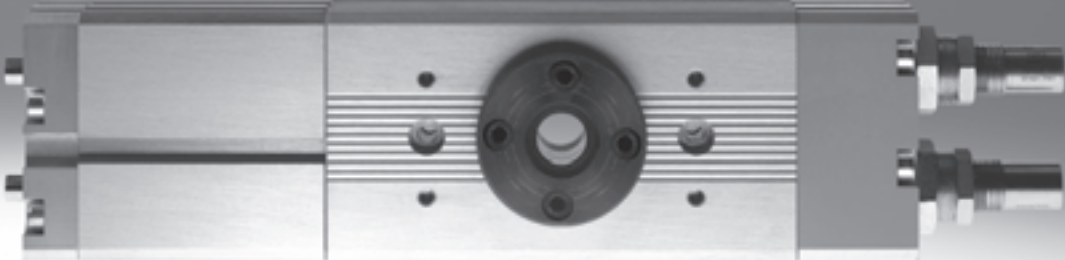


Semi-rotary drives DRQD/DRQD-B, twin pistons



- 1 - Type discontinued  
Available up until 2016

FESTO

## Semi-rotary drives DRQD/DRQD-B, twin pistons

Key features

### General

- Rack and pinion principle
- High accuracy
- Extremely good rigidity
- Backlash-free and dynamic
- Piston  $\varnothing$  6 ... 50 mm
- Torque 0.16 ... 50 Nm
- Swivel angle 0 ... 360°
- Defined interfaces
- End-position adjustment -60 ... +6°
- End-position adjustment with end-position cushioning P1J -320 ... +6°
- Choice of mounting options
- Supply port at one end
- Ideal for use in handling applications

### Wide choice of variants

#### Spigot shaft



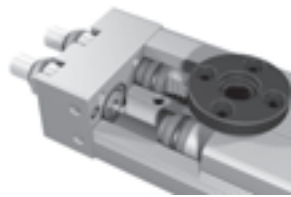
- Piston  $\varnothing$  6 ... 50 mm

#### Flanged shaft



- Piston  $\varnothing$  6 ... 50 mm

#### Adjustable end-position cushioning



- Piston  $\varnothing$  16 ... 50 mm
- PPVJ – pneumatic, adjustable
- YSRJ – hydraulic shock absorber, self-adjusting
- Piston  $\varnothing$  16 ... 32 mm
- P1J – flexible cushioning elements, adjustable

#### Intermediate position



- Piston  $\varnothing$  16 ... 50 mm
- Allows positioning of the drive shaft in a mid-position

#### Position sensing



- Piston  $\varnothing$  6 ... 50 mm
- For piston  $\varnothing$  6 ... 12 mm: proximity sensor SME/SMT-10
- For piston  $\varnothing$  16 ... 50 mm: proximity sensor SME/SMT-8

#### Adapter kits for grippers and drive combinations



- Piston  $\varnothing$  6 ... 50 mm

#### Energy through-feed



- Piston  $\varnothing$  6 ... 50 mm
- Simple and space-saving installation of tubing through the hollow flanged shaft
- DRQD-...-SD...  
1 ... 4 DUO tubes

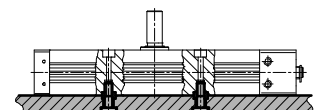
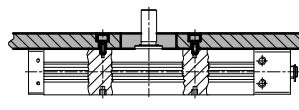
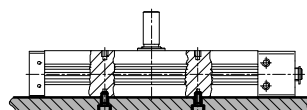
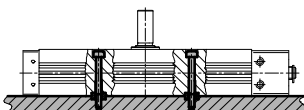


- Piston  $\varnothing$  16 ... 50 mm
- Simple and space-saving installation of tubing and cables through the hollow flanged shaft
- DRQD-...-E...  
1 ... 2 DUO tubes and 2 ... 4 electrical cables

#### Mounting options

using through holes

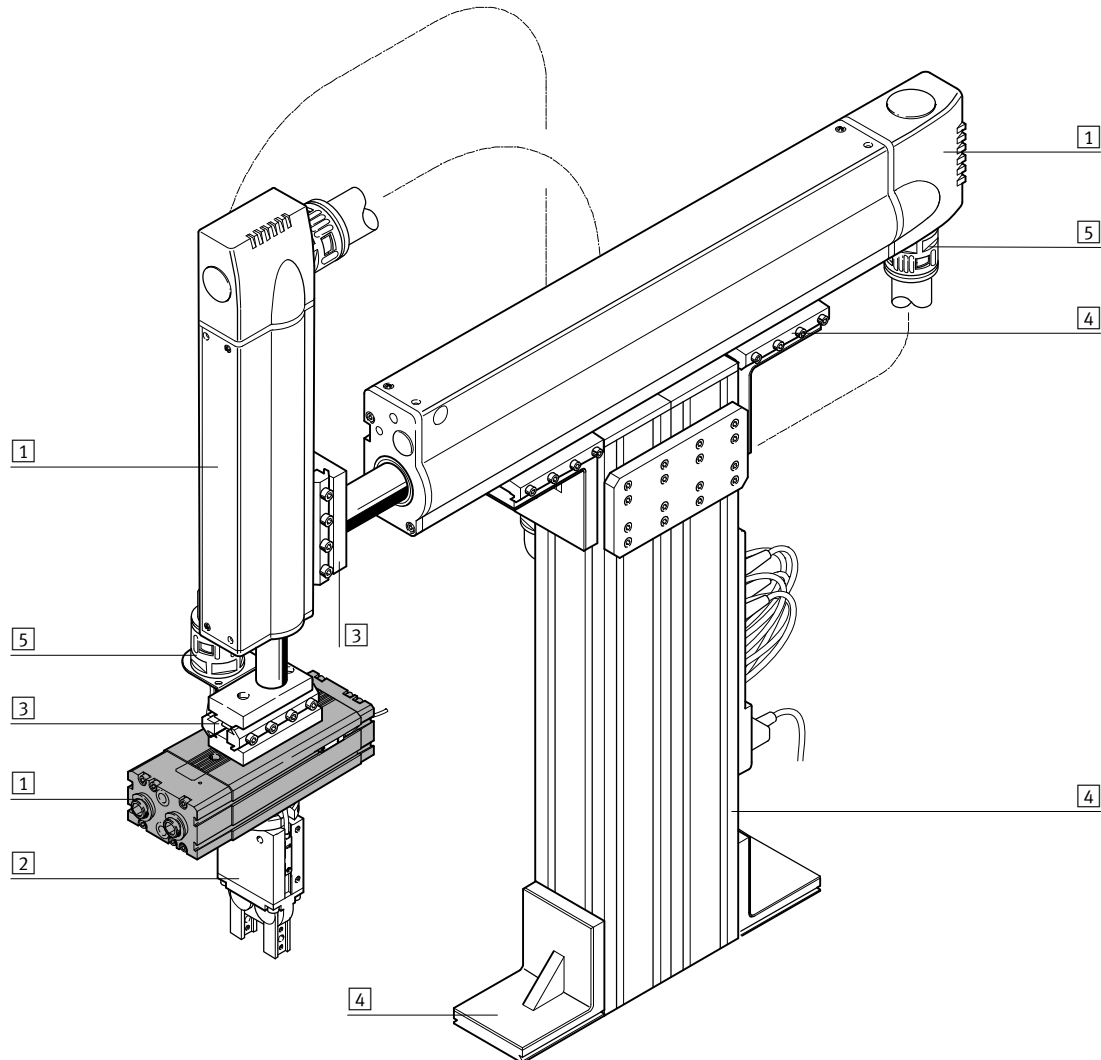
via thread in housing profile



## Semi-rotary drives DRQD/DRQD-B, twin pistons

System example

System product for handling and assembly technology



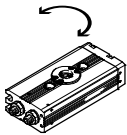
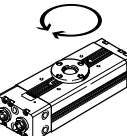
System elements and accessories		
	Brief description	→ Page/Internet
1	Drive units	Wide range of combination options within handling and assembly technology drive
2	Grippers	Wide range of combination options within handling and assembly technology gripper
3	Adapters	For drive/drive combinations 67
		For drive/gripper combinations gripper
4	Basic mounting components	Profiles and profile connectors as well as profile/drive connectors basic component
5	Installation components	For achieving a clear-cut, safe layout for electrical cables and tubing installation component
-	Axes	Wide range of combination options within handling and assembly technology axes
-	Motors	Servo and stepper motors, with or without gearing motor

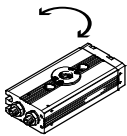
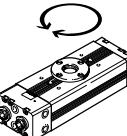
- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD/DRQD-B, twin pistons

Product range overview

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Function	Version	Type	Piston Ø [mm]	Swivel angle [°]	Adjustable end-position range [°]	Position sensing	End-position adjustment with flexible buffers in the end positions J...
						A	
Double- acting	Basic version						
		DRQD	6, 8, 12	90	-20 ... +6	■	■
				180	-60 ... +6		
		DRQD-B	16, 20, 25, 32	90	-20 ... +6	■	-
				180	-320 ... +6		
				360			
0 ... 340							
	DRQD	40, 50	90	-20 ... +6	■	-	
			180				
			360				
			0 ... 340				

Function	Version	Type	Piston Ø [mm]	Output shaft		
				Spigot shaft	Flanged shaft	Integrated adapter for direct mounting of grippers A...
				ZW	FW	A...
Double- acting	Basic version					
		DRQD	6, 8, 12	■	■	■
		DRQD-B	16, 20, 25, 32	■	■	-
	DRQD	40, 50	■	■	-	

- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD/DRQD-B, twin pistons

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Product range overview

Type	Piston Ø [mm]	Type of cushioning			Pneumatic connection	
		Pneumatic cushioning, adjustable PPV)	Flexible cushioning elements, adjustable P1)	Hydraulic shock absorber, self-adjusting YSRJ)	left AL	right AR
<b>Basic version</b>						
DRQD	6, 8, 12	-	-	-	-	■
DRQD-B	16, 20, 25, 32	■	■	■	■	■
DRQD	40, 50	■	-	■	■	■

Type	Piston Ø [mm]	Intermediate position Z1	Energy through-feed SD..., E...	Adapter kits for grippers	→ Page/Internet
<b>Basic version</b>					
DRQD	6, 8, 12	-	■	■	6
DRQD-B	16, 20, 25, 32	■	■	■	22
DRQD	40, 50	■	■	■	22

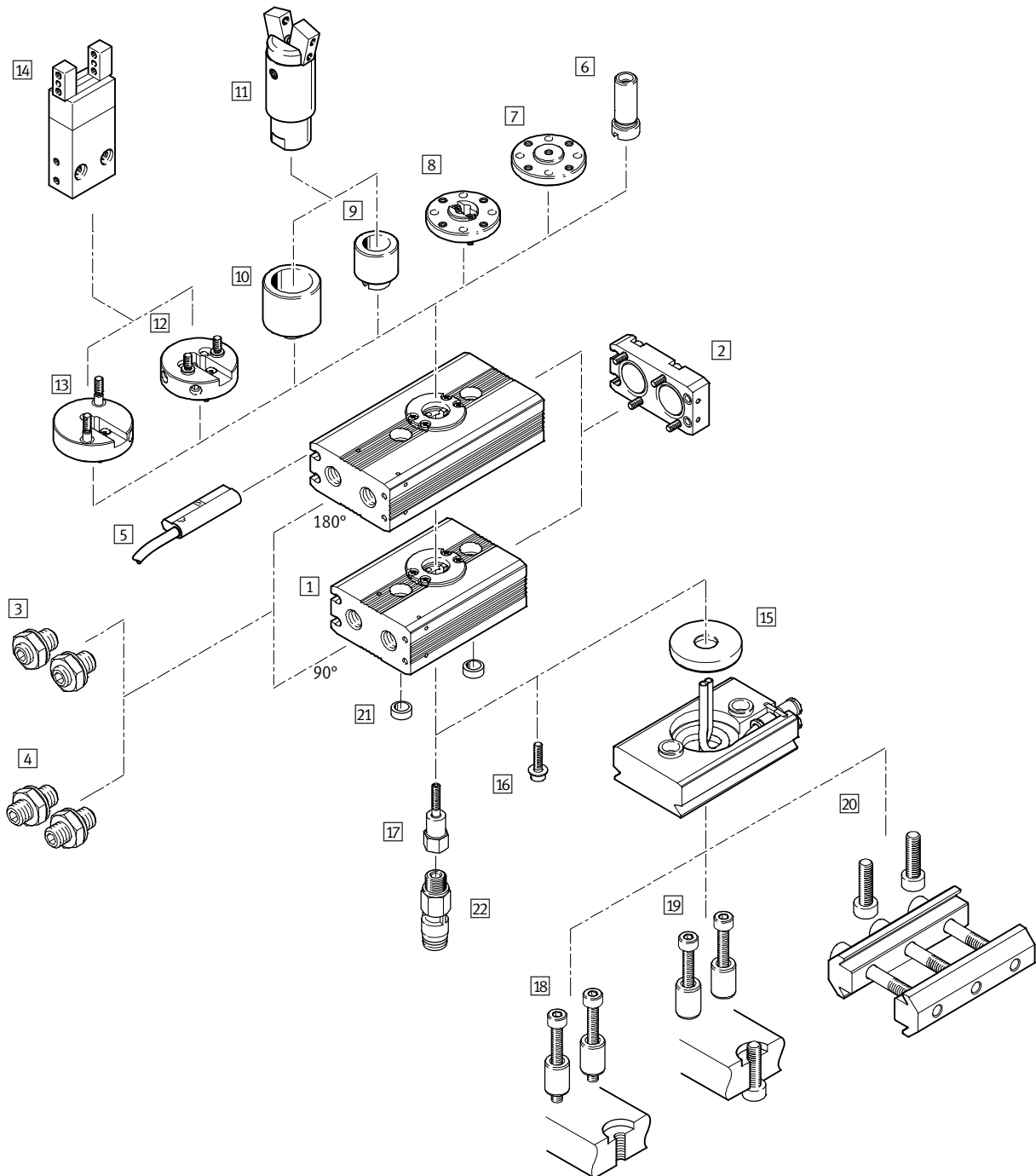
- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-6 ... 12, twin-pistons

Peripherals overview

FESTO

Piston  $\varnothing$  6 ... 12



## Semi-rotary drives DRQD-6 ... 12, twin-pistons

Peripherals overview

Variants, mounting attachments and accessories							
	Brief description	Piston Ø			→ Page/Internet		
		6	8	12			
1	Centre section	Centre section for 90° or 180° swivel angle	■	■	■	9	
2	Connector cap	With integrated compressed air directional function	■	■	■		
3	End-position adjustment J20	Flexible end position cushioning with adjustable end positions (-20 ... +6°)	■	■	■		
4	End-position adjustment J60	Flexible end position cushioning with adjustable end positions (-60 ... +6°)	■	■	■		
5	Position sensing A	Contactless via proximity sensors SME-/SMT-10	■	■	■	65	
6	Spigot shaft ZW <sup>1)</sup>	Hollow with woodruff key	■	■	■	9	
7	Flanged shaft FW <sup>1)</sup>	Hollow	■	■	■		
8	Flanged shaft FW-SD32	Hollow, for energy through-feed	-	■	■		
9	Adapters A08 <sup>2)</sup>	For grippers HGWM-08-...-G8 and HGPM-08-...-G8	■	■	■		
10	Adapters A12 <sup>2)</sup>	For grippers HGWM-12-...-G8 and HGPM-12-...-G8	■	■	■		
11	Grippers HGPM/HGWM	HGPM-...-G8 and HGWM-...-G8	■	■	■		gripper
12	Adapters AS1	For grippers DHPS-06-A, DHRS-10-A and DHWS-10-A	-	■	■		9
13	Adapters AS2	For grippers DHDS-16-A	-	■	■		
14	Grippers DHPS/DHDS/DHRS/DHWS	DHPS-06-A, DHDS-16-A, DHRS-10-A, DHWS-10-A	-	■	■		gripper
15	Energy through-feed SD32	2 tubes with O.D. 3 mm	-	■	■		14
16	Socket head screw ZS	Mounting of ZW and FW	■	■	■	9	
17	Hollow bolt HS	Mounting of ZW, FW, A08, A12 and air supply for attachments	■	■	■		
18	Type of mounting B1	For connection of DRQD/FW-SD32: Locking screws in centring sleeves	■	■	■		
19	Type of mounting B2	For connection of DRQD/FW-SD32: Through screws in attachment	■	■	■		
20	Type of mounting B3	For connection of DRQD/FW-SD32: Clamping via profile, grid 40 mm	■	■	■		
21	Centring sleeve ZBH	For centring (2 pieces included in scope of delivery for DRQD)	■	■	■	14	
22	Rotary push-in fitting <sup>3)</sup> QS	Quick Star push-in fittings, rotatable with ball bearing	■	■	■		

1) The socket head screw ZS is included in the scope of delivery. The hollow bolt HS must be ordered separately

2) Only in conjunction with hollow bolt HS. The hollow bolt HS must be ordered separately

3) For energy through-feed in combination with HS

- 1 - Type discontinued  
Available up until 2016

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## Semi-rotary drives DRQD-6 ... 12, twin-pistons

Type codes

DRQD - 6 - 180 - J60 - A - A12 - - HS - B2 - B - -

### Type

Double-acting	
DRQD	Semi-rotary drive

### Piston Ø [mm]

### Swivel angle [°]

### End-position adjustment [°]

J20	-20 ... +6
J60	-60 ... +6

### Position sensing

A	For proximity sensing
---	-----------------------

### Output shaft/adapter

ZW	Spigot shaft
FW	Flanged shaft
A08	Adapter for micro, angle and parallel grippers
A12	
AS1	Adapter for parallel, three-point, angle and radial grippers
AS2	

### Energy through-feed

SD32	2 tubes with O.D. 3 mm
------	------------------------

### Type of screw

ZS	Socket head screw
HS	Hollow bolt

### Type of mounting

B1	Locking screws in centring sleeves
B2	Through screws in attachment
B3	Clamping via profile, 40 mm

### User's manual

	German
E	English
F	French
S	Spanish
I	Italian
V	Swedish
B	Express waiver – no user manual to be included (already available)

### EU certification

EX4	II 2GD
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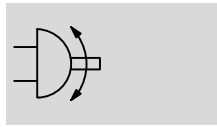
**- 1 - Type discontinued**  
**Available up until 2016**

**FESTO**

## Semi-rotary drives DRQD-6 ... 12, twin-pistons

Technical data

### Function



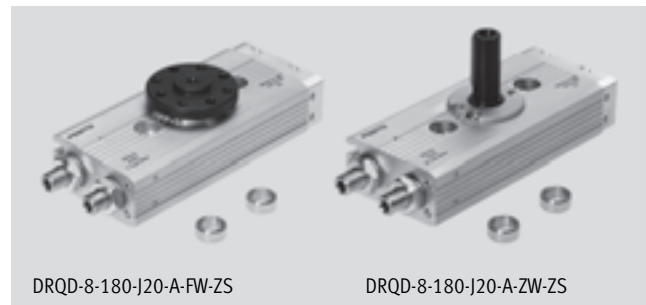
Diameter  
6 ... 12 mm

Force  
0.16 ... 0.76 Nm

[www.festo.com](http://www.festo.com)

### Variants

- 90° and 180° swivel angle
- Spigot or flanged shaft
- Adapters for grippers
- End-position adjustment
- Position sensing
- Energy through-feed
- Different types of mounting



DRQD-8-180-J20-A-FW-ZS

DRQD-8-180-J20-A-ZW-ZS


General technical data			
Piston Ø	6	8	12
Pneumatic connection	M3		
	HS	M5	
	SD32	–	QS...-3 for tube O.D. 3 mm
Constructional design	Semi-rotary drive with twin pistons based on the rack and pinion principle		
Cushioning	Flexible buffer at both ends		
Position sensing	For proximity sensing		
Type of mounting	Via through-hole		
	Via female thread		
Assembly position	Any		

Operating and environmental conditions			
Piston Ø	6	8	12
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:-:-]		
Operating pressure [bar]	1 ... 8		
	SD32	–	1.5 ... 8
Adjustable end-position range per end position [°]	J20	–20 ... +6	
	J60	–60 ... +6	
Max. permissible swivelling frequency at 6 bar (for completed cycle of motion) [Hz]	90°	5	4
	180°	3.5	2.5
	SD32	–	A reduction of max. 5% of the values indicated above
Repetition accuracy [°]	< 0.2		
Ambient temperature <sup>1)</sup> [°C]	–10 ... +60		
Corrosion resistance class CRC <sup>2)</sup>	1		
ATEX	Specified types → <a href="http://www.festo.com">www.festo.com</a>		

1) Note operating range of proximity sensors

2) Corrosion resistance class 1 according to Festo standard 940 070

Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers

 Type discontinued  
Available up until 2016


## Semi-rotary drives DRQD-6 ... 12, twin-pistons

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Technical data

ATEX <sup>1)</sup>	
ATEX category for gas	II 2G
Explosion ignition protection type for gas	c T4 X
ATEX category for dust	II 2D
Explosion ignition protection type for dust	c 120°C X
Explosion-proof temperature rating	-10°C ≤ Ta ≤ +60°C
CE marking (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)

1) Make sure that the accessories are suited for ATEX application.

Forces and torques				
Piston Ø		6	8	12
Theoretical torque [Nm] at 6 bar		0.16	0.33	0.76
	SD32	–	0.28	0.72
 Note: If torque acts against the direction of rotation in the end position, a drive with a rating of twice the maximum theoretical torque should be selected.				
Max. permissible radial and axial forces		Diagrams → 13		
Max. permissible mass moment of inertia [kgm <sup>2</sup> ]		0.075 x 10 <sup>-4</sup>	0.25 x 10 <sup>-4</sup>	0.7 x 10 <sup>-4</sup>
		The data applies to the variants ZW, FW, A... without grippers, unthrottled.		

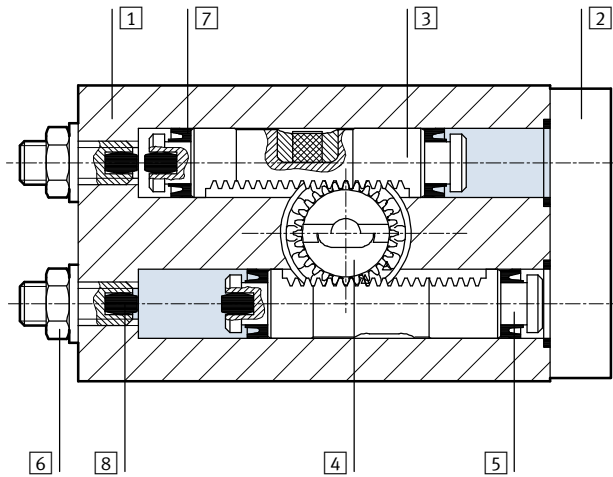
Weights [g]					
Piston Ø		6	8	12	
Centre section	90°	J20	66	90	145
		J60	67	92	148
	180°	J20	82	111	177
		J60	83	113	180
Output shaft	ZW	2	4		
	FW	4	7		
Adapters	A08	6	11		
	A12	6	11		
	AS1	–	13		
	AS2	–	15		
Screws	ZS	1			
	HS	4		5	
Flanged shaft with energy through-feed	SD32	–	71		
Mounting in combination with SD32	B1	–	17		
	B2	–	17	18	
	B3	–	81		

## Semi-rotary drives DRQD-6 ... 12, twin-pistons

Technical data

### Materials

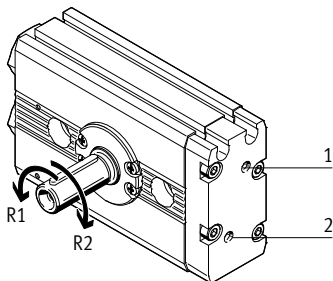
Sectional view



Piston $\varnothing$	6	8	12
1	Cylinder barrel (centre section) Anodised aluminium		
2	Connector cap Anodised aluminium		
3	Gear rack Anodised aluminium		
4	Pinion Stainless steel; milled teeth		
5	Piston Anodised aluminium		
6	Threaded pin, hex nuts Galvanised steel		
7	Piston seal	Nitrile rubber	Polyurethane
8	Buffer for end-position cushioning Nitrile rubber		
-	DUO spiral tubing Polyurethane		
-	Woodruff key Steel		
-	Hollow bolt, centring sleeves Stainless steel		
-	Static seals Steel, nitrile rubber		
-	Material note Copper, PTFE and silicone-free		

### Direction of rotation of the drive shaft

Pneumatic actuation of ports 1 or 2 produces a rotational movement in direction R1 or R2 respectively.



