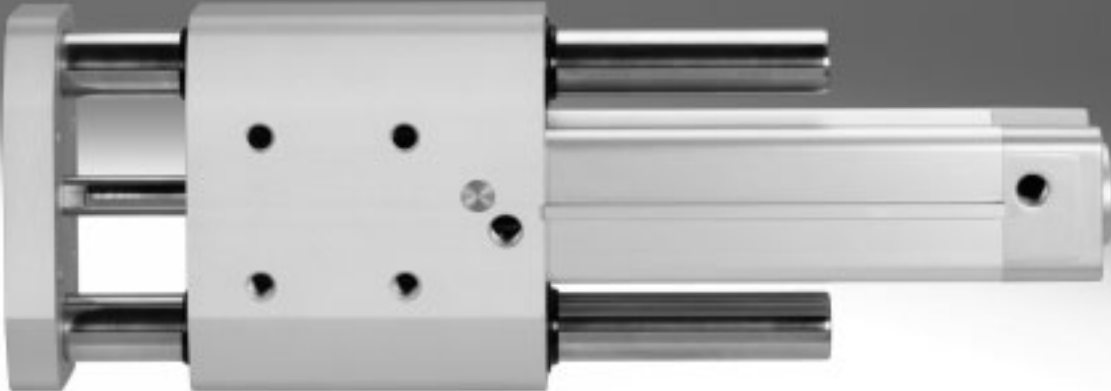


**Guided drives DGRF-C, Clean Design**



# Guided drives DGRF-C, Clean Design

Features and Product range overview

## At a glance

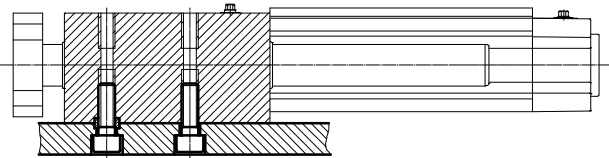
- The guided drive is used wherever hygiene, ease of cleaning and resistance are important, predominantly in dry and splash zones in the food and packaging industry.
- Corrosion-resistant in harsh environmental conditions
- Easy-to-clean design
- NSF-H1 compliant lubrication
- Resistant to conventional cleaning agents
- For hygiene reasons, the threads on the end caps should be sealed with suitable blanking screws
- With a dry-running seal (A3), the cylinder will continue to function reliably even if the lubricant has been washed away due to frequent cleaning.

## Areas of application:

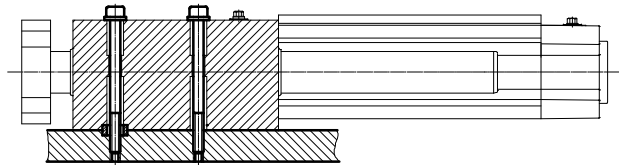
- Bottling systems in the beverage industry
  - Labelling and palletising machines
- Milk processing
  - Filling ice cream and yoghurt containers, etc.
- Meat processing
- Confectionery production
- Bakery production
- Packaging industry
  - Food, pharmaceuticals, cosmetics, chemicals, beverages and tobacco

## Mounting options

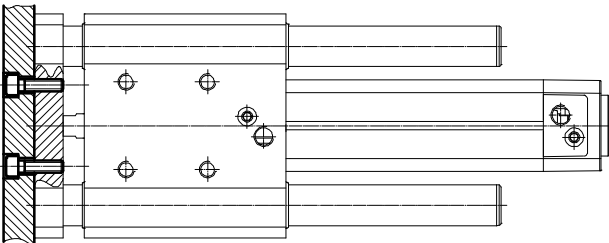
Underneath



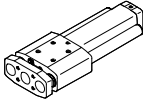
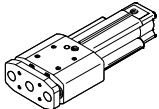
On top



On the yoke plate



## Product range overview

Function	Type	Piston Ø	Stroke	Cushioning			Position sensing	Mounting rail	Unlubricated operation
				P	PPV	PPS			
Double-acting	DGRF-C-GF								
		20, 25	10 ... 400	■	–	–	–	–	■
		32	10 ... 400	■	■	■	■	■	■
		40, 50, 63	10 ... 400	–	■	■	■	■	■

