



- Multi-position cylinder for advancing by up to 6 positions
- Adapter kits for standard, compact and short-stroke cylinders for advancing by up to 4 positions

# Multi-position cylinders ADNM, ADVUP

Product range overview



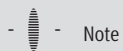
Function	Design	Type	Piston $\varnothing$ [mm]	Stroke [mm]	Pisto rod		→ Page
					With female thread	With male thread	
Double-acting		ADNM Single-ended piston rod	25, 40, 63, 100	1 ... 2,000	■	■	1 / 5.10-4
					■	■	
		ADVUP Single-ended piston rod	25	1 ... 500	■	■	1 / 5.10-32
			40, 63, 100	1 ... 2,000	■	■	

## Function principle

By connecting 2 to 5 cylinders in series with the same piston  $\varnothing$  and different stroke lengths, up to 6 positions can be approached.

Example:

ADVUP-25 for 5 positions at 0, 25, 50, 100 and 200 mm.



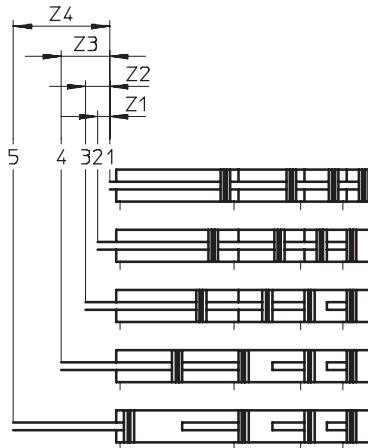
Note

- Each subsequent cylinder stroke must be greater than the one that preceded it.
- The sum of all individual strokes may not exceed the total stroke, i.e.
 

for piston $\varnothing$ 25:	500 mm
for piston $\varnothing$ 40, 63, 100:	2000 mm
- The stroke of the last cylinder with the extending piston rod may not exceed a maximum permitted stroke, i.e.
 

for piston $\varnothing$ 25:	300 mm
for piston $\varnothing$ 40, 63, 100:	1000 mm
- The strokes of the preceding cylinders must not exceed a maximum permissible stroke defined individually for each one, i.e.
 






for piston $\varnothing$ 25:	200 mm
for piston $\varnothing$ 40, 63:	300 mm
for piston $\varnothing$ 100:	400 mm



- The strokes become larger from one individual cylinder to the next:  
 $Z1 = 25 \text{ mm} < Z2 = 50 \text{ mm} < Z3 = 100 \text{ mm} < Z4 = 200 \text{ mm}$
- Sum of individual strokes = 375 mm < 500 mm
- Stroke of the last cylinder  $Z4 = 200 \text{ mm} < 300 \text{ mm}$
- Stroke of the preceding cylinder:  
 $Z3 = 100 \text{ mm} < 200 \text{ mm}$   
 $Z2 = 50 \text{ mm} < 200 \text{ mm}$   
 $Z1 = 25 \text{ mm} < 200 \text{ mm}$

## Adapter kits DPNC/DPNG/DPNN/DPNA/DPVU

Product range overview

Design	Type	For cylinders	Piston Ø [mm]	Overall stroke length [mm]	→ Page
	DPNC	DNCB, DNC, ADVC ADN Ø125 ADVU Ø125	32, 40, 50, 63, 80, 100, 125	1,000	1 / 5.10-25
	DPNG	DNG	32, 40, 50, 63, 80, 100	1,000	1 / 5.10-26
	DPNN	DNU	32, 40, 50, 63, 80, 100	1,000	1 / 5.10-27
	DPNA	ADN	12, 16, 20, 25, 32, 40, 50, 63, 80, 100	600 ... 1,000	1 / 5.10-27
	DPVU	ADVU	12, 16, 20, 25, 32, 40, 50, 63, 80, 100	400 ... 800	1 / 5.10-28

### Function principle

A 3 or 4-position cylinder consists of two separate cylinders whose piston rods advance in opposing directions.

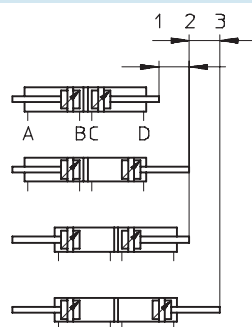
Depending upon actuation and stroke pattern, this type of cylinder can assume up to four positions. In each

case the cylinder is driven precisely against a stop. If one end of the piston rod is fixed, the cylinder barrel

executes the movement. The cylinder must be connected with flexible line connections.

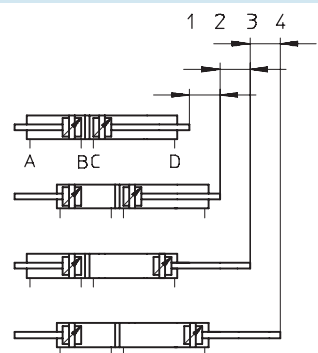
### Implementing 3 positions

Two cylinders with identical stroke length must be connected to this end.



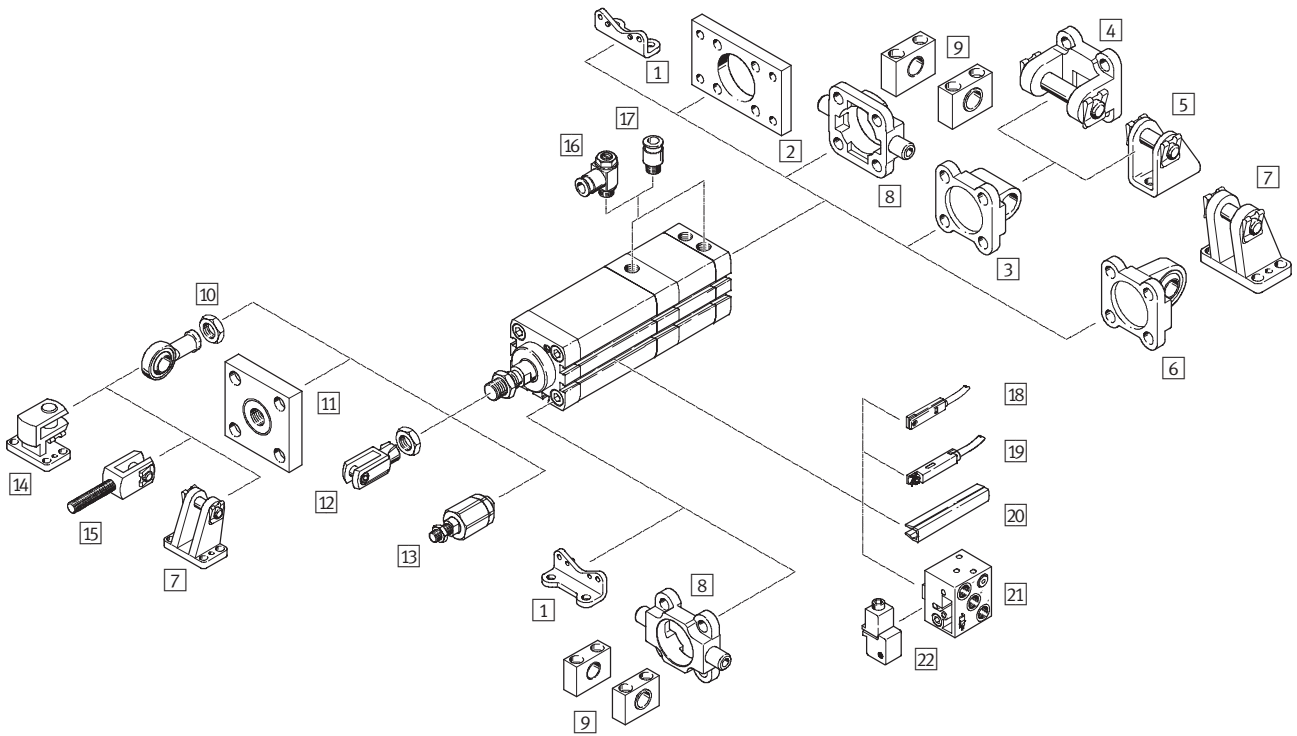
### Implementing 4 positions

Two cylinders with different stroke lengths must be connected to this end.



# Multi-position cylinders ADNM, standard port pattern

Peripherals overview



# Multi-position cylinders ADN, standard port pattern

Peripherals overview

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Mounting attachments and accessories					
	Brief description	∅ 25	∅ 40, 63, 100	→ Page	
1	Foot mounting HNA	For bearing and end caps	■	■	1 / 5.10-16
2	Flange mounting FNC	For end caps	■	■	1 / 5.10-17
3	Swivel flange SNCL	For end caps	■	■	1 / 5.10-18
4	Swivel flange SNCB	For swivel flange SNCL	-	■	1 / 5.10-20
5	Clevis foot LBN/CRLBN	For swivel flange SNCL	■	-	1 / 5.10-19
6	Swivel flange SNCS	For end caps	-	■	1 / 5.10-18
7	Clevis foot LBG	For swivel flange SNCS	-	■	1 / 5.10-22
8	Trunnion flange ZNCF/CRZNG	For bearing caps	-	■	1 / 5.10-21
9	Trunnion support LNZG	For trunnion flange ZNCF/CRZNG	-	■	1 / 5.10-21
10	Rod eye SGS/CRSGS	With spherical bearing	■	■	1 / 5.10-22
11	Coupling piece KSG	For compensating radial deviations	■	■	1 / 5.10-22
12	Rod clevis SG/CRSG	Permits a swivelling movement of the cylinder in one plane	■	■	1 / 5.10-22
13	Self-aligning rod coupler FK	For compensating radial and angular deviations	■	■	1 / 5.10-22
14	Right-angle clevis foot LQG	For rod eye SGS	-	■	1 / 5.10-22
15	Rod clevis SGA	With male thread	-	■	1 / 5.10-22
16	One-way flow control valve GRLA	For speed regulation	■	■	1 / 5.10-22
17	Push-in fitting QS	For connecting compressed air tubing with standard external diameters	■	■	Volume 3
18	Proximity sensor SME/SMT-8	Can be integrated in the sensor slot of the cylinder profile barrel	■	■	1 / 5.10-23
19	Proximity sensor SME/SMT-8M	Can be integrated in the sensor slot of the cylinder profile barrel	■	■	1 / 5.10-23
20	Slot cover ABP-5-S	For protecting the sensor cable and keeping dirt out of the sensor slots	■	■	1 / 5.10-24
21	Proximity sensor SMPO-8E	Pneumatic output signal	■	■	1 / 5.10-24
22	Mounting kit SMB-8E	For proximity sensor SMPO-8E	■	■	1 / 5.10-24

