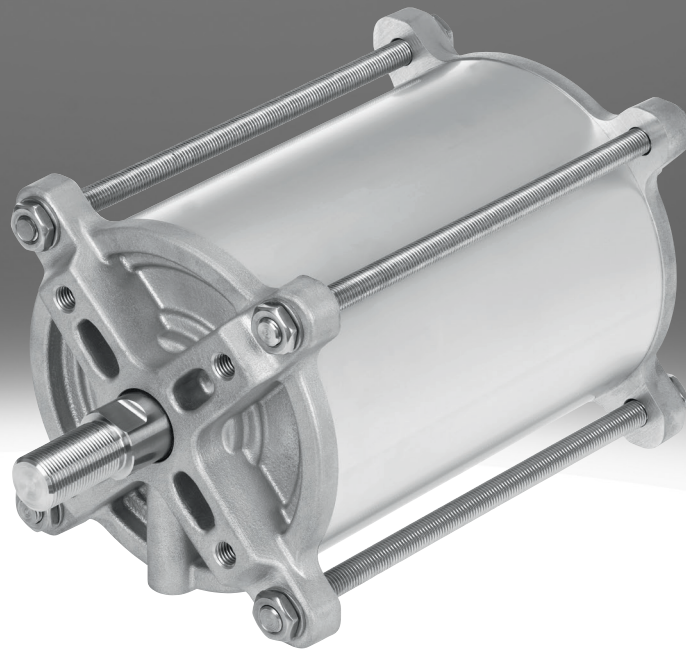


Linear actuator DFPC

FESTO



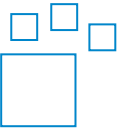
Characteristics

At a glance

The linear actuator DFPC are double-acting pneumatic actuators optimised for the requirements of process automation. The product variants with a mounting interface based on ISO 5210 or ISO 15552 and extended tie rods are designed for actuating process valves, such as gate valves and knife gate valves, pinch valves or process valves without housing. The sturdy, corrosion-resistant design is suitable for applications in different segments of process automation, such as water treatment, mining, the paper and pulp industry or the chemical industry.

- Robust and corrosion-resistant tie rod design, ideal for use in harsh ambient conditions
- Elastic cushioning rings for reducing the impact forces of the piston hitting the end positions of the actuator
- Variants can be configured according to individual needs using a modular product system
- Standard variants available quickly from stock
- Additional contactless end-position sensing possible with proximity switches
- Sturdy tie rod design
- Double-acting, sizes Ø 80 ... Ø 320, stroke length 10 ... 1600 mm
- Mounting interface in accordance with ISO 5210 or ISO 15552, with extended tie rods
- Operating pressure 0.06 ... 0.8 MPa, 8.7 ... 116 psi, 0.6 ... 8 bar
- Ambient temperature -20 ... +80 °C
- ATEX II 2GD

Ordering data - modular system



Configurable product

This product and all its product options can be ordered online via the configurator.

Type code

001	Series	
DFPC	Linear drive	

002	Piston diameter [mm]	
80	80	
100	100	
125	125	
160	160	
200	200	
250	250	
320	320	

003	Stroke [mm]	
50	50	
65	65	
80	80	
100	100	
125	125	
150	150	
200	200	
250	250	
300	300	
350	350	
400	400	
500	500	
600	600	
...	10 ... 1600	

004	Function	
D	Double-acting	

005	Piston rod thread type	
	Male thread	

006	Tie rod material	
	Standard	
V4	Stainless steel (austenitic chromium-nickel-molybdenum/1.4401, 1.4404 (AISI 316L), 1.4408)	

007	Housing surface treatment	
	None	

008	EU certification	
	None	
EX4	II 2GD	

009	Piston rod extension	
	None	
...E	1 ... 500 mm	

010	Piston rod thread extension	
	None	
...L	0 ... 70 mm	

011	Piston rod thread shortening	
...S	1 ... 74 mm	

012	Piston rod thread	
	Standard	
M16	M16	
M16P	M16x1.5	
M20	M20	
M20P	M20x1.5	
M24	M24	
M24P	M24x2	
M27	M27	
M42	M42	
M42P	M42x2	
M27P	M27x2	
M30	M30	
M48	M48	
M30P	M30x2	
M48P	M48x2	
M36	M36	
M36P	M36x2	

