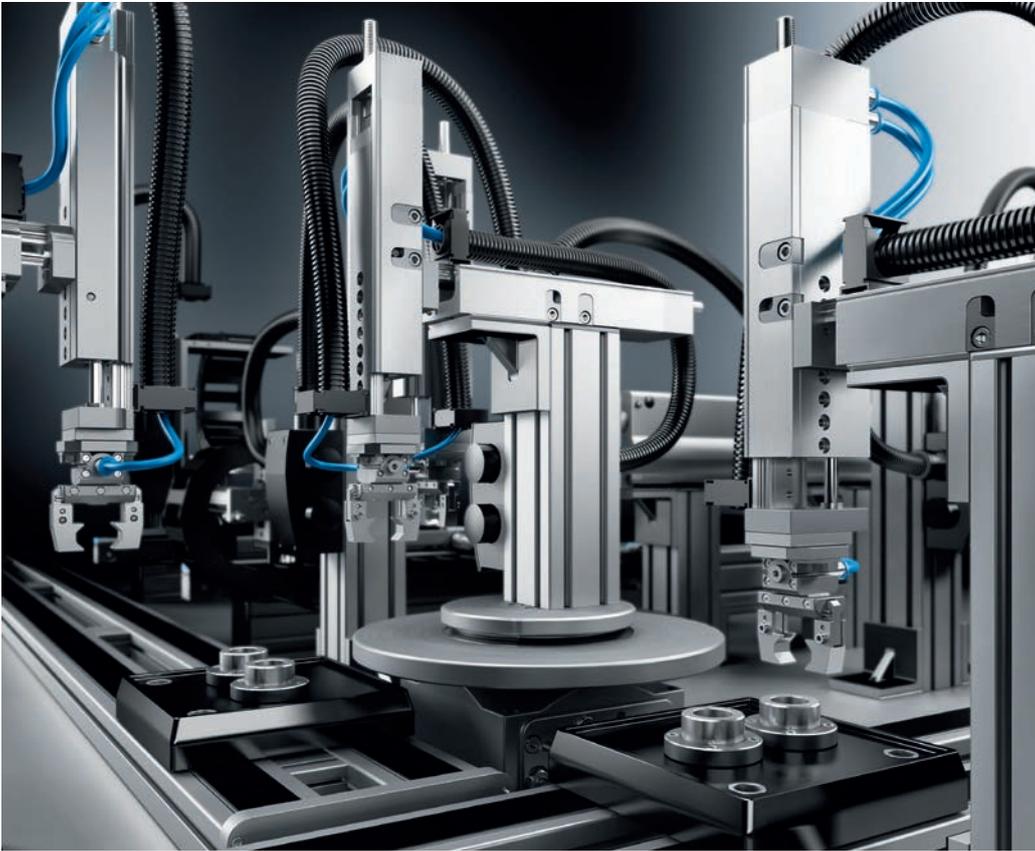


Characteristics

Application example

Rotating plate with stationary centre section

For mounting handling units or other devices in the centre of the rotary indexing table



Type codes

| 001 | Series |
|------|-----------------------|
| DHTG | Rotary indexing table |

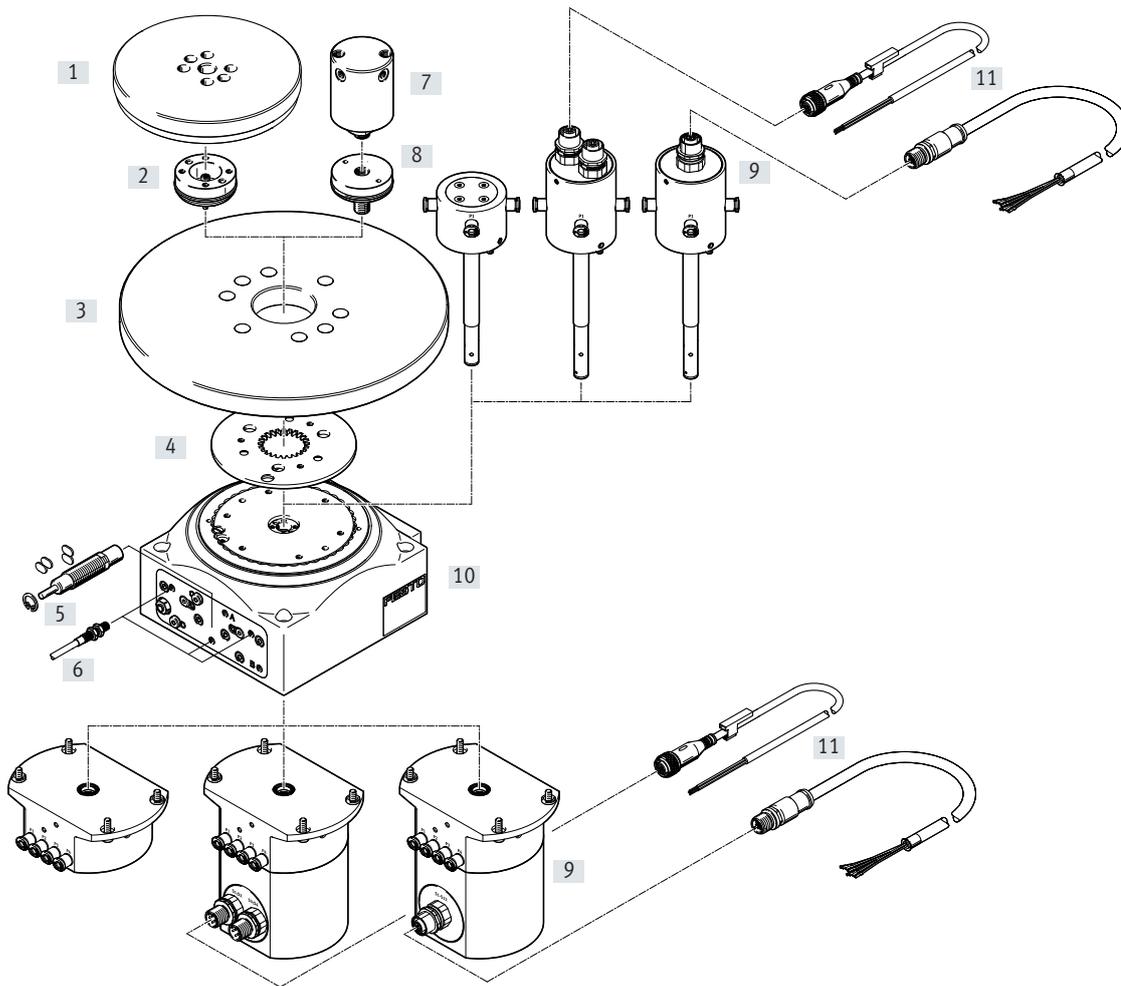
| 002 | Size |
|-----|------|
| 65 | 65 |
| 90 | 90 |
| 140 | 140 |
| 220 | 220 |

| 003 | Indexing |
|-----|----------------------|
| 2 | 2 indexing stations |
| 3 | 3 indexing stations |
| 4 | 4 indexing stations |
| 6 | 6 indexing stations |
| 8 | 8 indexing stations |
| 12 | 12 indexing stations |
| 24 | 24 indexing stations |

| 004 | Position sensing |
|-----|----------------------|
| A | For proximity sensor |

| 005 | Energy through-feed |
|-------|--|
| | None |
| P4 | Pneumatic, 4 ducts |
| P4L12 | Pneumatic, 4 ducts and electric, 12 cables |
| P4E4 | Pneumatic, 4 ducts and electric, 4signals |

Peripherals overview



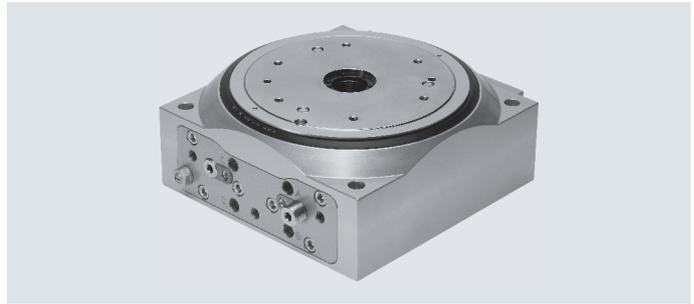
Peripherals overview

| Variants and accessories | | | |
|---|---|--|-----------------|
| Type | Description | | → Page/Internet |
| [1] Plate, fixed | For illustration purposes only, not included in the scope of delivery | | - |
| [2] Adapter kit DADG-AK | For mounting a blank plate on the rotary indexing table | | 28 |
| [3] Plate, rotary | For illustration purposes only, not included in the scope of delivery | | - |
| [4] Indexing conversion kit DADM-CK | The step angle can be adjusted at any time using the kit | | 30 |
| [5] Reciprocating motion kit DADM-TK | Allows conversion from movement in one direction to reciprocating motion | | 30 |
| [6] Proximity switch SIEN | For sensing the switching position of the rotary indexing table | | 30 |
| [7] Rotary distributor GF | Distributes the compressed air fed through the centre of the rotary indexing table to the actuators on the rotating blank plate. Cannot be used in combination with a fixed blank plate | | 29 |
| [8] Adapter kit DADG-AK-...-G... | For mounting the rotary distributor on the rotary indexing table | | 29 |
| [9] Energy through-feed pneumatic/electrical | For quick and easy pneumatic/electrical supply of parts mounted on the rotating plate | | 12 |
| [10] Rotary indexing table DHTG | Flexible application range: anticlockwise rotation, clockwise rotation or reciprocating motion | | 8 |
| [11] Connecting cables NEBU, NEBS, NEDY | For transmitting the signals | | 31 |