# Multi-position cylinders ADN, standard port pattern

Type codes

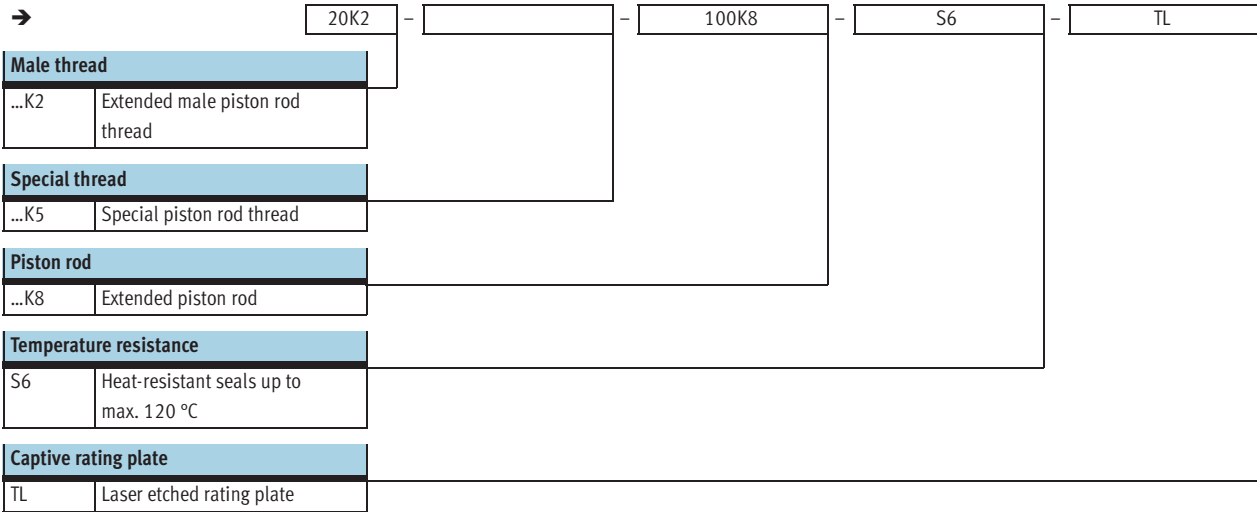


ADNM - 25 - A - P - A - 30Z1 - 50Z2 - 120Z3 - 150Z4 - [ ] →

<b>Type</b>	
Double-acting	
ADNM	Multi-position cylinder
<b>Piston Ø [mm]</b>	
<b>Piston rod thread</b>	
A	Male thread
I	Female thread
<b>Cushioning</b>	
P	Flexible cushioning rings/pads at both ends
<b>Position sensing</b>	
A	Via proximity sensor
<b>Position</b>	
...Z1	1st position
<b>Position</b>	
...Z2	2nd position
<b>Position</b>	
...Z3	3rd position
<b>Position</b>	
...Z4	4th position
<b>Position</b>	
...Z5	5th position

# Multi-position cylinders ADN, standard port pattern

Type codes

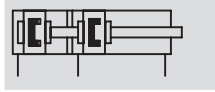


# Multi-position cylinders ADNM, standard port pattern

Technical data



## Function



⌀ - Diameter  
25 ... 100 mm

- | - Stroke length  
1 ... 2,000 mm

## Variants



K2



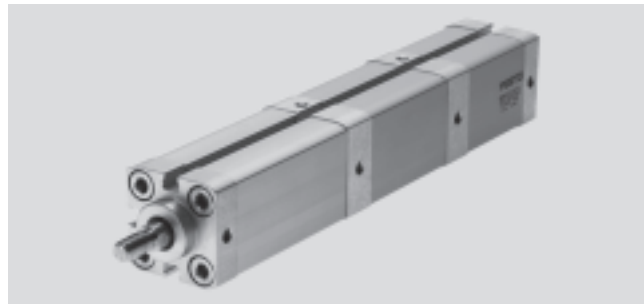
K5



K8



S6



General technical data					
Piston Ø		25	40	63	100
Pneumatic connection		M5	M5	G1/8	G1/8
Piston rod thread	Female	M6	M10	M12	M16
	Male	M8	M12x1.25	M16x1.5	M20x1.5
Constructional design		Piston			
		Piston rod			
		Cylinder barrel			
Cushioning		Flexible cushioning rings/pads at both ends			
Position sensing		Via proximity sensor			
Type of mounting		Via female threads			
		Via accessories			
Mounting position		Any			

Operating and environmental conditions					
Piston Ø		25	40	63	100
Operating medium		Filtered compressed air, lubricated or unlubricated			
Operating pressure [bar]	2nd position	0.8 ... 10		0.6 ... 10	
	3rd position	1.1 ... 10		0.9 ... 10	
	4th position	1.4 ... 10		1.2 ... 10	
	5th position	1.7 ... 10		1.5 ... 10	
Ambient temperature <sup>1)</sup> [°C]		-20 ... +80			
	S6	0 ... +120			
Corrosion resistance class CRC <sup>2)</sup>		2			

1) Note operating range of proximity sensors

2) Corrosion resistance class 2 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



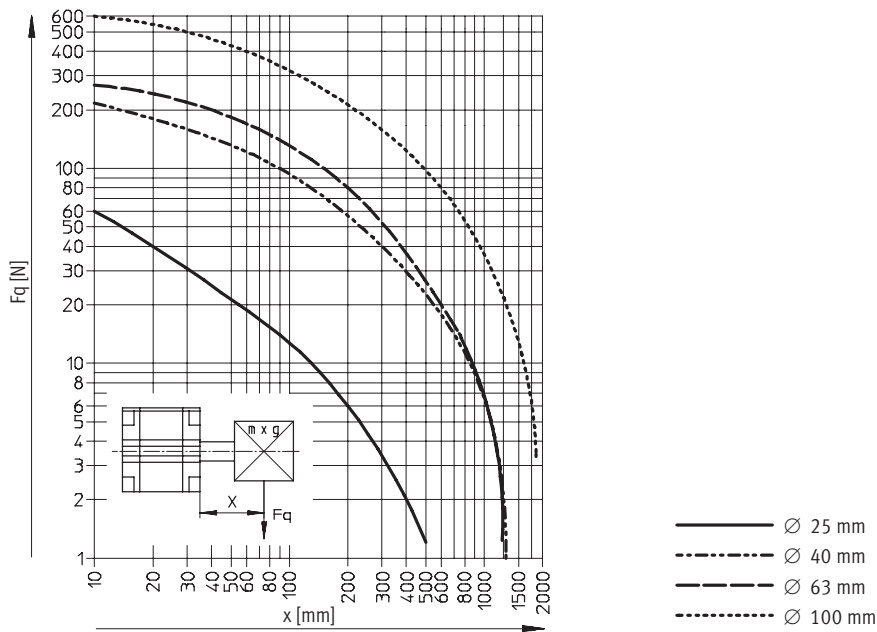
# Multi-position cylinders ADN, standard port pattern

Technical data



Forces [N] and impact energy [J]				
Piston $\varnothing$	25	40	63	100
Theoretical force at 6 bar, advancing	295	754	1870	4712
Theoretical force at 6 bar, retracting	247	633	1681	4417
Max. impact energy at the end positions	S6	0.35	0.65	1.25
		0.15	0.35	1.25

## Max. lateral force $F_q$ as a function of the projection $x$



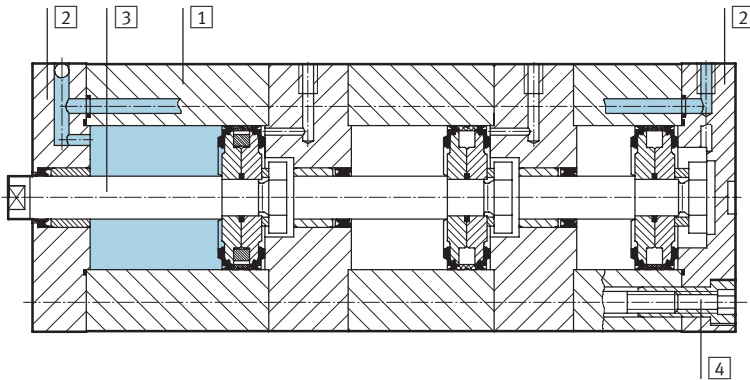
# Multi-position cylinders ADNM, standard port pattern

Technical data



## Materials

Sectional view



Multi-position cylinder	Basic version	S6
1 Cylinder barrel	Anodised aluminium	Anodised aluminium
2 Cover	Anodised aluminium	Anodised aluminium
3 Piston rod	High-alloy steel	High-alloy steel
4 Flange screws	Galvanised steel	Galvanised steel
- Seals	Polyurethane	Fluoro elastomer

# Multi-position cylinders ADN, standard port pattern

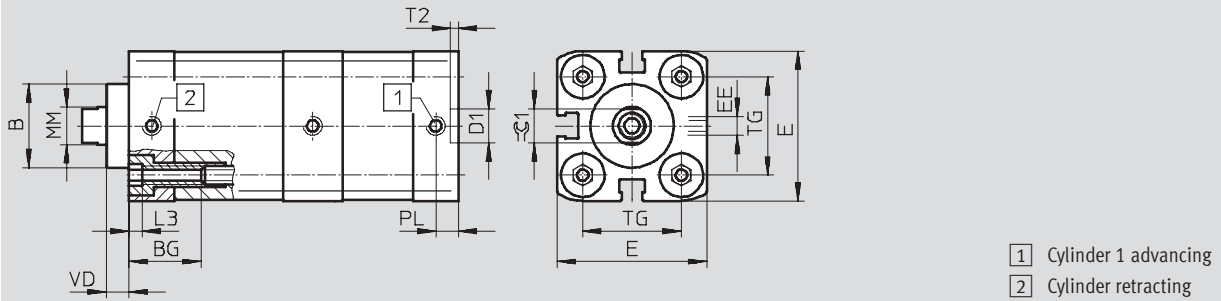
Technical data



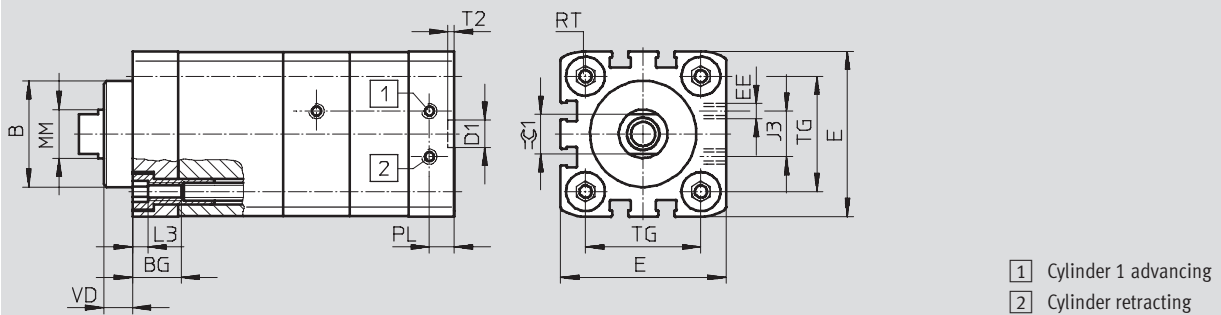
## Dimensions – Basic version

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

∅ 25



∅ 40 ... 100



∅	B	BG	D1	E	EE	J3	L3
[mm]	∅	min.	∅	+0.3			
25	22	15	9	39.5	M5	–	5
40	35	16	12	54.5	G $\frac{1}{8}$	15	5
63	42	75.5		23			
100	55	113.5		40			