013	Thread length of spacer bolts on bearing cap	
	None	
...LB2	10 ... 140 mm	

Datasheet

General technical data

Size of valve actuator	80	100	125	160	200	250	320
Piston diameter	80 mm	100 mm	125 mm	160 mm	200 mm	250 mm	320 mm
Stroke	50 mm; 65 mm; 80 mm	80 mm; 100 mm; 125 mm	100 mm; 125 mm; 150 mm	150 mm; 200 mm; 250 mm; 300 mm	300 mm; 350 mm; 400 mm	10 mm; 1,600 mm	
Design	Piston, Piston rod, Tie rod, Cylinder barrel						
Mode of operation	Double-acting						
Pneumatic connection	G1/8			G1/4			
Cushioning	Elastic cushioning rings/plates at both ends						
Fitting connection conforms to standard	ISO 5210						
Type of mounting ¹⁾	Either:, On flange as per ISO 5210, With spacer bolt						
Flange hole pattern	F07		F10			F10, F14	
Mounting position	optional						
Position detection	Via proximity switch						

1) Spacer bolt suitable for DFPC...-LB2, based on ISO15552

Operating and environmental conditions

Size of valve actuator	80	100	125	160	200	250	320
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]						
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)						
Operating pressure	0.2 ... 0.8 MPa					0.25 ... 0.8 MPa	
Operating pressure	29 ... 116 psi					36.25 ... 116 psi	
Operating pressure	2 ... 8 bar					2.5 ... 8 bar	
Nominal operating pressure	0.6 MPa						
Nominal operating pressure	87 psi					-	
Nominal operating pressure	6 bar						
Ambient temperature	-20 ... 80°C						
Shock resistance ¹⁾	Shock test with severity level 1 to FN 942017-5 and EN 60068-2-27						
Vibration resistance ²⁾	Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6						
Explosion protection certification outside the EU	-					EPL Db (GB), EPL Gb (GB)	

1) Valid up to a stroke of 400 mm

2) Valid up to a stroke of 400 mm

ATEX

ATEX category gas	II 2G
Explosion ignition protection type for gas	Ex h IIC T4 Gb
ATEX category dust	II 2D
Explosion ignition protection type for dust	Ex h IIIC T120°C Db
Explosion ambient temperature	-20°C ≤ Ta ≤ +80°C
CE mark (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)

Forces and impact energy

Size of valve actuator	80	100	125	160	200	250	320
Theoretical force at 0.6 MPa (6 bar, 87 psi), advance stroke	3,016 N	4,712 N	7,363 N	12,064 N	18,850 N	29,452 N	48,255 N
Theoretical force at 0.6 MPa (6 bar, 87 psi), return stroke	2,827 N	4,524 N	7,069 N	11,581 N	18,096 N	28,698 N	47,077 N
Impact energy in end positions	1.4 J	0.94 J	1.1 J	3.3 J	4.8 J	6 J	12.6 J

Datasheet

Air consumption

Size of valve actuator	80	100	125	160	200	250	320
Air consumption on advance stroke per 10 mm	0.352 l	0.55 l	0.859 l	1.407 l	2.199 l	3.436 l	5.63 l
Air consumption on return stroke per 10 mm	0.33 l	0.528 l	0.825 l	1.351 l	2.111 l	3.348 l	5.492 l

Weight

Size of valve actuator	80	100	125	160	200	250	320
Basic weight for 0 mm stroke	1,230.3 g	1,666.6 g	2,968.9 g	5,948.7 g	10,258.2 g	19,296.54 g	33,831.25 g
Additional weight per 10 mm stroke	61.8 g	71.4 g	107.4 g	148.61 g	255.79 g	335.51 g	473.67 g
Moving mass for 0 mm stroke	451 g	617.1 g	1,059.6 g	2,102 g	3,575.4 g	5,600.4 g	9,868.9 g
Additional moving mass per 10 mm stroke	24.8 g		38.9 g	64.34 g	105.31 g		151.1 g

