Cylinders with displacement encoder

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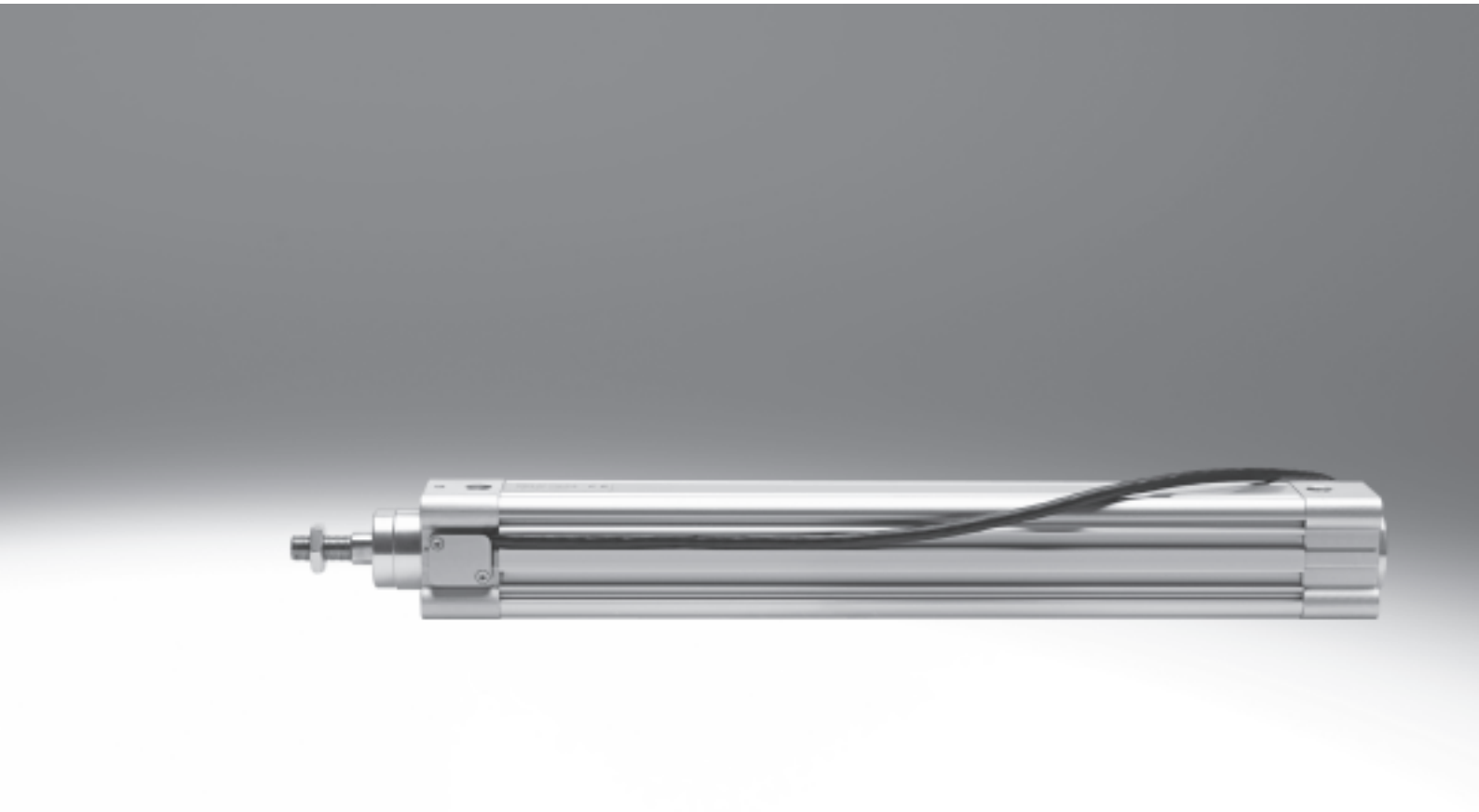

Cylinders with displacement encoder

Product range overview

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Function	Type	Brief description
Drives	**Rodless**	
	DGCI 	• With guide • With contactless displacement measuring encoder • Based on linear drive DGC • Supply ports optionally on end face or front • Wide range of options for mounting on drives • System product for handling and assembly technology
	DGPI/DGPIL 	• With or without guide • With contactless displacement measuring encoder, integrated • Wide range of options for mounting on drives • System product for handling and assembly technology
	DGP/DGPL 	• With or without guide • With potentiometer or contactless displacement measuring encoder, attached • With clamping unit • Wide range of options for mounting on drives • System product for handling and assembly technology
	With piston rod	
	DNCI 	• With contactless displacement measuring encoder • Various piston rod variants • Standards-based cylinder to ISO 15552 ISO DIN VDMA
	DNCM 	• With attached potentiometer • Various piston rod variants • Standards-based cylinder to ISO 15552 ISO DIN VDMA
Semi-rotary drive	**Swivel module**	
	DSMI 	• Based on swivel module DSM • Rotary encoder integrated • Compact design • Wide choice of mounting options

Cylinders with displacement encoder

Product range overview

Piston ∅ [mm]	Stroke/swivel angle [mm/°]	Suitable			→ Page/Internet
		For positioning with SPC200	For end-position controller SPC11	As a measuring cylinder	
Rodless					
18, 25, 32, 40, 63	100; 160; 225; 300; 360; 450; 500; 600; 750; 850; 1,000; 1,250; 1,500; 1,750; 2,000	■	■	–	38
25, 32, 40, 50, 63	225; 300; 360; 450; 500; 600; 750; 1,000; 1,250; 1,500; 1,750; 2,000	■	■	–	90
25, 32, 40, 50, 63	225; 300; 360; 450; 500; 600; 750; 1,000; 1,250; 1,500; 1,750; 2,000	■	■	■	Drive: 72 Displacement encoder: →Internet: displacement encoder
With piston rod					
32, 40, 50, 63	10 ... 2,000	■	■	■	4
32, 50	100, 160, 200, 250, 320, 400, 500	■	■	■	22
Swivel module					
25, 40	270	■	■	■	126

Standard cylinders DNCI, with integrated displacement encoder

Key features

Components for positioning and measuring using the standard cylinder DNCI

Positioning
with end-position controller SPC11 or axis controller SPC200

Proportional directional control valve MPYE-...
➔ Internet: mpye

Soft Stop
➔ Internet: soft stop

Closed loop end-position controller SPC11-INC

Positioning technology
➔Internet: spc

Axis interface SPC-AIF-INC

Axis controller SPC200

Measuring
with measuring transducer DADE

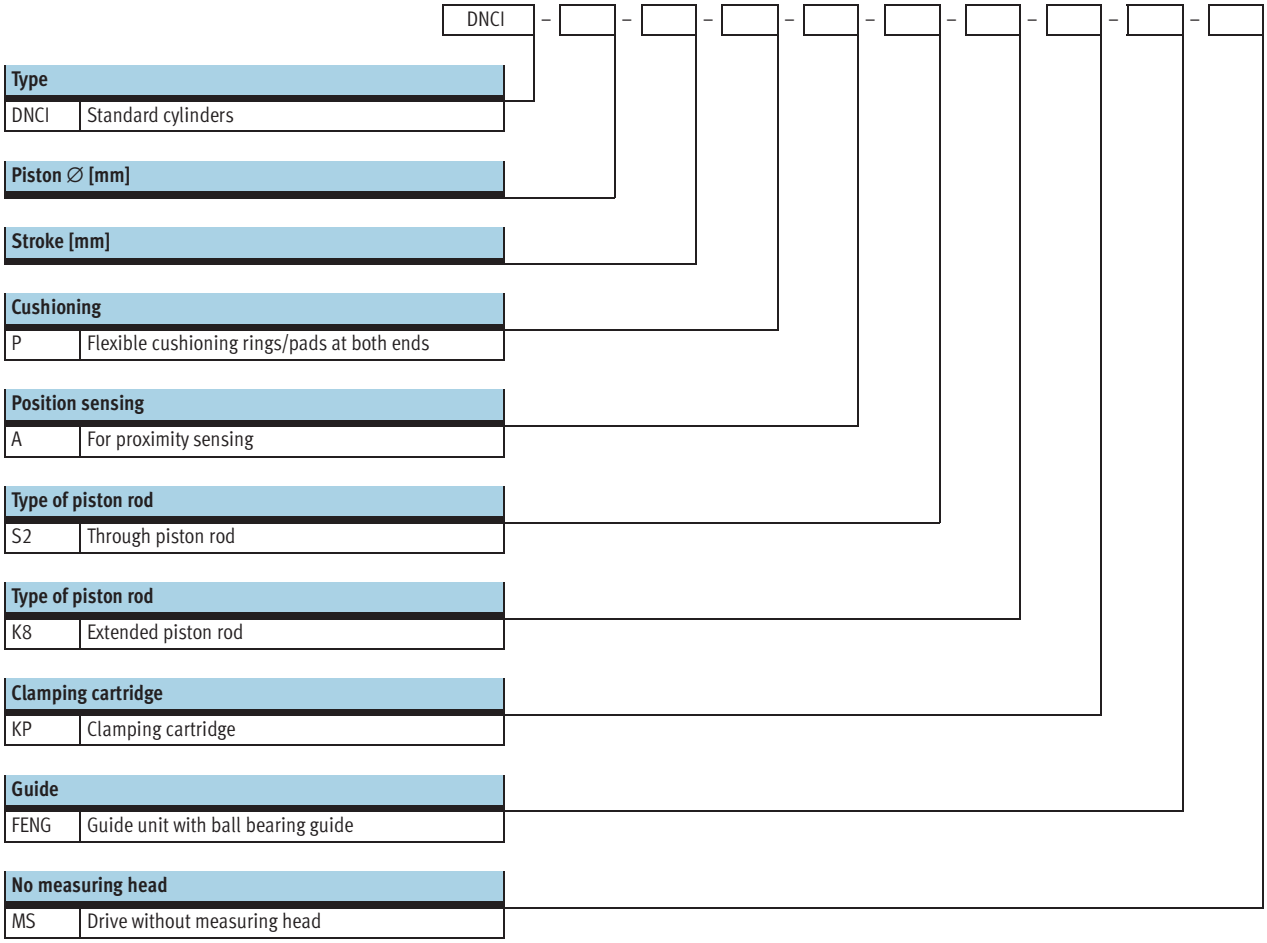
Measuring transducer DADE-...
➔ Internet: dade

PLC controller e.g. FEC-...
➔ Internet: fec

Display and control unit e.g. FED-...
➔Internet: fed

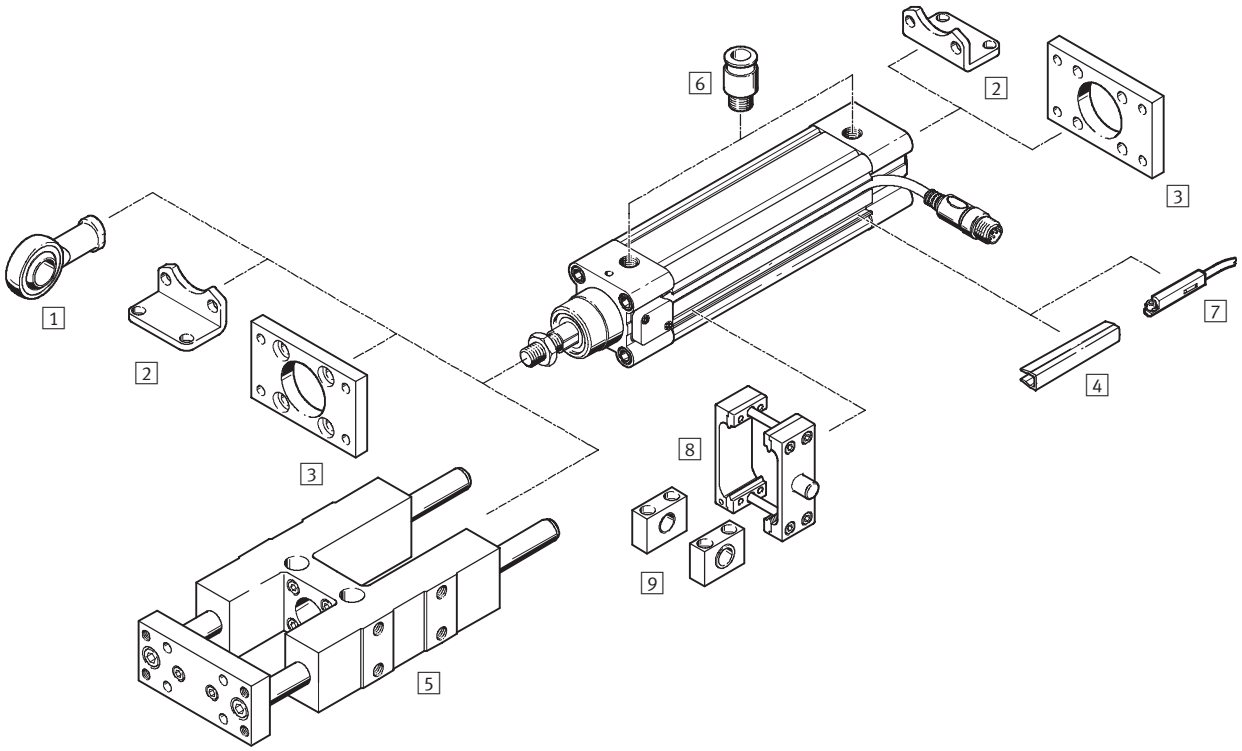
Standard cylinders DNCI, with integrated displacement encoder

Type code



Standard cylinders DNCI, with integrated displacement encoder

Peripherals overview



Note

If the drive DNCI is used without an end position controller SPC11 or an axis controller SPC200, e.g. as a measuring cylinder, then the standard accessories of the drive DNC can be used.

Standard cylinders DNCI, with integrated displacement encoder

Peripherals overview

Accessories			
	Type	Brief description	➔ Page/Internet
1	Rod eye SGS	With spherical bearing	19
2	Foot mounting HNC	For mounting the drive on the bearing and end cap	18
3	Flange mounting FNC	For mounting the drive on the bearing and end cap	19
4	Slot cover ABP-5-S	For protecting against ingress of dirt	21
5	Guide unit[1)] FENG-KF	For protecting against torsion at high torque loads	feng
6	Push-in fitting QS	For connecting compressed air tubing with standard external diameters	21
7	Proximity sensor SME/SMT-8	For additional sensing of the piston position, can be ordered optionally, only in conjunction with the order code A in the drive's modular product section	proximity sensor
8	Trunnion mounting kit ZNCM	For swivelling movements of the drive	20
9	Trunnion support LNZG	For securing the trunnion mounting kit ZNCM	20

1) Guide unit FENG-KF must be attached to the piston rod such that backlash is eliminated

Standard cylinders DNCI, with integrated displacement encoder

Technical data

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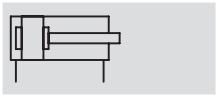
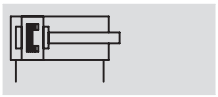
Function





- Ø - Diameter
  32 ... 63 mm

- l - Stroke length
  10 ... 2,000 mm

General technical data					
Piston ∅		32	40	50	63
Constructional design		Piston			
		Piston rod			
		Profile barrel			
Mode of operation		Double-acting			
Cushioning		Flexible cushioning rings/pads at both ends			
Position sensing		Integrated displacement encoder			
		For proximity sensing[1]			
Measuring principle (displacement encoder)		Digital			
Type of mounting		Foot mounting			
Stroke[2)4)]	[mm]	10 ... 2,000			
Torsion protection/Guide[3]		Guide rod with yoke, with ball bearing guide			
Stroke	[mm]	100 ... 500			
Piston rod extension	[mm]	1 ... 500			
Pneumatic connection		G1⁄8	G1⁄4	G1⁄4	G3⁄8
Electrical connection		Cable with 8-pin plug, round type M12			
Cable length	[m]	1.5			

1) Not included in the scope of delivery, can be ordered as an option
2) Note stroke reduction in conjunction with SPC200
3) Guide unit FENG-KF must be ordered as an option and will be supplied attached, the max. stroke is reduced
4) Can only be used as a positioning drive without reservation in the range from 100 ... 500 mm

Forces [N] and impact energy [Nm]					
Piston ∅		32	40	50	63
Theoretical force at 6 bar		483	754	1,178	1,870
advancing	S2	415	633	990	1,682
Theoretical force at 6 bar		415	633	990	1,682
retracting	S2	415	633	990	1,682
Impact energy at end positions		0.1	0.2	0.2	0.5

Permissible impact velocity:

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{dead} + m_{load}}}$$

Maximum permissible load:

$$m_{load} = \frac{2 \times E_{perm.}}{v^2} - m_{dead}$$

$v_{perm.}$ Permissible impact velocity
$E_{perm.}$ Max. impact energy
m_{dead} Moving load (drive)
m_{load} Moving work load

Note

These specifications represent the maximum values which can be reached. Note the maximum permitted impact energy.

Standard cylinders DNCI, with integrated displacement encoder

Technical data

Operating and environmental conditions		
Operating pressure[1]	[bar]	4 ... 8
Operating medium[2]		Compressed air, filtered and unlubricated, filter unit 5 µm
Ambient temperature[3]	[°C]	–20 ... +80
Vibration resistance		To DIN/IEC 68 Parts 2 – 6, severity level 2
Continuous shock resistance		To DIN/IEC 68 Parts 2 – 82, severity level 2
CE symbol (declaration of conformance)		In accordance with EU EMC Directive
Protection class (displacement encoder)		IP65 to IEC 60 529
Corrosion resistance class CRC[4]		1

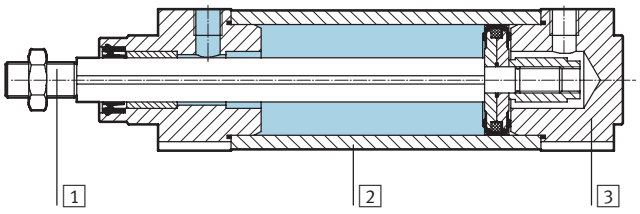
1) Only applies for applications with the Soft Stop end position controller SPC11 and axis controller SPC200
2) The proportional directional control valve MPYE used requires the characteristic values
3) Note operating range of proximity sensors
4) Corrosion resistance class 1 according to Festo standard 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.

Weights [g] with displacement encoder					
Piston ∅		32	40	50	63
Basic drive DNCI-...					
	Product weight with 0 mm stroke	521	853	1,319	1,914
	Additional weight per 10 mm stroke	30	44	62	71
	Moving load with 0 mm stroke	95	175	316	383
	Additional weight per 10 mm stroke	8	14	23	23
Drive with through piston rod DNCI-...-S2					
	Product weight with 0 mm stroke	586	981	1,553	2,165
	Additional weight per 10 mm stroke	39	60	87	96
	Moving load with 0 mm stroke	155	164	297	364
	Additional weight per 10 mm stroke	17	30	48	48
Additional weight with extended piston rod K8					
	Additional weight per 10 mm stroke	8	14	23	23
Additional weight with clamping cartridge KP					
	Product weight	234	394	700	1,147
Additional weight with guide unit FENG-...					
	Product weight with 0 mm stroke	1,530	2,370	4,030	5,410
	Additional weight per 10 mm stroke	18	32	50	62

Materials

Sectional view

Standard cylinders		
1	Piston rod	High-alloy steel
2	Cylinder barrel	Anodised aluminium
3	Bearing/end caps	Die-cast aluminium
–	Dynamic seals	Polyurethane TPE-U
–	Static seals	Nitrile rubber
–	Lubricant	Klüberplex BE31-102
Displacement encoder		
–	Sensor housing	Polyacetate
–	Cable sheath	Polyurethane
–	Plug housing	Polybuteneterephthalate
–	Wall mounting plate	Polyacetate
–	Screws for mounting plate	Steel



Standard cylinders DNCI, with integrated displacement encoder

Technical data

Positioning characteristics with axis controller SPC200						
Piston ∅			32	40	50	63
Repetition accuracy	horizontal	[mm]	< ±0.5			
	vertical	[mm]	< ±0.5			
Assembly position			Any			
Minimum load, horizontal		[kg]	3	5	8	12
Maximum load, horizontal		[kg]	45	75	120	180
Minimum load, vertical[1]		[kg]	3	5	8	12
Maximum load, vertical[1]		[kg]	15	25	40	60
Min. travel speed		[m/s]	0.05			
Max. speed of travel		[m/s]	1.5			
Typ. positioning time, long stroke[3]		[s]	0.45/0.70	0.50/0.75	0.65/0.80	0.55/0.75
Typ. positioning time, short stroke[4]		[s]	0.35/0.55	0.40/0.55	0.45/0.60	0.40/0.55
Minimum positioning stroke[2]		[%]	< 3			
Stroke reduction[5]		[mm]	10		15	
Recommended proportional directional control valve			→ 21			

1) Only in conjunction with an external guide
2) In relation to the maximum stroke of the drive, but never more than 20 mm
3) At 6 bar, horizontal mounting position, DNCI-XX-500, 400 mm positioning travel at min./max. load
4) At 6 bar, horizontal mounting position, DNCI-XX-500, 100 mm positioning travel at min./max. load
5) The stroke reduction is to be maintained on every side of the drive, the max. positionable stroke is therefore: stroke – 2x stroke reduction

Positioning characteristics with end position controller SPC11					
Piston ∅		32	40	50	63
Repetition accuracy of a mid-position[1]	[mm]	±2			
Assembly position		Horizontal			
Minimum load, horizontal[2]	[kg]	3	5	8	12
Maximum load, horizontal[2]	[kg]	45	75	120	180
Travel time		→ Sizing software “SmartS oft Stop”: → www.festo.com			
Recommended proportional directional control valve		→ 21			

1) In the stroke range from 100 ... 500 mm
2) Load = effective load + mass of all moving parts on the drive

Electrical data, displacement encoder		
Linearity error[1]	[mm]	±(0.07±0.02xL)
Max. speed of travel	[m/s]	1.5
Ambient temperature	[°C]	–20 ... +80
Max. temperature coefficient	[ppm/°K]	30
Protection class		IP65
CE symbol (declaration of conformance)		In accordance with EU EMC Directive
Max. permitted magnetic disruption field at 100 mm interval from the sensor[2]	[kA/m]	10
Electrical connection		Cable with 8-pin plug, round type M12
Cable length	[m]	1.5

1) Maximum deviation of the output signal from ”best fit” line (characteristic curve with nominal gradient).
L = Length of measuring system in meters
2) See also mounting conditions

Standard cylinders DNCI, with integrated displacement encoder

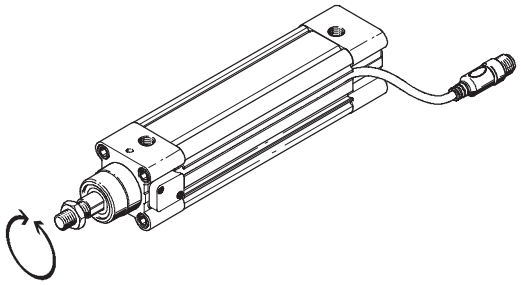
Technical data

Torques and lateral forces

The piston rod must not absorb any torque. We therefore recommend that an external guide FENG-KF be used with the drive DNCI. The guide unit is delivered installed.

The permissible static and dynamic characteristic load values with and without attached guide as well as with regard to the technical data of the variants (S2, S8, S9)

➔ Internet: dnc



Mounting conditions

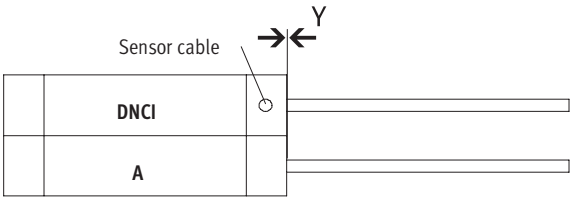
When mounting a drive A with magnet (for position sensing), in addition to a standard cylinder DNCI, the following conditions must be observed:

X Minimum distance between the drives

Y Offset between the drives on the bearing cap

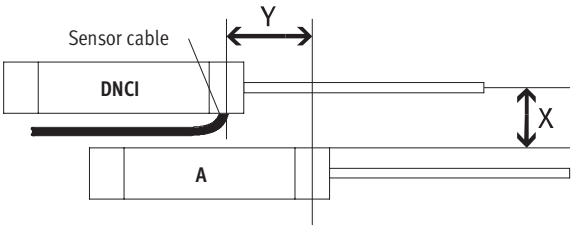
Parallel assembly

If the offset Y = 0 mm, the drives can be assembled directly next to one another.



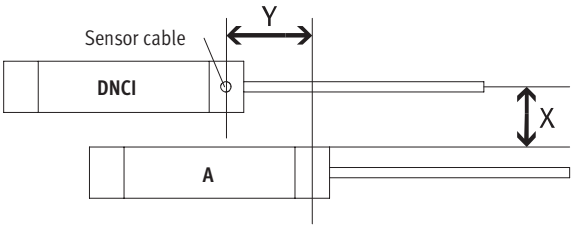
Offset assembly, cable outlet between the drives

If the offset Y > 0 mm and the cable outlet is between the drives, the distance from X > 70 mm must be observed.



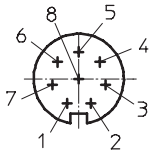
Offset assembly, cable outlet upwards or downwards

If the offset Y > 0 mm and the cable outlet is up or down, the distance from X > 60 mm must be observed.



Pin assignment of plug, view of plug

Pin	Function	Colour
1	5 V	black
2	GND	brown
3	sin+	red
4	sin–	orange
5	cos–	green
6	cos+	yellow
7	Screening	Screening
8	–	–

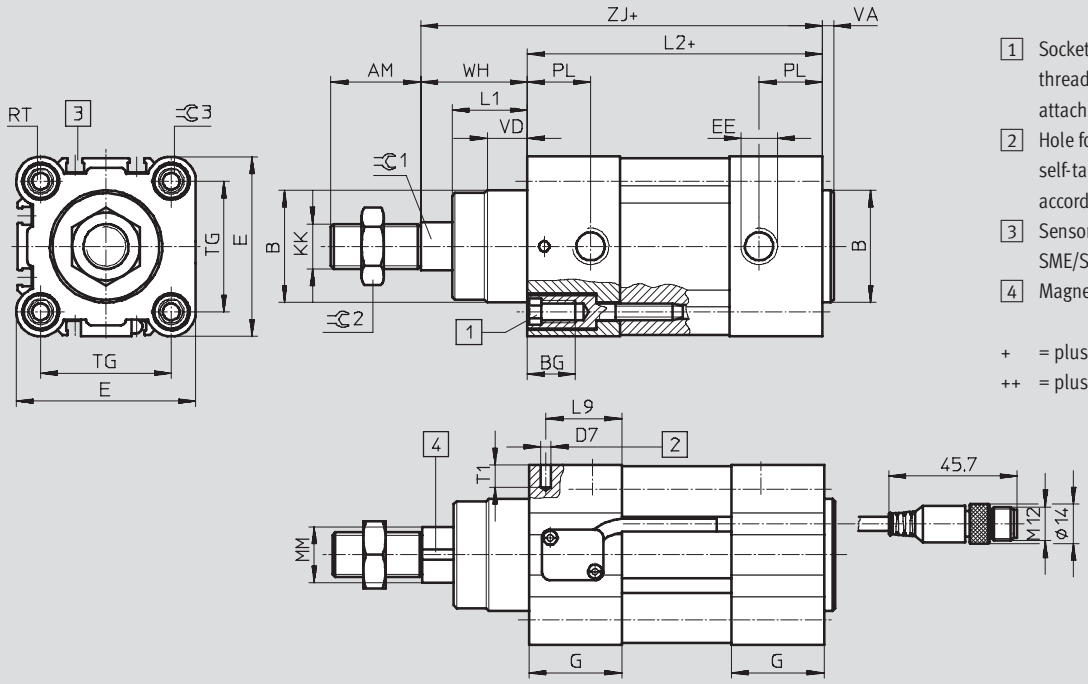


Standard cylinders DNCI, with integrated displacement encoder

Technical data

Dimensions Download CAD Data ➔ **www.festo.com/us/cad**

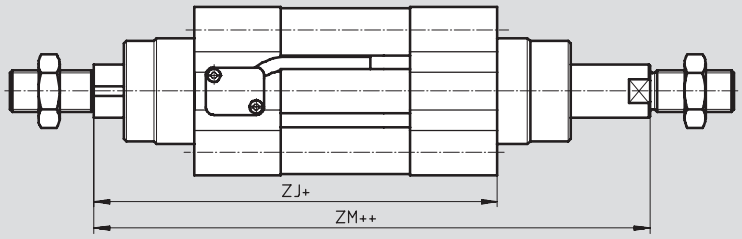
Basic version



1 Socket head screw with female thread for mounting attachments
2 Hole for securing the earthing self-tapping M4 screw according to DIN 7500
3 Sensor slot for proximity sensor SME/SMT-8
4 Magnetic measuring band

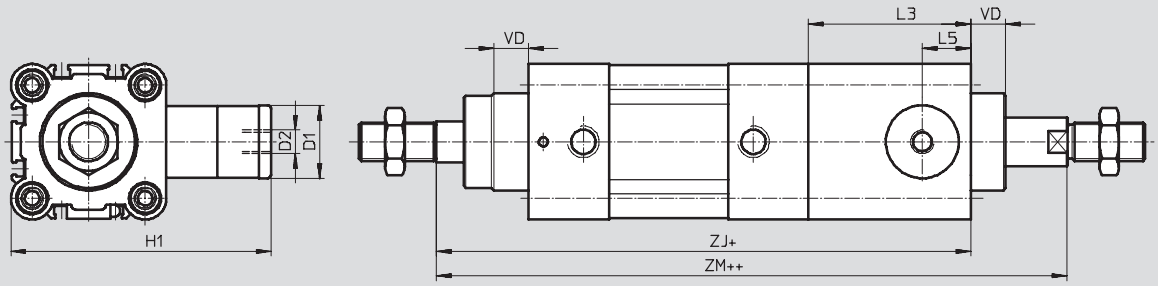
\+ = plus stroke length
++ = plus 2x stroke length

S2 – Through piston rod

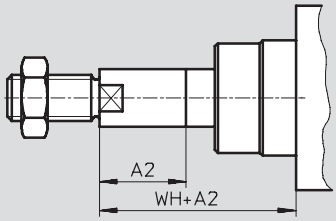


\+ = plus stroke length
++ = plus 2x stroke length

S2 / KP – Through piston rod with clamping cartridge



K8 – Extended piston rod



Standard cylinders DNCI, with integrated displacement encoder

Technical data

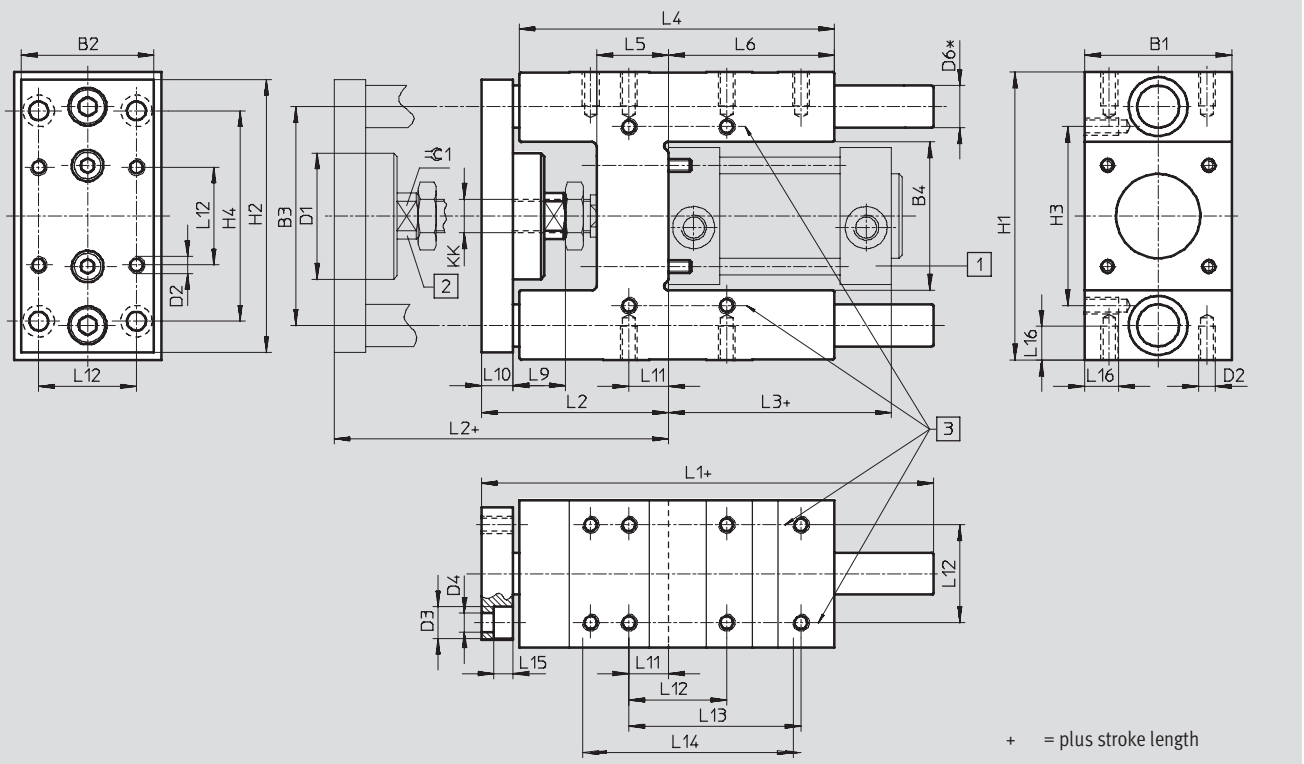
∅ [mm]	AM	A2 max.	B ∅ d11	BG	D1 ∅ f9	D2	D7 ∅	E	EE	G	H1
32	22	500	30	16	20	M5	3.7	45	G1/8	28	67
40	24	500	35	16	24	G1/8	3.7	54	G1/4	33	88
50	32	500	40	17	30	G1/8	3.7	64	G1/4	33	107
63	32	500	45	17	38	G1/8	3.7	75	G3/8	40.5	123

∅ [mm]	KK	L1	L2	L3	L5	L9	MM ∅ f8	PL	RT	T1	TG
32	M10x1.25	18	94	45	14	22.5	12	15.6	M6	8	32.5
40	M12x1.25	21.3	105	53	16	27	16	14	M6	8	38
50	M16x1.5	26.8	106	67	20	27	20	14	M8	8	46.5
63	M16x1.5	27	121	76	24	33	20	17	M8	8	56.5

∅ [mm]	PI	VD	WH	ZJ		ZM		=⊂1	=⊂2	=⊂3
					KP		KP			
32	4	10	26	120	165	148	193	10	16	6
40	4	10.8	30	135	188	167	220	13	18	6
50	4	14.3	37	143	210	183	250	17	24	8
63	4	14.5	37	158	234	199	275	17	24	8

Dimensions Download CAD Data ➔ **www.festo.com/us/cad**

Guide unit FENG-KF



Standard cylinders DNCI, with integrated displacement encoder

Technical data

For ∅ [mm]	B1 -0.3	B2	B3 ±0.2	B4 ±0.3	D1 ∅	D2	D3 ∅	D4 ∅	D6 ∅ h6	H1
32	50	45	74	50.5	44	M6	11	6.6	12	$97_{-0.4}$
40	58	54	87	58.5	44	M6	11	6.6	16	$115_{-0.4}$
50	70	63	104	70.5	60	M8	15	9	20	$137_{-0.5}$
63	85	80	119	85.5	60	M8	15	9	20	$152_{-0.5}$

For ∅ [mm]	H2	H3 ±0.2	H4 ±0.2	KK	L1	L2	L3	L4	L5	L6
32	90	61	78	M10x1.25	155	67_{+5}	94	125	24	76
40	110	69	84	M12x1.25	170	75_{+5}	105	140	28	81
50	130	85	100	M16x1	188	89_{+10}	106	150	34	79
63	145	100	105	M16x1	220	89_{+10}	121	182	34	111

For ∅ [mm]	L9	L10	L11	L12 ±0.2	L13 ±0.2	L14 ±0.2	L15	L16	⌯1
32	20	12	4.3	32.5	70.3	78	6.5	12	15
40	22	12	11	38	84	–	6.5	14	15
50	25	15	18.8	46.5	81.8	100	9	16	19
63	25	15	15.3	56.5	105	–	9	16	19

Standard cylinders DNCI, with integrated displacement encoder

Ordering data – Modular products

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M **Mandatory data** →

Module No.	Function		Piston ∅		Stroke		Cushioning		Position sensing	
535 411 535 412 535 413 535 414	DNCI		32 40 50 63		10 ... 2,000		P		A	
Order example										
535 411	**DNCI**	–	**32**	–	**100**	–	**P**	–	**A**	–

Ordering table

	Piston ∅		32	40	50	63	Conditions	Code		Enter code
M	Module No.		**535 411**	**535 412**	**535 413**	**535 414**				
	Function		Standard cylinder with integrated displacement encoder, non-rotating piston rod					**DNCI**		DNCI
	Piston ∅	[mm]	32	40	50	63		**-...**		
	Stroke	[mm]	10 ... 2,000				1	**-...**		
	Cushioning		Flexible cushioning rings/pads at both ends					**-P**		-P
↓	Position sensing		For proximity sensing					**-A**		-A

1 **Stroke** Can only be used as a positioning drive without reservation in the range from 100 ... 500 mm

Transfer order code

	DNCI	–		–		–	**P**	–	**A**	–

Standard cylinders DNCI, with integrated displacement encoder

Ordering data – Modular products

FESTO

0 Options				
Type of piston rod	**Piston rod extended at front**	**Clamping unit**	**Guide**	**Measuring head**
S2	...K8	KP	FENG	MS
–	–	–	–	–

Ordering table

Piston ∅		32	40	50	63	Conditions	Code		Enter code
0	Type of piston rod	Through piston rod					**-S2**		
	Piston rod extended [mm]	1 ... 500				2	**-...K8**		
	Clamping unit	Clamping cartridge				3	**-KP**		
	Guide	Guide unit with ball bearing guide on the sensor head side				4	**-FENG**		
	Measuring head	No measuring head					**-MS**		

2 **K8** In combination with piston rod type S2, the piston rod is only extended at the front (the side facing the measuring head)

3 **K9** Only with piston rod type S2

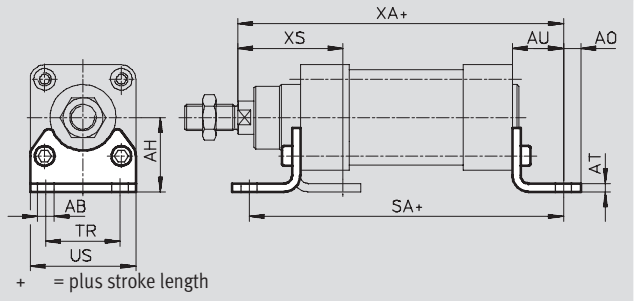
4 **FENG** Maximum stroke length 500 mm

Transfer order code

– | | – | | – | | – | | – | | – | |

Foot mounting HNC

Material:
galvanised steel
Free of copper, PTFE and silicone



Dimensions and ordering data

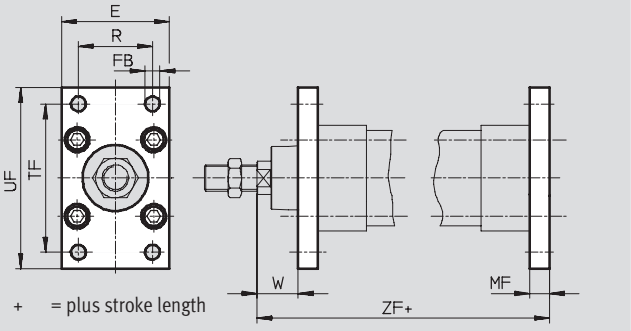
For ∅ [mm]	AB ∅	AH	AO	AT	AU	SA	
						Basic cylinder	KP
32	7	32	6.5	4	24	142	187
40	10	36	9	4	28	161	214
50	10	45	9.5	5	32	170	237
63	10	50	12.5	5	32	185	261

For ∅ [mm]	TR	US	XA		XS	CRC[1]	Weights [g]	Part No.	Type
			Basic cylinder	KP					
32	32	45	144	189	45	2	135	**174 369**	**HNC-32**
40	36	54	163	216	53	2	180	**174 370**	**HNC-40**
50	45	64	175	242	62	2	325	**174 371**	**HNC-50**
63	50	75	190	266	63	2	405	**174 372**	**HNC-63**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents

Flange mounting FNC

Material:
FNC: galvanised steel
Free of copper, PTFE and silicone



Dimensions and ordering data

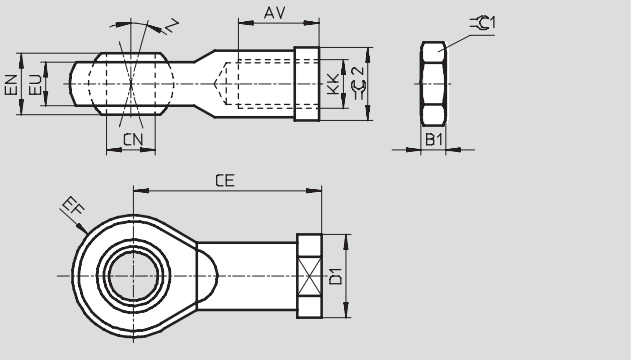
For ∅ [mm]	E	TC ∅ H13	MF	R	TF	UF	W	ZF Basic cylinder	ZF KP	CRC[1]	Weights [g]	Part No.	Type
32	45	7	10	32	64	80	16	130	175	2	240	**174 376**	**FNC-32**
40	54	9	10	36	72	90	20	145	198	2	280	**174 377**	**FNC-40**
50	65	9	12	45	90	110	25	155	222	2	520	**174 378**	**FNC-50**
63	75	9	12	50	100	120	25	170	246	2	690	**174 379**	**FNC-63**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents

Rod eye SGS

Scope of delivery:
1 rod eye, 1 hex nut to DIN 439

Material:
galvanised steel



Dimensions and ordering data

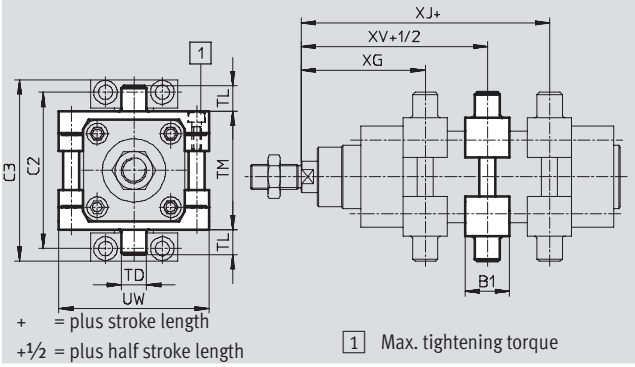
For ∅ [mm]	AV	B1	CE	CN ∅ H7	D1 ∅	EF ±0.5	EN	Z [°]	⌀G1	⌀G2	CRC[1]	Weights [g]	Part No.	Type
M10x1.25	20 –2	5	43	10	19	14	14	13	17	17	2	70	**9 261**	**SGS-M10x1,25**
M12x1.25	22 –2	6	50	12	22	16	16	13	19	19	2	105	**9 262**	**SGS-M12x1,25**
M16x1.5	28 –2	8	64	16	27	21	21	15	24	22	2	210	**9 263**	**SGS-M16x1,5**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents

Trunnion mounting kit ZNCM

The mounting kit can be attached at any position along the profile barrel of a cylinder.

Material:
tempered steel



Dimensions and ordering data

For ∅ [mm]	B1	C2	C3	TD ∅ e9	TL	TM	UW	XG Basic cylinder	XG KP
32	30	71	86	12	12	50	65	66.1	111.1
40	32	87	105	16	16	63	75	75.6	128.6
50	34	99	117	16	16	75	95	83.6	150.6
63	41	116	136	20	20	90	105	93.1	169.1

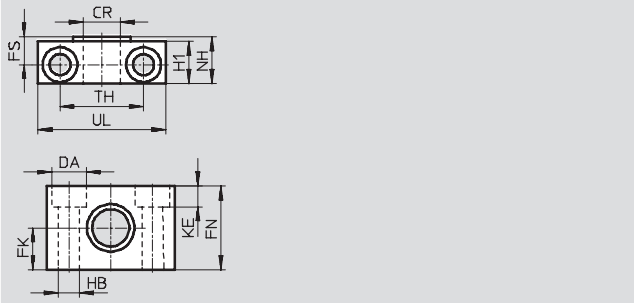
For ∅ [mm]	XJ Basic cylinder	XJ KP	XV Basic cylinder	XV KP	Max. tightening torque [Nm]	CRC[1]	Weights [g]	Part No.	Type
32	79.9	124.9	73	118	4+1	2	210	**163 525**	**ZNCM-32**
40	89.4	142.4	82.5	135.5	8+1	2	385	**163 526**	**ZNCM-40**
50	96.4	163.4	90	157	8+2	2	595	**163 527**	**ZNCM-50**
63	101.9	177.9	97.5	173.5	18+2	2	890	**163 528**	**ZNCM-63**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents

Trunnion supports LNZG

Material:
Trunnion support:
Anodised aluminium
Plain bearing: Plastic

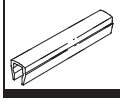
Free of copper, PTFE and silicone



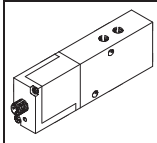
Dimensions and ordering data

For ∅ [mm]	CR ∅ D11	DA ∅ H13	FK ∅ ±0.1	FN	FS	H1	HB ∅ H13	KE	NH	TH ±0.2	UL	CRC[1]	Weights [g]	Part No.	Type
32	12	11	15	30	10.5	15	6.6	6.8	18	32	46	2	125	**32 959**	**LNZG-32**
40, 50	16	15	18	36	12	18	9	9	21	36	55	2	400	**32 960**	**LNZG-40/50**
63	20	18	20	40	13	20	11	11	23	42	65	2	480	**32 961**	**LNZG-63/80**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents

Ordering data					
	For ∅	Remarks	Part No.	Type	PU[1]
Push-in fitting				Technical data ➔ Internet: quick star	
	32	–	**186 098**	**QS-G⅛-8**	10
	40		**186 099**	**QS-G¼-8**	10
	50		**186 101**	**QS-G¼-10**	10
	63		**186 100**	**QS-G⅜-8**	10
			186 102	**QS-G⅜-10**	10
Slot cover				Technical data ➔ Internet: abp	
	32, 40, 50, 63	every 0.5 m	**151 680**	**ABP-5-S**	2

1) Packaging unit quantity

Ordering data – Proportional directional control valves				Technical data ➔ Internet: mpye
	For ∅ [mm]	Stroke [mm]	Part No.	Type
	For applications with axis controller SPC200			
	32	50 … 150	**154 200**	**MPYE-5-M5-010-B**
		150 … 400	**151 692**	**MPYE-5-⅛-LF-010-B**
		> 400	**151 693**	**MPYE-5-⅛-HF-010-B**
	40	50 … 300	**151 692**	**MPYE-5-⅛-LF-010-B**
		> 300	**151 693**	**MPYE-5-⅛-HF-010-B**
	50	50 … 200	**151 692**	**MPYE-5-⅛-LF-010-B**
		200 … 900	**151 693**	**MPYE-5-⅛-HF-010-B**
		> 900	**151 694**	**MPYE-5-¼-010-B**
	63	50 … 300	**151 693**	**MPYE-5-⅛-HF-010-B**
		300 … 1,000	**151 694**	**MPYE-5-¼-010-B**
		> 1,000	**151 695**	**MPYE-5-⅜-010-B**
	For applications with Soft Stop end position controller SPC11			
	32	100 … 500	**151 692**	**MPYE-5-⅛-LF-010-B**
		> 500	**151 693**	**MPYE-5-⅛-HF-010-B**
	40	100 … 320	**151 692**	**MPYE-5-⅛-LF-010-B**
		320 … 500	**151 693**	**MPYE-5-⅛-HF-010-B**
		> 500	**151 694**	**MPYE-5-¼-010-B**
	50	100 … 250	**151 692**	**MPYE-5-⅛-LF-010-B**
		250 … 400	**151 693**	**MPYE-5-⅛-HF-010-B**
		> 500	**151 694**	**MPYE-5-¼-010-B**
	63	100 … 200	**151 692**	**MPYE-5-⅛-LF-010-B**
		200 … 400	**151 693**	**MPYE-5-⅛-HF-010-B**
		400 … 650	**151 694**	**MPYE-5-¼-010-B**
		> 650	**151 695**	**MPYE-5-⅜-010-B**

Note

Recommended proximity sensor
➔ Internet: dnc

Individual positioning components with standard cylinder DNCM ...