∅	MM	PL	RT	T2	TG	VD	∅C1
[mm]	∅						
25	10	6	M5	2.1	26	6	9
40	16	8.2	M6		38	9.5	13
63	20		M8		56.5	12	17
100	25	10.5	M10	89	15.5	21	

# Multi-position cylinders ADNM, standard port pattern

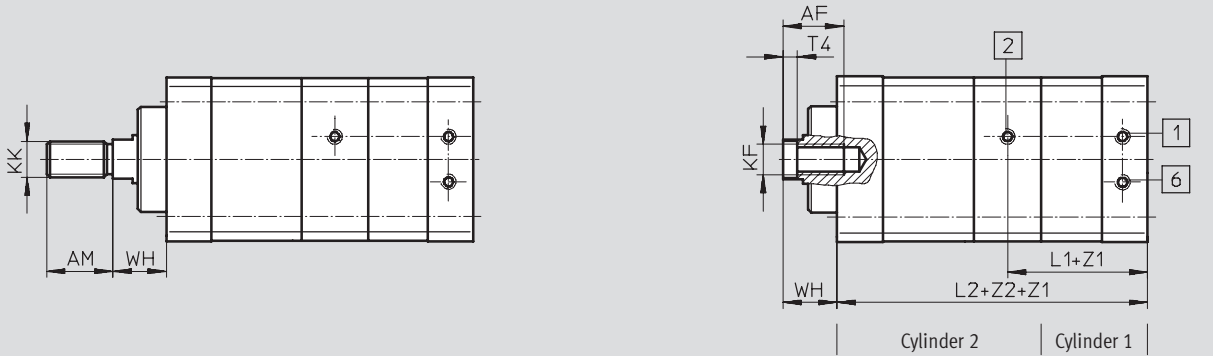
Technical data

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## Dimensions – Variants

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### Basic version

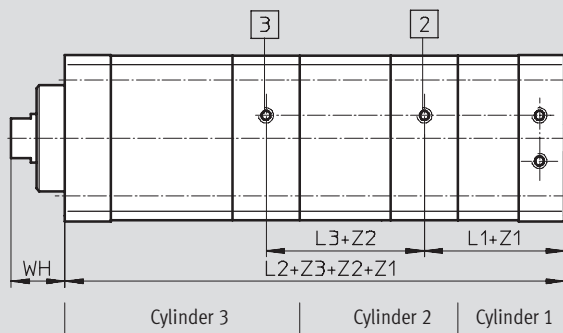


1 Air connection cylinder 1 advancing

2 Air connection cylinder 2 advancing

6 Air connection all cylinders retracted  
 Z1 = Stroke of cylinder 1  
 Z2 = Stroke of cylinder 2

### Z3 – 3 cylinders

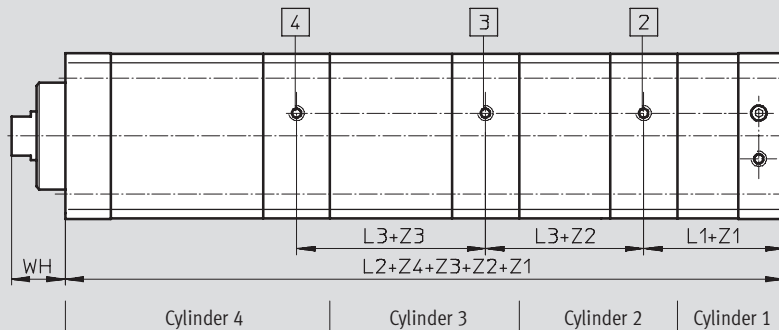


2 Air connection cylinder 2 advancing

3 Air connection cylinder 3 advancing

Z1 = Stroke of cylinder 1  
 Z2 = Stroke of cylinder 2  
 Z3 = Stroke of cylinder 3

### Z4 – 4 cylinders



2 Air connection cylinder 2 advancing

3 Air connection cylinder 3 advancing

4 Air connection cylinder 4 advancing

Z1 = Stroke of cylinder 1  
 Z2 = Stroke of cylinder 2  
 Z3 = Stroke of cylinder 3  
 Z4 = Stroke of cylinder 4

# Multi-position cylinders ADN, standard port pattern

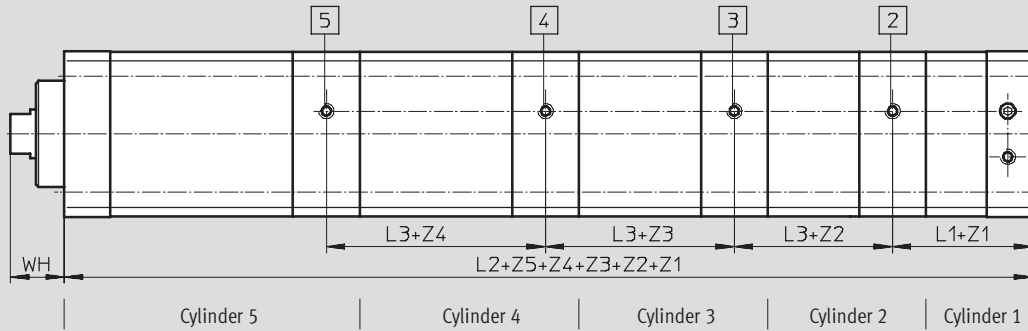
Technical data



## Dimensions – Variants

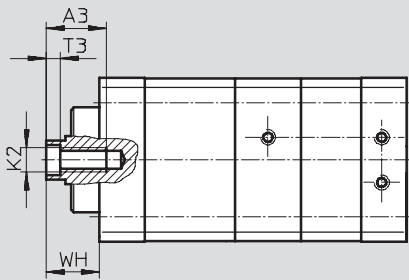
Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)

### Z5 – 5 cylinders



- |  |  |                           |                           |
|--|--|---------------------------|---------------------------|
| 2 Air connection cylinder<br>2 advancing | 4 Air connection cylinder<br>4 advancing | Z1 = Stroke of cylinder 1 | Z4 = Stroke of cylinder 4 |
| 3 Air connection cylinder<br>3 advancing | 5 Air connection cylinder<br>5 advancing | Z2 = Stroke of cylinder 2 | Z5 = Stroke of cylinder 5 |
|  |  | Z3 = Stroke of cylinder 3 |                           |

### K5 – Special piston rod thread

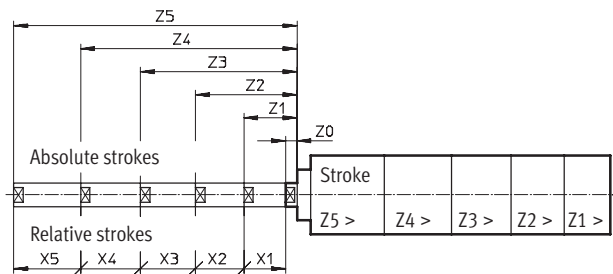


∅ [mm]	A3	AF	AM	KF		KK	L1	L2 Number of cylinders				L3	T4		WH +1.3	
	min.		-0.5		K5			2	3	4	5			K5		K5
25	12	14	16	M6	M5	M8	38.3	76	110	144	178	34.2	2.6	2	11.65	11.65
40	16	20	22	M10	M8	M12x1.25	40.4	86	125	167	210	39.5	4.7	3.3	17.75	17.75
63	20		28	M12	M10	M16x1.5	44	93	136	180	226	42	6.1	4.7	21	21
100	-	25	40	M16	-	M20x1.5	51.2	121	173	227	283	52	7	-	26.3	-

Note

Each individual movement always corresponds to at least the nominal stroke, with both relative and absolute dimensions. The safety margins

within the components needed for this can result in positive stroke deviations of several millimetres.



# Multi-position cylinders ADN, standard port pattern

Ordering data – Modular products



M Mandatory data						O Options →				
Module No.	Function	Size	Type of thread	Cushioning	Position sensing	1st position	2nd position	3rd position	4th position	5th position
539 695	ADNM	25	A	P	A	...Z1	...Z2	...Z3	...Z4	...Z5
539 696		40	I							
539 697		63								
539 698		100								
<b>Order example</b>										
539 695	ADNM	- 25	- A	- P	- A	- 30Z1	- 50Z2	- 120Z3	- 200Z4	-

Ordering table										
Size	25	40	63	100	Condi- tions	Code	Enter code			
M Module No.	539 695	539 696	539 697	539 698						
Function	Multi-position cylinder, standard port pattern					ADNM		ADNM		
Size [mm]	25	40	63	100		-...				
Type of thread	Male thread					-A				
	Female thread					-I				
Cushioning	Flexible cushioning rings/pads at both ends					-P		-P		
Position sensing	Via proximity sensor					-A		-A		
1st position [mm]	1 ... 200	1 ... 300	1 ... 300	1 ... 400	1	-...Z1		- ... Z1		
2nd position [mm]	1 ... 300	1 ... 1000	1 ... 1000	1 ... 1000	1 2	-...Z2		- ... Z2		
3rd position [mm]	1 ... 300	1 ... 1000	1 ... 1000	1 ... 1000	1 2	-...Z3				
4th position [mm]	1 ... 300	1 ... 1000	1 ... 1000	1 ... 1000	1 2	-...Z4				
5th position [mm]	1 ... 300	1 ... 1000	1 ... 1000	1 ... 1000	1 2	-...Z5				

The end of the retracted piston rod is the reference point for all positions.