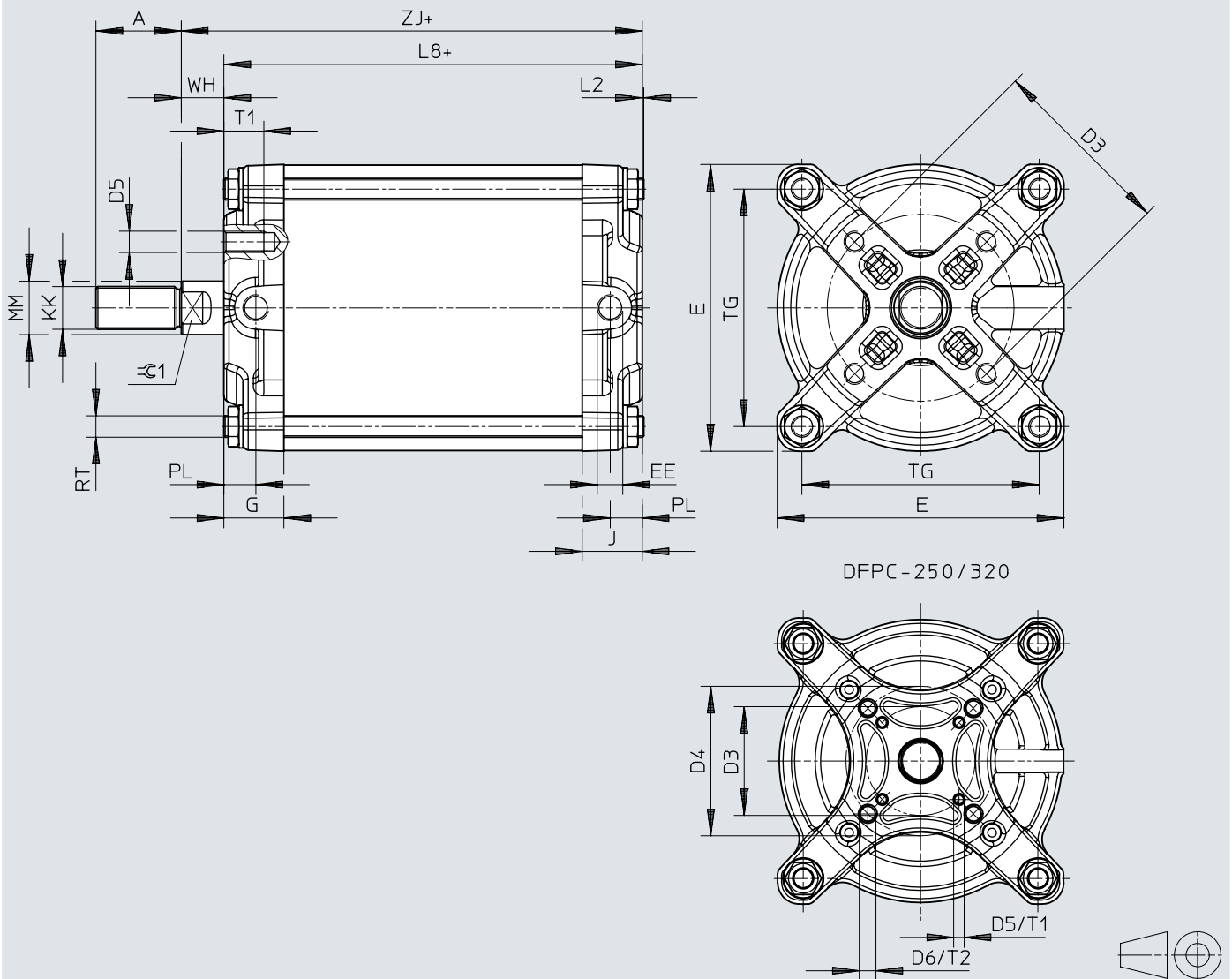
Materials

Material cover	Gravity die-cast aluminium, Aluminium
Material piston rod	High-alloy stainless steel
Material piston rod wiper	TPE-U(PU)
Material nut	High-alloy stainless steel
Material static seals	NBR
Material tie rod	High-alloy stainless steel
Material cylinder barrel	Smooth-anodised wrought aluminium alloy
Note on materials	RoHS-compliant

Dimensions

Dimensions – DFPC...-D

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[1] += plus stroke length

Dimensions

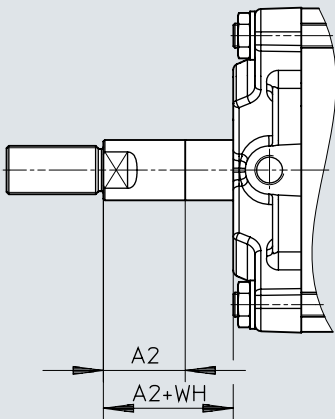
	A -0,5	D3 ∅	D4 ∅	D5 ∅	D6 ∅	E	EE	G	J	KK
DFPC-80-...-D	32	70	-	M8	-	90	G1/8	22,7	22,7	M16x1,5
DFPC-100-...-D	32	70	-	M8	-	107,5	G1/8	22,5	22,5	M16x1,5
DFPC-125-...-D	40	102	-	M10	-	136	G1/8	24,5	24,5	M20x1,5
DFPC-160-...-D	54	102	-	M10	-	170	G1/4	25,3	25,3	M27x2
DFPC-200-...-D	72	102	-	M10	-	211	G1/4	29,9	29,9	M36x2
DFPC-250-...-D	72	102	140	M10	M16	268	G1/4	39,2	39,2	M36x2
DFPC-320-...-D	84	102	140	M10	M16	338	G1/4	51	51	M42x2