Proportional directional control valve
MPYE-...
➔ Internet: mpye

Soft Stop ➔ Internet: soft stop

End position controller
SPC11-POT-TLF

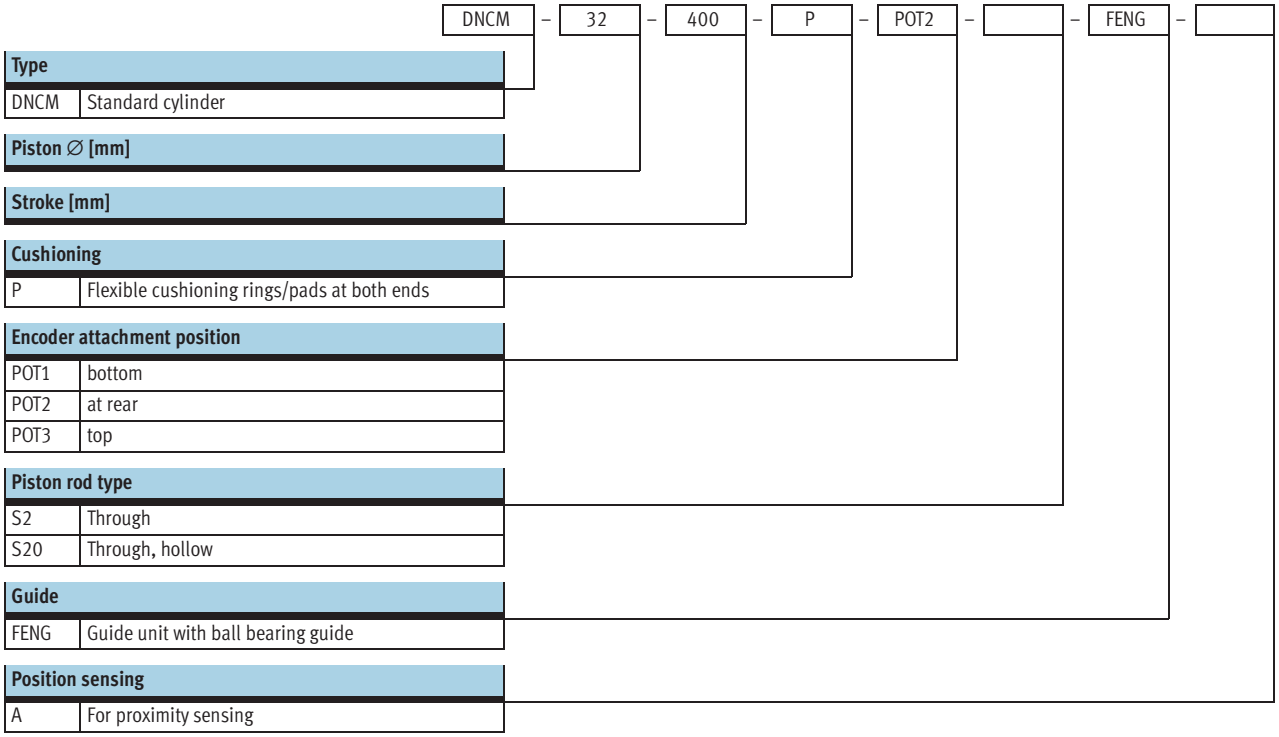
Positioning technology ➔ Internet: spc

Axis interface
SPC-AIF-POT

Axis positioning controller
SPC200

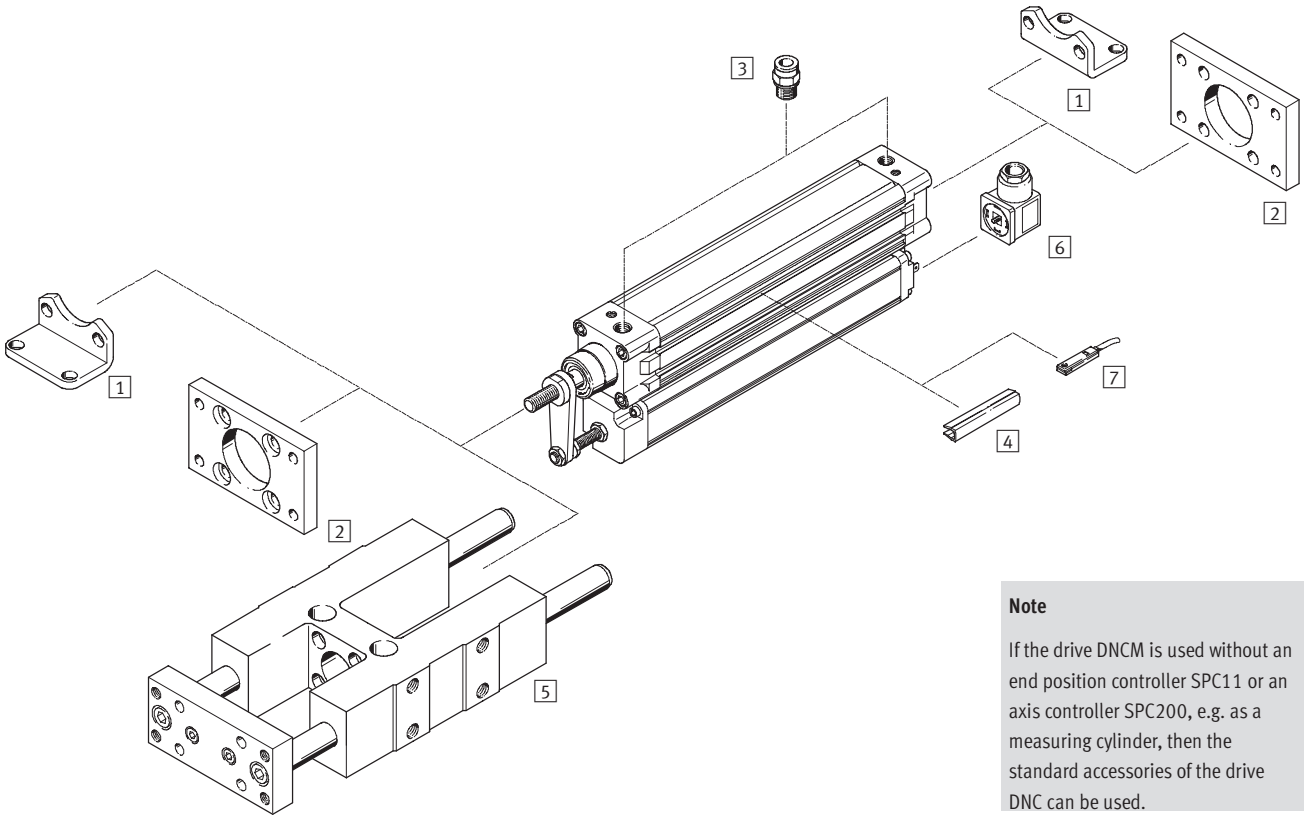
Standard cylinders DNCM, external displacement encoder

Type code



Standard cylinders DNCM, external displacement encoder

Peripherals overview



Note

If the drive DNCM is used without an end position controller SPC11 or an axis controller SPC200, e.g. as a measuring cylinder, then the standard accessories of the drive DNC can be used.

Standard cylinders DNCM, external displacement encoder

Peripherals overview

Accessories			
	Type	Brief description	→ Page/Internet
1	Foot mounting HNC	to mount the drive on the bearing and end cap	36
2	Flange mounting FNC	to mount the drive on the bearing and end cap	36
3	Push-in fitting QS	for connecting compressed air tubing with standard O.D.	37
4	Slot cover ABP-5-S	to protect against the ingress of dirt	36
5	Guide unit[1)] FENG-KF	to protect against torsion at high torque loads	feng
6	Plug socket MSSD-C-4P	to connect the displacement encoder, is part of the end position controller SPC11 and the axis controller SPC200	37
7	Proximity sensors SME-/SMT-8	for additional sensing of the piston position, can be ordered optionally, only in conjunction with the order code A in the drive's modular product section.	proximity sensor

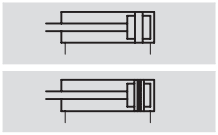
1) FENG-KF must be attached to the piston rod such that backlash is excluded.

Standard cylinders DNCM, external displacement encoder

Technical data

FESTO

Function



- Ø - Diameter
  32 mm and 50 mm
- l - Stroke length
  100 ... 500 mm

General technical data			
Piston ∅		32	50
Design		Piston	
		Piston rod	
		Profile barrel	
Mode of operation		Double-acting	
Operating medium[1]		Compressed air, filtered and unlubricated, filter unit 5 µm	
Cushioning		Flexible cushioning rings/pads at both ends	
Position sensing		Displacement encoder, attached externally	
		Proximity sensor[2]	
Measuring principle (displacement encoder)		Analogue with encoder, contacting and absolute measurement	
Type of mounting		Foot mounting	
Stroke[3]	[mm]	100, 160, 200, 250, 320, 400, 500	
Torsion protection/Guide[4]		Guide rod with yoke, with ball bearing guide	
Stroke	[mm]	100, 160, 200, 250	
Pneumatic connection		G1/8	G1/4
Electrical connection		4-pin plug, type A DIN 43 650	

1) The proportional directional control valve MPYE used requires the characteristic values.
2) Not included in the scope of delivery, can be ordered as an option.
3) Note stroke reduction in conjunction with SPC200.
4) FENG-KF guide must be ordered as an option and will be supplied attached, the max. stroke is reduced.

Forces [N] and impact energy [Nm]		
Piston ∅	32	50
Theoretical force at 6 bar advancing	483	1,178
Theoretical force at 6 bar retracting	415	990
Max. impact energy at end positions	0.1	0.2

Permissible impact velocity:

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{dead} + m_{load}}}$$

Maximum permissible load:

$$m_{load} = \frac{2 \times E_{perm.}}{v^2} - m_{dead}$$

$v_{perm.}$ Permissible impact velocity
$E_{perm.}$ Max. impact energy
m_{dead} Moving load (drive)
m_{load} Moving work load

Note

These specifications represent the maximum values which can be reached. Note the maximum permitted impact energy.

Standard cylinders DNCM, external displacement encoder

Technical data

Positioning characteristics with axis controller SPC200				
Piston ∅			32	50
Repetition accuracy	horizontal	[mm]	±0.2	
	vertical	[mm]	±0.2 (for stroke 0 ... 200 mm)	
		[mm]	±0.4 (for stroke 200 ... 500 mm)	
Mounting position			Any	
Minimum load, horizontal[1]		[kg]	3	8
Maximum load, horizontal[1)6)]		[kg]	45	120
Minimum load, vertical[1]		[kg]	3	8
Maximum load, vertical[1)6)]		[kg]	15	40
Min. speed of travel		[m/s]	0.05	0.05
Max. speed of travel		[m/s]	2.2	1.7
Typ. positioning time, long stroke[2]		[s]	0.45/0.75	0.65/0.85
Typ. positioning time, short stroke[3]		[s]	0.35/0.55	0.45/0.60
Minimum positioning stroke[4]		[%]	3	3
Stroke reduction[5]		[mm]	≥ 10	≥ 15
Recommended proportional directional control valve			→ 37	

1) Load = effective load + mass of all moving parts on the drive
2) At 6 bar, horizontal mounting position, DNCM-XX-500, 400 mm positioning travel at min./max. load
3) At 6 bar, horizontal mounting position, DNCM-XX-500, 100 mm positioning travel at min./max. load
4) In relation to the maximum stroke of the drive, but never more than 20 mm.
5) The stroke reserve is to be maintained on every side of the drive, the max. positionable stroke is therefore: Stroke – 2x stroke reserve
6) With external guide

Positioning characteristics with Soft Stop end position controller SPC11			
Piston ∅		32	50
Repetition accuracy of a mid-position[1]	[mm]	±2	
Mounting position		horizontal	
Minimum load, horizontal[2]	[kg]	3	8
Maximum load, horizontal[2]	[kg]	45	120
Travel time		→ Sizing software “Smart Soft Stop”: →www.festo.com	
Recommended proportional directional control valve		→ 37	

1) In the stroke range from 100 ... 500 mm
2) Load = effective load + mass of all moving parts on the drive

Operating and environmental conditions			
Piston ∅		32	50
Operating pressure[1]	[bar]	4 ... 8	
Ambient temperature[2]	[°C]	–10 ... +80	
Vibration resistance		To DIN/IEC 68 Parts 2 -6, severity level 2	
Continuous shock resistance		To DIN/IEC 68 Parts 2 -27, severity level 2	
CE marking symbol (see conformity declaration)		As per EU EMC directive	
Protection class (displacement encoder)		IP54 to IEC 60 529	
Corrosion resistance class CRC[3]		1	

1) Only applies for applications with the Soft Stop end position controller SPC11 and axis controller SPC200.
2) Note operating range of proximity sensors
3) Corrosion resistance class 1 according to Festo standard 940 070
Components requiring low corrosion resistance. Transport and storage protection.

Weights [g] with displacement encoder								
		Stroke						
Piston ∅		100	160	200	250	320	400	500
32	Product weight	1,160	1,406	1,640	1,990	2,312	2,640	3,190
	Moving load	310	375	430	490	565	660	760
50	Product weight	2,270	2,684	3,030	3,520	4,038	4,590	5,420
	Moving load	850	1,010	1,125	1,265	1,455	1,675	1,935

Standard cylinders DNCM, external displacement encoder

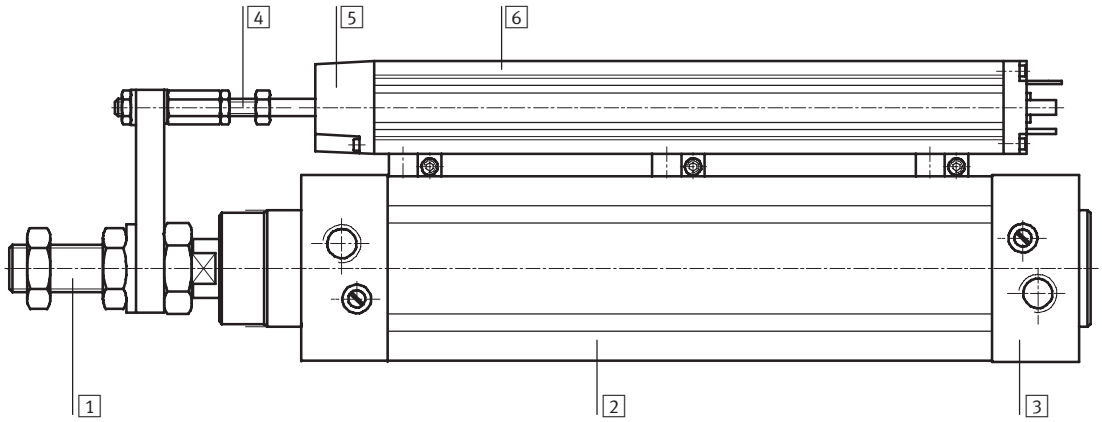
Technical data

Electrical data, displacement encoder									
Stroke			100	160	200	250	320	400	500
Power supply[1]		[V DC]	10						
Max. current consumption		[mA]	4						
Wiper current	recommended	[µA]	< 1						
	maximum[2]	[mA]	10						
Connection resistance		[kΩ]	3	5					
Connection resistance tolerance		[%]	±20						
Resolution		[mm]	≤ 0.01						
Independent linearity	maximum	[%]	0.09	0.08	0.07	0.06	0.05	0.05	0.05
Temperature coefficient		[ppm/°K]	≤ 5						
Interface			Analogue						

1) Stabilised power supply is recommended, max. 42 V DC permissible.
2) Only permissible in the short-term in the event of a fault.

Materials

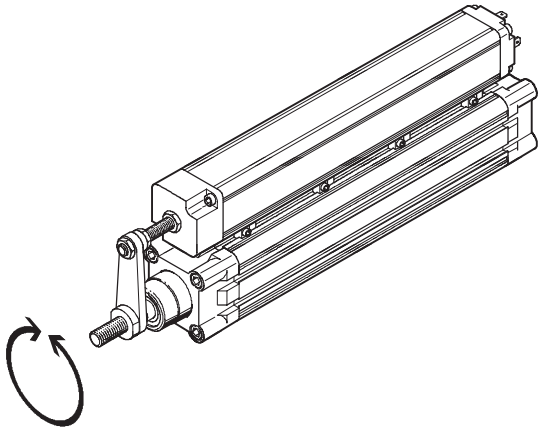
Sectional view



Drive		
1	Piston rod	High-alloy steel
2	Cylinder barrel	Anodised aluminium
3	Bearing/end caps	Die-cast aluminium
–	Dynamic seals	Polyurethane TPE-U
–	Static seals	Nitrile rubber
–	Lubricant	Klüberplex BE31-102

Displacement encoder			
4	Connecting rod		High-alloy steel
5	Bearing cap		Reinforced polyester
6	Profile		Anodised aluminium
–	Resistor element		Conductive plastic
–	Wiper	Contact	Precious metal
		Silencer	Elastomer
–	Cover seal		Nitrile rubber
–	Rod seal		Tetrafluoroethylene
–	Lubricant		ISOFLEX Topas MB52

Torques and lateral forces



Note

Torques or lateral forces can result in inaccurate measurement results. We therefore recommend that an external guide be used with the drive DNCM.
This must be attached to the piston rod such that backlash is excluded.

Use of the DNCM with the FENG-KF is recommended. The drive is delivered with the guide attached.

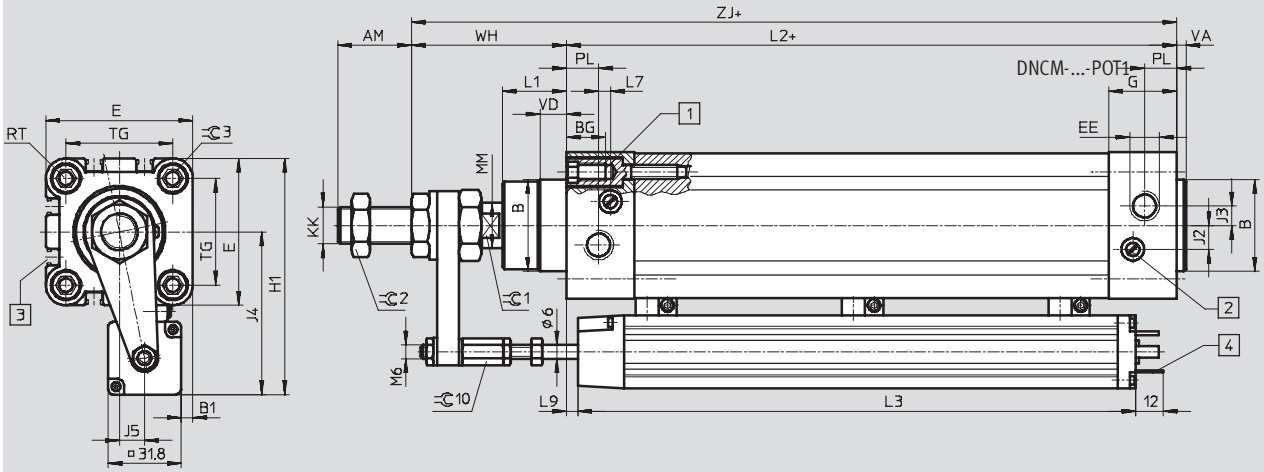
The permissible static and dynamic characteristic load values with and without attached guide
➔ Internet: dnc

Technical data for the S2 and S20 designs of the piston rod
➔ Internet: dnc

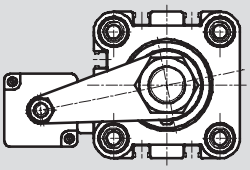
Standard cylinders DNCM, external displacement encoder

Technical data

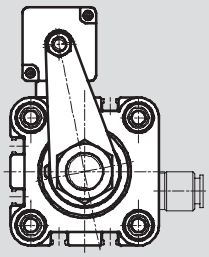
Dimensions Download CAD Data ➔ **www.festo.com/us/cad**



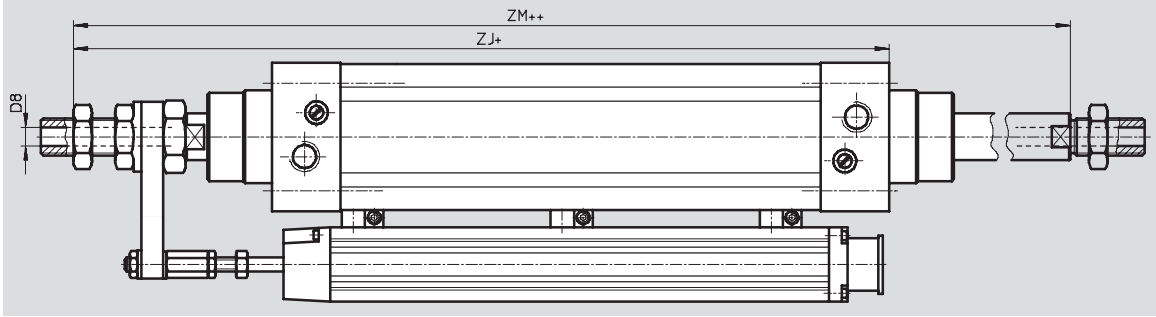
DNCM-...-POT2



DNCM-...-POT3



DNCM-...-S2/DNCM-...-S20



1 Socket head screw with female thread for mounting attachments

2 Regulating screw for adjustable end-position cushioning

3 Sensor slot for proximity sensor SME/SMT-8

4 Plug connector to DIN 43 650-A

\+ = plus stroke length

++ = plus 2x stroke length

Standard cylinders DNCM, external displacement encoder

Technical data

∅ [mm]	AM	B ∅ d11	BG	B1 ±0.8	D8 ∅	E	EE	G	H1 ±1.5
32	22	30	16	0.24	4.5	45	G1/8	25.1	84.4
50	32	40	17	5.6	8	64	G1/4	29.6	103.4

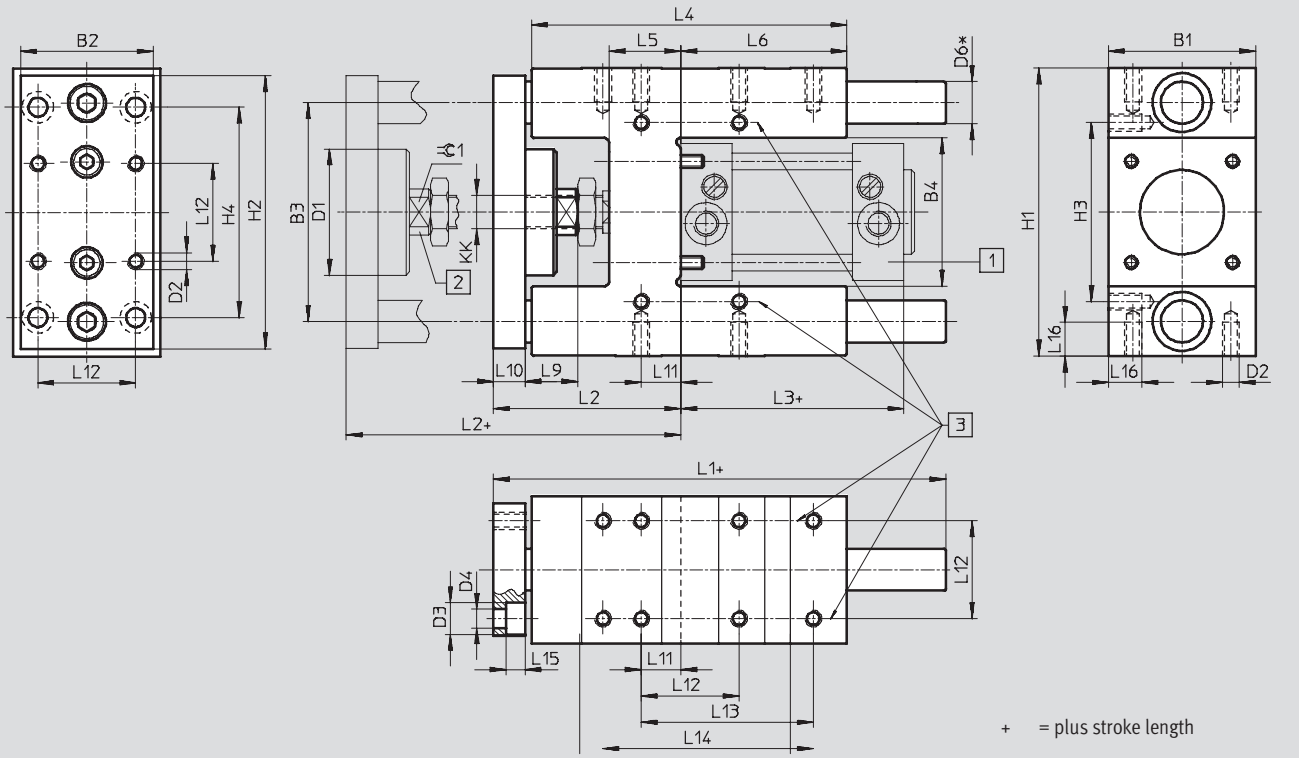
∅ [mm]	J2	J3	J4 ±1	J5 ±1	KK	L1	L2
32	6	5.2	45.8	6.3	M10x1.25	18	94
50	10.4	8.5	55.3	10.6	M16x1.5	28	106

∅ [mm]	Stroke [mm]	L3	L7	L9	MM ∅ f8	PL	RT	TG	VA	VD
32	100	201	3.3	6.5 ±2	12	15.6	M6	32.5	4	10
	160	248		1 +2/–1						
	200	298		5 ±2						
	250	349		5.5 ±2						
	320	436		13 ±2						
	400	502		6 ±2						
	500	629		20 ±2						
50	100	201	5.1	6.5 ±2	20	14	M8	46.5	4	11.5
	160	248		1 +2/–1						
	200	298		5 ±2						
	250	349		5.5 ±2						
	320	436		13 ±2						
	400	502		6 ±2						
	500	629		0 +2						

∅ [mm]	WH	ZJ	ZM	⌀1	⌀2	⌀3
32	44.4	138.4	166.4	10	16	6
50	67.4	173.4	213.4	17	24	8

Dimensions Download CAD Data ➔ **www.festo.com/us/cad**

Guide unit FENG-KF



Standard cylinders DNCM, external displacement encoder

Technical data

for ∅ [mm]	B1 -0.3	B2	B3 ±0.2	B4 ±0.3	D1 ∅	D2	D3 ∅	D4 ∅
32	50	45	74	50.5	44	M6	11	6.6
50	70	63	104	70.5	60	M8	15	9

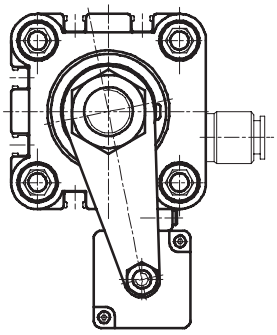
for ∅ [mm]	D6 ∅ h6	H1	H2	H3 ±0.2	H4 ±0.2	KK	L1	L2
32	12	$97_{-0.4}$	90	61	78	M10x1.25	155	67_{+5}
50	20	$137_{-0.5}$	130	85	100	M16x1.5	188	89_{+10}

for ∅ [mm]	L3	L4	L5	L6	L9	L10	L11	L12 ±0.2
32	94	125	24	76	20	12	4.3	32.5
50	106	150	34	79	25	15	18.8	46.5

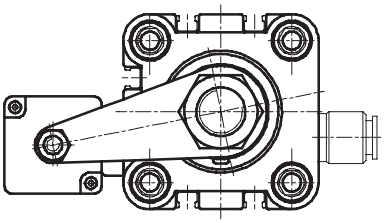
for ∅ [mm]	L13 ±0.2	L14 ±0.2	L15	L16	⌀1	Stroke [mm]	Weight per 10 mm stroke [g]	Weight [g]
32	70.3	78	6.5	12	15	10 ... 500	18	1 530
50	81.8	100	9	16	19	10 ... 500	50	4 030

Arrangement of the displacement encoder

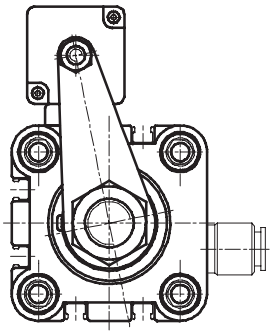
DNCM-...-POT1 (encoder underneath)



DNCM-...-POT2 (encoder at rear)



DNCM-...-POT3 (encoder on top)



Standard cylinders DNCM, external displacement encoder

Ordering data – Modular product system

FESTO

M Mandatory data						O Options		
Module No.	**Basic function**	**Size**	**Stroke**	**Cushioning**	**Encoder attachment position**	**Piston rod type**	**Guide**	**Position sensing**
528 940 528 941	DNCM	32 50	100 160 200 250 320 400 500	P	POT1 POT2 POT3	S2 S20	FENG	A
Ordering example								
528 941	**DNCM** –	**50** –	**500** –	**P** –	**POT3** –	**S20** –	–	**A**

Ordering table

Size			32	50	Conditions	Code		Enter code
M	Module No.		**528 940**	**528 941**				
	Basic function		Standard cylinder with displacement encoder			**DNCM**		DNCM
	Size	[mm]	32	50		**-...**		
	Stroke	[mm]	100			**-100**		
			160			**-160**		
			200			**-200**		
			250			**-250**		
			320		1	**-320**		
			400		1	**-400**		
			500		1	**-500**		
	Cushioning		Flexible cushioning rings/plates at both ends			**-P**		-P
	Encoder attachment position		Encoder underneath			**-POT1**		
			Encoder at rear			**-POT2**		
			Encoder on top			**-POT3**		
O	Piston rod type		Through piston rod		1	**-S2**		
			Through, hollow piston rod		1	**-S20**		
	Guide		Guide unit with ball bearing guide KF		2	**-FENG**		
	Position sensing		For proximity sensing			**-A**		

1 **320, 400, 500, S2, S20** Not with guide FENG.

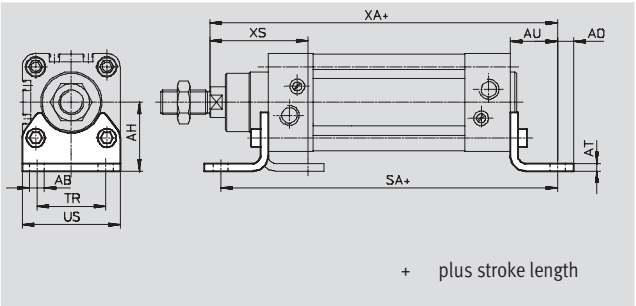
2 **FENG** Only with POT2 encoder. FENG is mounted without backlash.

Transfer order code

	DNCM	–		–		–	**P**	–		–		–		–	

Foot mounting HNC

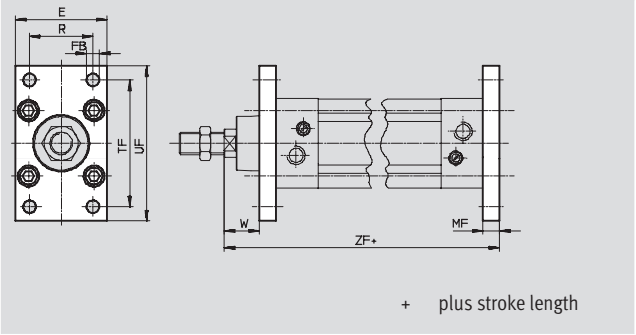
Material:
Galvanised steel
Free of copper, PTFE and silicone



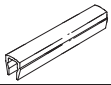
Dimensions and ordering data													
for ∅ [mm]	AB ∅	AH	AO	AT	AU	SA	TR	US	XA	XS	Weight [g]	Part No.	Type
32	7	32	6.5	4	24	142	32	45	144	45	135	**174 369**	**HNC-32**
50	10	45	9.5	5	31	170	45	64	175	62	325	**174 371**	**HNC-50**

Flange mounting FNC

Material:
Galvanised steel
Free of copper, PTFE and silicone



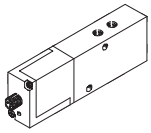
Dimensions and ordering data											
for ∅ [mm]	E	FB ∅ H13	MF	R	TF	UF	W	ZF	Weight [g]	Part No.	Type
32	45	7	10	32	64	80	16	130	240	**174 376**	**FNC-32**
50	65	9	12	45	90	110	25	155	520	**174 378**	**FNC-50**

Ordering data – Slot cover					Technical data ➔ Internet: abp
	for ∅ [mm]	Remarks	Part No.	Type	PU[1]
Slot cover ABP-S					
	32, 50	0.5 m each	**151 680**	**ABP-5-S**	2

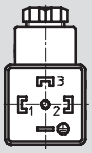
1) Packaging unit quantity

Ordering data – Push-in/threaded fittings					Technical data ➔ Internet: quick star
	for ∅ [mm]	Remarks	Part No.	Type	PU[1]
	32	for connecting compressed air tubing with standard O.D.	**186 098**	**QS-G⅛-8**	10
	50		**186 099**	**QS-G¼-8**	

1) Packaging unit quantity

Ordering data – Proportional directional control valves				Technical data ➔ Internet: mpye
	for ∅ [mm]	Stroke [mm]	Part No.	Type
	for applications with axis controller SPC200			
	32	100/160/200/250/320	**151 692**	**MPYE-5-⅛-LF-010-B**
		400/500	**151 693**	**MPYE-5-⅛-HF-010-B**
	50	100/160/200/250/320/400/500	**151 693**	**MPYE-5-⅛-HF-010-B**
	for applications with Soft Stop end position controller SPC11			
	32	100/160/200/250/320/400	**151 692**	**MPYE-5-⅛-LF-010-B**
		500	**151 693**	**MPYE-5-⅛-HF-010-B**
	50	100/160/200/250	**151 692**	**MPYE-5-⅛-LF-010-B**
		320/400	**151 693**	**MPYE-5-⅛-HF-010-B**
		500	**151 694**	**MPYE-5-¼-010-B**

Ordering data – Plug socket



PIN	Pin allocations	Designation	Part No.	Type
1	Power supply	Plug socket	**171 157**	**MSSD-C-4P**
2	Signal			
3	0 V			
PE	PE (yellow), screen			

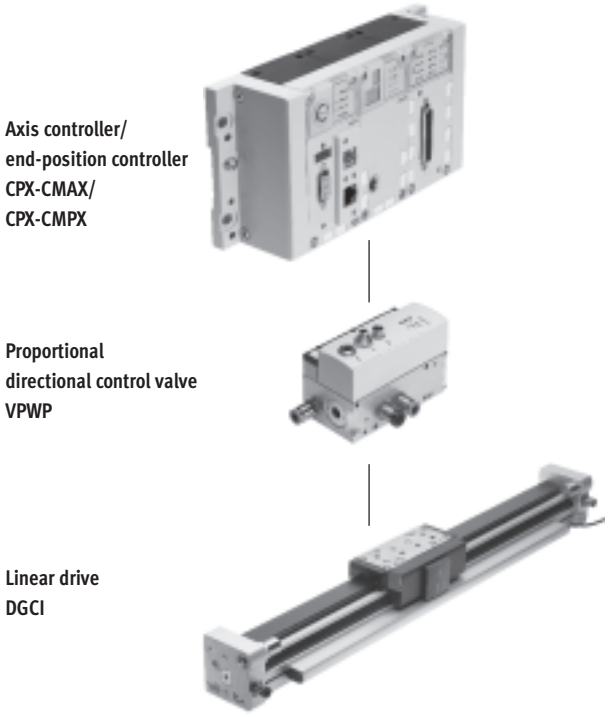
Note

Recommended proximity sensor
➔ Internet: dnc

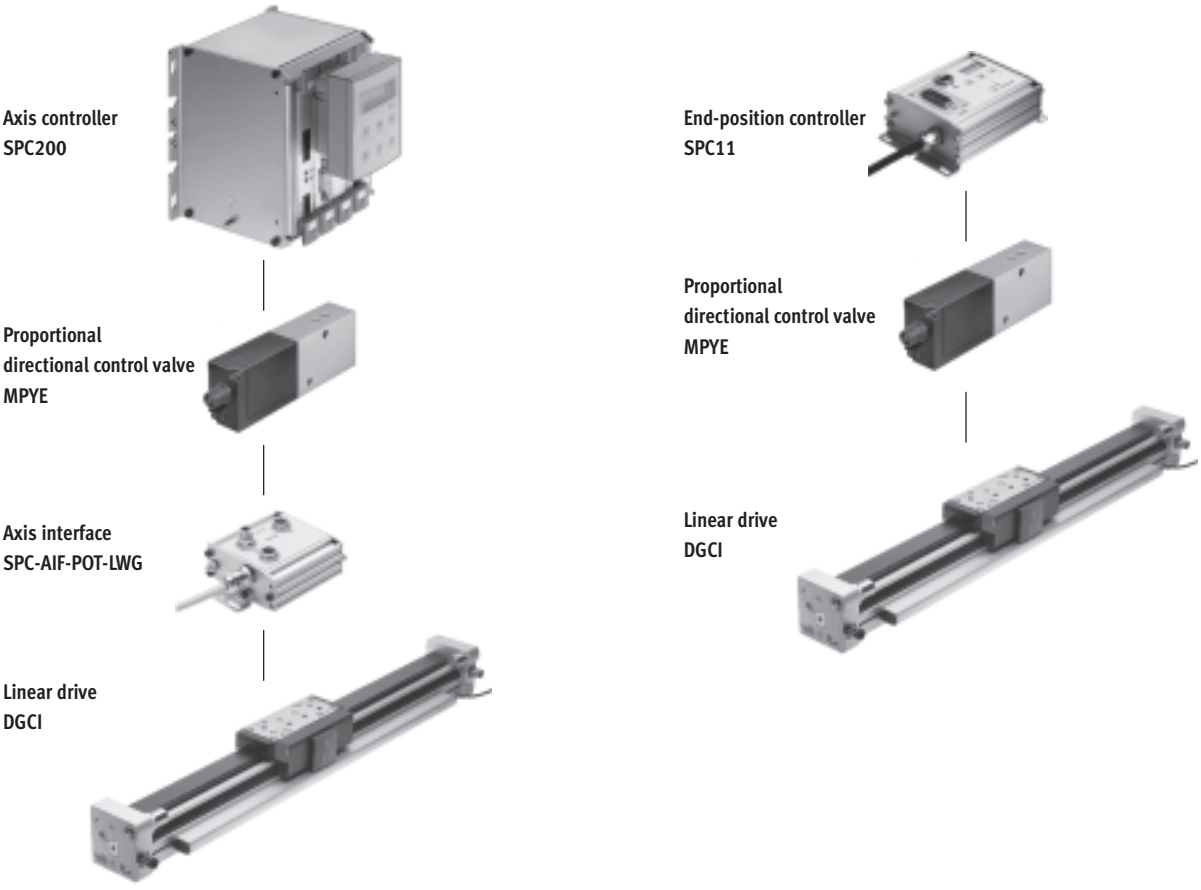
Linear drives DGCI, with displacement encoder

Key features

Individual components for positioning with axis controller CPX-CMAX or end-position controller CPX-CMPX



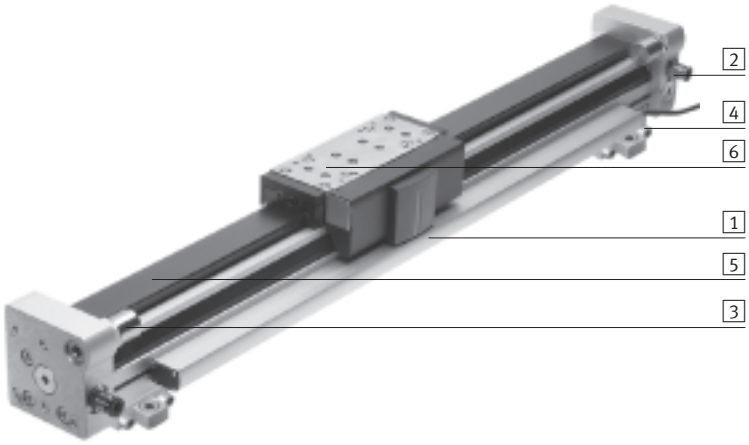
Individual components for positioning with axis controller SPC200 or end-position controller SPC11



Linear drives DGCI, with displacement encoder

Key features

At a glance



1 Displacement encoder ➔46

- High degree of protection IP67
- Non-contacting
- Measures absolute values

2 Supply ports ➔59

- Optionally on two sides (on the end face or at the front)
- Optionally with different coloured push-in fittings for simple and error-free tubing connections

3 End stops ➔50

- Metal fixed stop
- Shock absorber, precisely adjustable

4 Profile mounting ➔47

- Profile mountings remain on the base plate after the drive is dismantled. This saves time during assembly and removal

5 Recirculating ball bearing guide ➔44

- Piston ∅ 18 ... 63 mm
- Stroke lengths 100 ... 2,000 mm
- Guide backlash = 0 mm
- For medium and large loads
- Precision mounting interface with stainless steel slide
- Operating behaviour under torque load = very good

6 Recirculating ball bearing guide with protected guide ➔44

- Piston ∅ 18 ... 40 mm
- Stroke lengths 100 ... 2,000 mm
- Guide backlash = 0 mm
- The protected guide cleans the guide rail and protects the recirculating ball bearing guide by means of an additional wiper seal and lubrication unit

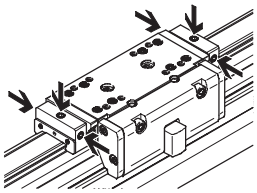
– Passive guide axis DGC-FA ➔ dgc-fa

- Without drive
- Piston ∅ 8 ... 63 mm
- Stroke lengths 1 ... 5,000 mm
- Guide backlash = 0 mm
- Precision guide, suitable for DGCI. Can be used as a machine component or as a twin guide with DGCI

– Passive guide axis with protected guide DGC-FA-GP ➔ dgc-fa

- Without drive
- Piston ∅ 18 ... 63 mm
- Stroke lengths 1 ... 5,000 mm
- Guide backlash = 0 mm
- The protected guide cleans the guide rail and protects the recirculating ball bearing guide by means of an additional wiper seal and lubrication unit

Central lubrication



The lubrication adapter enables the guide of the linear drive DGCI to be permanently lubricated in applications in humid or wet ambient conditions using semi or fully automatic relubrication devices.
The adapters are suitable for oils and greases.

- For piston ∅ 25, 32, 40, 63 mm
- Connections:
  - On both sides of the slide
  - In three places (front, top, rear) on each side

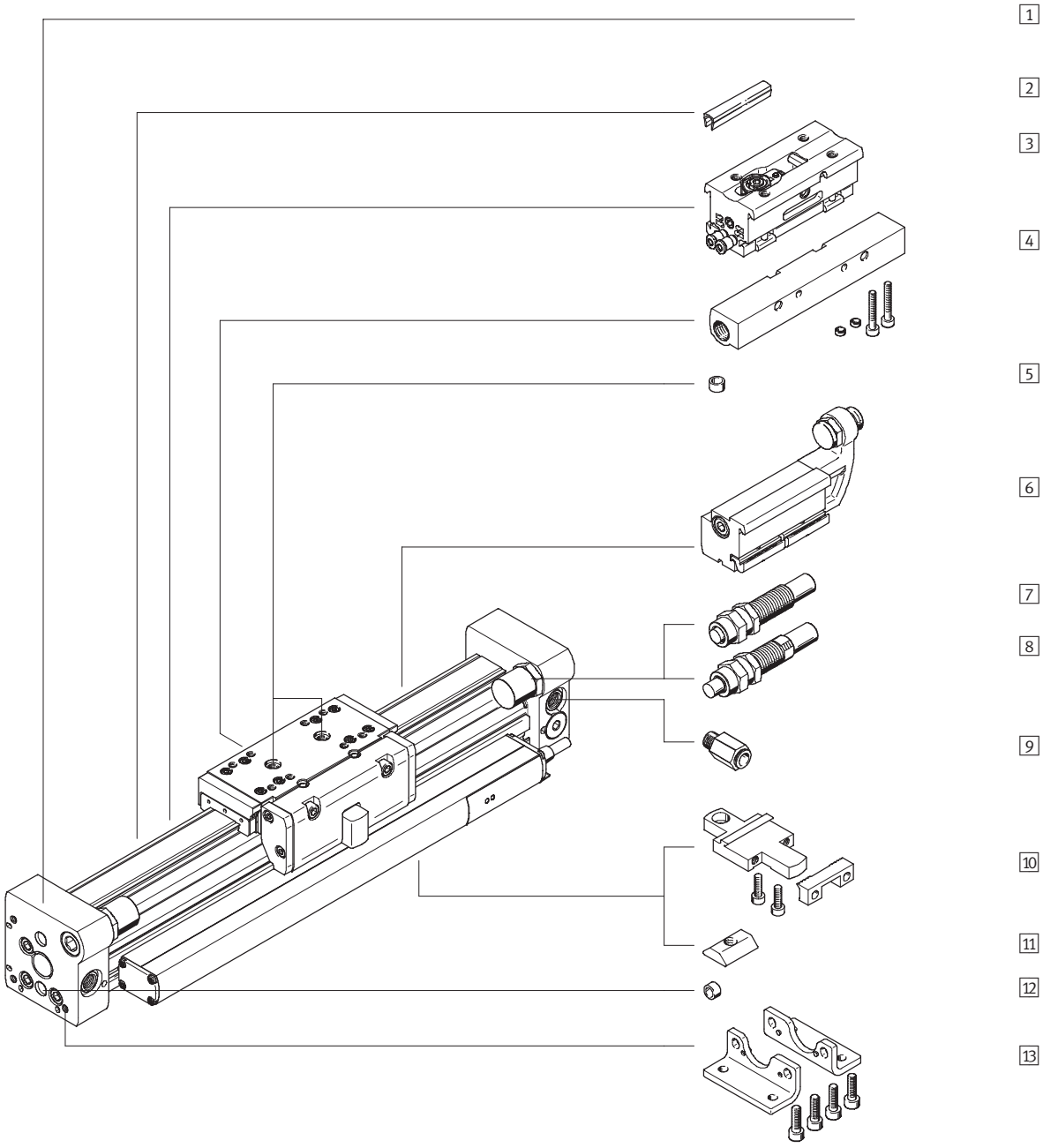
Technical data ➔ 49
Order code C in the modular product system ➔ 61

Linear drives DGCI, with displacement encoder

Peripherals overview

Note

Drive must not be operated without end stops or shock absorbers.