## Semi-rotary drives DRQD-6 ... 12, twin-pistons

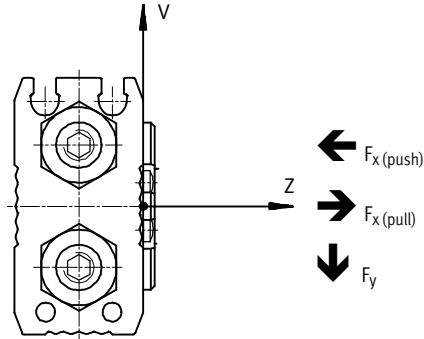
Technical data

### Max. permissible radial and axial forces on the drive shaft

#### Combined load

A semi-rotary drive DRQD-8-... is to be statically loaded with a radial force  $F_y = 60\text{ N}$ , which is at a distance of  $Z = 5\text{ mm}$  from the housing, and an

axial force  $F_{x, \text{push}} = 30\text{ N}$ , which is at a distance of  $V = 12\text{ mm}$  from the shaft (→ diagram of flanged shaft on right).



#### Question:

Is it permissible to statically load a semi-rotary drive DRQD-8-... with these combined forces?

#### Answer:

Graph 1 (→ 13) indicates that the maximum permissible radial force is  $F_{y, \text{max. (stat.)}} (5) = 193\text{ N}$  for a distance

$Z = 5\text{ mm}$ . Graph 3 (→ 13) indicates that the maximum axial force is

$F_{x, \text{push max. (stat.)}} (12) = 169\text{ N}$  for a distance  $V = 12\text{ mm}$ .

The following equation applies to combined loads:

$$\frac{F_y(z)}{F_{y, \text{max. (z)}}} + \frac{F_{x, \text{push}}(v)}{F_{x, \text{push, max. (v)}}} + \frac{F_{x, \text{pull}}(v)}{F_{x, \text{pull, max. (v)}}} \leq 1$$

The following values are assumed:

$F_y(5) = 60\text{ N}$   
 $F_{x, \text{push (stat.)}}(12) = 30\text{ N}$   
 $F_{y, \text{max. (stat.)}}(5) = 193\text{ N}$   
 $F_{x, \text{max. (stat.)}}(12) = 169\text{ N}$

With values inserted:

$$\frac{60\text{ N}}{193\text{ N}} + \frac{30\text{ N}}{169\text{ N}} \leq 1$$

$$0.311 + 0.178 \leq 1$$

$$0.489 \leq 1$$

Thus the drive may be statically loaded with the forces indicated above.

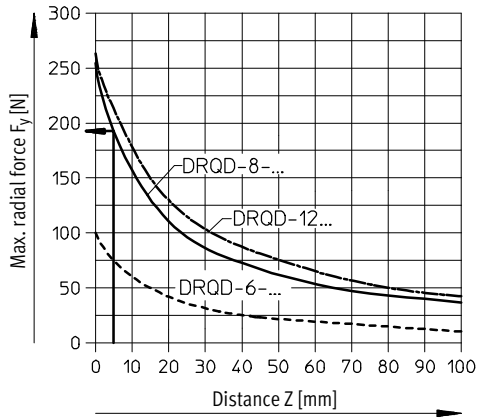
## Semi-rotary drives DRQD-6 ... 12, twin-pistons

Technical data

### Maximum static radial force

Graph 1

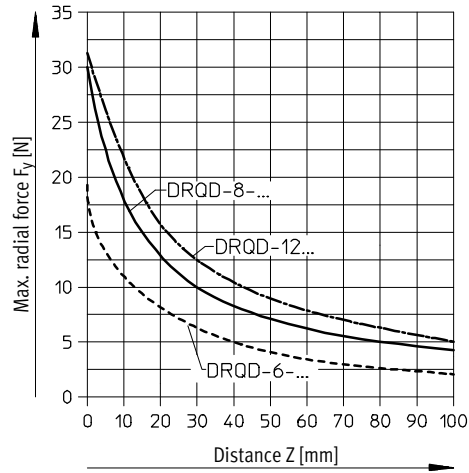
$$F_{y, \text{max. (stat.)}} = f(z)$$



### Maximum dynamic radial force

Graph 2

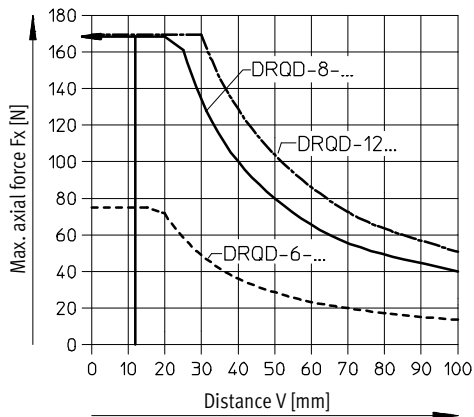
$$F_{y, \text{max. (dyn.)}} = f(z)$$



### Maximum static pull and push axial forces

Graph 3

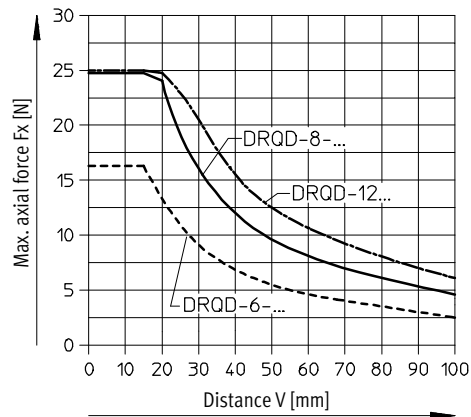
$$F_{x, \text{max. (stat.)}} = f(v)$$



### Maximum dynamic pull and push axial forces

Graph 4

$$F_{x, \text{max. (dyn.)}} = f(v)$$



**- 1 - Type discontinued**  
**Available up until 2016**

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## Semi-rotary drives DRQD-6 ... 12, twin-pistons

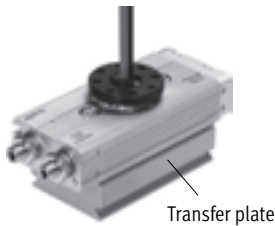
Technical data

### Energy through-feed

The energy through-feed consists of DUO tubing (two lengths of tubing are fused together into a pair), whereby each tube has an O.D. of 3 mm. Compressed air is supplied via the push-in

fittings in the transfer plate. Only Quick-Star push-in fittings may be used to connect compressed air tubing to consuming devices (e.g. grippers).

### DRQD-...-SD...



- For piston  $\varnothing$  8 ... 12
- Swivel angles of up to 180° are possible
- 1 DUO tube

Technical data			
Piston $\varnothing$		8	12
Number of spiral tubes		1 DUO tube	
Standard nominal flow rate per tube	[l/min]	min. 70	
Theoretical air consumption per tube at 6 bar	[cm <sup>3</sup> ]	5.3	
Operating pressure as a function of ambient temperature	[bar]	0 ... 10 (at -10 ... +30 °C) 0 ... 9 (at +30 ... +40 °C) 0 ... 7.8 (at +40 ... +60 °C)	
Push-in fittings for connection to consuming device		QS...-3 for tube O.D. of 3 mm	

## Semi-rotary drives DRQD-6 ... 12, twin-pistons

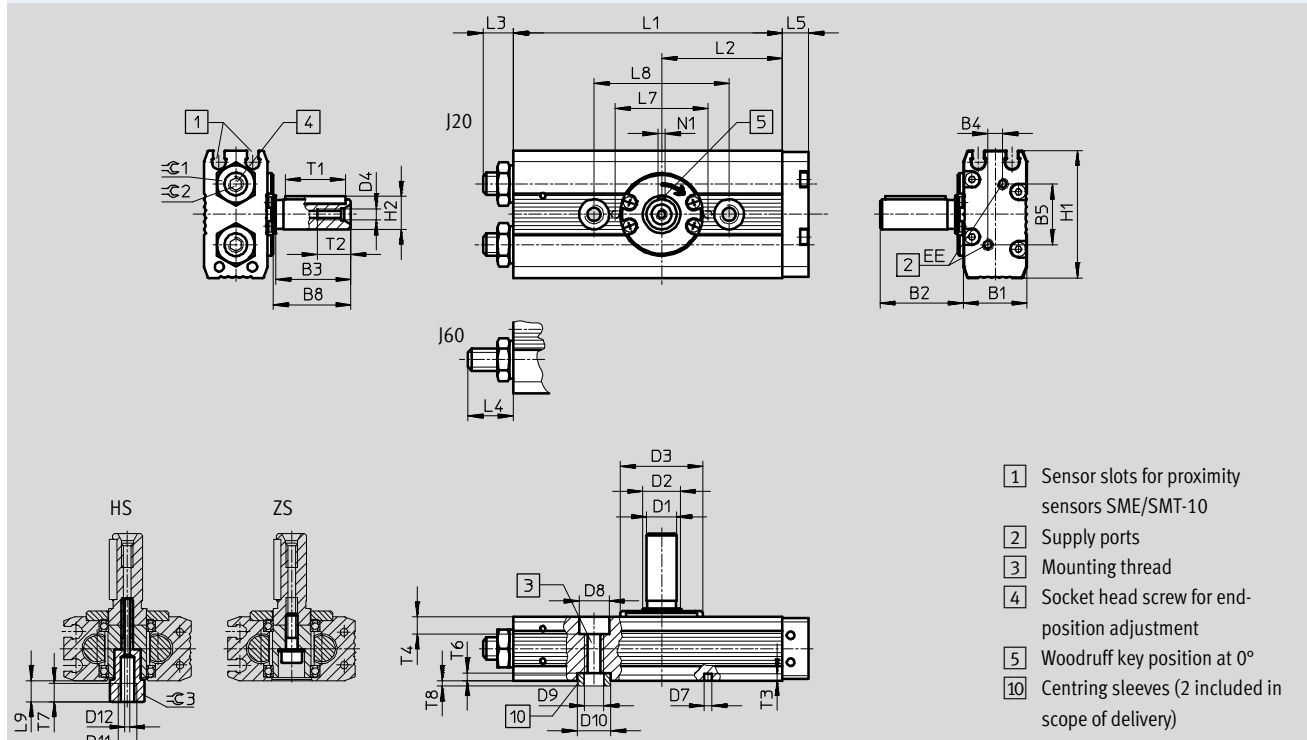
Technical data

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### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)


ZW – Spigot shaft



∅	Swivel angle [°]	B1	B2	B3	B4	B5	B8	D1	D2	D3 <sup>1)</sup>	D4	D7	D8	D9	D10	D11	D12	EE	H1	H2	
[mm]	[°]							∅ g7	∅ g6	∅ f7		∅ H8	∅ H8		∅ H7						
6	90	15.4	18.2	16	2	13.6	16.7	6	8	20	M2.5	2	6	M4	7	M5	1.3	M3	31	6.8	
	180																				
8	90	17	22.2	20	4	16.2	20.7	8	10	22	M3	-	8	M5	9	M5	1.3	M3	34	8.8	
	180																				
12	90	21	22.2	20	6	18.2	20.7	8	10	22	M3	-	8	M5	9	M5	1.3	M3	41	8.8	
	180																				

∅	Swivel angle [°]	L1	L2	L3	L4	L5	L7	L8	L9	N1	T1	T2	T3	T4	T6	T7	T8	⊖C1	⊖C2	⊖C3
[mm]	[°]			max.	max.		±0.03	±0.03		P9										
6	90	46.7	20.2	7.1	11.1	7.5	20	30	6.2	2	12	7	1.8	3.4	1.6	5	1.4	8	2.5	8
	180	61.8	27.75																	
8	90	54.2	23.45	8.1	12.1	7	-	36	5.7	2	16	9	-	4.6	2	5	2	10	3	8
	180	71.8	32.25																	
12	90	59.2	25.95	9.1	13.1	8	-	36	5.7	2	16	9	-	4.6	2	5	2	13	4	8
	180	76.8	34.75																	

1) Centring possible with D3

-  - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-6 ... 12, twin-pistons

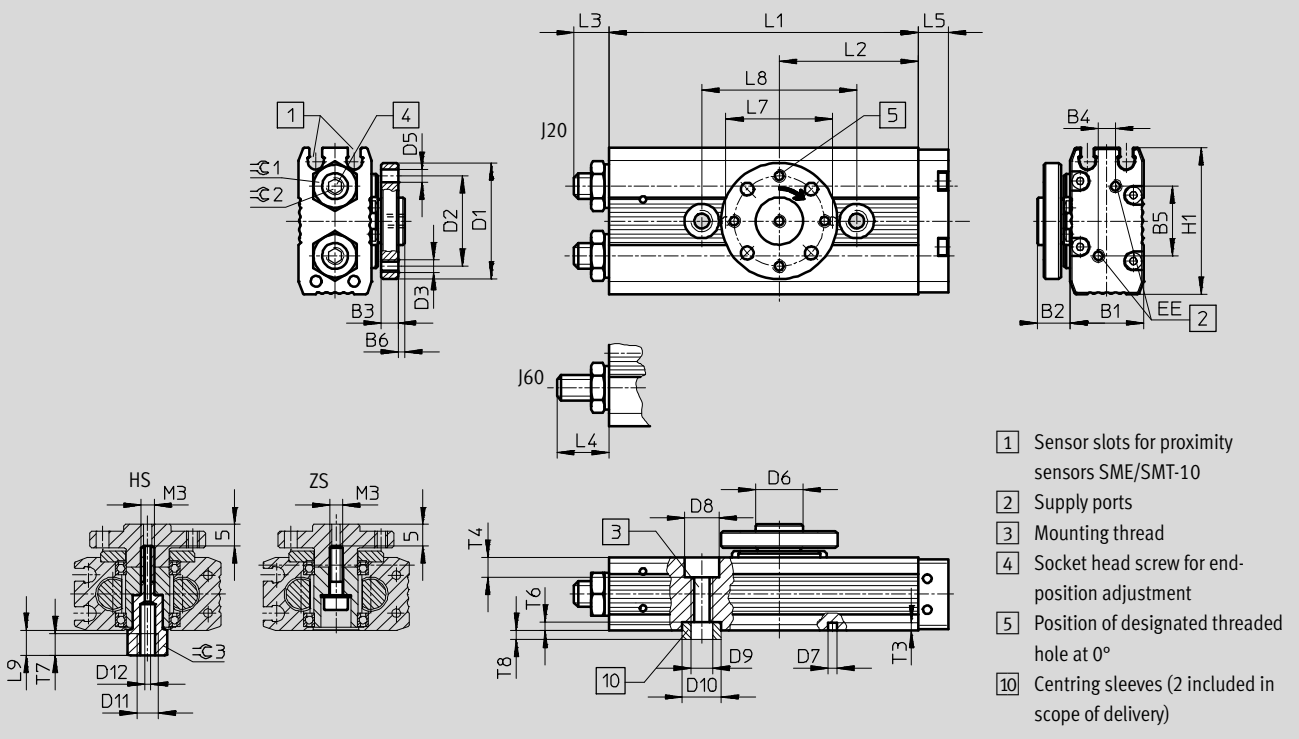
Technical data

FESTO

### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

FW – Flanged shaft



∅	Swivel angle [°]	B1	B2	B3	B4	B5	B6	D1	D2	D3	D5	D6	D7	D8	D9	D10	D11	D12
[mm]								∅	∅		∅ H7	∅ g7	∅ H8	∅ H8		∅ H7		∅
6	90	15.4	7.7	4	2	13.6	1.5	23	16	M3	3	8	2	6	M4	7	M5	1.3
	180																	
8	90	17	7.7	4	4	16.2	1.5	27	21	M3	3	11	-	8	M5	9	M5	1.3
	180																	
12	90	21	7.7	4	6	18.2	1.5	27	21	M3	3	11	-	8	M5	9	M5	1.3
	180																	

∅	Swivel angle [°]	EE	H1	L1	L2	L3	L4	L5	L7	L8	L9	T3	T4	T6	T7	T8	≙C1	≙C2	≙C3
[mm]						max.	max.		±0.03	±0.03									
6	90	M3	31	46.7	20.20	7.1	11.1	7.5	20	30	6.2	1.8	3.4	1.6	5	1.4	8	2.5	8
	61.8			27.75															
8	90	M3	34	54.2	23.45	8.1	12.1	7	-	36	5.7	-	4.6	2	5	2	10	3	8
	71.8			32.25															
12	90	M3	41	59.2	25.95	9.1	13.1	8	-	36	5.7	-	4.6	2	5	2	13	4	8
	76.8			34.75															



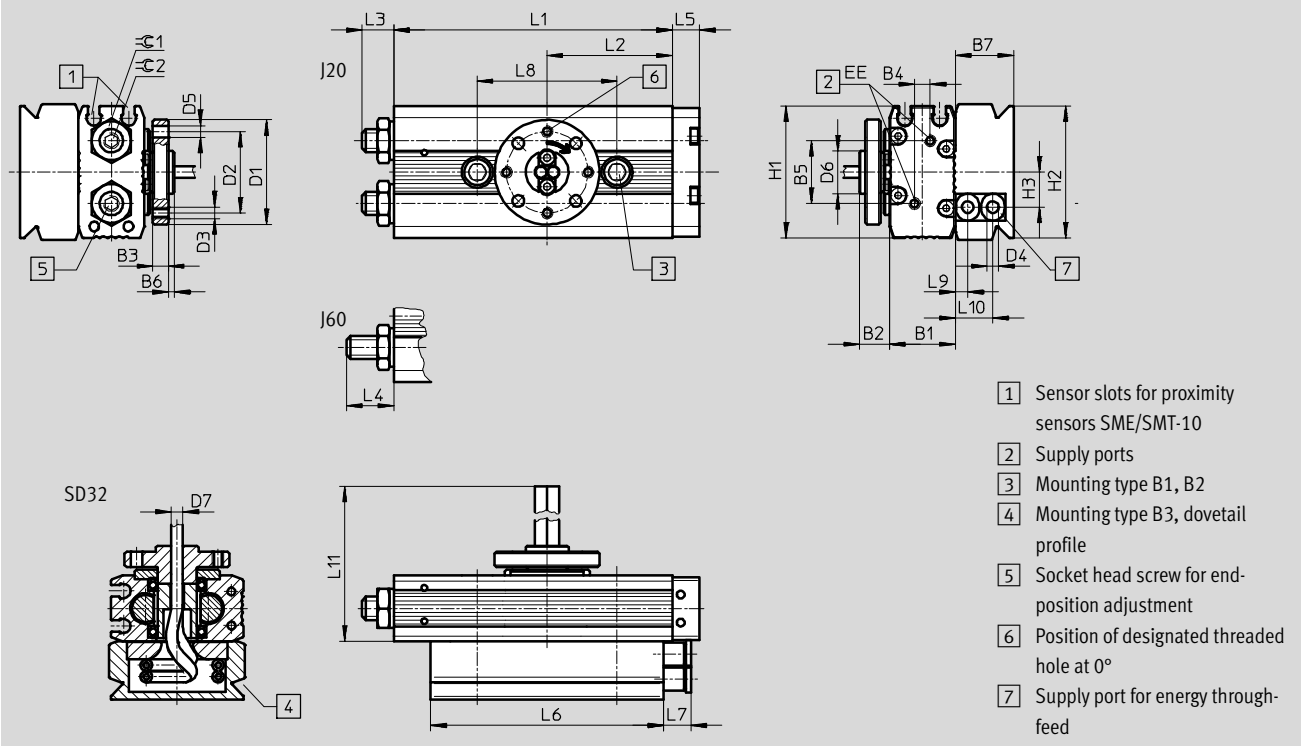
# Semi-rotary drives DRQD-6 ... 12, twin-pistons

Technical data

## Dimensions


Download CAD data → [www.festo.com](http://www.festo.com)

FW-SD32 – Energy through-feed



∅	Swivel angle	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	D4	D5	D6	D7	EE
[mm]	[°]								∅	∅	∅	∅	∅	∅	∅	
8	90	17	7.7	4	4	16.2	1.5	15	27	21	M3	3	3	11	3	M3
	180															
12	90	21	7.7	4	6	18.2	1.5	15	27	21	M3	3	3	11	3	M3
	180															

∅	Swivel angle	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	∠C1	∠C2
[mm]	[°]						max.	max.			±0.03						
8	90	34	35	9	54.2	23.45	8.1	12.1	7	60	7	36	3.2	9.7	292	10	3
	180				71.8	32.25											
12	90	41	35	9	59.2	25.95	9.1	13.1	8	60	7	36	3.2	9.7	292	13	4
	180				76.8	34.75											

-  - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-6 ... 12, twin-pistons

Technical data

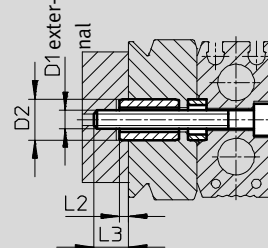
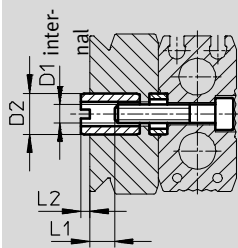
FESTO

### Dimensions – Mounting type

Download CAD data → [www.festo.com](http://www.festo.com)

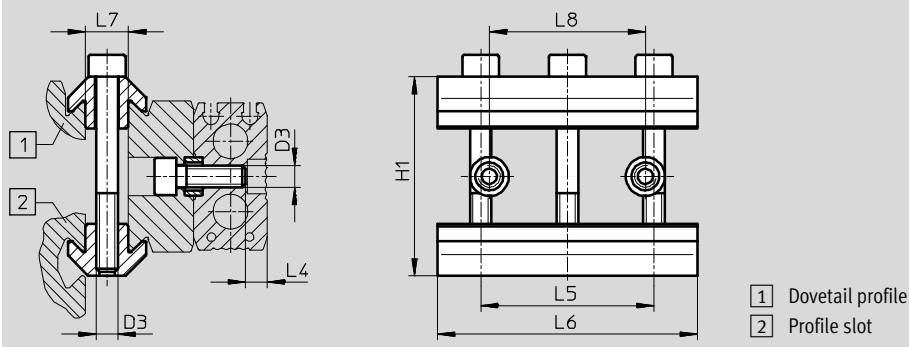
B1 – Counter screws in centring sleeves

B2 – Through screws in attachment



For $\varnothing$ [mm]	Swivel angle [°]	D1	D2 $\varnothing$ h7	L1	L2	L3
8	90	M4	9	4.9	2	8.2
	180					
12	90			5.9		9.2
	180					

### B3 – Clamping via profile



For $\varnothing$ [mm]	Swivel angle [°]	D3	H1	L4	L5	L6	L7 +0.1	L8 ±0.03
8	90	M5	46	5	40	60	10	36
	180							
12	90			9				
	180							

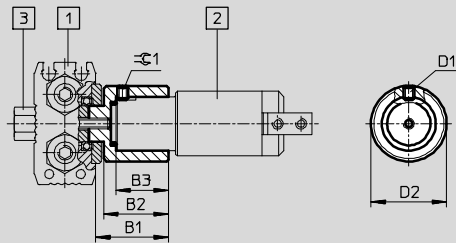
## Semi-rotary drives DRQD-6 ... 12, twin-pistons

Technical data

### Dimensions – Adapter for gripper

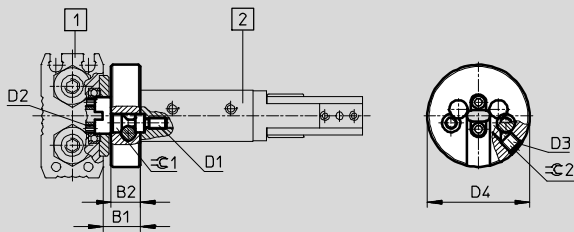
Download CAD data → [www.festo.com](http://www.festo.com)