- 1 Z1 ... Z5 The subsequent position must be larger than the one that precedes it:  
 Z1 < Z2 < Z3 < Z4 < Z5.  
 Max. total of all positions:  
 Size 25: max. 500 mm  
 Size 40, 63, 100: max. 2000 mm

- 2 Z2 ... Z5 Max. permissible stroke except for the last position (visible piston rod):  
 Size 25: 200 mm  
 Size 40, 63: 300 mm  
 Size 100: 400 mm

**Transfer order code**

# Multi-position cylinders ADN, standard port pattern

Ordering data – Modular products



## Options

<b>Male thread extended</b>	<b>Special thread</b>	<b>Piston rod extended</b>	<b>Temperature resistance</b>	<b>Captive rating plate</b>
...K2	"... "K5	...K8	S6	TL
- 20K2	- "M10"K5	- 100K8	-	-

## Ordering table

Size	25	40	63	100	Condi- tions	Code	Enter code
Male thread extended [mm]	Extended male piston rod thread					-...K2	
Special piston rod thread	M10x1.25	M10x1.25	M12x1.25	M16x1.5	[3]	-"... "K5	
	M10	M12	M16	M20			
	M5	M8	M10	-	[4]		
Piston rod extended [mm]	Extended piston rod					-...K8	
Temperature resistance	Heat-resistant seals up to max. 120 °C					-S6	
Captive rating plate	Laser etched rating plate					-TL	

- [3] K5 Only with piston rod thread A (male thread)
- [4] K5 Only with piston rod thread I (female thread)

- [5] K8 The sum of the length of the last position and piston rod extension must not exceed the maximum permissible length of the last position

Transfer order code

- [ ] - [ ] - [ ] - [ ] - [ ]

# Multi-position cylinders ADNM, standard port pattern

Accessories



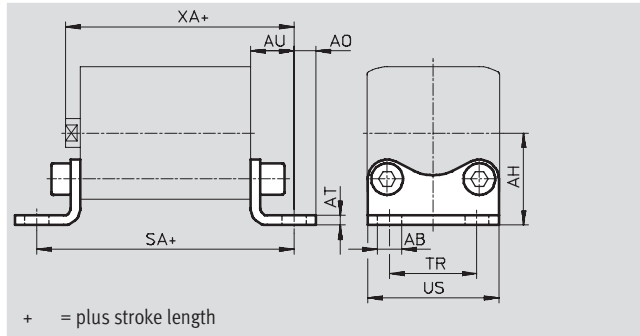
## Foot mounting HNA

Material:

HNA: Galvanised steel

HNA-...-R3: Steel with protective coating

Free of copper, PTFE and silicone



Dimensions and ordering data									
For $\varnothing$	AB $\varnothing$	AH	AO	AT	AU	SA	TR	US	XA
[mm]	H14	JS14		$\pm 0.5$	$\pm 0.2$		$\pm 0.2$	$-0.5$	
25	7	29	6.25	4	16	71	26	38.5	61
40	10	38	9		18	81	36	54	69
63		50	8	5	21	91	50	75	78
100	14.5	74	12.5	6	27	121	75	110	103

For $\varnothing$	Basic version				R3 – High corrosion protection			
	CRC <sup>1)</sup>	Weight [g]	Part No.	Type	CRC <sup>1)</sup>	Weight [g]	Part No.	Type
[mm]								
25	2	55	537 240	HNA-25	3	55	537 255	HNA-25-R3
40	2	90	537 242	HNA-40	3	90	537 257	HNA-40-R3
63	2	180	537 244	HNA-63	3	180	537 259	HNA-63-R3
100	2	470	537 250	HNA-100	3	470	537 261	HNA-100-R3

1) Corrosion resistance class 2 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.  
 Corrosion resistance class 3 to Festo standard 940 070  
 Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface



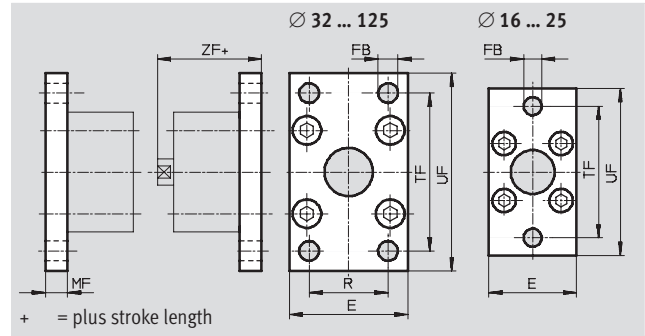
# Multi-position cylinders ADN, standard port pattern



Accessories

## Flange mounting FNC

Material:  
Galvanised steel  
Free of copper, PTFE and silicone



Dimensions and ordering data											
For Ø	E	FB	MF	R	TF	UF	ZF	CRC <sup>1)</sup>	Weight	Part No.	Type
[mm]		Ø				±1			[g]		
25	40	6.6	8	–	60	76	53	2	–	<b>537 248</b>	<b>FNC-25</b>
40	54	9	10	36	72	90	61	2	280	<b>174 377</b>	<b>FNC-40</b>
63	75		12	50	100	120	69	2	690	<b>174 379</b>	<b>FNC-63</b>
100	110	14	16	75	150	175	92	2	2400	<b>174 381</b>	<b>FNC-100</b>

1) Corrosion resistance class 2 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

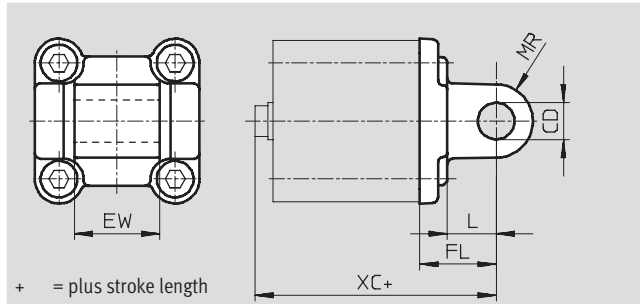
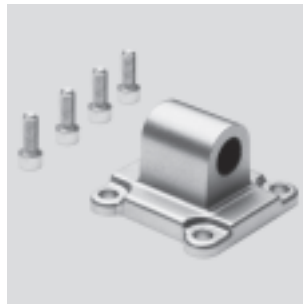
# Multi-position cylinders ADNM, standard port pattern

Accessories



## Swivel flange SNCL

Material:  
 SNCL: Die-cast aluminium  
 SNCL-...-R3: Die-cast aluminium with protective coating  
 Free of copper, PTFE and silicone



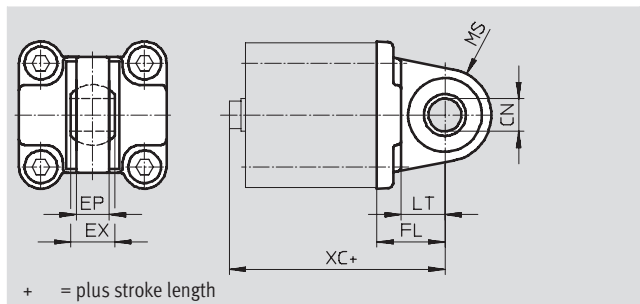
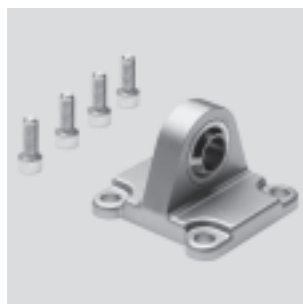
Dimensions and ordering data						
For $\varnothing$	CD	EW	FL	L	MR	XC
[mm]	$\varnothing$ H9	h12	$\pm 0.2$			
25	8	16	20	14	8	65
40	12	28	25	16	12	76
63	16	40	32	21	16	89
100	20	60	41	27	20	117

For $\varnothing$	Basic version				R3 – High corrosion protection			
	CRC <sup>1)</sup>	Weight [g]	Part No.	Type	CRC <sup>1)</sup>	Weight [g]	Part No.	Type
[mm]								
25	2	45	537 793	SNCL-25	3	45	537 797	SNCL-25-R3
40	2	115	174 405	SNCL-40	–	–	–	–
63	2	270	174 407	SNCL-63	–	–	–	–
100	2	700	174 409	SNCL-100	–	–	–	–

- 1) Corrosion resistance class 2 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.
- Corrosion resistance class 3 to Festo standard 940 070  
 Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface

## Swivel flange SNCS

Material:  
 Die-cast aluminium



Dimensions and ordering data											
For $\varnothing$	CN	EP	EX	FL	LT	MS	XC	CRC <sup>1)</sup>	Weight	Part No.	Type
[mm]	$\varnothing$ H7	+0.2		$\pm 0.2$					[g]		
40	12	12	16	25	16	17	70	2	125	174 398	SNCS-40
63	16	15	21	32	21	22	81	2	280	174 400	SNCS-63
100	20	18	25	41	27	29	108	2	700	174 402	SNCS-100

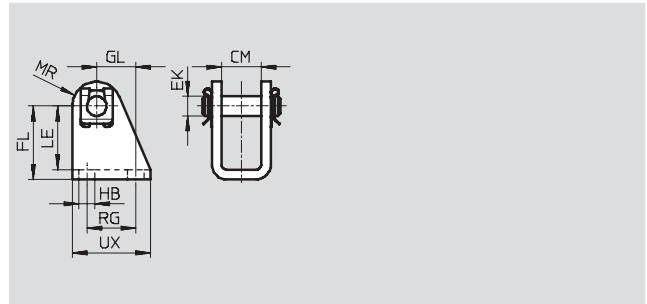
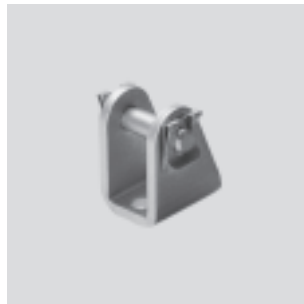
- 1) Corrosion resistance class 2 to Festo standard 940 070  
 Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents

# Multi-position cylinders ADN, standard port pattern

Accessories

## Clevis foot LBN

Material:  
Galvanised steel  
Free of copper, PTFE and silicone

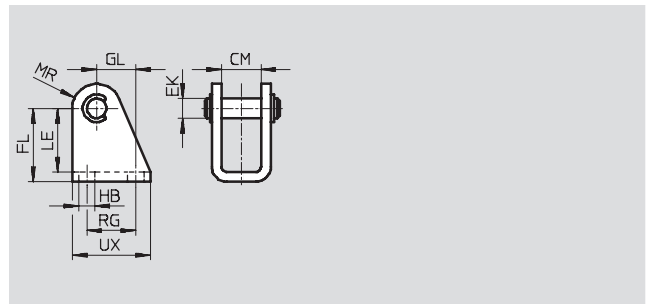


Dimensions and ordering data													
For Ø	CM	EK Ø	FL	GL	HB Ø	LE	MR	RG	UX	CRC <sup>1)</sup>	Weight [g]	Part No.	Type
[mm]													
25	16.1	8	30 +0.4/-0.2	16	6.6	26	10	20	32	2	81	<b>6 059</b>	<b>LBN-20/25</b>

1) Corrosion resistance class 2 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

## Clevis foot CRLBN, stainless steel

Material:  
High-alloy steel  
Free of copper, PTFE and silicone



Dimensions and ordering data													
For Ø	CM	EK Ø	FL	GL	HB Ø	LE	MR	RG	UX	CRC <sup>1)</sup>	Weight [g]	Part No.	Type
[mm]													
25	16.1	8	30 +0.4/-0.2	16	6.6	26	10	20	32	4	62	<b>161 863</b>	<b>CRLBN-20/25</b>

1) Corrosion resistance class 4 to Festo standard 940 070  
Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required