Linear drives DGCI, with displacement encoder

Peripherals overview

Variants and accessories				
	Type	For piston ∅	Brief description	➔ Page/Internet
1	Linear drive DGCI-KF	18 … 63	Linear drive without accessories, with recirculating ball bearing guide.	44
2	Slot cover L	18 … 63	For protecting against ingress of dirt and securing proximity sensor cables.	68
3	Intermediate position module DADM-DGC	25, 32	Facilitates intermediate positions with metal fixed stop. The module can be attached.	66
4	Shock absorber retainer DADP-DGC	18 … 63	For variable end-position adjustment in combination with the stop KYC.	64
5	Centring pin/sleeve[1)] ZBS/ZBH	18 … 63	For centring loads and attachments on the slide.	68
6	Stop KYC	18 … 63	For variable end-position adjustment in combination with the shock absorber retainer DADP-DGC.	64
7	Shock absorber YSR	18 … 63	Self-adjusting hydraulic shock absorber with spring return and linear cushioning characteristics.	60
8	Shock absorber YSRW	18 … 63	Self-adjusting hydraulic shock absorber with spring return and progressive cushioning characteristics.	60
9	Push-in fitting QS	18 … 63	For connecting compressed air tubing with standard O.D.	59
10	Profile mounting M	18 … 63	Simple and precise mounting option via dovetail connection.	63
11	Slot nut B	25 … 63	For mounting attachments.	68
12	Centring pin/sleeve[1)] ZBS/ZBH	18 … 63	For centring the drive without foot mountings (user-specific).	68
13	Foot mounting F	18 … 63	For mounting on the end cap.	62
–	Proportional directional control valve MPYE	18 … 63	Regulates the compressed air and therefore the position of the slide.	70

1) Included in the scope of delivery of the drive

Note

Allocation table of drives and associated proportional directional control valves ➔ 70

Linear drives DGCI, with displacement encoder

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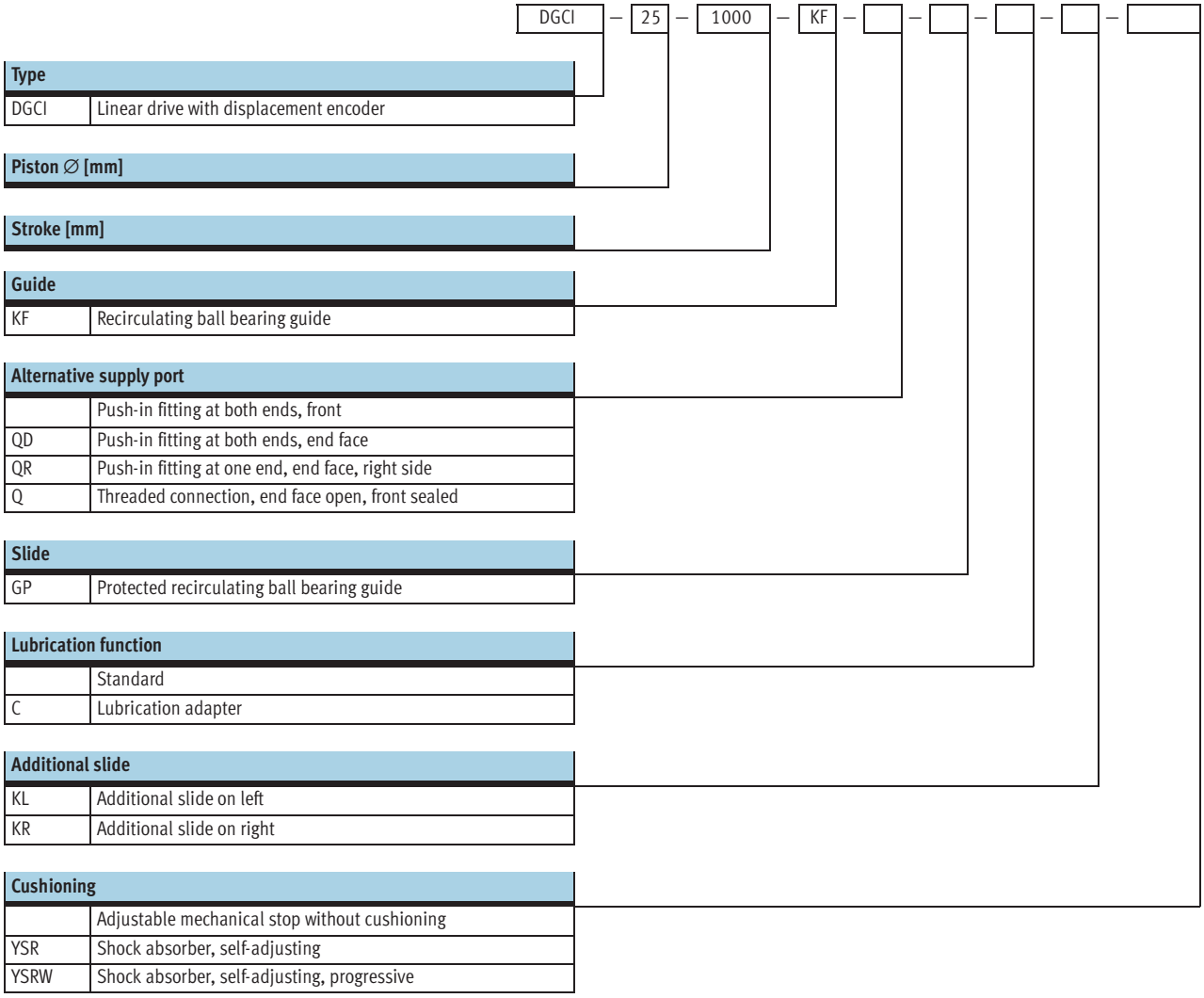
Type codes



Type	
DGCI	Linear drive with displacement encoder

Piston ∅ [mm]

Stroke [mm]

Guide	
KF	Recirculating ball bearing guide

Alternative supply port	
	Push-in fitting at both ends, front
QD	Push-in fitting at both ends, end face
QR	Push-in fitting at one end, end face, right side
Q	Threaded connection, end face open, front sealed

Slide	
GP	Protected recirculating ball bearing guide

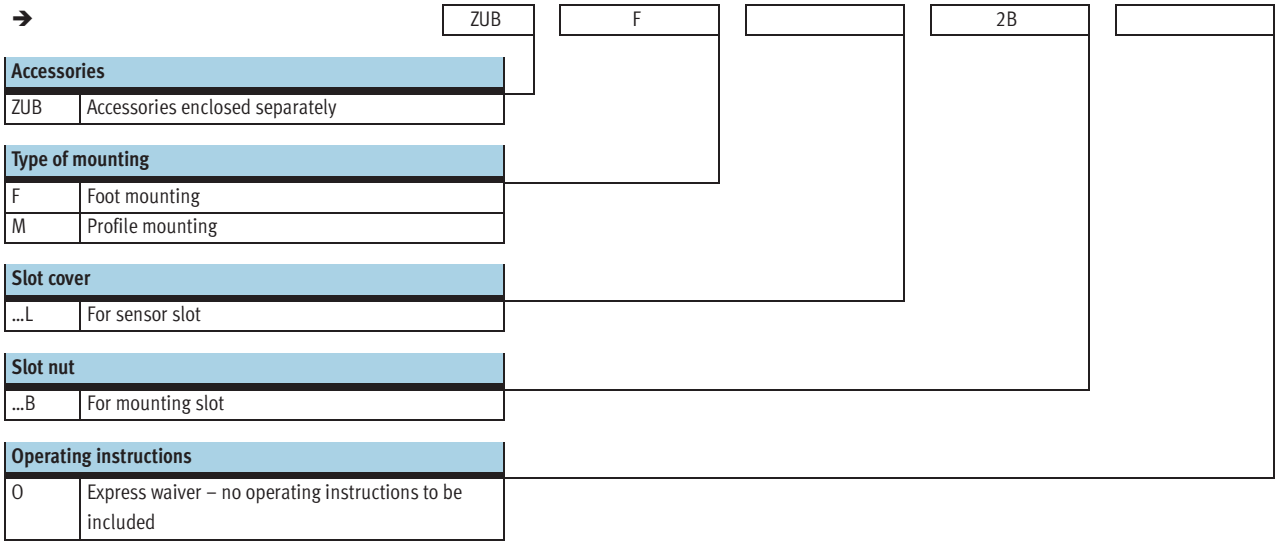
Lubrication function	
	Standard
C	Lubrication adapter

Additional slide	
KL	Additional slide on left
KR	Additional slide on right

Cushioning	
	Adjustable mechanical stop without cushioning
YSR	Shock absorber, self-adjusting
YSRW	Shock absorber, self-adjusting, progressive

Linear drives DGCI, with displacement encoder

Type codes

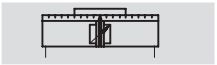


Linear drives DGCI, with displacement encoder

Technical data

FESTO

Function



- Ø - Diameter
  18 ... 63 mm
- l - Stroke length
  100 ... 2,000 mm

www.festo.com/en/Spare_parts_service

General technical data						
Piston ∅		18	25	32	40	63
Design		Rodless linear drive with displacement encoder				
Mode of operation		Double-acting				
Moment compensator principle		Slotted cylinder, mechanically coupled				
Guide		External recirculating ball bearing guide				
Mounting position		Any				
Type of mounting		Profile mounting				
		Foot mounting				
		Direct mounting				
Pneumatic connection[1]		M5	G1⁄8		G1⁄4	G3⁄8
Cushioning ➔ 48		• Via metal fixed stop • Optionally via shock absorber, self-adjusting at both ends				
Position sensing		Via displacement encoder				
Measuring principle (displacement encoder)		Digital, magnetostrictive, non-contacting and absolute measurement				
Stroke[2]	[mm]	100; 160; 225; 300; 360; 450; 500; 600; 750; 850; 1,000; 1,250; 1,750; 2,000				
Protected version		Optional				–
Max. speed[3]	[m/s]	5				
Stroke tolerance	[mm]	0 ... 2.5				

1) Recommended push-in fittings ➔ 68
With pre-assembled push-in fittings, the tubing diameters apply ➔ 57
2) Note stroke reduction in combination with SPC200
3) Only applies to positioning using axis controller SPC200 and end-position controller SPC11. Otherwise a maximum speed of 3 m/s is permitted

Operating and environmental conditions						
Piston ∅		18	25	32	40	63
Operating pressure	[bar]	2 ... 8			1.5 ... 8	
Operating medium		Filtered and unlubricated compressed air, grade of filtration 5 µm				
Ambient temperature	[°C]	–10 ... +60				
Vibration resistance to DIN/IEC 68, Part 2-6		At 10 ... 58 Hz: 0.15 mm				
		At 58 ... 150 Hz: 2G				
Continuous shock resistance to DIN/IEC 68, Part 2-27		Half sine 15g, 11 ms				
CE mark (see declaration of conformity)		To EU EMC Directive				
Certification		C-Tick				
Protection class (displacement encoder)		IP67				
Corrosion resistance class CRC[1]		1				

1) Corrosion resistance class 1 according to Festo standard 940 070
Components subject to low corrosion stress. 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.

Linear drives DGCI, with displacement encoder

Technical data

Forces [N] and impact energy [Nm]						
Piston ∅		18	25	32	40	63
Theoretical force at 6 bar		153	295	483	754	1,870
Impact energy in the end positions	With fixed stop	0.4	0.5	0.7	0.7	0.7
	With shock absorber YSR/YSRW	→ 48				

Positioning characteristics with axis controller SPC200						
Piston ∅		18	25	32	40	63
Repetition accuracy	[mm]	→ 46				
Mounting position		Any				
Minimum load, horizontal[1)]	[kg]	1	2	3	5	12
Maximum load, horizontal[1)]	[kg]	15	30	50	75	180
Minimum load, vertical[1)]	[kg]	1	2	3	5	12
Maximum load, vertical[1)]	[kg]	5	10	15	25	60
Minimum travel speed	[m/s]	0.05				
Maximum travel speed	[m/s]	5				3
Typ. positioning time, long stroke[2)]	[s]	0.75/1.15	0.65/1.00	0.65/1.05	0.70/1.05	1.05/1.20
Typ. positioning time, short stroke[3)]	[s]	0.38/0.65	0.38/0.60	0.38/0.60	0.38/0.60	0.65/0.65
Minimum positioning stroke[4)]	[%]	3				
Stroke reduction[5)]	[mm]	20	25	25	35	35
Recommended proportional directional control valve		→ 70				

1) Load = effective load + mass of all moving parts on the drive
2) At 6 bar, horizontal mounting position, DGCI-XX-1000, 800 mm positioning travel at min./max. load
3) At 6 bar, horizontal mounting position, DGCI-XX-1000, 100 mm positioning travel at min./max. load
4) Referred to the maximum stroke of the drive, but never more than 20 mm
5) The stroke reduction is to be maintained on every side of the drive, the max. positionable stroke is therefore: stroke – 2x stroke reduction

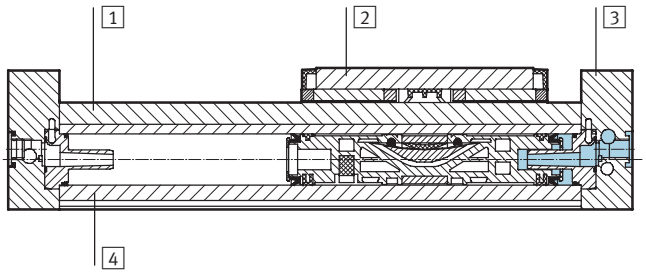
Positioning characteristics with end-position controller SPC11						
Piston ∅		18	25	32	40	63
Intermediate-position repetition accuracy	[mm]	±2				
Mounting position		Any				
Minimum load, horizontal[1)]	[kg]	1	2	3	5	12
Maximum load, horizontal[1)]	[kg]	15	30	50	75	180
Minimum load, vertical[1)]	[kg]	1	2	3	5	12
Maximum load, vertical[1)]	[kg]	5	10	15	25	60
Travel time	[s]	→ SoftStop sizing software: → www.festo.com				
Recommended proportional directional control valve		→ 70				

1) Load = effective load + mass of all moving parts on the drive

Weight [g]					
Piston ∅	18	25	32	40	63
Basic weight with 0 mm stroke	1,200	2,400	3,100	7,300	22,500
Additional weight per 10 mm stroke	38	56	81	124	243
Moving load	360	770	1,170	2,360	8,200
Moving load on additional slide	300	650	950	2,000	5,600

Materials

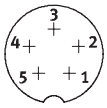
Sectional view



Linear drives		
1	Guide rail	High-alloy steel
2	Slide	High-alloy steel
3	End cap	Anodised aluminium
4	Cylinder profile, housing	Anodised aluminium
–	Seals, sealing band	Polyurethane
–	Guide band, dirt wiper, reversing roller	Polyacetal
–	Cover	Polyacetal, polyamide, powder-coated aluminium
–	Displacement encoder	Anodised aluminium, glass-fibre reinforced polyphthalamide
–	Cable	Polyurethane
–	Note on materials	Free of copper, PTFE and silicone

Electrical data for displacement encoder		
Linearity	[%]	±0.02 FS (min. ±50µm)
Resolution	[mm]	≤0.01
Interface		CAN to ISO/DIS 11898
Power supply	[V DC]	24 (±25%)
Current consumption	[mA]	Typically 100
Max. temperature coefficient	[ppm/°K]	15
Electrical connection		Cable with 5-pin plug, round type M9
Cable length	[m]	1.5
Cable quality		Suitable for use with energy chains

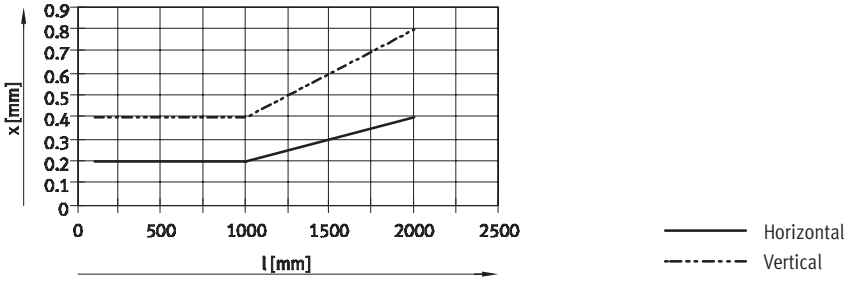
Pin allocation of plug for displacement encoder



Pin	Function
1	24 V
2	–
3	0 V

Pin	Function
4	CAN_H
5	CAN_L
–	Screened

Repetition accuracy x as a function of stroke l

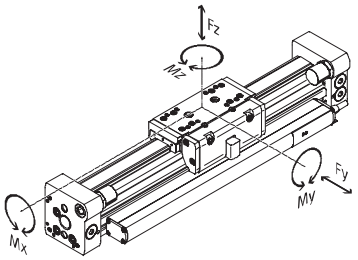


Linear drives DGCI, with displacement encoder

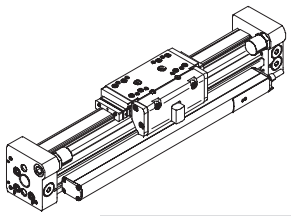
Technical data

Characteristic load values for linear drive with recirculating ball bearing guide and guide

The indicated forces and torques refer to the slide surface and the centre of the slide.
These values must not be exceeded during dynamic operation. Special attention must be paid to the cushioning phase.



GP – Protected guide



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

$$\frac{Fy}{Fy_{max.}} + \frac{Fz}{Fz_{max.}} + \frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + \frac{Mz}{Mz_{max.}} \leq 1$$

Note

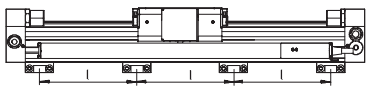
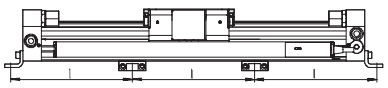
To avoid distortion in the slide, the bearing surfaces of the attachments must maintain a flatness of 0.01 mm.

Permissible forces and torques

Piston ∅		18	25	32	40	63
$Fy_{max.}$	[N]	1,850	3,050	3,310	6,890	15,200
$Fz_{max.}$	[N]	1,850	3,050	3,310	6,890	15,200
$Mx_{max.}$	[Nm]	16	36	54	144	529
$My_{max.}$	[Nm]	51	97	150	380	1,157
$Mz_{max.}$	[Nm]	51	97	150	380	1,157

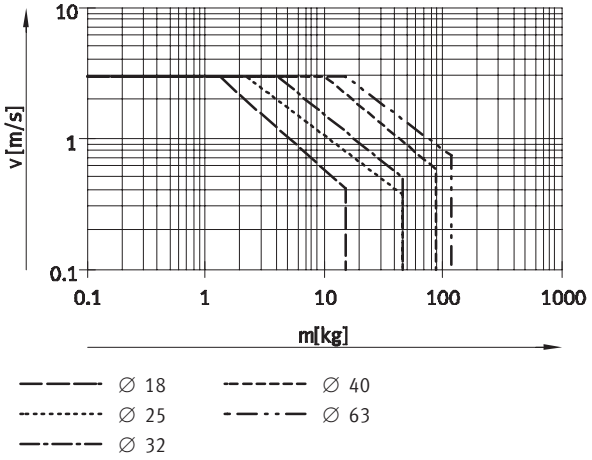
Number of profile mountings MUC as a function of overall length

Excessive distances between the profile mountings can reduce the positioning accuracy. The following table shows the required minimum number of profile and foot mountings.

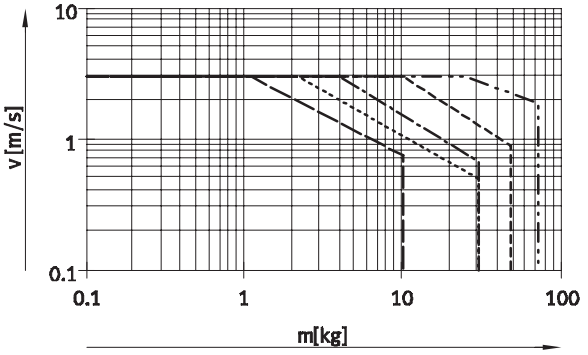
Stroke [mm]	Number of mounting attachments		
	Order code M	Order code F	
	Profile mounting	Foot mounting	+ profile mounting
			
100 ... 400	2	2	0
401 ... 600	2	2	1
601 ... 1,200	3	2	1
1,201 ... 1,400	3	2	2
1,401 ... 2,000	4	2	2

Maximum permissible piston speed with shock absorber v as a function of effective load m

Piston ∅ 18 ... 63 with YSR cushioning



Piston ∅ 18 ... 63 with YSRW cushioning



Note

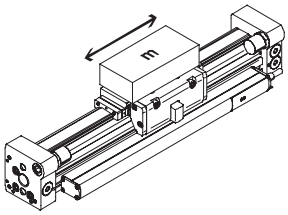
This data represents the maximum values that can be achieved.

In practice, values fluctuate relative to the size of the effective load.

Operating range of cushioning

The end-position cushioning must be adjusted to ensure jerk-free operation. If the operating conditions are outside the permissible range, the load to be moved must be cushioned using suitable equipment (shock absorbers, stops, etc.), preferably at the centre of gravity of the load.

The data applies to a horizontal mounting position.



Piston ∅		18	25	32	40	63
Distance $r_{max.}$	[mm]	35	50	50	50	50

Central lubrication

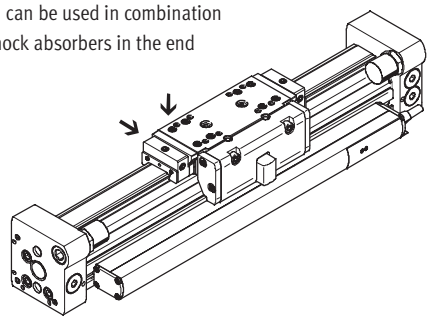
The lubrication adapter enables the guide of the linear drive DGCI to be permanently lubricated in applications in humid or wet ambient conditions using semi or fully automatic relubrication devices.

- For piston ∅ 25, 32, 40, 63
- The modules are suitable for oils and greases
- The dimensions of the linear drive DGCI are the same with and without central lubrication modules
- Both lubrication adapters must be connected
- There are three connection options on each side
- Can be used in combination with:
  - Standard slide GK
  - Additional slide KL, KR
- Cannot be used in combination with:
  - Protected recirculating ball bearing guide GP

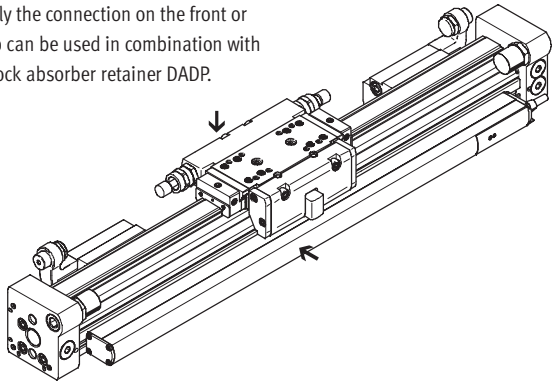
Slide dimensions
➔ 56
Order code C in the modular product system ➔ 61

Connection options

Only the connection at the rear or on the top can be used in combination with shock absorbers in the end caps.

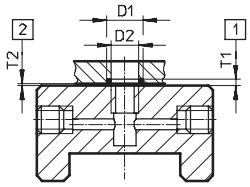


Only the connection on the front or top can be used in combination with shock absorber retainer DADP.



Connection option for customer design

The drawing opposite shows the connection option on the top lubrication interface using a customer design.



D1 $8^{+0.2}$ mm
D2 6 mm
T1 $0.6_{-0.05}$ mm
T2 $0.1^{+0.2}$ mm
O-ring ∅ 6x1 mm (DIN 3771)

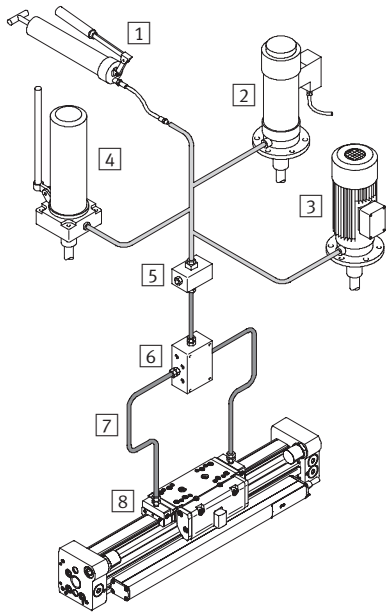
1 Slot depth for O-ring
2 Required air gap

Additional dimensions ➔ 56

Structure of a central lubrication system

A central lubrication system requires various additional components. The illustration shows different options (using a hand pump, pneumatic container pump or electric container pump) required as a minimum for designing a central lubrication system. Festo does not sell these additional components, however they can be obtained from the following companies:
- Lincoln
- Bielomatik
- SKF (Vogel)

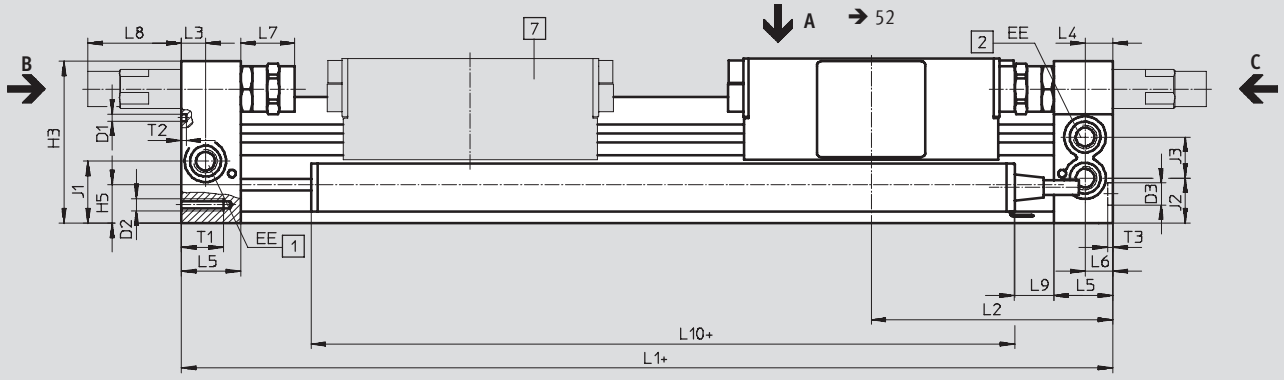
Festo recommends these companies because they can supply all the necessary components.



1 Hand pump
2 Pneumatic container pump
3 Electric container pump
4 Manually operated container pump
5 Nipple block
6 Distributor block
7 Tubing or piping
8 Fittings

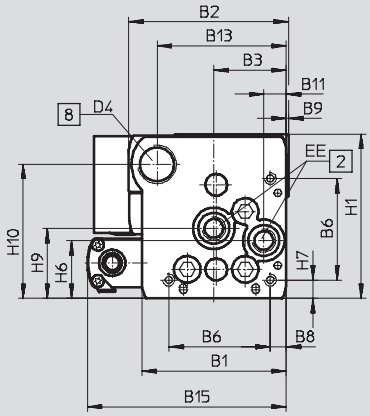
Dimensions Download CAD Data ➔ **www.festo.com/us/cad**

∅ 18 ... 63

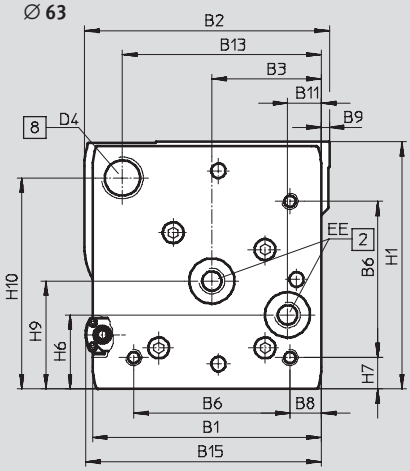


View C

∅ 18 ... 40

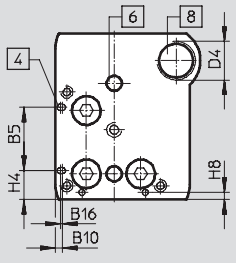


∅ 63

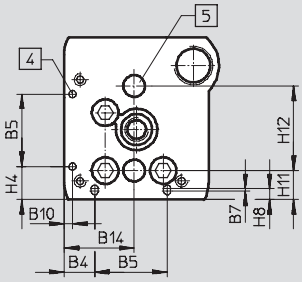


View B

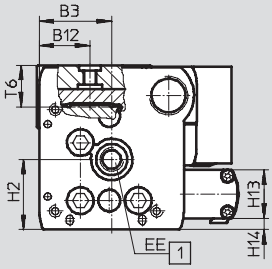
∅ 18



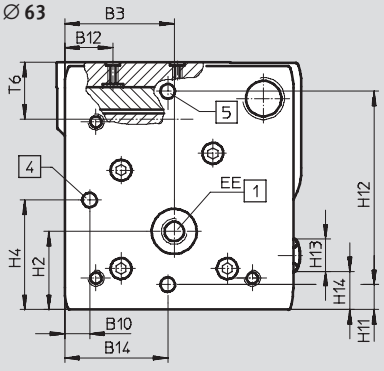
∅ 25 ... 40



∅ 18 ... 40



∅ 63



\+ plus stroke length

1 Option of supply port at both ends (on the end face or at the front)

2 Option of supply port at both ends, for supplying from one end (on the end face, right-hand side)

4 Mounting hole for foot mounting HPC

5 Hole for centring pin ZBS

6 Hole for centring sleeve ZBH

7 Additional slide

8 Thread for end stop

Linear drives DGCI, with displacement encoder

Technical data

∅ [mm]	B1	B2	B3	B4 ±0.1	B5 ±0.05	B6	B7	B8 ±0.1	B9	B10	B11	B12
18	44.5	49.9	19.5	8.8	21	31	–	3.8	1	2.4	5.5	15.5
25	59.8	66	30	12.65	30	42	1	6.65	1	3.5	9.3	21
32	73	79	38.5	5.7	63.1	57.5	–	8.5	1.5	14	14.9	18
40	91	98.5	45	17.2	55	65	–	12.2	2	8	16.5	24.8
63	142	149	68	–	–	97	–	19.5	5	15.5	21	30

∅ [mm]	B13	B14 ±0.05	B15	B16	D1 ∅	D2	D3 ∅ H7	D4	EE	H1	H2	H3
18	39	19.5	68.3	0.8	2±0.05	M4	5	M12x1	M5	56.3	23.1	55
25	53	29	82.4	–	3±0.05	M5	9	M16x1	G1/8	68	29	67
32	65	38.5	97.8	–	3±0.05	M6	9	M16x1	G1/8	78.5	30	77
40	80.5	45	110.3	–	4±0.05	M6	9	M22x1.5	G1/4	99.5	41.5	97.5
63	123.5	68	146.3	–	9H7	M10	9	M26x1.5	G3/8	153.5	48.5	151

∅ [mm]	H4 ±0.1	H5	H6	H7	H8	H9	H10	H11	H12 ±0.05	H13	H14	J1	J2
18	9.6	13.4	20	4.6	2.4	25.2	46	8.5±0.15	30	20	2.3	20	16.5
25	13.65	15.8	24	7.65	4.5	29	55.5	12±0.15	35	20	4.7	26.1	18.6
32	5.7	17	27.7	8.5	14	35.2	63.8	11.45±0.15	50	20	5.9	30	22
40	17.2	25	36.5	12.2	8	44	81.5	15±0.15	60	20	13.9	35	26
63	68	34.8	46	19.5	–	67	131	15.5±0.2	120	20	23.7	41.5	39.5

∅ [mm]	J3	L1		L2		L3	L4	L5	L6	L7		
		KF	KF-GP	KF	KF-GP					KF	KF-GP	KF-YSR(W)
18	11	150	157	74.5	78	5.7	5.8	15	5.5	14.5 ... 16.5	18 ... 20	14.5 ... 34.5
25	17	200	205	100	102.5	10.5	10.6	24.5	10.6	22.5 ... 26.5	25 ... 29	22.5 ... 47.5
32	18.5	250	250	124.8	124.8	14.5	14.5	30.5	14.5	27.3 ... 32.3	27.3 ... 32.3	27.3 ... 52.3
40	26	300	312	150	156	14.6	14.6	33.5	14.6	31 ... 36	37 ... 42	31 ... 56
63	31.5	400	–	200	–	20	20	44	20	41 ... 46	–	41 ... 76

∅ [mm]	L8		L9		L10	T1	T2	T3	T6	Stroke tolerance
	YSR	YSRW	KF ±0.2	KF-GP ±0.2	max.			+0.2		
18	29.9	32.6	–	3.5	119	9	2	3.1	15	0 ... 2.5
25	35.6	38.6	16.5	19	119	17.5	2	2.1	17.3	
32	19.5	28	35.3	35.3	119	15	2	2.1	20	
40	38.5	43.5	17	23	119	20	2	2.1	25.7	
63	38.3	48.3	97	–	119	27.5	2.1+0.2	2.1	36.1	

Note

For reasons of functional safety of the displacement encoder and stability of the linear drive DGCI, the distance L7 must not fall below the values in the table.

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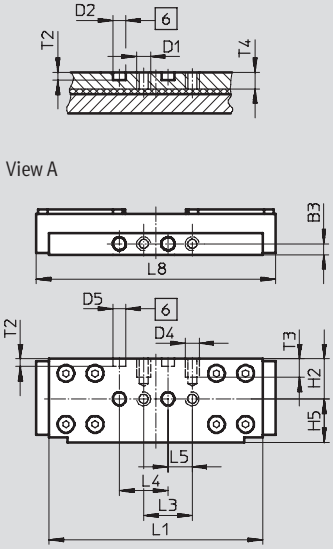
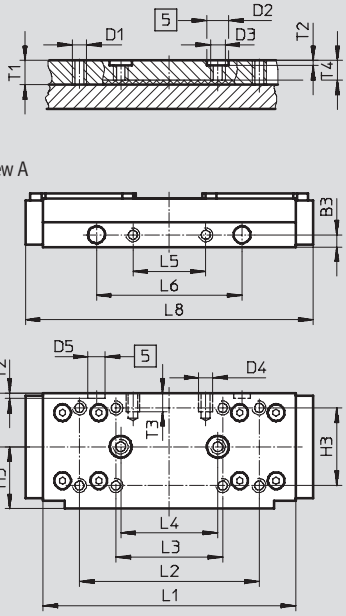
Slide

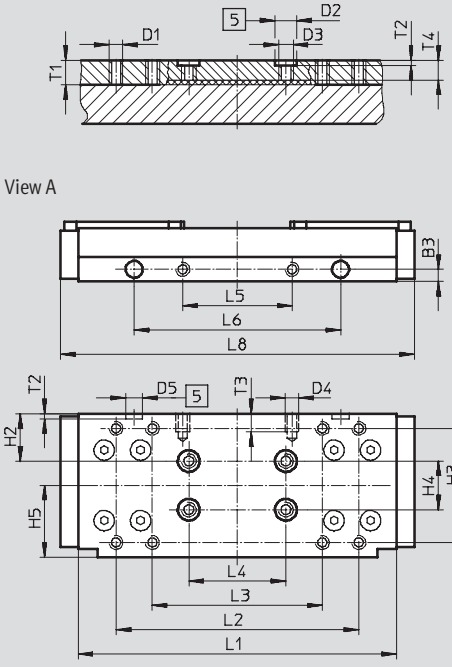
∅ 18



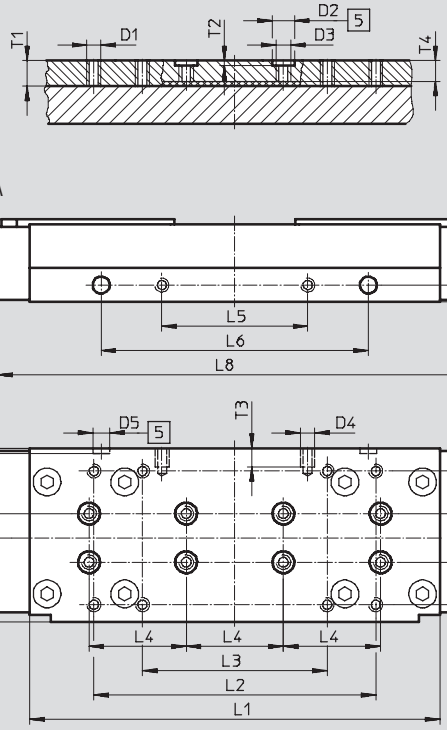
∅ 25



∅ 32



∅ 40



5 Hole for centring sleeve ZBH
6 Hole for centring pin ZBS

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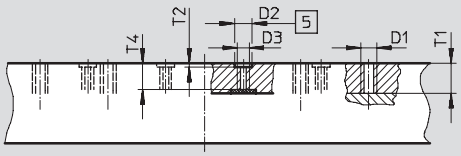
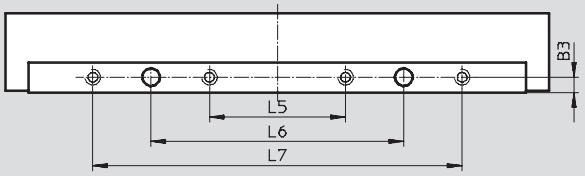
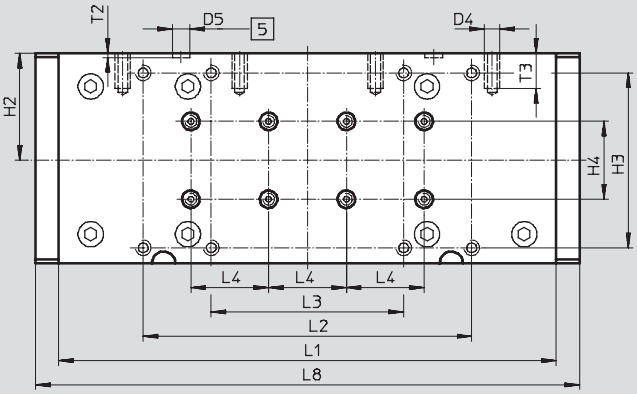
Slide

∅ 63



View A





5 Hole for centring sleeve ZBH
6 Hole for centring pin ZBS

∅ [mm]	B3 ±0.05	D1	D2 ∅ H7	D3	D4	D5 ∅ H7	H2	H3	H4 ±0.03	H5 ±0.1	L1
18	4.5	M5	5	–	M5	5	16.5	–	–	18	88±0.1
25	5	M5	9	M6	M5	7	22	32±0.2	–	25.5	104±0.2
32	5	M5	9	M6	M5	7	19.5	47±0.2	20	29.5	131±0.2
40	7	M5	9	M6	M6	7	26.8	55±0.2	20	34.7	169±0.2
63	8	M8	9	M6	M8	9	55	90±0.3	40	–	256±0.1

∅ [mm]	L2 ±0.2	L3	L4 ±0.03	L5 ±0.1	L6 ±0.05	L7 ±0.1	L8	T1	T2	T3	T4
18	–	20±0.1	20	10	–	–	99	–	3.1±0.1	7.5	6.7
25	74	44±0.2	40	30	60	–	118.5	10	2.1±0.2	7.5	8
32	100	70±0.2	40	45	85	–	145.7	10	2.1±0.2	7.5	8
40	116	76±0.2	40	60	110	–	195.4	10.5	2.1±0.2	7.5	8.5
63	169	99±0.2	40	70	130	190	280	15.5	2.1±0.2	18	13.6

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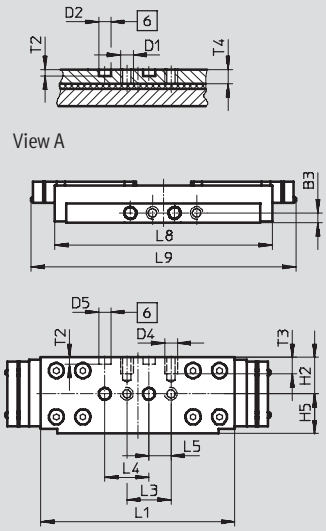
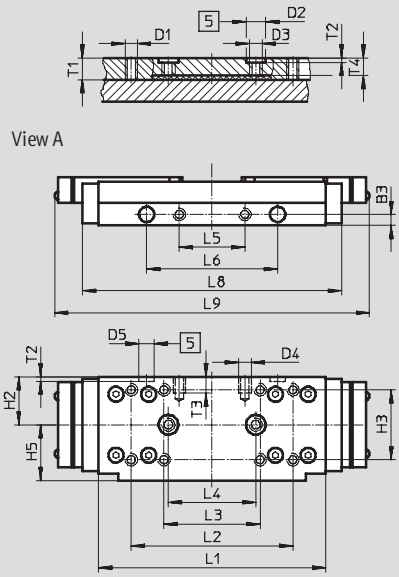
Slide, variant GP – Protected recirculating ball bearing guide

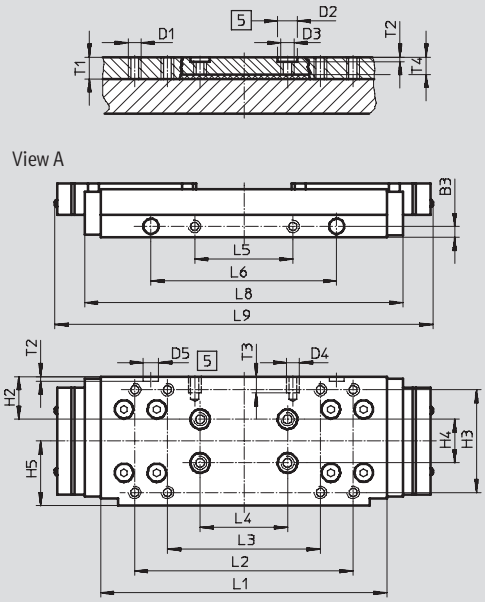
∅ 18



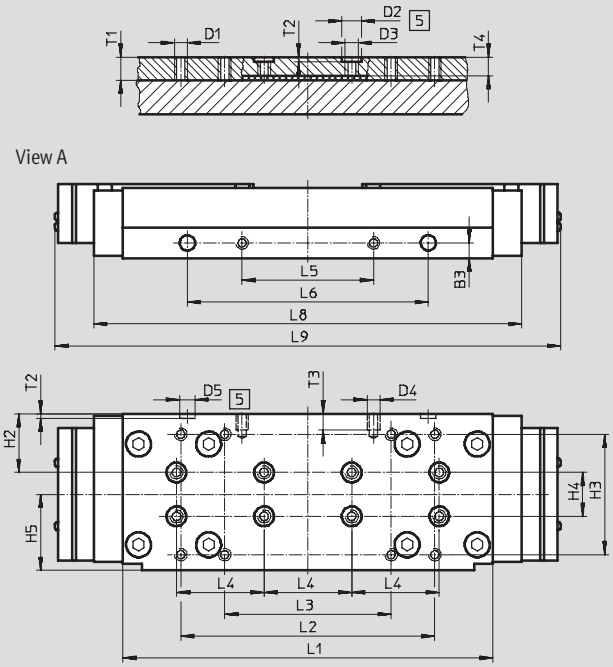
∅ 25



∅ 32



∅ 40



5 Hole for centring sleeve ZBH
6 Hole for centring pin ZBS

Linear drives DGCI, with displacement encoder

Technical data

∅ [mm]	B3 ±0.05	D1	D2 ∅ H7	D3	D4	D5 ∅ H7	H2	H3
18	4.5	M5	5	–	M5	5	16.5	–
25	5	M5	9	M6	M5	7	22	32±0.2
32	5	M5	9	M6	M5	7	19.5	47±0.2
40	7	M5	9	M6	M6	7	26.8	55±0.2

∅ [mm]	H4 ±0.03	H5 ±0.1	L1	L2 ±0.2	L3	L4 ±0.03	L5 ±0.1	L6 ±0.05
18	–	18	88±0.1	–	20±0.1	20	10	–
25	–	25.5	104±0.2	74	44±0.2	40	30	60
32	20	29.5	131±0.2	100	70±0.2	40	45	85
40	20	34.7	169±0.2	116	76±0.2	40	60	110

∅ [mm]	L8	L9	T1	T2	T3	T4
18	99	120	–	3.1±0.1	7.5	6.7
25	118.5	144	10	2.1±0.2	7.5	8
32	145.7	173	10	2.1±0.2	7.5	8
40	195.4	231	10.5	2.1±0.2	7.5	8.5