	L2 max.	L8	MM ∅	PL	RT	T1	T2	TG	WH	ZJ	⊕1
DFPC-80-...-D	2,4	75,2	20	15,2	M8	15	-	72	16 +0,6/-1,6	91,2	16
DFPC-100-...-D	2,2	76,8	20	12	M8	15	-	89	16 +0,7/-1,2	92,8	16
DFPC-125-...-D	1,6	91	25	14	M10	18	-	110	20 +0,9/-1	111	21
DFPC-160-...-D	0,7	127	32	14,3	M12	18	-	140	24 +1,1/-1,1	150,9	27
DFPC-200-...-D	1	144,2	40	18,9	M16	20	-	175	30 +1,2/-1,2	173,8	36
DFPC-250-...-D	2,5	173,8	40	20,8	M20	20	25	220	30 +1,4/-1,4	203,8	36
DFPC-320-...-D	1,7	204,8	50	32	M20	20	25	270	30 +1,5/-1,5	234,8	46

Dimensions

Dimensions – [E] extended piston rod

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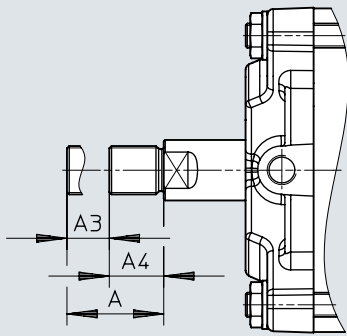


	A2		WH
	min.	max.	
DFPC-80-...-D	1	500	16 +0,6/-1,6
DFPC-100-...-D	1	500	16 +0,7/-1,2
DFPC-125-...-D	1	500	20 +0,9/-1
DFPC-160-...-D	1	500	24 +1,1/-1,1
DFPC-200-...-D	1	500	30 +1,2/-1,2
DFPC-250-...-D	1	500	30 +1,4/-1,4
DFPC-320-...-D	1	500	30 +1,5/-1,5

Dimensions

Dimensions – [S] shortened piston rod thread

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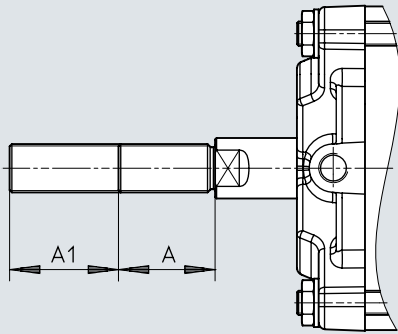


	A -0,5	A3		A4
		min.	max.	
DFPC-80-...-D	32	1	22	A – A3
DFPC-100-...-D	32	1	22	A – A3
DFPC-125-...-D	40	1	30	A – A3
DFPC-160-...-D	54	1	44	A – A3
DFPC-200-...-D	72	1	62	A – A3
DFPC-250-...-D	72	1	62	A – A3
DFPC-320-...-D	84	1	74	A – A3

Dimensions

Dimensions – [L] Extended piston rod thread

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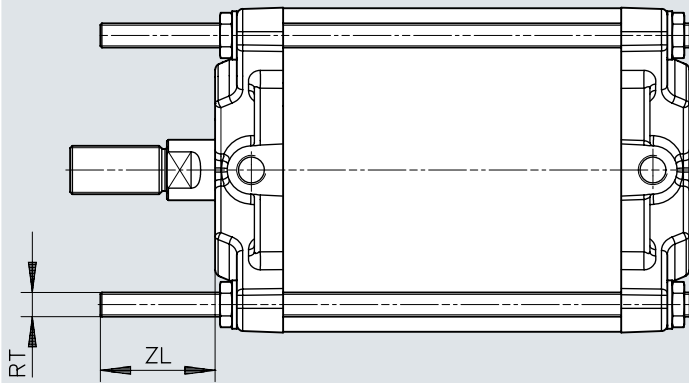


	A -0,5	A1	
		min.	max.
DFPC-80-...-D	32	1	70
DFPC-100-...-D	32	1	70
DFPC-125-...-D	40	1	70
DFPC-160-...-D	54	1	70
DFPC-200-...-D	72	1	70
DFPC-250-...-D	72	1	70
DFPC-320-...-D	84	1	70