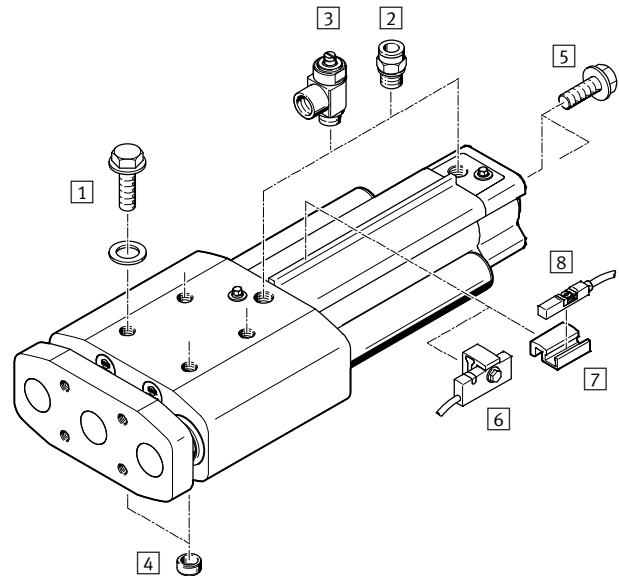
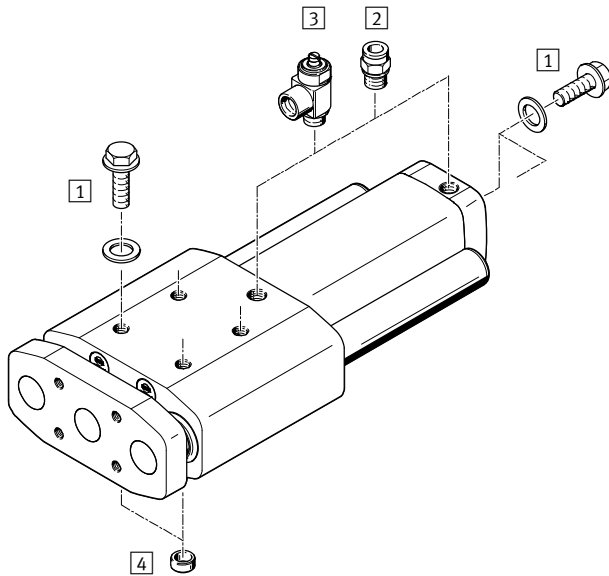
# Guided drives DGRF-C, Clean Design

Peripherals overview

FESTO

Piston  $\varnothing$  20, 25

Piston  $\varnothing$  32, 40, 50, 63



Accessories		Description	DGRF-...-			→ Page/ Internet
			P	PPV	PPS	
1	Plug screw DAMD	<ul style="list-style-type: none"> <li>For sealing unused mounting threads</li> <li>The cover plate is included with the screw</li> <li>The screws are not included with the drive</li> </ul>	■	■	■	15
2	Push-in fitting NPQH/CRQS/CRQSL/NPQP	For connecting overall toleranced tubing	■	■	■	13
3	One-way flow control valve CRGLA/VFOH	For regulating speed	■	■	■	14
4	Centring sleeve ZBH	<ul style="list-style-type: none"> <li>For centring the guided drive</li> <li>Two centring sleeves are included in the scope of delivery</li> </ul>	■	■	■	15
5	Plug screw DAMD	<ul style="list-style-type: none"> <li>For sealing unused mounting threads</li> <li>The screws are not included with the drive</li> </ul>	■	■	■	15
6	Proximity sensor SMT-C1	<ul style="list-style-type: none"> <li>For sensing the piston rod position</li> <li>Proximity sensor is mounted on the sensor mounting rail</li> </ul>	■	■	■	12
7	Mounting kit SMB-8-C	<ul style="list-style-type: none"> <li>For mounting the proximity sensor CRSMT-8M</li> <li>Mounting kit is mounted on the sensor mounting rail</li> </ul>	-	■1)	■	12
8	Proximity sensor CRSMT-8M	For sensing the piston rod position	-	■1)	■	12

1) Possible when ordering cylinders from 02/2014 (series E2).

# Guided drives DGRF-C, Clean Design

Type codes

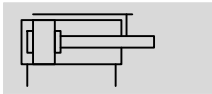
		DGRF	-	C	-	GF	-	32	-	200	-	PPV	-	A	-	R	-	A3	
<b>Type</b>																			
Double-acting																			
DGRF	Guided drive																		
<b>Design</b>																			
C	Easy-to-clean design																		
<b>Guide</b>																			
GF	Plain-bearing guide																		
<b>Piston Ø [mm]</b>																			
<b>Stroke [mm]</b>																			
<b>Cushioning</b>																			
P	Elastic cushioning rings at both ends																		
PPV	Pneumatic cushioning, adjustable at both ends																		
PPS	Pneumatic cushioning, self-adjusting at both ends																		
<b>Position sensing</b>																			
A	Via proximity sensor																		
<b>Sensor mounting, external</b>																			
R	Mounting rail for proximity sensor																		
<b>Wiper seal material</b>																			
-	Standard																		
A3	Suitable for unlubricated operation																		

# Guided drives DGRF-C, Clean Design

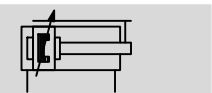
Technical data

Function

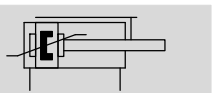
P cushioning



PPV cushioning



PPS cushioning



- Diameter  
20 ... 63 mm
- Stroke length  
10 ... 400 mm
- [www.festo.com](http://www.festo.com)



General technical data							
Piston Ø		20	25	32	40	50	63
Pneumatic connection		M5	M5	G1/8	G1/4	G1/4	G3/8
Mode of operation		Double-acting					
Design		Guide					
		Guide rods with yoke					
Guide		Plain-bearing guide					
Cushioning	P	Elastic cushioning rings at both ends			-		
	PPV	-		Pneumatic cushioning, adjustable at both ends			
	PPS	-		Pneumatic cushioning, self-adjusting at both ends			
Cushioning length	[mm]	-		20	20	22	22
Position sensing		-		Via proximity sensor			
Type of mounting		Via through-hole					
		Via female thread					
Mounting position		Any					
Torsional backlash <sup>1)</sup>	[°]	0.13	0.11	0.10	0.09	0.07	0.06