Linear drives DGCI, with displacement encoder

Technical data

FESTO

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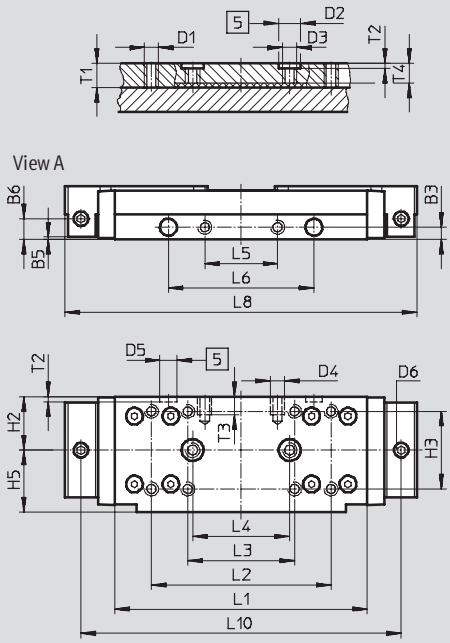
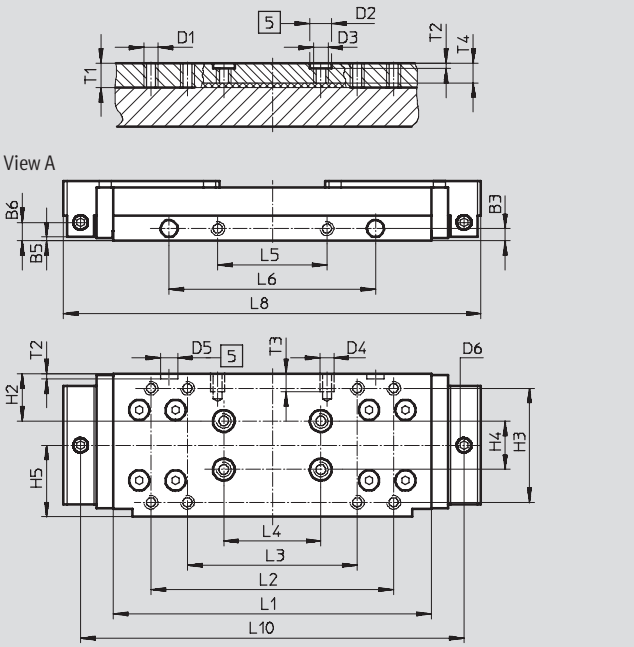
Slide, variant C – Lubrication adapter

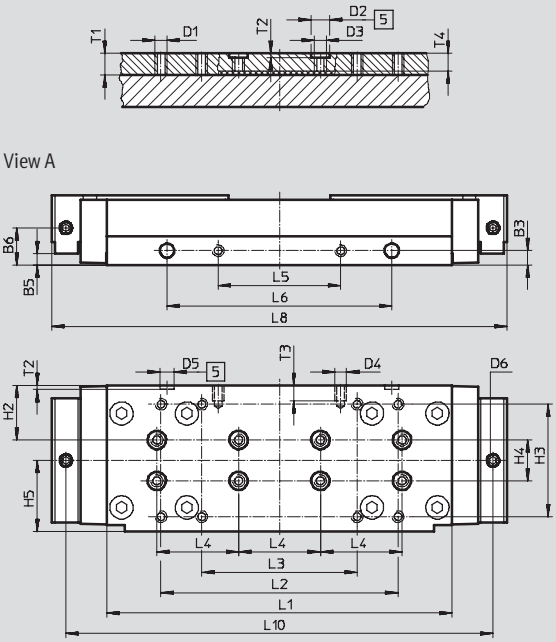
∅ 25



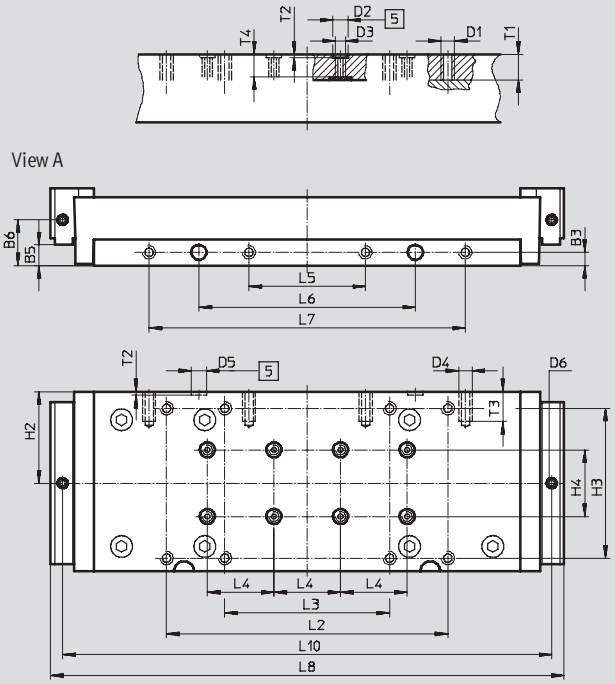
∅ 32



∅ 40



∅ 63



5 Hole for centring sleeve ZBH

Linear drives DGCI, with displacement encoder

FESTO

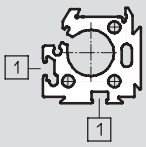
Technical data

∅ [mm]	B3 ±0.05	B5 ±0.05	B6	D1	D2 ∅ H7	D3	D4	D5 ∅ H7	D6	H2	H3	H4 ±0.03	H5 ±0.1
25	5	1	8.5	M5	9	M6	M5	7	M6x1	22	32±0.2	–	25.5
32	5	1.5	7.5	M5	9	M6	M5	7	M6x1	19.5	47±0.2	20	29.5
40	7	18.2	18.2	M5	9	M6	M6	7	M6x1	26.8	55±0.2	20	34.7
63	8	12.5	27.5	M8	9	M6	M8	9	M6x1	55	90±0.3	40	–

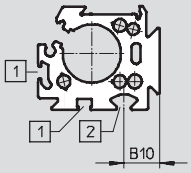
∅ [mm]	L1	L2 ±0.2	L3 ±0.2	L4 ±0.03	L5 ±0.1	L6 ±0.05	L7 ±0.1	L8	L10	T1	T2 +0.2	T3	T4
25	104±0.2	74	44	40	30	60	–	145	132	10	2.1	7.5	8
32	131±0.2	100	70	40	45	85	–	172	158	10	2.1	7.5	8
40	169±0.2	116	76	40	60	110	–	223	209	10.5	2.1	7.5	8.5
63	256±0.1	169	99	40	70	130	190	308.4	293.8	15.5	2.1	18	13.6

Profile barrel

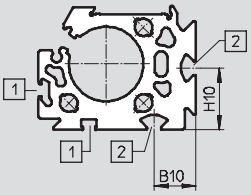
∅ 18



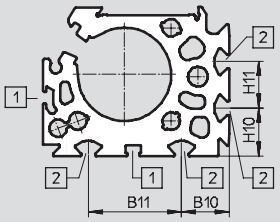
∅ 25



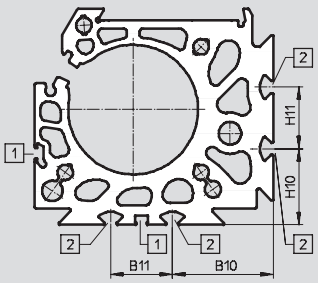
∅ 32



∅ 40



∅ 63



1 Slot for proximity sensor
2 Mounting slot for slot nut

∅ [mm]	B10	B11	H10	H11
25	15.23	–	–	–
32	18	–	26.5	–
40	20.5	40	20.5	20
63	49	30	37	30

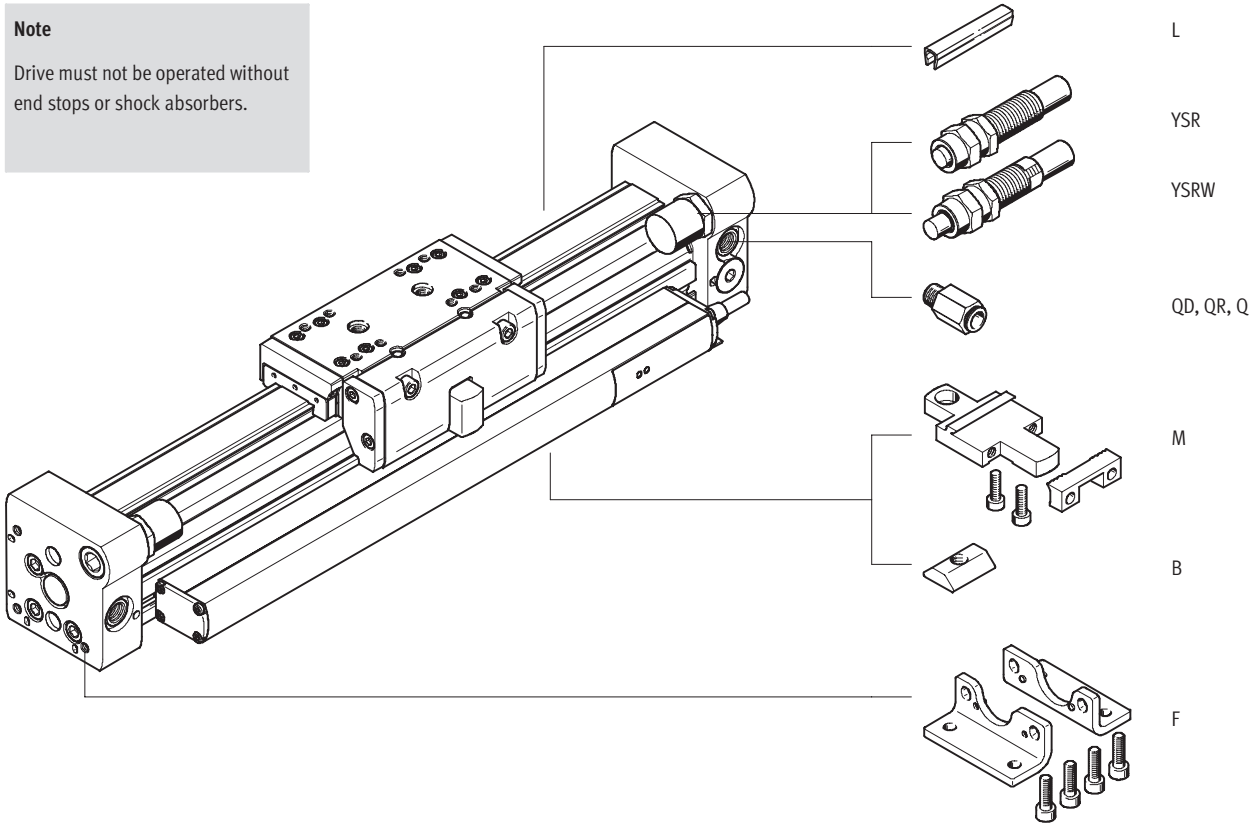
Tubing diameter with pre-assembled push-in fittings					
Size	Stroke [mm]	∅ in [mm]			
		6	8	10	12
DGCI-18	100 ... 2,000	■	–	–	–
DGCI-25	100 ... 160	■	–	–	–
	225 ... 2,000	–	■	–	–
DGCI-32	100	■	–	–	–
	160 ... 2,000	–	■	–	–
DGCI-40	100 ... 750	–	■	–	–
	850 ... 2,000	–	–	■	–
DGCI-63	100 ... 300	–	■	–	–
	360 ... 500	–	–	■	–
	600 ... 2,000	–	–	–	■

Order code

Mandatory data/options

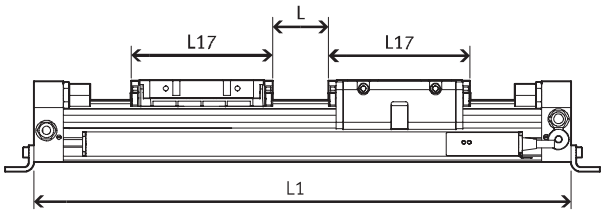
Note

Drive must not be operated without end stops or shock absorbers.



Effective stroke reduction when ordering an additional slide KL or KR

For a linear drive DGCI with additional slide, the effective stroke is reduced by the length of the additional slide and the distance between both slides.



∅ [mm]	L17	
	DGCI-...-KF	DGCI-...-KF-...-GP
18	99	120
25	118.5	144
32	145.7	173
40	195.4	231
63	280	–

Given:
DGCI-18-500-...
L = 20 mm
L17= 99 mm

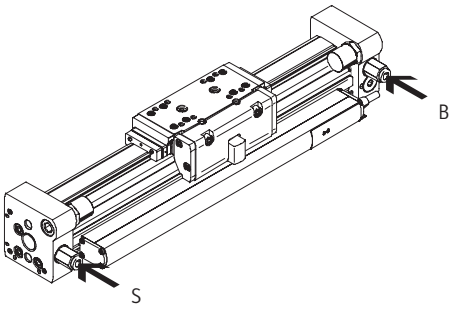
The effective stroke is reduced to
381 mm = 500 mm – 20 mm – 99 mm

Order code – Alternative supply port

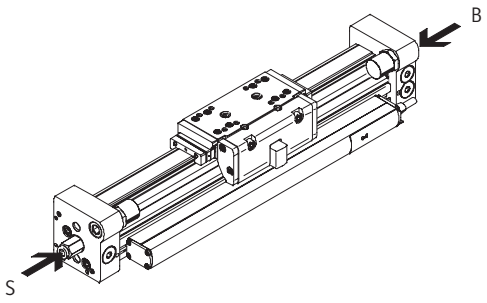
Four different supply port options (see below) can be selected when ordering the linear drive.

To make commissioning easier, the linear drive is supplied with different coloured push-in fittings (black or blue release ring) and without push-in fittings in the case of the variant DGCI-...Q.

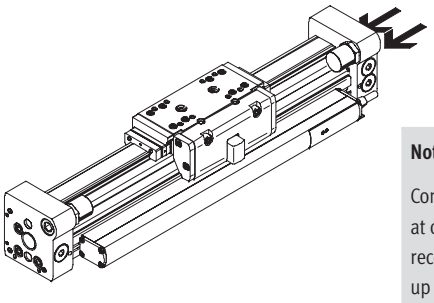
Push-in fitting at both ends, front (standard)
DGCI-...



Push-in fitting at both ends, end face
DGCI-...-QD



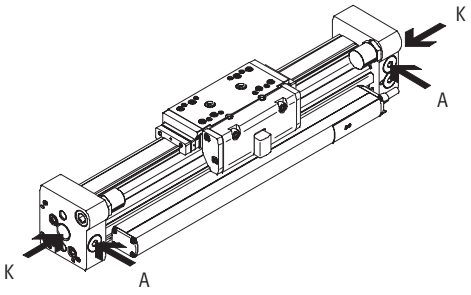
Push-in fitting at one end, end face
DGCI-...-QR



Note

Compressed air supply at one end is only recommended for strokes up to 600 mm.

No push-in fitting, end face open
DGCI-...Q



Direction of movement of the slide

S To the right:
Fitting with black release ring

B To the left:
Fitting with blue release ring

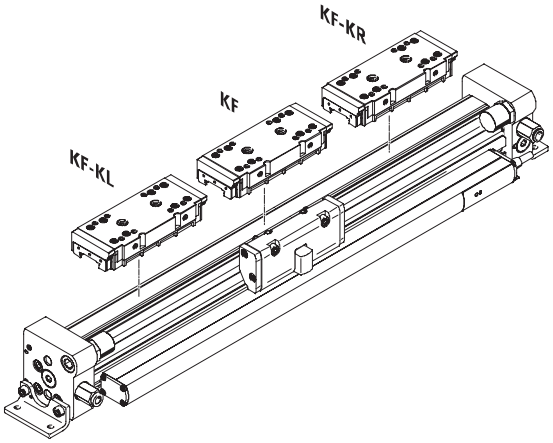
Alternative port option

K Supply ports open

A Supply ports sealed

Order code

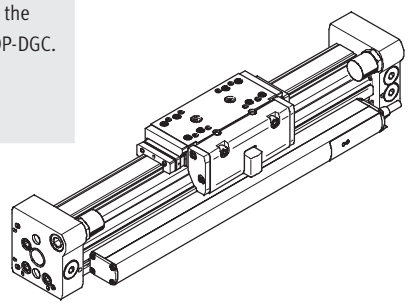
KL/KR – With additional slide



GP – With protected recirculating ball bearing guide

Note

In the case of the variant with GP, only fixed stops may be used in the end caps. Shock absorbers may only be used in combination with the shock absorber retainer DADP-DGC.



Linear drives DGCI, with displacement encoder

Ordering data – Modular products

FESTO

M Mandatory data					O Options ➔
Module No.	**Function**	**Piston ∅**	**Stroke**	**Guide**	**Alternative supply port**
544 425 544 426 544 427 544 428 544 429	DGCI	18 25 32 40 63	100; 160; 225; 300; 360; 450; 500; 600; 750; 850; 1,000; 1,250; 1,500; 1,750; 2,000	KF	– QD QR Q
Ordering example					
	DGCI	–	–	– **KF**	–

Ordering table

Size		18	25	32	40	63	Conditions	Code		Enter code
M	Module No.	**544 425**	**544 426**	**544 427**	**544 428**	**544 429**				
	Function	Linear drive with displacement encoder						**DGCI**		DGCI
	Piston ∅ [mm]	18	25	32	40	63		**-...**		
	Stroke [mm]	100; 160; 225; 300; 360; 450; 500; 600; 750; 850; 1,000; 1,250; 1,500; 1,750; 2,000						**-...**		
	Guide	Recirculating ball bearing guide						**-KF**		-KF
O	Alternative supply port	Push-in fitting at both ends, front face (standard)								
		Push-in fitting at both ends, end face						**-QD**		
		Push-in fitting at one end, end face, right side					1	**-QR**		
		Threaded connection (end face open, front face sealed)						**-Q**		
		M5	G1/8	G1/8	G1/4	G3/8				

1 **QR** Only for strokes 100 ... 600 mm

Transfer order code

	DGCI	–		–		– **KF**	–	

Linear drives DGCI, with displacement encoder

FESTO

Ordering data – Modular products

➔ 0 **Options**

	Slide		Lubrication function		Additional slide on left		Additional slide on right		Cushioning		Accessories		Type of mounting		Slot cover for sensor slot		Slot nut for mounting slot		Manual
	GP		C		KL		KR		– YSR YSRW		ZUB		F M		...L		...B		O
–		–		–		–		–		–	**ZUB**	–		–		–		–	

Ordering table

Size	18	25	32	40	63	Conditions	Code		Enter code
↓ Slide	Protected recirculating ball bearing guide				–	2	**-GP**		
0 Lubrication function	Standard								
	–	Lubrication adapter					**-C**		
Additional slide on left	Additional slide, standard, on left					3	**-KL**		
Additional slide on right	Additional slide, standard, on right					3	**-KR**		
Cushioning	Adjustable mechanical stop without cushioning (standard)								
	Shock absorber, self-adjusting						**-YSR**		
	Shock absorber, self-adjusting, progressive						**-YSRW**		
Accessories							**ZUB-**		ZUB-
Type of mounting	Foot mounting (includes 0 ... 2 profile mountings depending on the stroke)					4	**F**		
	Profile mounting (2 ... 4 depending on the stroke)					4	**M**		
Slot cover for sensor slot	1 ... 9						**...L**		
Slot nut for mounting slot	–	1 ... 9					**...B**		
Manual	Express waiver - no operating instructions to be included (already available) (operating instructions in PDF format are available free of charge on our website at www.festo.com)						**O**		

2 **GP** Not with YSR, YSRW and C
Not with additional slide on left KL or additional slide on right KR

3 **KL, KR** For a linear drive DGCI with additional slide (KL, KR), the effective stroke per additional slide is reduced by the dimension in the table ➔ 58 plus the distance between the slides.
If the slide with lubrication adapter C is selected, then the additional slide (KL, KR) is also supplied with lubrication adapter

4 **F, M** Allocation table ➔ 47

Transfer order code

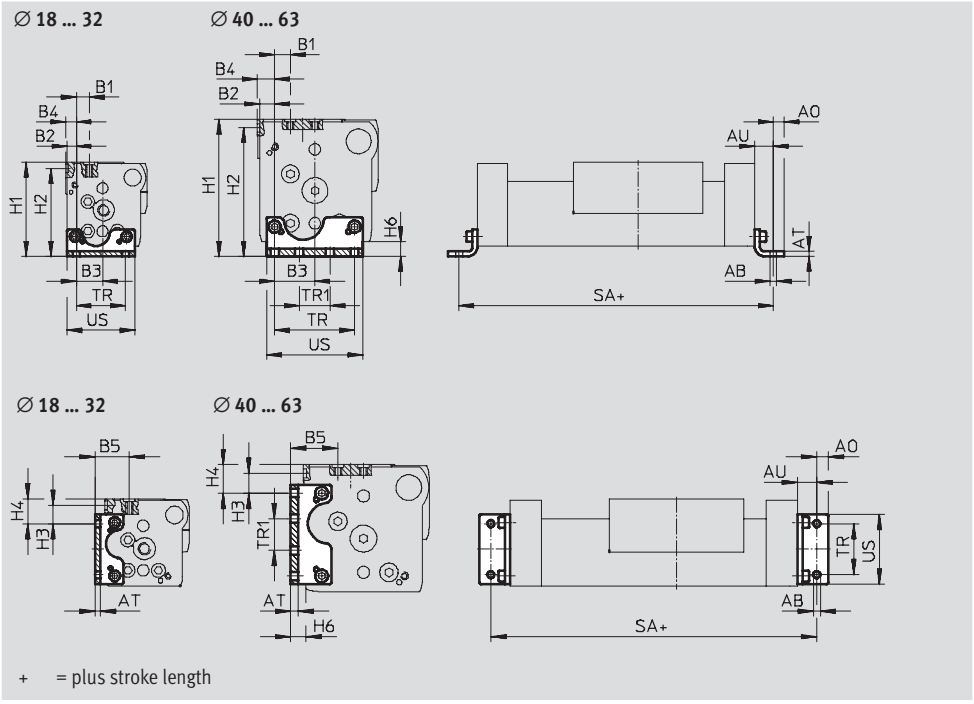
–		–		–		–		–	**ZUB**	–		–		–		–	

Foot mounting HPC
(order code: F)

Material:
Galvanised steel

Note

Additional profile mountings MUC are required for strokes above 400 mm ➔ 47.



Dimensions and ordering data

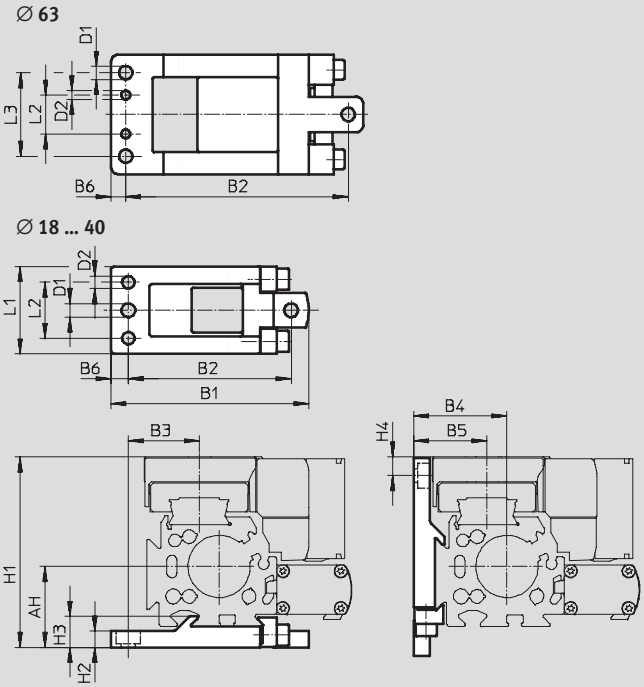
For Ø [mm]	AB Ø	AO	AT	AU	B1	B2	B3
18	5.5	6.75	3	13.25	11.2	4.3	15.2
25	5.5	9	4	15	13.35	7.65	22.35
32	6.6	10	5	19	9	9	29.5
40	6.6	10	6	20	12.6	12.2	32.8
63	11	13.5	8	28	17.5	12.5	55.5

For Ø [mm]	B4	B5	H1	H2	H3	H4
18	5.3	23.2	64	59.5	16	21.5
25	8.65	29.5	76.5	71.5	14.35	19.35
32	10.5	27	87.5	82.5	8	13
40	14.2	36.8	111.5	104.5	15.3	22.3
63	17.5	49	172.5	164.5	22	30

For Ø [mm]	H6	SA	TR ±0.1	TR1 ±0.1	US	Weight [g]	Part No.	Type
18	7.7	176.5	30	–	38.6	58	**533 667**	**HPC-18**
25	8.5	230	40	–	55	131	**533 668**	**HPC-25**
32	9	288	56.5	19.5	68	239	**533 669**	**HPC-32**
40	12	340	65	25	78	348	**533 670**	**HPC-40**
63	19	456	111	39	133	1,245	**545 237**	**HPC-63**

Profile mounting MUC
(order code: M)

Material:
High-alloy steel



Range of applications
➔47

Dimensions and ordering data

For ∅ [mm]	AH	B1	B2 ±0.2	B3	B4	B5	B6	D1 ∅ H13	D2 ∅ H7
18	27.2	67.8±0.2	56±0.15	28.7	27.2	23.2	5.7	5.5	5
25	32.5	79.5±0.2	65.5±0.15	28.5	37.5	29.5	7	5.5	5
32	37.5	94±0.2	80±0.15	35	47.5	37	7	5.5	5
40	47	110.5±0.2	96±0.15	43	57	46.8	7	6.5	6
63	75	169±0.5	149±0.2	72.5	87	69	10	9	6

For ∅ [mm]	H1	H2	H3	H4	L1	L2 ±0.05	L3 ±0.2	Weight [g]	Part No.	Type
18	64	5.7$_{-0.2}$	9.9±0.1	6.4	33±0.1	20.5	–	78	**531 752**	**MUC-18**
25	76.5	6.5$_{-0.2}$	12.5±0.1	7.43	35±0.1	22.5	–	113	**531 753**	**MUC-25**
32	87.5	6.5$_{-0.2}$	13±0.1	4	45±0.1	30	–	174	**531 754**	**MUC-32**
40	111.5	8.5$_{-0.2}$	16±0.1	11.3	60±0.1	44	–	346	**531 755**	**MUC-40**
63	172.5	11	25.5	15	80±0.4	26	56	1,080	**531 757**	**MUC-63**

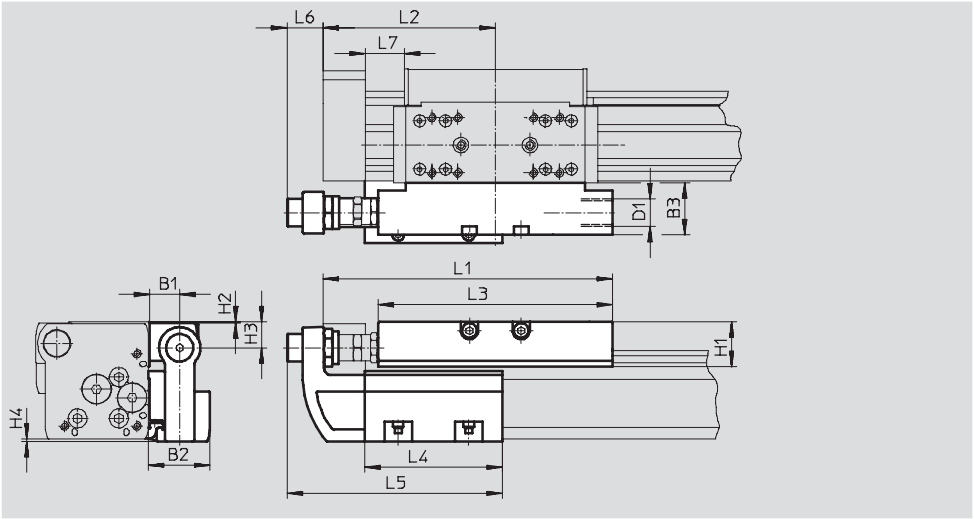
Shock absorber retainer DADP-DGC
Stop KYC

Materials: Stop
Housing: Anodised aluminium
Stop bracket: Stainless steel casting
Clamp: High-alloy steel
Free of copper and PTFE

Materials: Shock absorber retainer
Housing: Anodised aluminium
Free of copper and PTFE

Shock absorber retainer DADP-DGC

Stop KYC



Note

Shock absorbers are not included in the scope of delivery. Existing stop elements can be removed from the end caps of the linear drive and installed in the shock absorber retainer.

Dimensions

For ∅ [mm]	B1	B2	B3	D1	H1	H2	H3	H4	L1
18	16	34.5	29	M12x1	20.7	0.2	12.5	0.7	128
25	16.5	35	30	M16x1	25.5	0.5	15	1.4	168
32	16.5	35	30	M16x1	25.5	0.5	15	1.7	206.8
40	16	35.7	35	M22x1.5	37	0.5	21.5	2	255
63	25	50	40	M26x1.5	51.5	1.5	33	0	328

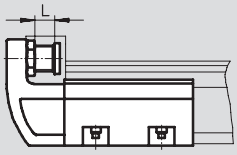
For ∅ [mm]	L2	L3	L4	L5	L6	L7		
						KF	KF-GP	KF-YSR(W)
18	74.5	107	80	118.5	23.5	≥14.5	≥18	≥14.5
25	100	136	80	125	20.5	≥22.5	≥25	≥22.5
32	124.8	164	120	165	14.5	≥27.3	≥27.3	≥27.3
40	150	210	156	220.5	31	≥31	≥37	≥31
63	200	256	200	268	24	≥41	–	≥41

Note

For reasons of functional safety of the displacement encoder and stability of the linear drive DGCI, the distance L7 must not fall below the values in the table.

Technical data and ordering data

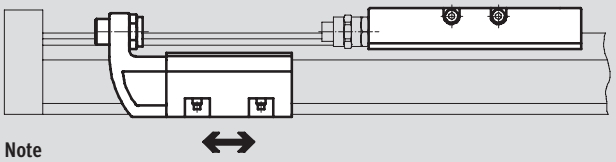
Precision adjustment



Note

The stop KYC can be used in both directions.

Installation example



Note

- The stop KYC can be mounted at any position along the stroke.
- Note dimension L7 ➔ 64.

For ∅ [mm]	Max. impact force [N]	Ambient temperature [°C]	CRC[1]	Weight [g]	Part No.	Type
Shock absorber retainer DADP-DGC						
18	1,100	−10 … +80	2	130	**541 729**	**DADP-DGC-18-KF**
25	1,400			180	**541 730**	**DADP-DGC-25-KF**
32	1,700			215	**541 731**	**DADP-DGC-32-KF**
40	3,500			460	**541 732**	**DADP-DGC-40-KF**
63	4,300			1,080	**545 245**	**DADP-DGC-63**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

For ∅ [mm]	Precision adjustment L [mm]	Ambient temperature [°C]	CRC[1]	Weight [g]	Part No.	Type
Stop KYC						
18	10	−10 … +80	2	400	**541 691**	**KYC-18**
25	10			560	**541 692**	**KYC-25**
32	10			790	**541 693**	**KYC-32**
40	15			1,525	**541 694**	**KYC-40**
63	15			2,950	**545 243**	**KYC-63**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

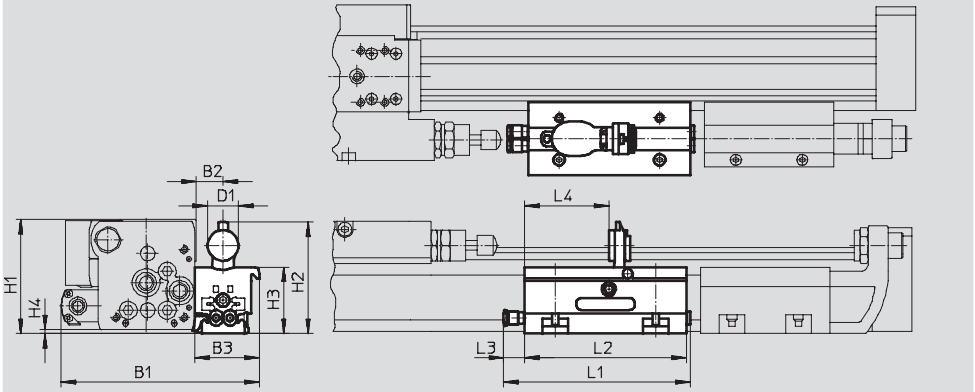
Note

Permissible impact energy
➔ 45

Intermediate position module DADM-DGC

Materials:
Housing: Anodised aluminium
Stop screw, nut:
Galvanised steel

Clamp, lever:
High-alloy steel
Free of copper and PTFE



Note

- Shock absorbers are not included in the scope of delivery. Existing shock absorbers can be removed from the end caps of the linear drive and installed in the shock absorber retainer. Under no circumstances may the linear drive and the intermediate position module be operated without a shock absorber.
- A shock absorber retainer DADP-DGC and a stop KYC are additionally needed when using an intermediate position module.
- The projection (dimension H4) must be observed when using the drive in combination with the intermediate position module DADM-DGC. Mounting via foot mountings HPC or profile mountings MUC is recommended in this case.

Dimensions

For ∅ [mm]	B1	B2	B3	D1	H1	H2
25	122.5	16.5	40	19	69.4	68.6
32	138	16.5	40	19	80.2	79.7

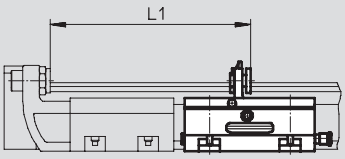
For ∅ [mm]	H3	H4	L1	L2	L3	L4
25	41	1.4	116	100	13.4	52.2
32	52	1.7	116	100	13.4	52.2

Note

Permissible impact energy
➔ 45

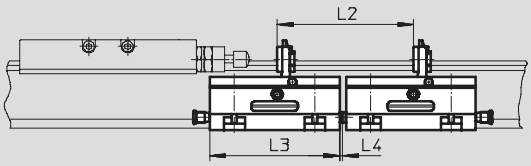
Minimum distance

Between end stop and intermediate position



∅	L1
25	145.3
32	185.3

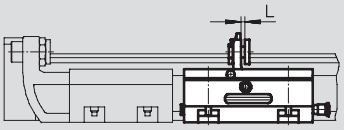
Between two intermediate positions



∅	L2	L3	L4
25	105	100	2.5
32	105	100	2.5

Technical data and ordering data

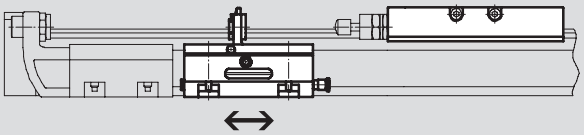
Precision adjustment L



Note

The intermediate position module DADM-DGC can be used in both directions. A shock absorber retainer DADP-DGC and a stop KYC are additionally needed when using an intermediate position module.

Installation example



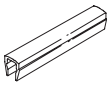
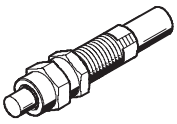
Note

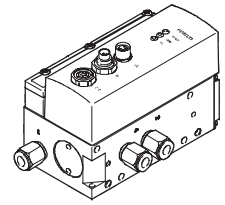
The intermediate position module DADM-DGC can be mounted at any position along the stroke.

For ∅ [mm]	Operating pressure [bar]	Impact velocity [m/s]	Swivel time [ms]	Repetition accuracy [mm]	Pneumatic connection	Precision adjustment L [mm]
25	2.5 ... 8	→ 48	<100	0.02	QS-4	2
32						

For ∅ [mm]	Ambient temperature [°C]	CRC[1)]	Mounting position	Position sensing	Weight [g]	Part No.	Type
25	−10 ... +60	2	Any	Via proximity sensor SME/SMT-10	430	**541 700**	**DADM-DGC-25-A**
32					530	**541 701**	**DADM-DGC-32-A**

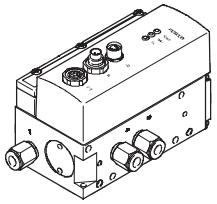
1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Ordering data						
	For ∅	Comment	Order code	Part No.	Type	PU[1]
Slot nut HMBN					Technical data ➔ Internet: hmbn	
	25 … 40	For mounting slot	B	**547 264**	**HMBN-5-1M5**	10
	63			**186 566**	**HMBN-5-2M5**	
Centring pin/sleeve ZBS, ZBH					Technical data ➔ Internet: zbs, zbh	
	18	For slide	–	**150 928**	**ZBS-5**	10
	25 … 63			**150 927**	**ZBH-9**	
	18	For end cap	–	**150 928**	**ZBS-5**	
	25 … 63			**150 927**	**ZBH-9**	
Slot cover ABP-S					Technical data ➔ Internet: abp	
	18 … 63	For sensor slot, every 0.5 m	L	**151 680**	**ABP-5-S**	2
Shock absorber YSRW					Technical data ➔ Internet: ysrw	
	18		YSRW	**540 347**	**YSRW-DGC-18-KF**	1
	25			**540 349**	**YSRW-DGC-25-KF**	
	32			**540 351**	**YSRW-DGC-32-KF**	
	40			**1232870**	**YSRW-DGC-40/50-B**	
	63			**543 069**	**YSRW-DGC-63**	

Ordering data – Proportional directional control valves and push-in fittings						
			Proportional directional control valve Technical data ➔ Internet: vpwp		Push-in fitting for DGCI Technical data ➔ Internet: quick star	
	For ∅ [mm]	Stroke [mm]	Part No.	Type	Part No.	Type
	For applications with axis controller CPX-CMAX					
	18	100 … 300	**1)**	**VPWP-2**	**153 306**	**QSM-M5-6**
		360 … 2,000	**550 170**	**VPWP-4-L-5-Q6-10-E-...**	**153 306**	**QSM-M5-6**
	25	100 … 160	**1)**	**VPWP-2**	**153 002**	**QS-⅛-6**
		225 … 750	**550 170**	**VPWP-4-L-5-Q8-10-E-...**	**153 004**	**QS-⅛-8**
		850 … 2,000	**550 171**	**VPWP-6-L-5-Q8-10-E-...**	**153 004**	**QS-⅛-8**
	32	100	**1)**	**VPWP-2**	**153 002**	**QS-⅛-6**
		160 … 360	**550 170**	**VPWP-4-L-5-Q8-10-E-...**	**153 004**	**QS-⅛-8**
		450 … 2,000	**550 171**	**VPWP-6-L-5-Q8-10-E-...**	**153 004**	**QS-⅛-8**
	40	100 … 300	**550 170**	**VPWP-4-L-5-Q8-10-E-...**	**153 005**	**QS-¼-8**
		360 … 750	**550 171**	**VPWP-6-L-5-Q8-10-E-...**	**153 005**	**QS-¼-8**
		850 … 2,000	**550 172**	**VPWP-8-L-5-Q10-10-E-...**	**153 007**	**QS-¼-10**
	63	100 … 160	**550 170**	**VPWP-4-L-5-Q8-10-E-...**	**153 006**	**QS-⅜-8**
		225 … 300	**550 171**	**VPWP-6-L-5-Q8-10-E-...**	**153 006**	**QS-⅜-8**
		360 … 450	**550 172**	**VPWP-8-L-5-Q10-10-E-...**	**153 008**	**QS-⅜-10**
		500 … 2,000	**1)**	**VPWP-10**	**153 009**	**QS-⅜-12**

1) On request

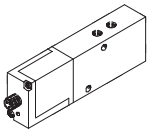
Ordering data – Proportional directional control valves and push-in fittings



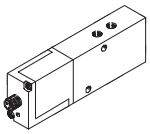
For ∅ [mm]	Stroke [mm]	Proportional directional control valve Technical data ➔ Internet: vpwp Part No.	Type	Push-in fitting for DGCI Technical data ➔ Internet: quick star Part No.	Type
For applications with Soft Stop end-position controller CPX-CMPX, horizontal					
18	100 … 300	**1)**	**VPWP-2**	**153 306**	**QSM-M5-6**
	360 … 1,750	**550 170**	**VPWP-4-L-5-Q6-10-E-...**	**153 306**	**QSM-M5-6**
	2,000	**550 171**	**VPWP-6-L-5-Q-10-E-...**	**153 306**	**QSM-M5-6**
25	100 … 160	**550 170**	**VPWP-4-L-5-Q6-10-E-...**	**153 002**	**QS-⅛-6**
	225 … 300	**550 170**	**VPWP-4-L-5-Q8-10-E-...**	**153 004**	**QS-⅛-8**
	360 … 2,000	**550 171**	**VPWP-6-L-5-Q8-10-E-...**	**153 004**	**QS-⅛-8**
32	100	**550 170**	**VPWP-4-L-5-Q6-10-E-...**	**153 002**	**QS-⅛-6**
	160 … 1,000	**550 171**	**VPWP-6-L-5-Q8-10-E-...**	**153 004**	**QS-⅛-8**
	1,250 … 2,000	**550 172**	**VPWP-8-L-5-Q-10-E-...**	**153 004**	**QS-⅛-8**
40	100 … 500	**550 171**	**VPWP-6-L-5-Q8-10-E-...**	**153 005**	**QS-¼-8**
	600 … 750	**550 172**	**VPWP-8-L-5-Q-10-E-...**	**153 005**	**QS-¼-8**
	850 … 2,000	**550 172**	**VPWP-8-L-5-Q10-10-E-...**	**153 007**	**QS-¼-10**
63	100 … 160	**550 170**	**VPWP-4-L-5-Q8-10-E-...**	**153 006**	**QS-⅜-8**
	225 … 300	**550 171**	**VPWP-6-L-5-Q8-10-E-...**	**153 006**	**QS-⅜-8**
	360 … 450	**550 172**	**VPWP-8-L-5-Q10-10-E-...**	**153 008**	**QS-⅜-10**
	500 … 2,000	**1)**	**VPWP-10**	**153 009**	**QS-⅜-12**
For applications with Soft Stop end-position controller CPX-CMPX, vertical					
18	100 … 300	**1)**	**VPWP-2**	**153 306**	**QSM-M5-6**
	360 … 1,750	**550 170**	**VPWP-4-L-5-Q6-10-E-...**	**153 306**	**QSM-M5-6**
	2,000	**550 171**	**VPWP-6-L-5-Q-10-E-...**	**153 306**	**QSM-M5-6**
25	100 … 160	**550 170**	**VPWP-4-L-5-Q6-10-E-...**	**153 002**	**QS-⅛-6**
	225 … 750	**550 170**	**VPWP-4-L-5-Q8-10-E-...**	**153 004**	**QS-⅛-8**
	850 … 2,000	**550 171**	**VPWP-6-L-5-Q8-10-E-...**	**153 004**	**QS-⅛-8**
32	100	**550 170**	**VPWP-4-L-5-Q6-10-E-...**	**153 002**	**QS-⅛-6**
	160 … 300	**550 170**	**VPWP-4-L-5-Q8-10-E-...**	**153 004**	**QS-⅛-8**
	360 … 1,750	**550 171**	**VPWP-6-L-5-Q8-10-E-...**	**153 004**	**QS-⅛-8**
	2,000	**550 172**	**VPWP-8-L-5-Q-10-E-...**	**153 004**	**QS-⅛-8**
40	100 … 225	**550 170**	**VPWP-4-L-5-Q8-10-E-...**	**153 005**	**QS-¼-8**
	300 … 750	**550 171**	**VPWP-6-L-5-Q8-10-E-...**	**153 005**	**QS-¼-8**
	850 … 1,000	**550 171**	**VPWP-6-L-5-Q-10-E-...**	**153 007**	**QS-¼-10**
	1,250 … 2,000	**550 172**	**VPWP-8-L-5-Q10-10-E-...**	**153 007**	**QS-¼-10**
63	100 … 160	**550 170**	**VPWP-4-L-5-Q8-10-E-...**	**153 006**	**QS-⅜-8**
	225 … 300	**550 171**	**VPWP-6-L-5-Q8-10-E-...**	**153 006**	**QS-⅜-8**
	360 … 450	**550 172**	**VPWP-8-L-5-Q10-10-E-...**	**153 008**	**QS-⅜-10**
	500 … 2,000	**1)**	**VPWP-10**	**153 009**	**QS-⅜-12**

1) On request

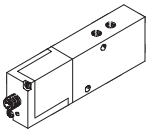
Ordering data – Proportional directional control valves and push-in fittings

	For ∅ [mm]	Stroke [mm]	Proportional directional control valve Technical data ➔ Internet: mpye Part No.	Type	Push-in fitting for DGCI Technical data ➔ Internet: quick star Part No.	Type
	For applications with axis controller SPC200					
	18	100 … 300	**154 200**	**MPYE-5-M5-010-B**	**153 306**	**QSM-M5-6**
		360 … 2,000	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 306**	**QSM-M5-6**
	25	100 … 160	**154 200**	**MPYE-5-M5-010-B**	**153 002**	**QS-1/8-6**
		225 … 750	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 004**	**QS-1/8-8**
		850 … 2,000	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 004**	**QS-1/8-8**
	32	100	**154 200**	**MPYE-5-M5-010-B**	**153 002**	**QS-1/8-6**
		160 … 360	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 004**	**QS-1/8-8**
		450 … 2,000	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 004**	**QS-1/8-8**
	40	100 … 300	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 005**	**QS-1/4-8**
		360 … 750	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 005**	**QS-1/4-8**
		850 … 2,000	**151 694**	**MPYE-5-1/4-010-B**	**153 007**	**QS-1/4-10**
	63	100 … 160	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 006**	**QS-3/8-8**
		225 … 300	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 006**	**QS-3/8-8**
		360 … 450	**151 694**	**MPYE-5-1/4-010-B**	**153 008**	**QS-3/8-10**
		500 … 2,000	**151 695**	**MPYE-5-3/8-010-B**	**153 009**	**QS-3/8-12**

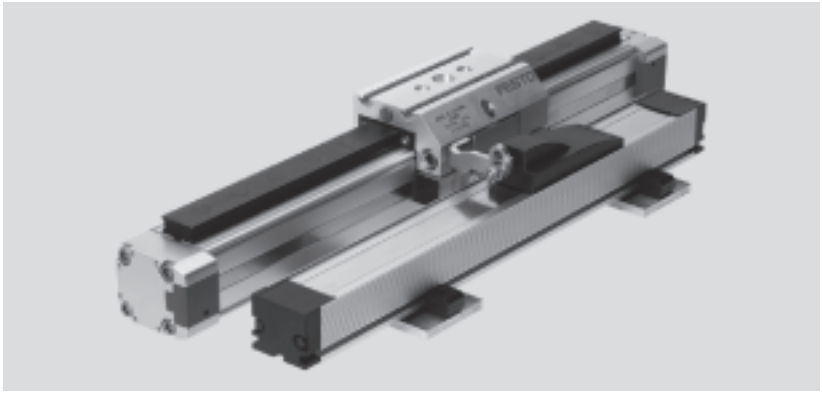
Ordering data – Proportional directional control valves and push-in fittings

	For ∅ [mm]	Stroke [mm]	Proportional directional control valve Technical data ➔ Internet: mpye Part No.	Type	Push-in fitting for DGCI Technical data ➔ Internet: quick star Part No.	Type
	For applications with Soft Stop end-position controller SPC11-MTS-AIF-2, horizontal					
	18	100 … 300	**154 200**	**MPYE-5-M5-010-B**	**153 306**	**QSM-M5-6**
		360 … 1,750	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 306**	**QSM-M5-6**
		2,000	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 306**	**QSM-M5-6**
	25	100 … 160	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 002**	**QS-1/8-6**
		225 … 300	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 004**	**QS-1/8-8**
		360 … 2,000	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 004**	**QS-1/8-8**
	32	100	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 002**	**QS-1/8-6**
		160 … 1,000	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 004**	**QS-1/8-8**
		1,250 … 2,000	**151 694**	**MPYE-5-1/4-010-B**	**153 004**	**QS-1/8-8**
	40	100 … 500	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 005**	**QS-1/4-8**
		600 … 750	**151 694**	**MPYE-5-1/4-010-B**	**153 005**	**QS-1/4-8**
		850 … 2,000	**151 694**	**MPYE-5-1/4-010-B**	**153 007**	**QS-1/4-10**
	63	100 … 160	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 006**	**QS-3/8-8**
		225 … 300	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 006**	**QS-3/8-8**
		360 … 450	**151 694**	**MPYE-5-1/4-010-B**	**153 008**	**QS-3/8-10**
		500 … 2,000	**151 695**	**MPYE-5-3/8-010-B**	**153 009**	**QS-3/8-12**

Ordering data – Proportional directional control valves and push-in fittings

	For ∅ [mm]	Stroke [mm]	Proportional directional control valve Technical data ➔ Internet: mpye Part No.	Type	Push-in fitting for DGCI Technical data ➔ Internet: quick star Part No.	Type
	For applications with Soft Stop end-position controller SPC11-MTS-AIF-2, vertical					
	18	100 … 300	**154 200**	**MPYE-5-M5-010-B**	**153 306**	**QSM-M5-6**
		360 … 1,750	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 306**	**QSM-M5-6**
		2,000	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 306**	**QSM-M5-6**
	25	100 … 160	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 002**	**QS-1/8-6**
		225 … 750	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 004**	**QS-1/8-8**
		850 … 2,000	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 004**	**QS-1/8-8**
	32	100	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 002**	**QS-1/8-6**
		160 … 300	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 004**	**QS-1/8-8**
		360 … 1,750	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 004**	**QS-1/8-8**
		2,000	**151 694**	**MPYE-5-1/4-010-B**	**153 004**	**QS-1/8-8**
	40	100 … 225	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 005**	**QS-1/4-8**
		300 … 750	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 005**	**QS-1/4-8**
		850 … 1,000	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 007**	**QS-1/4-10**
		1,250 … 2,000	**151 694**	**MPYE-5-1/4-010-B**	**153 007**	**QS-1/4-10**
	63	100 … 160	**151 692**	**MPYE-5-1/8-LF-010-B**	**153 006**	**QS-3/8-8**
		225 … 300	**151 693**	**MPYE-5-1/8-HF-010-B**	**153 006**	**QS-3/8-8**
		360 … 450	**151 694**	**MPYE-5-1/4-010-B**	**153 008**	**QS-3/8-10**
		500 … 2,000	**151 695**	**MPYE-5-3/8-010-B**	**153 009**	**QS-3/8-12**

Individual positioning components with linear drive DGPL ...