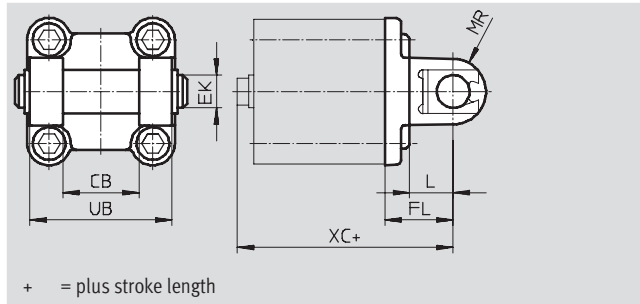
# Multi-position cylinders ADNM, standard port pattern

Accessories



## Swivel flange SNCB/SNCB-...-R3

Material:  
 SNCB: Die-cast aluminium  
 SNCB-...-R3: Die-cast aluminium with protective coating, high corrosion protection  
 Free of copper, PTFE and silicone



Dimensions and ordering data							
For $\varnothing$	CB	EK	FL	L	MR	UB	XC
[mm]	H14	$\varnothing$ e8	$\pm 0.2$			h14	
40	28	12	25	16	12	52	76
63	40	16	32	21	16	70	89
100	60	20	41	27	20	110	117

For $\varnothing$	Basic version				R3 – High corrosion protection			
	CRC <sup>1)</sup>	Weight [g]	Part No.	Type	CRC <sup>1)</sup>	Weight [g]	Part No.	Type
40	2	150	174 391	SNCB-40	3	150	176 945	SNCB-40-R3
63	2	365	174 393	SNCB-63	3	365	176 947	SNCB-63-R3
100	2	925	174 395	SNCB-100	3	925	176 949	SNCB-100-R3

1) Corrosion resistance class 2 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.  
 Corrosion resistance class 3 to Festo standard 940 070  
 Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface

# Multi-position cylinders ADN, standard port pattern



Accessories

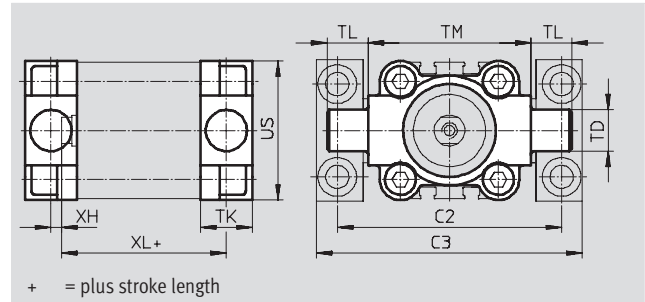
## Trunnion flange ZNCF/CRZNG

Material:

ZNCF: Special steel casting

CRZNG: Electrolytically polished special steel casting

Free of copper, PTFE and silicone



Dimensions and ordering data									
For Ø	C2	C3	TD	TK	TL	TM	US	XH	XL
[mm]			Ø						
40	87	105	16	20	16	63	54	4	55
63	116	136	20	24	20	90	75	4	61
100	164	189	25	38	25	132	110	10	86

For Ø	Basic version				R3 – High corrosion protection			
	CRC <sup>1)</sup>	Weight [g]	Part No.	Type	CRC <sup>1)</sup>	Weight [g]	Part No.	Type
[mm]								
40	2	240	<b>174 412</b>	<b>ZNCF-40</b>	4	260	<b>161 853</b>	<b>CRZNG-40</b>
63	2	600	<b>174 414</b>	<b>ZNCF-63</b>	4	640	<b>161 855</b>	<b>CRZNG-63</b>
100	2	2030	<b>174 416</b>	<b>ZNCF-100</b>	4	2400	<b>161 857</b>	<b>CRZNG-100</b>

- 1) Corrosion resistance class 2 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.  
 Corrosion resistance class 4 to Festo standard 940 070  
 Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required

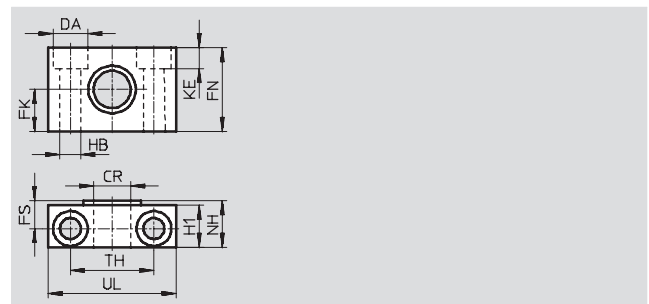
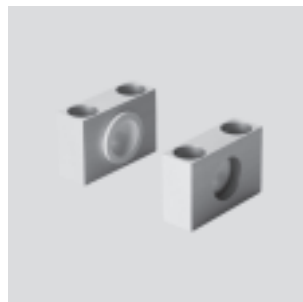
## Trunnion support LNZG

Material:

Trunnion support: Anodised aluminium

Plain bearing: Plastic

Free of copper, PTFE and silicone








Dimensions and ordering data															
For Ø	CR	DA	FK	FN	FS	H1	HB	KE	NH	TH	UL	CRC <sup>1)</sup>	Weight	Part No.	Type
[mm]	Ø	Ø	Ø				Ø			±0.2			[g]		
	D11	H13	±0.1				H13								
40	16	15	18	36	12	18	9	9	21	36	55	2	400	<b>32 960</b>	<b>LNZG-40/50</b>
63	20	18	20	40	13	20	11	11	23	42	65	2	480	<b>32 961</b>	<b>LNZG-63/80</b>
100	25	20	25	50	16	24.5	14	13	28.5	50	75	2	960	<b>32 962</b>	<b>LNZG-100/125</b>



- 1) Corrosion resistance class 2 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


# Multi-position cylinders ADN, standard port pattern

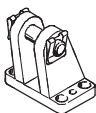
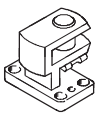
Accessories




Ordering data – Piston rod attachments				Technical data → 1 / 10.3-2			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
<b>Rod eye SGS</b>				<b>Rod clevis SGA for rod eye SGS</b>			
	25	9 255	SGS-M8		25	–	
	40	9 262	SGS-M12x1,25		40	10 767	SGA-M12x1,25
	63	9 263	SGS-M16x1,5		63	10 768	SGA-M16x1,5
	100	9 264	SGS-M20x1,5		100	10 769	SGA-M20x1,5
<b>Rod clevis SG</b>				<b>Self-aligning rod coupler FK</b>			
	25	3 111	SG-M8		25	2 062	FK-M8
	40	6 145	SG-M12x1,25		40	6 141	FK-M12x1,25
	63	6 146	SG-M16x1,5		63	6 142	FK-M16x1,5
	100	6 147	SG-M20x1,5		100	6 143	FK-M20x1,5
<b>Coupling piece KSG</b>							
	25	–					
	40	32 964	KSG-M12x1,25				
	63	32 965	KSG-M16x1,5				
	100	32 966	KSG-M20x1,5				

Ordering data – Corrosion and acid resistant piston rod attachments				Technical data → 1 / 10.3-2			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
<b>Rod eye CRSGS</b>				<b>Rod clevis CRSG</b>			
	25	195 581	CRSGS-M8		25	13 568	CRSG-M8
	40	195 583	CRSGS-M12x1,25		40	13 570	CRSG-M12x1,25
	63	195 584	CRSGS-M16x1,5		63	13 571	CRSG-M16x1,5
	100	195 585	CRSGS-M20x1,5		100	13 572	CRSG-M20x1,5

-  - Note  
 Piston rod attachments for cylinders with special piston rod thread (variant K5) → Chapter 10.3

Ordering data – Mounting attachments				Technical data → 1 / 10.1-2			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
<b>Clevis foot LBG for rod eye SGS</b>				<b>Right-angle clevis foot LQG for rod eye SGS</b>			
	25	–			25	–	
	40	31 762	LBG-40		40	31 769	LQG-40
	63	31 764	LBG-63		63	31 771	LQG-63
	100	31 766	LBG-100		100	31 773	LQG-100

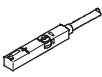

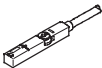
Ordering data – One-way flow control valves				Technical data → Volume 2			
Designation	Connection		Material	Part No.	Type		
	For Ø	For tubing O.D.					
<b>For exhaust air</b>							
	25, 40	3	Metal design	193 137	GRLA-M5-QS-3-D		
		4		193 138	GRLA-M5-QS-4-D		
	63, 100	4		193 143	GRLA-1/8-QS-4-D		
		6		193 144	GRLA-1/8-QS-6-D		
		8		193 145	GRLA-1/8-QS-8-D		

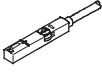


Special-function drives  
Multi-position cylinders  
5.10



# Multi-position cylinders ADNМ, standard port pattern

Accessories

**FESTO**

Ordering data – Proximity switches for T-slot, magneto-resistive					Technical data → <a href="http://www.festo.com/catalogue/sm">www.festo.com/catalogue/sm</a>	
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type
<b>N/O contact</b>						
	Insertable in the slot from above, flush with cylinder profile	PNP	Cable, 3-wire	2,5	<b>543 867</b>	<b>SMT-8M-PS-24V-K-2,5-OE</b>
			Plug M8x1, 3-pin	0,3	<b>543 866</b>	<b>SMT-8M-PS-24V-K-0,3-M8D</b>
			Plug M12x1, 3-pin	0,3	<b>543 869</b>	<b>SMT-8M-PS-24V-K-0,3-M12</b>
		NPN	Cable, 3-wire	2,5	<b>543 870</b>	<b>SMT-8M-NS-24V-K-2,5-OE</b>
Plug M8x1, 3-pin	0,3		<b>543 871</b>	<b>SMT-8M-NS-24V-K-0,3-M8D</b>		
	Insertable in the slot lengthwise, flush with the cylinder profile	PNP	Cable, 3-wire	2,5	<b>175 436</b>	<b>SMT-8-PS-K-LED-24-B</b>
			Plug M8x1, 3-pin	0,3	<b>175 484</b>	<b>SMT-8-PS-S-LED-24-B</b>
<b>N/C contact</b>						
	Insertable in the slot from above, flush with cylinder profile	PNP	Cable, 3-wire	7,5	<b>543 873</b>	<b>SMT-8M-PO-24V-K7,5-OE</b>

Ordering data – Proximity switches for T-slot, magnetic reed					Technical data → <a href="http://www.festo.com/catalogue/sm">www.festo.com/catalogue/sm</a>		
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type	
<b>N/O contact</b>							
	Insertable in the slot from above, flush with cylinder profile	Contacting	Cable, 3-wire	2,5	<b>543 862</b>	<b>SME-8M-DS-24V-K-2,5-OE</b>	
				5,0	<b>543 863</b>	<b>SME-8M-DS-24V-K-5,0-OE</b>	
			Plug M8x1, 3-pin	Cable, 3-wire	2,5	<b>543 872</b>	<b>SME-8M-ZS-24V-K-2,5-OE</b>
				0,3	<b>543 861</b>	<b>SME-8M-DS-24V-K-0,3-M8D</b>	
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2,5	<b>150 855</b>	<b>SME-8-K-LED-24</b>	
				0,3	<b>150 857</b>	<b>SME-8-S-LED-24</b>	
<b>N/C contact</b>							
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7,5	<b>160 251</b>	<b>SME-8-O-K-LED-24</b>	