1) Retracted state, without load

Operating and environmental conditions							
Piston Ø		20	25	32	40	50	63
Variant				P	PPV/PPS		
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]					
Note on operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)					
Operating pressure	[bar]	2.5 ... 10		2 ... 10	2 ... 12	2 ... 12	1.5 ... 12
	A3 [bar]	2 ... 10			2 ... 12	1.5 ... 12	
Ambient temperature	[°C]	-20 ... +80					
Food-safe <sup>1)</sup>		See supplementary material information					
Corrosion resistance class CRC <sup>2)</sup>		3					

1) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

2) Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

# Guided drives DGRF-C, Clean Design

Technical data

Forces [N] and impact energy [J]						
Piston Ø	20	25	32	40	50	63
Theoretical force at 6 bar, advancing	189	295	483	754	1178	1870
Theoretical force at 6 bar, retracting	141	247	415	633	990	1682
Max. impact energy in the end positions with P cushioning	0.2	0.3	0.4	-	-	-

Permissible impact velocity

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{intrinsic} + m_{Load}}}$$

$v_{perm.}$  Permissible impact velocity

$E_{perm.}$  Maximum impact energy

$m_{intrinsic}$  Moving mass (drive)

$m_{Load}$  Moving payload



Note

These specifications represent the maximum values that can be achieved. Note the maximum permissible impact energy.

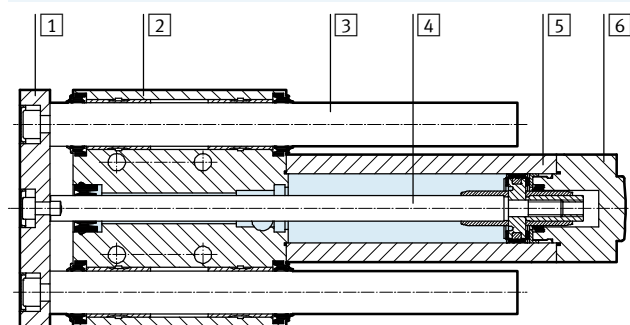
Maximum permissible load:

$$m_{Load} = \frac{2 \times E_{perm.}}{v^2} - m_{intrinsic}$$

Weight [g]							
Piston Ø	20	25	32		40	50	63
			P	PPV/PPS			
Product weight with 0 mm stroke	885	1199	2090	2305	3000	4800	6405
Additional weight per 10 mm stroke	52	55	80	78	90	140	143
Moving mass with 0 mm stroke	417	486	902	904	1065	1792	2114
Moving mass per 10 mm stroke	38	38	58	58	65	102	102

## Materials

Sectional view

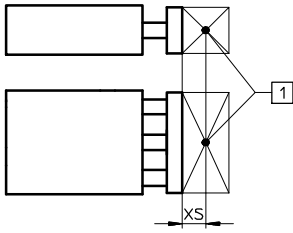


Guided drive	
1	Yoke plate Anodised wrought aluminium alloy
2	Housing Anodised wrought aluminium alloy
3	Guide rod High-alloy stainless steel
4	Piston rod High-alloy stainless steel
5	Cylinder barrel Anodised wrought aluminium alloy
6	Cover DGRF...-20/-25/-32-P Anodised wrought aluminium alloy
	DGRF...-32-PPV/-PPS Die-cast aluminium, coated
	DGRF...-40/-50/-63 Die-cast aluminium, coated
-	Seal DGRF... TPE-U (PUR) media sealing (modified for resistance to hydrolysis and cleaning agents)
	DGRF...-A3 PE
	Note on materials RoHS-compliant

# Guided drives DGRF-C, Clean Design

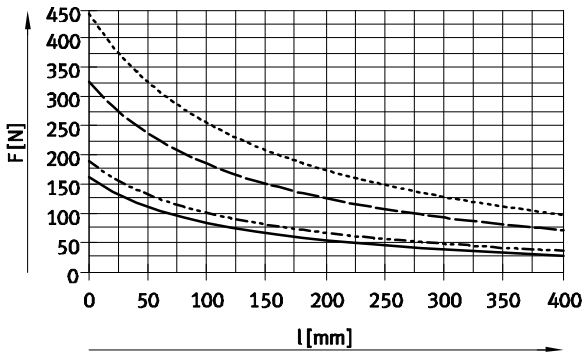
Technical data

## Max. payload F as a function of stroke l



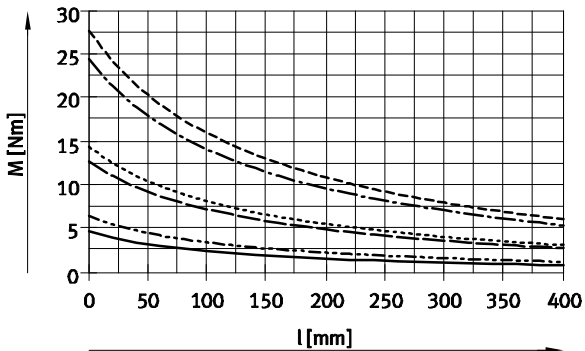
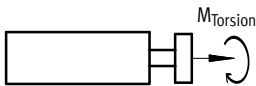
1 Centre of gravity of load

- Load data are based on a distance from the centre of gravity of  $X_S = 50$  mm
- Load data for larger distances on request