Dimensions

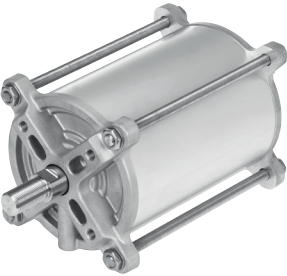
Dimensions – [LB2] Spacer bolts on the bearing cap

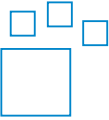
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	RT	ZL	
		min. ±0,5	max. ±0,5
DFPC-80-...-D	M8	10	120
DFPC-100-...-D	M8	10	120
DFPC-125-...-D	M10	10	120
DFPC-160-...-D	M12	10	120
DFPC-200-...-D	M16	10	120
DFPC-250-...-D	M20	10	140
DFPC-320-...-D	M20	10	140

Ordering data

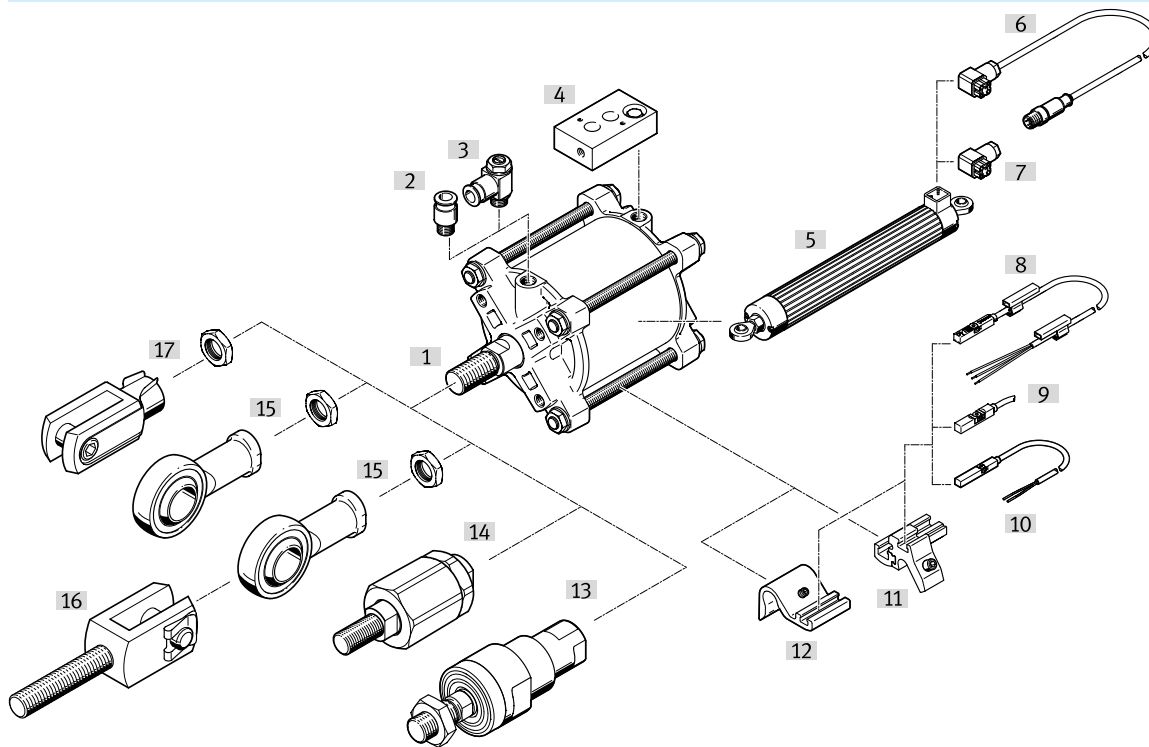
Ordering data						
	Tie rod material	Piston diameter	Stroke	Product weight	Part no.	Type
	Standard	80 mm	50 mm	1,540 g	8110815	DFPC-80-50-D
			65 mm	1,630 g	8110817	DFPC-80-65-D
			80 mm	1,720 g	8110816	DFPC-80-80-D
		100 mm	80 mm	2,240 g	8110777	DFPC-100-80-D
			100 mm	2,380 g	8110776	DFPC-100-100-D
			125 mm	2,560 g	8110775	DFPC-100-125-D
		125 mm	100 mm	4,040 g	8110773	DFPC-125-100-D
			125 mm	4,310 g	8110774	DFPC-125-125-D
			150 mm	4,580 g	8110772	DFPC-125-150-D
		160 mm	150 mm	8,180 g	8133079	DFPC-160-150-D
			200 mm	8,920 g	8133080	DFPC-160-200-D
			250 mm	9,660 g	8133081	DFPC-160-250-D
			300 mm	10,410 g	8133082	DFPC-160-300-D
		200 mm	300 mm	17,930 g	8133104	DFPC-200-300-D
			350 mm	19,210 g	8133105	DFPC-200-350-D
	400 mm		20,490 g	8133106	DFPC-200-400-D	