Ordering data – Connecting cables				Technical data → <a href="http://www.festo.com/catalogue/nebu">www.festo.com/catalogue/nebu</a>	
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2,5	<b>541 333</b>	<b>NEBU-M8G3-K-2.5-LE3</b>
			5	<b>541 334</b>	<b>NEBU-M8G3-K-5-LE3</b>
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2,5	<b>541 363</b>	<b>NEBU-M12G5-K-2.5-LE3</b>
			5	<b>541 364</b>	<b>NEBU-M12G5-K-5-LE3</b>
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2,5	<b>541 338</b>	<b>NEBU-M8W3-K-2.5-LE3</b>
			5	<b>541 341</b>	<b>NEBU-M8W3-K-5-LE3</b>
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2,5	<b>541 367</b>	<b>NEBU-M12W5-K-2.5-LE3</b>
			5	<b>541 370</b>	<b>NEBU-M12W5-K-5-LE3</b>


Special-function drives  
Multi-position cylinders

**5.10**


# Multi-position cylinders ADN, standard port pattern




Accessories

Ordering data – Rectangular proximity sensors, pneumatic		Technical data → <a href="http://www.festo.com/catalogue/sm">www.festo.com/catalogue/sm</a>	
Assembly	Length	Part No.	Type
Pneumatic connection			
3/2-way valve, normally closed			
	Female thread M5	178 563	SMPO-8E

Ordering data – Mounting kit for proximity sensors SMPO-8E		Technical data → <a href="http://www.festo.com/catalogue/smb">www.festo.com/catalogue/smb</a>	
Assembly	Length	Part No.	Type
Clamped in T-slot			
		178 230	SMB-8E

Ordering data – Slot cover for T-slot		Technical data → <a href="http://www.festo.com/catalogue/smb">www.festo.com/catalogue/smb</a>	
Assembly	Length	Part No.	Type
Insertable from above			
	2x 0.5 m	151 680	ABP-5-S



# Adapter kits DPNC, standard port pattern



Technical data

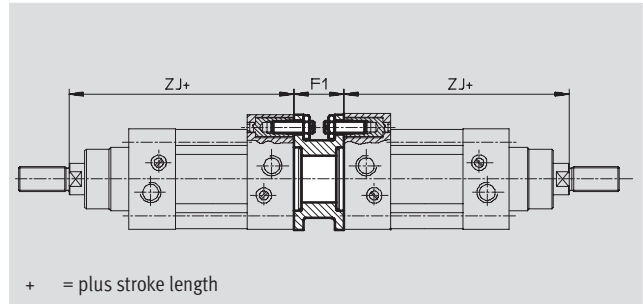
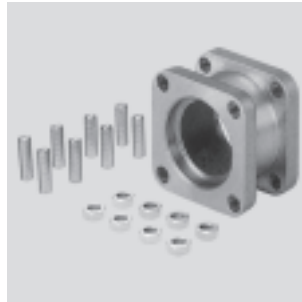
## Adapter kit DPNC


for standard cylinder DNCB, DNC,  
standard cylinder ADN Ø125,  
compact cylinder ADVU Ø125 and  
short-stroke cylinder ADVC

### Material:

Flange: Wrought aluminium alloy;  
threaded pins, hex nuts: Galvanised  
steel

Free of copper, PTFE and silicone



 Note  
The maximum overall stroke length may not be exceeded when combining cylinders and the adapter kit.

Dimensions and ordering data						
For Ø	F1	ZJ	Max. overall stroke length [mm]	CRC <sup>1)</sup>	Weight [g]	Part No. Type
32	27	120	1,000	2	85	<b>174 418 DPNC-32</b>
40	27	135	1,000	2	115	<b>174 419 DPNC-40</b>
50	32	143	1,000	2	210	<b>174 420 DPNC-50</b>
63	28	158	1,000	2	360	<b>174 421 DPNC-63</b>
80	38	174	1,000	2	620	<b>174 422 DPNC-80</b>
100	38	189	1,000	2	1,190	<b>174 423 DPNC-100</b>
125	48	225	1,000	2	1,600	<b>174 424 DPNC-125</b>

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

# Adapter kits DPNG, standard port pattern

Technical data



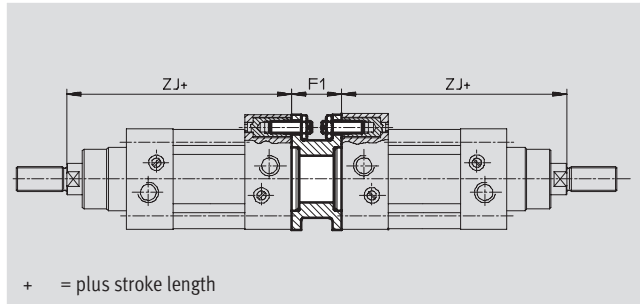
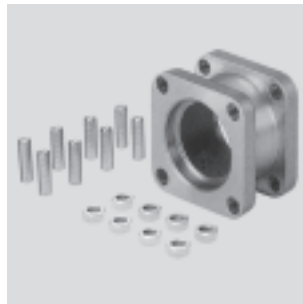
## Adapter kit DPNG

For standard cylinders DNG

Material:

Flange: Wrought aluminium alloy;  
threaded pins, hex nuts: Galvanised  
steel

Free of copper, PTFE and silicone



Dimensions and ordering data							
For Ø	F1	ZJ	Max. overall stroke length [mm]	CRC <sup>1)</sup>	Weight [g]	Part No.	Type
32	27	120	1,000	2	85	159 485	DPNG-32
40	27	135	1,000	2	115	159 486	DPNG-40
50	32	143	1,000	2	210	159 487	DPNG-50
63	28	158	1,000	2	360	159 488	DPNG-63
80	38	174	1,000	2	620	159 489	DPNG-80
100	38	189	1,000	2	1,190	159 490	DPNG-100

- - Note  
The maximum overall stroke length may not be exceeded when combining cylinders and the adapter kit.

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

# Adapter kits DPNA/DPNN

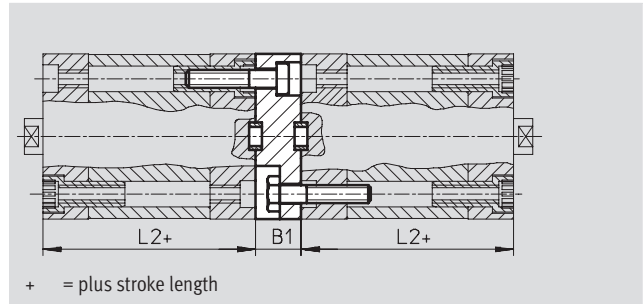
Technical data



**New**

**Adapter kit DPNA**  
for standard cylinder ADN

Material:  
Flange: Aluminium  
Screws: Galvanised steel  
Free of copper, PTFE and silicone



**Note**

The maximum overall stroke length may not be exceeded when combining cylinders and the adapter kit.

## Dimensions and ordering data

For Ø	B1	L2	Max. overall stroke length [mm]	CRC <sup>1)</sup>	Part No.	Type
12	13	35	600	2	537 263	DPNA-12
16	13	35	600	2	537 264	DPNA-16
20	13	37	600	2	537 265	DPNA-20
25	13	39	600	2	537 266	DPNA-25
32	15	44	800	2	537 267	DPNA-32
40	15	45	800	2	537 268	DPNA-40
50	15	45	800	2	537 269	DPNA-50
63	15	49	800	2	537 270	DPNA-63
80	17	54	1,000	2	537 271	DPNA-80
100	19,5	67	1,000	2	537 272	DPNA-100

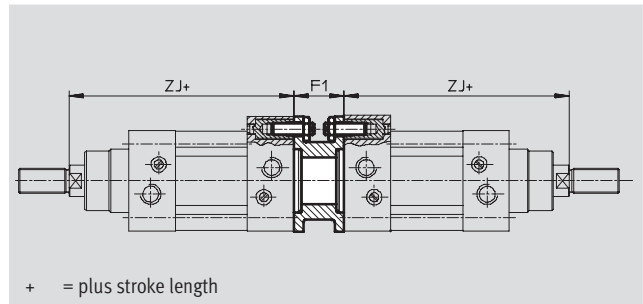
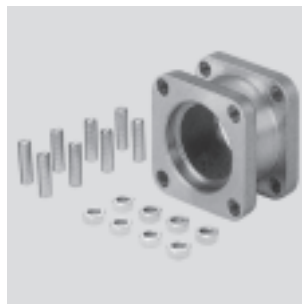
1) Corrosion resistance class 2 according to Festo standard 940 070

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

**Type Discontinued**  
Available up until 2008

**Adapter kit DPNN**  
for standard cylinders DNU

Material:  
Flange: Wrought aluminium alloy;  
threaded pins, hex nuts: Galvanised steel  
Free of copper, PTFE and silicone



## Dimensions and ordering data

For Ø	F1	ZJ	Max. overall stroke length [mm]	CRC <sup>1)</sup>	Weight [g]	Part No.	Type
32	27	120	1,000	2	85	159 485	DPNN-32
40	27	135	1,000	2	115	159 486	DPNN-40
50	32	143	1,000	2	210	159 487	DPNN-50
63	34	155	1,000	2	360	159 488	DPNN-63
80	42	172	1,000	2	620	159 489	DPNN-80
100	42	187	1,000	2	1,190	159 490	DPNN-100

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

**Note**

The maximum overall stroke length may not be exceeded when combining cylinders and the adapter kit.