Data sheet

⊗ Size
 65, 90, 140, 220

Indexing
 2, 3, 4, 6, 8, 12, 24



| General technical data | | | | | |
|--|---|----------------------------------|--------------------|-------|-------|
| Size | 65 | 90 | 140 | 220 | |
| Pneumatic connection | M5 | | G1/8 | | |
| Design | Gear coupling | | | | |
| | Gear rack/pinion | | | | |
| | Force pilot operated motion sequence | | | | |
| Mode of operation | Double-acting | | | | |
| Type of mounting | Via through-hole and centring sleeve | | | | |
| Mounting position | Any | | | | |
| Cushioning | Adjustable shock absorber stroke, hard characteristic curve | | | | |
| Indexing | 2, 3, 4, 6, 8, 12, 24 | | 3, 4, 6, 8, 12, 24 | | |
| Theoretical torque at 6 bar | [Nm] | 2.1 | 4.4 | 18.1 | 58.9 |
| Parallelism of plate ¹⁾ | [mm] | ≤ 0.04 | | | |
| Axial eccentricity of plate ²⁾ | [mm] | ≤ 0.02 | | | |
| Concentricity of plate ³⁾ | [mm] | ≤ 0.02 | | | |
| Repetition accuracy of swivel angle | [°] | ≤ 0.03 | | | |
| Max. mass moment of inertia without flow control ⁴⁾ | [kgm ²] | 0.016 | 0.03 | 0.3 | 2.5 |
| Cycle time without flow control | | → Page 10 | | | |
| Position sensing | | For inductive proximity switches | | | |
| Weight | | | | | |
| DHTG-... | [kg] | 2.0 | 4.5 | 10 | 24 |
| DHTG-...-P4 | [kg] | 4.39 | 6.89 | 12.49 | 26.64 |
| DHTG-...-P4E4 | [kg] | 5.12 | 7.62 | 13.22 | 27.37 |
| DHTG-...-P4L12 | [kg] | 5.15 | 7.65 | 13.25 | 27.40 |

1) Parallelism of the plate surface relative to the housing support

2) Measured on the surface and at the edge of the plate in relation to the housing support

3) Measured on the inner diameter of the plate in relation to the housing

4) Operation with flow control can increase the mass moment of inertia by 50%. The service life of the shock absorber is reduced in this case. The mass moment of inertia depends on the number of indexing stations and the switching frequency (→ page 11)

⊗ **Note**

The "clockwise" rotation of the plate can be controlled via an internal flow control valve in combination with the reciprocating motion kit. For "anticlockwise" rotation, external actuation via an additional one-way flow control valve GRLA is needed.

Data sheet

| Operating and environmental conditions | |
|--|--|
| Operating medium | Compressed air to ISO 8573-1:2010 [7:4:4] |
| Note on operating/pilot medium | Lubricated operation possible (in which case lubricated operation will always be required) |
| Operating pressure [bar] | 4 ... 8 |
| Ambient temperature [°C] | 5 ... 60 |
| Storage temperature [°C] | -20 ... +80 |
| Degree of protection | IP54 ²⁾ |
| Corrosion resistance CRC ¹⁾ | 2 |

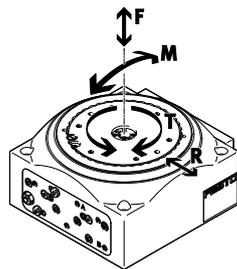
1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

2) The specified degree of protection applies to the top side of the rotary indexing table. The underside must be provided with appropriate external protection for the environment.

Static characteristic load values

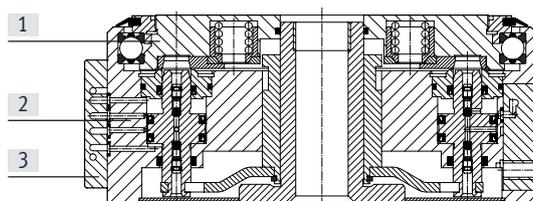
The indicated forces and torques refer to the locked table and can also act on the table plate.



| Size | | 65 | 90 | 140 | 220 |
|--------------------------|------|------|------|------|------|
| Forces | | | | | |
| Max. axial force F | [N] | 1000 | 2000 | 4000 | 5000 |
| Max. radial force R | [N] | 2000 | 5000 | 6000 | 8000 |
| Torques | | | | | |
| Max. tilting torque M | [Nm] | 100 | 150 | 300 | 500 |
| Max. tangential torque T | [Nm] | 100 | 150 | 200 | 500 |

Materials

Sectional view



| Rotary indexing table | |
|-----------------------|--|
| [1] Plate | Galvanised steel |
| [2] Cover | Wrought aluminium alloy |
| [3] Housing | Wrought aluminium alloy |
| - Stops | Galvanised steel |
| - Seals | NBR, TPE-U (PU) |
| Note on materials | |
| DHTG-... | Free of copper and PTFE |
| DHTG-...-P4... | Cables with PTFE insulation |
| | Contains paint-wetting impairment substances |

Data sheet

Calculating the cycle time

The rotary indexing tables are equipped with a hydraulic shock absorber, which means that the max. frequency of the shock absorber must also be taken into account when calculating the cycle time.

The switching time comprises:

Switching time = Unlock, rotate, lock and return stroke of working piston.

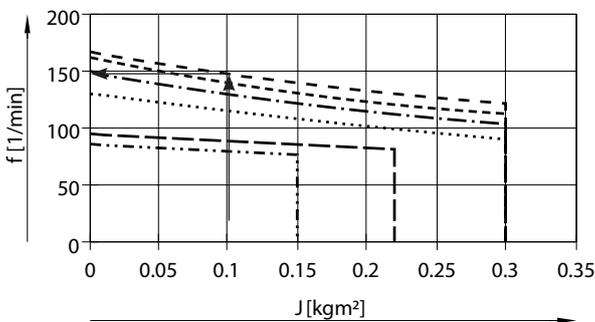
The cycle time is calculated as follows:

Cycle time = Switching time + Processing time + Dwell time.

Calculation example

DHTG-140 with 8 indexing stations The customer application requires
and a mass moment of inertia of 300 ms per step for inserting and
0.1 kgm². removing parts.

Switching frequency



$$T_{\text{switching time}} = 1/f = 60 \text{ s}/130 = 0.461 \text{ s} = 461 \text{ ms}$$

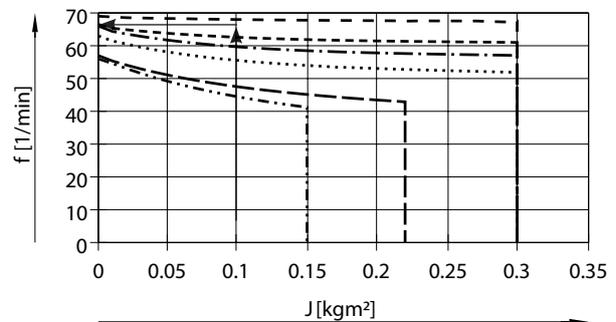
Dwell time = Min. permissible cycle time - Switching time - Processing time

$$\text{Dwell time} = 1017 \text{ ms} - 461 \text{ ms} - 300 \text{ ms} = 256 \text{ ms.}$$

Given the fact that the switching time + processing time is shorter than the min. permissible cycle time, the rotary indexing table must stay in the end position before the next step is performed. In other words, between the switching operations an additional dwell time of 256 ms must be allowed for in the control sequence.

The max. achievable switching frequency in relation to the mass moment of inertia can be read off from the switching frequency graph. The switching time can be calculated from this based on $T = 60/f$. The processing time is calculated based on the time required for the respective customer application (e.g. time for component removal, press-in time, etc.). A dwell time may be necessary if the cycle time is shorter than the min. possible cycle time.

Max. permissible cycle frequency



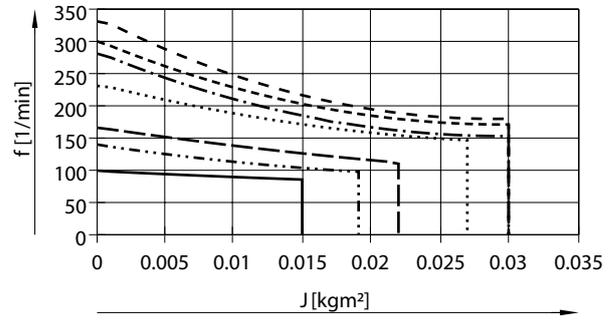
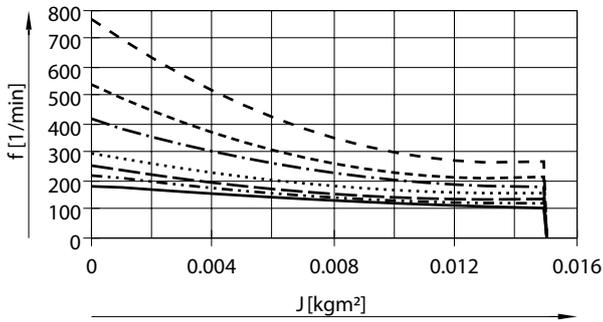
$$T_{\text{min. permissible cycle time}} = 60 \text{ s}/59 = 1.017 \text{ s} = 1017 \text{ ms}$$

Data sheet

Mass moment of inertia J as a function of switching frequency f and number of indexing stations

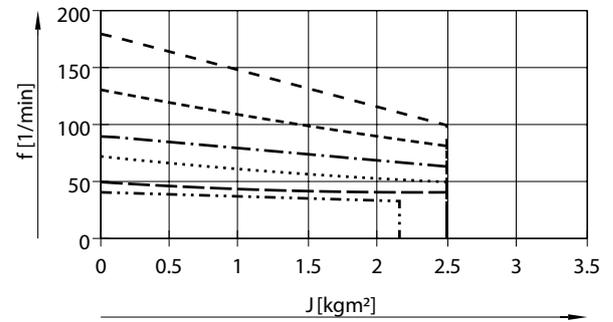
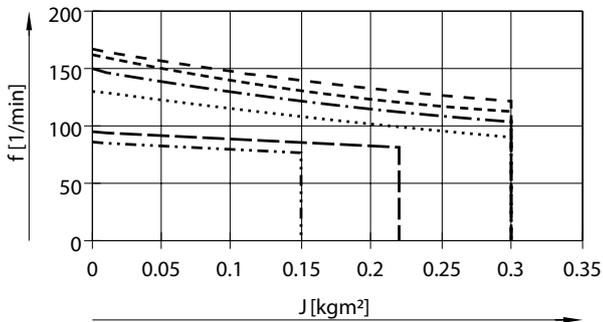
Size 65