	Stainless steel (austenitic chromium-nickel-molybdenum/1.4401, 1.4404 (AISI 316L), 1.4408)	80 mm	50 mm	1,540 g	8172140	DFPC-80-50-D-V4EX4-44E-9S-W2
			65 mm	1,630 g	8172141	DFPC-80-65-D-V4EX4-44E-9S-W2
			80 mm	2,240 g	8172146	DFPC-80-80-D-V4EX4-44E-9S-W2
		100 mm	100 mm	2,380 g	8172147	DFPC-100-100-D-V4EX4-44E-9S-W2
			125 mm	2,560 g	8172148	DFPC-100-125-D-V4EX4-44E-9S-W2
			150 mm	4,580 g	8172151	DFPC-125-150-D-V4EX4-40E-17S-M16P-W2
		125 mm	100 mm	4,040 g	8172149	DFPC-125-100-D-V4EX4-40E-17S-M16P-W2
			125 mm	4,310 g	8172150	DFPC-125-125-D-V4EX4-40E-17S-M16P-W2
			150 mm	4,580 g	8172151	DFPC-125-150-D-V4EX4-40E-17S-M16P-W2
		160 mm	150 mm	8,180 g	8172142	DFPC-160-150-D-V4EX4-36E-31S-M16P-W2
			200 mm	8,920 g	8172143	DFPC-160-200-D-V4EX4-39E-31S-M16P-W2
			250 mm	9,660 g	8172144	DFPC-160-250-D-V4EX4-43E-27S-M24P-W2
			300 mm	10,410 g	8172145	DFPC-160-300-D-V4EX4-51E-27S-M24P-W2
		250 mm	200 mm	2,610 g	8172153	DFPC-250-200-D-V4EX4-33E-49S-M16P-W2
			250 mm	27,680 g	8172154	DFPC-250-250-D-V4EX4-37E-45S-M24P-W2
			300 mm	29,360 g	8172155	DFPC-250-300-D-V4EX4-45E-45S-M24P-W2
			350 mm	31,040 g	8172156	DFPC-250-350-D-V4EX4-3E-45S-M24P-W2
			400 mm	32,720 g	8172157	DFPC-250-400-D-V4EX4-3E-45S-M24P-W2
			500 mm	36,070 g	8172158	DFPC-250-500-D-V4EX4-3E-45S-M24P-W2
320 mm		600 mm	62,250 g	8172332	DFPC-320-600-D-V4EX4-7E-57S-M24P-W2	