# Adapter kits DPVU

Technical data



## Adapter kit DPVU

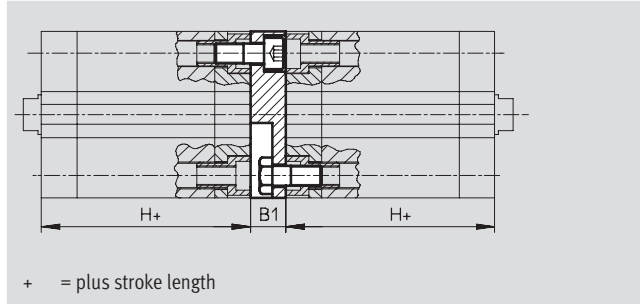
for compact cylinder ADVU

Material:

Flange: Aluminium

Screws: Galvanised steel

Free of copper, PTFE and silicone



### Dimensions and ordering data

For Ø	B1	H	Max. overall stroke length [mm]	CRC <sup>1)</sup>	Weight [g]	Part No.	Type
12/16	12,5	38	400	2	22	<b>161 194</b>	<b>DPVU-12/16</b>
20	12,5	38	400	2	36	<b>161 195</b>	<b>DPVU-20</b>
25	13	39,5	400	2	44	<b>161 196</b>	<b>DPVU-25</b>
32	14,5	44,5	600	2	90	<b>161 197</b>	<b>DPVU-32</b>
40	14,5	45,5	600	2	137	<b>161 198</b>	<b>DPVU-40</b>
50	14,5	45,5	600	2	177	<b>161 199</b>	<b>DPVU-50</b>
63	14,5	50	600	2	308	<b>161 200</b>	<b>DPVU-63</b>
80	16,5	56	800	2	495	<b>161 201</b>	<b>DPVU-80</b>
100	19,5	66,5	800	2	859	<b>161 202</b>	<b>DPVU-100</b>



Note

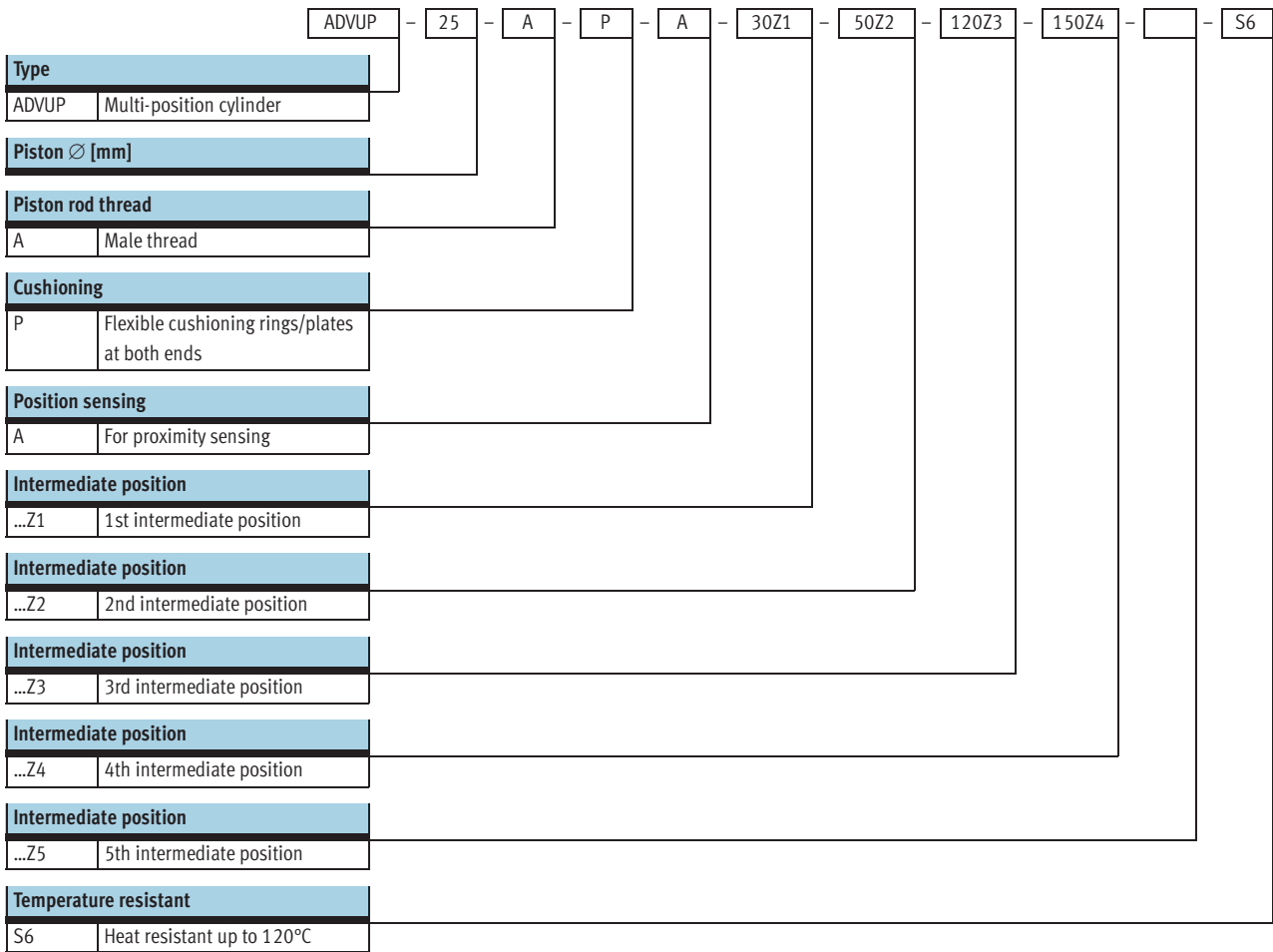
The maximum overall stroke length may not be exceeded when combining cylinders and the adapter kit.

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

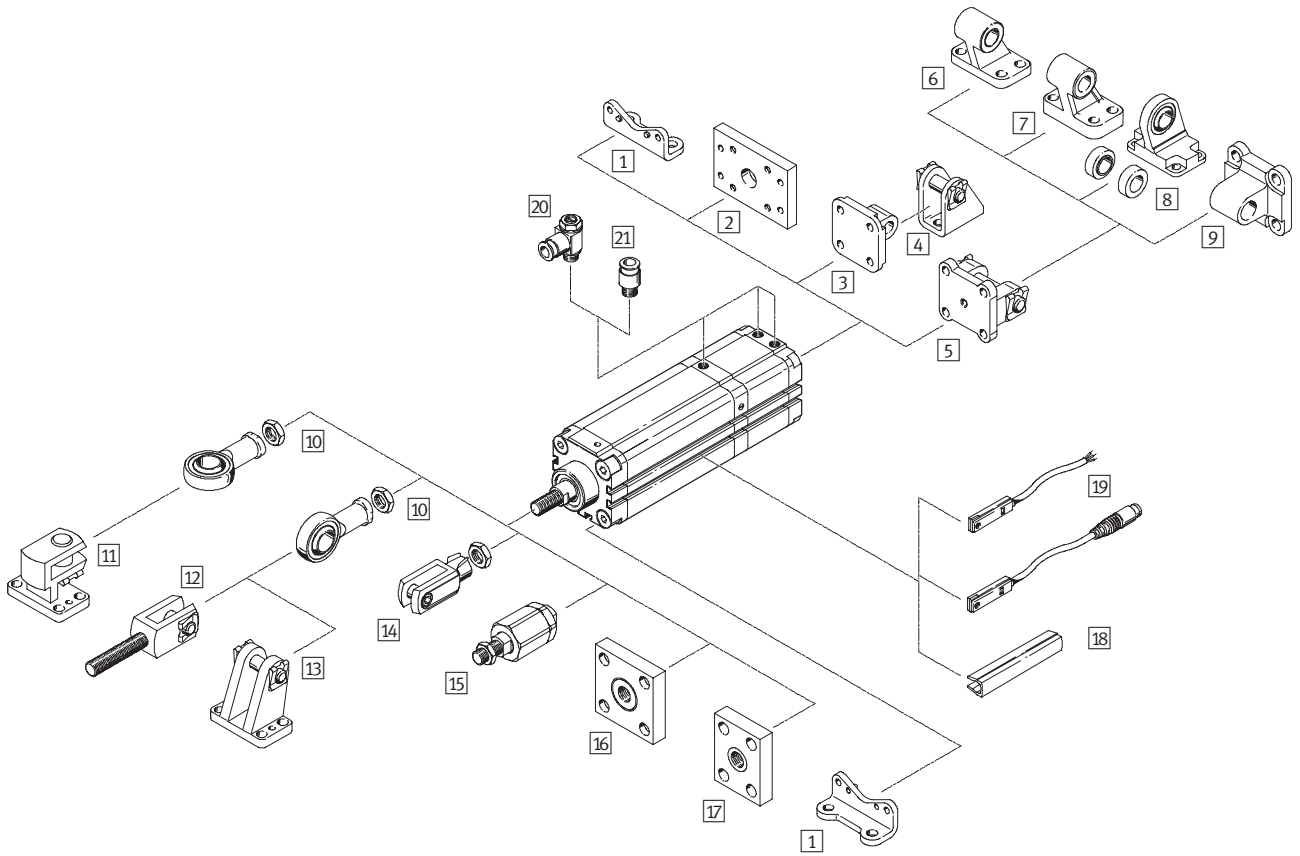
# Multi-position cylinders ADVUP

Type codes



# Multi-position cylinders ADVUP

Peripherals overview



Special-function drives  
Multi-position cylinders

5.10

# Multi-position cylinders ADVUP

Peripherals overview

FESTO

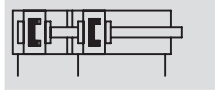
Mounting attachments and accessories					
	Brief description	∅ 25	∅ 40, 63, 100	→ Page	
1	Foot mounting HUA	for bearing and end caps	■	■	1 / 5.10-40
2	Flange mounting FUA	for end caps	■	■	1 / 5.10-41
3	Swivel flange SUA for ∅ 25	for end caps	■	-	1 / 5.10-42
4	Clevis foot LBN	-	■	-	1 / 5.10-43
5	Swivel flange SUA for ∅ 40, 63, 100	for end caps	-	■	1 / 5.10-42
6	Clevis foot LN	-	-	■	1 / 5.10-43
7	Clevis foot LNG	-	-	■	1 / 5.10-43
8	Clevis foot LSN	with spherical bearing	-	■	1 / 5.10-43
9	Swivel flange SNCL	-	-	■	1 / 5.10-43
10	Rod eye SGS	with spherical bearing	■	■	1 / 5.10-43
11	Right-angle clevis foot LQG	-	-	■	1 / 5.10-43
12	Rod clevis SGA	with male thread	■	■	1 / 5.10-43
13	Clevis foot LBG	-	-	■	1 / 5.10-43
14	Rod clevis SG	Permits a swivelling movement of the cylinder in one plane	■	■	1 / 5.10-43
15	Self-aligning rod coupler FK	for compensating radial and angular deviations	■	■	1 / 5.10-43
16	Coupling piece KSG	for compensating radial deviations	■	■	1 / 5.10-43
17	Coupling piece KSZ	for cylinders with a non-rotating piston rod to compensate for radial deviations	■	■	1 / 5.10-43
18	Slot cover ABP-5-S	to protect the sensor cable and keep dirt out of the sensor slots	■	■	1 / 5.10-44
19	Proximity sensors SME/SMT-8	can be integrated in the cylinder profile barrel	■	■	1 / 5.10-44
20	One-way flow control valve GRLA/GRLZ	for speed regulation	■	■	1 / 5.10-45
21	Push-in fitting QS	for connecting compressed air tubing with standard O.D.	■	■	Volume 3