Size 90



Size 140

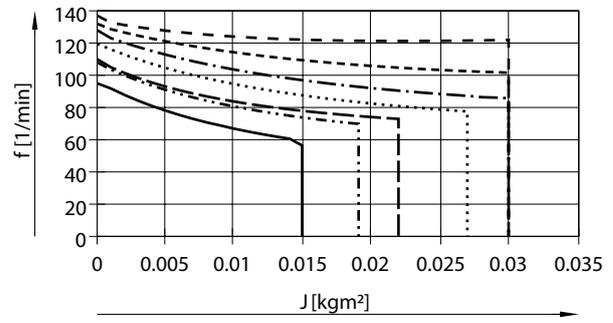
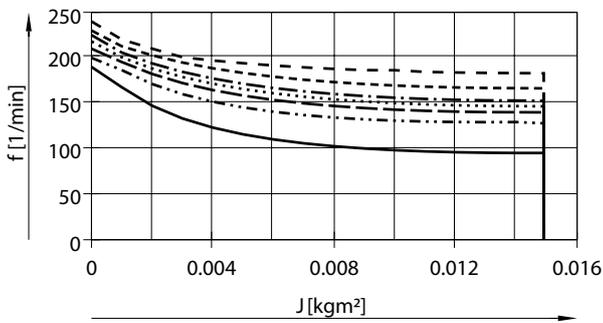
Size 220



Max. permissible cycle frequency f as a function of mass moment of inertia J

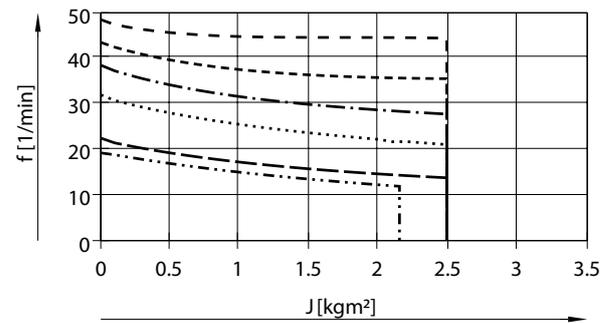
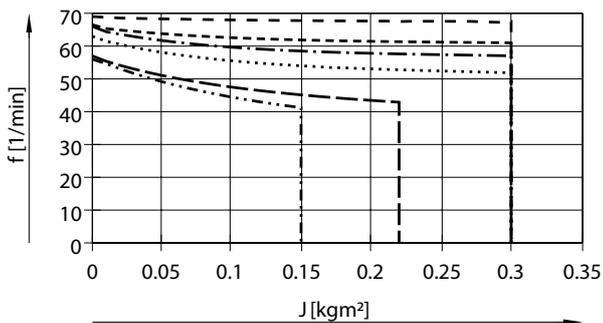
Size 65

Size 90



Size 140

Size 220



- 2 indexing stations
- 3 indexing stations
- 4 indexing stations
- 6 indexing stations
- 8 indexing stations
- 12 indexing stations
- 24 indexing stations

Data sheet

Energy through-feed

DHTG-...-P4

DHTG-...-P4E4

DHTG-...-P4L12



Function

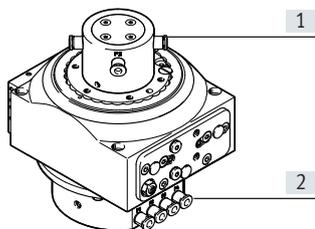
The energy through-feed can be used to transfer electrical signals or compressed air through the hollow shaft.

Advantages

- Fast and easy supply of the parts mounted on the rotating plate
- Tubing and electrical cables are not damaged by the rotation
- Two variants available:
 - Pneumatic
 - Pneumatic and electrical

Pneumatic

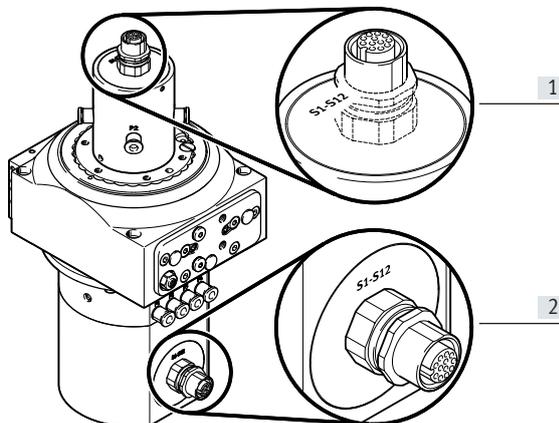
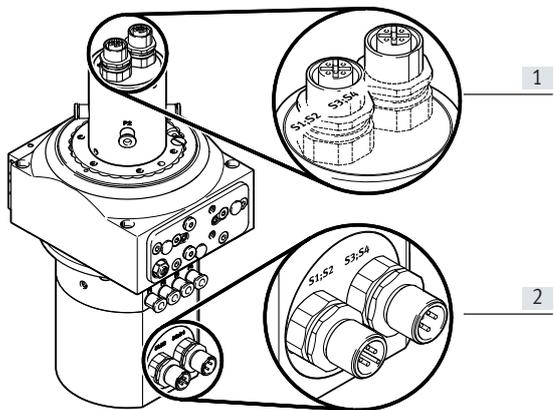
DHTG-...-P4



Pneumatic/electrical

DHTG-...-P4E4

DHTG-...-P4L12



- [1] Output
- [2] Input

Data sheet

| Technical data | | | |
|-----------------------------|--------------------|-------------|----------------------|
| Variant | | Pneumatic | Pneumatic/electrical |
| Order code | | P4 | P4E4 |
| | | | Pneumatic/electrical |
| | | | P4/L12 |
| Pneumatic | | | |
| Number of pneumatic ducts | | 4 | 4 |
| Tubing O.D. | | 4 | |
| Operating pressure per duct | [bar] | -0.85 ... 8 | |
| Connection | | M5 | |
| Flow rate per duct | [l/min] | 86 | |
| Electrical | | | |
| Number of signal lines | | - | 4 ¹⁾ |
| Rated voltage | [V DC] | - | 30 |
| Max. current | [A] | - | 1.5 |
| Cable cross section | [mm ²] | - | 0.14 |
| Connection | | - | M12 |

1) Freely configurable



Note

Also approved for vacuum operation.

Pin allocation – Energy through-feed, electrical

DHTG-...-P4E4

| Input | | | | Output | | | |
|-------------|--------------------------|------------------|-----------------|-----------------|------------------|--------------------------|-------------|
| M12 plug | | | | M12 socket | | | |
| Designation | Contact assignment | Pin | Circuit diagram | Circuit diagram | Pin | Contact assignment | Designation |
| S1;S2 | + Sig 2 - Sig 1 | 1 2 3 4 | | | 1 2 3 4 | + Sig 2 - Sig 1 | S1;S2 |
| S3;S4 | + Sig 4 - Sig 3 | 1 2 3 4 | | | 1 2 3 4 | + Sig 4 - Sig 3 | S3;S4 |

DHTG-...-P4L12

| Input | | Output | |
|-------------------------------------|-----------------|-----------------|-------------------------------------|
| M12 socket | | M12 socket | |
| Designation | Circuit diagram | Circuit diagram | Designation |
| Sig 1 ... 12 freely configurable | | | Sig 1 ... 12 freely configurable |



Note

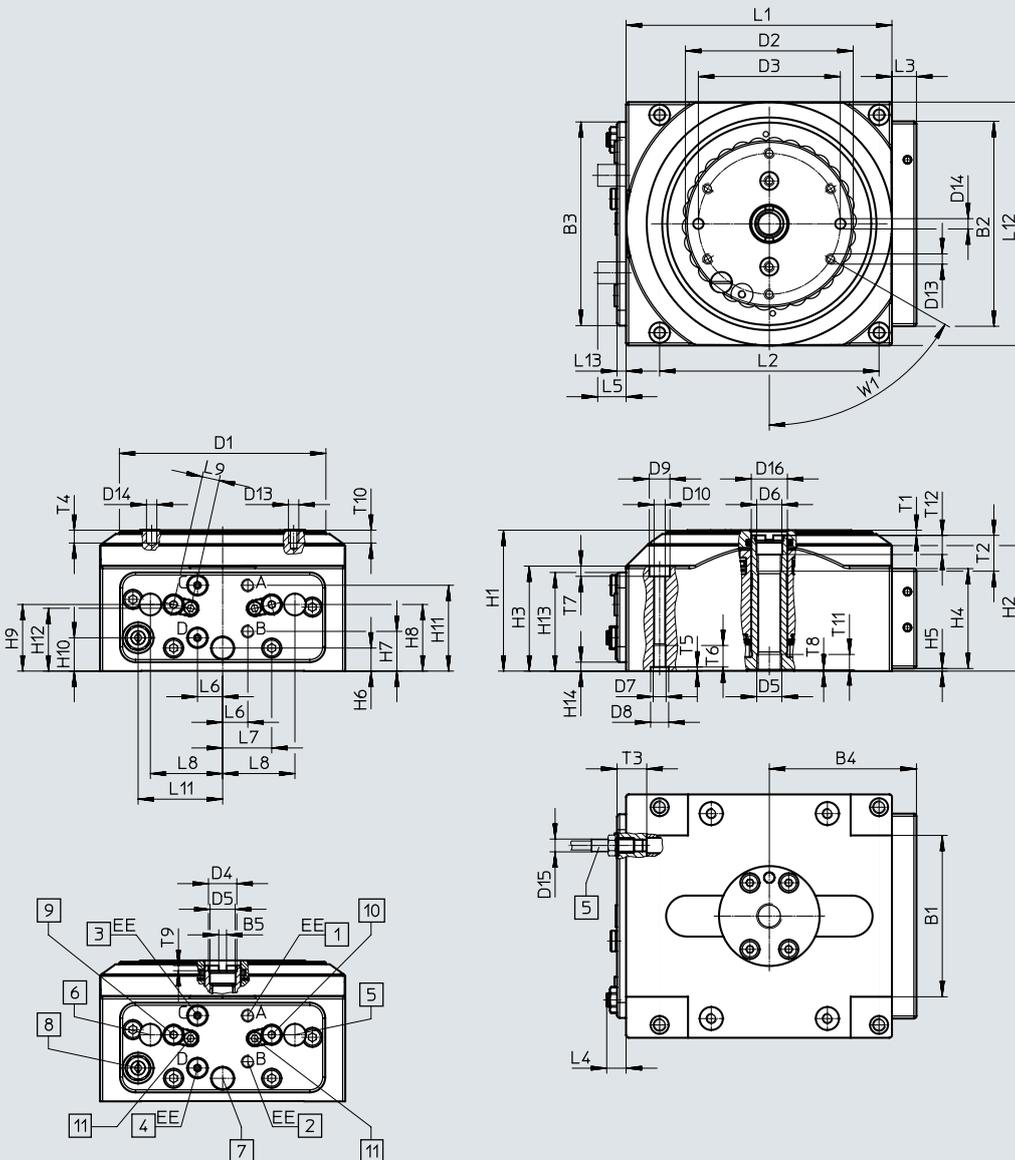
Only connecting cables with straight connectors can be used (→ page 1).