Proportional directional control valve
MPYE-...
➔ Internet: mpye

Soft Stop ➔ Internet: soft stop

End position controller
SPC11-POT-TLF

Positioning technology ➔ Internet: spc

Axis interface
SPC-AIF-POT

Axis positioning controller
SPC200

Linear drives DGPL, external displacement encoder

Features

DGPL, with recirculating ball bearing guide

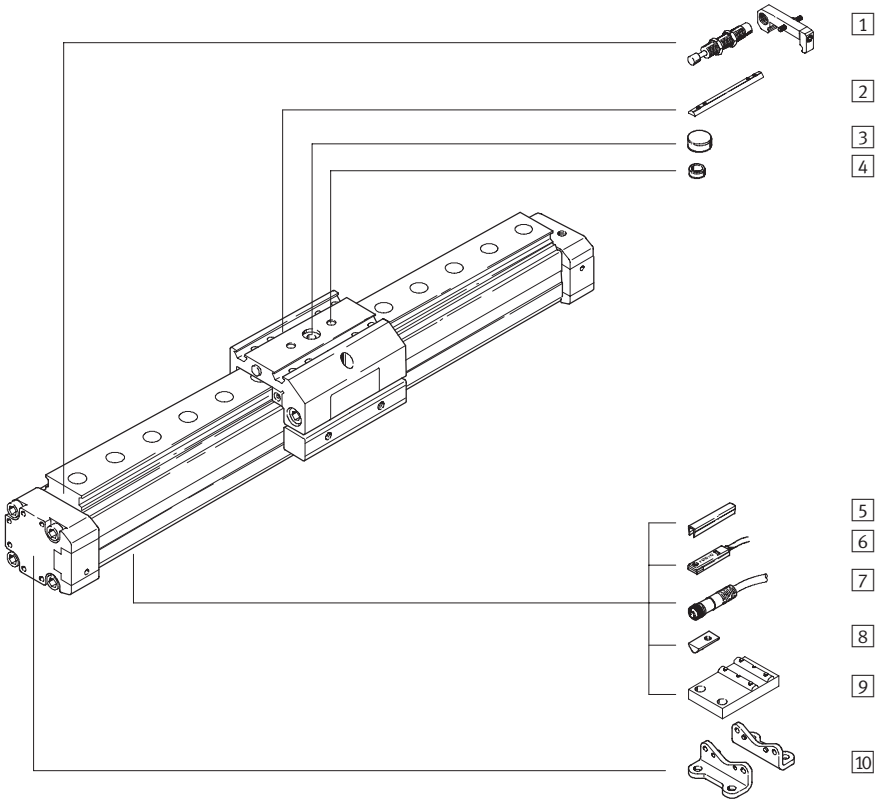
- Piston ∅ 25 ... 63 mm
- Stroke 225 ... 2,000 mm
- Standard slide or extended slide
- High characteristic load values
- Air connections on both sides

DGPL, with recirculating ball bearing guide and clamping unit

- Piston ∅ 25...40 mm
- Stroke 225 ... 2,000 mm
- Standard slide or extended slide
- In the event of a loss of pressure, the slide can be fixed in vertical operation using the clamping unit.
- High characteristic load values
- Air connections on both sides

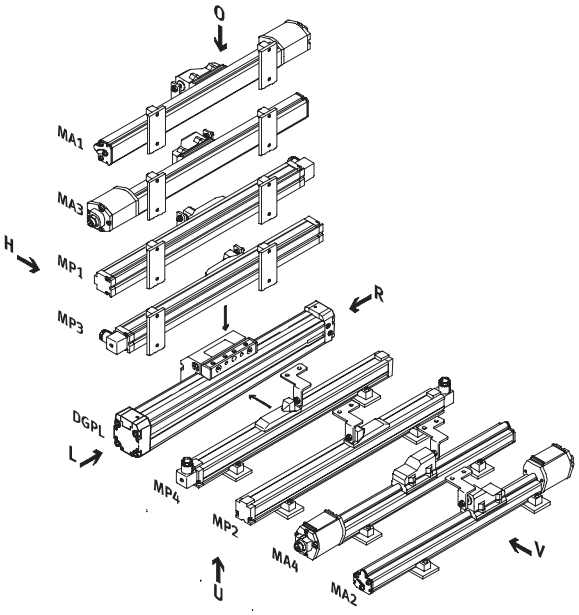
Linear drives DGPL, external displacement encoder

Peripherals overview

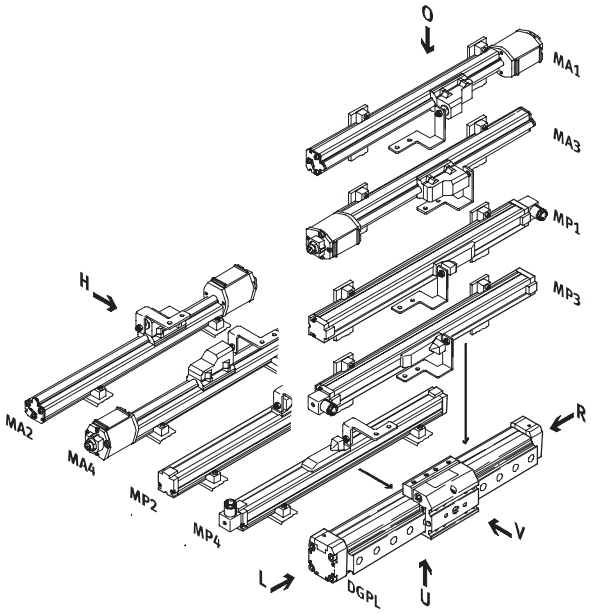


Displacement encoder attachment position 11

Slide at rear (SH)



Slide at front (SV)



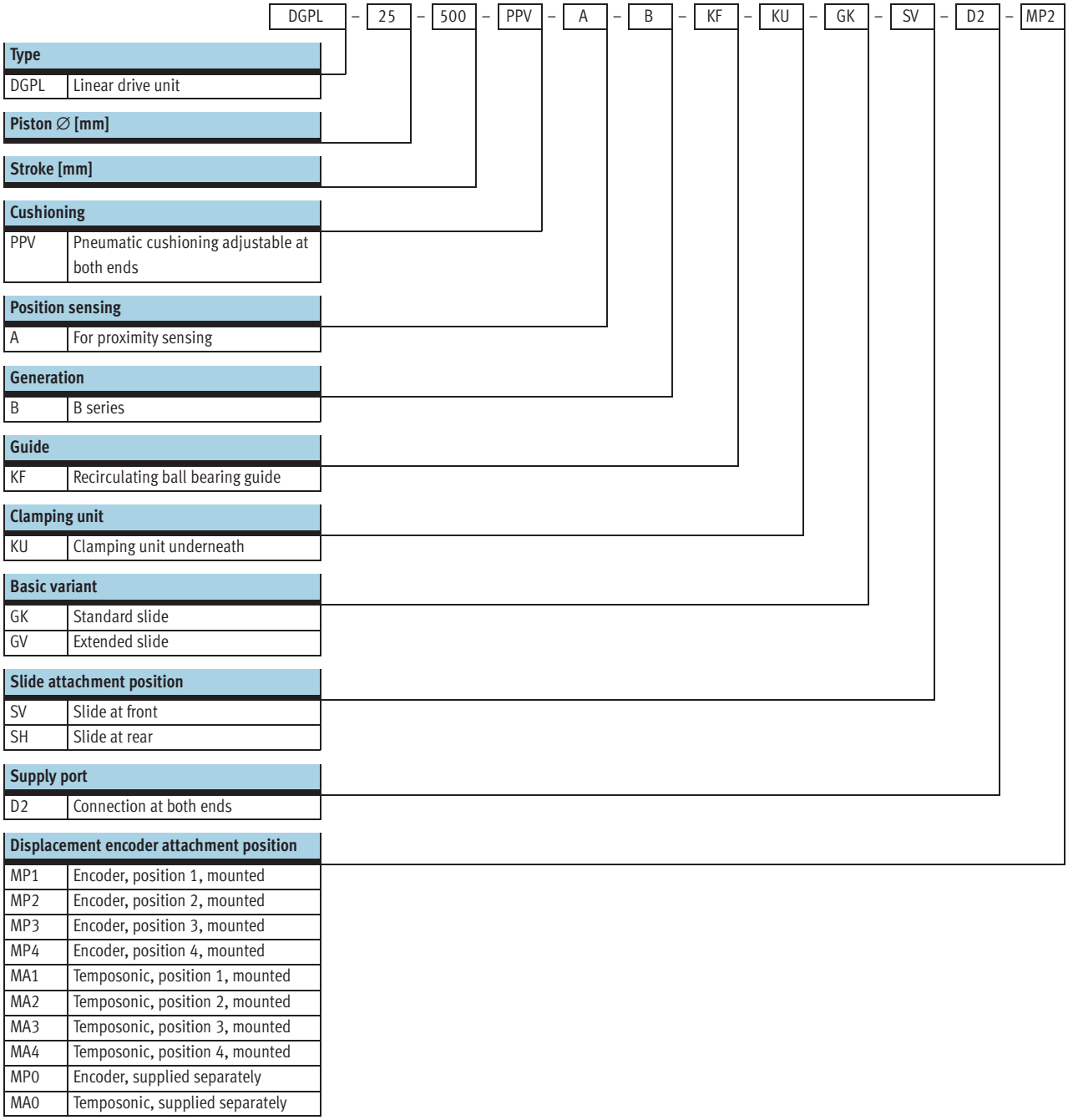
Linear drives DGPL, external displacement encoder

Peripherals overview

Variants and accessories			
	Type	Brief description	➔ Page/Internet
1	Shock absorber kits C	to avoid damage at the end stop, in the event of malfunctions	122
2	Slot nut for slide X	for mounting loads and attachments on the slide	123
3	Central mounting Q	for centring loads and attachments on the slide	123
4	Centring sleeves Z	for centring loads and attachments on the slide	123
5	Slot cover B/S	to protect against the ingress of dirt	123
6	Proximity sensors G/H/I/J/N	for additional sensing of the piston position, can be ordered optionally, only in conjunction with the order code A in the drive's modular product section.	125
7	Cable with socket V	for proximity sensor	125
8	Slot nut for mounting slot Y	for mounting attachments	123
9	Central support M	to mount the axis	120
10	Foot mounting F	to mount the axis	120
11	Displacement encoder attachment position MA1 ... MA4/MP1 ... MP4	for drive position measurement	86

Linear drives DGPL, external displacement encoder

Type codes



Type	
DGPL	Linear drive unit

Piston ∅ [mm]	

Stroke [mm]	

Cushioning	
PPV	Pneumatic cushioning adjustable at both ends

Position sensing	
A	For proximity sensing

Generation	
B	B series

Guide	
KF	Recirculating ball bearing guide

Clamping unit	
KU	Clamping unit underneath

Basic variant	
GK	Standard slide
GV	Extended slide

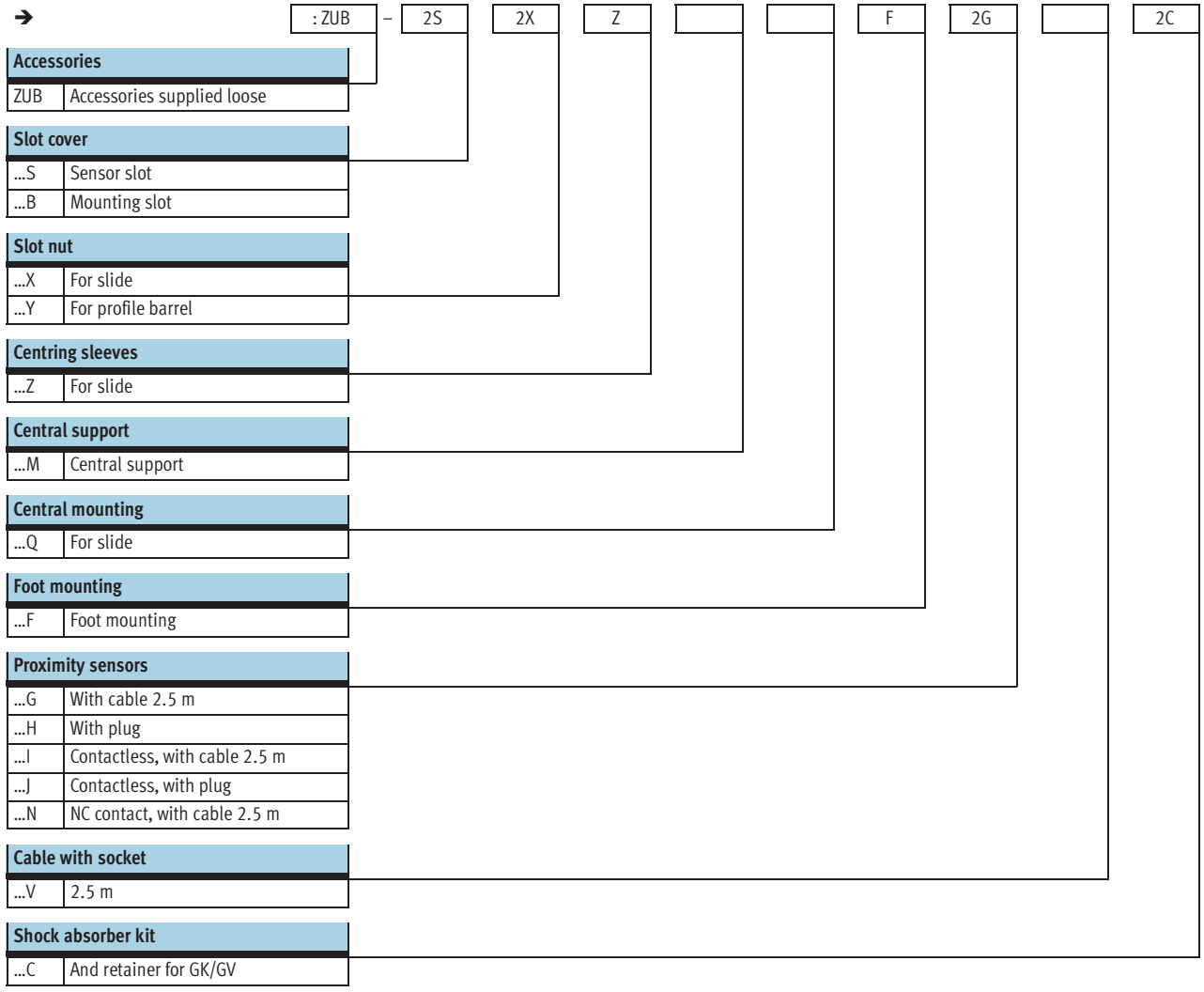
Slide attachment position	
SV	Slide at front
SH	Slide at rear

Supply port	
D2	Connection at both ends

Displacement encoder attachment position	
MP1	Encoder, position 1, mounted
MP2	Encoder, position 2, mounted
MP3	Encoder, position 3, mounted
MP4	Encoder, position 4, mounted
MA1	Temposonic, position 1, mounted
MA2	Temposonic, position 2, mounted
MA3	Temposonic, position 3, mounted
MA4	Temposonic, position 4, mounted
MP0	Encoder, supplied separately
MA0	Temposonic, supplied separately

Linear drives DGPL, external displacement encoder

Type codes

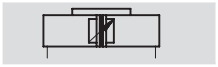


Linear drives DGPL, external displacement encoder

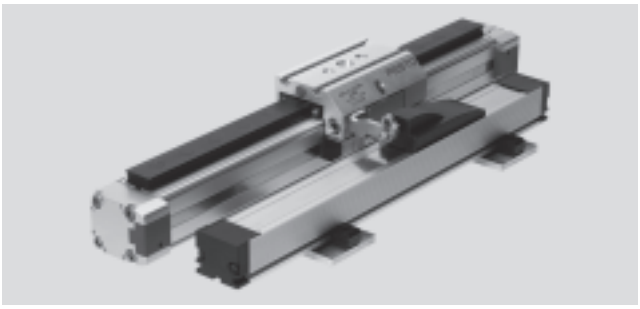
Technical data

FESTO

Function



- Ø - Diameter
  25 ... 63 mm
- l - Stroke length
  225 ... 2,000 mm



General technical data						
Piston ∅		25	32	40	50	63
Design		Piston				
		Driver				
		Profile barrel				
Mode of operation		Double-acting				
Operating medium[1]		Compressed air, filtered and unlubricated, filter unit 5 µm				
Cushioning		Pneumatic cushioning adjustable at both ends				
Cushioning length	[mm]	18	20	30		
Position sensing		Displacement encoder, attached externally				
		For proximity sensing				
Measuring principle (displacement encoder)		➔ Internet: displacement encoders				
Type of mounting		Foot mounting				
Stroke[2)3)]	[mm]	225, 300, 360, 450, 500, 600, 750, 1,000, 1,250, 1,500, 1,750, 2,000				
Protection against torsion/guide		Guide rail with slide				
		Recirculating ball bearing				
Clamping unit		➔ Internet: dgpl				
Pneumatic connection		G1⁄8		G1⁄4		G3⁄8
Electrical connection		➔ Internet: displacement encoders				

1) The proportional directional control valve MPYE used requires the characteristic values.
2) Note stroke reduction in conjunction with SPC200.
3) Supply of compressed air to each end of the cylinder (feature D2) is absolutely essential for Soft Stop SPC11 and axis controller SPC200 as of a length of 500 mm.

Forces [N] and impact energy [Nm]						
Piston ∅		25	32	40	50	63
Theoretical force at 6 bar		295	483	754	1,178	1,870
Max. impact energy at the end positions[1]		0.1	0.2	0.4	0.8	0.8

1) Cushioning PPV must be completely open for applications with Soft Stop SPC11 and axis controller SPC200.

Permissible impact velocity:

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{dead} + m_{load}}}$$

Maximum permissible load:

$$m_{load} = \frac{2 \times E_{perm.}}{v^2} - m_{dead}$$

$v_{perm.}$ Permissible impact velocity
$E_{perm.}$ Max. impact energy
m_{dead} Moving load (drive)
m_{load} Moving work load

Note

These specifications represent the maximum values which can be reached. Note the maximum permitted impact energy.

Positioning characteristics with axis controller SPC200						
Piston ∅		25	32	40	50	63
Repetition accuracy	[mm]	→ 80				
Mounting position		Any				
Minimum load, horizontal[1)]	[kg]	2	3	5	8	12
Maximum load, horizontal[1)]	[kg]	30	45	75	120	180
Minimum load, vertical[1)]	[kg]	2	3	5	8	12
Maximum load, vertical[1)]	[kg]	10	15	25	40	60
Min. speed of travel	[m/s]	0.05				
Max. speed of travel	[m/s]	3				
Typ. positioning time, long stroke[2)]	[s]	0.80/1.20	0.90/1.25	0.80/1.20	1.00/1.25	0.95/1.25
Typ. positioning time, short stroke[3)]	[s]	0.50/0.70	0.50/0.65	0.45/0.65	0.55/0.65	0.55/0.65
Minimum positioning stroke[4)]	[%]	3				
Stroke reduction[5)]	[mm]	25		35		
Recommended proportional directional control valve		→ 124				

1) Load = effective load + mass of all moving parts on the drive
2) At 6 bar, horizontal mounting position, DGPL-XX-1250, 1000 mm positioning travel at min./max. load
3) At 6 bar, horizontal mounting position, DNCM-XX-1250, 100 mm positioning travel at min./max. load
4) In relation to the maximum stroke of the drive, but never more than 20 mm.
5) The stroke reserve is to be maintained on every side of the drive, the max. positionable stroke is therefore: Stroke – 2x stroke reserve

Positioning characteristics with end position controller SPC11						
Piston ∅		25	32	40	50	63
Repetition accuracy of a mid-position[1)]	[mm]	±2				
Mounting position		Any				
Minimum load, horizontal[2)]	[kg]	2	3	5	8	12
Maximum load, horizontal[2)]	[kg]	30	45	75	120	180
Minimum load, vertical[2)]	[kg]	2	3	5	8	12
Maximum load, vertical[2)]	[kg]	10	15	25	40	60
Travel time	[s]	→ Sizing software “Smartb Soft Stop”: → www.festo.com				
Recommended proportional directional control valve		→ 124				

1) In the stroke range from 225 ... 2,000 mm
2) Load = effective load + mass of all moving parts on the drive

Operating and environmental conditions						
Piston ∅		25	32	40	50	63
Operating pressure[1)]	[bar]	4 ... 8				
Ambient temperature[2)]	[°C]	–10 ... +60				
Vibration resistance		To DIN/IEC 68 Parts 2 -6, severity level 2				
Continuous shock resistance		To DIN/IEC 68 Parts 2 -27, severity level 2				
CE symbol		To 89/336/EEC (EMC regulation)				
Protection class (displacement encoder)		→ Internet: displacement encoder				

1) Only applies for applications with Soft Stop SPC11 and axis controller SPC200.
2) Note operating range of proximity sensors.

Linear drives DGPL, external displacement encoder

Technical data

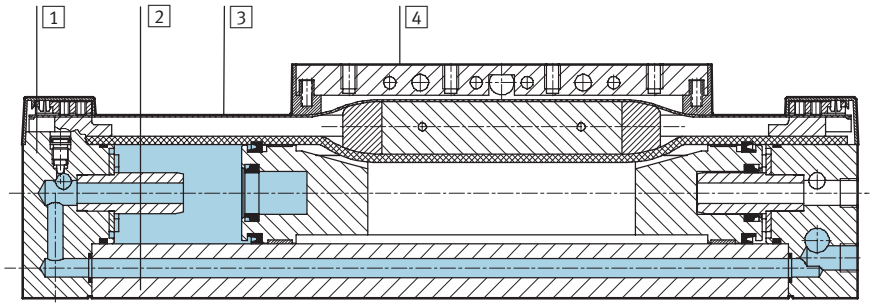
Weights [g] without displacement encoder						
Piston ∅		25	32	40	50	63
Basic weight		1,520	2,720	4,480	9,600	15,370
Additional weight per 10 mm stroke		53	69	97	167	236
Clamping unit		714	1,100	1,694	–	–
Additional weight of clamping unit per 10 mm stroke		27	34	42	–	–
Moving load	Standard slide GK	605	895	1,700	3,000	4,990
	Extended slide GV	950	1,375	2,603	4,700	7,860
	Clamping unit	185	250	461	–	–

Note

Electrical data, displacement encoder:	Analogue displacement encoder (Order code: MP) ➔Internet: displacement encoder	Digital displacement encoder (Order code: MA) ➔ Internet: displacement encoder

Materials

Sectional view



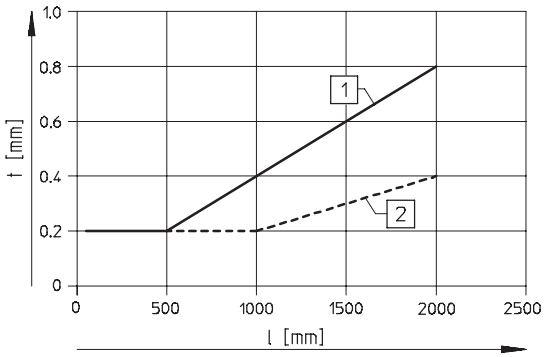
Displacement encoder materials
➔Internet: displacement encoder

Drive		
1	End cap	Anodised aluminium
2	Profile	Anodised aluminium
3	Cover strip	Steel, corrosion resistant
4	Driver	Anodised aluminium
–	Slide	Anodised aluminium
–	Guide rail	Corrosion resistant steel
–	Seals	Nitrile rubber, polyurethane

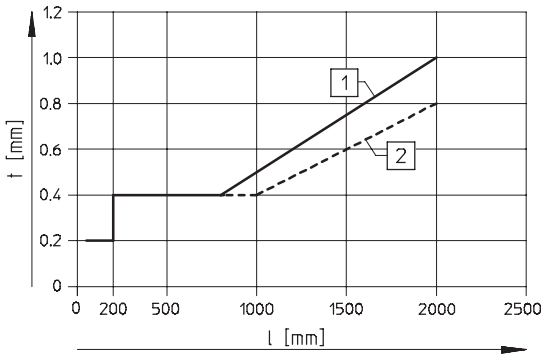
Repetition accuracy

Tolerance t [mm] as a function of the stroke l [mm]

horizontal



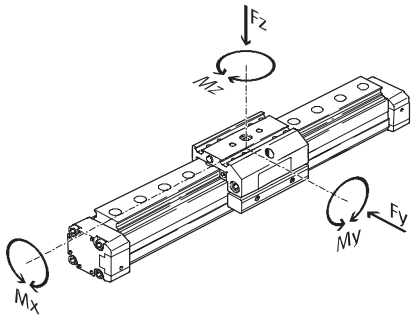
vertical



1 with analogue displacement encoder
2 with digital displacement encoder

Characteristic load values

The forces and torques specified refer to the centre line of the profile barrel internal diameter.
They must not be exceeded during dynamic operation. Special attention must be paid to the cushioning phase.



If the drive is subjected to more than two of the indicated forces and torques simultaneously, the following equations must be satisfied in addition to the indicated maximum loads.

$$0,4 \times \frac{Fz}{Fz_{max.}} + \frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + 0,2 \times \frac{Mz}{Mz_{max.}} \leq 1$$

$$\frac{Fz}{Fz_{max.}} \leq 1 \qquad \frac{Mz}{Mz_{max.}} \leq 1$$

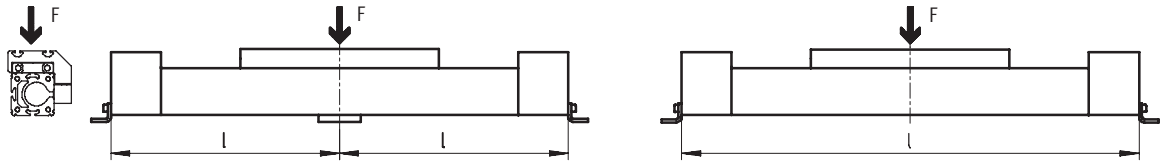
Permissible forces and torques

Piston ∅		25		32		40		50		63	
Variant		GK	GV	GK	GV	GK	GV	GK	GV	GK	GV
$Fy_{max.}$	[N]	3,080	3,080	3,080	3,080	7,300	7,300	7,300	7,300	14,050	14,050
$Fz_{max.}$	[N]	3,080	3,080	3,080	3,080	7,300	7,300	7,300	7,300	14,050	14,050
$Mx_{max.}$	[Nm]	45	45	63	63	170	170	240	240	580	580
$My_{max.}$	[Nm]	85	170	127	250	330	660	460	920	910	1,820
$Mz_{max.}$	[Nm]	85	170	127	250	330	660	460	920	910	1,820

Maximum permissible support span l as a function of the force F

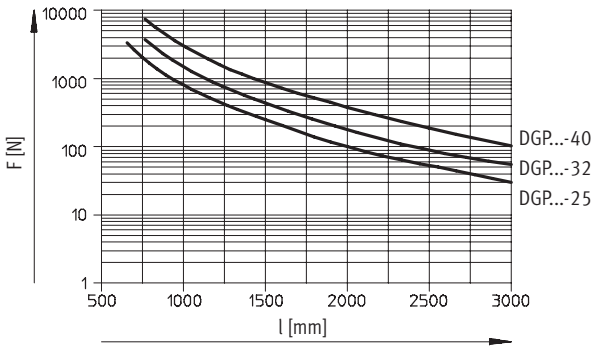
The axis may need to be supported with central supports MUP in order to limit deflection in the case of large strokes. The following diagrams serve to determine the maximum permissible support span l as a function of the force F.

Force on the surface of the slide

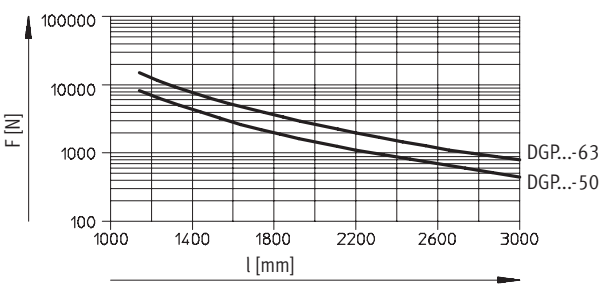


Maximum support span l (without central support) as a function of the force F

Piston ∅ 25 ... 40



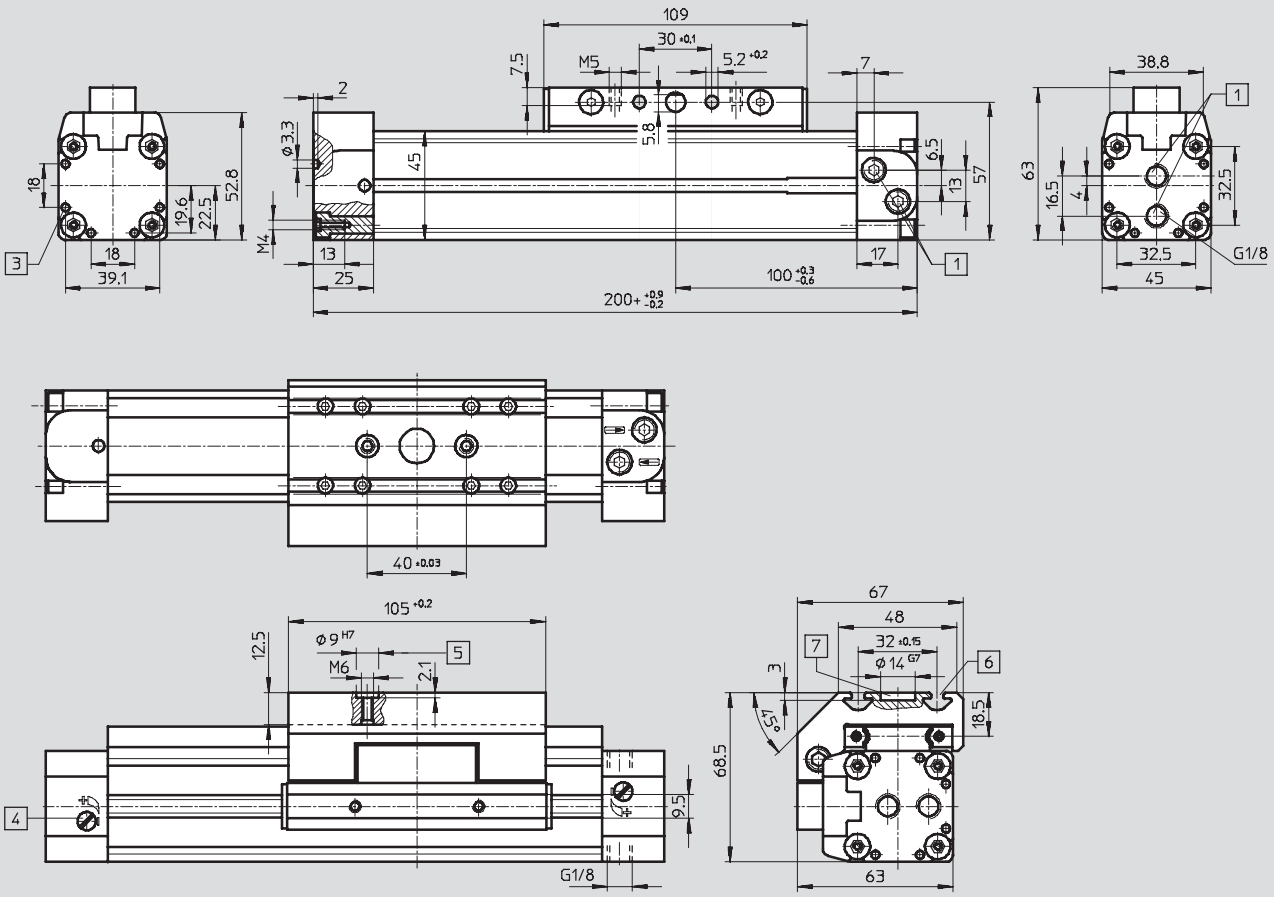
Piston ∅ 50/63



Dimensions Download CAD Data ➔ **www.festo.com/us/cad**

Standard slide GK

Piston ∅ 25



1 Supply ports at one end, option of three sides of an end cap (D2 variant: supply port at both ends, option of three sides per end cap)

3 Mounting hole for foot mounting HP

4 Regulating screw for adjustable end-position cushioning

5 Hole for centring sleeve ZBH-9

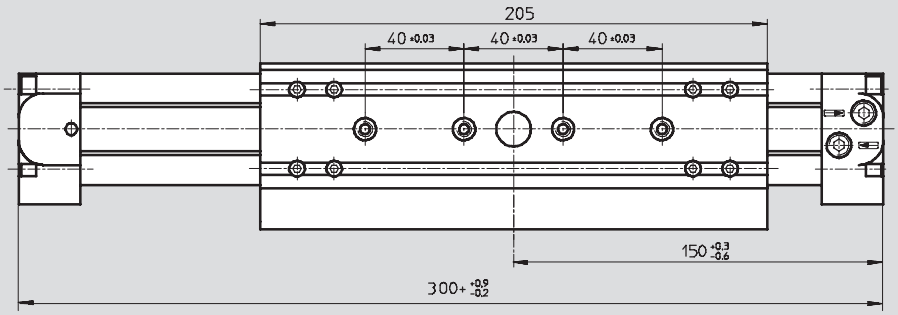
6 Mounting slot for slot nut NSTL

7 Drilled hole for central mounting SLZZ

\+ = plus stroke length

Extended slide GV

Piston ∅ 25

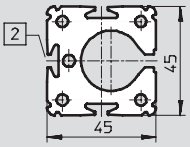


\+ = plus stroke length

Profile barrel

Piston ∅ 25

2 Sensor slot for proximity sensor

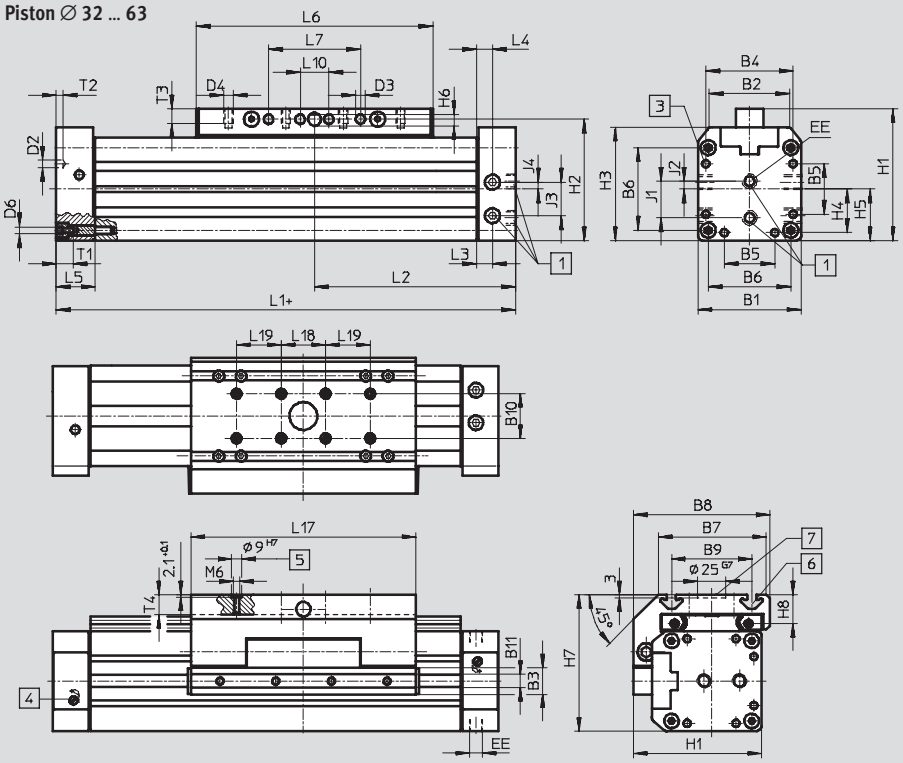


Dimensions

Download CAD Data ➔ **www.festo.com/us/cad**

Standard slide GK

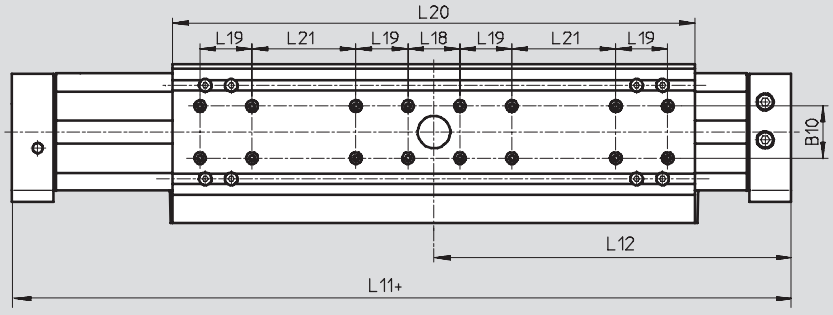
Piston ∅ 32 … 63



1 Supply ports at one end, option of three sides of an end cap (D2 variant: supply port at both ends, option of three sides per end cap)
3 Mounting hole for foot mounting HP
4 Regulating screw for adjustable end-position cushioning
5 Hole for centring sleeve ZBH-9
6 Mounting slot for slot nut NSTL
7 Drilled hole for central mounting SLZZ
\+ = plus stroke length

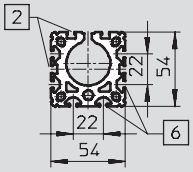
Extended slide GV

Piston ∅ 32 … 63

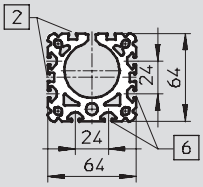


Profile barrel

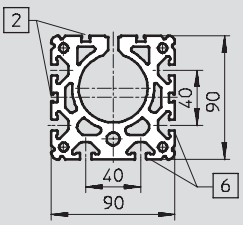
Piston ∅ 32



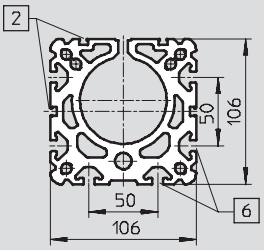
Piston ∅ 40



Piston ∅ 50



Piston ∅ 63



2 Sensor slot for proximity sensor
6 Mounting slot for slot nut NST

Linear drives DGPL, external displacement encoder

Technical data

∅ [mm]	B1	B2	B3 +0.2	B4	B5	B6	B7	B8	B9	B10 ±0.03	B11	D2 ∅
32	54	35.8	19	46	21	40	63	79	47 ±0.15	20	9.5	4.3
40	64	45.7	21	53	28	49	78.5	96.5	55 ±0.2			
50	90	69.2	24	76	44	72	97	122	72 ±0.2	40	12	6.3
63	106	84.8		89		83	121	142	90 ±0.25			

∅ [mm]	D3 ∅ +0.2	D4	D6	EE	H1	H2	H3	H4	H5	H6	H7	H8
32	5.2	M5	M5	G1⁄8	72	66	62	23	27	5.8	77.5	18.5
40	6.5	M6		G1⁄4	86	78	71.8	26.5	32	7.7	90.5	20
50	8.5	M8	M6		115	106	99	36	45	9.7	122.5	26
63			M8	G3⁄8	131	122	115	44.5	53		144.5	30

∅ [mm]	J1	J2	J3	J4	L1	L2	L3	L4	L5	L6	L7	L10 ±0.15
32	19	4.2	14	4.7	250	125	17	8.5	31	135	50 ±0.1	–
40	22	5	21	9.1	300	150	11.5	11.5		171	70 ±0.1	
50	31.8	6.8	29.3	6	350	175	14	14	34	206	80 ±0.1	
63	36	8	31	14	400	200				234	110 ±0.1	

∅ [mm]	L11 +0.9/–0.2	L12 +0.3/–0.6	L17	L18 ±0.03	L19 ±0.03	L20	L21 ±0.1	T1	T2	T3	T4 max.
32	380	190	131 +0.2	40	–	261	40	13.2	3	7.5	12.5
40	470	235	167 +0.2		40	337			4	10.5	
50	550	275	202 +0.2			402	80	15.2	6	12.5	18.5
63	650	325	230 +0.2			480	120	21.2			20.5

Note

Accessories➔ 120

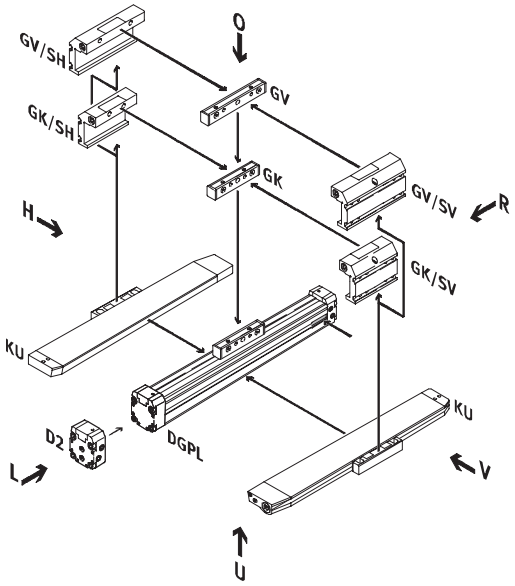
Linear drives DGPL, external displacement encoder

Ordering data – Modular product system

Order code

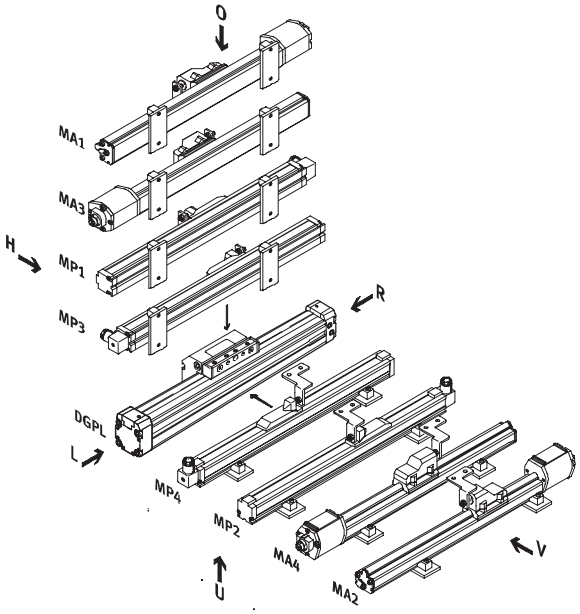
Mandatory data/Options

KU Clamping unit underneath
GK Standard slide
GV Extended slide
SV Slide at rear
SH Slide at front
D2 Air connection at both ends