Ordering data – Modular product system						
	Tie rod material ¹⁾	Piston diameter	Stroke	Product weight	Part no.	Type
	Standard	200 mm	10 ... 1600 mm	10,510 ... 51300 g	8133072	DFPC-200- -
	Standard, Stainless steel (austenitic chromium-nickel-molybdenum/1.4401, 1.4404 (AISI 316L), 1.4408)	80 mm		1,300 ... 11200 g	8110796	DFPC-80- -
		100 mm		1,740 ... 13140 g	8110785	DFPC-100- -
		125 mm		3,080 ... 20210 g	8110797	DFPC-125- -
		160 mm		6,100 ... 29850 g	8133065	DFPC-160- -
		250 mm		19,630 ... 72980 g	8141420	DFPC-250- -
		320 mm		34,300 ... 109620 g	8141421	DFPC-320- -

1) Selected types only available in certain countries

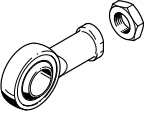
Peripherals

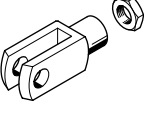
Peripherals overview

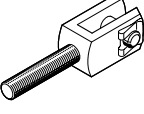


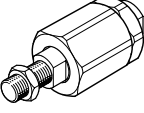
Accessories			→ Link
Type/order code	Description		
[1]	Linear actuator DFPC	Variants with mounting interface in accordance with ISO 5210 or ISO 15552 with extended tie rods	dfpc
[2]	Push-in fitting QS	For connecting tubing with standard O.D.	qs
[3]	One-way flow control valve GRLA	Exhaust air flow control with non-return function	15
[3]	One-way flow control valve GRLZ	Supply air flow controls with non-return function	15
[4]	Control plate DADG	Control plate for mounting a valve to VDI/VDE 3845 (NAMUR) using a hollow bolt on the actuators of the DFPC series, in sizes G1/8 and G1/4	15
[5]	Displacement encoder MLO-POT	- Connecting rod potentiometer, absolute measurement with high resolution - The mounting on the linear actuator DFPC must be individually manufactured	15
[6]	Connecting cable NEBC	Connecting cable M12, 5-pin between sensor interface and displacement encoder	17
[7]	Plug socket SD	For encoder connection	17
[8]	Proximity switch CRSMT-8	Magneto-resistive, corrosion-resistant, in accordance with EU Explosion Protection Directive (ATEX)	16
[9]	Proximity switch SDBT	Magneto-resistive, NAMUR, according to EU Explosion Protection Directive (ATEX)	16
[10]	Proximity switch SMT-8M-A	Magneto-resistive, 5 ... 30V DC, according to EU Explosion Protection Directive (ATEX)	16
[11]	Mounting kit SMBZ-8- ...	For proximity switch SME/SMT-8M, with piston Ø 100	16
[12]	Sensor bracket DASP-F10- ...	For proximity switch SME/SMT-8M, for piston Ø 125 and piston Ø 160	16
[13]	Self-aligning rod coupler CRFK	To compensate for radial and angular deviations, corrosion resistant	14
[14]	Self-aligning rod coupler FK	To compensate for radial and angular deviations	14
[15]	Rod eye SGS	With spherical bearing	14
[15]	Rod eye CRSGS	With spherical bearing, high corrosion protection	14
[16]	Rod clevis SG	Allows a swivelling movement of the cylinder in one plane	14
[16]	Rod clevis CRSG	Allows a swivelling movement of the cylinder in one plane, higher corrosion protection	15
[17]	Rod clevis SGA	With male thread	14

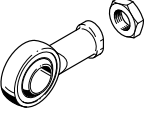
Accessories

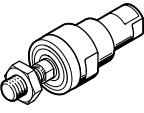
Rod eye SGS			
	Description	Part no.	Type
	For Ø 80, 100	★ 9263	SGS-M16X1,5
	For Ø 125	★ 9264	SGS-M20X1,5
	For Ø 160	10774	SGS-M27X2
	For Ø 200, 250	10775	SGS-M36X2
	For Ø 320	10776	SGS-M42X2

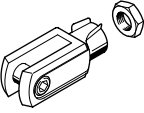
Rod clevis SG			
	Description	Part no.	Type
	For Ø 80, 100	★ 6146	SG-M16X1,5
	For Ø 125	★ 6147	SG-M20X1,5
	For Ø 160	14987	SG-M27X2-B
	For Ø 200, 250	9581	SG-M36X2
	For Ø 320	9582	SG-M42X2

Rod clevis SGA			
	Description	Part no.	Type
	For Ø 80, 100	10768	SGA-M16X1,5
	For Ø 125	10769	SGA-M20X1,5
	For Ø 160	10770	SGA-M27X2
	For Ø 200, 250	10771	SGA-M36X2

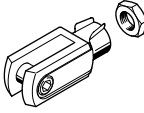
Self-aligning rod coupler FK			
	Description	Part no.	Type
	For Ø 80, 100	★ 6142	FK-M16X1,5
	For Ø 125	★ 6143	FK-M20X1,5
	For Ø 200, 250	10746	FK-M36X2

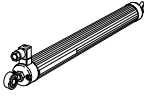
Rod eye CRSGS			
	Description	Part no.	Type
	For Ø 80, 100	195584	CRSGS-M16X1,5
	For Ø 125	195585	CRSGS-M20X1,5
	For Ø 160	195586	CRSGS-M27X2

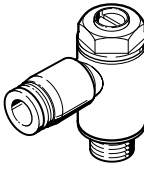
Self-aligning rod coupler CRFK			
	Description	Part no.	Type
	For Ø 80, 100	2490673	CRFK-M16X1,5
	For Ø 125	2545677	CRFK-M20X1,5

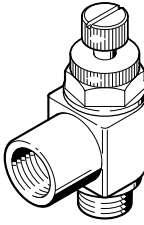
Rod clevis CRSG			
	Description	Part no.	Type
	For Ø 80, 100	13571	CRSG-M16X1,5

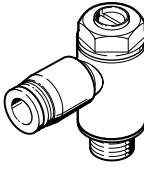
Accessories

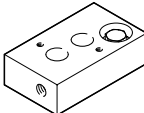
Rod clevis CRSG			
	Description	Part no.	Type
	For Ø 125	13572	CRSG-M20X1,5
	For Ø 160	185361	CRSG-M27X2