Data sheet

Dimensions

Download CAD data → www.festo.com

Size 65



- | | | |
|--|---|---|
| <p>[1] Compressed air supply port: unlock and rotate (reciprocating motion: unlock)</p> <p>[2] Compressed air supply port: lock and return stroke (reciprocating motion: lock)</p> <p>[3] Sealing plug (for reciprocating motion: rotate compressed air supply port clockwise)</p> | <p>[4] Sealing plug (for reciprocating motion: rotate compressed air supply port anticlockwise)</p> <p>[5] Sensor turned for clockwise rotation (sensor initial position for anticlockwise rotation)</p> <p>[6] Sensor initial position for clockwise rotation (sensor turned for anticlockwise rotation)</p> | <p>[7] Lock sensing</p> <p>[8] One-way flow control valve</p> <p>[9] Adjustment of end-position cushioning for anticlockwise rotation and reciprocating motion (not applicable for clockwise rotation)</p> <p>[10] Adjustment of end-position cushioning for clockwise rotation and reciprocating motion (not applicable for anticlockwise rotation)</p> <p>[11] Lock nut for end-position cushioning</p> <p>[12] The drilled holes are for attaching the energy through-feed and must not be used.</p> |
|--|---|---|

Data sheet

| Size | B1 ³⁾ ±2 | B2 | B3 | B4 | B5 +0.1 | D1 ∅ | D2 ∅ | D3 ¹⁾ ∅ | D4 ∅ | D5 | D6 ∅ H8 | D7 |
|------|------------------------|----|------|------|------------|---------|---------|-----------------------|---------|------|---------------|----|
| 65 | 63 | 80 | 79.5 | 47.5 | 3 | 80 | 65 | 55 | 11 | G1/8 | 10 | M5 |

| Size | D8 ∅ H8 | D9 ∅ | D10 ∅ | D13 | D14 ∅ H8 | D15 | D16 ∅ H8 | EE | H1 ±0.5 | H2 | H3 | H4 |
|------|---------------|---------|----------|-----|----------------|--------|----------------|----|------------|----|----|----|
| 65 | 7 | 8 | 4.3 | M4 | 4 | M5x0.5 | 14 | M5 | 55 | 49 | 41 | 39 |

| Size | H5 | H6 | H7 | H8 | H9 | H10 | H11 | H12 | H13 | H14 | L1 ±0.1 | L2 ¹⁾ TM |
|------|----|----|------|----|----|-----|------|------|------|-----|------------|------------------------|
| 65 | 1 | 9 | 15.5 | 26 | 26 | 13 | 33.5 | 24.5 | 38.5 | 3.5 | 103 | 85 |

| Size | L3 | L4 +1 | L5 ²⁾ max | L6 | L7 | L8 | L9 | L11 | L12 ±0.1 | L13 +0.1 | T1 ±1 | T2 min |
|------|-----|----------|-------------------------|------|----|----|------|-------|-------------|-------------|----------|-----------|
| 65 | 9.5 | 7.5 | 11 | 9.75 | 19 | 28 | 6.75 | 32.75 | 95 | 3.5 | 2 | 14 |

| Size | T3 min | T4 min | T5 +0.1 | T6 min | T7 | T8 | T9 | T10 min | T11 min | T12 | W1 |
|------|-----------|-----------|------------|-----------|----|-----|----|------------|------------|-----|-----|
| 65 | 12 | 5 | 1.6 | 10 | 4 | 0.5 | 2 | 6 | 5 | 7 | 60° |

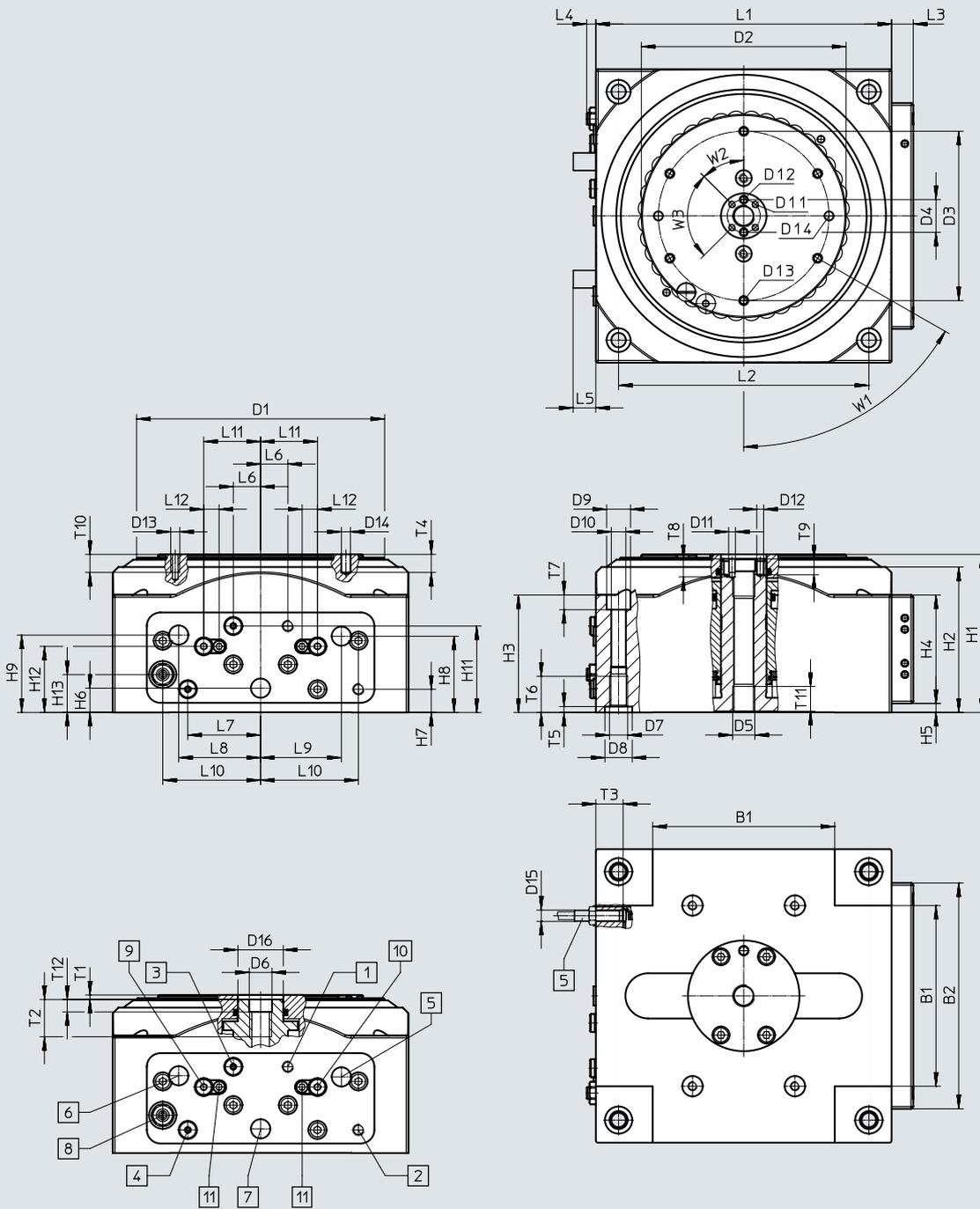
- 1) Tolerance between the centring holes: ±0.02
Tolerance between the threaded holes and countersinks: ±0.2
- 2) Max. projection of shock absorber adjustment
- 3) 0.1 +0.05 recessed

Data sheet

Dimensions

Download CAD data → www.festo.com

Size 90



- | | | |
|--|---|--|
| [1] Compressed air supply port: unlock and rotate (reciprocating motion: unlock) | [4] Sealing plug (for reciprocating motion: rotate compressed air supply port anticlockwise) | [7] Lock sensing |
| [2] Compressed air supply port: lock and return stroke (reciprocating motion: lock) | [5] Sensor turned for clockwise rotation (sensor initial position for anticlockwise rotation) | [8] One-way flow control valve |
| [3] Sealing plug (for reciprocating motion: rotate compressed air supply port clockwise) | [6] Sensor initial position for clockwise rotation (sensor turned for anticlockwise rotation) | [9] Adjustment of end-position cushioning for anticlockwise rotation and reciprocating motion (not applicable for clockwise rotation) |
| | | [10] Adjustment of end-position cushioning for clockwise rotation and reciprocating motion (not applicable for anticlockwise rotation) |
| | | [11] Lock nut for end-position cushioning |
| | | [12] The drilled holes are used for attaching the energy through-feed and must not be used. |