#### A08/A12

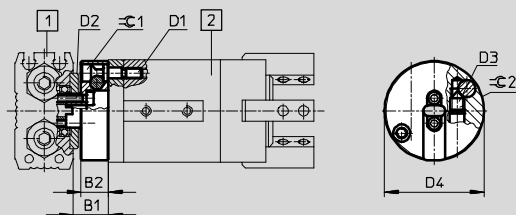


For adapter	1 Drive	2 Grippers	3 Type of screw	B1	B2	B3 ±0.03	D1	D2 Ø	±0.1
A08	DRQD-6-... DRQD-8-... DRQD-12-...	HGWM-08-...-G8 HGPM-08-...-G8	HS	15.2	13	9.6	M3	16	1.5
A12	DRQD-6-... DRQD-8-... DRQD-12-...	HGWM-12-...-G8 HGPM-12-...-G8	HS	20.2	18	14.6	M3	21	1.5

#### AS1



#### AS2



For adapter	1 Drive	2 Grippers	B1	B2	D1	D2	D3	D4 Ø	±0.1	±0.2
AS1	DRQD-8-... DRQD-12-...	DHPS-06-... DHRS-10-... DHWS-10-...	10.2	8	M3	M2	M4	28	2.5	2
AS2	DRQD-8-... DRQD-12-...	DHDS-16-...	10.2	8	M3	M2	M4	29	2.5	2

- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-6 ... 12, twin-pistons

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Ordering data – Modular products

Ordering table						
Size	6	8	12	Condi- tions	Code	Enter code
<b>M</b> Module No.	<b>187431</b>	<b>187432</b>	<b>187433</b>			
Function	Semi-rotary drive with twin pistons				<b>DRQD</b>	DRQD
Piston Ø [mm]	6	8	12		-...	
Swivel angle	90°				<b>-90</b>	
	180°				<b>-180</b>	
End-position adjustment	Adjusting range +6°/-20°				<b>-J20</b>	
	Adjusting range +6°/-60°				<b>-J60</b>	
Position sensing	For proximity sensing				<b>-A</b>	-A
Output shaft/adaptor	Spigot shaft			<b>1</b>	<b>-ZW</b>	
	Flanged shaft			<b>2</b>	<b>-FW</b>	
	Adapter for HGWM-08		Adapter for HGPM-08/HGWM-08	<b>3</b>	<b>-A08</b>	
	Adapter for HGWM-12		Adapter for HGPM-12/HGWM-12	<b>3</b>	<b>-A12</b>	
	-		Adapter for DHWS/DHRS-10-A, DHPS-6-A	<b>4</b>	<b>-AS1</b>	
	-		Adapter for DHDS-16-A	<b>4</b>	<b>-AS2</b>	

- 1 ZW** Not with energy through-feed SD32  
Only with screw type ZS, HS
- 2 FW** Required for energy through-feed SD32  
Only with screw type ZS, HS

- 3 A08, A12** Not with energy through-feed SD32  
Only with screw type HS
- 4 AS1, AS2** Required for energy through-feed SD32  
Not with screw type ZS, HS

Transfer order code

**DRQD** -  -  -  -  - **A** -

**- 1 - Type discontinued**  
**Available up until 2016**

## Semi-rotary drives DRQD-6 ... 12, twin-pistons

**FESTO**

Ordering data – Modular products

Ordering table						
Size	6	8	12	Condi- tions	Code	Enter code
<input type="checkbox"/> Energy through-feed	–	2x tubing O.D. 3 mm		<input type="checkbox"/> 5	<b>-SD32</b>	
Type of screw	Socket head screw				<b>-ZS</b>	
	Hollow bolt				<b>-HS</b>	
Type of mounting	–	Mounting type 1		<input type="checkbox"/> 6	<b>-B1</b>	
	–	Mounting type 2		<input type="checkbox"/> 6	<b>-B2</b>	
	–	Mounting type 3		<input type="checkbox"/> 6	<b>-B3</b>	
Alternative language user docu- mentation (standard is German)	English				<b>-E</b>	
	French				<b>-F</b>	
	Spanish				<b>-S</b>	
	Italian				<b>-I</b>	
	Swedish				<b>-V</b>	
	Express waiver – no user manual to be included (already available)					<b>-B</b>
EU certification	II 2GD				<b>-EX4</b>	

**SD32** Only with mounting type B1, B2, B3

**B1, B2, B3** Only with energy through-feed SD32  
 Not with certification EX4

Transfer order code

–  –  –  –  –

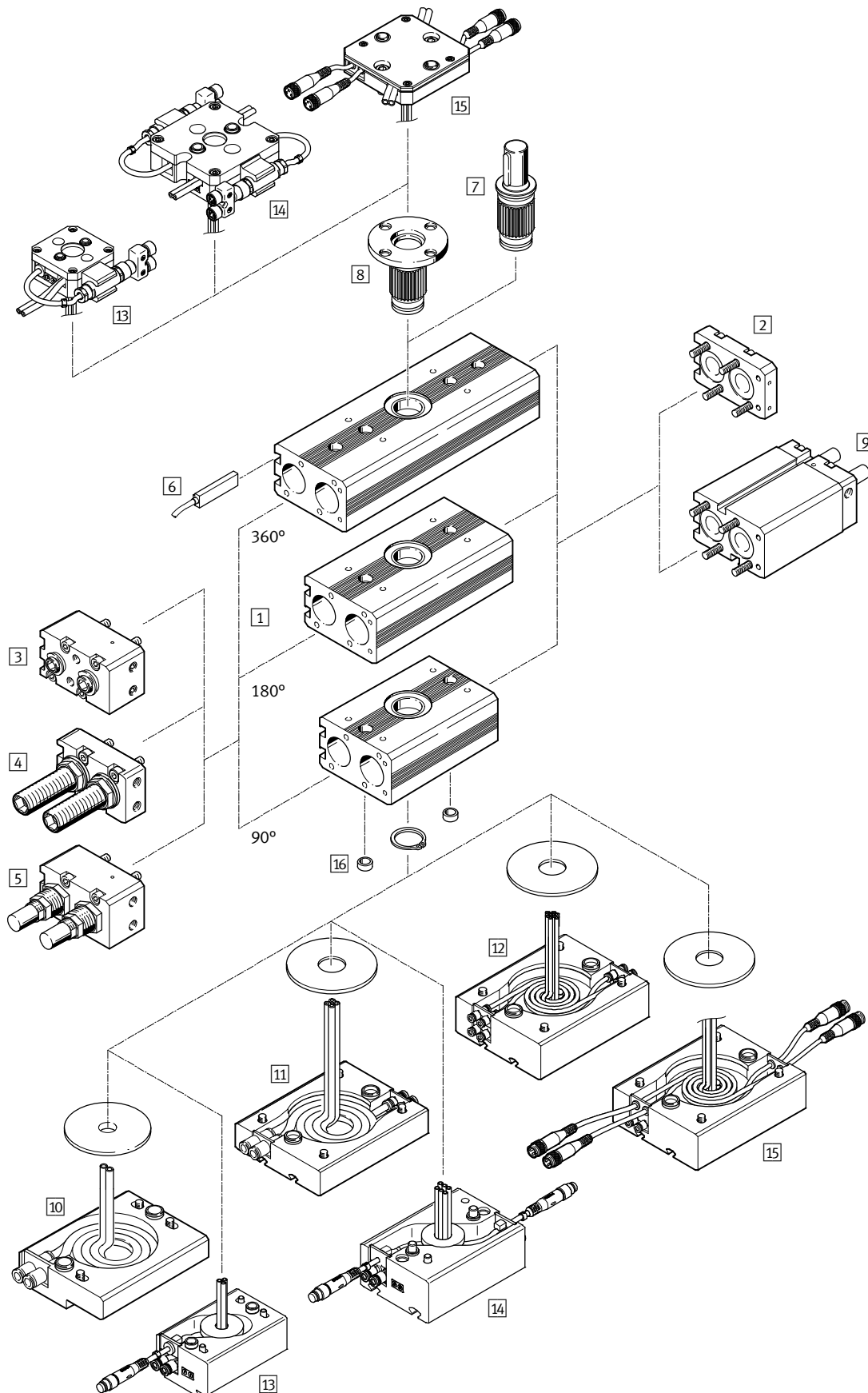
- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

Peripherals overview

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Piston  $\varnothing$  16 ... 50



## Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

Peripherals overview

Variants, mounting attachments and accessories									
	Brief description	Piston $\varnothing$						→ Page/Internet	
		16	20	25	32	40	50		
1	Centre section	Centre section for 90°, 180° or 360° swivel angle	■	■	■	■	■	■	60
2	End cap AL, AR	With integrated compressed air directional function	■	■	■	■	■	■	
3	Connector cap PPVJ	Flexible end position cushioning with adjustable end positions (–20° ... +6°)	■	■	■	■	■	■	
4	Connector cap P1J	Adjustable cushioning elements with adjustable end positions	■	■	■	■	-	-	
5	Connector cap YSRJ	Adjustable shock absorbers with adjustable end positions (–20° ... +6°)	■	■	■	■	■	■	
6	Position sensing A	Contactless via proximity sensors SME-/SMT-8	■	■	■	■	■	■	65
7	Spigot shaft ZW	With woodruff key	■	■	■	■	■	■	60
8	Flanged shaft FW	Hollow, for energy through-feed	■	■	■	■	■	■	
9	Intermediate position Z1	Mid-position at centre of nominal angles of rotation of 90° and 180° ( $\pm 10^\circ$ )	■	■	■	■	■	■	35
10	Energy through-feed SD32, SD42	2 tubes with O.D. 3 or 4 mm	■	■	■	■	-	-	36
	Energy through-feed SD62	2 tubes with O.D. 6 mm	-	-	-	-	■	■	
11	Energy through-feed SD64	4 tubes with O.D. 6 mm	-	-	-	-	■	■	
12	Energy through-feed SD48	8 tubes with O.D. 4 mm	-	-	-	-	■	■	
13	Energy through-feed E422	2 tubes with O.D. 4 mm and 1 4-pin cable to 2 3-pin cables	■	■	-	-	-	-	
14	Energy through-feed E444	4 tubes with O.D. 4 mm and 2 4-pin cables to 4 3-pin cables	-	-	■	■	-	-	
15	Energy through-feed E644	4 tubes with O.D. 6 mm and 4 3-pin cables	-	-	-	-	■	■	
16	Centring sleeve ZBH	For centring (2 pieces included in scope of delivery for DRQD)	■	■	■	■	■	■	64

- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

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Type codes

		DRQD	-	B	-	32	-	90	-	YSRJ	-	A	-	AR	-	FW
<b>Type</b>																
Double-acting																
DRQD	Semi-rotary drive															
<b>Product design</b>																
B	Function-optimized															
<b>Piston Ø [mm]</b>																
<b>Swivel angle [°]</b>																
<b>Type of cushioning</b>																
PPVJ	Adjustable end-position cushioning															
P1J	Adjustable flexible cushioning elements															
YSRJ	Adjustable shock absorbers															
<b>Position sensing</b>																
A	For proximity sensing															
<b>Pneumatic connection</b>																
AL	Supply port, left															
AR	Supply port, right															
<b>Output shaft</b>																
ZW	Spigot shaft															
FW	Flanged shaft															



## Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

FESTO

Type codes

		-		-	SD42	-	B	-	
<b>Intermediate position</b>									
Z1	1 intermediate position (mid-position)								
<b>Energy through-feed</b>									
SD32	2 tubes with O.D. 3 mm								
SD42	2 tubes with O.D. 4 mm								
SD48	8 tubes with O.D. 4 mm								
SD62	2 tubes with O.D. 6 mm								
SD64	4 tubes with O.D. 6 mm								
E422	2 tubes with O.D. 4 mm and 1 4-pin cable to 2 3-pin cables								
E444	4 tubes with O.D. 4 mm and 2 4-pin cables to 4 3-pin cables								
E644	4 tubes with O.D. 6 mm and 4 3-pin cables								
<b>User's manual</b>									
	German (standard)								
E	English								
F	French								
S	Spanish								
I	Italian								
V	Swedish								
B	Express waiver – no user manual to be included (already available)								
<b>EU certification</b>									
EX4	II 2GD								

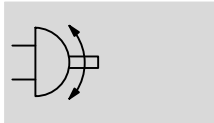
**- 1 - Type discontinued**  
**Available up until 2016**

## Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

**FESTO**

Technical data

Function



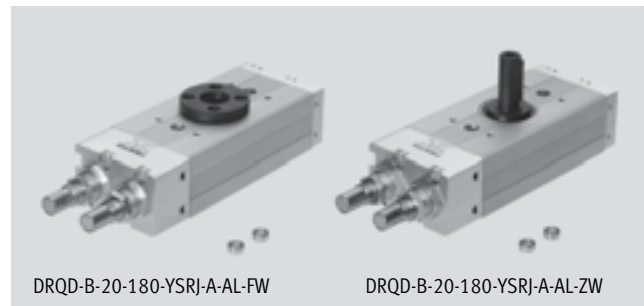
⊘ Diameter  
16 ... 50 mm

≡ Force  
1.6 ... 50 Nm

www.festo.com

Variants

- 90°, 180° and 360° or X swivel angle
- Spigot or flanged shaft
- Adjustable end-position cushioning or shock absorbers
- Position sensing
- Intermediate position
- Energy through-feed
- Different types of mounting



General technical data		16	20	25	32	40	50	
Piston Ø		16	20	25	32	40	50	
Pneumatic connection		M5			G1/8		G1/4	
	SD32	QS...-3 for tubing O.D. Ø 3 mm <sup>1)</sup>				-	-	
	SD42/SD48	QS...-4 for tubing O.D. Ø 4 mm <sup>1)</sup>				-	-	
	E422	QS...-4 for tubing O.D. 4 mm		-			-	
	E444	-		QS...-4 for tubing O.D. 4 mm		-		
	SD62/SD64/ E644	-				QS...-6 for tubing O.D. 6 mm		
Constructional design		Semi-rotary drive with twin pistons based on the rack and pinion principle						
Cushioning	PPVJ	Adjustable, pneumatic						
	P1J	Adjustable, flexible cushioning elements					-	
	YSRJ	Adjustable, hydraulic shock absorbers						
Position sensing		For proximity sensing						
Type of mounting		Via through-hole						
		Via female thread						
Assembly position		Any						
Adjustable end-position range per end position	[°] PPVJ	-20 ... +6						
	P1J	-270 ... +6	-320 ... +6	-280 ... +6	-210 ... +6	-		
	YSRJ	-20 ... +6						
Max. permissible swivelling frequency at 6 bar (for completed cycle of motion)	[Hz] PPVJ	90°	4	3	2	1.2	1.2	1.2
		180°	3	2.2	1.3	0.8	0.9	0.9
		360°	1.5	1.2	0.8	0.5	0.5	0.5
	P1J	90°	3.6	3	2.5	2.2	-	-
		180°	2.5	2.2	1.9	1.6	-	-
		360°	1.5	1.2	1	0.8	-	-
	YSRJ	90°	2	2	1.5	1.2	1	0.9
		180°	1.8	1.8	1.5	1.2	1	0.8
		360°	1	1	0.9	0.8	0.7	0.6
	SD.../E...		A reduction of max. 5% of the values indicated above					
			Note: At temperatures < 0 °C, a max. frequency of 1 Hz applies in the case of variant YSRJ					

## Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

FESTO

Technical data


General technical data										
Piston Ø			16	20	25	32	40	50		
Minimum cycle times in conjunction with Z1 (from the end position to the intermediate position)	[s]	PPVJ	90°	0.20	0.22	0.18	0.21	0.20	0.18	
			180°	0.26	0.41	0.20	0.26	0.21	0.35	
	YSRJ	90°	0.20	0.22	0.17	0.20	0.47	0.35		
		180°	0.23	0.31	0.22	0.23	1.10	0.99		
Repetition accuracy (ap- proached from both ends)	[°]	Z1	≤ 0.05							
			≤ 0.15				≤ 0.25	≤ 0.20	≤ 0.30	

Operating and environmental conditions											
Piston Ø			16	20	25	32	40	50			
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]	PPVJ	1 ... 10								
Operating pressure	[bar]	P1J	3 ... 10				-				
		YSRJ	2 ... 10								
		Z1	1 ... 10								
Ambient temperature	[°C]		-10 ... +60								
Corrosion resistance class CRC <sup>1)</sup>			1								
ATEX			Specified types → <a href="http://www.festo.com">www.festo.com</a>								

1) Corrosion resistance class 1 according to Festo standard 940 070  
Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers

ATEX <sup>1)</sup>											
Piston Ø			16	20	25	32	40	50			
ATEX category for gas			II 2G								
Explosion ignition protection type for gas			c T4 X								
ATEX category for dust			II 2D								
Explosion ignition protection type for dust			c T120°C X				c 120°C X				
Explosion-proof temperature rating			-10°C ≤ Ta ≤ +60°C								
CE marking (see declaration of conformity)			To EU Explosion Protection Directive (ATEX)								

1) Make sure that the accessories are suited for ATEX application.

Forces and torques											
Piston Ø			16	20	25	32	40	50			
Theoretical torque at 6 bar	[Nm]		1.6	3.1	6.1	12.5	25	50			
		Z1	1.7	3.6	6.2	13.5	32.2	78.6			
			 Note: If torque acts against the direction of rotation in the end position, a drive with a rating of twice the maximum theoretical torque should be selected.								
Max. permissible radial and axial forces			Graphs → 33								
Max. permissible mass moment of inertia	[kgm <sup>2</sup> ]	PPVJ	5 x 10 <sup>-4</sup>	10 x 10 <sup>-4</sup>	20 x 10 <sup>-4</sup>	40 x 10 <sup>-4</sup>	200 x 10 <sup>-4</sup>	500 x 10 <sup>-4</sup>			
		P1J	Graphs → 30					-			
		YSRJ	Graphs → 31								
		PPVJ-Z1	5 x 10 <sup>-4</sup>	10 x 10 <sup>-4</sup>	20 x 10 <sup>-4</sup>	40 x 10 <sup>-4</sup>	200 x 10 <sup>-4</sup>	500 x 10 <sup>-4</sup>			
		YSRJ-Z1	-	-	-	-	1000 x 10 <sup>-4</sup>	2000 x 10 <sup>-4</sup>			
			The data applies to the variants ZW, FW, without grippers and unthrottled.								

- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

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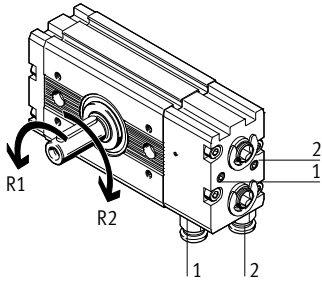
Technical data

Weights [g]			16	20	25	32	40	50
Piston $\varnothing$								
Connection cap AL/AR		PPVJ	116	220	358	609	1,170	2,320
		P1J	140	240	335	610	-	
		YSRJ	140	240	441	917	2,170	4,270
Centre section/output shaft	90°	ZW	379	609	1,026	1,891	3,330	6,860
		FW	380	586	1,018	1,848	3,960	7,010
	180°	ZW	467	753	1,267	2,325	4,340	8,850
		FW	468	730	1,259	2,282	4,570	9,000
	360°	ZW	643	1,039	1,741	3,199	6,350	12,890
		FW	644	1,016	1,733	3,165	6,580	13,040
End cap			40	53	82	140	370	610
Intermediate position	90°	Z1	235	315	550	805	2,510	3,960
	180°	Z1	235	315	550	805	2,510	3,960
Flanged shaft with energy through-feed		SD32	152		303		-	
		SD42	152		303		-	
		SD48	-		-		1,220	
		SD62	-		-		900	
		SD64	-		-		930	
		E422	400		-		-	
		E444	-		800		-	
		E644	-		-		2,700	

### Direction of rotation of the drive shaft

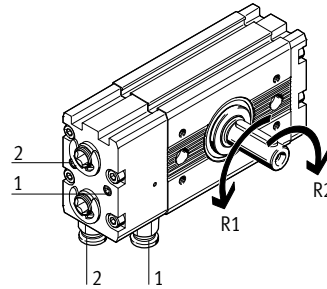
Connection cap on right (AR)

Pneumatic actuation of ports 1 or 2 produces a rotational movement in direction R1 or R2 respectively.



Connection cap on left (AL)

Pneumatic actuation of ports 1 or 2 produces a rotational movement in direction R1 or R2 respectively.



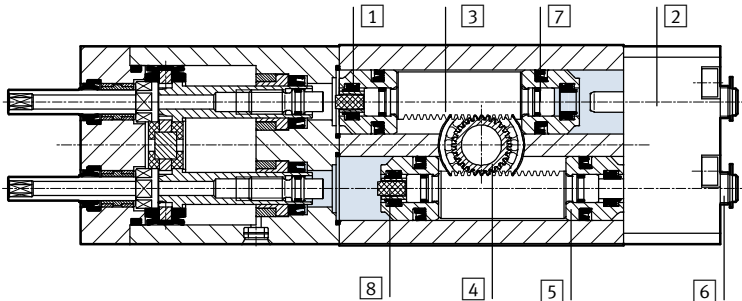
## Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

FESTO

Technical data

### Materials

Sectional view



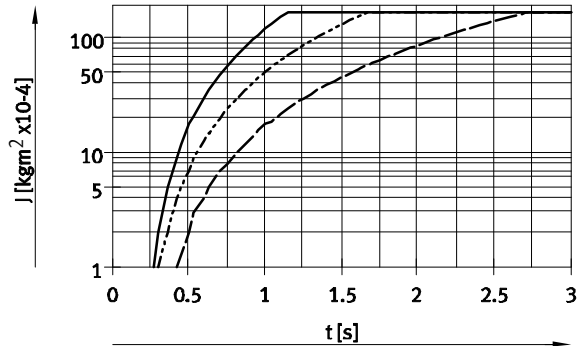
Piston Ø	16	20	25	32	40	50
<b>Basic drive</b>						
1	Cylinder barrel (centre section)	Anodised aluminium			Wrought aluminium alloy, anodised	
2	Connector cap	Anodised aluminium				
3	Gear rack	High-alloy stainless steel, hardened			High-alloy steel	
4	Pinion	Tempered steel				
5	Piston	Anodised aluminium				
6	Adjustable sleeve	Galvanised steel				
		P1J	Stainless steel			
7	Piston seal	Polyurethane				
-	Material note	Copper, PTFE and silicone-free RoHS-compliant				
<b>Function end cap PPVJ</b>						
-	Cushioning seal	Nitrile rubber/polyurethane			Polyurethane	
-	Buffer sleeve, regulating screw	Anodised aluminium				
<b>Function end cap P1J</b>						
-	Cap, housing	Aluminium			-	
-	Seals	Nitrile rubber/thermoplastic polyurethane elastomer				
<b>Function end cap YSRJ</b>						
-	Buffer	Delrin				
-	Rod wiper seal	Nitrile rubber/polyurethane				
<b>Energy through-feed SD.../E...</b>						
-	Transfer plate/sliding disc	Anodised aluminium				
-	DUO spiral tubing	Polyurethane				
<b>Z1 intermediate position module</b>						
-	Piston	Stainless steel; nitrile rubber				
-	Piston rod, nut	Stainless steel				
-	Bearings	POM				
-	Rod wiper seal	Polyurethane				

## Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

Technical data

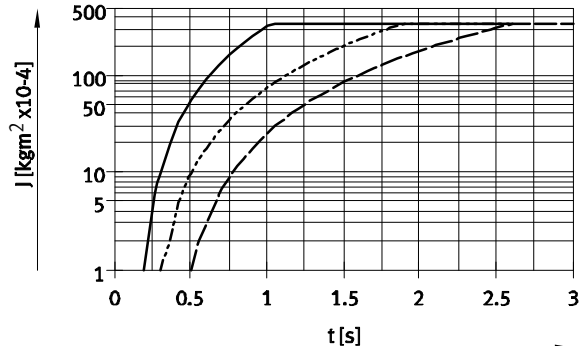
Maximum permitted mass moment of inertia  $J$  on the output shaft as a factor of swivel time  $t$