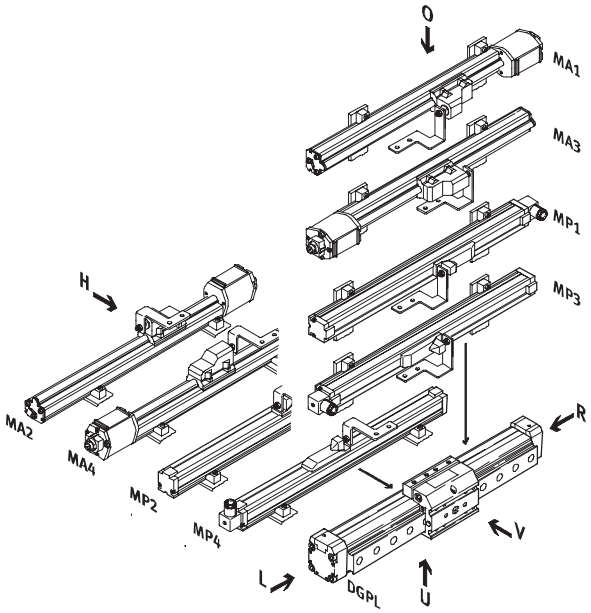


Attachment position for slides at rear (SH)

MP Analogue displacement encoder
MA Digital displacement encoder



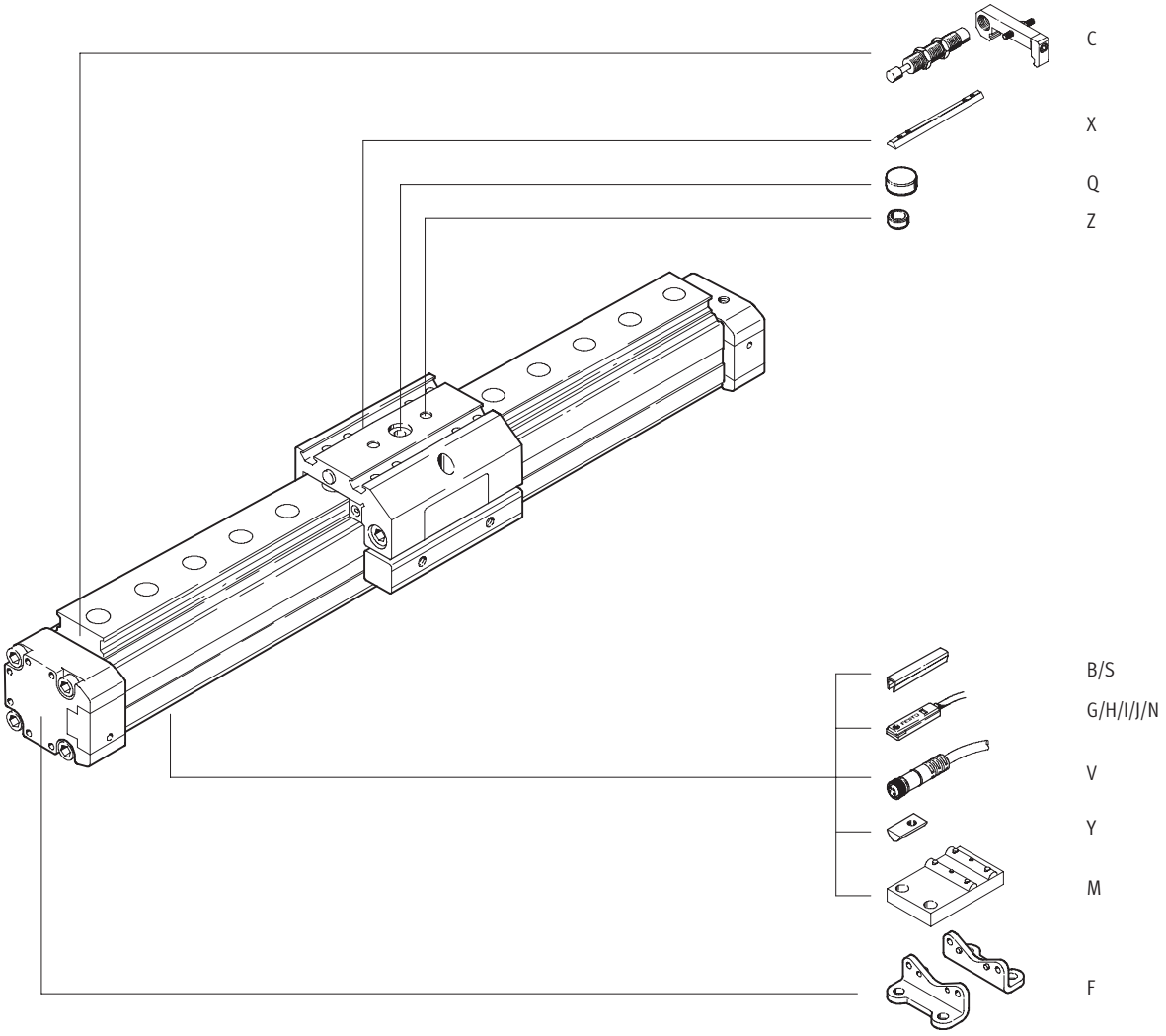
Attachment position for slides at front (SV)



Note

O top
U underneath
R right
L left
V front
H rear

Order code
Options



Linear drives DGPL, external displacement encoder

Ordering data – Modular product system

FESTO

M Mandatory data								O Options				
Module No.	Drive function	Size	Stroke	Cushioning	Position sensing	Generation	Guide	Clamping unit	Basic variant	Slide attachment position	Supply port	Displacement encoder
175 134 175 135 175 136 175 137 175 138	DGPL	25 32 40 50 63	225 ... 2 000	PPV	A	B	KF	KU	GK GV	SV SH	D2	MP1 MP2 MP3 MP4 MA1 MA2 MA3 MA4 MP0 MA0
Ordering example												
175 136	DGPL	– 40	– 750	– PPV	– A	– B	– KF	–	– GV	– SH	– D2	– MA2

Ordering table

Size		25	32	40	50	63	Conditions	Code		Enter code
M	Module No.	**175 134**	**175 135**	**175 136**	**175 137**	**175 138**				
	Drive function	Pneumatic linear drive with slide						**DGPL**		DGPL
	Size	25	32	40	50	63		**-...**		
	Stroke [mm]	225, 300, 360, 450, 500, 600, 750, 1 000, 1 250, 1 500,1 750, 2 000						**-...**		
	Cushioning	Pneumatic cushioning adjustable at both ends						**-PPV**		-PPV
	Position sensing	For proximity sensing						**-A**		-A
	Generation	B series						**-B**		-B
	Guide	Recirculating ball bearing guide						**-KF**		-KF
O	Clamping unit	Underneath			–	–		**-KU**		
	Basic variant	Standard piston/slide					1	**-GK**		
		Extended piston/slide						**-GV**		
	Slide attachment position	Slide at front					2	**-SV**		
		Slide at rear						**-SH**		
	Supply port	at both ends						**-D2**		
	Displacement encoder	Encoder, position 1, mounted						**-MP1**		
		Encoder, position 2, mounted					3	**-MP2**		
		Encoder, position 3, mounted						**-MP3**		
		Encoder, position 4, mounted					3	**-MP4**		
		Temposonic with CAN axis interface, position 1, mounted						**-MA1**		
		Temposonic with CAN axis interface, position 2, mounted					3	**-MA2**		
		Temposonic with CAN axis interface, position 3, mounted						**-MA3**		
		Temposonic with CAN axis interface, position 4, mounted					3	**-MA4**		
		Encoder, supplied separately						**-MP0**		
↓		Temposonic with CAN axis interface, supplied separately						**-MA0**		

1 **GK or GV** Must be selected
2 **SV or SH** Must be selected
3 **MP2, MP4, MA2, MA4** Not with clamping unit KU

Transfer order code

	DGPL	–		–		–	PPV	–	A	–	B	–	KF	–		–		–		–		–	

0 Options

	Accessories	Slot cover	Slot nut	Centring sleeve	Central support	Central mounting	Foot mounting	Proximity sensor, magnetic	Plug socket	Shock absorber kit
	ZUB	...S ...B	...X ...Y	...Z	...M	...Q	...F	...G ...H ...I ...J ...N	...V	...C
:	ZUB	– 2S2B	2XY	Z		Q	F			2C

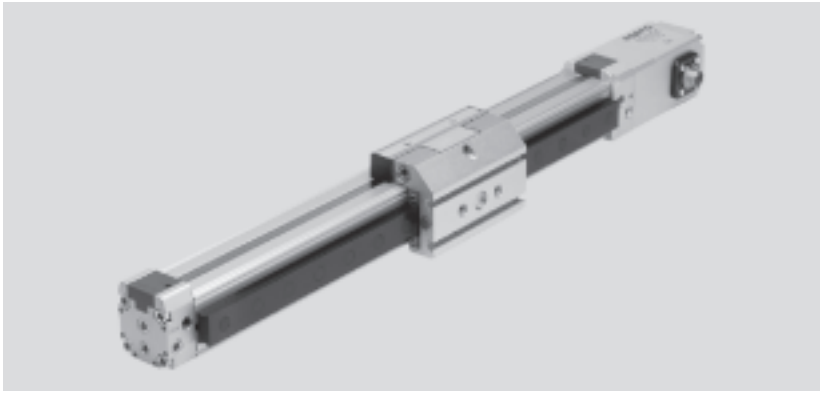
Ordering table

Size			25	32	40	50	63	Conditions	Code		Enter code
↓	Accessories		Supplied separately						:ZUB-		:ZUB-
0	Slot cover, x2, 0.5 m	Sensor slot	1 ... 10						...S		
		Mounting slot	–	1 ... 10					...B		
	Slot nut	Slide	1 ... 10						...X		
		Mounting slot	–	1 ... 10					...Y		
	Centring sleeve (pack of 10)		10, 20, 30, 40, 50, 60, 70, 80, 90						...Z		
	Central support		1 ... 10						...M		
	Central mounting		1 ... 10						...Q		
	Foot mounting		1 ... 10						...F		
	Magnetic proximity sensor	With cable 2.5 m	1 ... 10						...G		
		With plug	1 ... 10						...H		
	Magnetic proximity sensor, contactless	With cable 2.5 m	1 ... 10						...I		
		With plug	1 ... 10						...J		
	Magnetic proximity sensor	NC contact, with cable 2.5 m	1 ... 10						...N		
	Cable with socket, 2.5 m		1 ... 10						...V		
	Shock absorber kit		1 ... 10						...C		

Transfer order code

:	ZUB	–								

Individual positioning components with linear drive DGPI/DGPIL ...



Proportional directional control valve
MPYE-...
➔ Internet: mpye

Soft Stop ➔ Internet: soft stop

End position controller
SPC11-MTS-AIF

Positioning technology ➔ Internet: spc

Axis interface
SPC-AIF-MTS

Axis positioning controller
SPC200

Linear drives DGPI/DGPIL, integrated displacement encoder

Features

DGPI, without guide
92

- Piston ∅ 25 ... 63 mm
- Stroke 225 ... 2,000 mm
- Standard driver
- Low characteristic load values
- Air connections on both sides

DGPIL, with recirculating ball bearing guide 106

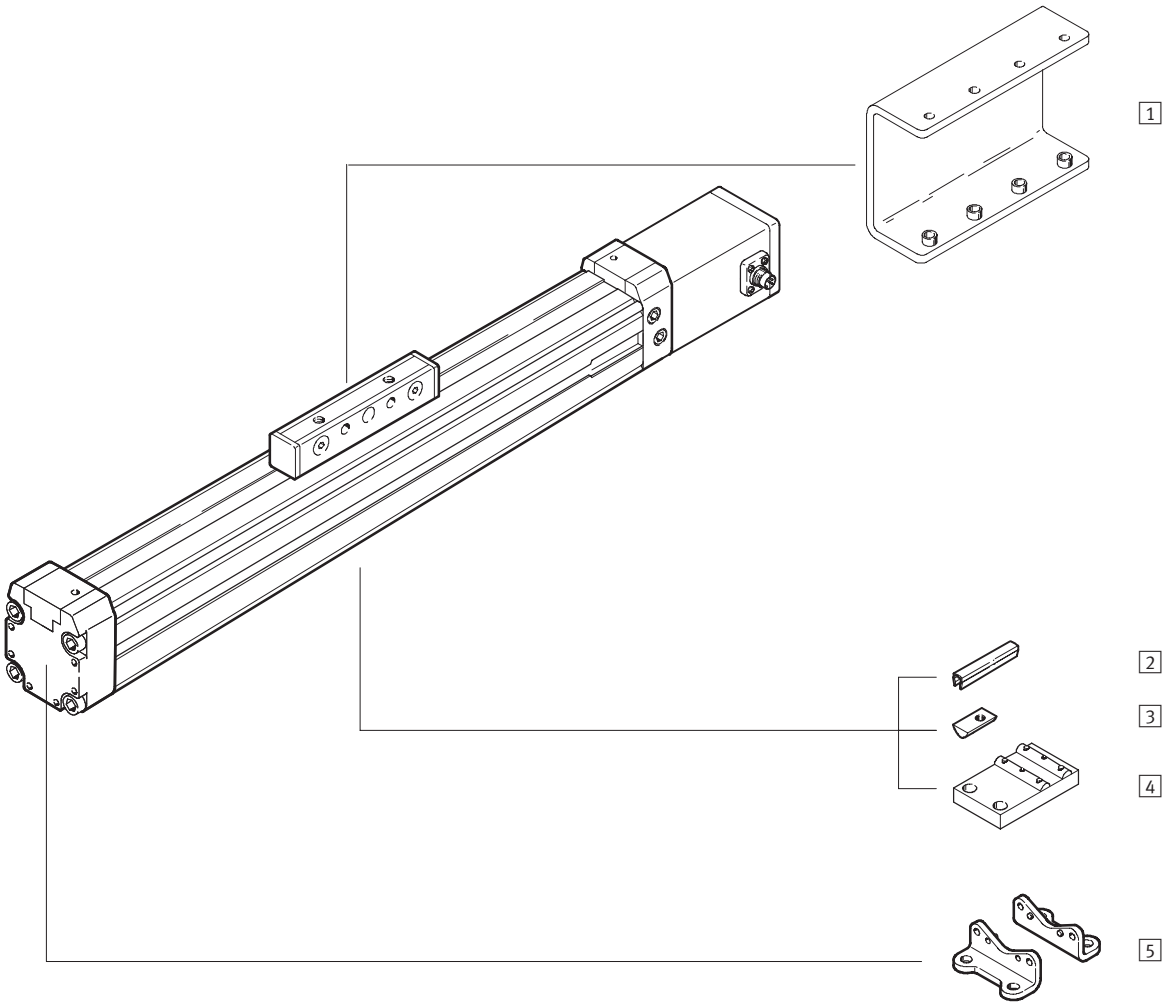
- Piston ∅ 25 ... 63 mm
- Stroke 225 ... 2,000 mm
- Standard slide
- High characteristic load values
- Air connections on both sides

DGPIL, with recirculating ball bearing guide and protected version 106

- Piston ∅ 25...40 mm
- Stroke 225 ... 2,000 mm
- Protected from above and the sides against the ingress of particles
- High characteristic load values
- Air connections on both sides

Linear drives DGPI, integrated displacement encoder

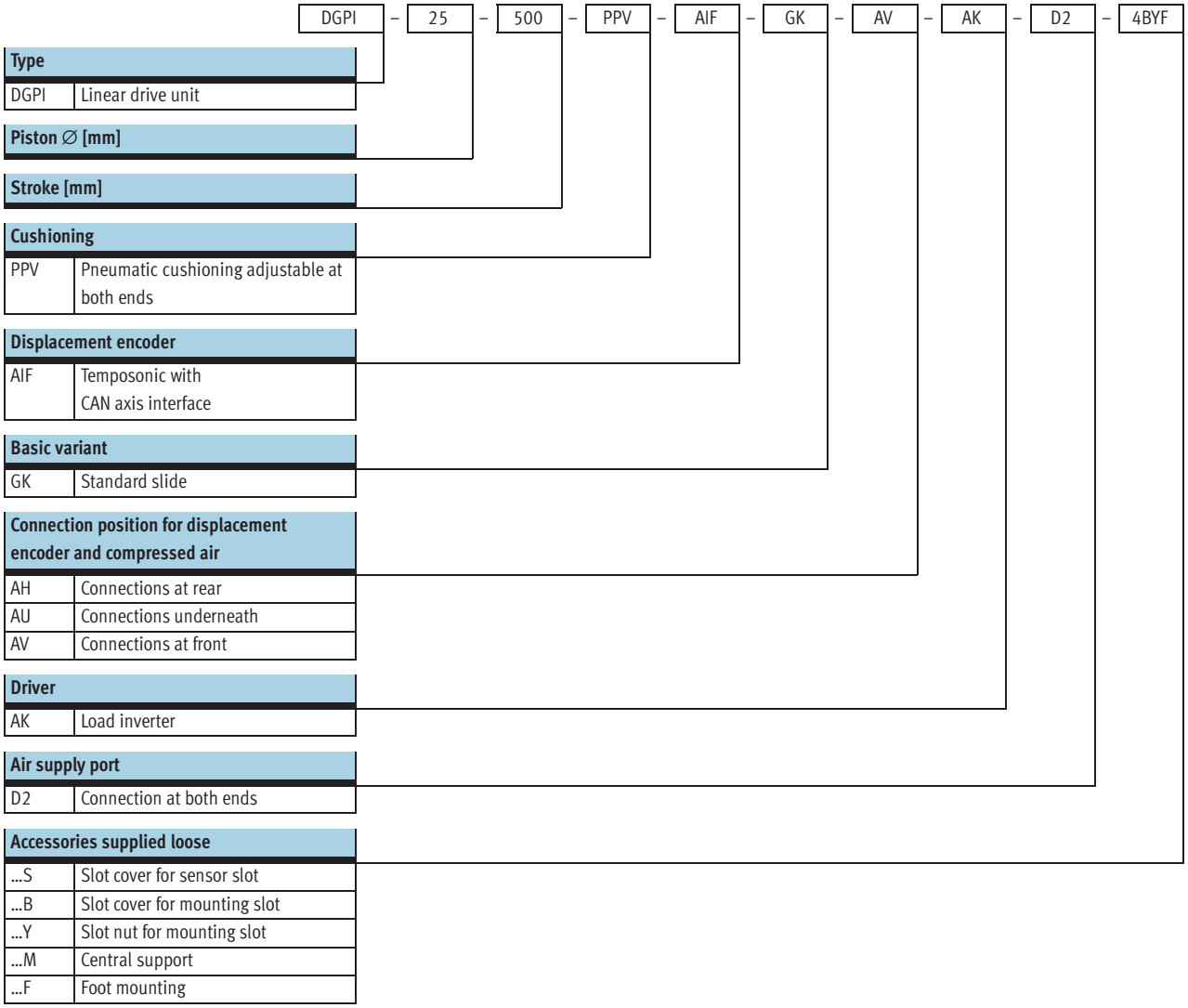
Peripherals overview



Variants and accessories			
	Type	Brief description	→ Page/Internet
1	Load inverter AK	to secure the load from beneath, is supplied attached	121
2	Slot cover B/S	to protect against the ingress of dirt	123
3	Slot nut Y	for mounting attachments	123
4	Central support M	to mount the axis	120
5	Foot mounting F	to mount the axis	120

Linear drives DGPI, integrated displacement encoder

Type codes



Type	
DGPI	Linear drive unit

Piston ∅ [mm]	

Stroke [mm]	

Cushioning	
PPV	Pneumatic cushioning adjustable at both ends

Displacement encoder	
AIF	Temposonic with CAN axis interface

Basic variant	
GK	Standard slide

Connection position for displacement encoder and compressed air	
AH	Connections at rear
AU	Connections underneath
AV	Connections at front

Driver	
AK	Load inverter

Air supply port	
D2	Connection at both ends

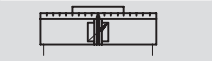
Accessories supplied loose	
...S	Slot cover for sensor slot
...B	Slot cover for mounting slot
...Y	Slot nut for mounting slot
...M	Central support
...F	Foot mounting

Linear drives DGPI, integrated displacement encoder

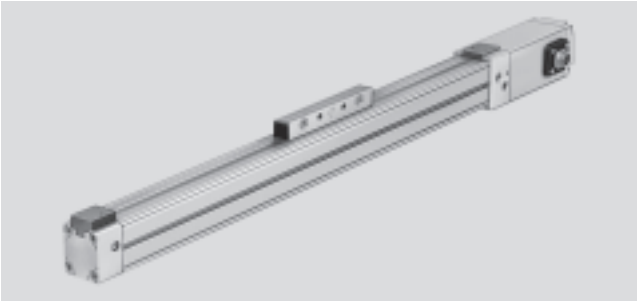
Technical data

FESTO

Function



- Ø - Diameter
  25 ... 63 mm
- l - Stroke length
  225 ... 2,000 mm



General technical data						
Piston Ø		25	32	40	50	63
Design		Piston				
		Driver				
		Profile barrel				
Mode of operation		Double-acting				
Operating medium[1]		Compressed air, filtered and unlubricated, filter unit 5 µm				
Cushioning		Pneumatic cushioning adjustable at both ends				
Cushioning length	[mm]	18	20	30		
Position sensing		Integrated displacement encoder				
Measuring principle		Digital, magnetostrictive, non-contacting, absolute measurement				
Type of mounting		Foot mounting				
Stroke[2)3)]	[mm]	225, 300, 360, 450, 500, 600, 750, 1,000, 1,250, 1,500, 1,750, 2,000				
Pneumatic connection		G1/8		G1/4		G3/8
Electrical connection		6-pin round plug to DIN 45 322				

1) The proportional directional control valve MPYE used requires the characteristic values.
2) Note stroke reduction in conjunction with SPC200.
3) Supply of compressed air to each end of the cylinder (feature D2) is absolutely essential for Soft Stop SPC11 and axis controller SPC200 as of a length of 500 mm.

Forces [N] and impact energy [Nm]					
Piston Ø	25	32	40	50	63
Theoretical force at 6 bar	295	483	754	1,178	1,870
Max. impact energy at the end positions[1]	0.1	0.2	0.4	0.8	0.8

1) Cushioning PPV must be completely open for applications with Soft Stop SPC11 and axis controller SPC200.

Permissible impact velocity:

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{dead} + m_{load}}}$$

Maximum permissible load:

$$m_{load} = \frac{2 \times E_{perm.}}{v^2} - m_{dead}$$

$v_{perm.}$ Permissible impact velocity
$E_{perm.}$ Max. impact energy
m_{dead} Moving load (drive)
m_{load} Moving work load

Note

These specifications represent the maximum values which can be reached. Note the maximum permitted impact energy.

Linear drives DGPI, integrated displacement encoder

Technical data

Positioning characteristics with axis controller SPC200						
Piston ∅		25	32	40	50	63
Repetition accuracy	[mm]	→ 80				
Mounting position		Any				
Minimum load, horizontal[1)]	[kg]	2	3	5	8	12
Maximum load, horizontal[1)]	[kg]	30	45	75	120	180
Minimum load, vertical[1)]	[kg]	2	3	5	8	12
Maximum load, vertical[1)]	[kg]	10	15	25	40	60
Min. speed of travel	[m/s]	0.05				
Max. speed of travel	[m/s]	3				
Typ. positioning time, long stroke[2)]	[s]	0.75/1.20	0.85/1.20	0.75/1.20	0.95/1.25	0.90/1.20
Typ. positioning time, short stroke[3)]	[s]	0.40/0.60	0.45/0.60	0.40/0.60	0.50/0.65	0.50/0.65
Minimum positioning stroke[4)]	[%]	3				
Stroke reduction[5)]	[mm]	25		35		
Recommended proportional directional control valve		→ 124				

1) Load = effective load + mass of all moving parts on the drive
2) At 6 bar, horizontal mounting position, DGPL-XX-1250, 1000 mm positioning travel at min./max. load
3) At 6 bar, horizontal mounting position, DNCM-XX-1250, 100 mm positioning travel at min./max. load
4) In relation to the maximum stroke of the drive, but never more than 20 mm.
5) The stroke reserve is to be maintained on every side of the drive, the max. positionable stroke is therefore: Stroke – 2x stroke reserve

Positioning characteristics with end position controller SPC11						
Piston ∅		25	32	40	50	63
Repetition accuracy of a mid-position[1)]	[mm]	±2				
Mounting position		Any				
Minimum load, horizontal[2)]	[kg]	2	3	5	8	12
Maximum load, horizontal[2)]	[kg]	30	45	75	120	180
Minimum load, vertical[2)]	[kg]	2	3	5	8	12
Maximum load, vertical[2)]	[kg]	10	15	25	40	60
Travel time	[s]	→ Sizing software “Smart Soft Stop”:→ www.festo.com				
Recommended proportional directional control valve		→ 124				

1) In the stroke range from 225 ... 2,000 mm
2) Load = effective load + mass of all moving parts on the drive

Operating and environmental conditions						
Piston ∅		25	32	40	50	63
Operating pressure[1)]	[bar]	4 ... 8				
Ambient temperature	[°C]	–10 ... +60				
Vibration resistance		To DIN/IEC 68 Parts 2 -6, severity level 1				
Continuous shock resistance		To DIN/IEC 68 Parts 2 -27, severity level 1				
CE marking symbol (see conformity declaration)		As per EU EMC directive				
Protection class (displacement encoder)		IP65 to IEC 60 529				
Corrosion resistance class CRC[2)]		1				

1) Only applies for applications with Soft Stop SPC11 and axis controller SPC200.
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.

Weights [g]						
Piston ∅		25	32	40	50	63
Basic weight		1,540	2,150	3,500	6,980	10,600
Additional weight per 10 mm stroke		38	43	59	130	168
Moving load		180	314	551	1,045	1,775

Linear drives DGPI, integrated displacement encoder

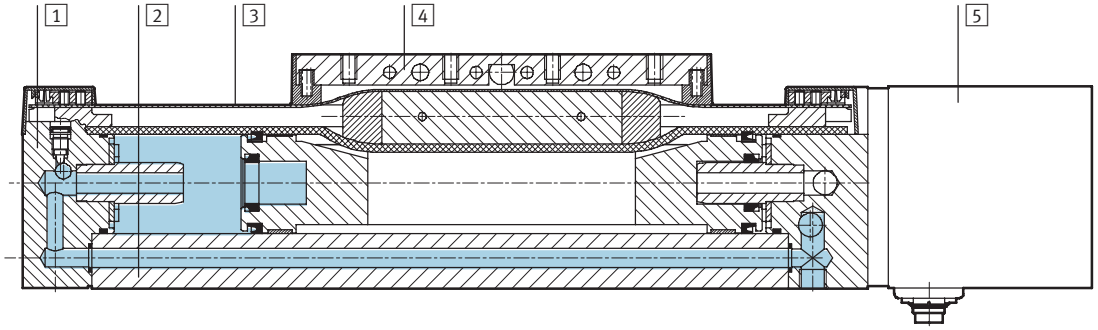
Technical data

Electrical data, displacement encoder			
Power supply		[V DC]	24 (–15/+25%)
Max. current consumption		[mA]	90
Resolution		[mm]	≤ 0.01
Independent linearity[1)]	maximum	[%]	0.02
Temperature coefficient		[ppm/°K]	≤ 15
Interface			Digital, CAN with protocol: SPC-AIF

1) Minimum ±50 µm

Materials

Sectional view



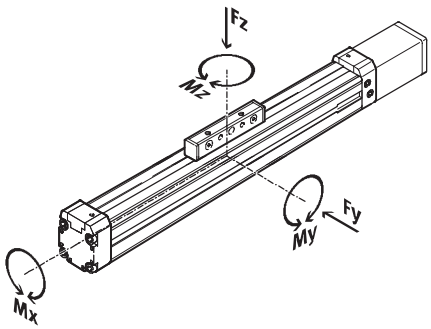
Drive		
1	End cap	Anodised aluminium
2	Profile	Anodised aluminium
3	Cover strip	Steel, corrosion resistant
4	Driver	Anodised aluminium
5	Displacement encoder housing	Anodised aluminium
–	Seals	Nitrile rubber, polyurethane

Note

Further technical data
➔ Internet: dgpl

Characteristic load values

The forces and torques specified refer to the centre line of the profile barrel internal diameter.
They must not be exceeded during dynamic operation. Special attention must be paid to the cushioning phase.



If the drive is subjected to more than two of the indicated forces and torques simultaneously, the following equations must be satisfied in addition to the indicated maximum loads.

$$0,4 \times \frac{Fz}{Fz_{max.}} + \frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + 0,2 \times \frac{Mz}{Mz_{max.}} \leq 1$$

$$\frac{Fz}{Fz_{max.}} \leq 1 \qquad \frac{Mz}{Mz_{max.}} \leq 1$$

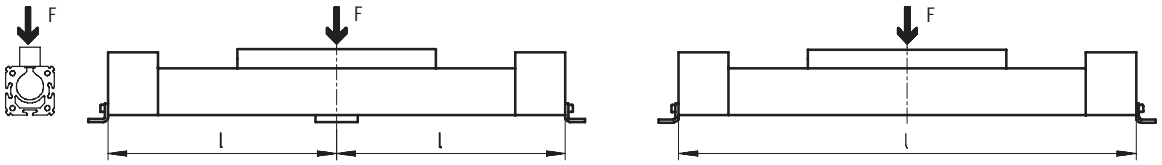
Permissible forces and torques

Piston ∅		25	32	40	50	63
$Fy_{max.}$	[N]	–	–	–	–	–
$Fz_{max.}$	[N]	330	480	800	1,200	1,600
$Mx_{max.}$	[Nm]	1	2	4	7	8
$My_{max.}$	[Nm]	20	40	60	120	120
$Mz_{max.}$	[Nm]	3	5	8	15	24

Maximum permissible support span l as a function of the force F

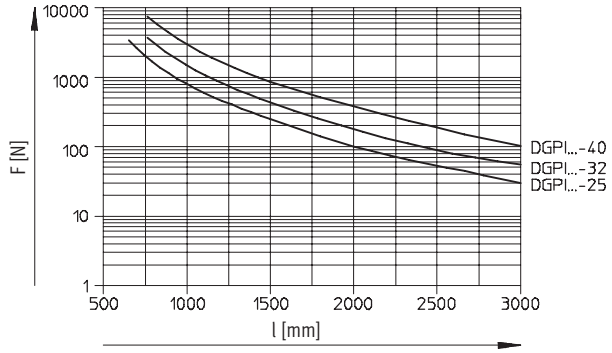
The axis may need to be supported with central supports MUP in order to limit deflection in the case of large strokes. The following diagrams serve to determine the maximum permissible support span l as a function of the force F.

Force on the surface of the slide

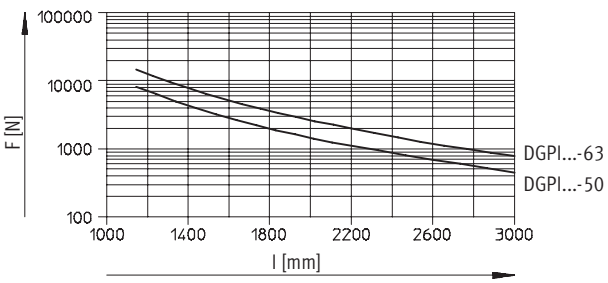


Maximum support span l (without central support) as a function of the force F

Piston ∅ 25 ... 40



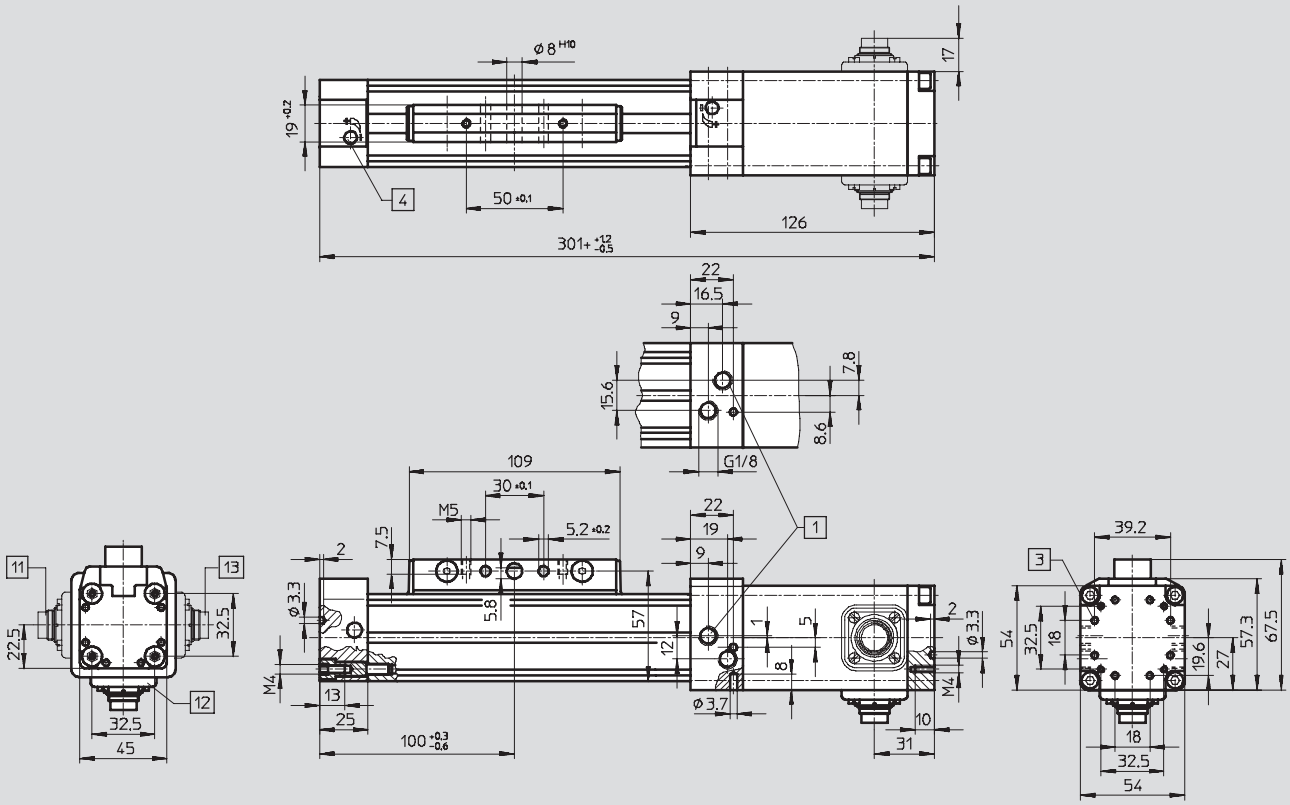
Piston ∅ 50/63



Dimensions Download CAD Data ➔ **www.festo.com/us/cad**

Standard driver GK

Piston ∅ 25



1 Both compressed air connections can be optionally connected to three sides of the right-hand end cap

3 Mounting holes for foot mounting HP

4 Regulating screw for adjustable end-position cushioning

11 Encoder connection at rear

12 Encoder connection underneath

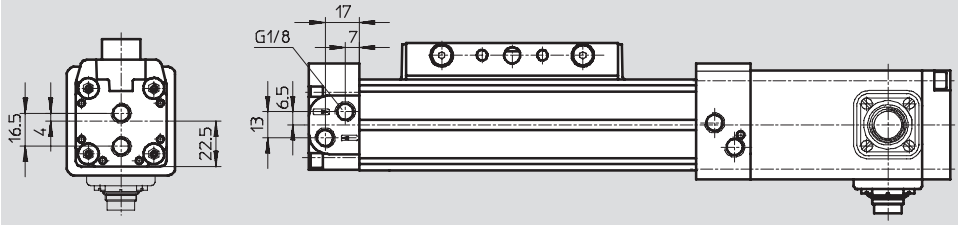
13 Encoder connection at front

\+ = plus stroke length

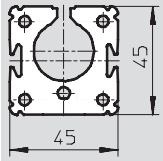
Dimensions Download CAD Data ➔ **www.festo.com/us/cad**

Supply port D2 at both sides

Piston ∅ 25



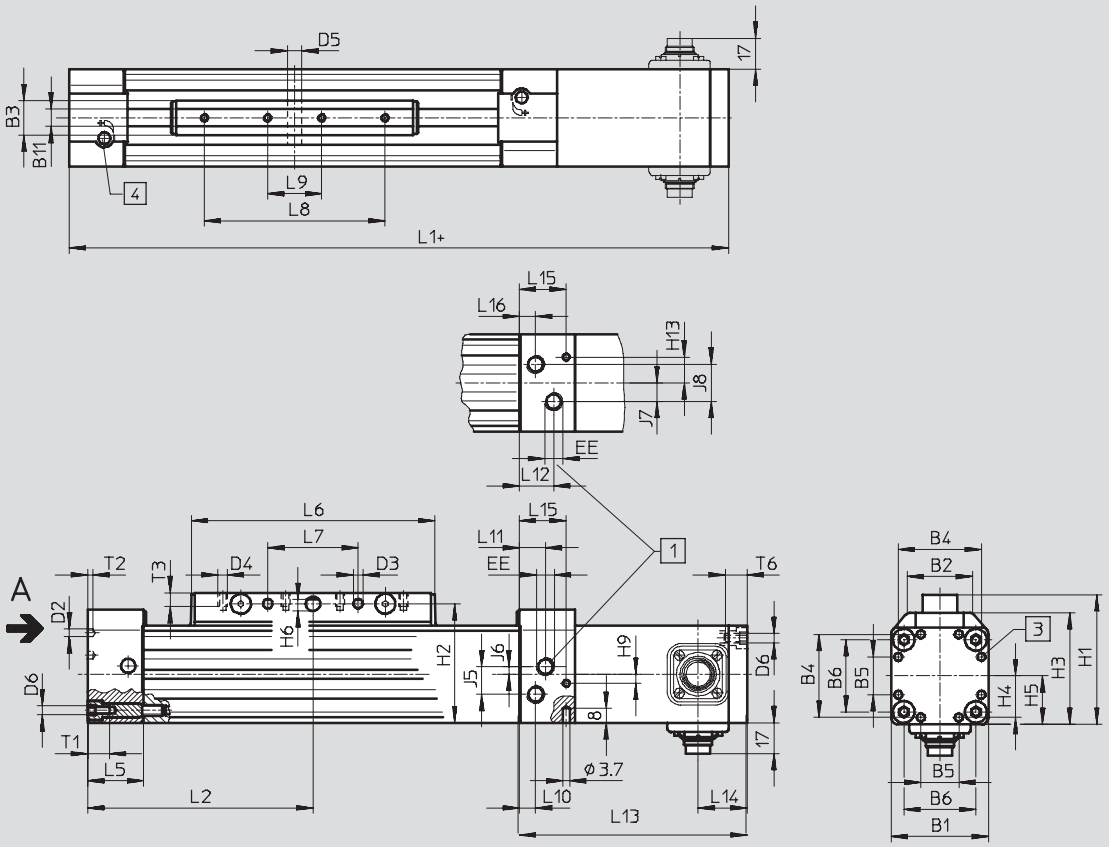
Profile barrel



Dimensions Download CAD Data ➔ **www.festo.com/us/cad**

Standard driver GK

Piston ∅ 32 … 63



1 Both compressed air connections can be optionally connected to three sides of the right-hand end cap

3 Mounting holes for foot mounting HP

4 Regulating screw for adjustable end-position cushioning

11 Encoder connection at rear

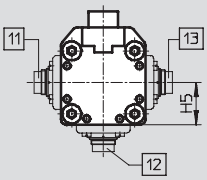
12 Encoder connection underneath

13 Encoder connection at front

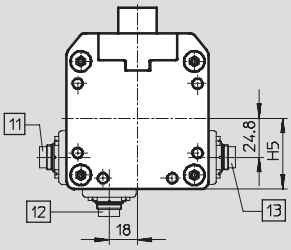
\+ = plus stroke length

View A

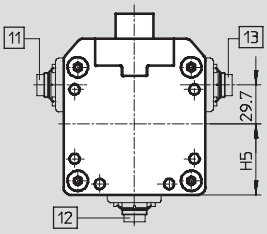
Piston ∅ 32/40



Piston ∅ 50

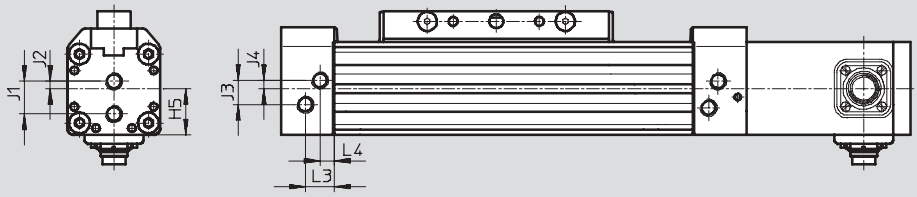


Piston ∅ 63



Supply port D2 at both sides

Piston ∅ 32 … 63



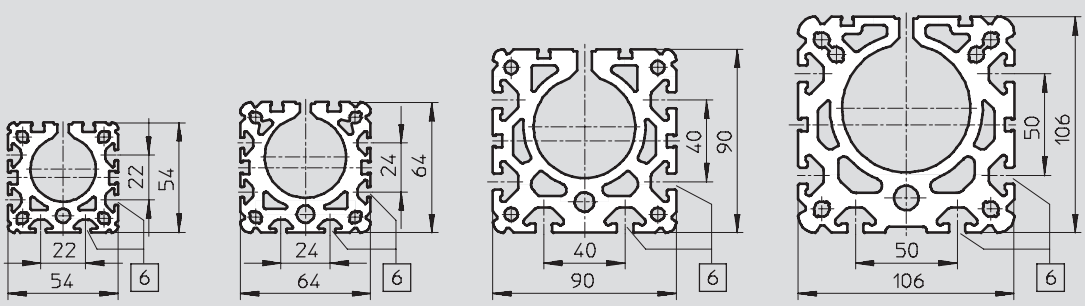
Linear drives DGPI, integrated displacement encoder

Technical data

Dimensions Download CAD Data ➔ **www.festo.com/us/cad**

Profile barrel

Piston ∅ 32 **Piston ∅ 40** **Piston ∅ 50** **Piston ∅ 63**



6 Mounting slot for slot nuts NST

∅ [mm]	B1	B2	B3 +0.2	B4	B5	B6	B11	D2 ∅	D3 ∅ +0.2	D4	D5 ∅ H10	D6
32	54	35.8	19	46	21	40	9.5	4.3	5.2	M5	8	M5
40	64	45.7	21	53	28	49	9.5	4.3	6.5	M6	10	M5
50	90	69.2	24	76	44	72	12	6.3	8.5	M8	12	M6
63	106	84.8	24	89	44	83	12	6.3	8.5	M8	12	M8

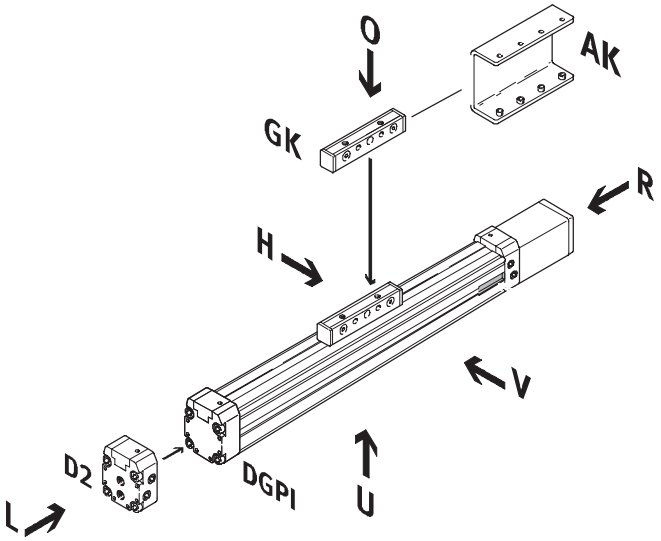
∅ [mm]	EE	H1	H2	H3	H4	H5	H6	H9	H13	J1	J2	J3
32	G1⁄8	72	66	62	23	27	5.8	5	10.3	19	4.2	14
40	G1⁄4	86	78	71.8	26.5	32	7.7	5	12.75	22	5	21
50	G1⁄4	115	106	99	36	45	9.7	21.8	16.6	31.8	6.8	29.3
63	G3⁄8	131	122	115	44.5	53	9.7	–28	30	36	8	31

∅ [mm]	J4	J5	J6	J7	J8	L1	L2	L3	L4	L5	L6	L7 ±0.1
32	4.7	15.4	4.2	10.3	20.6	345	125	17	8.5	31	135	50
40	9.1	23	9.1	12.75	25.5	397	150	11.5	11.5	31	171	70
50	6	20.6	6.8	21	21	465	175	14	14	34	206	80
63	14	27	8	25	25	513	200	14	14	34	234	110

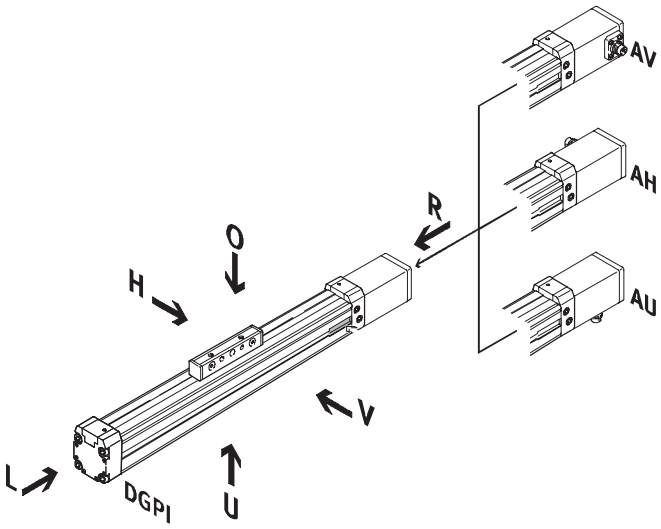
∅ [mm]	L8 ±0.1	L9 ±0.1	L10	L11	L12	L13	L14	L15	L16	T1	T2	T3	T6
32	100	30	17	8.5	19	126	27	26	9	13.2	3	7.5	12
40	130	40	10.8	16.5	21	128	29	26	10.8	13.2	4	10.5	12
50	150	50	10.8	18	22.8	149	80	25.2	12	15.2	6	12.5	15
63	190	70	14	24.5	31	147.5	68	16.5	16.5	21.2	6	12.5	20