Data sheet

| | | | | | | | | | | | | |
|------|------------------------|----------------|---------|----------------|-----------------------|-----------------------|------------|------------------|------------------------|---------------|-----------|-------------------------|
| Size | B1 ³⁾ ±2 | B2 | D1 ∅ | D2 ∅ | D3 ¹⁾ ∅ | D4 ¹⁾ ∅ | D5 | D6 ∅ H8 | D7 | D8 ∅ H8 | D9 ∅ | D10 ∅ |
| 90 | 80 | 100 | 109 | 90 | 75 | 14.5 | G1/8 | 10 | M8 | 12 | 10.5 | 6.4 |
| Size | D11 | D12 ∅ H8 | D13 | D14 ∅ H8 | D15 | D16 ∅ H8 | EE | H1 ±0.5 | H2 | H3 | H4 | H5 |
| 90 | M3 | 3 | M4 | 4 | M5x0.5 | 20 | M5 | 70 | 64.4 | 52 | 48 | 4 |
| Size | H6 | H7 | H8 | H9 | H11 | H12 | H13 | L1 TM ±0.1 | L2 ¹⁾ TM | L3 | L4 | L5 ²⁾ max |
| 90 | 10.75 | 10.25 | 33.75 | 34.25 | 38.25 | 29.25 | 16.75 | 130 | 110 | 9.5 | 4 | 10 |
| Size | L6 | L7 | L8 | L9 | L10 | L11 | L12 | T1 ±1 | T2 min | T3 | T4 min | |
| 90 | 12 | 32 | 36 | 35.5 | 43 | 25 | 6.7 | 2 | 16.5 | 12 | 8 | |
| Size | T5 +0.1 | T6 min | T7 | T8 | T9 min | T10 min | T11 min | T12 | W1 | W2 | W3 | |
| 90 | 2.6 | 16 | 6.5 | 6 | 5 | 8 | 11 | 5.5 | 60° | 45° | 90° | |

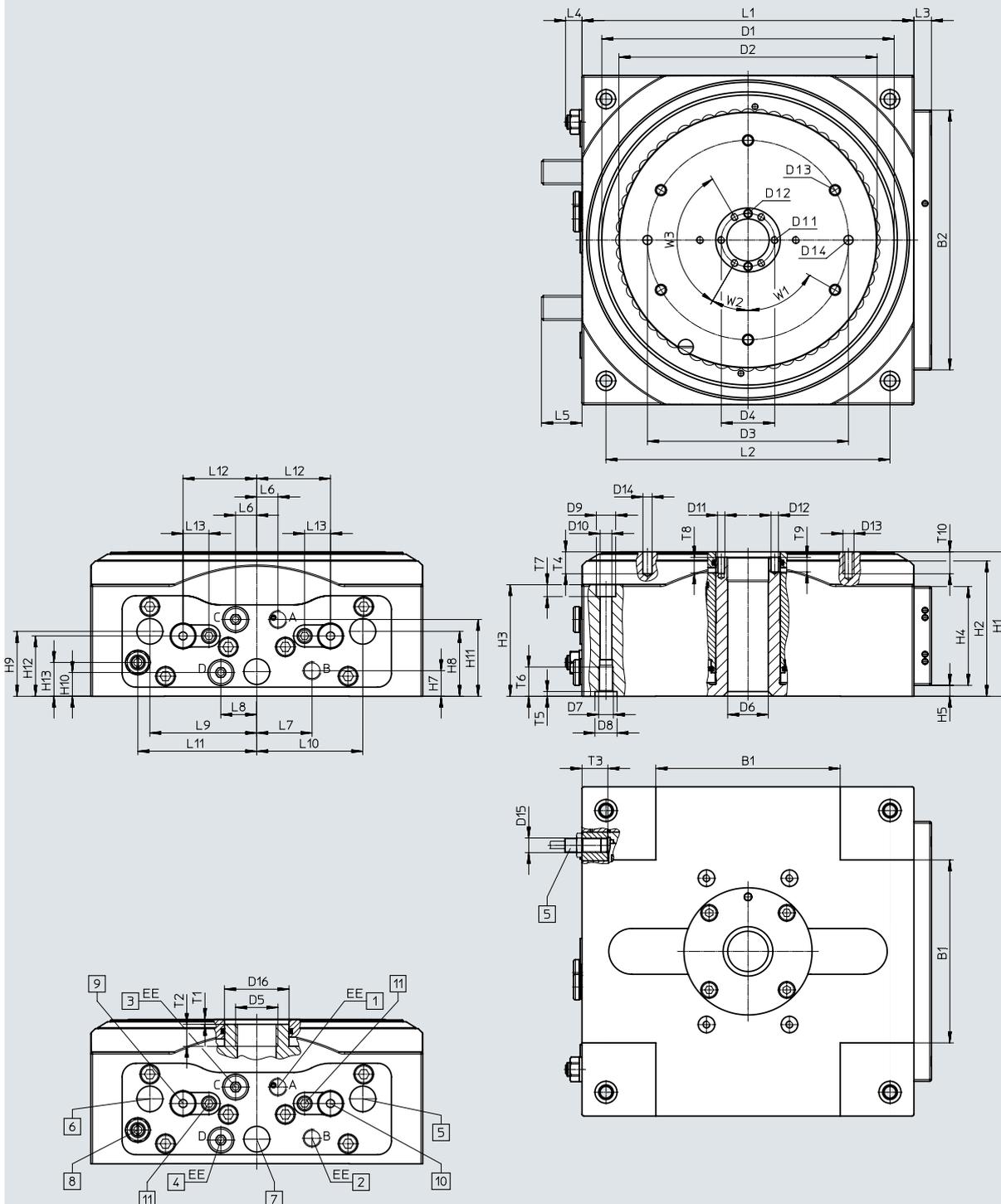
- 1) Tolerance for centring hole ±0.02 mm
Tolerance for thread ±0.1 mm
- 2) Max. projection of shock absorber adjustment
- 3) 0.1 +0.05 recessed

Data sheet

Dimensions

Download CAD data → www.festo.com

Size 140, 220



- | | | |
|--|---|--|
| [1] Compressed air supply port: unlock and rotate (reciprocating motion: unlock) | [4] Sealing plug (for reciprocating motion: rotate compressed air supply port anticlockwise) | [7] Lock sensing |
| [2] Compressed air supply port: lock and return stroke (reciprocating motion: lock) | [5] Sensor turned for clockwise rotation (sensor initial position for anticlockwise rotation) | [8] One-way flow control valve |
| [3] Sealing plug (for reciprocating motion: rotate compressed air supply port clockwise) | [6] Sensor initial position for clockwise rotation (sensor turned for anticlockwise rotation) | [9] Adjustment of end-position cushioning for anticlockwise rotation and reciprocating motion (not applicable for clockwise rotation) |
| | | [10] Adjustment of end-position cushioning for clockwise rotation and reciprocating motion (not applicable for anticlockwise rotation) |
| | | [11] Lock nut for end-position cushioning |
| | | [12] The drilled holes are for attaching the energy through-feed and must not be used. |

Data sheet

| Size | B1 ³⁾ ±2 | B2 | D1 ∅ | D2 ∅ | D3 ¹⁾ ∅ | D4 ¹⁾ ∅ | D5 | D6 ∅ | D7 | D8 ∅ H8 | D9 ∅ | D10 ∅ | D11 | D12 ∅ H8 |
|------|------------------------|-----|---------|---------|-----------------------|-----------------------|-------|---------|-----|---------------|---------|----------|-----|----------------|
| 140 | 100 | 142 | 159 | 140 | 109 | 29 | M23x1 | 22 | M8 | 12 | 10.5 | 6.4 | M4 | 4 |
| 220 | 150 | 212 | 239 | 220 | 165 | 67 | – | 58.4 | M10 | 15 | 13.5 | 8.4 | M5 | 5 |

| Size | D13 | D14 ∅ H8 | D15 | D16 ∅ H8 | EE | H1 ±0.5 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 |
|------|-----|----------------|------|----------------|------|------------|------|------|----|-----|------|------|------|------|
| 140 | M6 | 5 | M8x1 | 35 | G1/8 | 79 | 74 | 61 | 54 | 6 | 13.5 | 14 | 35.5 | 35.5 |
| 220 | M8 | 6 | M8x1 | 75 | G1/8 | 89 | 83.5 | 68.5 | 64 | 4.5 | 13.5 | 24.5 | 15 | 15 |

| Size | H10 | H11 | H12 | H13 | L1 TM ±0.1 | L2 ¹⁾ TM | L3 | L4 +1 | L5 ²⁾ max | L6 | L7 | L8 | L9 | L10 | L11 |
|------|------|------|------|------|------------------|------------------------|-----|----------|-------------------------|------|----|------|----|------|------|
| 140 | 13 | 42 | 33 | 18.5 | 180 | 154 | 9.5 | 8.9 | 22 | 11.5 | 30 | 19.5 | 58 | 57.5 | 64.5 |
| 220 | 24.5 | 50.5 | 36.5 | 24 | 270 | 228 | 12 | 4.6 | 22 | 41 | 41 | 41 | 61 | 61 | 99.5 |

| Size | L12 | L13 | T1 ±1 | T2 min | T3 min | T4 min | T5 +0.1 | T6 min | T7 | T8 min | T9 min | T10 min | W1 | W2 | W3 |
|------|-----|-----|----------|-----------|-----------|-----------|------------|-----------|-----|-----------|-----------|------------|-----|-----|------|
| 140 | 40 | 14 | 3 | 12 | 14 | 8 | 2.6 | 16 | 6.5 | 8 | 8 | 11 | 60° | 30° | 120° |
| 220 | 68 | 14 | 4 | – | 19 | 8 | 3.1 | 20 | 8.5 | 10 | 10 | 11 | 60° | 30° | 120° |