DRQD-B-16-...-P1]



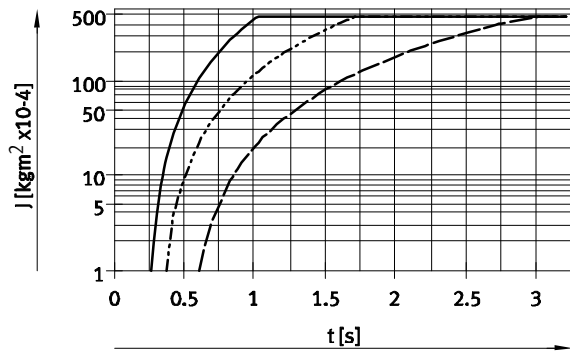
Max. permitted mass moment =  $175 \text{ kgm}^2 \times 10^{-4}$

DRQD-B-20-...-P1]



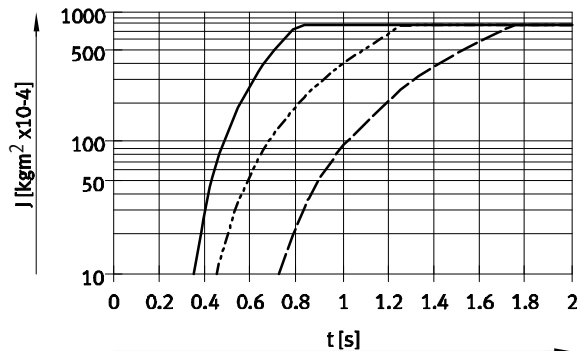
Max. permitted mass moment =  $350 \text{ kgm}^2 \times 10^{-4}$

DRQD-B-25-...-P1]



Max. permitted mass moment =  $500 \text{ kgm}^2 \times 10^{-4}$

DRQD-B-32-...-P1]



Max. permitted mass moment =  $800 \text{ kgm}^2 \times 10^{-4}$

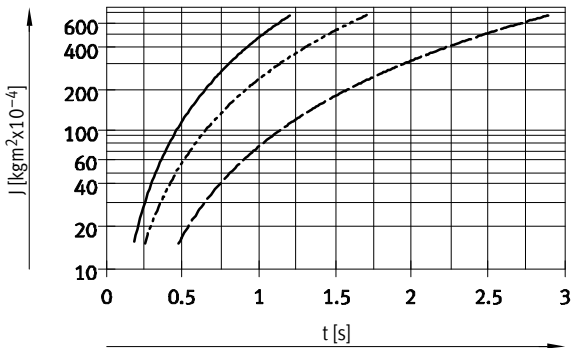
— 90°  
- - - 180°  
- · - 360°

# Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

Technical data

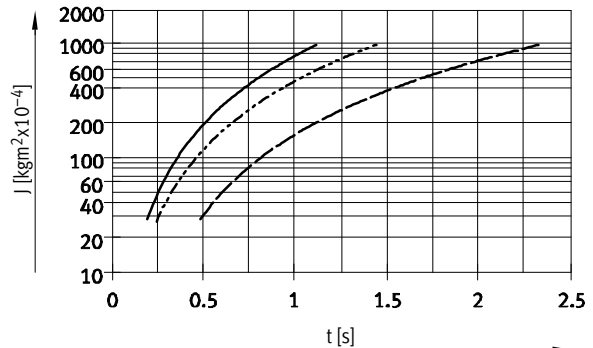
## Maximum permitted mass moment of inertia J on the output shaft as a factor of swivel time t

DRQD-B-16-...-YSRJ



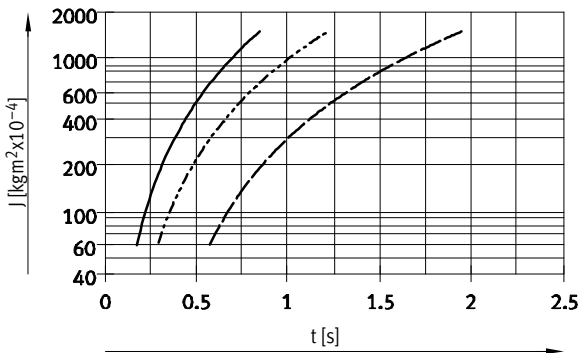
Max. permitted mass moment =  $700 \text{ kgm}^2 \times 10^{-4}$

DRQD-B-20-...-YSRJ



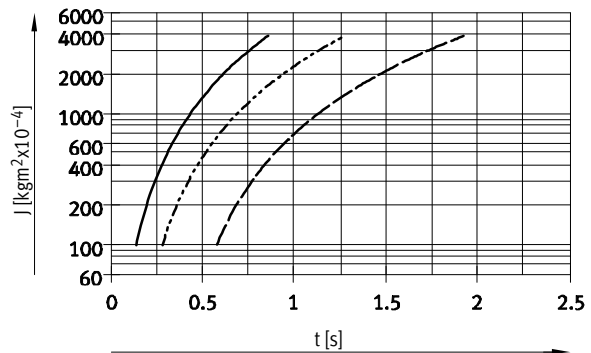
Max. permitted mass moment =  $1\,000 \text{ kgm}^2 \times 10^{-4}$

DRQD-B-25-...-YSRJ



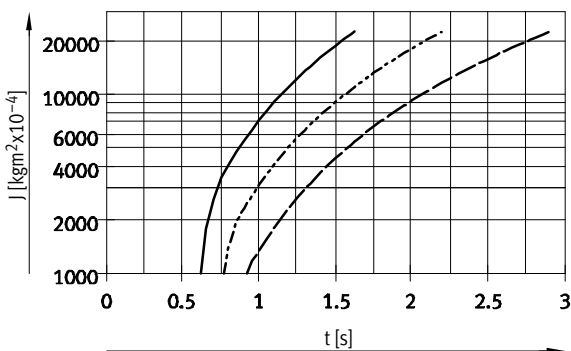
Max. permitted mass moment =  $1\,500 \text{ kgm}^2 \times 10^{-4}$

DRQD-B-32-...-YSRJ



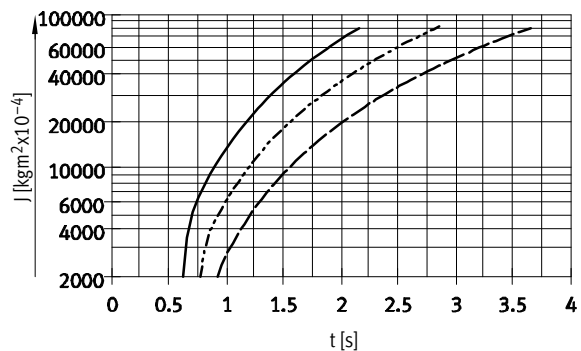
Max. permitted mass moment =  $4\,000 \text{ kgm}^2 \times 10^{-4}$

DRQD-40-...-YSRJ



Max. permitted mass moment =  $23\,000 \text{ kgm}^2 \times 10^{-4}$

DRQD-50-...-YSRJ



Max. permitted mass moment =  $83\,000 \text{ kgm}^2 \times 10^{-4}$

- 90°
- - - 180°
- · - · 360°

## Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

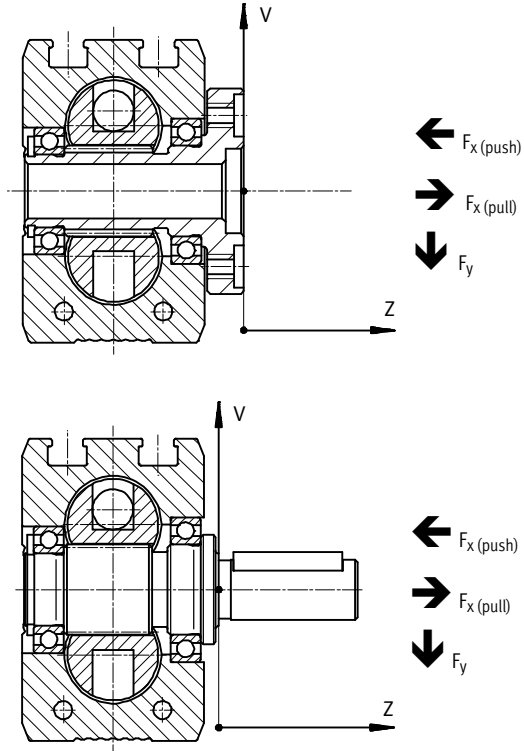
Technical data

### Max. permissible radial and axial forces on the drive shaft

#### Combined load

A DRQD-B-16-...-FW is to be statically loaded with a radial force  $F_y = 300\text{ N}$ , which is at a distance of  $Z = 15\text{ mm}$  from the flanged shaft, and an axial

force  $F_{x, \text{push}} = 100\text{ N}$ , which is at a distance of  $V = 25\text{ mm}$  from the shaft (→ diagram of flanged shaft on right).



#### Question:

Is it permissible to statically load a DRQD-B-16-...-FW with these combined forces?

#### Answer:

According to graph 1 (→ 33), a distance of  $Z = 15\text{ mm}$  results in a maximum permissible radial force

$F_{y, \text{max. (stat.)}} (15) = 400\text{ N}$ .  
According to graph 3 (→ 33), a distance of  $V = 25\text{ mm}$  results in a maxi-

mum permissible axial force  
 $F_{x, \text{push max. (stat.)}} (25) = 550\text{ N}$ .

The following equation applies to combined loads:

$$\frac{F_y(z)}{F_{y, \text{max. (z)}}} + \frac{F_{x, \text{push}}(v)}{F_{x, \text{push, max. (v)}}} + \frac{F_{x, \text{pull}}(v)}{F_{x, \text{pull, max. (v)}}} \leq 1$$

The following values are assumed:

$F_y(15) = 300\text{ N}$   
 $F_{x, \text{push (stat.)}} (25) = 100\text{ N}$   
 $F_{y, \text{max. (stat.)}} (15) = 400\text{ N}$   
 $F_{x, \text{max. (stat.)}} (25) = 550\text{ N}$

With values inserted:

$$\frac{300\text{ N}}{400\text{ N}} + \frac{100\text{ N}}{550\text{ N}} \leq 1$$

$$0.75 + 0.182 \leq 1$$

$$0.932 \leq 1$$

Thus the drive may be statically loaded with the forces indicated above.



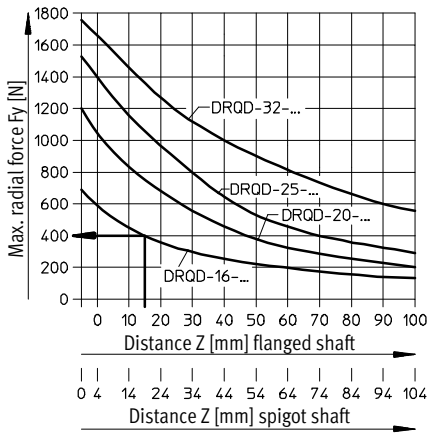
**Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons**

Technical data

**Maximum static radial force**

Graph 1

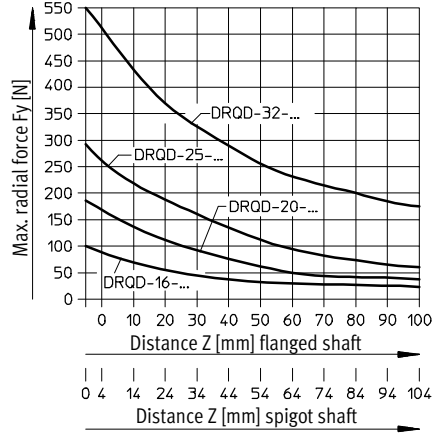
$F_{y, \text{max. (stat.)}} = f(z)$



**Maximum dynamic radial force**

Graph 2

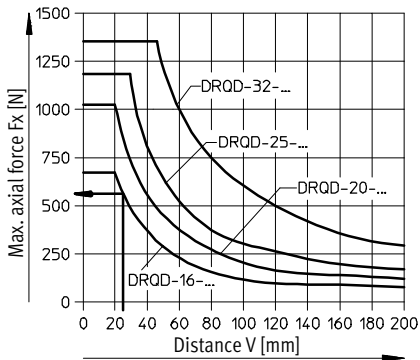
$F_{y, \text{max. (dyn.)}} = f(z)$



**Maximum static axial pushing force**

Graph 3

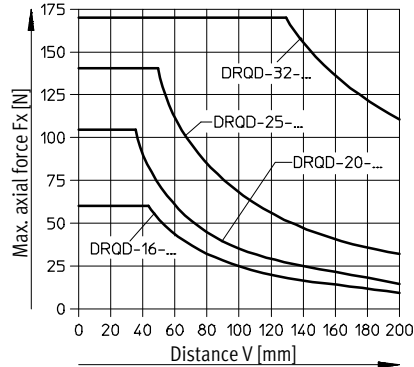
$F_{x, \text{push max. (stat.)}} = f(v)$



**Maximum dynamic axial pushing force**

Graph 4

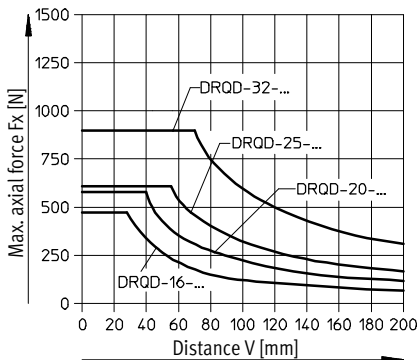
$F_{x, \text{push max. (dyn.)}} = f(v)$



**Maximum static axial pulling force**

Graph 5

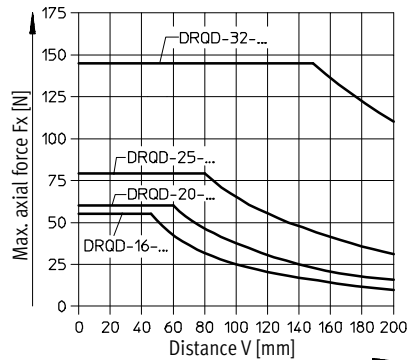
$F_{x, \text{pull max. (stat.)}} = f(v)$



**Maximum dynamic axial pulling force**

Graph 6

$F_{x, \text{pull max. (dyn.)}} = f(v)$



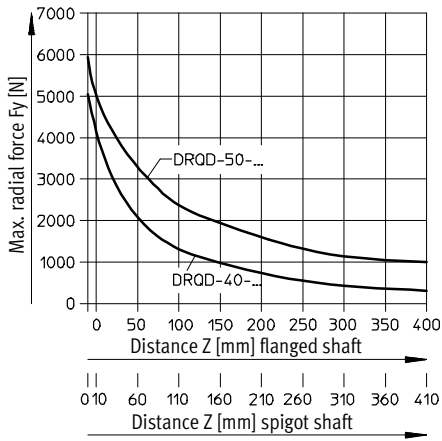
# Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

Technical data

## Maximum static radial force

Graph 1

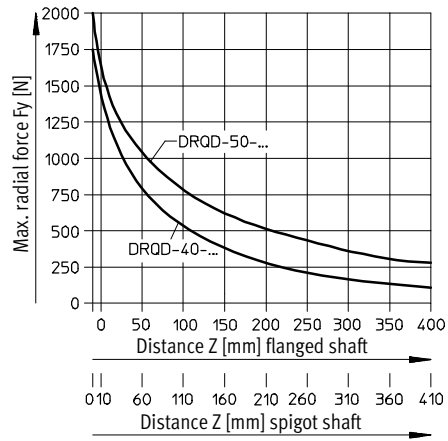
$F_{y, \text{max. (stat.)}} = f(z)$



## Maximum dynamic radial force

Graph 2

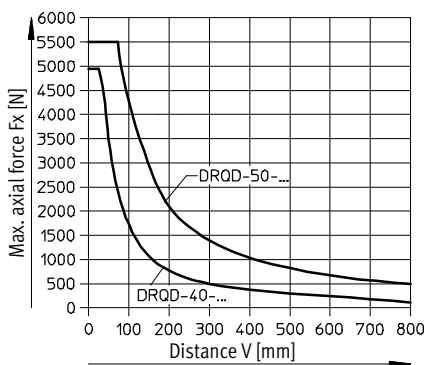
$F_{y, \text{max. (dyn.)}} = f(z)$



## Maximum static axial pushing force

Graph 3

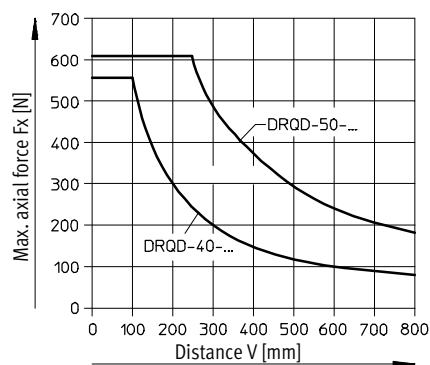
$F_{x, \text{push max. (stat.)}} = f(v)$



## Maximum dynamic axial pushing force

Graph 4

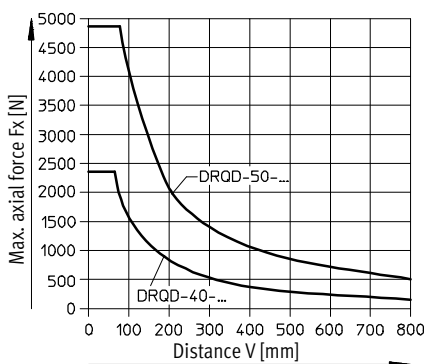
$F_{x, \text{push max. (dyn.)}} = f(v)$



## Maximum static axial pulling force

Graph 5

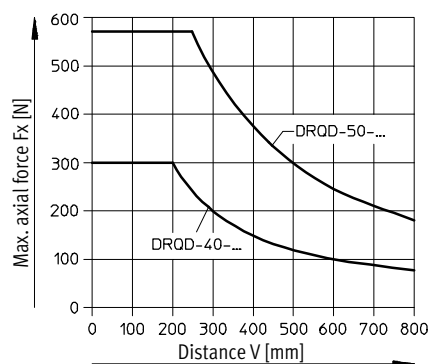
$F_{x, \text{pull max. (stat.)}} = f(v)$



## Maximum dynamic axial pulling force

Graph 6

$F_{x, \text{pull max. (dyn.)}} = f(v)$



## Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

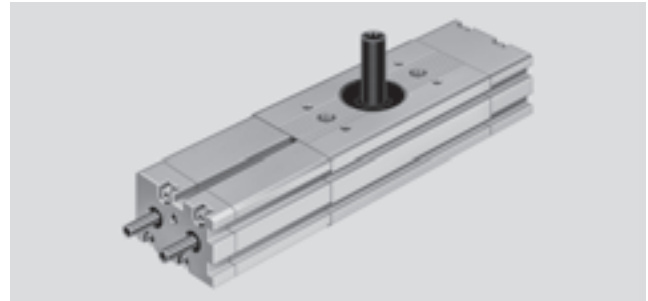
Technical data

### Z1 intermediate position module

For  $\varnothing$  16 ... 50

The intermediate position module is fitted in place of the end cap, and allows for adjustable, backlash-free positioning of the drive at 50% of its nominal rotation angle. The intermediate position module is available for nominal rotation angles of 90° and 180°.

The intermediate position module cannot be used in combination with cushioning type DRQD-...-P1J.



### Function

A piston incorporating two screw fastened piston rods is pressurised and shifts the semi-rotary drive gear racks until both make full contact with the

piston rods in the mid-position module. The mid-position can be accurately adjusted within a range of  $\pm 10^\circ$  with the adjusting screws in the piston

rods. Thanks to the hollow shaft design of the piston rod, adjustment can be performed under pressure. The through rods in the mid-position

module are guided by means of multiple bearings in the cover and in the adapter.

### Actuation

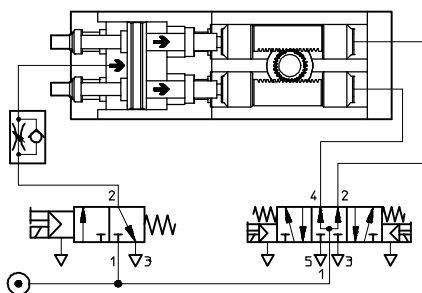
In order for the mid-position module to function, the DRQD basic actuator must be pressurised at both sides.

This can be accomplished with two different types of actuation:

#### Actuation type 1

- Mid-position module (supply air must be restricted) with a 3/2-way valve

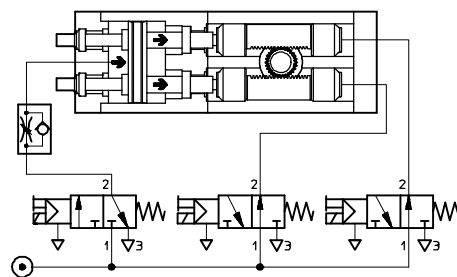
- DRQD basic drive with a 5/3-way valve, mid-position pressurised



#### Actuation type 2

- Mid-position module (supply air must be restricted) with a 3/2-way valve

- DRQD basic drive with two 3/2-way valves, spring return



### Note

Even if the semi-rotary drives DRQD-B-16 to 32 have been equipped with shock absorbers (type YSRJ), the mid-position may not be loaded with

more than the max. permissible mass moment of inertia for the PPVJ variant! The reason for this is the cushioning: Whereas loads can be absorbed in the

end positions with the shock absorbers, the mid-position is only equipped with basic flexible cushioning. Additional information on the

permissible mass moment of inertia for the sizes 40 and 50 mm: **→ 27**

## Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

Technical data

### Energy through-feed

DRQD-...-SD...

The energy through-feed consists of one to max. four DUO tubes (fused tubing pair), whereby each tube has an O.D. of 3 ... 6 mm. Compressed air is supplied via the push-in fittings in

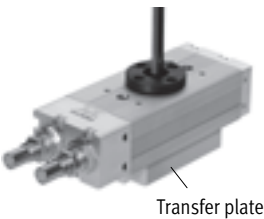
the transfer plate. Only Quick-Star push-in fittings may be used to connect compressed air tubing to consuming devices (e.g. grippers).

DRQD-...-E...

The energy through-feed consists of one to max. two DUO tubes (fused tubing pair), whereby each tube has an O.D. of 4 ... 6 mm. Compressed air is supplied via the push-in fittings in the transfer plate. Only Quick-Star

push-in fittings may be used to connect compressed air tubing to consuming devices (e.g. grippers). In addition, up to four proximity sensors can be connected by means of this energy through-feed.

DRQD-...-SD...