- Ø 20
- - - Ø 25
- · - · - Ø 32/40
- · · · · Ø 50/63

## Max. torque load M as a function of stroke l



- Ø 20
- - - Ø 25
- · - · - Ø 32
- · · · · Ø 40
- - - - - Ø 50
- - - - - Ø 63

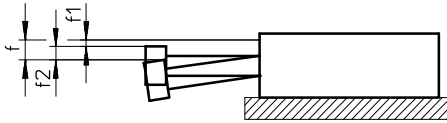
# Guided drives DGRF-C, Clean Design

Technical data

FESTO

## Deflection of piston rod

Deflection  $f_1$  due to bearing clearance as a function of stroke  $l$



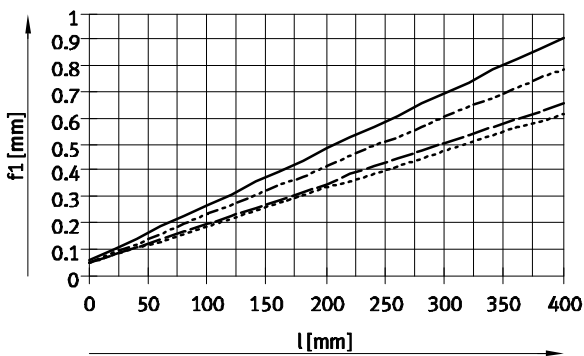
$$f = f_1 + f_2$$

$f$  = Total deflection of piston rod

$f_1$  = Deflection due to bearing clearance

$f_2$  = Deflection due to lateral force

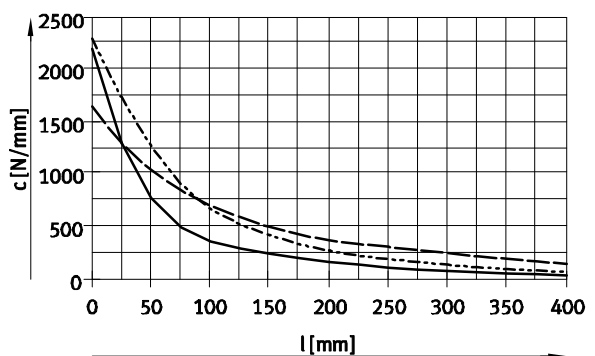
Deflection  $f_1$ ,  
due to bearing clearance as a function of stroke  $l$



- $\varnothing 20$
- - -  $\varnothing 25$
- · -  $\varnothing 32/40$
- · ·  $\varnothing 50/63$

Deflection  $f_2$ ,  
due to useful load  $F$  and rigidity  $c$  as a function of stroke  $l$

$$f_2 = \frac{F}{c}$$

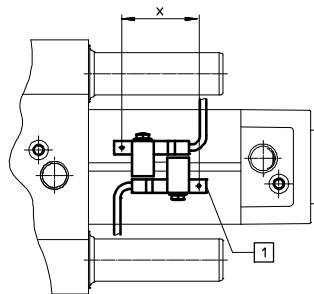


- $\varnothing 20/25$
- - -  $\varnothing 32/40$
- · -  $\varnothing 50/63$
- · ·  $\varnothing 20$

## End-position sensing

With proximity sensor SMT-C1

A minimum stroke is required to be able to sense both end positions at the cylinder.

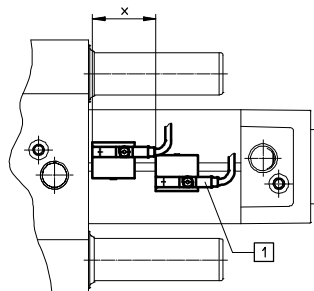


- 1 Position of the proximity sensor within the housing.

Piston $\varnothing$	32	40	50	63
Minimum stroke $x$ [mm]	35	35	35	30

With mounting kit SMB-8-C and proximity sensor CRSMT-8M

A minimum stroke is required to be able to sense both end positions at the cylinder.



- 1 Position of the proximity sensor within the housing.