Order code
Mandatory data/Options

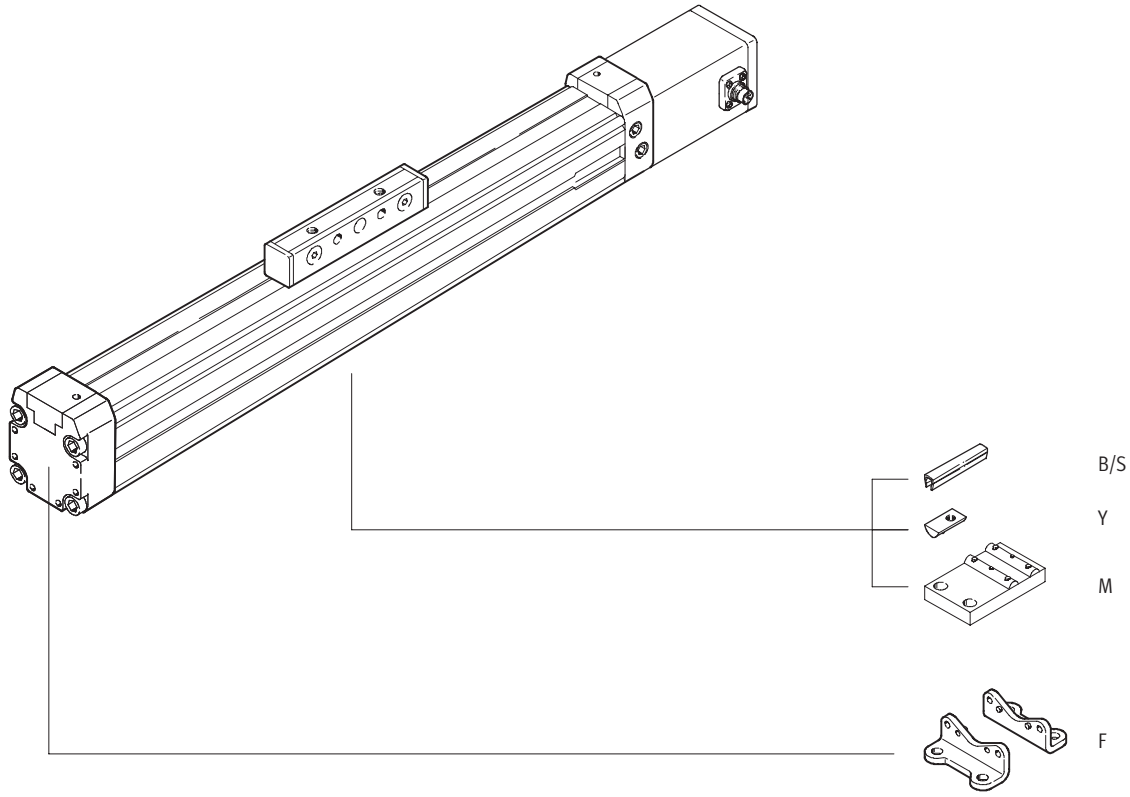
AK Load inverter
D2 Air connection at both ends
GK Standard slide



AV Displacement encoder connection to front
AH Displacement encoder connection to rear
AU Displacement encoder connection underneath



Order code
Options



Linear drives DGPI, integrated displacement encoder

Ordering data – Modular product system

FESTO

M Mandatory data →

Module No.	Drive function	Size	Stroke	Cushioning	Displacement encoder	Basic variant	Connection position for displacement encoder
175 134	DGPI	25	225 ... 2 000	PPV	AIF	GK	AH
175 135		32					AU
175 136		40					AV
175 137		50					
175 138		63					
Ordering example							
175 138	**DGPI**	**63**	**750**	**PPV**	**AIF**	**GK**	**AV**

Ordering table

Size		25	32	40	50	63	Conditions	Code		Enter code
M	Module No.	**175 134**	**175 135**	**175 136**	**175 137**	**175 138**				
	Drive function	Pneumatic linear drive with integrated displacement encoder						**DGPI**		DGPI
	Size	25	32	40	50	63		**-...**		
	Stroke [mm]	225, 300, 360, 450, 500, 600, 750, 1 000, 1 250, 1 500,1 750, 2 000						**-...**		
	Cushioning	Pneumatic cushioning adjustable at both ends						**-PPV**		-PPV
	Displacement encoder	Temposonic with CAN axis interface						**-AIF**		-AIF
	Basic variant	Standard piston/slide						**-GK**		-GK
	Connection position for displacement encoder AIF and compressed air	Connection position for displacement encoder and air supply port, rear						**-AH**		
		Connection position for displacement encoder and air supply port, underneath						**-AU**		
		Connection position for displacement encoder and air supply port, front						**-AV**		

Transfer order code

	DGPI	–		–		–	PPV	–	AIF	–	GK	–	

[O] Options

	Driver/Air supply port		Accessories		Slot cover		Slot nut	Central support	Foot mounting
	AK D2		ZUB		...S ...B		...Y	...M	...F
–	**AK**	:	**ZUB**	–	**2B2S**		**10Y**		**F**

Ordering table

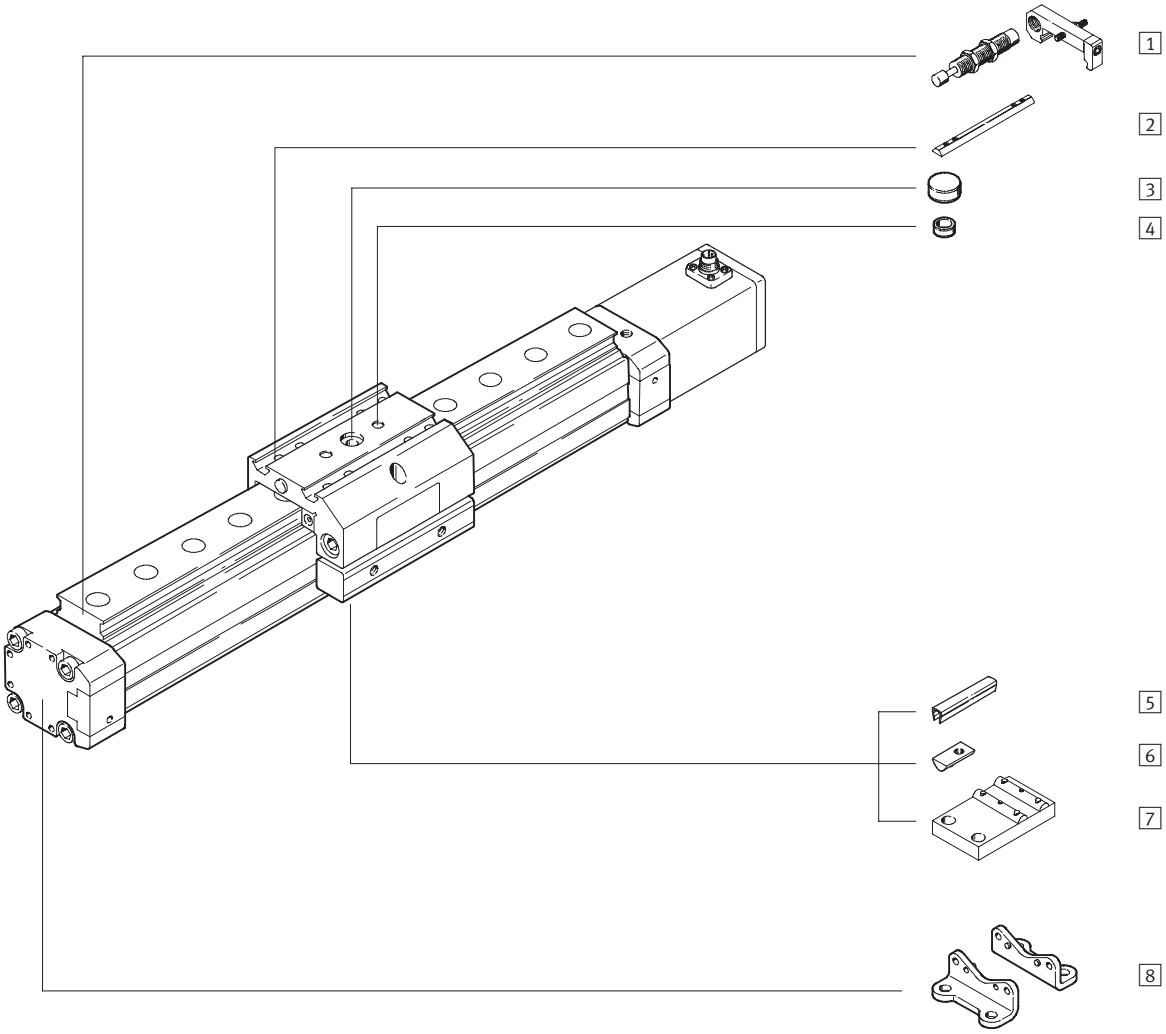
Size		25	32	40	50	63	Conditions	Code		Enter code
↓	Driver	Load inverter						**-AK**		
[O]	Air supply port	at both ends						**-D2**		
	Accessories	Supplied separately						**:ZUB-**		:ZUB-
	Slot cover, x2, 0.5 m – Sensor slot	1 ... 10						...S		
	Slot cover, x2, 0.5 m – Mounting slot	–	1 ... 10					...B		
	Slot nut – Mounting slot	–	1 ... 10					...Y		
	Central support	1 ... 10						...M		
	Foot mounting	1 ... 10						...F		

Transfer order code

–		:	**ZUB**	–					

Linear drives DGPIL, integrated displacement encoder

Peripherals overview



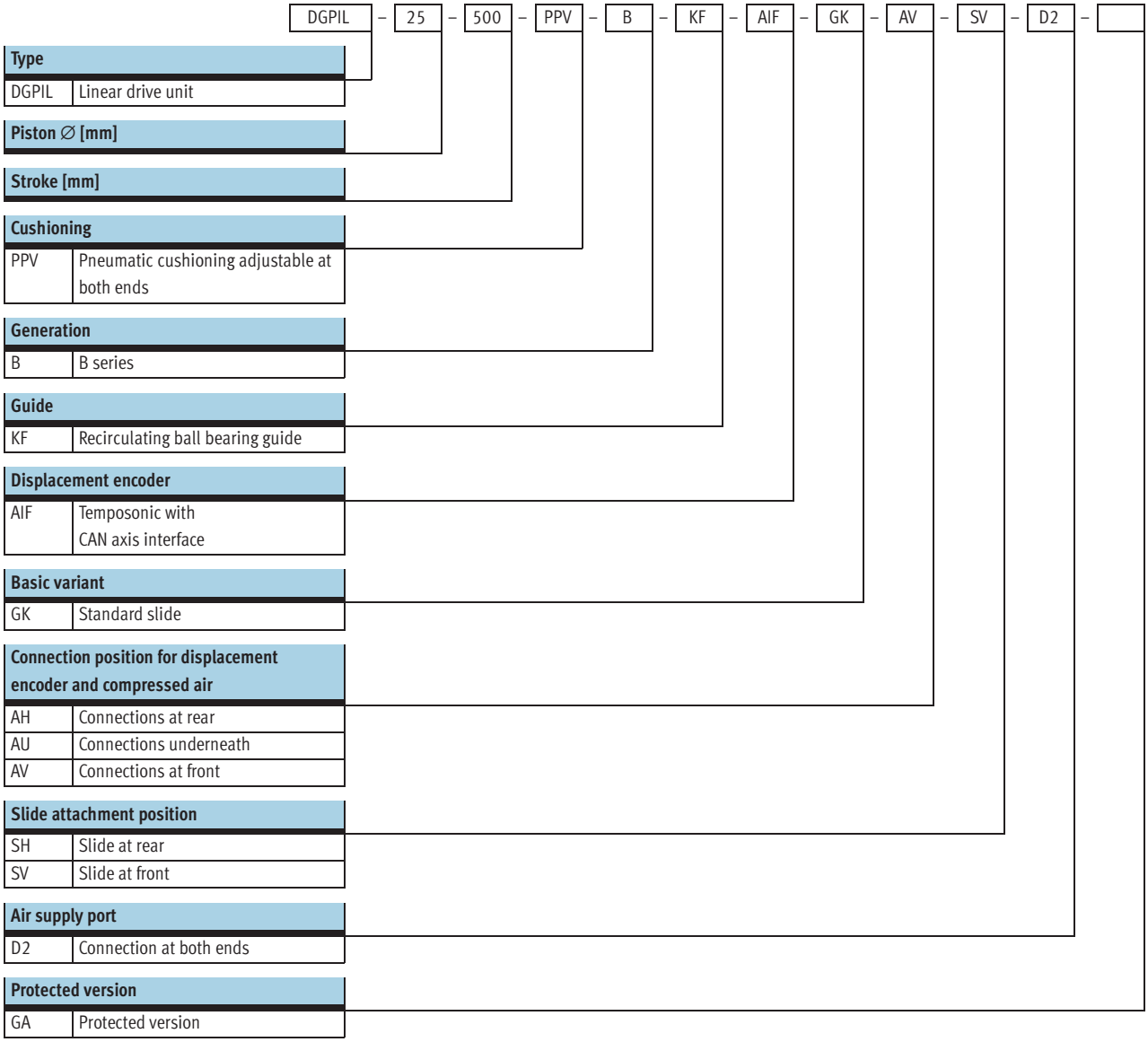
Linear drives DGPIL, integrated displacement encoder

Peripherals overview

Variants and accessories			
	Type	Brief description	➔ Page/Internet
1	Shock absorber kit C/E	to avoid damage at the end stop, in the event of malfunctions	122
2	Slot nut for slide X	for mounting loads and attachments on the slide	123
3	Central mounting Q	for centring loads and attachments on the slide	123
4	Centring sleeves Z	for centring loads and attachments on the slide	123
5	Slot cover B/S	to protect against the ingress of dirt	123
6	Slot nut for mounting slot Y	for mounting attachments	123
7	Central support M	to mount the axis	120
8	Foot mounting F	to mount the axis	120

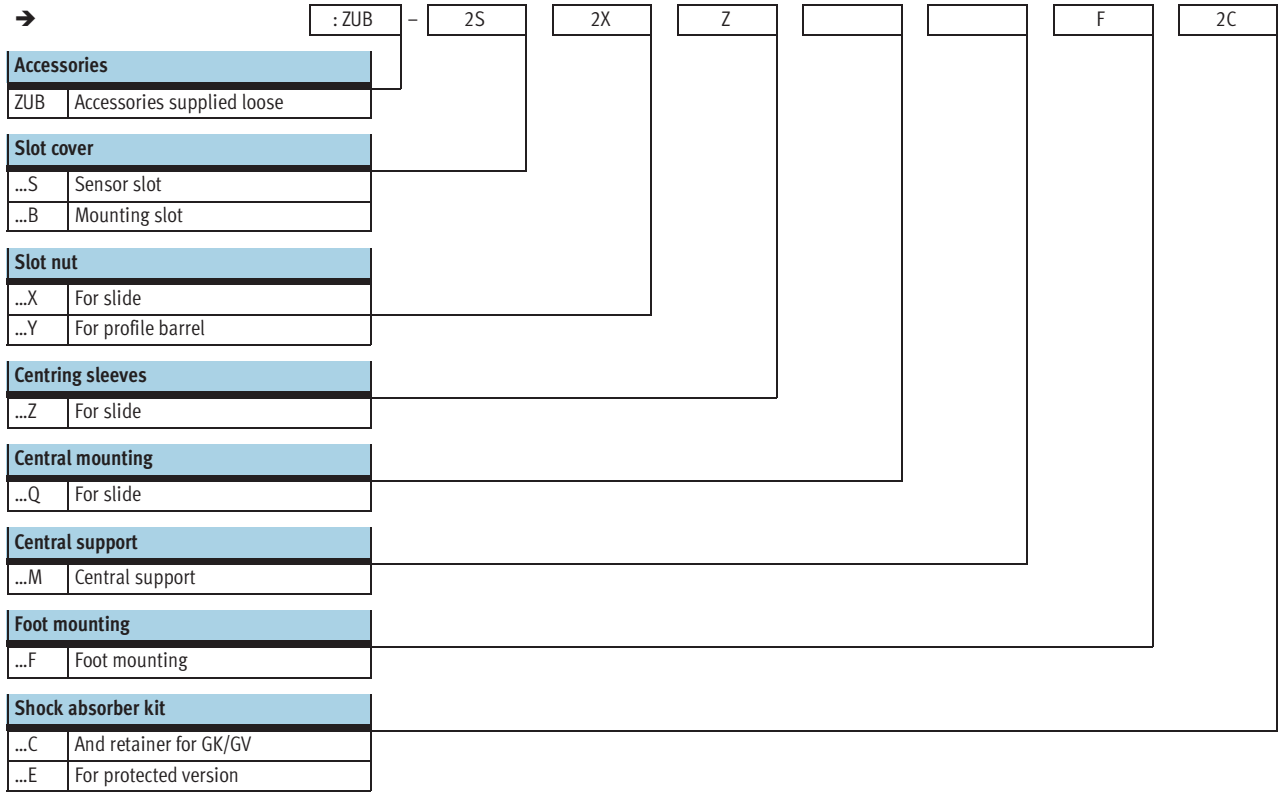
Linear drives DGPIL, integrated displacement encoder

Type codes



Linear drives DGPIL, integrated displacement encoder

Type codes

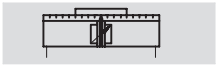


Linear drives DGPIL, integrated displacement encoder

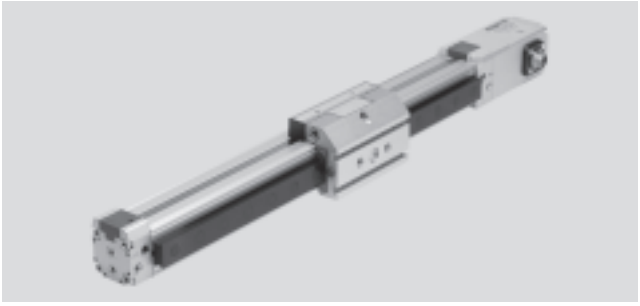
Technical data

FESTO

Function



- Ø - Diameter
  25 ... 63 mm
- l - Stroke length
  225 ... 2,000 mm



General technical data						
Piston ∅		25	32	40	50	63
Design		Piston				
		Driver				
		Profile barrel				
Mode of operation		Double-acting				
Operating medium[1]		Compressed air, filtered and unlubricated, filter unit 5 µm				
Cushioning		Pneumatic cushioning adjustable at both ends				
Cushioning length	[mm]	18	20	30		
Position sensing		Integrated displacement encoder				
Measuring principle		Digital, magnetostrictive, non-contacting, absolute measurement				
Type of mounting		Foot mounting				
Stroke[2)3)]	[mm]	225, 300, 360, 450, 500, 600, 750, 1,000, 1,250, 1,500, 1,750, 2,000				
Protection against torsion/guide		Guide rail with slide				
		Recirculating ball bearing				
Protected version[4]		Optional				
Pneumatic connection		G1/8		G1/4		G3/8
Electrical connection		6-pin round plug to DIN 45 322				

1) The proportional directional control valve MPYE used requires the characteristic values.
2) Note stroke reduction in conjunction with SPC200.
3) Supply of compressed air to each end of the cylinder (feature D2) is absolutely essential for Soft Stop SPC11 and axis controller SPC200 as of a length of 500 mm.
4) Protected from above and the sides against the ingress of particles

Forces [N] and impact energy [Nm]					
Piston ∅	25	32	40	50	63
Theoretical force at 6 bar	295	483	754	1,178	1,870
Max. impact energy at the end positions[1]	0.1	0.2	0.4	0.8	0.8

1) Cushioning PPV must be completely open for applications with Soft Stop SPC11 and axis controller SPC200.

Permissible impact velocity:

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{dead} + m_{load}}}$$

Maximum permissible load:

$$m_{load} = \frac{2 \times E_{perm.}}{v^2} - m_{dead}$$

$v_{perm.}$ Permissible impact velocity
$E_{perm.}$ Max. impact energy
m_{dead} Moving load (drive)
m_{load} Moving work load

Note

These specifications represent the maximum values which can be reached. Note the maximum permitted impact energy.

Linear drives DGPIL, integrated displacement encoder

Technical data

Positioning characteristics with axis controller SPC200						
Piston ∅		25	32	40	50	63
Repetition accuracy	[mm]	➔ 80				
Mounting position		Any				
Minimum load, horizontal[1)]	[kg]	2	3	5	8	12
Maximum load, horizontal[1)]	[kg]	30	45	75	120	180
Minimum load, vertical[1)]	[kg]	2	3	5	8	12
Maximum load, vertical[1)]	[kg]	10	15	25	40	60
Min. speed of travel	[m/s]	0.05				
Max. speed of travel	[m/s]	3				
Typ. positioning time, long stroke[2)]	[s]	0.75/1.20	0.85/1.20	0.75/1.20	0.95/1.25	0.90/1.20
Typ. positioning time, short stroke[3)]	[s]	0.40/0.60	0.45/0.60	0.40/0.60	0.50/0.65	0.50/0.65
Minimum positioning stroke[4)]	[%]	3				
Stroke reduction[5)]	[mm]	25		35		
Recommended proportional directional control valve		➔ 124				

1) Load = effective load + mass of all moving parts on the drive
2) At 6 bar, horizontal mounting position, DGPL-XX-1250, 1000 mm positioning travel at min./max. load
3) At 6 bar, horizontal mounting position, DNCM-XX-1250, 100 mm positioning travel at min./max. load
4) In relation to the maximum stroke of the drive, but never more than 20 mm.
5) The stroke reserve is to be maintained on every side of the drive, the max. positionable stroke is therefore: Stroke – 2x stroke reserve

Positioning characteristics with end position controller SPC11						
Piston ∅		25	32	40	50	63
Repetition accuracy of a mid-position[1)]	[mm]	±2				
Mounting position		Any				
Minimum load, horizontal[2)]	[kg]	2	3	5	8	12
Maximum load, horizontal[2)]	[kg]	30	45	75	120	180
Minimum load, vertical[2)]	[kg]	2	3	5	8	12
Maximum load, vertical[2)]	[kg]	10	15	25	40	60
Travel time	[s]	➔ Sizing software “Smart Soft Stop”:➔ www.festo.com				
Recommended proportional directional control valve		➔ 124				

1) In the stroke range from 225 ... 2,000 mm
2) Load = effective load + mass of all moving parts on the drive

Operating and environmental conditions						
Piston ∅		25	32	40	50	63
Operating pressure[1)]	[bar]	4 ... 8				
Ambient temperature	[°C]	–10 ... +60				
Vibration resistance		To DIN/IEC 68 Parts 2 -6, severity level 1				
Continuous shock resistance		To DIN/IEC 68 Parts 2 -27, severity level 1				
CE marking symbol (see conformity declaration)		As per EU EMC directive				
Protection class (displacement encoder)		IP65 to IEC 60 529				

1) Only applies for applications with Soft Stop SPC11 and axis controller SPC200.

Linear drives DGPIL, integrated displacement encoder

Technical data

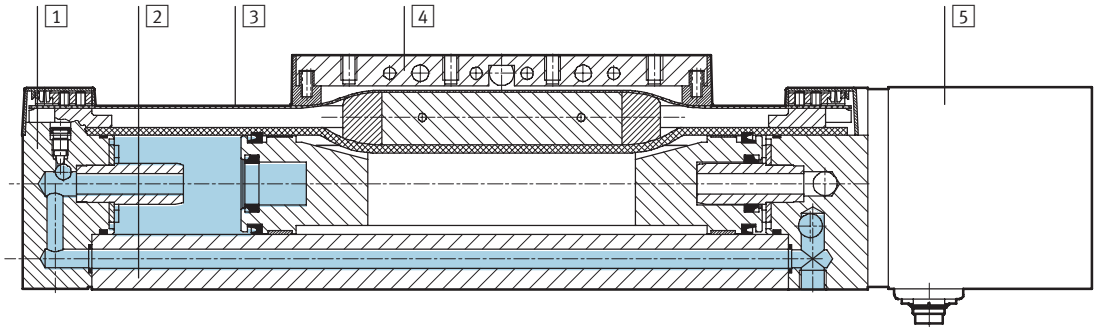
Weights [g]					
Piston ∅	25	32	40	50	63
Standard slide GK					
Basic weight	2,220	3,320	5,330	10,700	16,870
Additional weight per 10 mm stroke	55	71	99	186	256
Moving load	605	895	1,700	3,000	4,990
Additional weights for protected version GA					
Dirt protection cover	1,690	2,500	4,000	–	–
Additional weight per 10 mm stroke	26	42	65	–	–
Moving load	907	1,350	2,550	–	–

Electrical data, displacement encoder			
Power supply		[V DC]	24 (–15/+25%)
Max. current consumption		[mA]	90
Resolution		[mm]	≤ 0.01
Independent linearity[1]	maximum	[%]	0.02
Temperature coefficient		[ppm/°K]	≤ 15
Interface			Digital, CAN with protocol: SPC-AIF

1) Minimum ±50 µm

Materials

Sectional view



Drive		
1	End cap	Anodised aluminium
2	Profile	Anodised aluminium
3	Cover strip	Steel, corrosion resistant
4	Driver	Anodised aluminium
5	Displacement encoder housing	Anodised aluminium
–	Slide	Anodised aluminium
–	Guide rail	Corrosion resistant steel
–	Seals	Nitrile rubber, polyurethane

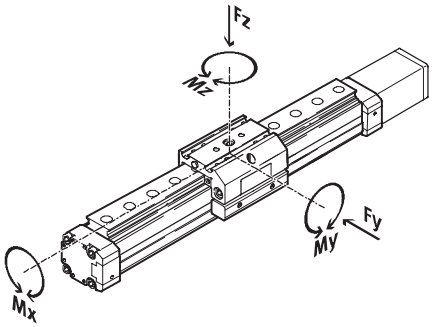
Note

Further technical data

➔ Internet: dgpl

Characteristic load values

The forces and torques specified refer to the centre line of the profile barrel internal diameter.
They must not be exceeded during dynamic operation. Special attention must be paid to the cushioning phase.



If the drive is subjected to more than two of the indicated forces and torques simultaneously, the following equations must be satisfied in addition to the indicated maximum loads.

$$\frac{Fy}{Fy_{max.}} + \frac{Fz}{Fz_{max.}} + \frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + \frac{Mz}{Mz_{max.}} \leq 1$$

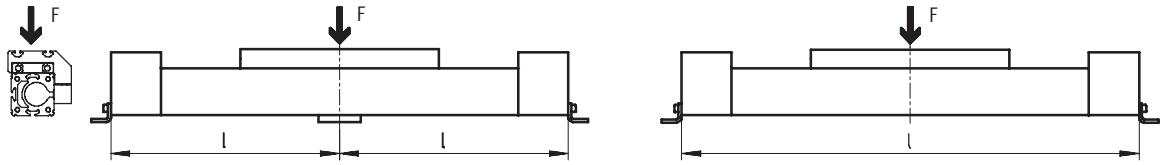
Permissible forces and torques

Piston ∅		25	32	40	50	63
$Fy_{max.}$	[N]	3,080	3,080	7,300	7,300	14,050
$Fz_{max.}$	[N]	3,080	3,080	7,300	7,300	14,050
$Mx_{max.}$	[Nm]	45	63	170	240	580
$My_{max.}$	[Nm]	85	127	330	460	910
$Mz_{max.}$	[Nm]	85	127	330	460	910

Maximum permissible support span l as a function of the force F

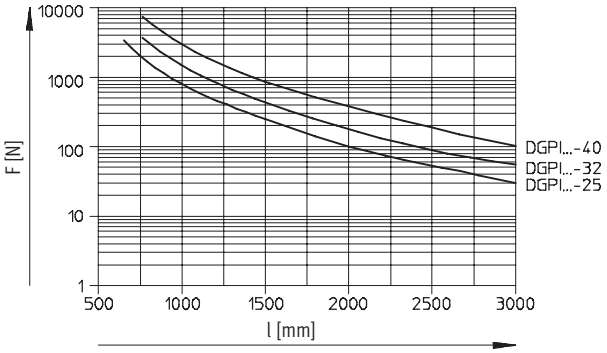
The axis may need to be supported with central supports MUP in order to limit deflection in the case of large strokes. The following diagrams serve to determine the maximum permissible support span l as a function of the force F.

Force on the surface of the slide

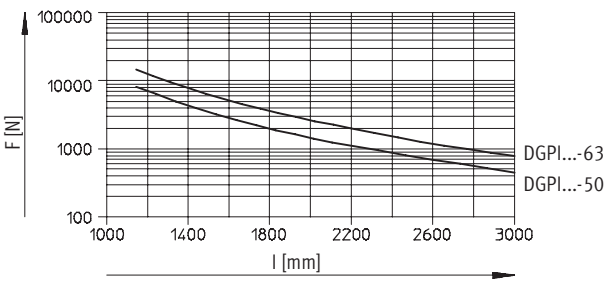


Maximum support span l (without central support) as a function of the force F

Piston ∅ 25 ... 40



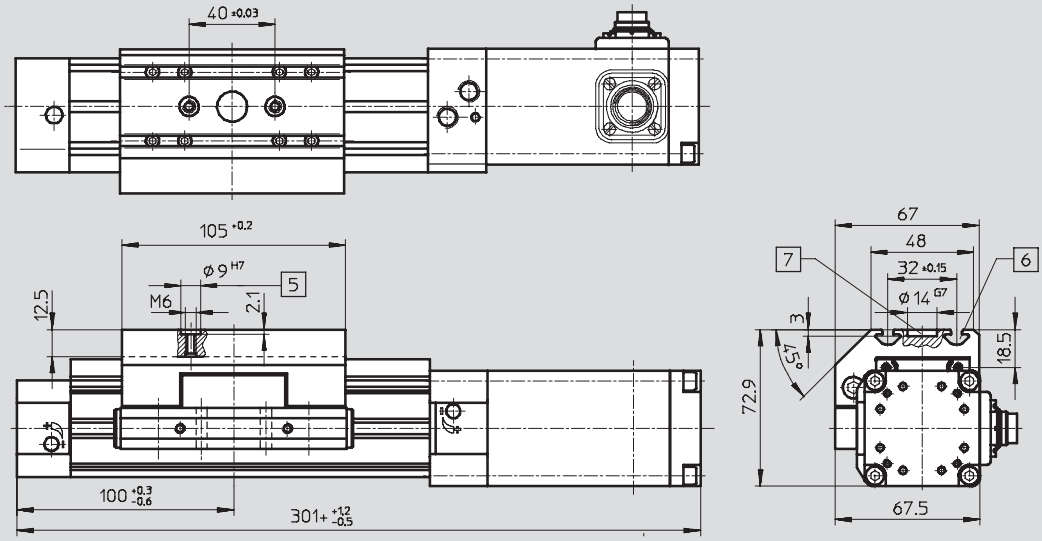
Piston ∅ 50/63



Dimensions Download CAD Data ➔ **www.festo.com/us/cad**

Standard slide GK

Piston ∅ 25



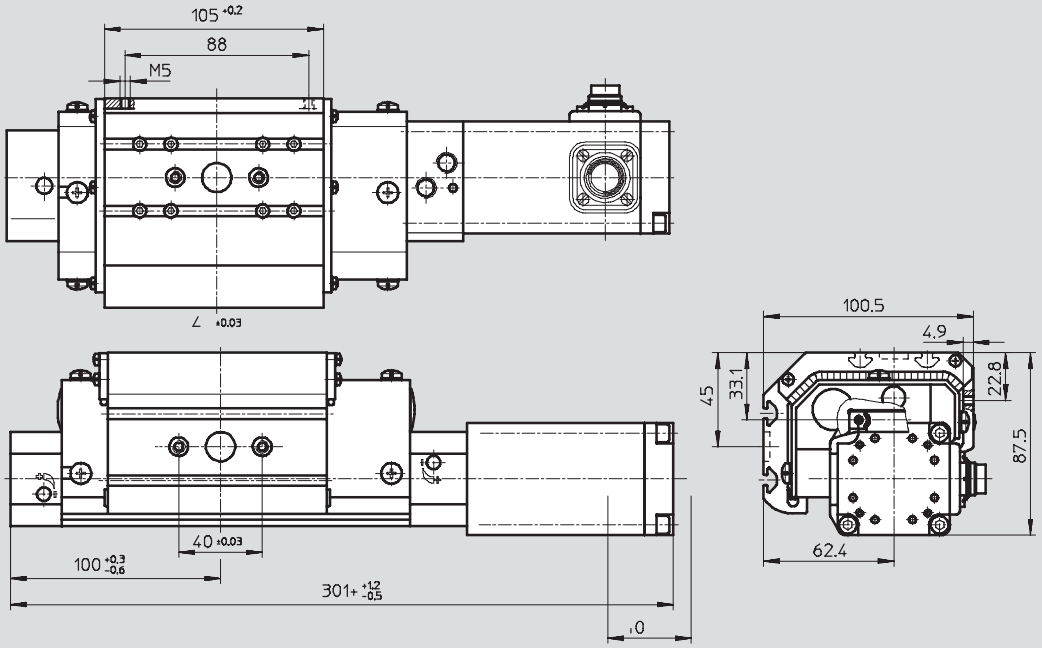
5 Hole for centring sleeve ZBH-9
6 Mounting slot for slot nut NSTL
7 Drilled hole for central mounting SLZZ

\+ = plus stroke length

Basic dimensions
➔ 98

Protected version GA

Piston ∅ 25



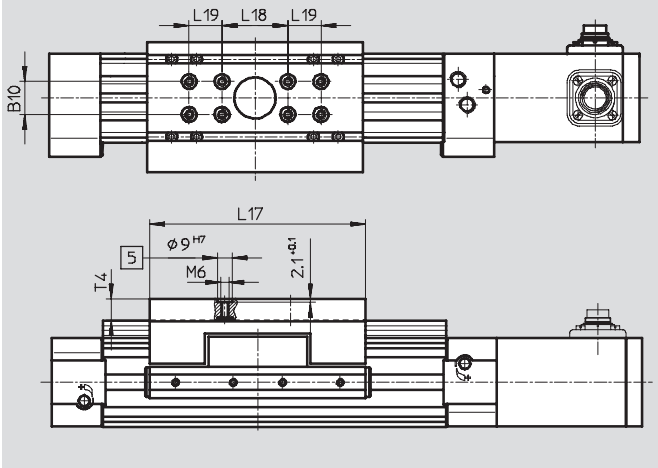
\+ = plus stroke length

Basic dimensions
➔ 98

Dimensions Download CAD Data ➔ **www.festo.com/us/cad**

Standard slide GK

Piston ∅ 32 ... 63

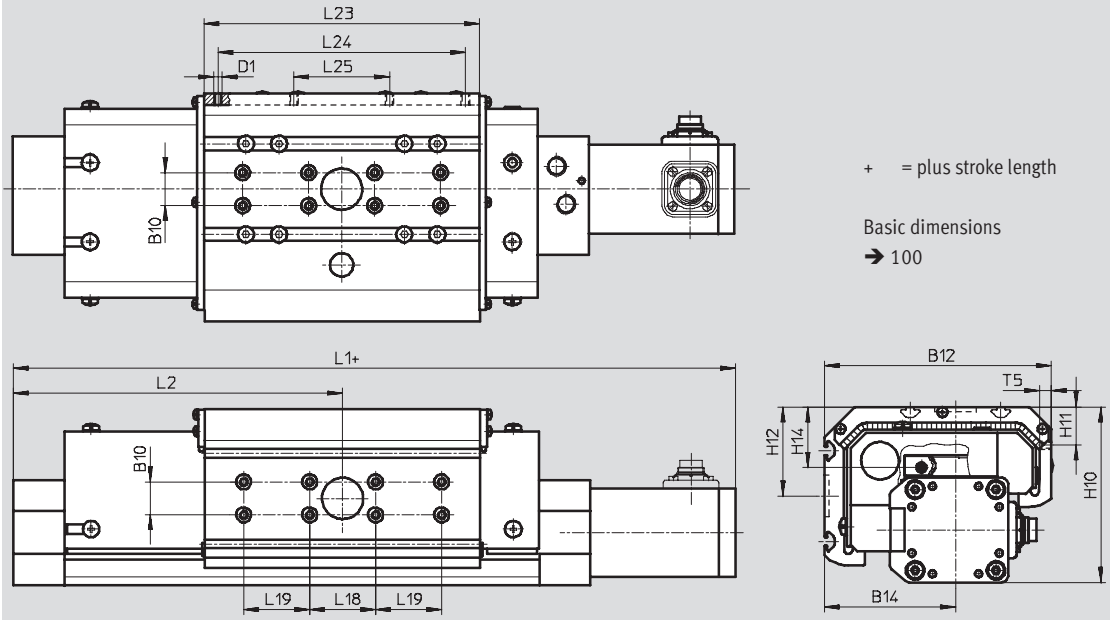


5 Hole for centring sleeve ZBH-9
6 Mounting slot for slot nut NSTL
7 Drilled hole for central mounting SLZZ
\+ = plus stroke length

Basic dimensions
➔ 100

Protected version GA

Piston ∅ 32/40



\+ = plus stroke length

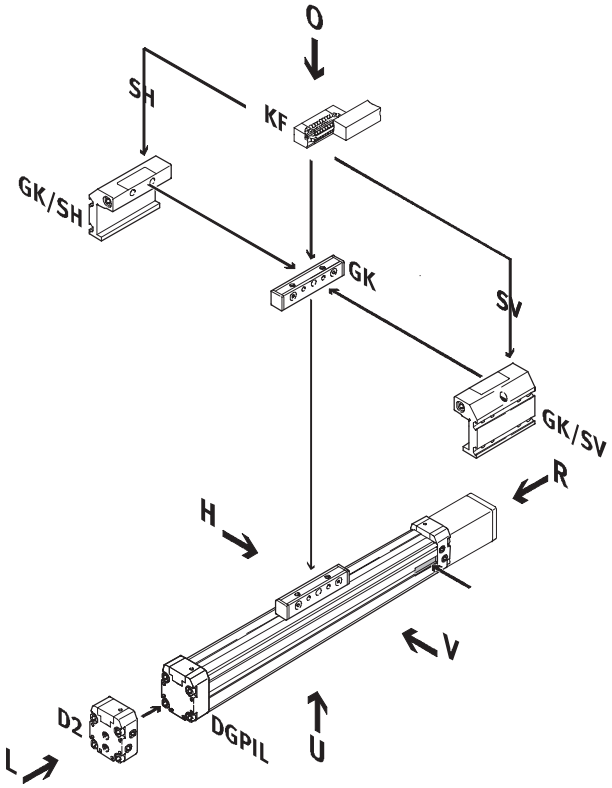
Basic dimensions
➔ 100

∅ [mm]	B7	B8	B9	B10 ±0.03	B12	B14	D1	H1	H7	H8	H10
32	63	79	47 ±0.15	20	112.1	67.6	–	72	77.5	18.5	93.1
40	78.5	96.5	55 ±0.2	20	137.6	79.6	M5	86	90.5	20	106.6
50	97	122	72 ±0.2	40	–	–	–	115	122.5	26	–
63	121	142	90 ±0.25	40	–	–	–	131	144.5	30	–

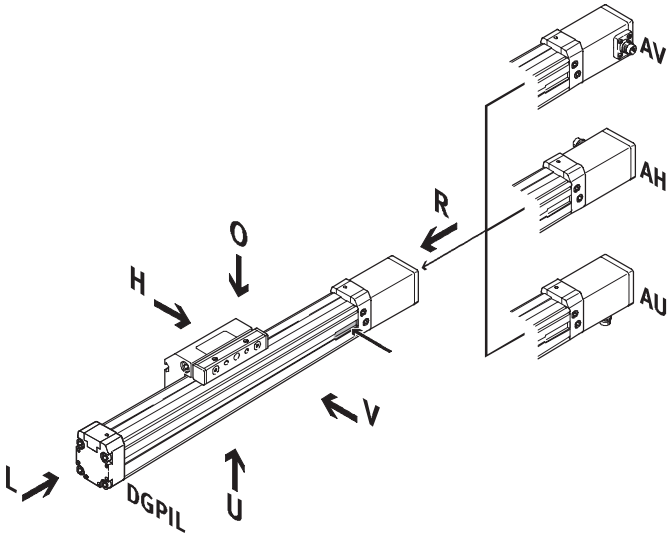
∅ [mm]	H11	H12	H14	L1	L2	L17 +0.2	L18 ±0.03	L19 ±0.03	L23	L24	L25	T4 max.	T5
32	–	49.5	34.1	345	125	131	40	–	131	–	–	12.5	–
40	23.1	54	36.1	397	150	167	40	40	167	150	58	12.5	7
50	–	–	–	465	175	202	40	40	–	–	–	18.5	–
63	–	–	–	513	200	230	40	40	–	–	–	20.5	–

Order code
Mandatory data

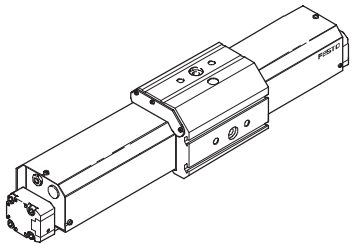
KF Recirculating ball bearing guide
SH Slide at rear
SV Slide at front
D2 Air connection at both ends
GK Standard slide



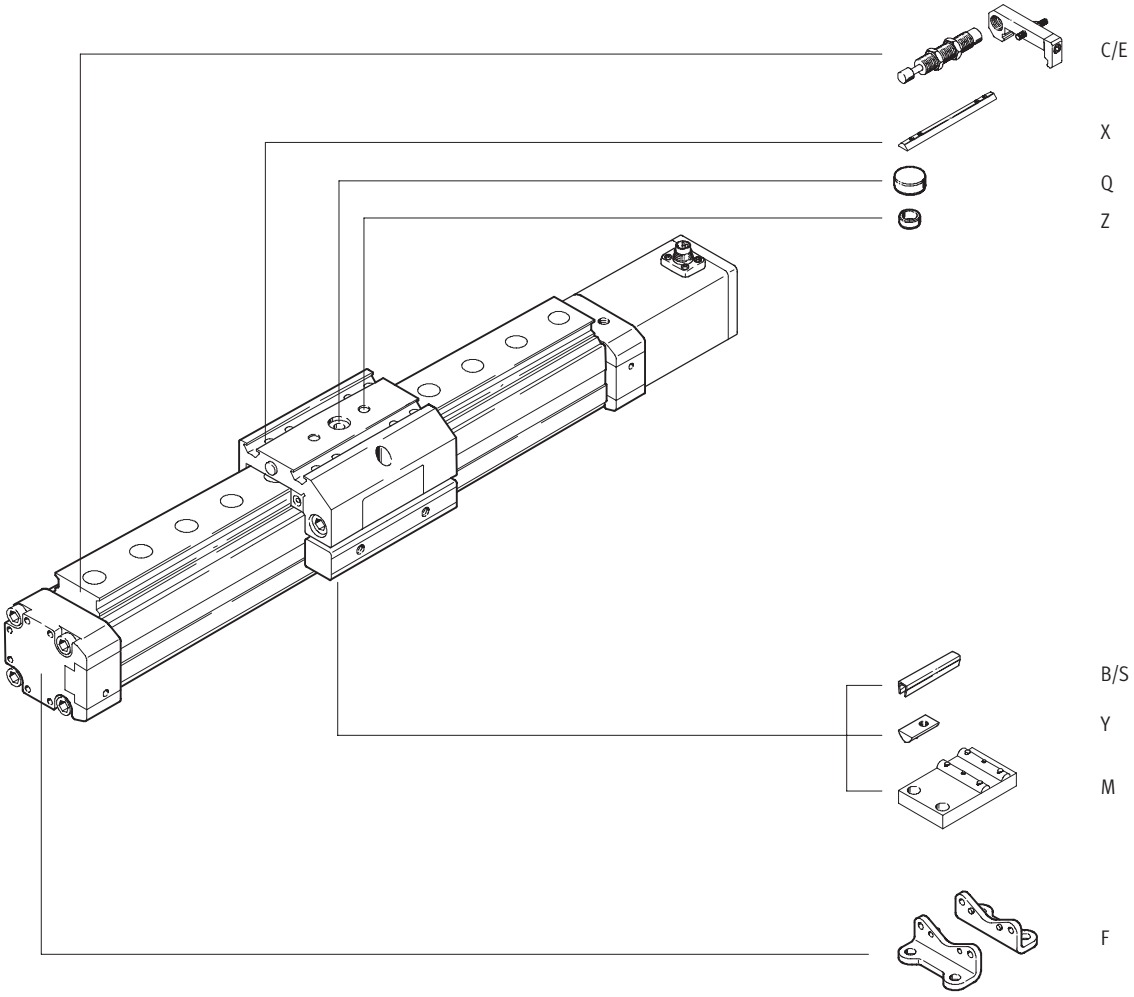
AV Displacement encoder connection to front
AH Displacement encoder connection to rear
AU Displacement encoder connection underneath



GA Protected version



Order code
Options



Linear drives DGPIL, integrated displacement encoder

Ordering data – Modular product system

FESTO

M **Mandatory data**

Module No.	Drive function	Size	Stroke	Cushioning	Generation	Guide	Displacement encoder	Basic variant	Connection position for displacement encoder	Slide attachment position
175 134	DGPIL	25	225 ...	PPV	B	KF	AIF	GK	AH	SH
175 135		32	2 000						AU	SV
175 136		40							AV	
175 137		50								
175 138		63								
Ordering example										
175 134	**DGPIL**	**25**	**450**	**PPV**	**B**	**KF**	**AIF**	**GK**	**AU**	**SH**

Ordering table

Size		25	32	40	50	63	Conditions	Code		Enter code
M	Module No.	**175 134**	**175 135**	**175 136**	**175 137**	**175 138**				
	Drive function	Pneumatic linear drive with integrated displacement encoder and slide						**DGPIL**		DGPIL
	Size	25	32	40	50	63		**-...**		
	Stroke [mm]	225, 300, 360, 450, 500, 600, 750, 1 000, 1 250, 1 500.1 750, 2 000						**-...**		
	Cushioning	Pneumatic cushioning adjustable at both ends						**-PPV**		-PPV
	Generation	B series						**-B**		-B
	Guide	Recirculating ball bearing guide						**-KF**		-KF
	Displacement encoder	Temposonic with CAN axis interface						**-AIF**		-AIF
	Basic variant	Standard piston/slide						**-GK**		-GK
	Connection position for displacement encoder AIF and compressed air	Connection position for displacement encoder and air supply port, rear						**-AH**		
		Connection position for displacement encoder and air supply port, underneath						**-AU**		
		Connection position for displacement encoder and air supply port, front						**-AV**		
	Slide attachment position	Slide at rear						**-SH**		
↓		Slide at front						**-SV**		

Transfer order code

	DGPIL	–		–		–	**PPV**	–	**B**	–	**KF**	–	**AIF**	–	**GK**	–		–		–

Linear drives DGPIL, integrated displacement encoder

Ordering data – Modular product system

FESTO

[0] Options

	Air supply port		Protected version		Accessories		Slot cover		Slot nut		Centring sleeve		Central support		Central mounting		Foot mounting		Shock absorber
	D2		GA		ZUB		...S ...B		...X ...Y		...Z		...M		...Q		...F		...C ...E
–	**D2**	–		:	**ZUB**	–	**2S2B**		**2X**								**F**		**2C**

Ordering table

Size			25	32	40	50	63	Conditions	Code		Enter code
↓	Air supply port		at both ends						**-D2**		
[0]	Protected version		Protected roller bearing design for harsh environment		–	–	–		**-GA**		
	Accessories		Supplied separately						**:ZUB-**		:ZUB-
	Slot cover, x2, 0.5 m	Sensor slot	1 ... 10						**...S**		
		Mounting slot	–	1 ... 10					**...B**		
	Slot nut	Slide	1 ... 10						**...X**		
		Mounting slot	–	1 ... 10					**...Y**		
	Centring sleeve (pack of 10)		10, 20, 30, 40, 50, 60, 70, 80, 90						**...Z**		
	Central support		1 ... 10						**...M**		
	Central mounting		1 ... 10						**...Q**		
	Foot mounting		1 ... 10						**...F**		
	Shock absorber kit	with retainer, 1-off	1 ... 10					[1]	**...C**		
			1 ... 10		–	–	–	[2]	**...E**		

[1] **C** Not with protected version GA.