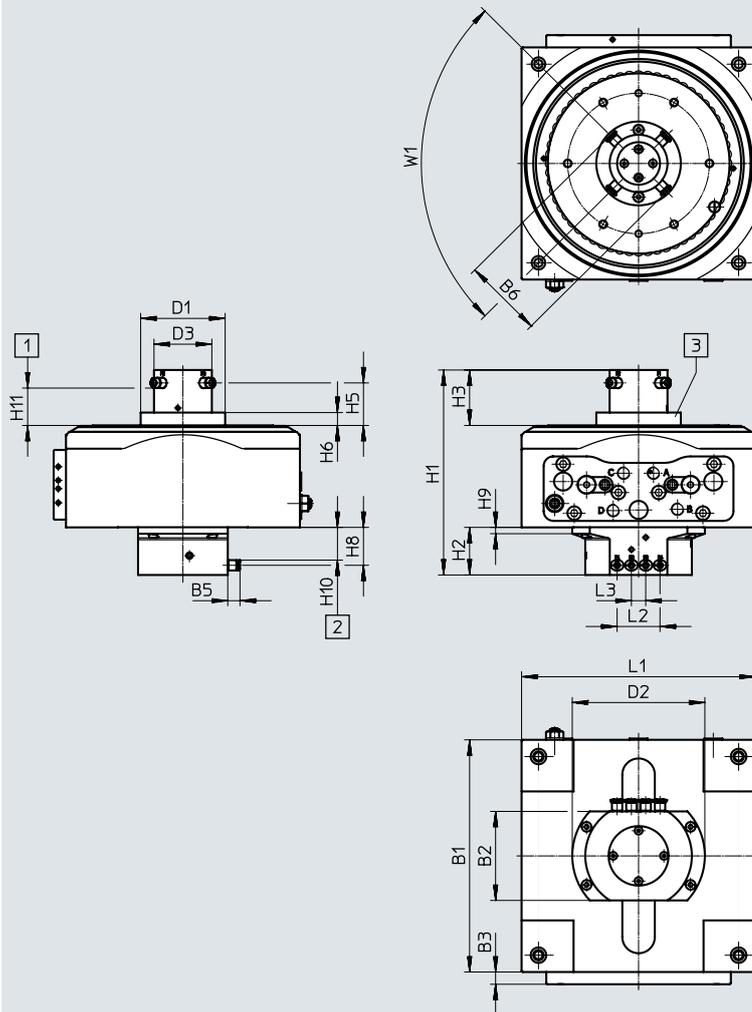
- 1) Tolerance between the centring holes: ±0.02
Tolerance between the threaded holes and countersinks: ±0.2
- 2) Max. projection of shock absorber adjustment
- 3) 0.1 +0.05 recessed

Data sheet

Dimensions – Variants

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P4 – Pneumatic energy through-feed



- [1] Max. installation height on the rotating plate
- [2] Max. installation height on the
- [3] Mounting surface
- [4] Adapter plate only for size 140 and 220

Data sheet

| Size | B1 | B2 ±0.1 | B3 | B5 | B6 | D1 ∅ ±0.1 | D2 ∅ |
|------|-----|------------|-----|-----|------|-----------------|---------|
| 65 | 103 | 69 | 9.5 | 9.3 | 61.4 | – | 102 |
| 90 | 130 | | 9.5 | | | – | |
| 140 | 180 | | 9.5 | | | 65 | |
| 220 | 270 | | 12 | | | 100 | |

| Size | D3 ∅ ±0.1 | H1 | H2 ±0.1 | H3 | H5 | H6 ±0.1 | H8 ±0.1 |
|------|-----------------|-----|------------|--------|---------|------------|------------|
| 65 | 44.5 | 125 | 37 | 33±0.1 | 23±0.05 | – | 29.5 |
| 90 | | 140 | | 33±0.1 | 23±0.05 | – | |
| 140 | | 159 | | 43±0.2 | 33±0.15 | 10 | |
| 220 | | 169 | | 43±0.2 | 33±0.15 | 10 | |

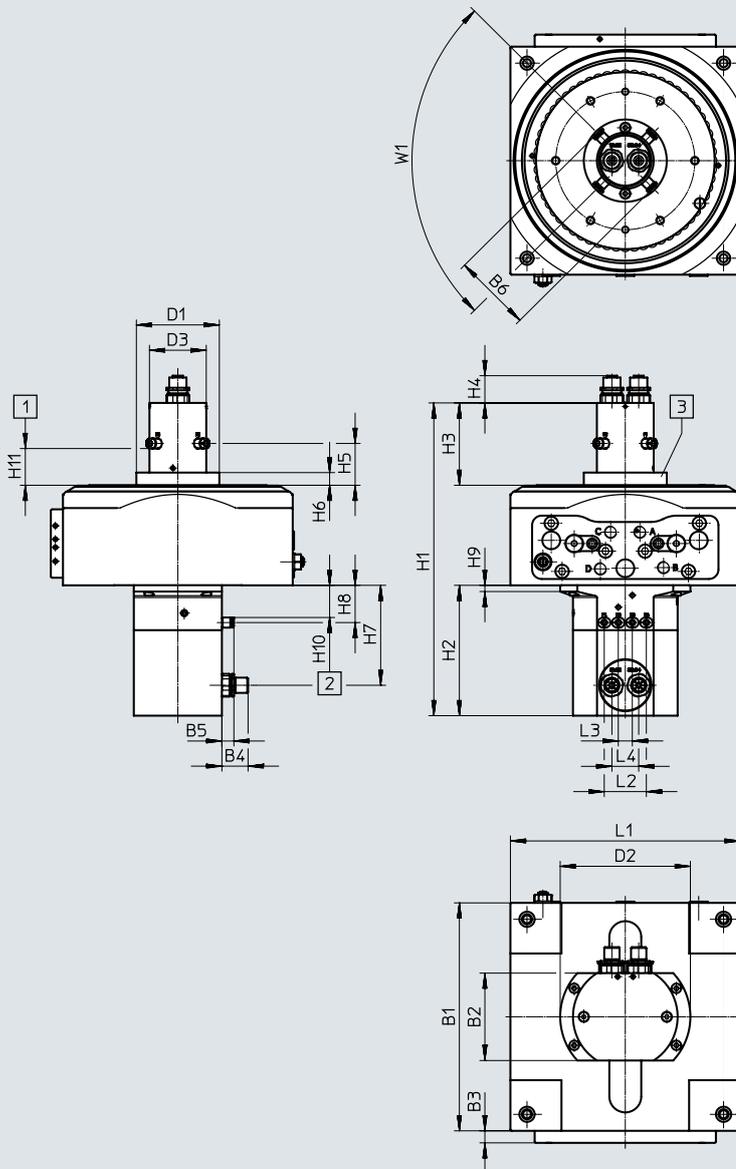
| Size | H9 | H10 | H11 | L1 | L2 ±0.1 | L3 ±0.1 | W1 |
|------|----|-----|-----|-----|------------|------------|-----|
| 65 | 5 | 25 | 19 | 95 | 33 | 11 | 90° |
| 90 | | | 19 | 130 | | | |
| 140 | | | 29 | 180 | | | |
| 220 | | | 29 | 270 | | | |

Data sheet

Dimensions – Variants

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P4E4 – Pneumatic/electrical energy through-feed



- [1] Max. installation height on the rotating plate
- [2] Max. installation height on the
- [3] Mounting surface
- [4] Adapter plate only for size 140 and 220

Data sheet

| Size | B1 | B2 ±0.1 | B3 | B4 +3 | B5 | B6 | D1 ∅ ±0.1 | D2 ∅ | D3 ∅ ±0.1 |
|------|-----|------------|-----|----------|-----|------|-----------------|---------|-----------------|
| 65 | 103 | 69 | 9.5 | 19 | 9.3 | 61.4 | - | 102 | 44.5 |
| 90 | 130 | | 9.5 | | | | - | | |
| 140 | 180 | | 9.5 | | | | 65 | | |
| 220 | 270 | | 12 | | | | 100 | | |

| Size | H1 | H2 ±0.1 | H3 | H4 +2 | H5 | H6 ±0.1 | H7 | H8 ±0.1 |
|------|-----|------------|--------|----------|---------|------------|----|------------|
| 65 | 213 | 103 | 55±0.1 | 17.5 | 23±0.05 | - | 79 | 29.5 |
| 90 | 228 | | 55±0.1 | | 23±0.05 | - | | |
| 140 | 247 | | 65±0.2 | | 33±0.15 | 10 | | |
| 220 | 257 | | 65±0.2 | | 33±0.15 | 10 | | |

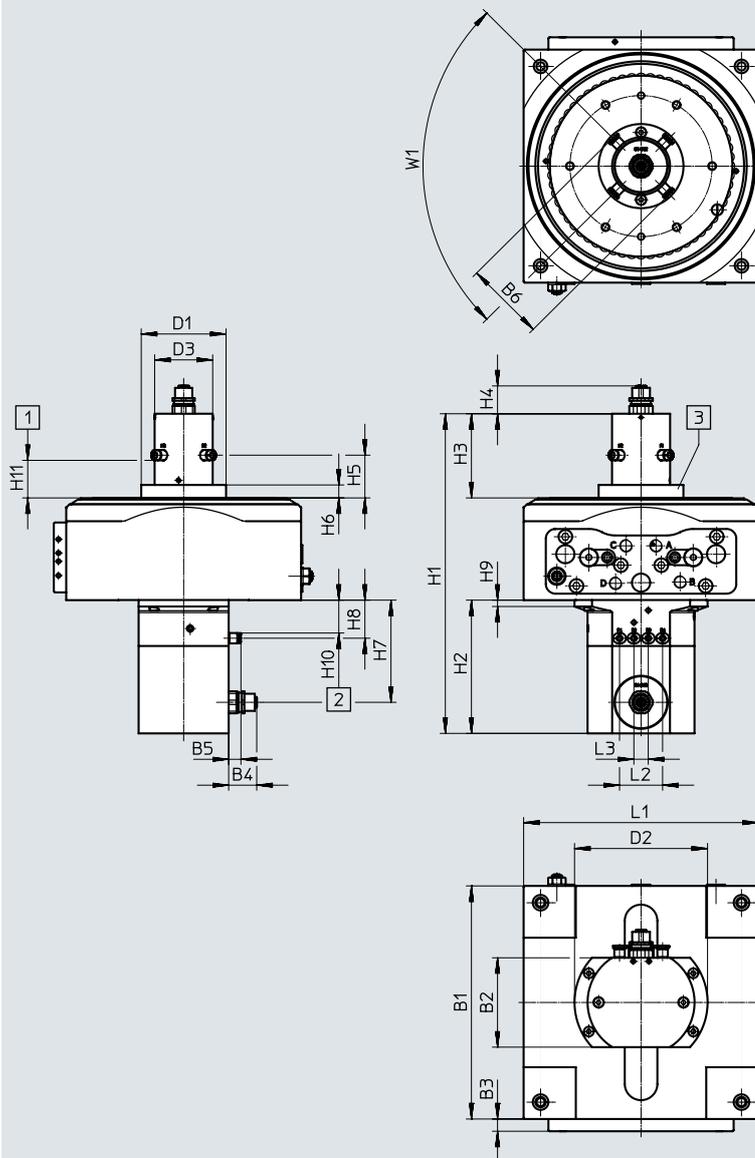
| Size | H9 | H10 | H11 | L1 | L2 ±0.1 | L3 ±0.1 | L4 | W1 |
|------|----|-----|-----|-----|------------|------------|----|-----|
| 65 | 5 | 25 | 19 | 95 | 33 | 11 | 21 | 90° |
| 90 | | | 19 | 130 | | | | |
| 140 | | | 29 | 180 | | | | |
| 220 | | | 29 | 270 | | | | |