Piston $\varnothing$	32	40	50	63
Minimum stroke $x$ [mm]	30	30	30	30



# Guided drives DGRF-C, Clean Design

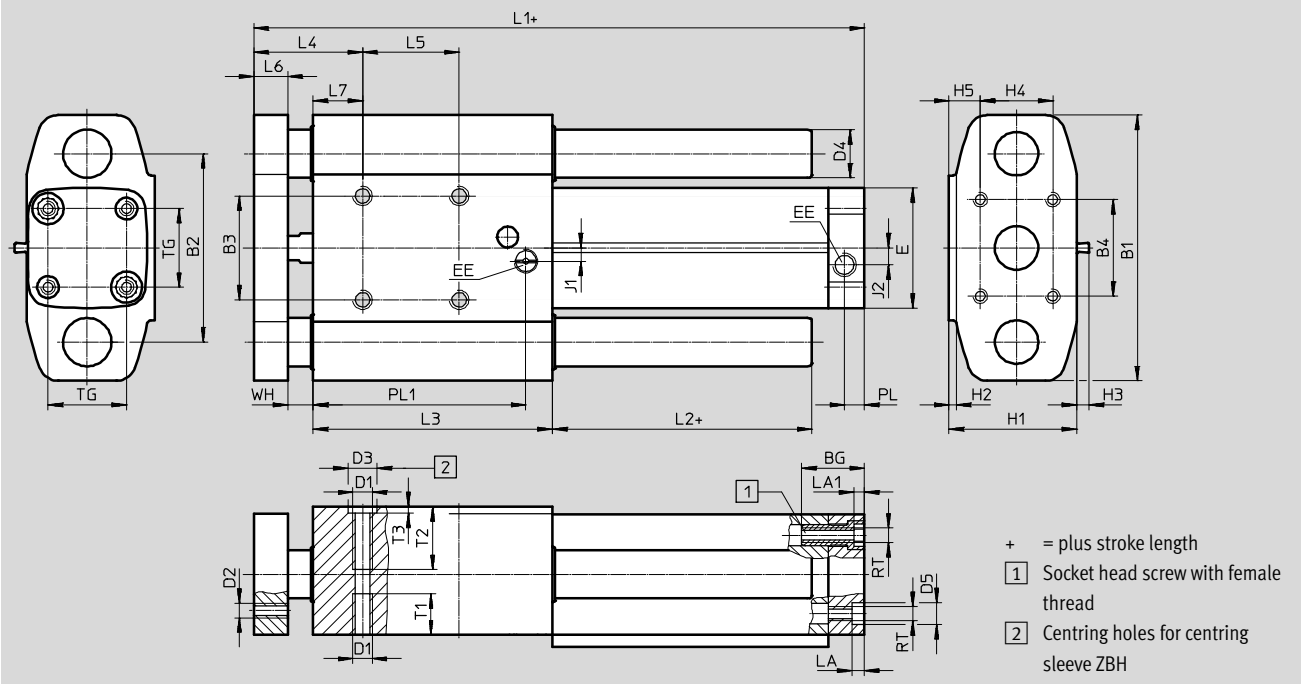
Technical data

FESTO

## Dimensions

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

DGRF-...-P – elastic cushioning rings at both ends



∅	BG	B1	B2	B3 <sup>2)</sup>	B4	D1	D2	D3 <sup>3)</sup>	D4	D5	E	EE
[mm]								∅ H7	∅	∅ F9		
20	19.5	83	58	30	30	M6	M5	9	16	9	37	M5
25	19.5	95	68	35	40	M6	M6	9	16	9	42	M5
32	26	110	78	43	40	M8	M6	12	20	9	50	G1/8

∅	H1	H2	H3 <sup>1)</sup>	H4	H5	J1	J2	L1	L2	L3	L4	L5
[mm]												
20	39	2	–	20	10.5	0	0	115 +1.4/-0.8	7	68	40 +1/-0.9	30
25	44	2	–	20	13	0	0	126 +1.4/-0.8	7	77	40+1/-0.9	40
32	53	3	5	30	13	5.5	7	152.8 ±1.1	7.4	99	45+0.9/-1	40

∅	L6	L7	LA	LA1	PL	PL1	RT	T1	T2	T3	TG	WH
[mm]												
20	12	18	4.9	4.6	6	62	M5	13	20	2.1	22	10 +0.5/-0.7
25	12	18	4.9	4.6	6	71	M5	13	25	2.1	26	10 +0.5/-0.7
32	14	20.4	5.1	4.6	8.2	88	M6	17	26	2.6	32.5	10.7 +0.3/-0.9

1) Only in combination with sensor mounting rail (DGRF-32-...-R)