[2] **E** Only with protected version GA.

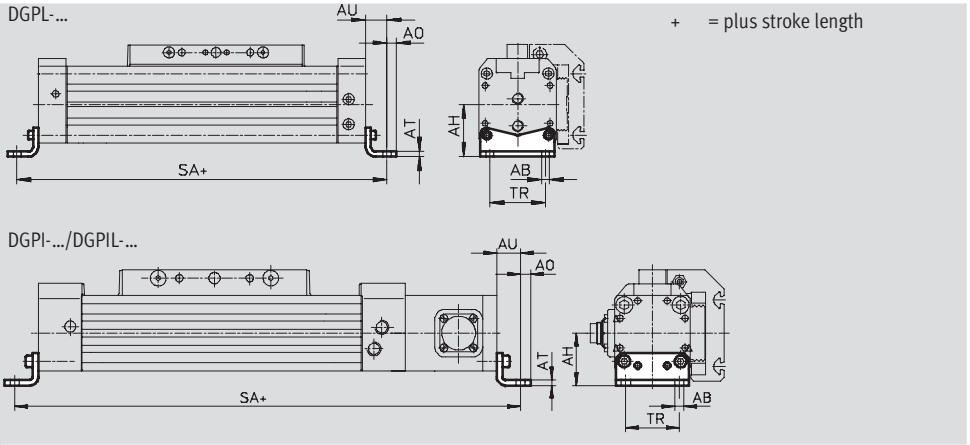
Transfer order code

–		–		:	**ZUB**	–								

Foot mounting HP
(Order code: F)

Material:
Galvanised steel

Free of copper, PTFE and silicone



\+ = plus stroke length

Dimensions and ordering data

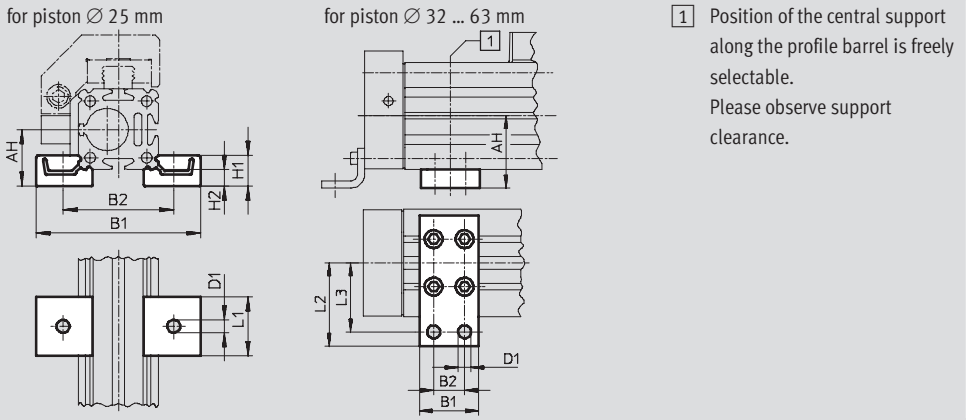
for ∅ [mm]	AB ∅	AH	AO	AT	AU	SA DGPL	SA DGPI(L)	TR	Weight [g]	Part No.	Type
25	5.5	29.5	6	3	13	226	327	32.5	61	**150 731**	**HP-25**
32	6.6	37	7	4	17	284	379	38	117	**150 732**	**HP-32**
40	6.6	46	8.5	5	17.5	335	432	45	188	**150 733**	**HP-40**
50	9	61	11	6	25	400	515	65	243	**150 734**	**HP-50**
63	11	69	13.5	6	28	456	569	75	305	**150 735**	**HP-63**

Central support MUP
(Order code: M)

Material:
Galvanised steel

Free of copper, PTFE and silicone

MUP-40



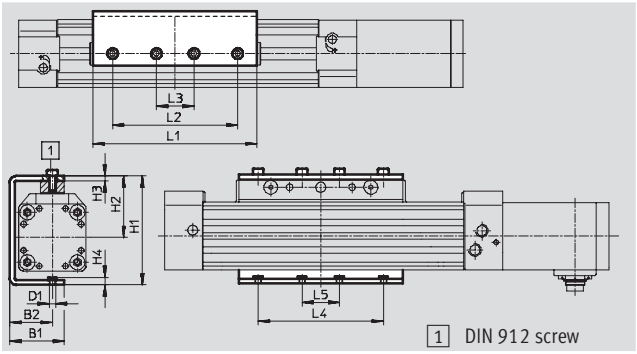
[1] Position of the central support along the profile barrel is freely selectable.
Please observe support clearance.

Dimensions and ordering data

for ∅ [mm]	AH	B1	B2	D1 ∅	H1	H2	L1	L2	L3	Weight [g]	Part No.	Type
25	29.5	81	58	5.5	13	7	25	–	–	33	**150 736**	**MUP-18/25**
32	37	35	22	6.6	–	–	–	41.5	35	89	**150 737**	**MUP-32**
40	46	35	22	6.6	–	–	–	47	40	126	**150 738**	**MUP-40**
50	61	50	26	11	–	–	–	70	58	241	**150 739**	**MUP-50**
63	69	50	26	11	–	–	–	77	65	340	**150 800**	**MUP-63**

Load inverter AK
for DGPI
(Order code: AK)

Material:
Galvanised steel



Dimensions and ordering data

for ∅ [mm]	B1	B2	D1	H1	H2	H3	H4	L1	L2
25	39	29.5	M5	76.1	43.5	3	5	105	–
32	43.5	34	M5	87	49	4	6	131	100
40	50.5	40	M6	104	58	4	8.1	167	130
50	67	55	M8	138.5	75	5	10.5	202	150
63	77	65	M8	156.5	84	6	11.5	230	190

for ∅ [mm]	L3	L4	L5	1	CRC[1)]	Weight [g]	Part No.	Type
25	50	50	20	M5x10	2	380	**196 106**	**AK-25**
32	30	100	30	M5x12		690	**196 107**	**AK-32**
40	40	130	40	M6x14		1,050	**196 108**	**AK-40**
50	50	150	50	M8x16		2,080	**196 109**	**AK-50**
63	70	190	70	M8x18		2,820	**196 110**	**AK-63**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Shock absorber DG-GA
for DGPIL
Protected version GA
(Order code: E)

Material:
Housing: Galvanised steel; piston rod: high-alloy steel
Seals: Perbunan, polyurethane
Free of copper, PTFE and silicone

Ordering data

for ∅ [mm]	Weight [g]	Part No.	Type
25	70	**192 875**	**DG-GA-25-YSR**
32	110	**192 876**	**DG-GA-32-YSR**
40	140	**192 877**	**DG-GA-40-YSR**

Shock absorber YSR-...-C
for DGPL/DGPIL
(Order code: C)

Material:
Housing: Galvanised steel; piston rod: high-alloy steel,
Seals: Perbunan, polyurethane
Free of copper, PTFE and silicone

Note

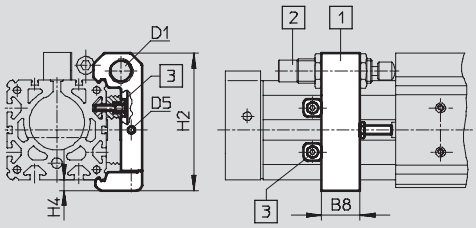
Shock absorber YSRW with progressive characteristic
➔ Internet: ysrw

Ordering data

for ∅ [mm]	Weight [g]	Part No.	Type
25	70	**34 572**	**YSR-12-12-C**
32	70	**34 572**	**YSR-12-12-C**
40	140	**34 573**	**YSR-16-20-C**
50	140	**34 573**	**YSR-16-20-C**
63	240	**34 574**	**YSR-20-25-C**

Shock absorber retainer KYP
for DGPL/DGPIL
(Order code: C)

Material:
Retainer: Aluminium
Sleeve: Steel, corrosion resistant



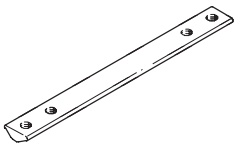
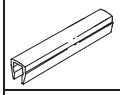
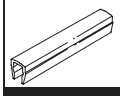
1 Shock absorber retainer KYP (if the retainer is in contact with the front cap, i.e. cap serves to secure the position, the entire stroke length can be utilised)

2 Shock absorber YSR-...-C

3 Position retainer (included in scope of delivery) either behind or underneath the shock absorber retainer KYP

Dimensions and ordering data

for ∅ [mm]	B8	D1	D5	H2	H4	Weight [g]	Part No.	Type
25	19	M16x1	M5	69.5	6	95	**158 908**	**KYP-25**
32	25	M16x1	M5	80	8	130	**158 909**	**KYP-32**
40	32	M22x1.5	M5	102	8	209	**158 910**	**KYP-40**
50	35	M22x1.5	M8	124	10	415	**158 911**	**KYP-50**
63	44	M26x1.5	M10	152.5	11.5	609	**158 912**	**KYP-63**

Ordering data	for ∅ [mm]	Remarks	Order code	Part No.	Type	PU[1]
Slot nut NST					Technical data ➔ Internet: nst	
	25	For mounting slot	Y	**526 091**	**NST-HMV-M4**	1
	32, 40			**150 914**	**NST-5-M5**	1
	50, 63			**150 915**	**NST-8-M6**	1
Slot nut NSTL					Technical data ➔ Internet: nstl	
	25	For slide	X	**158 410**	**NSTL-25**	1
	32			**158 411**	**NSTL-32**	1
	40			**158 412**	**NSTL-40**	1
	50			**158 413**	**NSTL-50**	1
	63			**158 414**	**NSTL-63**	1
Centring sleeve ZBH					Technical data ➔ Internet: zbh	
	25 ... 63	For slide	Z	**150 927**	**ZBH-9**	10
Central mounting SLZZ					Technical data ➔ Internet: slzz	
	25	For slide	Q	**150 900**	**SLZZ-16/10**	1
	32, 40			**150 901**	**SLZZ-25/16**	
	50, 63			**150 904**	**SLZZ-50/40**	1
Slot cover ABP					Technical data ➔ Internet: abp	
	32, 40	For mounting slot 0.5 m each	B	**151 681**	**ABP-5**	2
	50, 63			**151 682**	**ABP-8**	
Slot cover ABP-S					Technical data ➔ Internet: abp	
	25 ... 63	For sensor slot 0.5 m each	S	**563 360**	**ABP-5-S1**	2

1) Packaging unit quantity

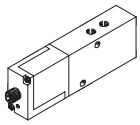
Ordering data – Push-in/threaded fittings	for ∅ [mm]	Remarks	Part No.	Type	PU[1]
					Technical data ➔ Internet: quick star
	25, 32	For connecting compressed air tubing	**186 098**	**QS-G⅛-8**	10
	40, 50		**186 099**	**QS-G¼-8**	
			186 101	**QS-G¼-10**	10
	63		**186 100**	**QS-G⅜-8**	10
			186 102	**QS-G⅜-10**	
			186 103	**QS-G⅜-12**	

1) Packaging unit quantity

Ordering data – Proportional directional control valves Technical data ➔ Internet: mpye

Selection aid

Application	for ∅ [mm]	Stroke [mm]											
		225	300	360	450	500	600	750	1,000	1,250	1,500	1,750	2,000
horizontal/vertical	**For applications with axis controller SPC200**												
	25	1/1	1/1	1/1	1/1	1/1	1/1	1/1	2/2	2/2	2/2	2/2	2/2
	32	1/1	1/1	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
	40	1/1	2/2	2/2	2/2	2/2	2/2	2/2	3/3	3/3	3/3	3/3	3/3
	50	2/2	2/2	2/2	2/2	2/2	3/3	3/3	3/3	3/3	3/3	3/3	3/3
	63	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	4/4	4/4	4/4	4/4
	For applications with Soft Stop end position controller SPC11												
	25	1/[1)]	1/1	2/1	2/1	2/1	2/2	2/2	2/3	2/3	2/3	2/3	2/3
	32	1/[1)]	2/1	2/1	2/1	2/1	2/1	3/2	3/3	3/3	3/3	3/3	3/3
	40	2/1	2/1	2/1	2/1	2/2	3/3	3/4	3/4	3/4	3/4	3/4	3/4
	50	1/1	2/1	2/2	3/2	3/3	4/3	4/4	4/4	4/4	4/4	4/4	4/4
	63	2/1	2/2	3/3	3/3	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4

Valve	Selection number	Part No.	Type
	1	**151 692**	**MPYE-5-⅛-LF-010-B**
	2	**151 693**	**MPYE-5-⅛-HF-010-B**
	3	**151 694**	**MPYE-5-¼-010-B**
	4	**151 695**	**MPYE-5-⅜-010-B**

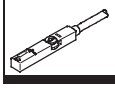
1) On request

Note

The representation e.g. 2/1 in the columns means:

Selection number 2	Selection number 1
for horizontal application	for vertical application
151 693 MPYE-5-⅛-HF-010-B	151 692 MPYE-5-⅛-LF-010-B

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 lengthwise, flush with the cylinder profile	PNP	Plug M8x1, 3-pin	0.3	**175 484**	**SMT-8-PS-S-LED-24-B**
N/C contact						
	Insertable in the slot from above, flush with cylinder profile	PNP	Cable, 3-wire	7.5	**543 873**	**SMT-8M-PO-24V-K7,5-OE**

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
N/O contact						
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	**150 855**	**SME-8-K-LED-24**
			Plug M8x1, 3-pin	0.3	**150 857**	**SME-8-S-LED-24**
N/C contact						
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	**160 251**	**SME-8-O-K-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	**541 333**	**NEBU-M8G3-K-2.5-LE3**
			5	**541 334**	**NEBU-M8G3-K-5-LE3**
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541 338**	**NEBU-M8W3-K-2.5-LE3**
			5	**541 341**	**NEBU-M8W3-K-5-LE3**

New
Size 63

Swivel modules DSMI-B, integrated angular displacement encoder

Key features

Individual components for positioning with axis controller CPX-CMAX or end-position controller CPX-CMPX

Axis controller/
End-position controller
CPX-CMAX/
CPX-CMPX

Proportional
directional control valve
VPWP

Sensor interface
CASM-S-D2-R3

Swivel module
DSMI

Individual components for positioning with axis controller SPC200 or end-position controller SPC11

Axis controller
SPC200

Proportional
directional control valve
MPYE

Axis interface
SPC-AIF-POT-LWG

Swivel module
DSMI

End-position controller
SPC11

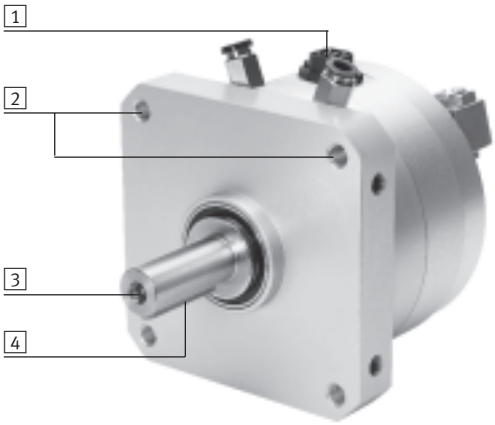
Proportional
directional control valve
MPYE

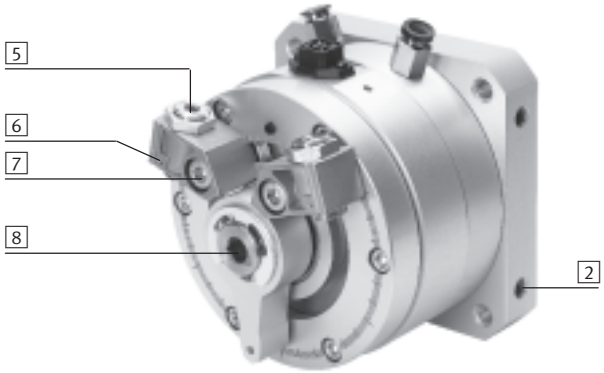
Swivel module
DSMI

Swivel modules DSMI-B, integrated angular displacement encoder

Key features

At a glance

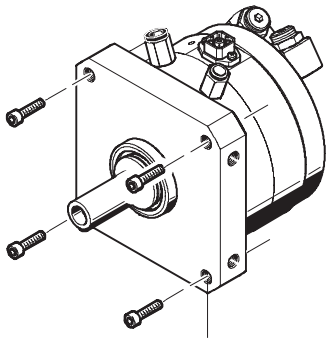




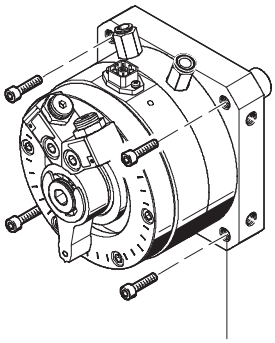
1 Connector plug for displacement encoder
2 Wide range of integrated mounting options
3 Option for mounting on the drive shaft by the user
4 Woodruff key
5 Fixed stop with precision adjustment of the swivel angle
6 Bracket for mounting proximity sensor for contactless position sensing
7 Fixed stop can be set at any point within the swivel angle
8 Manual operation via internal hexagon socket in the drive shaft

A female thread is already integrated for attachment of an additional drive shaft by the user.

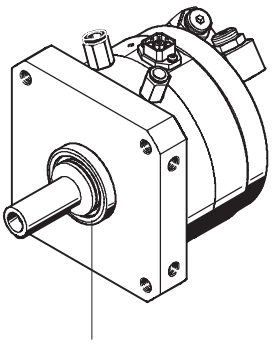
Mounting options



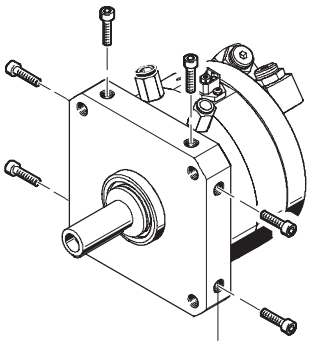
Threaded through-hole



Threaded through-hole



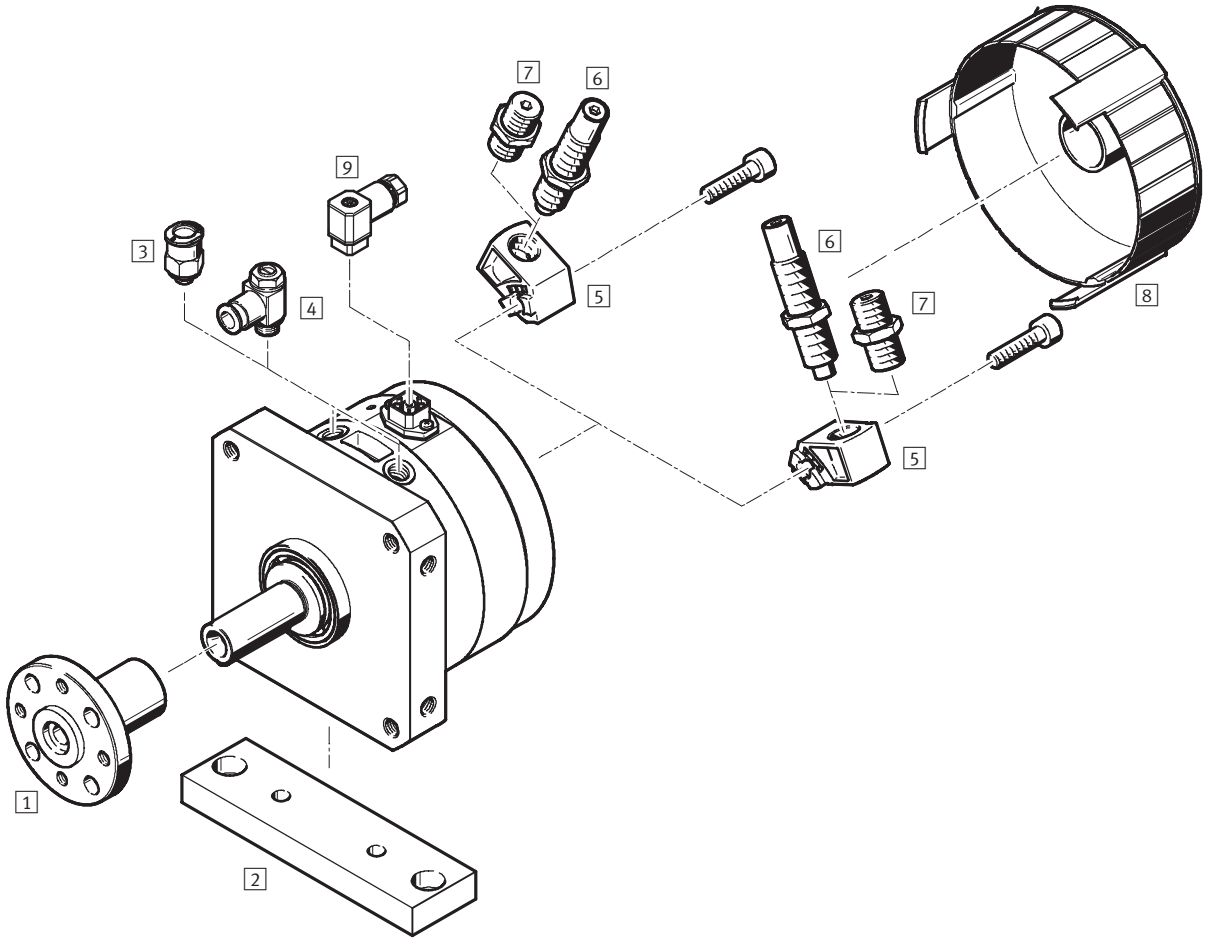
Centring collar



Basic thread

Swivel modules DSMI-B, integrated angular displacement encoder

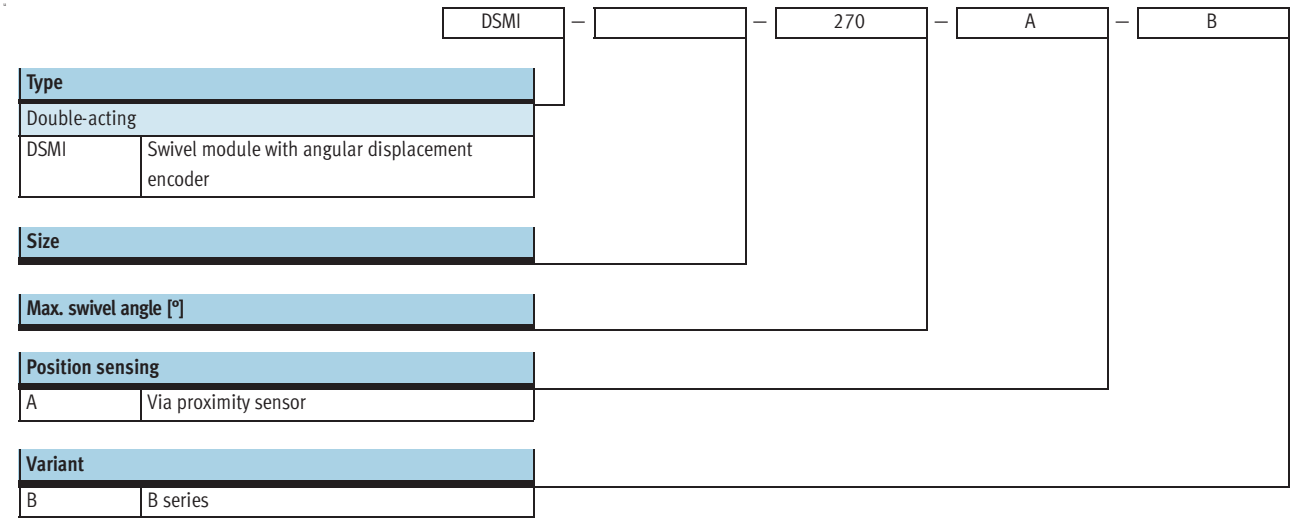
Peripherals overview



Accessories			
	For size	Brief description	→ Page/Internet
1 Push-on flange FWSR	25, 40	For mounting attachments	134
2 Mounting plate HSM	25, 40	Adapter plate for mounting the drive	134
3 Push-in fitting QS	25, 40, 63	For connecting compressed air tubing with standard O.D. (push-in fittings are included in the scope of delivery of the drive)	quick star
4 One-way flow control valve GRLA	25, 40, 63	For regulating speed (is recommended when using the DSMI as a measuring cylinder)	135
5 Cushioning mount DSM-B	25, 40, 63	• For elastic cushioning components • For shock absorbers • As a mechanical stop in Soft Stop applications	135
6 Shock absorber DYSC	25, 40, 63	Self-adjusting shock absorbers with fixed stop (is recommended when using the DSMI as a measuring cylinder)	135
7 Cushioning kit DSM-...-P-B	25, 40, 63	Elastic cushioning components with fixed stop	135
8 Cover cap AKM	25, 40	Reduces the risk of injury in the swivel range of the stop lever	135
9 Plug socket SD	25, 40, 63	For connecting the displacement encoder	135

Swivel modules DSMI-B, integrated angular displacement encoder

Type codes



Type	
Double-acting	
DSMI	Swivel module with angular displacement encoder

Size

Max. swivel angle [°]

Position sensing	
A	Via proximity sensor

Variant	
B	B series

New
Size 63

Swivel modules DSMI-B, integrated angular displacement encoder

Technical data

FESTO

Size
25 ... 63

Torque
5 ... 40 Nm

General technical data				
Size		25	40	63
Design		Rotary vane		
		Drive shaft, running in ball bearings		
Mode of operation		Double-acting		
Position sensing		Via integrated angular displacement encoder		
		Via proximity sensor[1]		
Measuring principle (angular displacement encoder)		Analogue with conductive plastic potentiometer		
Type of mounting		Via female thread		
Min. travel speed	[°/s]	50		
Max. travel speed	[°/s]	2,000		
Max. swivel angle[2]	[°]	272		
Adjustment range of swivel angle	[°]	0 ... 270		
Pneumatic connection		M5	G1/8	G1/4
Push-in fitting used		QSM-M5-6	QS-G1/8-8-I	QS-G1/4-10-I
Compressed air tubing O.D.	[mm]	6	8	10
Electrical connection		4-pin plug, □ 16, DIN 45 322		

1) Can be ordered as an option
2) Note stroke reduction in combination with axis controllers CPX-CMAX, SPC200

Torque [Nm]			
Size	25	40	63
Torque[1]	5	20	40

1) Theoretical values, calculated at 6 bar

Permissible forces on the drive shaft				
Size		25	40	63
Max. radial force	[N]	120	350	500
Max. axial force	[N]	50	120	500
Max. swivel frequency[1]	[Hz]	2		1

1) At max. permissible mass moment of inertia, operating pressure of 6 bar and a swivel angle of 270°

Note

Further technical data
➔ Internet: dsm

Swivel modules DSMI-B, integrated angular displacement encoder

Technical data

FESTO

Positioning characteristics with axis controller CPX-CMAX, SPC200				
Size		25	40	63
Repetition accuracy	[°]	±0.3		
Mounting position		Any		
Min. mass moment of inertia, horizontal[1]	[kgm^2]	15 x 10^{-4}	60 x 10^{-4}	300 x 10^{-4}
Max. mass moment of inertia, horizontal[1]	[kgm^2]	300 x 10^{-4}	1,200 x 10^{-4}	6,000 x 10^{-4}
Min. mass moment of inertia, vertical[2]	[kgm^2]	15 x 10^{-4}	60 x 10^{-4}	300 x 10^{-4}
Max. mass moment of inertia, vertical[2]	[kgm^2]	300 x 10^{-4}	1,200 x 10^{-4}	6,000 x 10^{-4}
Min. travel speed	[°/s]	50		
Max. travel speed	[°/s]	2,000		
Typ. positioning time, long stroke[3]	[s]	0.35/0.60	0.30/0.55	0.64/1
Typ. positioning time, short stroke[4]	[s]	0.15/0.25	0.25/0.25	0.30/0.35
Minimum positioning stroke	[°]	5		
Max. swivel stroke[5]	[°]	260		
Recommended proportional directional control valve				
For CPX-CMAX		On request	VPWP-4-L-5-Q8-10-E-F	
For SPC200		MPYE-5-M5-010-B	MPYE-5-⅛-LF-010-B	

1) Must not change during the movement, but may be outside the centre of gravity
2) Must not change during the movement, must act at the centre of gravity
3) At 6 bar, vertical mounting position, 260° positioning angle at min./max. mass moment of inertia
4) At 6 bar, vertical mounting position, 15° positioning angle at min./max. mass moment of inertia
5) A stroke reduction of 5° on both sides must be noted

Positioning characteristics with Soft Stop end-position controller CPX-CMPX, SPC11				
Size		25	40	63
End-position repetition accuracy[1]	[°]	< 0.2		
Intermediate-position repetition accuracy	[°]	±2		
Mounting position		Horizontal		
Cushioning[2]		Electronically controlled		
Min. mass moment of inertia, horizontal[3]	[kgm^2]	15 x 10^{-4}	60 x 10^{-4}	300 x 10^{-4}
Max. mass moment of inertia, horizontal[3]	[kgm^2]	300 x 10^{-4}	1,200 x 10^{-4}	6,000 x 10^{-4}
Minimum swivel stroke	[°]	15		
Recommended proportional directional control valve				
For CPX-CMPX		On request	VPWP-4-L-5-Q8-10-E-F	
For SPC200		MPYE-5-M5-010-B	MPYE-5-⅛-LF-010-B	

1) When using the DSMI stops
2) The cushioning pad on the stop lever must be removed for applications with Soft Stop. The stop lever must not swivel to the end stop at too great a speed as this could damage the swivel module
3) Must not change during the movement, but may be outside the centre of gravity

Operating and environmental conditions		
Operating medium		Compressed air, filtered and unlubricated, filter unit 5 µm
Operating pressure	[bar]	2 ... 10
Operating pressure[1]	[bar]	4 ... 8
Ambient temperature[2]	[°C]	–10 ... +60
Vibration resistance		To DIN/IEC 68 Part 2 – 6, severity level 2
Shock resistance		To DIN/IEC 68 Part 2 – 82, severity level 2
CE mark (see declaration of conformity)		To EU EMC Directive
Protection class		IP65 to IEC 60 529
Corrosion resistance class CRC[3]		1

1) Only applies to applications with end-position controller CPX-CMPX, SPC11 and axis controller CPX-CMAX, SPC200
2) Note operating range of proximity sensors
3) Corrosion resistance class 1 to Festo standard 940 070. Components subject to low corrosion stress. Transport and storage protection

Swivel modules DSMI-B, integrated angular displacement encoder

Technical data

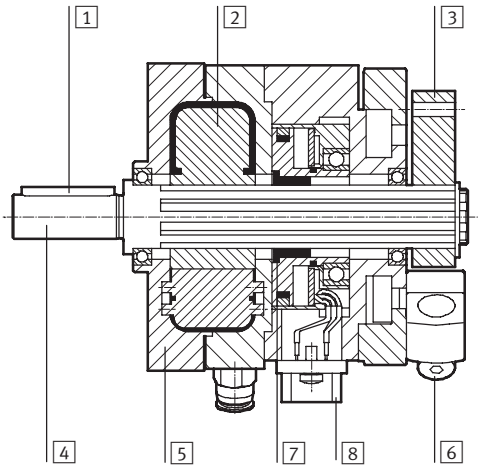
Weight				
Size		25	40	63
DSMI	[g]	1,080	3,950	6,900

Electrical data, displacement encoder			
Power supply[1]		[V DC]	10
Max. current consumption		[mA]	4
Wiper current	Recommended	[µA]	< 1
	Maximum[2]	[mA]	10
Connection resistance		[kΩ]	5
Connection resistance tolerance		[%]	±20
Angular resolution		[°]	0.1
Independent linearity		[%]	0.25
Output signal			Analogue

1) Stabilised power supply is recommended, max. 42 V DC permissible.
2) Only permissible in the short term in the event of a fault.

Materials

Sectional view



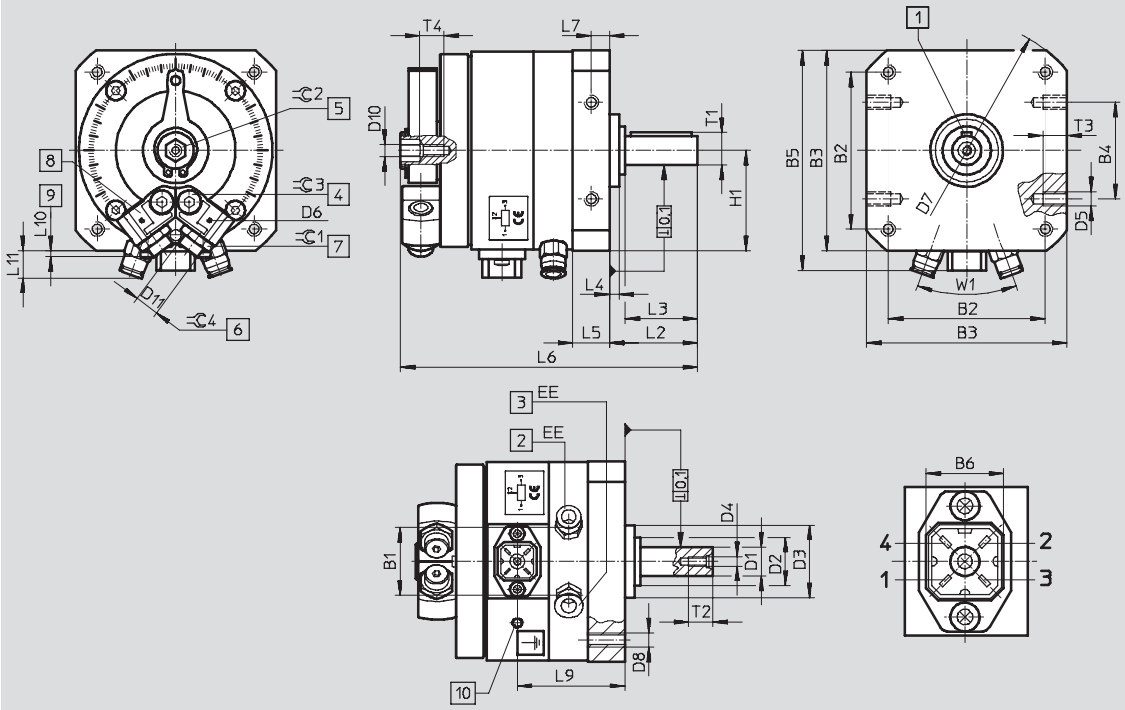
Cylinder/displacement encoder		
Cylinder		
1	Woodruff key	Steel
2	Rotary vane	Glass fibre-reinforced plastic
3	Stop lever	Anodised wrought aluminium alloy
4	Drive shaft	Nickel-plated steel
5	Housing	Anodised wrought aluminium alloy
6	Fixed stop/screw	Steel
	Note on materials	Free of copper, PTFE and silicone
Displacement encoder		
7	Coupling	Polyurethane
8	Housing	Anodised aluminium

Swivel modules DSMI-B, integrated angular displacement encoder

Technical data

FESTO

Dimensions Download CAD Data ➔ **www.festo.com/us/cad**



1 Woodruff key position at 0°
2 Blue release ring for supply port
3 Black release ring for supply port
4 Locking screw for clamping the stop
5 Manual operation (internal hexagon)
6 End-position adjustment
7 Lock nut for end-position adjustment
8 Infinitely adjustable stops
9 Projection for end-position adjustment
10 Earth terminal for self-tapping M4x8 screw

Size	B1	B2	B3	B4	B5	B6	D1 g7	D2	D3 f8	D4	D5	D6	D7
[mm]	±0.5						∅	∅	∅				∅
25	28	65±0.3	83±0.3	40±0.2	91	16	12	20–0.3	30	M4	M6	M2	106±0.3
40	43.8	105±0.3	130±0.5	80±0.3	139	16	20	36–0.4	52	M6	M10	M2	168±0.5
63	55	125±0.5	152±0.5	80±0.3	157	16	25	40±0.3	70	M10	M10	M3	200±0.5

Size	D8	D10	D11	EE	H1	L2	L3	L4	L5	L6	L7	L9	L10
[mm]					±0.2	+0.6/–0.7	±0.2	±0.4	+0.2/–0.3		±0.2	±1	
25	M6	M5	M10x1	M5	41.5	36.5	30	4	15.2	123±0.5	7.5	44.5	2.9
40	M10	M6	M16x1	G⅛	65	62	50	8	23.7	184±0.6	12	64.5	3.4
63	M12	M6	M22x1.5	G¼	76	75.5	60	10.5	28.5	235±0.6	14	80.5	6

Size	L11	T1	T2	T3	T4	W1	⌀ 1	⌀ 2	⌀ 3	⌀ 4	Woodruff key to DIN 6885
[mm]	±2	max.	+2	±0.2							
25	12	13.5	10	10	10	40°	13	8	4	3	A4x4x25
40	16	22.5	16	15	10	40°	19	10	8	5	A6x6x45
63	20	28	22	16	20	40°	27	10	8	5	A8x7x50

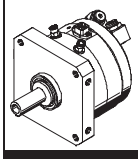
New
Size 63

Swivel modules DSMI-B, integrated angular displacement encoder

Accessories

FESTO

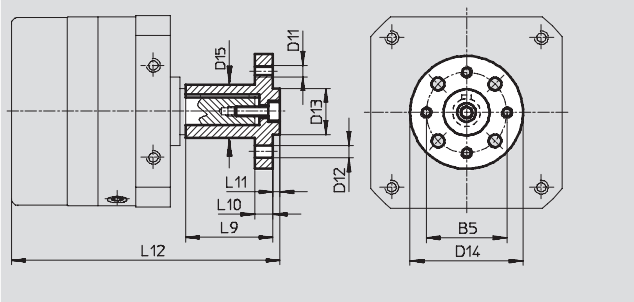
Ordering data

	Size	Swivel angle [°]	Part No.	Type
	25	270	**561690**	**DSMI-25-270-A-B**
	40		**561691**	**DSMI-40-270-A-B**
	63		**1202485**	**DSMI-63-270-A-B**

Accessories

Push-on flange FWSR

Materials:
Anodised aluminium
Free of copper, PTFE and silicone

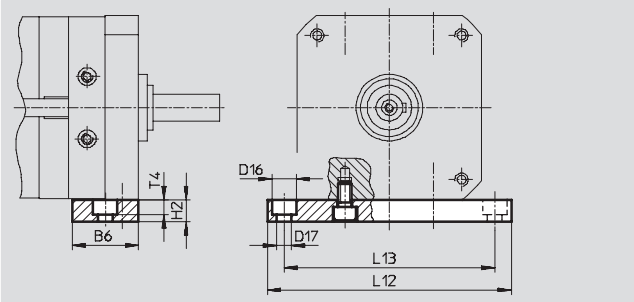


Dimensions and ordering data

For size [mm]	B5	D11	D12 ∅ H13	D13 ∅ g7	D14 ∅	D15 ∅	L9	L10	L11	L12	Weight [g]	Part No.	Type
25	35	M5	5.5	20	50	23	38	8	3	116.5	68	**13240**	**FWSR-25**
40	54	M8	9	36	70	38	60	11	5	186.5	240	**14656**	**FWSR-40**

Mounting plate HSM

Materials:
Anodised aluminium
Free of copper, PTFE and silicone



Dimensions and ordering data

For size [mm]	B6	D16 ∅	D17 ∅	H2	L12	L13	T4	Weight [g]	Part No.	Type
25	30	11	6.6	10	110	95	6.8	94	**165573**	**HSM-25**
40	45	18	11	20	180	155	11	459	**165575**	**HSM-40**

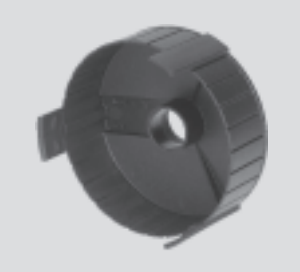
Swivel modules DSMI-B, integrated angular displacement encoder

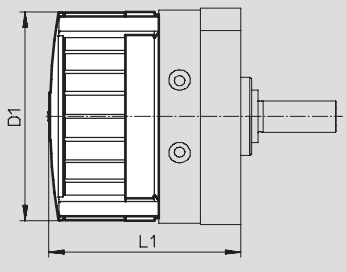
Accessories

FESTO

Cover cap AKM

Materials:
Polyamide

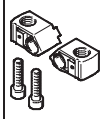




Dimensions and ordering data

For size [mm]	D1 ∅	L1	Part No.	Type
25	83	98.5±1.2	**549196**	**AKM-25**
40	130	135.5±1.5	**549198**	**AKM-40**

Ordering data

	For size	Brief description	Part No.	Type	PU[1]
Cushioning mount					
	25	• For elastic cushioning components • For shock absorbers	**547902**	**DSM-25-B**	2
	40		**547904**	**DSM-40-B**	
	63		**552085**	**DSM-63-B**	
Cushioning kit					
	25	For cushioning mount DSMI-...-B	**550658**	**DSM-16/25-P-B**	2
	40		**550660**	**DSM-40-P-B**	
	63		**552086**	**DSM-63-P-B**	
Shock absorber					
	25	For cushioning mount DSMI-...-B	**548012**	**DYSC-7-5-Y1F**	1
	40		**548014**	**DYSC-12-12-Y1F**	
	63		**553593**	**DYSC-16-18-Y1F**	

1) Packaging unit

Ordering data – One-way flow control valves Technical data ➔ Internet: grla

	For size	Connection		Material	Part No.	Type
		Thread	For tubing O.D.			
For exhaust air						
	25	M5	3	Metal design	**193137**	**GRLA-M5-QS-3-D**
			4		**193138**	**GRLA-M5-QS-4-D**
			6		**193139**	**GRLA-M5-QS-6-D**
	40	G1/8	3		**193142**	**GRLA-1/8-QS-3-D**
			4		**193143**	**GRLA-1/8-QS-4-D**
			6		**193144**	**GRLA-1/8-QS-6-D**
			8		**193145**	**GRLA-1/8-QS-8-D**
	63	G1/4	10		**193148**	**GRLA-1/4-QS-10-D**

Ordering data – Plug sockets

	Pin	Pin allocation	Designation	Part No.	Type
	1	Power supply	Plug socket	**194332**	**SD-4-WD-7**
	2	Signal			
	3	0 V			
	4	PE (yellow), screened			

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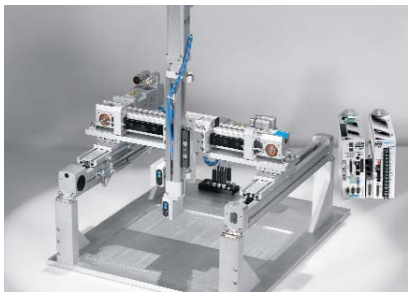

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Festo North America

Festo Regional Contact Center

5300 Explorer Drive
Mississauga, Ontario L4W 5G4
Canada

USA Customers:

For ordering assistance,
Call: 1.800.99.FESTO (1.800.993.3786)
Fax: 1.800.96.FESTO (1.800.963.3786)
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For technical support,
Call: 1.866.GO.FESTO (1.866.463.3786)
Fax: 1.800.96.FESTO (1.800.963.3786)
Email: product.support@us.festo.com

Canadian Customers:

Call: 1.877.GO.FESTO (1.877.463.3786)
Fax: 1.877.FX.FESTO (1.877.393.3786)
Email: festo.canada@ca.festo.com

USA Headquarters

Festo Corporation
395 Moreland Road
P.O. Box 18023
Hauppauge, NY 11788, USA
www.festo.com/us

USA Sales Offices

Appleton
North 922 Tower View Drive, Suite N
Greenville, WI 54942, USA

Boston
120 Presidential Way, Suite 330
Woburn, MA 01801, USA

Chicago
1441 East Business Center Drive
Mt. Prospect, IL 60056, USA

Dallas
1825 Lakeway Drive, Suite 600
Lewisville, TX 75057, USA

Detroit – Automotive Engineering Center
2601 Cambridge Court, Suite 320
Auburn Hills, MI 48326, USA

New York
395 Moreland Road
Hauppauge, NY 11788, USA

Silicon Valley
4935 Southfront Road, Suite F
Livermore, CA 94550, USA

United States

USA Headquarters, East: Festo Corp., 395 Moreland Road, Hauppauge, NY 11788
Phone: 1.631.435.0800; Fax: 1.631.435.8026;
Email: info@festo-usa.com **www.festo.com/us**

Canada

Headquarters: Festo Inc., 5300 Explorer Drive, Mississauga, Ontario L4W 5G4
Phone: 1.905.624.9000; Fax: 1.905.624.9001;
Email: festo.canada@ca.festo.com **www.festo.ca**

Mexico

Headquarters: Festo Pneumatic, S.A., Av. Ceylán 3, Col. Tequesquinahuac,
54020 Tlalnepantla, Edo. de México
Phone: 011 52 [55] 53 21 66 00; Fax: 011 52 [55] 53 21 66 65;
Email: festo.mexico@mx.festo.com **www.festo.com/mx**

Central USA
Festo Corporation
1441 East Business
Center Drive
Mt. Prospect, IL 60056, USA
Phone: 1.847.759.2600
Fax: 1.847.768.9480

Western USA
Festo Corporation
4935 Southfront Road,
Suite F
Livermore, CA 94550, USA
Phone: 1.925.371.1099
Fax: 1.925.245.1286

Festo Worldwide

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