Data sheet

Dimensions – Variants

Download CAD data → www.festo.com

P4L12 – Pneumatic/electrical energy through-feed



- [1] Max. installation height on the rotating plate
- [2] Max. installation height on the
- [3] Mounting surface
- [4] Adapter plate only for size 140 and 220

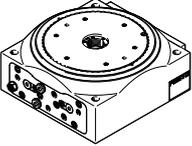
Data sheet

| Size | B1 | B2 ±0.1 | B3 | B4 +3 | B5 | B6 | D1 ∅ ±0.1 | D2 ∅ |
|------|-----|------------|-----|----------|-----|------|-----------------|---------|
| 65 | 103 | 69 | 9.5 | 17.5 | 9.3 | 61.4 | – | 102 |
| 90 | 130 | | 9.5 | | | | – | |
| 140 | 180 | | 9.5 | | | | 65 | |
| 220 | 270 | | 12 | | | | 100 | |

| Size | D3 ∅ ±0.1 | H1 | H2 ±0.1 | H3 | H4 +2 | H5 | H6 ±0.1 | H7 |
|------|-----------------|-----|------------|--------|----------|---------|------------|----|
| 65 | 44.5 | 213 | 103 | 55±0.1 | 17.5 | 23±0.05 | – | 79 |
| 90 | | 228 | | 55±0.1 | | 23±0.05 | – | |
| 140 | | 247 | | 65±0.2 | | 33±0.15 | 10 | |
| 220 | | 257 | | 65±0.2 | | 33±0.15 | 10 | |

| Size | H8 ±0.1 | H9 | H10 | H11 | L1 | L2 ±0.1 | L3 ±0.1 | W1 |
|------|------------|----|-----|-----|-----|------------|------------|-----|
| 65 | 29.5 | 5 | 25 | 19 | 95 | 33 | 11 | 90° |
| 90 | | | | 19 | 130 | | | |
| 140 | | | | 29 | 180 | | | |
| 220 | | | | 29 | 270 | | | |

Data sheet

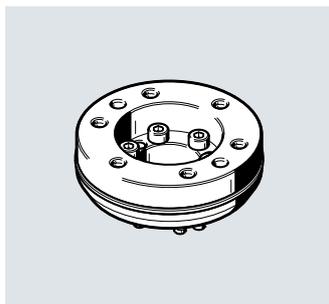
| Ordering data | Size | Indexing | Part no. | Type |
|--|------|----------|---------------|---------------|
|  | 65 | 2 | 548076 | DHTG-65-2-A |
| | | 3 | 555448 | DHTG-65-3-A |
| | | 4 | 548077 | DHTG-65-4-A |
| | | 6 | 548078 | DHTG-65-6-A |
| | | 8 | 548079 | DHTG-65-8-A |
| | | 12 | 548080 | DHTG-65-12-A |
| | | 24 | 548081 | DHTG-65-24-A |
| | | 90 | 2 | 548082 |
| | 3 | | 555449 | DHTG-90-3-A |
| | 4 | | 548083 | DHTG-90-4-A |
| | 6 | | 548084 | DHTG-90-6-A |
| | 8 | | 548085 | DHTG-90-8-A |
| | 12 | | 548086 | DHTG-90-12-A |
| | 24 | | 548087 | DHTG-90-24-A |
| | 140 | | 3 | 555450 |
| | | 4 | 548088 | DHTG-140-4-A |
| | | 6 | 548089 | DHTG-140-6-A |
| | | 8 | 548090 | DHTG-140-8-A |
| | | 12 | 548091 | DHTG-140-12-A |
| | | 24 | 548092 | DHTG-140-24-A |
| | 220 | 3 | 555451 | DHTG-220-3-A |
| | | 4 | 548093 | DHTG-220-4-A |
| | | 6 | 548094 | DHTG-220-6-A |
| | | 8 | 548095 | DHTG-220-8-A |
| 12 | | 548096 | DHTG-220-12-A | |
| 24 | | 548097 | DHTG-220-24-A | |

Ordering data – Modular product system

| Ordering table | | | | | | | |
|---------------------|---|---------------|---------------|---------------|------------|-------------|------------|
| Size | 65 | 90 | 140 | 220 | Conditions | Code | Enter code |
| Module no. | 575738 | 575739 | 575740 | 575741 | | | |
| Product type | DHTG series G | | | | | DHTG | DHTG |
| Size | 65 | 90 | 140 | 220 | | -... | |
| Indexing | 2 indexing stations | | - | | | -2 | |
| | 3 indexing stations | | | | | -3 | |
| | 4 indexing stations | | | | | -4 | |
| | 6 indexing stations | | | | | -6 | |
| | 8 indexing stations | | | | | -8 | |
| | 12 indexing stations | | | | | -12 | |
| Position sensing | Via proximity switch | | | | | -24 | A |
| | | | | | | A | |
| Energy through-feed | None | | | | | - | |
| | Pneumatic, 4 ducts | | | | | -P4 | |
| | Pneumatic, 4 ducts; electrical, 4 signals | | | | | -P4E4 | |
| | Pneumatic, 4 ducts; electrical, 12 cables | | | | | -P4L12 | |

Accessories

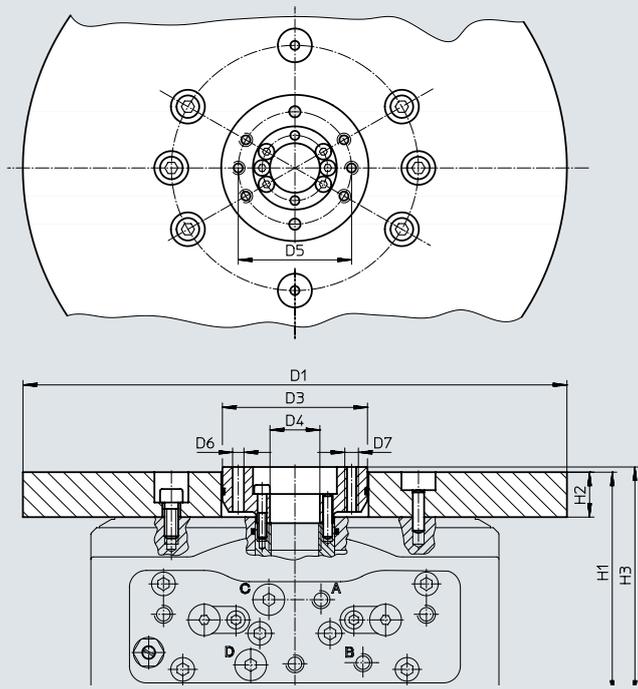
Adapter kit
DADG-AK



Dimensions

Download CAD data → www.festo.com

With rotary plate and adapter kit DADG-AK for mounting a fixed plate



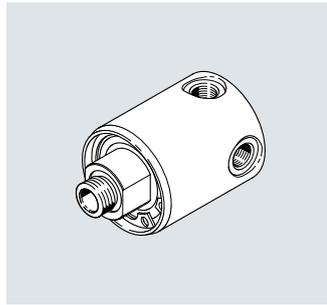
| Size | D3 ∅ +0.2 | D4 ∅ +0.2 | D5 ∅ | D6 ∅ H7 | D7 | H2 max. | H3 ±0.5 |
|-------------|-----------------|-----------------|---------|---------------|----|------------|------------|
| DADG-AK-65 | 29 | 5 | 20 | 4 | M4 | 15 | 72 |
| DADG-AK-90 | 39 | 9 | 30 | 4 | M4 | 15 | 87 |
| DADG-AK-140 | 64 | 22 | 50 | 5 | M6 | 20 | 101 |
| DADG-AK-220 | 104 | 58.4 | 90 | 6 | M8 | 20 | 111 |

Ordering data – Adapter kit DADG-AK

| | For size | Part no. | Type |
|--|----------|----------|-------------|
| | 65 | 555424 | DADG-AK-65 |
| | 90 | 555425 | DADG-AK-90 |
| | 140 | 555426 | DADG-AK-140 |
| | 220 | 555427 | DADG-AK-220 |

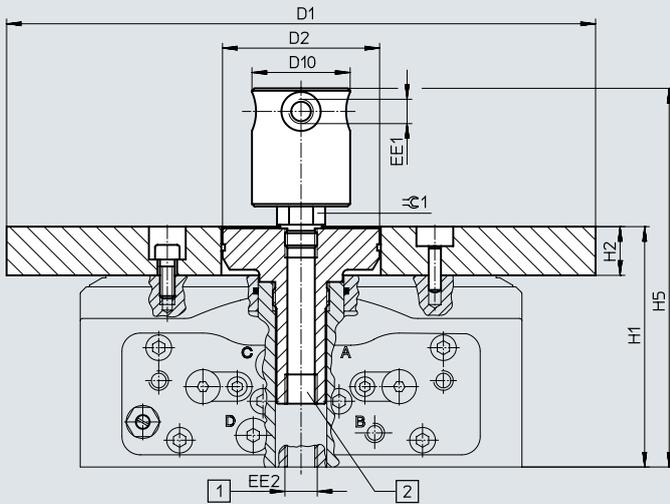
Accessories

Rotary distributor
 GF-..., single
 GF-...-2, multiple



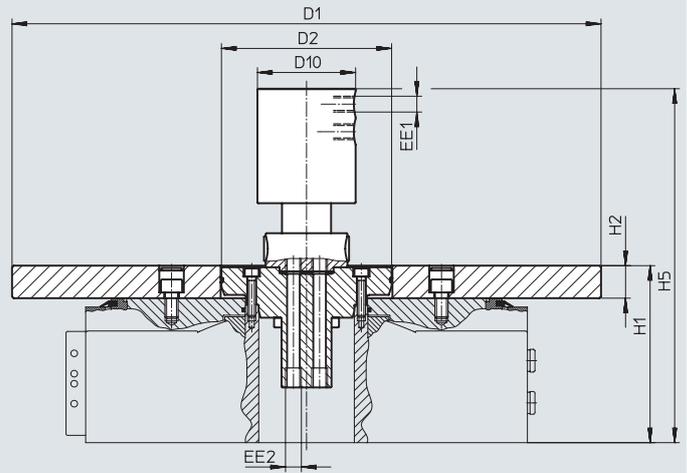
Dimensions

With rotary distributor GF-... (single) and adapter kit DADG-AK-...