- For piston  $\varnothing$  16 ... 50
- Swivel angles of up to 360° are possible
- 1 ... 4 DUO tubes

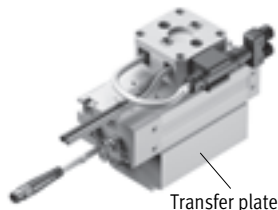
Technical data		16	20	25	32	40	50
Piston $\varnothing$							
Number of DUO tubes	SD32	1				–	
	SD42	1				–	
	SD48	–				4	
	SD62	–				1	
	SD64	–				2	
Standard nominal flow rate (per tube)	[l/min]						
	SD32	min. 70				–	
	SD42	min. 130				–	
	SD48	–				min. 130	
	SD62	–				min. 250	
Theoretical air consumption per line at 6 bar	[cm <sup>3</sup> ]						
	SD32	5.3				–	
	SD42	9.5				–	
	SD48	–				9.5	
	SD62	–				24.4	
Operating pressure as a function of ambient temperature	[bar]						
		0 ... 10 (at –10 ... +30 °C)					
		0 ... 9 (at –30 ... +40 °C)					
		0 ... 7 (at –40 ... +60 °C)					
	Tube O.D. on flanged shaft drive side	[mm]					
SD32		3				–	
SD42		4				–	
SD48		–				4	
SD62		–				6	
Push-in fittings for connection to consuming device	[mm]						
	SD32	QS-...-3 for tube O.D. 3 mm				–	
	SD42	QS-...-4 for tube O.D. 4 mm				–	
	SD48	–				QS-...-4 for tube O.D. 4 mm	
	SD62	–				QS-...-6 for tube O.D. 6 mm	
SD64	–				QS-...-6 for tube O.D. 6 mm		

## Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

Technical data

### Energy through-feed

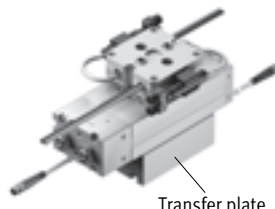
DRQD-...-E422



Transfer plate

- For piston  $\varnothing$  16/20
- Swivel angles of up to 180° are possible
- 1 DUO tube with O.D. 4 mm
- 1 4-pin cable to 2 3-pin cables

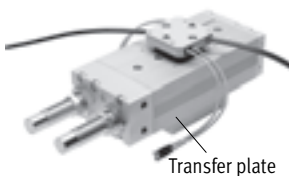
DRQD-...-E444



Transfer plate

- For piston  $\varnothing$  25/32
- Swivel angles of up to 180° are possible
- 2 DUO tubes each with O.D. 4 mm
- 2 4-pin cables to 4 3-pin cables

DRQD-...-E644



Transfer plate

- For piston  $\varnothing$  40/50
- Swivel angles of up to 180° are possible
- 2 DUO tubes each with O.D. 6 mm
- 4 3-pin cables

Technical data		16	20	25	32	40	50	
Number of DUO tubes	E422	1		-				
	E444			2		-		
	E644					2		
Standard nominal flow rate (per tube) [l/min]	E422	min. 130		-				
	E444			min. 130		-		
	E644					min. 250		
Theoretical air consumption per line at 6 bar [cm <sup>3</sup> ]	E422	9.5		-				
	E444			9.5		-		
	E644					24.4		
Operating pressure as a function of ambient temperature [bar]		0 ... 10 (at -10 ... +30 °C)						
		0 ... 9 (at +30 ... +40 °C)						
		0 ... 7 (at +40 ... +60 °)						
Tube O.D. on flanged shaft drive side [mm]	E422	4		-				
	E444			4		-		
	E644					6		
Push-in fittings for connection to consuming device [mm]	E422	QS-...-4 for tube O.D. 4 mm		-				
	E444			QS-...-4 for tube O.D. 4 mm		-		
	E644					QS-...-6 for tube O.D. 6 mm		

- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-B-16 ... 32, twin-pistons

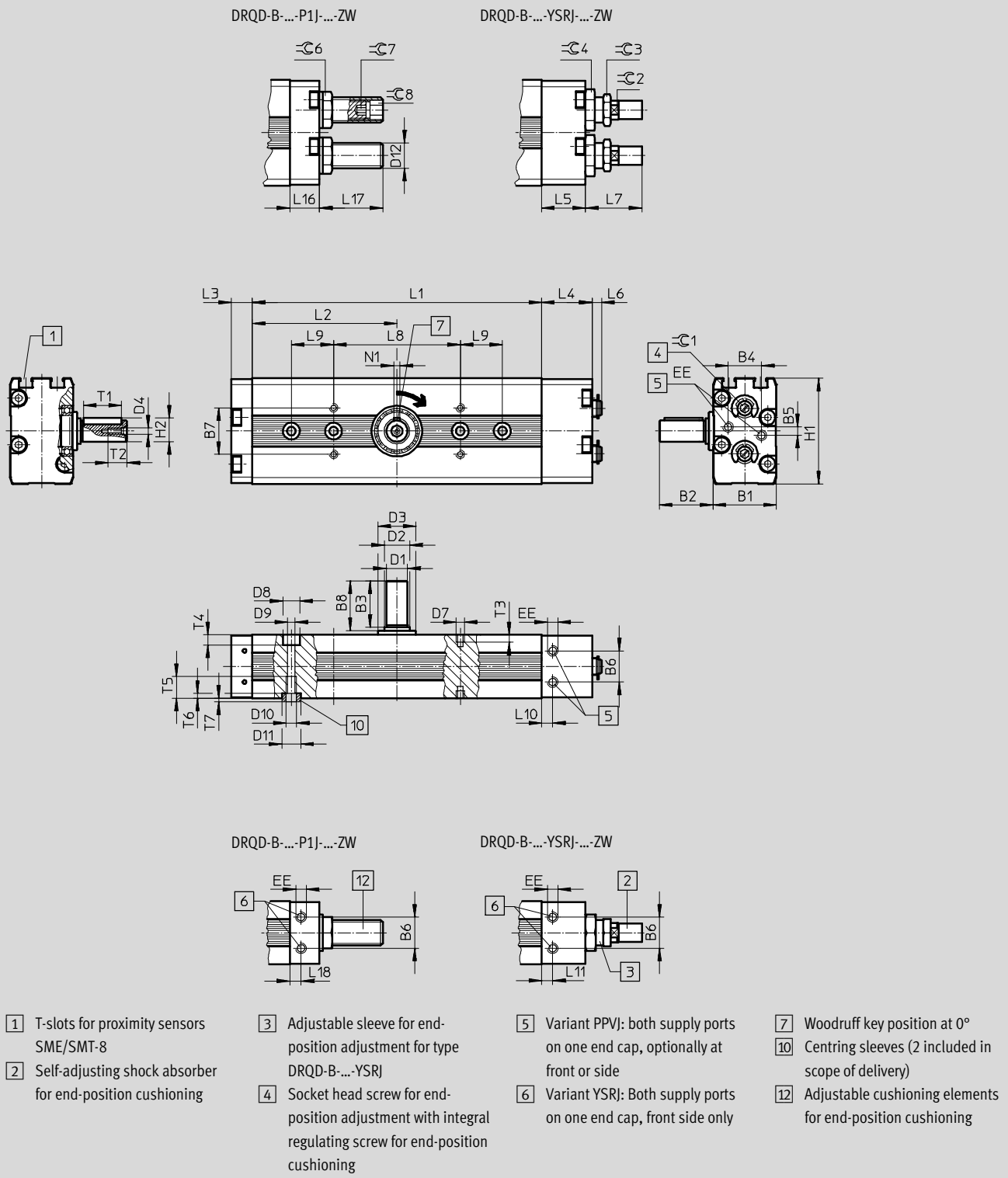
Technical data

FESTO

### Dimensions

ZW – Spigot shaft

Download CAD data → [www.festo.com](http://www.festo.com)



## Semi-rotary drives DRQD-B-16 ... 32, twin-pistons

FESTO

Technical data

∅	Swivel angle	B1	B2	B3	B4	B5	B6	B7	B8	D1	D2	D3	D4	D7	D8	D9	D10	D11	D12
[mm]	[°]									∅ g6	∅	∅			∅ H13	∅		∅ H7	
16	90	30	25.5	23	17.8	4	14.8	22	23.5	10	12	18	M3	M4	8	4.2	M5	9	M12
	180																		
	360																		
20	90	36	32.5	30	21.8	4	19.8	26	30.5	12	15	24	M4	M4	8	4.2	M5	9	M14
	180																		
	360																		
25	90	42	42.5	40	24.8	4	24.8	30	40.5	16	20	30	M5	M5	10	5.3	M6	9	M16
	180																		
	360																		
32	90	51	52.5	50	29.8	2	29.8	36	50.5	20	25	35	M6	M5	10	5.3	M6	9	M22
	180																		
	360																		

∅	Swivel angle	EE	H1	H2	L1	L2	L3	L4	L5	L6		L7		L8	L9	L10	L11	L16
										min.	max.	min.	max.					
16	90	M5	50	11.2	71	35.5	10	24	20.8	1.7	5.7	23.4	28.2	60	-	7.6	5.3	14
	180				93	46.5									-			
	360				137	68.5									20			
20	90	M5	56	13.5	78.4	39.2	10	31.5	27	2.4	7	28.6	35.9	60	-	8	5	13.5
	180				104.8	52.4									-			
	360				157.6	78.8									20			
25	90	M5	67	18	91.2	45.6	11	36.5	33	2.6	8.9	42	50.2	60	-	11	5	15
	180				124	62									-			
	360				189.2	94.6									20			
32	90	G $\frac{1}{8}$	79	22.5	114.8	57.4	13	39	39	4.3	11.8	59.4	70.1	80	-	13.1	8	20
	180				155.6	77.8									20			
	360				237.4	118.7									20			

∅	Swivel angle	L17		L18	N1	T1	T2	T3	T4	T5	T6	T7	≙C1	≙C2	≙C3	≙C4	≙C6	≙C7	≙C8
		min.	max.																
16	90	6.7	41	5.8	3	18.1	9	3.5	5	10	2	2	4	9	13	17	15	4	8
	180																		
	360																		
20	90	8.5	59.5	5	4	25.1	10	3.5	5	12	2	2	7	11	15	19	17	4	8
	180																		
	360																		
25	90	9	61.4	5	5	36.1	12.5	5	6	12	2	2	7	15	19	24	19	5	10
	180																		
	360																		
32	90	10	60	8	6	45.1	16	5	6	14	2	2	8	20	27	32	27	5	10
	180																		
	360																		

-  - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-40 ... 50, twin-pistons

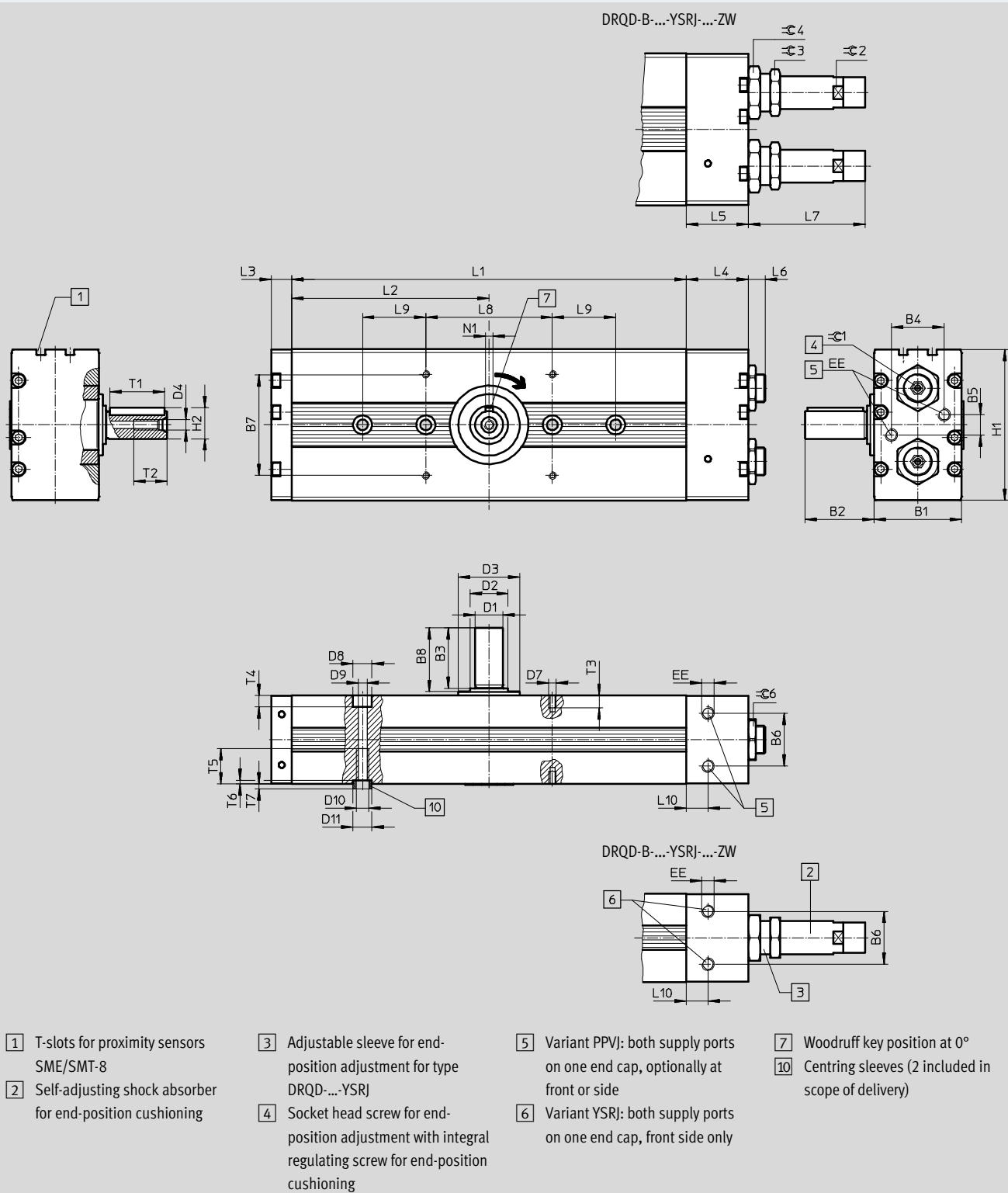
Technical data

FESTO

### Dimensions

ZW – Spigot shaft

Download CAD data → [www.festo.com](http://www.festo.com)





## Semi-rotary drives DRQD-40 ... 50, twin-pistons

Technical data

∅ [mm]	Swivel angle [°]	B1	B2	B3	B4	B5	B6	B7	B8	D1 ∅ g6	D2 ∅	D3 ∅	D4	D7	D8 ∅ H13	D9 ∅
40	90	70	53.5	50	42	4	42	80	50.5	22	30	48.5	M8	M6	15	8.5
	180															
	360															
50	90	86	63.5	60	50	16	50	80	60.9	28	38	58.5	M12	M6	15	8.5
	180															
	360															

∅ [mm]	Swivel angle [°]	D10	D11 ∅ H7	EE	H1	H2	L1	L2	L3	L4	L5	L6		L7		L8 ±0.03
												min.	max.	min.	max.	
40	90	M10	15	G $\frac{1}{8}$	120	24.5	146.8	73.4	16	49	41.5	5	14.6	85.1	96.4	100
	180						201.8	100.9								
	360						311.8	155.9								
50	90	M10	15	G $\frac{1}{4}$	144	31	191.4	95.7	18	64	55	8	20.7	107.8	120.6	100
	180						262.8	131.4								
	360						405.8	202.9								

∅ [mm]	Swivel angle [°]	L9 ±0.03	L10	N1 P9	T1	T2 +2	T3	T4	T5	T6	T7	≈C1	≈C2	≈C3	≈C4	≈C6
40	90	-	17	6	45.1	26	10	10	28	3	3	10	24	32	36	27
	180	-														
	360	50														
50	90	-	21.2	8	56.1	28	10	11	28	3	3	14	28	36	46	41
	180	50														
	360	100														

- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-B-16 ... 32, twin-pistons

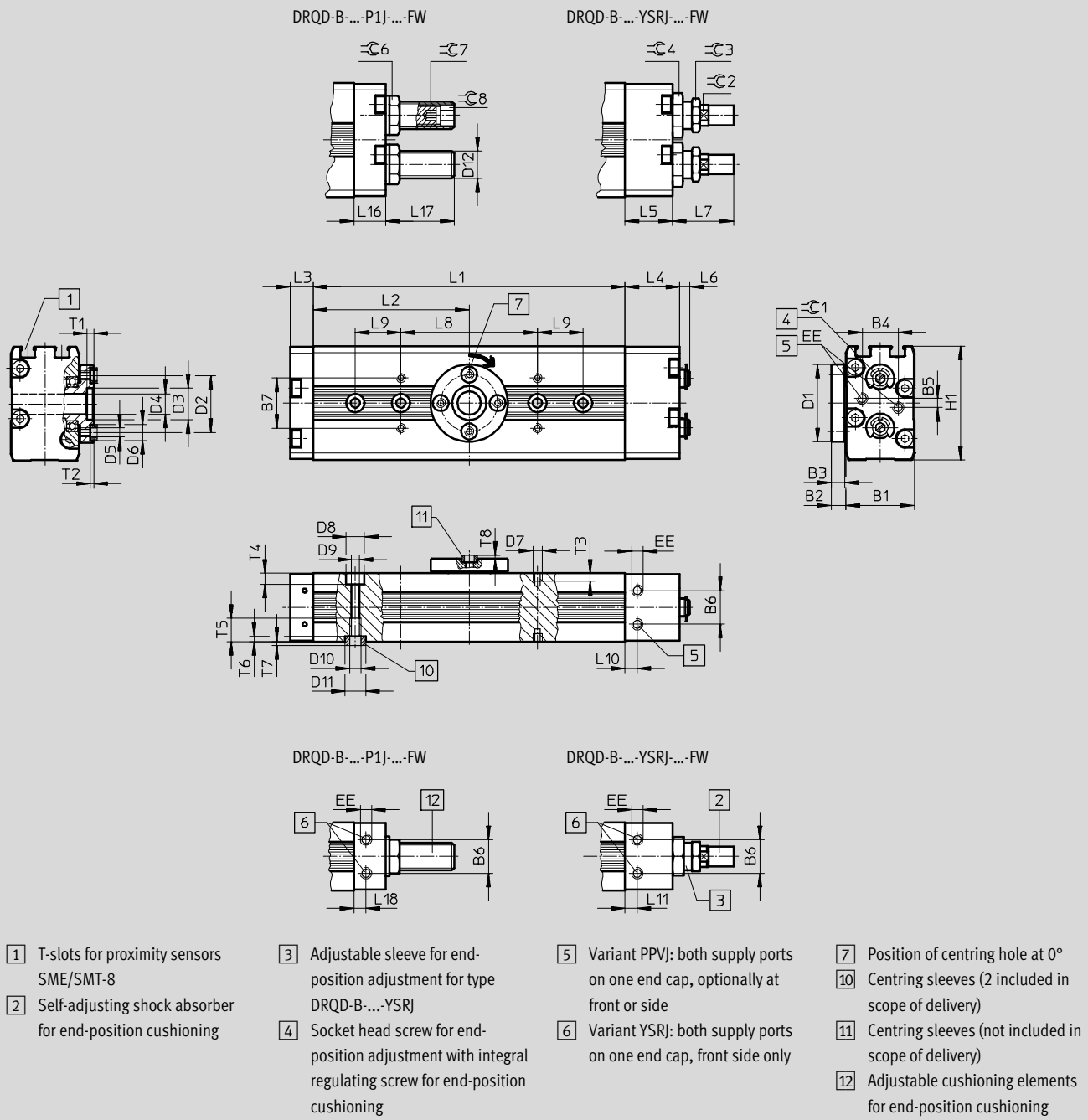
Technical data

FESTO

### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

FW – Flanged shaft



## Semi-rotary drives DRQD-B-16 ... 32, twin-pistons

FESTO

Technical data

∅	Swivel angle	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11
[mm]	[°]								∅	∅ +0.025	∅ H8	∅		∅ H7		∅ H13	∅		∅ H7
16	90	30	6.5	6	17.8	4	14.8	22	34	25	14	9	M4	7	M4	8	4.2	M5	9
	180																		
	360																		
20	90	36	6.5	6	21.8	4	19.8	26	38	28	16	11	M4	7	M4	8	4.2	M5	9
	180																		
	360																		
25	90	42	9.5	9	24.8	4	24.8	30	48	34	16	12	M6	9	M5	10	5.3	M6	9
	180																		
	360																		
32	90	51	9.5	9	29.8	2	29.8	36	58	45	19	14	M6	9	M5	10	5.3	M6	9
	180																		
	360																		

∅	Swivel angle	D12	EE	H1	L1	L2	L3	L4	L5	L6		L7		L8	L9	L10	L11	L16
										min.	max.	min.	max.					
16	90	M12	M5	50	71	35.5	10	24	20.8	1.7	5.7	23.4	28.2	60	-	7.6	5.3	14
	180				93	46.5									-			
	360				137	68.5									20			
20	90	M14	M5	56	78.4	39.2	10	31.5	27	2.4	7	28.6	35.9	60	-	8	5	13.5
	180				104.8	52.4									-			
	360				157.6	78.8									20			
25	90	M16	M5	67	91.2	45.6	11	36.5	33	2.6	8.9	42	50.2	60	-	11	5	15
	180				124	62									-			
	360				189.2	94.6									20			
32	90	M22	G $\frac{1}{8}$	79	114.8	57.4	13	39	39	4.3	11.8	59.4	70.1	80	-	13.1	8	20
	180				155.6	77.8									20			
	360				237.4	118.7									20			

∅	Swivel angle	L17		L18	T1	T2	T3	T4	T5	T6	T7	T8	≈C1	≈C2	≈C3	≈C4	≈C6	≈C7	≈C8
		min.	max.																
16	90	6.7	41	5.8	3	1.6	3.5	5	10	2	2	1.4	4	9	13	17	15	4	8
	180																		
	360																		
20	90	8.5	59.5	5	3	1.6	3.5	5	12	2	2	1.4	7	11	15	19	17	4	8
	180																		
	360																		
25	90	9	61.4	5	3	2	5	6	12	2	2	2	7	15	19	24	19	5	10
	180																		
	360																		
32	90	10	60	8	3	2	5	6	14	2	2	2	8	20	27	32	27	5	10
	180																		
	360																		

- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-40 ... 50, twin-pistons

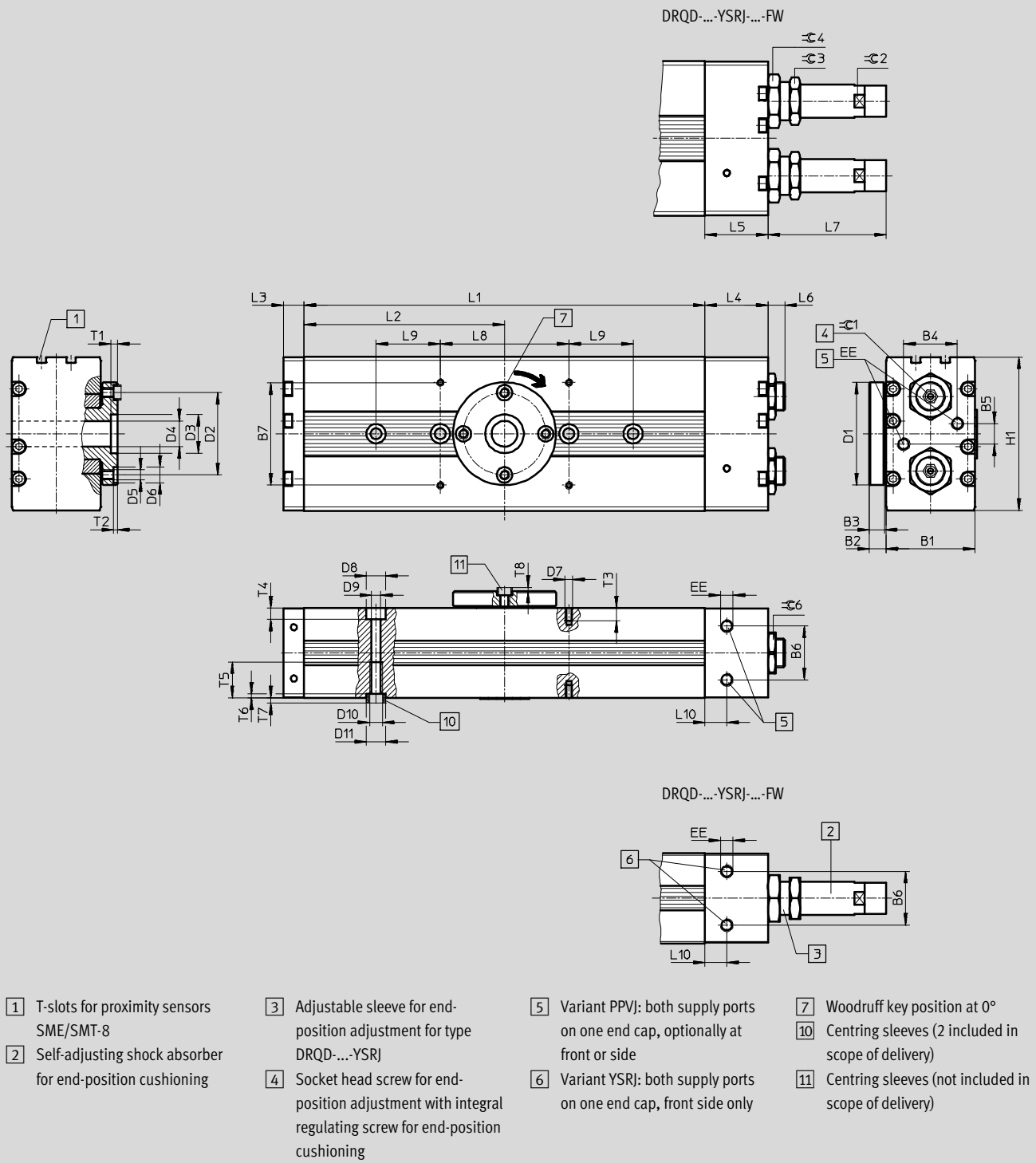
Technical data

FESTO

### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

FW – Flanged shaft



- 1 - Type discontinued  
Available up until 2016

FESTO

## Semi-rotary drives DRQD-40 ... 50, twin-pistons

Technical data

∅ [mm]	Swivel angle [°]	B1	B2	B3	B4	B5	B6	B7	D1 ∅	D2 ∅ ±0.025	D3 ∅ H7	D4	D5	D6 ∅ H7	D7	D8 ∅ H13
40	90	70	13	12	42	4	42	80	80	64	30	20	M8	12	M6	15
	180															
	360															
50	90	86	13	12	50	16	50	80	85	64	30	24	M8	12	M6	15
	180															
	360															