2) Tolerance between centring holes ±0.02 mm

3) Two centring sleeves included in the scope of delivery

# Guided drives DGRF-C, Clean Design

Technical data

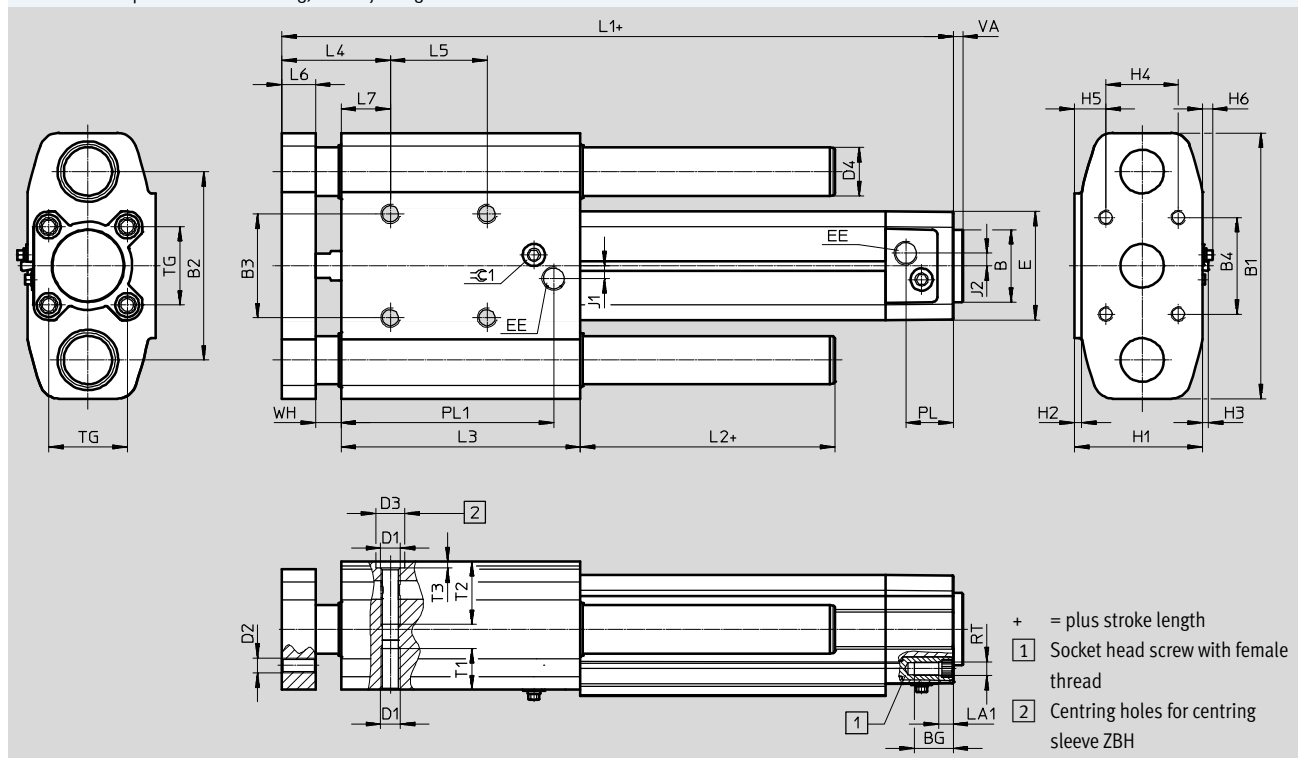
FESTO

## Dimensions

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

DGRF-...-PPV – pneumatic cushioning, adjustable at both ends

DGRF-...-PPS – pneumatic cushioning, self-adjusting at both ends



∅	B	BG	B1	B2	B3 <sup>2)</sup>	B4	D1	D2	D3 <sup>3)</sup>	D4	E	EE	H1	H2
[mm]	∅ d11								∅ H7	∅				
32	30	16	110	78	43	40	M8	M6	12	20	45	G1/8	53	3
40	35	16	120	88	51	50	M8	M6	12	20	54	G1/4	61	3
50	40	17	148	110	64	60	M8	M8	12	25	64	G1/4	73	3
63	45	17	162	125	80	80	M10	M8	12	25	75	G3/8	84	3

∅	H3 <sup>1)</sup>	H4	H5	H6	J1	J2	L1	L2	L3	L4	L5
[mm]											
32	2.5	30	13	5.6	5.3	5.3	177.6 +1.9/-1.2	7.4	99	45 +1.5/-1.1	40
40	3	30	17	5.6	4	4	183.5 +1.9/-1.3	7.5	99	45 +1.5/-1.1	40
50	2	40	18	7.5	5.5	5.5	193.5 +1.7/-1.3	7.7	105	50 +1.3/-1.2	40
63	2	40	23.5	9.3	6.3	6.3	207.3 +1.7/-1.3	7.5	105	50 +1.3/-1.2	40

∅	L6	L7	LA1	PL	PL1	RT	T1	T2	T3	TG	VA	WH	∅ 1
[mm]													
32	14	20.4	5.6	19.5	88	M6	17	26	2.6	32.5	4	10.6 +1/-0.9	4
40	14	20.5	5.6	22.5	83	M6	17	26	2.6	38	4	10.5 ±1/-1	4
50	16	22.7	6.1	22.5	89	M8	17	20	2.6	46.5	4	11.3 +0.8/-1	4
63	20	18.5	6.1	27.5	88	M8	17	24	2.6	56.5	4	11.5 +0.8/-1	4

- 1) Only in combination with sensor mounting rail (DGRF-...-R)
- 2) Tolerance between centring holes ±0.02 mm
- 3) Two centring sleeves included in the scope of delivery

# Guided drives DGRF-C, Clean Design

Ordering data – Modular products

Ordering table									
Size	20	25	32	40	50	63	Condi- tions	Code	Entry code
<b>M</b> Module No.	<b>562216</b>	<b>562217</b>	<b>563366</b>	<b>562219</b>	<b>562220</b>	<b>562221</b>			
Function	Guided drive							<b>DGRF</b>	DGRF
Product version	Easy-to-clean design							<b>-C</b>	-C
Guide	Plain-bearing guide							<b>-GF</b>	-GF
Piston Ø [mm]	20	25	32	40	50	63		-...	
Stroke [mm]	10 ... 400							-...	
Cushioning	Elastic cushioning rings at both ends							<b>-P</b>	
	Pneumatic cushioning, adjustable at both ends							<b>-PPV</b>	
	Pneumatic cushioning, self-adjusting at both ends							<b>-PPS</b>	
Position sensing	Via proximity sensor						<input type="checkbox"/>	<b>A</b>	
Sensor mounting, external	Mounting rail for proximity sensor						<input type="checkbox"/>	<b>-R</b>	
<b>O</b> Wiper seal variant	Standard								
	For unlubricated operation							<b>-A3</b>	

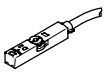
**A, R** Always included with piston Ø 32 ... 63.