Download CAD data → www.festo.com

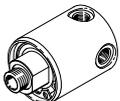
With rotary distributor GF-1/8-2 (multiple) and adapter kit DADG-AK-220-2G18 – for size 220



| Size | D2 | D10 ∅ +0.2 | EE1 | EE2 | H2 max. | H5 ±1 | ±1 |
|--------------------------------|-----|------------------|------|------|------------|----------|----|
| DADG-AK-65-1G18 GF-1/8-M5 | 29 | 40 | M5 | G1/8 | 15 | 127.5 | 17 |
| DADG-AK-90-1G18 GF-1/8-M5 | 39 | 40 | M5 | G1/8 | 15 | 142.5 | 17 |
| DADG-AK-140-1G14 GF-1/4-1/8 | 64 | 40 | G1/8 | G1/4 | 20 | 155.5 | 17 |
| DADG-AK-220-1G12 GF-1/2-1/4 | 104 | 60 | G1/4 | G1/2 | 20 | 187.5 | 27 |

Ordering data

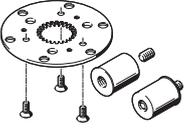
Rotary distributor GF

| | For size | Part no. | Type |
|---|-----------------|----------|------------|
|  | Single | | |
| | 65, 90 | 539290 | GF-1/8-M5 |
| | 140 | 539291 | GF-1/4-1/8 |
| | 220 | 539292 | GF-1/2-1/4 |
| | Multiple | | |
| | 220 | 539287 | GF-1/8-2 |

Adapter kit DADG-AK

| | For size | Part no. | Type |
|---|-----------------|----------|------------------|
|  | Single | | |
| | 65 | 555428 | DADG-AK-65-1G18 |
| | 90 | 555429 | DADG-AK-90-1G18 |
| | 140 | 555430 | DADG-AK-140-1G14 |
| | 220 | 555431 | DADG-AK-220-1G12 |
| | Multiple | | |
| | 220 | 555432 | DADG-AK-220-2G18 |

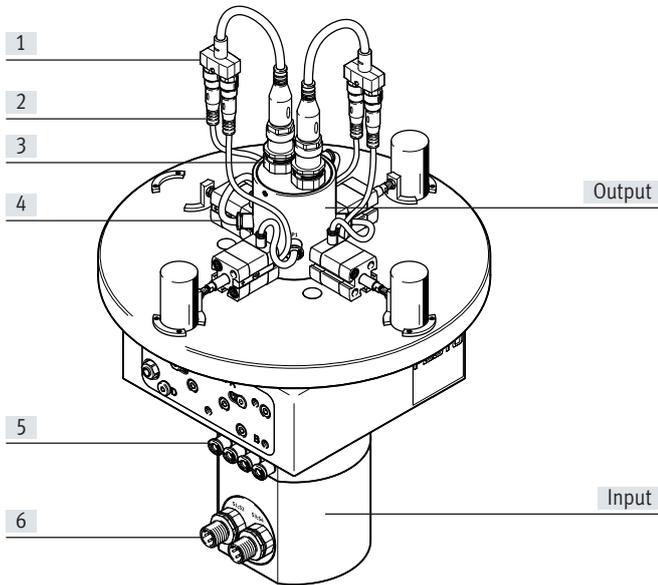
Accessories

| Ordering data | | | | | |
|--|------------------------------|------------------------------|------------------|----------------|---------------------|
| | For size | Indexing | Part no. | Type | |
| Indexing conversion kit DADM-CK | | | | | |
|  | 65 | 2 | 548098 | DADM-CK-65-2 | |
| | | 3 | 554389 | DADM-CK-65-3 | |
| | | 4 | 548099 | DADM-CK-65-4 | |
| | | 6 | 548100 | DADM-CK-65-6 | |
| | | 8 | 548101 | DADM-CK-65-8 | |
| | | 12 | 548102 | DADM-CK-65-12 | |
| | | 24 | 548103 | DADM-CK-65-24 | |
| | 90 | 2 | 548104 | DADM-CK-90-2 | |
| | | 3 | 555445 | DADM-CK-90-3 | |
| | | 4 | 548105 | DADM-CK-90-4 | |
| | | 6 | 548106 | DADM-CK-90-6 | |
| | | 8 | 548107 | DADM-CK-90-8 | |
| | | 12 | 548108 | DADM-CK-90-12 | |
| | | 24 | 548109 | DADM-CK-90-24 | |
| | 140 | 3 | 555446 | DADM-CK-140-3 | |
| | | 4 | 548110 | DADM-CK-140-4 | |
| | | 6 | 548111 | DADM-CK-140-6 | |
| | | 8 | 548112 | DADM-CK-140-8 | |
| | | 12 | 548113 | DADM-CK-140-12 | |
| | | 24 | 548114 | DADM-CK-140-24 | |
| | 220 | 3 | 555447 | DADM-CK-220-3 | |
| | | 4 | 548115 | DADM-CK-220-4 | |
| | | 6 | 548116 | DADM-CK-220-6 | |
| | | 8 | 548117 | DADM-CK-220-8 | |
| 12 | | 548118 | DADM-CK-220-12 | | |
| 24 | | 548119 | DADM-CK-220-24 | | |
| Reciprocating motion kit DADM-TK | | | | | |
|  | 65 | - | 548120 | DADM-TK-65 | |
| | 90 | | 548121 | DADM-TK-90 | |
| | 140 | | 563304 | DADM-TK-140 | |
| | 220 | | 563305 | DADM-TK-220 | |
| Ordering data – Proximity switch, inductive | | | | | |
| Data sheets → Internet: sien | | | | | |
| | For size | Contact | Connection | Part no. | Type |
|  | 65, 90 | N/O contact | Plug | 150371 | SIEN-M5B-PS-S-L |
| | | N/C contact | Plug | 150375 | SIEN-M5B-PO-S-L |
| | 140, 220 | N/O contact | Cable | 150386 | SIEN-M8B-PS-K-L |
| | | | Plug | 150387 | SIEN-M8B-PS-S-L |
| | | N/C contact | Cable | 150390 | SIEN-M8B-PO-K-L |
| | | | Plug | 150391 | SIEN-M8B-PO-S-L |
| Ordering data – Connecting cables | | | | | |
| Data sheets → Internet: nebu | | | | | |
| | Electrical connection, left | Electrical connection, right | Cable length [m] | Part no. | Type |
|  | Straight socket, M8x1, 3-pin | Cable, open end, 3-wire | 2.5 | 541333 | NEBU-M8G3-K-2.5-LE3 |
| | | | 5 | 541334 | NEBU-M8G3-K-5-LE3 |
|  | Angled socket, M8x1, 3-pin | Cable, open end, 3-wire | 2.5 | 541338 | NEBU-M8W3-K-2.5-LE3 |
| | | | 5 | 541341 | NEBU-M8W3-K-5-LE3 |

Accessories

Wiring of the proximity switches in combination with the energy through-feed

Sample illustration using DHTG-...-P4E4



- [1] Y-distributor
NEDY-L2R1-V1-...
- [2] Proximity switch with plug
- [3] Electrical connection (output)
- [4] Compressed air supply port (output)
- [5] Compressed air supply port (input)
- [6] Electrical connection (input)

Note
For variant DHTG-...-P4E4, proximity switches with plugs must be used for the attachments at the output. These are then connected to the energy through-feed module using a Y-distributor.

Ordering data – Connecting cables for proximity switches

| | Electrical connection, left | Electrical connection, right | Suitable for energy chains | Cable length [m] | Part no. | Type | |
|-----------------------|-------------------------------|----------------------------------|----------------------------|-------------------|----------|--------------------------------|---------------------------|
| DHTG-...-P4E4 | | | | | | | |
| Input | | | | | | | |
| | Straight socket, M12x1, 5-pin | Cable, open end, 4-wire | ■ | 2.5 | 550326 | NEBU-M12G5-K-2.5-LE4 | |
| | | | | 5 | 541328 | NEBU-M12G5-K-5-LE4 | |
| Output | | | | | | | |
| | Straight plug, M12x1, 4-pin | 2x straight sockets, M8x1, 3-pin | – | 0.3 ¹⁾ | 8032867 | NEDY-L2R1-V1-M8G3-U-M12G4-0.3R | |
| DHTG-...-P4L12 | | | | | | | |
| Input/output | | | | | | | |
| | Straight plug, M12x1, 12-pin | Straight plug, M12x1, 12-wire | ■ | 0.3 | 3947404 | NEBS-SM12G12-E-0.3-N-M12G12 | |
| | | Cable, open end, 12-wire | | ■ | 0.5 | 3947401 | NEBS-SM12G12-E-0.5-N-LE12 |
| | | | | | 5 | 3947395 | NEBS-SM12G12-E-5-N-LE12 |

1) Cable lengths can be selected between 0.3 m and 30 m → Internet: nedy

Ordering data – Rotary through-feed

| | Description | Part no. | Type |
|--|--|----------|---------------|
| | Spare part for energy through-feed. Can be replaced as needed. | 3920687 | DHAS-SCR12-H6 |

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1 Festo Inc.
5300 Explorer Drive
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