∅ [mm]	Swivel angle [°]	D9 ∅	D10	D11 ∅ H7	EE	H1	L1	L2	L3	L4	L5	L6		L7	
												min.	max.	min.	max.
40	90	8.5	M10	15	G $\frac{1}{8}$	120	146.8	73.4	16	49	41.5	5	14.6	85.1	96.4
	180						201.8	100.9							
	360						311.8	155.9							
50	90	8.5	M10	15	G $\frac{1}{4}$	144	191.4	95.7	18	64	55	8	20.7	107.8	120.6
	180						262.8	131.4							
	360						405.8	202.9							

∅ [mm]	Swivel angle [°]	L8 ±0.03	L9 ±0.03	L10	T1	T2	T3	T4	T5	T6	T7	≡C1	≡C2	≡C3	≡C4	≡C6
40	90	100	-	17	4	2.7	10	10	28	3	3	10	24	32	36	27
	180		-													
	360		50													
50	90	100	-	21.2	4	2.7	10	11	28	3	3	14	28	36	46	41
	180		50													
	360		100													

- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-B-16 ... 32, twin-pistons

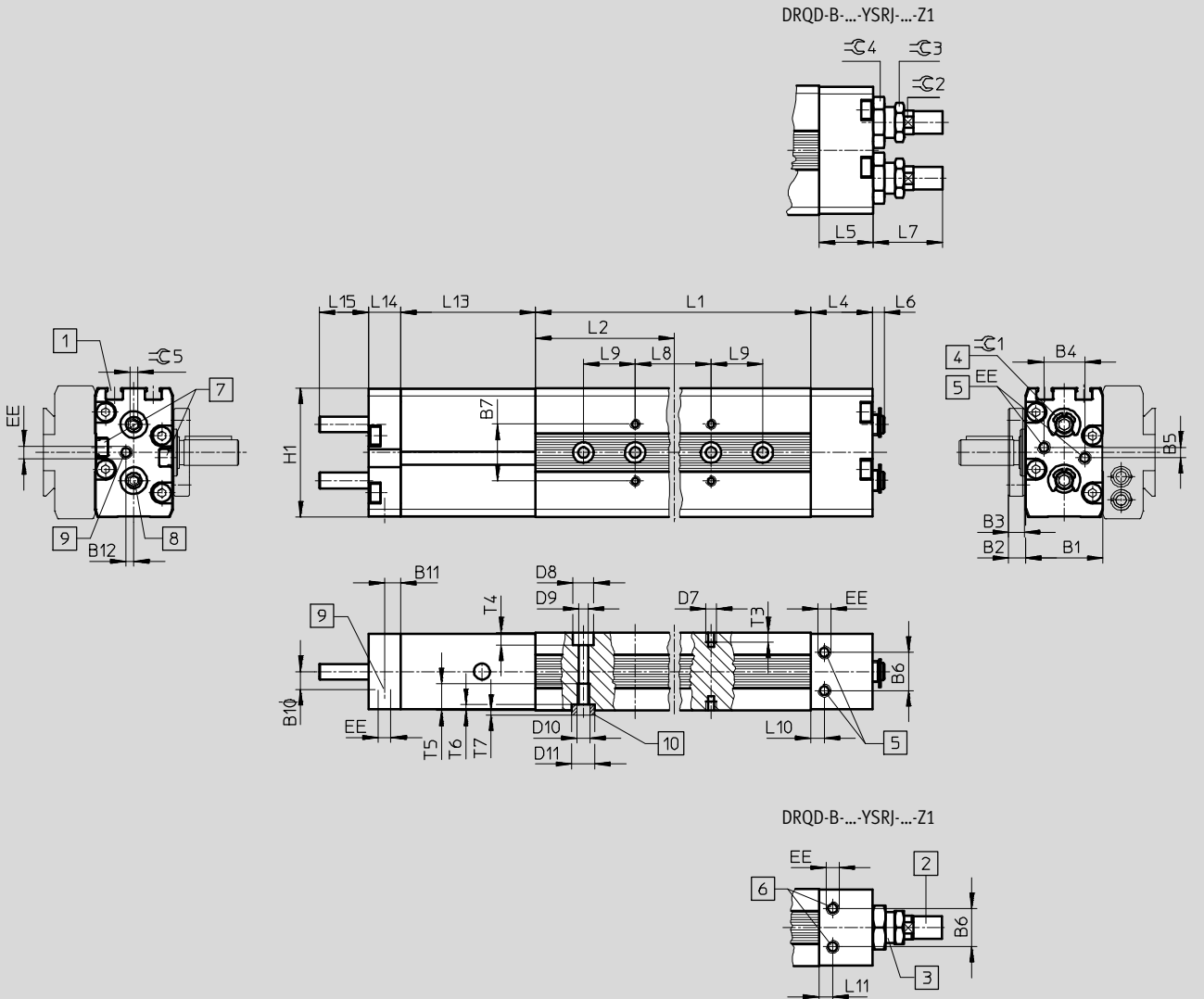
Technical data

FESTO

### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Z1 – Intermediate position module (energy through-feed is optional)



- |   |   |  |   |
|---|---|--|---|
| <p>1 T-slots for proximity sensor SME/SMT-8 for end-position sensing</p> <p>2 Self-adjusting shock absorber for end-position cushioning</p> <p>3 Adjustable sleeve for end-position adjustment for type DRQD-B-...-YSRJ</p> | <p>4 Socket head screw for end-position adjustment with integral regulating screw for end-position cushioning</p> <p>5 Variant PPV: both supply ports on one end cap, optionally at front or side</p> | <p>6 Variant YSRJ: both supply ports on one end cap, front side only</p> <p>7 T-slots for proximity sensor SME/SMT-8 for mid-position sensing</p> <p>8 Socket head screw for mid-position adjustment (slightly recessed)</p> | <p>9 Supply port for mid-position module at cap, optionally at side or front</p> <p>10 Centring sleeves (2 included in scope of delivery)</p> |
|---|---|--|---|

## Semi-rotary drives DRQD-B-16 ... 32, twin-pistons

Technical data

∅ [mm]	Swivel angle [°]	B1	B2	B3	B4	B5	B6	B7	B10	B11	B12	D7	D8 ∅ H13	D9 ∅	D10	D11 ∅ H7
16	90	30	6.5	6	17.8	4	14.8	22	6.4	4.5	3	M4	8	4.2	M5	9
	180															
20	90	36	6.5	6	21.8	4	19.8	26	6.5	4.5	5.6	M4	8	4.2	M5	9
	180															
25	90	42	9.5	9	24.8	4	24.8	30	9.1	6.9	8.2	M5	10	5.3	M6	9
	180															
32	90	51	9.5	9	29.8	2	29.8	36	9	8	9	M5	10	5.3	M6	9
	180															

∅ [mm]	Swivel angle [°]	EE	H1	L1	L2	L4	L5	L6		L7		L8 ±0.03	L9 ±0.03	L10	L11
								min.	max.	min.	max.				
16	90	M5	50	71	35.5	24	20.8	1.7	5.7	23.4	28.2	60	-	7.6	5.3
	180			93	46.5								-		
20	90	M5	56	78.4	39.2	31.5	27	2.4	7	28.6	35.9	60	-	8	5
	180			104.8	52.4								-		
25	90	M5	67	91.2	45.6	36.5	33	2.6	8.9	42	50.2	60	-	11	5
	180			124	62								-		
32	90	G $\frac{1}{8}$	79	114.8	57.4	39	39	4.3	11.8	59.4	70.1	80	-	13.1	8
	180			155.6	77.8								20		

∅ [mm]	Swivel angle [°]	L13	L14	L15		T3	T4	T5	T6	T7	≈C1	≈C2	≈C3	≈C4	≈C5
				min.	max.										
16	90	52.2	12.3	0	19.1	3.5	5	10	2	2	4	9	13	17	3
	180														
20	90	55.4	12.3	0	21.8	3.5	5	12	2	2	7	11	15	19	3
	180														
25	90	62.1	15	0	26	5	6	12	2	2	7	15	19	24	4
	180														
32	90	68.2	15.5	0	31.5	5	6	14	2	2	8	20	27	32	4
	180														

- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-40 ... 50, twin-pistons

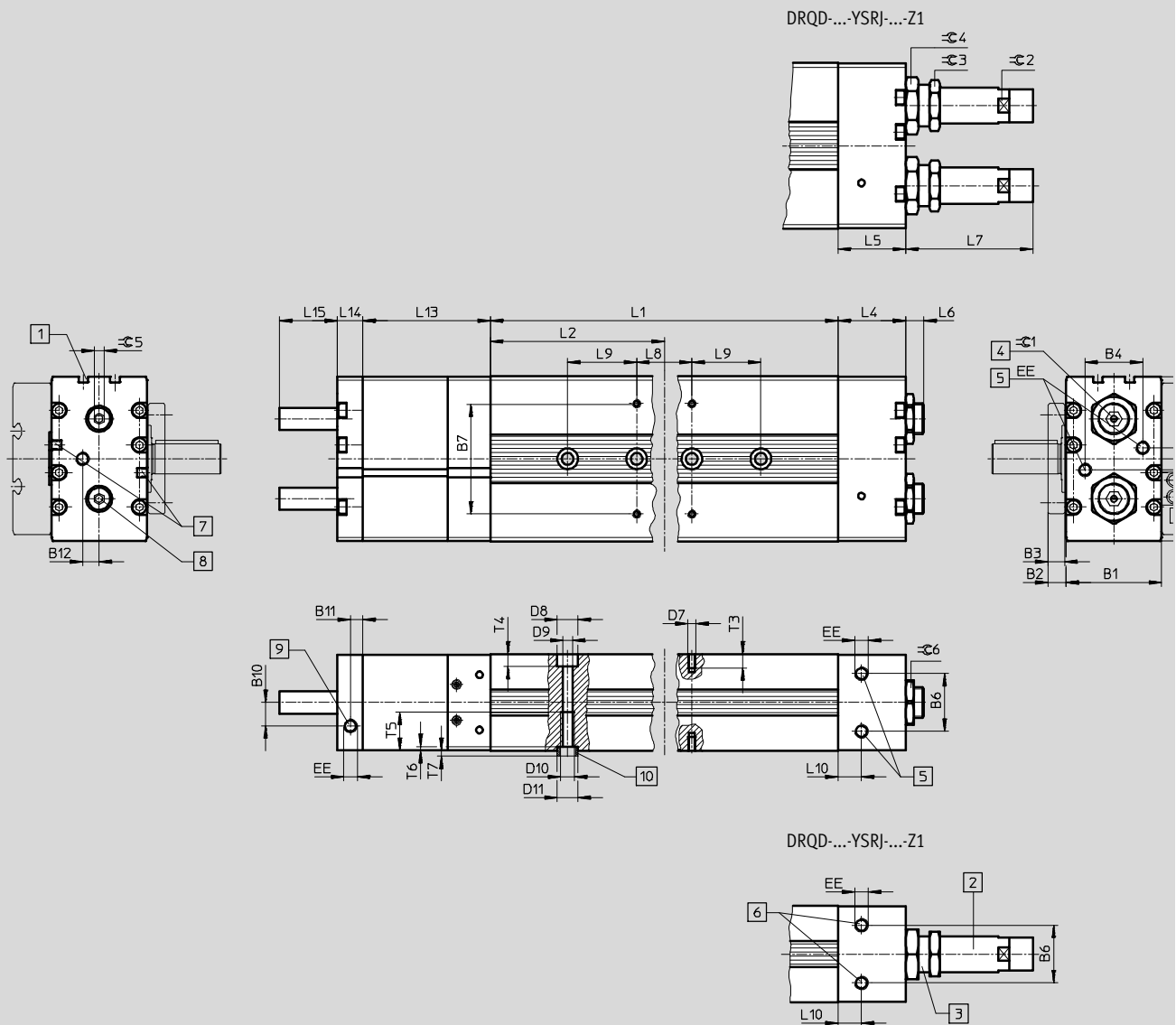
Technical data

FESTO

### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Z1 – Intermediate position module (energy through-feed is optional)



- |   |   |  |   |
|---|---|--|---|
| <p>1 T-slots for proximity sensor SME/SMT-8 for end-position sensing</p> <p>2 Self-adjusting shock absorber for end-position cushioning</p> <p>3 Adjustable sleeve for end-position adjustment for type DRQD-...-YSRJ</p> | <p>4 Socket head screw for end-position adjustment with integral regulating screw for end-position cushioning</p> <p>5 Variant PPV: both supply ports on one end cap, optionally at front or side</p> | <p>6 Variant YSRJ: both supply ports on one end cap, front side only</p> <p>7 T-slots for proximity sensor SME/SMT-8 for mid-position sensing</p> <p>8 Socket head screw for mid-position adjustment (slightly recessed)</p> | <p>9 Supply port for mid-position module at cap, optionally at side or front</p> <p>10 Centring sleeves (2 included in scope of delivery)</p> |
|---|---|--|---|



- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-40 ... 50, twin-pistons


FESTO

Technical data

∅ [mm]	Swivel angle [°]	B1	B2	B3	B4	B5	B6	B7	B10	B11	B12	D7	D8 ∅ H13	D9 ∅	D10
40	90	70	13	12	42	4	42	80	92.5	9	12	M6	15	8.5	M10
	180														
	360														
50	90	86	13	12	50	16	50	80	105.7	9	14	M6	15	8.5	M10
	180														
	360														

∅ [mm]	Swivel angle [°]	D11 ∅ H7	EE	H1	L1	L2	L4	L5	L6		L7		L8 ±0.03	L9 ±0.03	L10
									min.	max.	min.	max.			
40	90	15	G $\frac{1}{8}$	120	146.8	73.4	49	41.5	5	14.6	85.1	96.4	100	-	17
	180				201.8	100.9								-	
	360				311.8	155.9								50	
50	90	15	G $\frac{1}{4}$	144	191.4	95.7	64	55	8	20.7	107.8	120.6	100	-	21.2
	180				262.8	131.4								50	
	360				405.8	202.9								100	

∅ [mm]	Swivel angle [°]	L13	L14	L15		T3	T4	T5	T6	T7	=C1	=C2	=C3	=C4	=C5	=C6
				min.	max.											
40	90	92.5	18.5	0	41.95	10	10	28	3	3	10	24	32	36	7	27
	180															
	360															
50	90	105.7	20.5	0	52.95	10	11	28	3	3	14	28	36	46	7	41
	180															
	360															

-  - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-B-16 ... 32, twin-pistons

Technical data

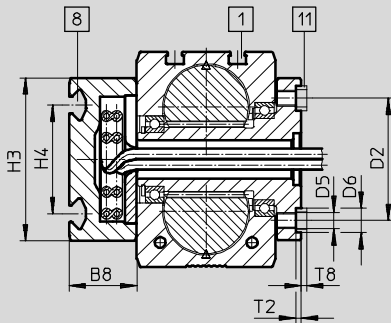
FESTO

### Dimensions

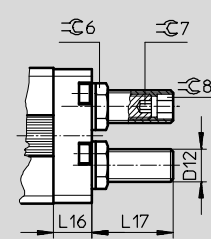
Download CAD data → [www.festo.com](http://www.festo.com)

FW-SD – Energy through-feed

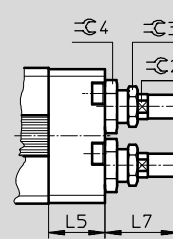
DRQD-B-25-...-32



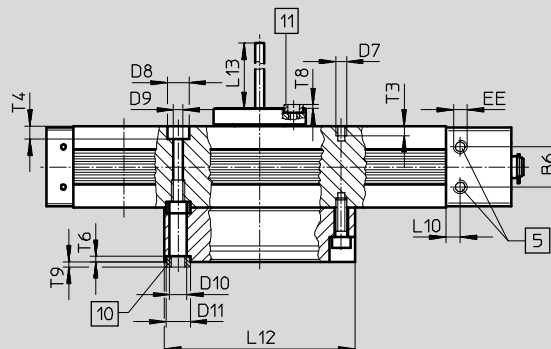
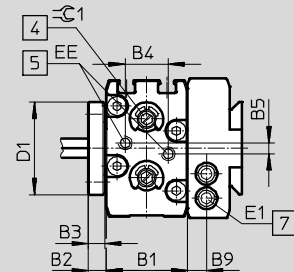
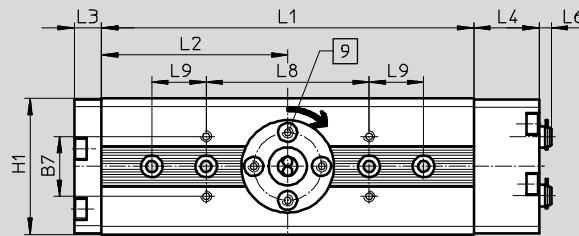
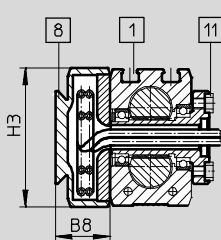
DRQD-B-...-P1J-...-SD



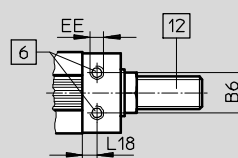
DRQD-B-...-YSRJ-...-SD



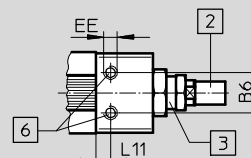
DRQD-B-16-...-20



DRQD-B-...-YSRJ-...-ZW



DRQD-B-...-YSRJ-...-SD



- |   |  |  |   |
|---|--|--|---|
| <p>1 T-slots for proximity sensors SME/SMT-8</p> <p>2 Self-adjusting shock absorber for end-position cushioning</p> <p>3 Adjustable sleeve for end-position adjustment for type DRQD-B-...-YSRJ</p> | <p>4 Socket head screw for end-position adjustment with integral regulating screw for end-position cushioning</p> <p>5 Variant PPVJ: both supply ports on one end cap, optionally at front or side</p> | <p>6 Variant YSRJ: both supply ports on one end cap, front side only</p> <p>7 Supply port for energy through-feed</p> <p>8 Mounting option via dovetail profile (for <math>\varnothing</math> 16 to 20 mm) or profile slot nut (grid dimensions 40 mm for <math>\varnothing</math> 25 to 32 mm) → 64</p> | <p>9 Position of designated centring hole at 0°</p> <p>10 Centring sleeves (2 included in scope of delivery) → 64</p> <p>11 Centring sleeves (not included in scope of delivery)</p> <p>12 Adjustable cushioning elements for end-position cushioning</p> |
|---|--|--|---|

## Semi-rotary drives DRQD-B-16 ... 32, twin-pistons

FESTO

Technical data

∅ [mm]	Swivel angle [°]	B1	B2	B3	B4	B5	B6	B7	B8	B9	D1 ∅	D2 ∅ ±0.025	D5	D6 ∅ H7	D7	D8 ∅ H13	D9 ∅	D10 ∅ H13	D11 ∅ H7
16	90	30	6.5	6	17.8	4	14.8	22	20	7	34	25	M4	7	M4	8	4.2	5.5	9
	180																		
	360																		
20	90	36	6.5	6	21.8	4	19.8	26	20	7	38	28	M4	7	M4	8	4.2	5.5	9
	180																		
	360																		
25	90	42	9.5	9	24.8	4	24.8	30	25	7	48	34	M6	9	M5	10	5.3	6.6	9
	180																		
	360																		
32	90	51	9.5	9	29.8	2	29.8	36	25	7	58	45	M6	9	M5	10	5.3	6.6	9
	180																		
	360																		

∅ [mm]	Swivel angle [°]	D12	EE	E1 ∅	H1	H3	H4	L1	L2	L3	L4	L5	L6		L7		L8 ±0.03	L9 ±0.03	L10
													min.	max.	min.	max.			
16	90	M12	M5	4	50	51	-	71	35.5	10	24	20.8	1.7	5.7	23.4	28.2	60	-	7.6
	180							93	46.5									-	
	360							137	68.5									20	
20	90	M14	M5	4	56	51	-	78.4	39.2	10	31.5	27	2.4	7	28.6	35.9	60	-	8
	180							104.8	52.4									-	
	360							157.6	78.8									20	
25	90	M16	M5	4	67	60	40	91.2	45.6	11	36.5	33	2.6	8.9	42	50.2	60	-	11
	180							124	62									-	
	360							189.2	94.6									20	
32	90	M22	G1/8	4	79	60	40	114.8	57.4	13	39	39	4.3	11.8	59.4	70.1	80	-	13.1
	180							155.6	77.8									20	
	360							237.4	118.7									20	

∅ [mm]	Swivel angle [°]	L11	L12	L13 min.	L16	L17		L18	T2	T3	T4	T6	T8	T9	⊖C1	⊖C2	⊖C3	⊖C4	⊖C6	⊖C7	⊖C8
						min.	max.														
16	90	5.3	72	255	14	6.7	41	5.8	1.6	3.5	5	2.1	1.4	2	4	9	13	17	15	4	8
	180																				
	360																				
20	90	5	72	250	13.5	8.5	59.5	5	1.6	3.5	5	2.1	1.4	2	7	11	15	19	17	4	8
	180																				
	360																				
25	90	5	95	240	15	9	61.4	5	2	5	6	2.1	2	2	7	15	19	24	19	5	10
	180																				
	360																				
32	90	8	95	230	20	10	60	8	2	5	6	2.1	2	2	8	20	27	32	27	5	10
	180																				
	360																				

- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-40 ... 50, twin-pistons

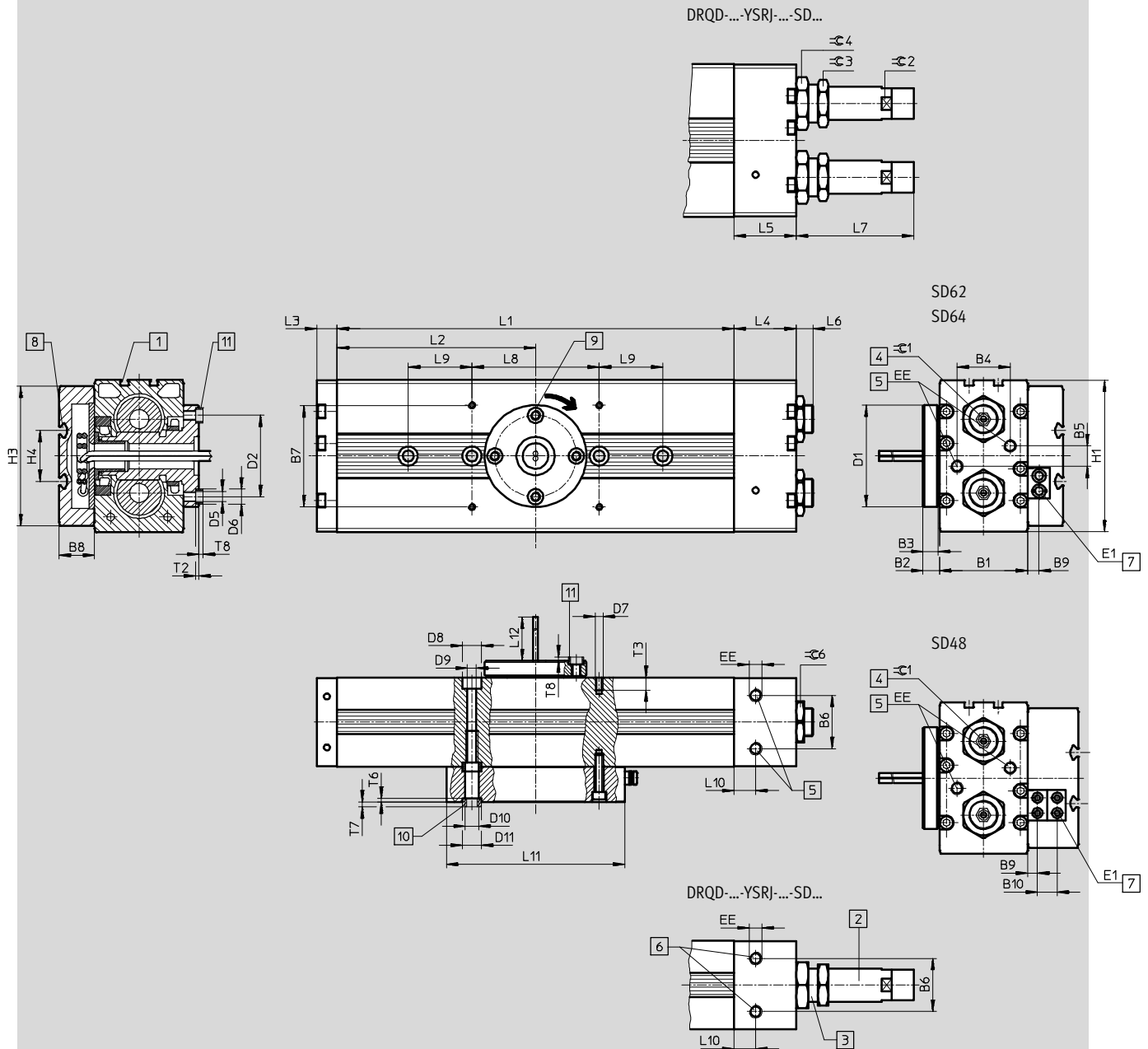
Technical data

FESTO


### Dimensions

FW-SD – Energy through-feed

Download CAD data → [www.festo.com](http://www.festo.com)



- |   |   |  |  |
|---|---|--|--|
| <p>1 T-slots for proximity sensors SME/SMT-8</p> <p>2 Self-adjusting shock absorber for end-position cushioning</p> <p>3 Adjustable sleeve for end-position adjustment for type DRQD-...-YSRJ</p> | <p>4 Socket head screw for end-position adjustment with integral regulating screw for end-position cushioning</p> <p>5 Variant PPV: both supply ports on one end cap, optionally at front or side</p> | <p>6 Variant YSRJ: both supply ports on one end cap, front side only</p> <p>7 Supply port for energy through-feed</p> <p>8 Mounting option via profile slot nut (grid dimensions 40 mm) → 64</p> | <p>9 Position of designated centring hole at 0°</p> <p>10 Centring sleeves (2 included in scope of delivery) → 64</p> <p>11 Centring sleeves (not included in scope of delivery)</p> |
|---|---|--|--|

 Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-40 ... 50, twin-pistons


FESTO

Technical data

∅ [mm]	Swivel angle [°]	Variant	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	D1 ∅	D2 ∅ ±0.05	D3 ∅ H7	D4 ∅	D5	D6 ∅ H7	D7	D8 ∅ H13
40	90	SD62/SD64	70	13	12	42	4	42	80	28	9	–	80	64	30	20	M8	12	M6	15
		SD48								40	7.75	15.5								
	180	SD62/SD64	70	13	12	42	4	42	80	28	9	–	80	64	30	20	M8	12	M6	15
		SD48								40	7.75	15.5								
	360	SD62/SD64	70	13	12	42	4	42	80	28	9	–	80	64	30	20	M8	12	M6	15
		SD48								40	7.75	15.5								
50	90	SD62/SD64	86	13	12	50	16	50	80	28	9	–	85	64	30	24	M8	12	M6	15
		SD48								40	7.75	15.5								
	180	SD62/SD64	86	13	12	50	16	50	80	28	9	–	85	64	30	24	M8	12	M6	15
		SD48								40	7.75	15.5								
	360	SD62/SD64	86	13	12	50	16	50	80	28	9	–	85	64	30	24	M8	12	M6	15
		SD48								40	7.75	15.5								

∅ [mm]	Swivel angle [°]	Variant	D9 ∅	D10 ∅	D11 ∅ H7	EE	E1	H1	H3	H4	L1	L2	L3	L4	L5	L6		L7	
																min.	max.	min.	max.
40	90	SD62/SD64	8.5	M10	15	G $\frac{1}{8}$	$\frac{6}{4}$	120	110	40	146.8	73.4	16	49	41.5	5	14.6	85.1	96.4
		SD48					$\frac{6}{4}$												
	180	SD62/SD64	8.5	M10	15	G $\frac{1}{8}$	$\frac{6}{4}$	120	110	40	201.8	100.9	16	49	41.5	5	14.6	85.1	96.4
		SD48					$\frac{6}{4}$												
	360	SD62/SD64	8.5	M10	15	G $\frac{1}{8}$	$\frac{6}{4}$	120	110	40	311.8	155.9	16	49	41.5	5	14.6	85.1	96.4
		SD48					$\frac{6}{4}$												
50	90	SD62/SD64	8.5	M10	15	G $\frac{1}{4}$	$\frac{6}{4}$	144	110	40	191.4	95.7	18	64	55	8	20.7	107.8	120.6
		SD48					$\frac{6}{4}$												
	180	SD62/SD64	8.5	M10	15	G $\frac{1}{4}$	$\frac{6}{4}$	144	110	40	262.8	131.4	18	64	55	8	20.7	107.8	120.6
		SD48					$\frac{6}{4}$												
	360	SD62/SD64	8.5	M10	15	G $\frac{1}{4}$	$\frac{6}{4}$	144	110	40	405.8	202.9	18	64	55	8	20.7	107.8	120.6
		SD48					$\frac{6}{4}$												

∅ [mm]	Swivel angle [°]	Variant	L8 ±0.03	L9 ±0.03	L10	L11	L12	T1	T2 min.	T3	T4	T5	T6 ±0.15	T7	T8	≡C1	≡C2	≡C3	≡C4	≡C6
			40	90	SD62/SD64	100	–	17	140	42	4	2.7	10	10	28	3	3	2.3	10	24
SD48																				
180	SD62/SD64	100		–	17	140	42	4	2.7	10	10	28	3	3	2.3	10	24	32	36	27
	SD48																			
360	SD62/SD64	100		50	17	140	42	4	2.7	10	10	28	3	3	2.3	10	24	32	36	27
	SD48																			
50	90	SD62/SD64	100	–	21.2	140	26	4	2.7	10	11	28	3	3	2.3	14	28	36	46	41
		SD48																		
	180	SD62/SD64	100	50	21.2	140	26	4	2.7	10	11	28	3	3	2.3	14	28	36	46	41
		SD48																		
	360	SD62/SD64	100	100	21.2	140	26	4	2.7	10	11	28	3	3	2.3	14	28	36	46	41
		SD48																		

-  Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-B-16 ... 20, twin-pistons

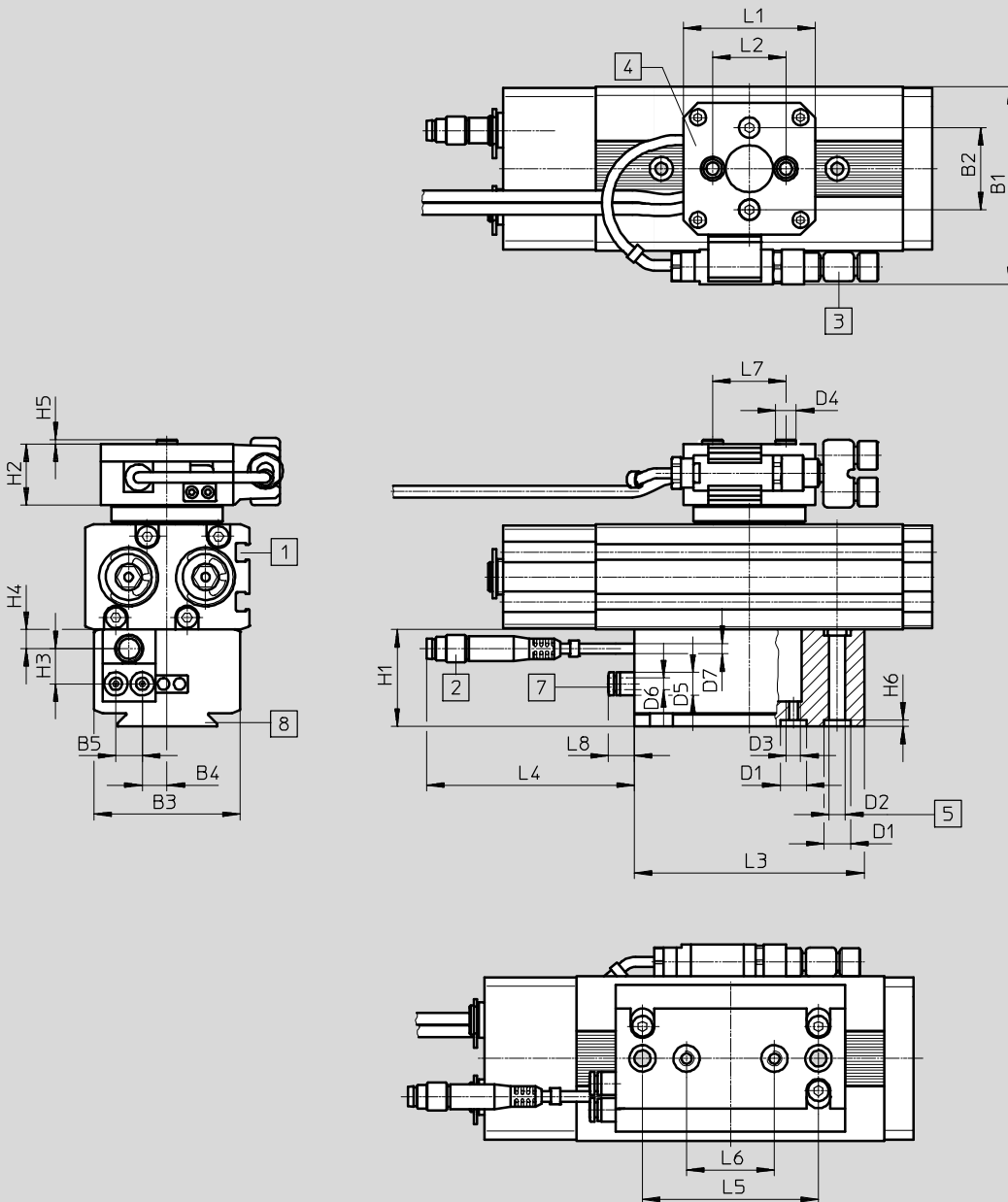
Technical data

FESTO

### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

FW E422 – Energy through-feed



- 1 T-slots for proximity sensors SME/SMT-8
- 2 Plug M8x1, 4-pin
- 3 Socket M8x1 for proximity sensor SME/SMT
- 4 Output plate can be repositioned by 90°

- 5 Screw-through option with screw M4
- 7 Supply port for energy through-feed for tubing O.D. 4 mm
- 8 Mounting option via dovetail connection

Basic dimensions  
→ 42

- 1 - Type discontinued  
Available up until 2016


## Semi-rotary drives DRQD-B-16 ... 20, twin-pistons

FESTO

Technical data

∅	B1	B2	B3	B4	B5	D1	D2	D3	D4	D5	D6	D7
[mm]		±0,02	+0,4		±0,2	∅ H7	∅		∅ h7	∅	∅	∅
16	64	28	50	8,5	9	9	5,5	M5	7	8	4	3,5
20		25										

∅	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	L6	L7	L8
[mm]	+0,2	+0,2		±0,5		±0,1		±0,02	±0,2		±0,02	±0,02	±0,02	
16	33	21	12	6,5	1,4	2,1	45	25	78,4	70	60	30	25	10
20								28						

-  - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-B-25 ... 32, twin-pistons

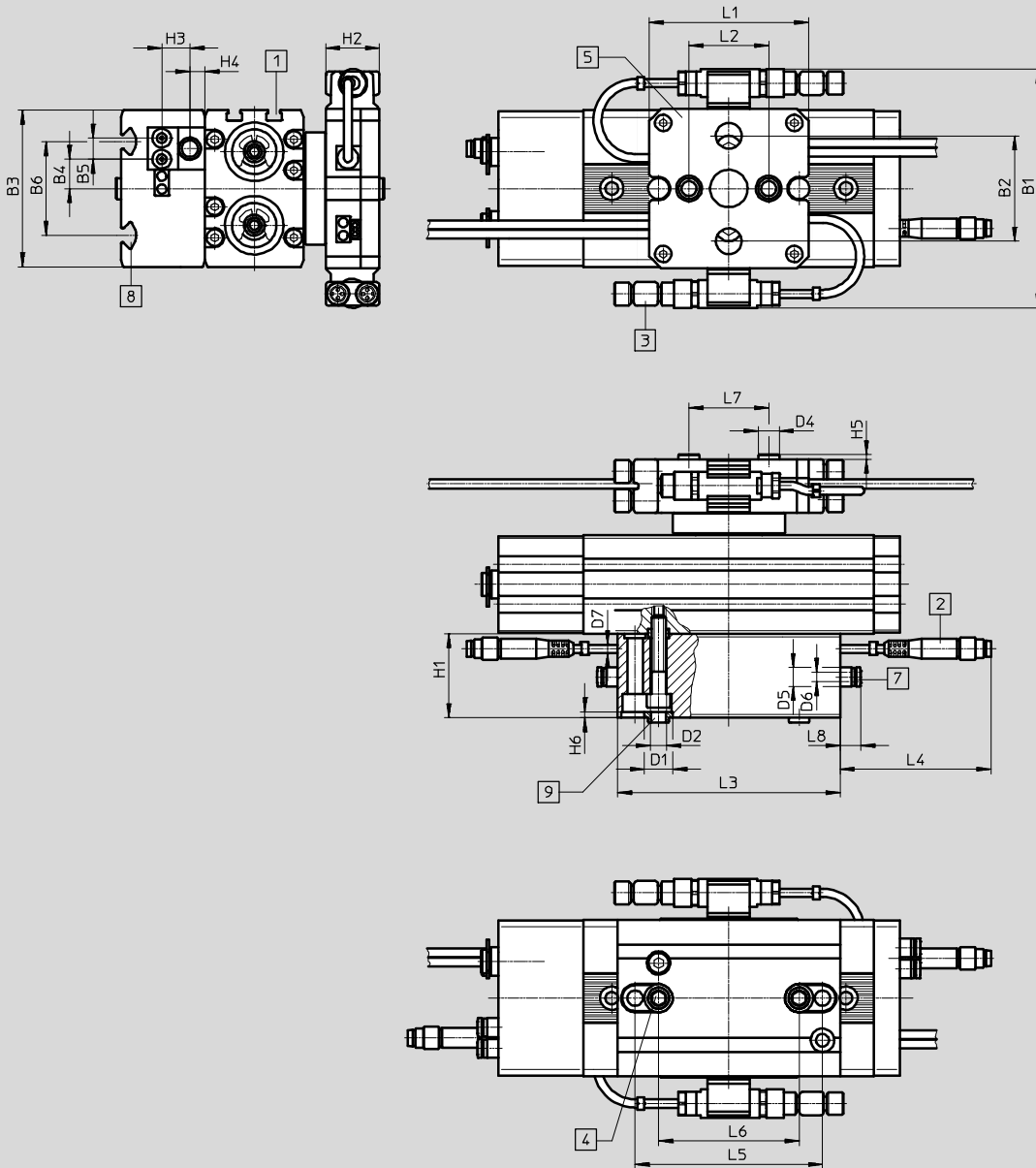
Technical data

FESTO

### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

FW-E444 – Energy through-feed



1 T-slots for proximity sensors  
SME/SMT-8

2 Plug M8x1, 4-pin

3 Socket M8x1 for proximity  
sensor SME/SMT

4 Mounting via through-holes  
possible with screw M5 (retain-  
ing screws must be removed  
beforehand)

5 Centring hole can be  
repositioned by 90°

7 Supply port for energy through-  
feed for tubing O.D. 6 mm

8 Mounting option via profile slot  
nut

9 Centring sleeves (2 pieces  
included in scope of delivery)

→ 64

Basic dimensions  
→ 42



- 1 - Type discontinued  
Available up until 2016


## Semi-rotary drives DRQD-B-25 ... 32, twin-pistons

FESTO

Technical data

∅	B1	B2	B3	B4	B5	B6	D1	D2	D4	D5	D6	D7
[mm]		±0,02	+0,3		±0,2	±0,5	∅ H7	∅ H13	∅ h7	∅	∅	∅
25	102	34	67	12,5	9	40	12	66	9	8	4	3,5
32		45										

∅	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	L6	L7	L8
[mm]	+0,15	+0,2		±0,5		±0,1		±0,02	±0,2		±0,02	±0,02	±0,02	
25	36	23	12	6,5	2	2,6	68	34	95	65	80	60	34	10
32								45						

-  - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-40 ... 50, twin-pistons

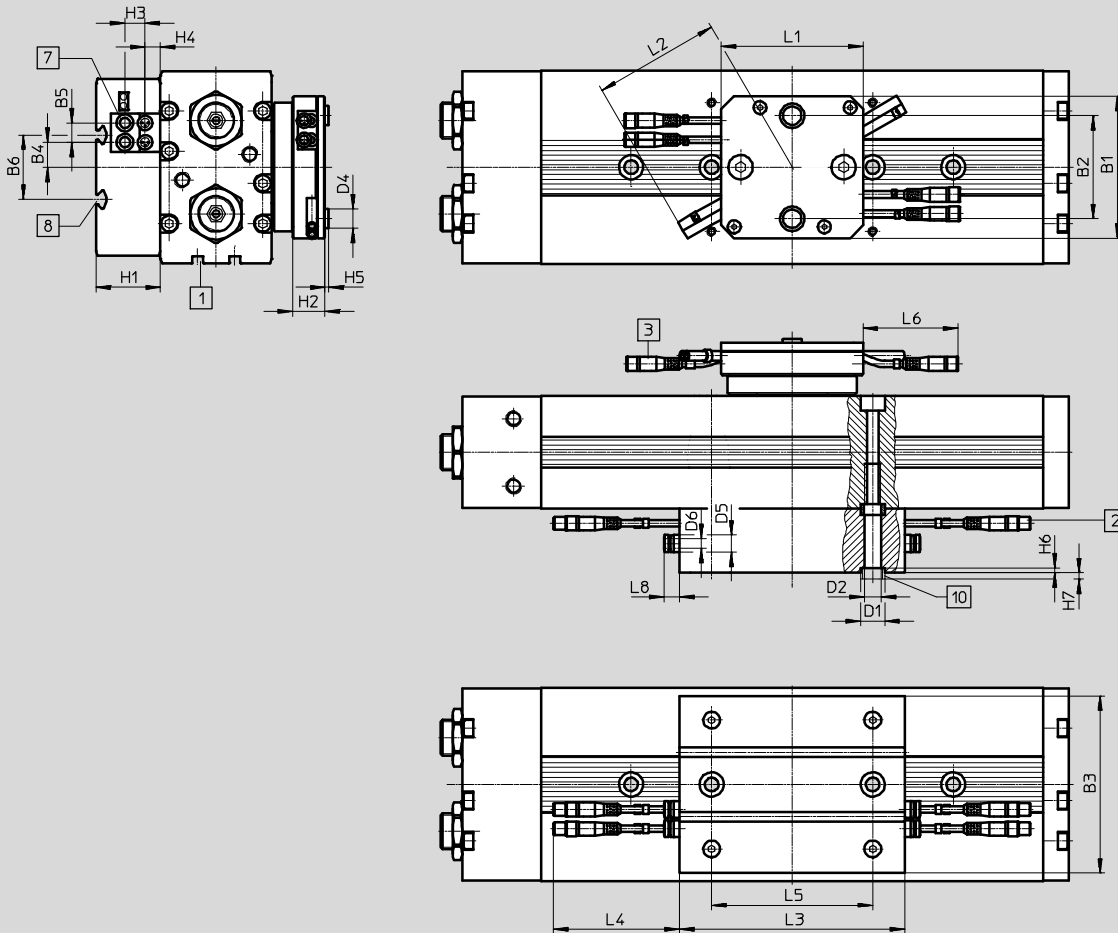
Technical data

FESTO

### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

FW-E644 – Energy through-feed




- 1** T-slots for proximity sensors  
SME/SMT-8
- 2** Plug M8x1
- 3** Socket M8x1
- 7** Supply port for energy through-feed for tubing O.D. 6 mm

- 8** Mounting option via profile slot  
nut (grid dimensions 40 mm)  
→ 64
- 10** Centring sleeves (2 pieces  
included in scope of delivery)  
→ 64

Basic dimensions  
→ 44

∅	B1	B2	B3	B4	B5	B6	D1	D2	D4	D5	D6
[mm]		±0,02	+0,2		±0,2	±0,5	∅ H7	∅ H13	∅ h7	∅	∅
40	88	64	110	15,5	12	40	15	10,5	12	10,5	6
50											




∅	H1	H2	H3	H4	H5	H6	H7	L1	L2	L3	L4	L5	L6	L8
[mm]	+0,2/-0,1	+0,2		±0,5		+0,15			min.			±0,03		±1
40	40	20	12,5	9,5	2,5	3	3	88	75	140	82	100	150	9,5
50													130	

 Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-B-16 ... 32, DRQD-40 ... 50, twin-pistons

FESTO

Technical data

Ordering data – Standard types				
DRQD	∅ [mm]	Swivel angle [°]	Part No.	Type
<b>PPVJ – Adjustable end-position cushioning</b>				
	AL – Connection on left			
	16	180	563341	DRQD-B-16-180-PPVJ-A-AL-FW
	20		563342	DRQD-B-20-180-PPVJ-A-AL-FW
	25		563343	DRQD-B-25-180-PPVJ-A-AL-FW
	32		563344	DRQD-B-32-180-PPVJ-A-AL-FW
	AR – Connection on right			
	16	90	563367	DRQD-B-16-90-PPVJ-A-AR-FW
	16	180	563353	DRQD-B-16-180-PPVJ-A-AR-FW
	20		563354	DRQD-B-20-180-PPVJ-A-AR-FW
	25		563355	DRQD-B-25-180-PPVJ-A-AR-FW
	32		563356	DRQD-B-32-180-PPVJ-A-AR-FW
	<b>P1J – Adjustable flexible cushioning elements</b>			
	AL – Connection on left			
	16	180	1177954	DRQD-B-16-180-P1J-A-AL-FW
	20		1177955	DRQD-B-20-180-P1J-A-AL-FW
	25		1177956	DRQD-B-25-180-P1J-A-AL-FW
	32		1177957	DRQD-B-32-180-P1J-A-AL-FW
	AR – Connection on right			
	16	180	1177950	DRQD-B-16-180-P1J-A-AR-FW
	20		1177951	DRQD-B-20-180-P1J-A-AR-FW
	25		1177952	DRQD-B-25-180-P1J-A-AR-FW
	32		1177953	DRQD-B-32-180-P1J-A-AR-FW
<b>YSRJ – Adjustable shock absorbers</b>				
	AL – Connection on left			
	16	180	563337	DRQD-B-16-180-YSRJ-A-AL-FW
	20		563338	DRQD-B-20-180-YSRJ-A-AL-FW
	25		563339	DRQD-B-25-180-YSRJ-A-AL-FW
	32		563340	DRQD-B-32-180-YSRJ-A-AL-FW
	AR – Connection on right			
	16	180	563349	DRQD-B-16-180-YSRJ-A-AR-FW
	20		563350	DRQD-B-20-180-YSRJ-A-AR-FW
	25		563351	DRQD-B-25-180-YSRJ-A-AR-FW
	32		563352	DRQD-B-32-180-YSRJ-A-AR-FW