Displacement encoder			
	Stroke	Part no.	Type
	100 mm	192213	MLO-POT-100-LWG
	150 mm	192214	MLO-POT-150-LWG
	225 mm	152645	MLO-POT-225-LWG
	300 mm	152646	MLO-POT-300-LWG
	360 mm	152647	MLO-POT-360-LWG
	450 mm	152648	MLO-POT-450-LWG
	600 mm	152650	MLO-POT-600-LWG
	750 mm	152651	MLO-POT-750-LWG

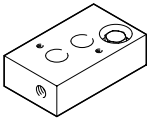
Exhaust air flow control with slotted screw				
	Pneumatic connection	Pneumatic connection 1	Part no.	Type
	G1/8	Push-in connector 4 mm	★ 193143	GRLA-1/8-QS-4-D
		Push-in connector 6 mm	★ 193144	GRLA-1/8-QS-6-D
		Push-in connector 8 mm	★ 193145	GRLA-1/8-QS-8-D

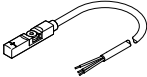
Exhaust air flow control with knurled screw				
	Pneumatic connection	Pneumatic connection 1	Part no.	Type
	G1/8	Push-in connector 8 mm	534337	GRLA-1/8-QS-8-RS-D

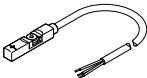
Supply air flow control with slotted screw				
	Pneumatic connection	Pneumatic connection 1	Part no.	Type
	G1/8	Push-in connector 8 mm	★ 193159	GRLZ-1/8-QS-8-D

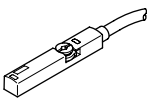
Control plate, NAMUR				
	Description	Pneumatic connection	Part no.	Type
	For mounting a valve according to VDI/VDE 3845 (NAMUR) using a hollow bolt	G1/8	8131546	DADG-FM-VDE1G18

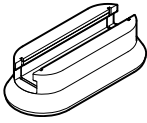
Accessories

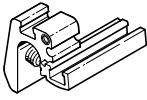
Control plate, NAMUR					
	Description	Pneumatic connection	Part no.	Type	
	For mounting a valve according to VDI/VDE 3845 (NAMUR) using a hollow bolt	G1/4	8131548	DADG-FM-VDE1G14	


Proximity switch for T-slot, magneto-resistive					
	Switching output	Electrical connection	Cable length	Part no.	Type
	PNP	Open end	5 m	★ 574336	SMT-8M-A-PS-24V-E-5,0-OE
		Plug M8, A-coded	0.3 m	★ 574334	SMT-8M-A-PS-24V-E-0,3-M8D

Proximity switch for T-slot, corrosion-resistant					
	Switching output	Electrical connection	Cable length	Part no.	Type
	PNP	Open end	5 m	574380	CRSMT-8M-PS-24V-K-5,0-OE-EX2

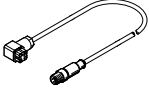
Proximity switch for T-slot, NAMUR					
	Switching output	Electrical connection	Cable length	Part no.	Type
	NAMUR	Open end	5 m	579071	SDBT-MS-20NL-ZN-E-5-LE-EX6
			10 m	579072	SDBT-MS-20NL-ZN-E-10-LE-EX6

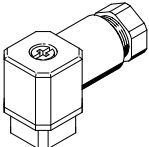
Mounting kits for proximity switches CRSMB					
	Description	Material housing	Part no.	Type	
	For piston Ø 80 ... 320	Anodised aluminium, TPE-U(PU)	525565	CRSMB-8-32/100	

Mounting kits for proximity switches SMBZ					
	Description	Material housing	Part no.	Type	
	For piston Ø 80 ... 100	Anodised wrought aluminium alloy	537806	SMBZ-8-32/100	

Mounting kits for proximity switches DASP					
	Description	Material housing	Part no.	Type	
	For piston Ø 125	Anodised wrought aluminium alloy	8127664	DASP-F10-125-A	
	For piston Ø 160		8144200	DASP-F10-160-A	
	For piston Ø 200	Wrought aluminium alloy, Anodised	1553813	DASP-M4-160-A	
	For piston Ø 250 ... 320		1456781	DASP-M4-250-A	

Accessories

Connecting cables			
	Description	Part no.	Type
	Between sensor interface and displacement encoder	549293	NEBC-P1W4-K-0.3-N-M12G5

Plug sockets			
	Description	Part no.	Type
	For displacement encoder connection	194332	SD-4-WD-7