**Transfer order code**


# Guided drives DGRF-C, Clean Design

Accessories

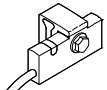
**With DGRF-...-PPV<sup>1)</sup>/-PPS permissible:**



Ordering data – Proximity sensor for T-slot, magneto-resistive						Technical data → Internet: smt
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with the mounting kit	PNP	Cable, 3-wire	5.0	<b>574380</b>	<b>CRSMT-8M-PS-24V-K-5,0-OE</b>
			Cable, 3-wire	10.0	<b>574381</b>	<b>CRSMT-8M-PS-24V-K-10,0-OE</b>
			Plug M8x1, 3-pin	0.3	<b>574383</b>	<b>CRSMT-8M-PS-24V-K-0,3-M8D</b>
			Plug M12x1, 3-pin	0.3	<b>574382</b>	<b>CRSMT-8M-PS-24V-K-0,3-M12</b>

1) Possible when ordering cylinders from 02/2014 (series E2).

Ordering data – Mounting kit			
	Description	Part No.	Type
	For mounting the proximity sensor CRSMT-8M on the mounting rail	<b>1806790</b>	<b>SMB-8-C</b>







**With DGRF-...-P/-PPV/-PPS permissible:**

Ordering data – Proximity sensor for T-slot, magneto-resistive						Technical data → Internet: smt
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Is mounted on the mounting rail	PNP	Cable, 3-wire	5.0	<b>571339</b>	<b>SMT-C1-PS-24V-K-5,0-OE</b>
			Plug M8x1, 3-pin	0.3	<b>571342</b>	<b>SMT-C1-PS-24V-K-0,3-M8D</b>
			Plug M12x1, 3-pin	0.3	<b>571341</b>	<b>SMT-C1-PS-24V-K-0,3-M12</b>

Ordering data – Connecting cables for SMT-C1-...					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>

# Guided drives DGRF-C, Clean Design

Accessories




Ordering data – Push-in fittings						Technical data → Internet: qs				
	Connection		Material	Weight [g]	Part No.	Type	PU <sup>2)</sup>			
	Thread	Tubing O.D. Ø								
<b>With external hexagon</b>										
	M5	4	High-alloy stainless steel	4.2	1857681	NPCK-C-D-M5-K4	1			
		G1/8		6	14.1	1366257		NPCK-C-D-G18-K6		
		8		13.4	1490383	NPCK-C-D-G18-K8				
	G1/4	8		28.85	1691701	NPCK-C-D-G14-K8				
		10		32.9	1489336	NPCK-C-D-G14-K10				
	G3/8	10		51.15	1489614	NPCK-C-D-G38-K10				
	M5	4		Nickel- and chrome-plated brass	5.8	578334	NPQH-D-M5-Q4-P10	10		
		G1/8			6	11.2	578335		NPQH-D-M5-Q6-P10	
		8			6.3	578338	NPQH-D-G18-Q4-P10			
	G1/4	6			9.2	578339	NPQH-D-G18-Q6-P10			
		8	11.9		578340	NPQH-D-G18-Q8-P10				
	G1/4	6	13.1		578341	NPQH-D-G14-Q6-P10				
		8	14.1		578342	NPQH-D-G14-Q8-P10				
	G1/4	10	17.5		578343	NPQH-D-G14-Q10-P10				
		G3/8	8		20.6	578345	NPQH-D-G38-Q8-P10			
		10	22.7		578346	NPQH-D-G38-Q10-P10				
		12	29.8		578347	NPQH-D-G38-Q12-P10				
		M5	4		Stainless steel	6.0	162860		CRQS-M5-4 <sup>1)</sup>	1
G1/8			6	8.4		162861	CRQS-M5-6 <sup>1)</sup>			
R1/8		4	8.7	132643		CRQS-1/8-4				
		6	9.9	162862		CRQS-1/8-6				
R1/8		8	12	162863		CRQS-1/8-8				
		10	18	132644		CRQS-1/4-6				
R1/4		6	18	162864		CRQS-1/4-8				
		8	22	162865		CRQS-1/4-10				
R3/8		10	29	162866		CRQS-3/8-10				
		12	37	162867		CRQS-3/8-12				
		R1/8	4	Polypropylene		2.5	133041	NPQP-D-R18-Q4-FD-P10	10	
			6			3.0	133043	NPQP-D-R18-Q6-FD-P10		
	8		4.5		133045	NPQP-D-R18-Q8-FD-P10				
	R1/4	6	3.5		133044	NPQP-D-R14-Q6-FD-P10				
		8	4.5		133046	NPQP-D-R14-Q8-FD-P10				
	R1/4	10	7.0		133047	NPQP-D-R14-Q10-FD-P10				
		R3/8	10		8.0	133048	NPQP-D-R38-Q10-FD-P10			
		12	12.0		133049	NPQP-D-R38-Q12-FD-P10				
	<b>With internal hexagon</b>									
		M5	4		Nickel- and chrome-plated brass	4.5	578370	NPQH-DK-M5-Q4-P10		10
G1/8			6	8.8		578371	NPQH-DK-M5-Q6-P10			
		8	6.2	578374		NPQH-DK-G18-Q4-P10				
G1/4		6	9.1	578375		NPQH-DK-G18-Q6-P10				
		8	12.8	578376		NPQH-DK-G18-Q8-P10				
G3/8		12	14.4	578377		NPQH-DK-G14-Q8-P10				
	M5	4	Stainless steel	5		132328	CRQS-M5-4-1 <sup>1)</sup>	1		
		G1/8		6		7.7	132329		CRQS-M5-6-1 <sup>1)</sup>	
	R1/8	6		8.4		132330	CRQS-1/8-6-I			
		8		12		132331	CRQS-1/8-8-I			
	R1/4	8		15		132332	CRQS-1/4-8-I			
		10		21		132333	CRQS-1/4-10-I			
R3/8	10	24		132334	CRQS-3/8-10-I					