**- 1 - Type discontinued**  
**Available up until 2016**

## Semi-rotary drives DRQD-B-16 ... 32, twin-pistons

**FESTO**

Ordering data – Modular products

Ordering table							
Size	16	20	25	32	Condi- tions	Code	Enter code
<b>M</b> Module No.	<b>563345</b>	<b>563346</b>	<b>563347</b>	<b>563348</b>			
Function	Semi-rotary drive with twin pistons					<b>DRQD</b>	DRQD
Product design	Function-optimized					<b>-B</b>	-B
Piston Ø [mm]	16	20	25	32		-...	
Swivel angle (standard)	90°					<b>-90</b>	
Adjusting range +6°/-20° (not preset)	180°					<b>-180</b>	
	360°				<b>1</b>	<b>-360</b>	
X-rotation angle	1° ... 70°, with centre section 90°					-...	
Adjusting range ±6°	100° ... 160°, with centre section 180°					-...	
Angle preset ±1°	190° ... 340°, with centre section 360°				<b>1</b>	-...	
Cushioning	Adjustable end-position cushioning					<b>-PPVJ</b>	
	Adjustable shock absorbers					<b>-YSRJ</b>	
	Adjustable flexible cushioning elements				<b>2</b>	<b>-P1J</b>	
Position sensing	For proximity sensing					<b>-A</b>	-A
Pneumatic connection	Connection on left					<b>-AL</b>	
	Connection on right					<b>-AR</b>	
Output shaft	Spigot shaft				<b>3</b>	<b>-ZW</b>	
	Flanged shaft				<b>4</b>	<b>-FW</b>	

**1 190 ... 360** Not with energy through-feed E422, E444

**2 P1J** Not with Z1, only with standard swivel angle (90°, 180°, 360°)

**3 ZW**

Not with energy through-feed SD32, SD42, E422, E444

**4 FW**

Required for energy through-feed SD32, SD42, E422, E444

Transfer order code

**DRQD** -  **B** -  -  -  **A** -  -

- 1 - Type discontinued  
Available up until 2016

## Semi-rotary drives DRQD-B-16 ... 32, twin-pistons

FESTO

Ordering data – Modular products

Ordering table								
Size	16	20	25	32	Condi- tions	Code	Enter code	
0	Intermediate position	1 intermediate position (mid-position)			5	-Z1		
	Energy through-feed	2x tubing O.D. 3 mm				-SD32		
		2x tubing O.D. 4 mm				-SD42		
		2x tubing O.D. 4 mm, 1x 4-pin cable to 2x 3-pin cable		-	-	6	-E422	
		-	-	4x tubing O.D. 4 mm, 2x 4-pin cable to 4x 3-pin cable		6	-E444	
	Alternative language user docu- mentation (standard is German)	No user manual to be included				-B		
		User manual English				-E		
		User manual French				-F		
		User manual Spanish				-S		
		User manual Italian				-I		
		User manual Swedish				-V		
	EU certification	II 2GD				-EX4		

5 Z1 Cannot be combined with swivel angle (standard) 360° and X swivel angle

6 E422, E444 Not with certification EX4

Transfer order code

-  -  -  -

**- 1 - Type discontinued**  
**Available up until 2016**

## Semi-rotary drives DRQD-40 ... 50, twin-pistons

**FESTO**

Ordering data – Modular products

Ordering table					
Size	40	50	Condi- tions	Code	Enter code
<b>[M]</b> Module No.	<b>197373</b>	<b>197374</b>			
Function	Semi-rotary drive with twin pistons			<b>DRQD</b>	DRQD
Piston Ø [mm]	40	50		-...	
Swivel angle (standard)	90°			<b>-90</b>	
Adjusting range +6°/-20° (not preset)	180°			<b>-180</b>	
	360°		<b>[1]</b>	<b>-360</b>	
	1° ... 70°, with centre section 90°			-...	
X-rotation angle Adjusting range ±6°	100° ... 160°, with centre section 180°			-...	
	190° ... 340°, with centre section 360°		<b>[1]</b>	-...	
Cushioning	Adjustable end-position cushioning			<b>-PPVJ</b>	
	Adjustable shock absorbers			<b>-YSRJ</b>	
Position sensing	For proximity sensing			<b>-A</b>	-A
Pneumatic connection	Connection on left			<b>-AL</b>	
	Connection on right			<b>-AR</b>	
Output shaft	Spigot shaft		<b>[2]</b>	<b>-ZW</b>	
	Flanged shaft		<b>[3]</b>	<b>-FW</b>	

**[1] 190 ... 360** Not with energy through-feed E644

**[3] FW** Required for energy through-feed SD48, SD62, SD64, E644

**[2] ZW** Not with energy through-feed SD48, SD62, SD64, E644

Transfer order code

**DRQD** -  -  -  - **A** -  -

**- I - Type discontinued**  
**Available up until 2016**

## Semi-rotary drives DRQD-40 ... 50, twin-pistons

**FESTO**

Ordering data – Modular product system

Ordering table						
Size	40	50	Condi- tions	Code	Enter code	
0	Intermediate position	1 intermediate position (mid-position)	4	-Z1		
	Energy through-feed	8x tubing O.D. 4 mm	5	-SD48		
		2x tubing O.D. 6 mm	5	-SD62		
		4x tubing O.D. 6 mm	5	-SD64		
		4x tubing O.D. 6 mm, 4x 3-pin cable	5	-E644		
	Alternative language user docu- mentation (standard is German)	No user manual to be included			-B	
		User manual English			-E	
		User manual French			-F	
		User manual Spanish			-S	
		User manual Italian			-I	
		User manual Swedish			-V	
	EU certification	II 2GD			-EX4	

- 4 **Z1** Cannot be combined with swivel angle (standard) 360° and X swivel angle  
 5 **E644** Not with certification EX4



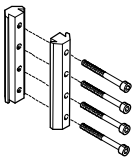
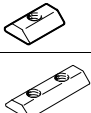
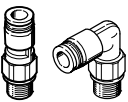
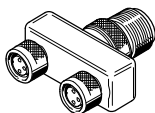
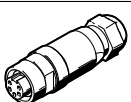
Transfer order code

-  -  -  -

# Semi-rotary drives DRQD/DRQD-B, twin pistons

Accessories

**FESTO**


Ordering data						
	For Ø	Remarks	Design	Part No.	Type	PU <sup>1)</sup>
<b>Centring sleeve ZBH</b> <span style="float: right;">Technical data → Internet: zbh</span>						
	6	For centring the drive on attachments		<b>186717</b>	<b>ZBH-7</b>	10
	8 ... 32			<b>150927</b>	<b>ZBH-9</b>	
	40/50			<b>191409</b>	<b>ZBH-15</b>	
	16/20	For centring attachments on the flanged shaft FW		<b>186717</b>	<b>ZBH-7</b>	
	25/32			<b>150927</b>	<b>ZBH-9</b>	
	40/50			<b>189653</b>	<b>ZBH-12</b>	
<b>Connecting sleeve ZBV</b> <span style="float: right;">Technical data → Internet: zbv</span>						
	25 ... 32	For centring the semi-rotary drive with a drive		<b>548806</b>	<b>ZBV-12-9</b>	1
<b>Adapter kit HMSV</b> <span style="float: right;">Technical data → Internet: hmsv</span>						
	16/20	Mounting via dovetail profile for variant with energy through-feed SD... and E...		<b>177647</b>	<b>HMSV-1</b>	1
<b>Slot nut HMBN</b> <span style="float: right;">Technical data → Internet: hmbn</span>						
	25 ... 50	Mounting via profile slot nut for variant with energy through-feed SD... and E...		<b>547264</b>	<b>HMBN-5-1M5</b>	10
				<b>186566</b>	<b>HMBN-5-2M5</b>	
<b>Rotary push-in fitting</b> <span style="float: right;">Technical data → Internet: quick star</span>						
	6 ... 12 Only in combination with hollow bolt HS	With ball bearing, for standard O.D. tubing	Straight	<b>153526</b>	<b>QSR-M5-4</b>	1
			L-shape	<b>153529</b>	<b>QSRL-M5-4</b>	
<b>T-connector NEDU</b> <span style="float: right;">Technical data → Internet: nedu</span>						
	16 ... 32	Included in the scope of delivery if semi-rotary drive DRQD is ordered with energy through-feed E422 and E444. Suitable for connection of two proximity sensors SME/SMT-8 or SME/SMT-10		<b>544391</b>	<b>NEDU-M8D3-M8T4</b>	1
<b>Cable socket NECU</b> <span style="float: right;">Technical data → Internet: necu</span>						
	16 ... 32	Included in the scope of delivery if semi-rotary drive DRQD is ordered with energy through-feed E422 and E444.		<b>544392</b>	<b>NECU-M8G4</b>	1



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



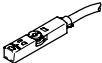
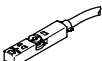
# Semi-rotary drives DRQD/DRQD-B, twin pistons

Accessories

Ordering data – Proximity sensors for C-slot, magneto-resistive						Technical data → Internet: smt	
	Type of mounting	Switch output	Electrical connection, connection direction	Cable length [m]	Part No.	Type	
N/O contact							
	Insertable in the slot from above	PNP	Cable, 3-wire, in-line	2.5	551373	SMT-10M-PS-24V-E-2,5-L-OE	
			Plug M8x1, 3-pin, in-line	0.3	551375	SMT-10M-PS-24V-E-0,3-L-M8D	
			Plug M8x1, 3-pin, lateral	0.3	551376	SMT-10M-PS-24V-E-0,3-Q-M8D	

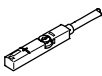


Ordering data – Proximity sensors for C-slot, magnetic reed						Technical data → Internet: sme	
	Type of mounting	Switch output	Electrical connection, connection direction	Cable length [m]	Part No.	Type	
N/O contact							
	Insertable in the slot from above	Contacting	Plug M8x1, 3-pin, in-line	0.3	551367	SME-10M-DS-24V-E-0,3-L-M8D	
			Cable, 3-wire, in-line	2.5	551365	SME-10M-DS-24V-E-2,5-L-OE	
			Cable, 2-wire, in-line	2.5	551369	SME-10M-ZS-24V-E-2,5-L-OE	
	Insertable in the slot lengthwise	Contacting	Plug M8x1, 3-pin, in-line	0.3	173212	SME-10-SL-LED-24	
			Cable, 3-wire, in-line	2.5	173210	SME-10-KL-LED-24	



Ordering data – Connecting cables				Technical data → 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		


Ordering data – Proximity sensors for T-slot, magneto-resistive						Technical data → Internet: smt	
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type	
N/O contact							
	Insertable in the slot from above, flush with cylinder profile, short design	PNP	Cable, 3-wire	2.5	574335	SMT-8M-A-PS-24V-E-2,5-OE	
			Plug M8x1, 3-pin	0.3	574334	SMT-8M-A-PS-24V-E-0,3-M8D	
			Plug M12x1, 3-pin	0.3	574337	SMT-8M-A-PS-24V-E-0,3-M12	
		NPN	Cable, 3-wire	2.5	574338	SMT-8M-A-NS-24V-E-2,5-OE	
			Plug M8x1, 3-pin	0.3	574339	SMT-8M-A-NS-24V-E-0,3-M8D	
N/C contact							
	Insertable in the slot from above, flush with cylinder profile, short design	PNP	Cable, 3-wire	7.5	574340	SMT-8M-A-PO-24V-E-7,5-OE	

# Semi-rotary drives DRQD/DRQD-B, twin pistons

Accessories

Ordering data – Proximity sensors for T-slot, magnetic reed					Technical data → Internet: sme	
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type
<b>N/O contact</b>						
	Insertable in the slot from above, flush with cylinder profile	Contacting	Cable, 3-wire	2.5	<b>543862</b>	<b>SME-8M-DS-24V-K-2,5-OE</b>
				5.0	<b>543863</b>	<b>SME-8M-DS-24V-K-5,0-OE</b>
			Cable, 2-wire	2.5	<b>543872</b>	<b>SME-8M-ZS-24V-K-2,5-OE</b>
			Plug M8x1, 3-pin	0.3	<b>543861</b>	<b>SME-8M-DS-24V-K-0,3-M8D</b>
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	<b>150855</b>	<b>SME-8-K-LED-24</b>
			Plug M8x1, 3-pin	0.3	<b>150857</b>	<b>SME-8-S-LED-24</b>
<b>N/C contact</b>						
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	<b>160251</b>	<b>SME-8-O-K-LED-24</b>

Ordering data – Connecting cables				Technical data → 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	<b>541333</b>	<b>NEBU-M8G3-K-2.5-LE3</b>
			5	<b>541334</b>	<b>NEBU-M8G3-K-5-LE3</b>
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	<b>541363</b>	<b>NEBU-M12G5-K-2.5-LE3</b>
			5	<b>541364</b>	<b>NEBU-M12G5-K-5-LE3</b>
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	<b>541338</b>	<b>NEBU-M8W3-K-2.5-LE3</b>
			5	<b>541341</b>	<b>NEBU-M8W3-K-5-LE3</b>
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	<b>541367</b>	<b>NEBU-M12W5-K-2.5-LE3</b>
			5	<b>541370</b>	<b>NEBU-M12W5-K-5-LE3</b>


Ordering data – Slot cover for T-slot				
	Assembly	Length [m]	Part No.	Type
	Insertable from above	2x 0.5	<b>151680</b>	<b>ABP-5-S</b>

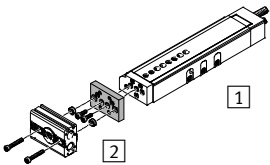
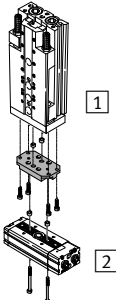
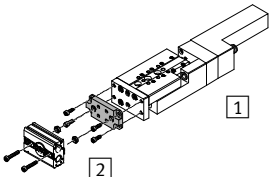
# Semi-rotary drives DRQD/DRQD-B, twin pistons

Accessories

**Adapter kit**  
HAPS, HMSV

Material:  
Wrought aluminium alloy  
Free of copper and PTFE  
RoHS-compliant

 Note  
The kit includes the individual mounting interface as well as the necessary mounting material.

Permissible drive/drive combinations with adapter kit				Download CAD data → <a href="http://www.festo.com">www.festo.com</a>			
Combination	1	2	Adapter kit				
	Drive	Drive	CRC <sup>1)</sup>	Part No.	Type	Required quantity	PU <sup>2)</sup>
DGSL/DRQD	DGSL	DRQD	HMSV				
	Direct mounting on yoke plate						
	4, 6	6	2	548783	HMSV-53	1	1
	8, 10	8, 12		548784	HMSV-54	1	1
	12, 16	8, 12		548785	HMSV-55	1	1
	20, 25	16, 20		548786	HMSV-56	1	1
	Direct mounting on slide						
	8, 10	8, 12	2	548784	HMSV-54	1	1
	12, 16	8, 12		548785	HMSV-55	1	1
	20, 25	16, 20		548786	HMSV-56	1	1
	SLT/DRQD	SLT	DRQD	HAPS			
	6	6	2	178447	HAPS-1	1	1
	10	8		178448	HAPS-2	1	1
	16	12		178449	HAPS-3	1	1
	20	16, 20		178450	HAPS-4	1	1
	25	16, 20		178451	HAPS-5	1	1
	SLTE/DRQD	SLTE		DRQD	HAPS		
	10	8	2	178448	HAPS-2	1	1
	16	12		178449	HAPS-3	1	1

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.

2) Packaging unit quantity


# Semi-rotary drives DRQD/DRQD-B, twin pistons

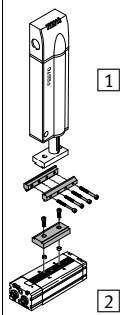
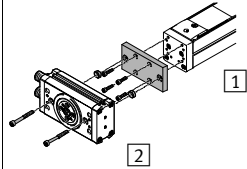
Accessories

FESTO

Adapter kit  
HMVA, HMSV

Material:  
Wrought aluminium alloy  
Free of copper and PTFE  
RoHS-compliant

 Note  
The kit includes the individual mounting interface as well as the necessary mounting material.

Permissible drive/drive combinations with adapter kit			Download CAD data → <a href="http://www.festo.com">www.festo.com</a>				
Combination	1	2	Adapter kit			Required quantity	PU <sup>2)</sup>
	Drive	Drive	CRC <sup>1)</sup>	Part No.	Type		
HMP/DRQD	HMP	DRQD	HMSV				
	Direct mounting						
	16, 20	16, 20	2	–	M5x20 DIN 912 <sup>3)</sup>	3	–
				150927	ZBH-9 <sup>3)</sup>	3	10
	25	16, 20		–	M5x25 DIN 912 <sup>3)</sup>	3	–
				150927	ZBH-9 <sup>3)</sup>	3	10
	25	25		177657	HMSV-11	1	1
	32	20		177659	HMSV-13	1	1
	32	25	177661	HMSV-15	1	1	
	32	32	177663	HMSV-17	1	1	
	Dovetail mounting						
	16, 20, 25, 32	16 <sup>4)</sup> , 20 <sup>4)</sup>	2	177647	HMSV-1	1	1
	16, 20, 25	16, 20		177656	HMSV-10	1	1
	25	25		177657	HMSV-11	1	1
				177649	HMSV-3	1	1
	32	20		177659	HMSV-13	1	1
				177649	HMSV-3	1	1
	32	25		177661	HMSV-15	1	1
				177653	HMSV-7	1	1
	32	177663	HMSV-17	1	1		
		177653	HMSV-7	1	1		
DGP(I)L, DGE, DGEA/DRQD	DG...	DRQD	HMSV, HMVA				
	18 <sup>5)</sup> , 25, 32	16, 20	2	196788	HMVA-DLA18/25	1	1
				177656	HMSV-10	1	1
	40	20		196790	HMVA-DLA40	1	1
				177656	HMSV-10	1	1
	25	25		196788	HMVA-DLA18/25	1	1
				177657	HMSV-11	1	1
				177649	HMSV-3	1	1
	40	25		196790	HMVA-DLA40	1	1
				177657	HMSV-11	1	1
				177649	HMSV-3	1	1
40	32	196790	HMVA-DLA40	1	1		
		177663	HMSV-17	1	1		
		177653	HMSV-7	1	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.
- Packaging unit quantity.
- The screws and centring sleeves listed are not included in the scope of delivery of the drives.
- Possible in combination with DRQD-...-SD32 and DRQD-...-SD42 (flanged shaft with energy through-feed).
- Only for DGEA-...

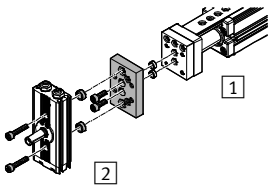
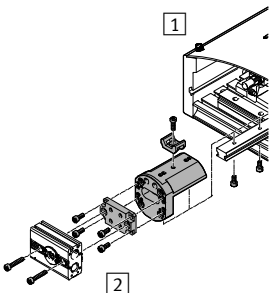
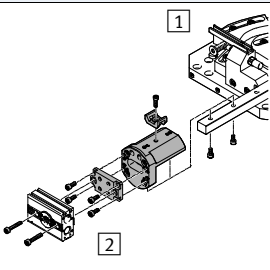
# Semi-rotary drives DRQD/DRQD-B, twin pistons

Accessories

**Adapter kit**  
HMVA, HMSV, HAPG

Material:  
Wrought aluminium alloy  
Free of copper and PTFE  
RoHS-compliant

 Note  
The kit includes the individual mounting interface as well as the necessary mounting material.

Permissible drive/drive combinations with adapter kit				Download CAD data → <a href="http://www.festo.com">www.festo.com</a>			
Combination	[1] Drive	[2] Drive	Adapter kit				
	Size	Size	CRC <sup>1)</sup>	Part No.	Type	Required quantity	PU <sup>2)</sup>
	EGSL	DRQD	HMSV				
	35	6	2	548783	HMSV-53	1	1
				1088262	HMSV-70	1	1
	35	8, 12		548784	HMSV-54	1	1
				1088262	HMSV-70	1	1
45, 55	8, 12	548785		HMSV-55	1	1	
		75	16, 20	548786	HMSV-56	1	1
	HSP	DRQD	HAPG, HAPS				
	12	6	2	540881	HAPG-70-B	1	1
				–	M4x20 DIN 912 <sup>3)</sup>	2	–
	16	8, 12		178448	HAPS-2 <sup>4)</sup>	1	1
				540882	HAPG-71-B	1	1
	25	12		178448	HAPS-2 <sup>4)</sup>	1	1
		540883		HAPG-72-B	1	1	
	HSW	DRQD	HAPG, HAPS				
	12, 16	8, 12	2	178448	HAPS-2 <sup>4)</sup>	1	1
				540882	HAPG-71-B	1	1

- 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.
- 2) Packaging unit quantity
- 3) The screws listed are not included in the scope of delivery of the drives.
- 4) The centering sleeves for attaching to the adapter kit HAPG-71-B are not required.

## Product Range and Company Overview

### A Complete Suite and Company Overview

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



**Custom Automation Components**  
Complete custom engineered solutions



**Custom Control Cabinets**  
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### Quality Assurance, ISO 9001 and ISO 14001 Certifications

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To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.

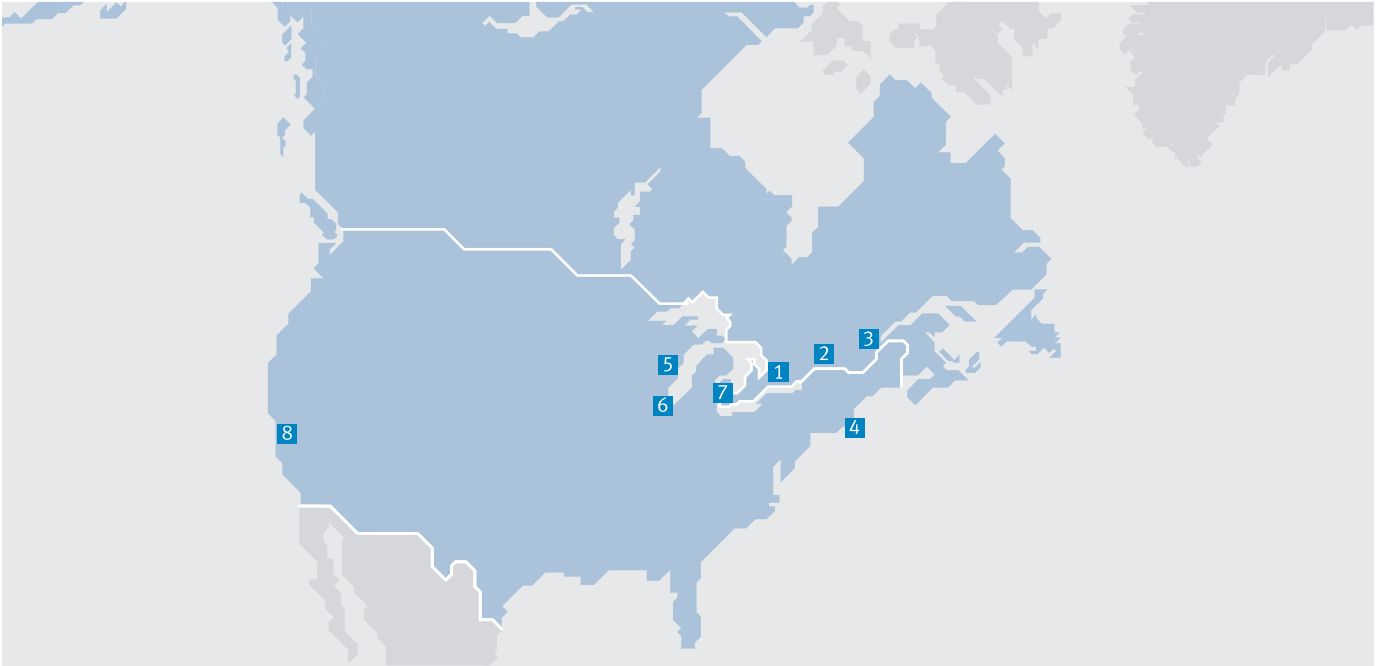


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