1) With sealing ring  
2) Packaging unit quantity



# Guided drives DGRF-C, Clean Design

Accessories

FESTO

Ordering data – Push-in L-fittings					Technical data → Internet: qs					
	Connection		Material	Weight [g]	Part No.	Type	PU <sup>2)</sup>			
	Thread	Tubing O.D. Ø								
<b>With external hexagon</b>										
	M5	4	Nickel- and chrome-plated brass	8.9	578276	NPQH-L-M5-Q4-P10	10			
		6		12.2	578277	NPQH-L-M5-Q6-P10				
	G1/8	4		16.3	578280	NPQH-L-G18-Q4-P10				
		6		19.3	578281	NPQH-L-G18-Q6-P10				
		8		22.2	578282	NPQH-L-G18-Q8-P10				
	G1/4	6		22.4	578283	NPQH-L-G14-Q6-P10				
		8		25.8	578284	NPQH-L-G14-Q8-P10				
		10		33.1	578285	NPQH-L-G14-Q10-P10				
		12		59.6	578286	NPQH-L-G14-Q12-P10				
	G3/8	8		36.7	578287	NPQH-L-G38-Q8-P10				
		10		38.2	578288	NPQH-L-G38-Q10-P10				
		12		58.2	578289	NPQH-L-G38-Q12-P10				
		M5		4	Stainless steel	12		162870	CRQSL-M5-4 <sup>1)</sup>	1
				6		18		162871	CRQSL-M5-6 <sup>1)</sup>	
		R1/8		4		14		132598	CRQSL-1/8-4	
6			19	162872		CRQSL-1/8-6				
8			26	162873		CRQSL-1/8-8				
R1/4		6	26	132599		CRQSL-1/4-6				
		8	30	162874		CRQSL-1/4-8				
		10	42	162875		CRQSL-1/4-10				
R3/8		10	49	162876		CRQSL-3/8-10				
		12	65	162877		CRQSL-3/8-12				
		R1/8	4	Polypropylene		4.0	133051	NPQP-L-R18-Q4-FD-P10	10	
			6			5.0	133053	NPQP-L-R18-Q6-FD-P10		
	8		7.0		133055	NPQP-L-R18-Q8-FD-P10				
	R1/4	6	5.5		133054	NPQP-L-R14-Q6-FD-P10				
		8	7.5		133056	NPQP-L-R14-Q8-FD-P10				
		10	12		133057	NPQP-L-R14-Q10-FD-P10				
	R3/8	10	13		133058	NPQP-L-R38-Q10-FD-P10				
		12	18		133059	NPQP-L-R38-Q12-FD-P10				


- 1) With sealing ring  
2) Packaging unit quantity

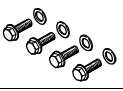
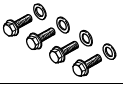

Ordering data – One-way flow control valves					Technical data → Internet: crgrla		
	Connection		Material	Part No.	Type	PU <sup>1)</sup>	
	Thread	For push-in fitting					
	M5	CRQS/CRQSL/CRQST, QS	Electropolished stainless steel casting	161403	CRGRLA-M5-B	1	
	G1/8			161404	CRGRLA-1/8-B		
	G1/4			161405	CRGRLA-1/4-B		
	G3/8			161406	CRGRLA-3/8-B		
	G1/8	Push-in connector is integrated	Nickel-plated brass	578797	VFOH-LE-A-G18-Q4	1	
				578798	VFOH-LE-A-G18-Q6		
				578799	VFOH-LE-A-G18-Q8		
	G1/4			578800	VFOH-LE-A-G14-Q8		
				578801	VFOH-LE-A-G14-Q10		

- 1) Packaging unit quantity


# Guided drives DGRF-C, Clean Design

Accessories

Ordering data – Plastic tubing, standard O.D.		Technical data → Internet: tubing	
		Type	
	Approved for use in the food industry and resistant to hydrolysis	PUN-H	
	Good resistance to chemicals and hydrolysis	PLN	
	Pneumatic tubing with resistance to high temperatures and chemicals	PFAN	

Ordering data – Blanking screws, corrosion-resistant					
	For Ø	Description	Part No.	Type	PU <sup>1)</sup>
For mounting thread on the guide					
	20, 25	With cover plate	543715	DAMD-P-M6-12-R1	4
	32, 40, 50		543716	DAMD-P-M8-16-R1	
	63		543717	DAMD-P-M10-16-R1	
For mounting thread on the end cap					
	20, 25	With cover plate	543714	DAMD-P-M5-10-R1	4
	32 <sup>2)</sup>		543715	DAMD-P-M6-12-R1	
	32 <sup>3)</sup> , 40	–	1355016	DAMD-PS-M6-12-R1	
	50, 63		650121	DAMD-PS-M8-16-R1	

- 1) Packaging unit quantity
- 2) For cylinder with P cushioning
- 3) For cylinder with PPV/PPS cushioning

Ordering data – Centring sleeves		Technical data → Internet: zbh		
	For Ø	Part No.	Type	PU <sup>1)</sup>
	20, 25	150927	ZBH-9	10
	32, 40, 50, 63	189653	ZBH-12	

- 1) Packaging unit quantity