# Multi-position cylinders ADVUP

Technical data

FESTO

## Function



-  $\varnothing$  - Diameter  
25, 40, 63, 100

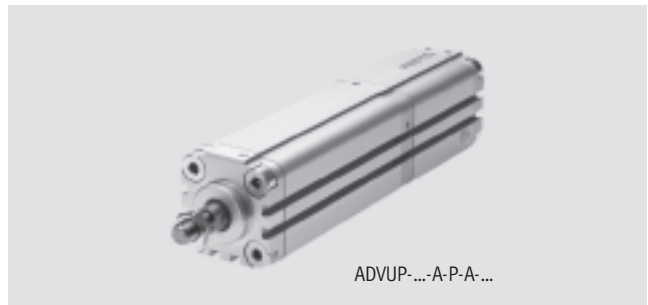
- | - Stroke length  
1 ... 2000

- - [www.festo.com/en/Spare\\_parts\\_service](http://www.festo.com/en/Spare_parts_service)

## Variants



S6



General technical data					
Piston $\varnothing$		25	40	63	100
Pneumatic connection		M5	M5	G $\frac{1}{8}$	G $\frac{1}{4}$
Piston rod thread	female	M5	M8	M10	M12
	male	M10x1.25	M12x1.25	M16x1.5	M20x1.5
Operating medium	Filtered compressed air, lubricated or unlubricated				
Constructional design	Piston				
	Piston rod				
Cushioning	Flexible cushioning rings/plates at both ends				
Position sensing	For proximity sensing				
Type of mounting	Using internal threads				
	Via accessories				
Mounting position	Any				

Operating pressure [bar]					
Piston $\varnothing$		25	40	63	100
2 cylinders		1.1 ... 10		0.9 ... 10	
3 cylinders		1.4 ... 10		1.2 ... 10	
4 cylinders		1.7 ... 10		1.5 ... 10	
5 cylinders		2.0 ... 10		1.8 ... 10	

Ambient conditions		
Multi-position cylinder	Basic version	S6
Ambient temperature <sup>1)</sup>	[°C]	-20 ... +80
Corrosion resistance class CRC <sup>2)</sup>		2

1) Note operating range of proximity sensors

2) 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



# Multi-position cylinders ADVUP

Technical data

FESTO

Forces [N] and impact energy [J]				
Piston Ø	25	40	63	100
Theoretical force at 6 bar, advancing	295	754	1,870	4,712
Theoretical force at 6 bar, retracting	247	633	1,682	4,418
Max. impact energy at end positions	0.10	0.52	0.70	1.00

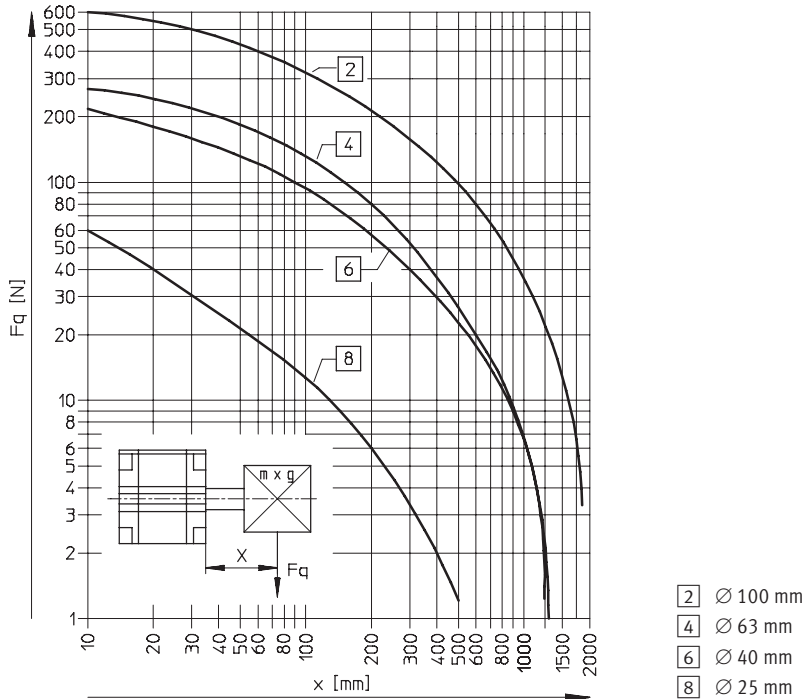
Weights [g]				
Piston Ø	25	40	63	100
<b>2 cylinders</b>				
Product weight at 0 mm stroke	375	825	1,200	5,250
Additional weight per 10 mm stroke	36	70	136	200
Moving load at 0 mm stroke	52	126	268	1,228
Additional load per 10 mm stroke	6	12	21	38
<b>3 cylinders</b>				
Product weight at 0 mm stroke	500	1,100	1,600	7,000
Additional weight per 10 mm stroke	36	69	134	200
Moving load at 0 mm stroke	78	189	402	1,842
Additional load per 10 mm stroke	6	11	19	38
<b>4 cylinders</b>				
Product weight at 0 mm stroke	625	1,375	2,000	8,750
Additional weight per 10 mm stroke	36	69	133	200
Moving load at 0 mm stroke	104	252	536	2,456
Additional load per 10 mm stroke	6	11	18	38
<b>5 cylinders</b>				
Product weight at 0 mm stroke	750	1,650	2,400	10,500
Additional weight per 10 mm stroke	36	69	133	200
Moving load at 0 mm stroke	130	315	670	3,070
Additional load per 10 mm stroke	6	11	18	38

# Multi-position cylinders ADVUP

Technical data

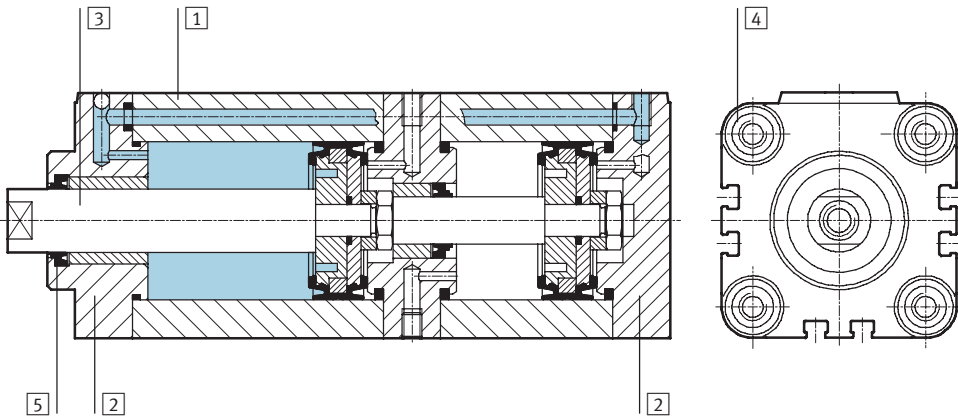


## Max. lateral force $F_q$ as a function of projection $X$



## Materials

Sectional view



Multi-position cylinder	Basic version	S6
1 Cylinder barrel	Aluminium smooth anodised	Wrought aluminium alloy
2 Bearing end cap	Aluminium smooth anodised	Wrought aluminium alloy
3 Piston rod $\varnothing$ 25	High-alloy stainless steel	High-alloy stainless steel
$\varnothing$ 40, 63, 100	High-alloy steel	High-alloy steel
4 Flange screws	Tempered steel	Tempered steel
5 Dynamic seals	Polyurethane	Fluorocarbon rubber

# Multi-position cylinders ADVUP

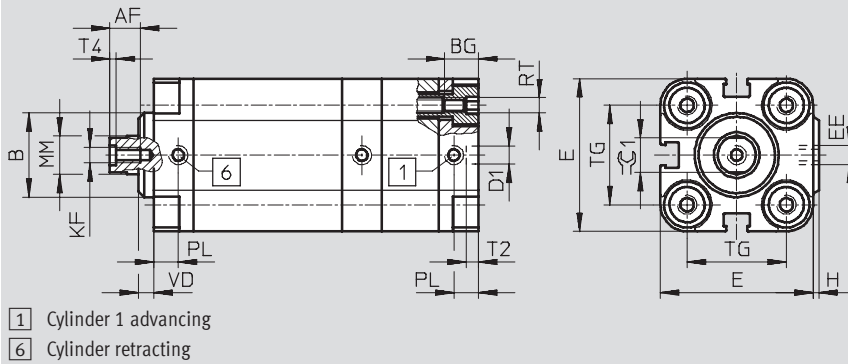
Technical data



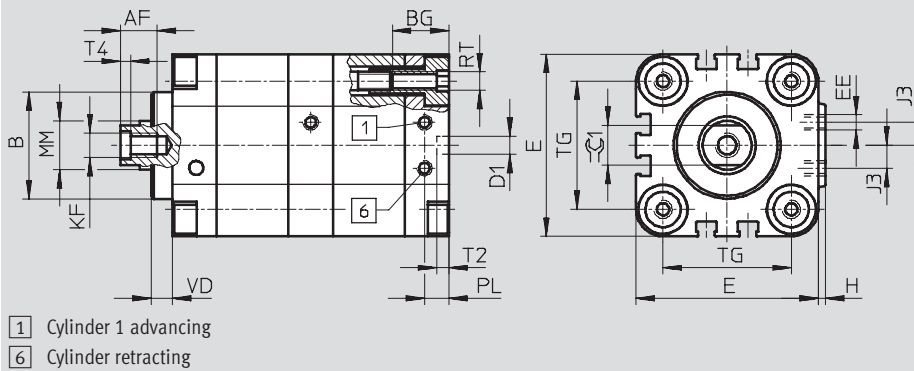
## Dimensions – Basic cylinder

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

Piston Ø 25 mm



Piston Ø 40, 63, 100 mm



Ø	AF	B	BG	D1	E	EE	H	J3	KF
[mm]		Ø		Ø H9					
25	10	22	11	6	40	M5	1.5	–	M5
40	12	35	15	6	60	M5	2.5	7.5	M8
63	16	42	23	8	87	G $\frac{1}{8}$	4	10.5	M10
100	20	55	23	8	128	G $\frac{1}{4}$	5	14.5	M12

Ø	MM	PL	RT	T2	T4	TG	VD	⊖C1
[mm]	Ø			-0.2				h13
25	10	8	M5	4	2	26	4	9
40	16	8	M6	4	3.3	42	7	13
63	20	8	M10	4	4.7	62	11.5	17
100	25	10.5	M10	4	6.1	103	15	22

# Multi-position cylinders ADVUP

Technical data

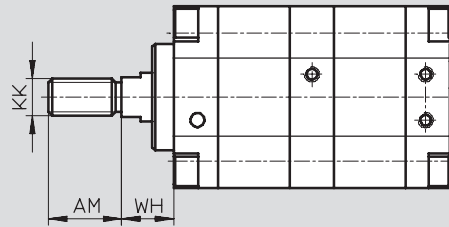
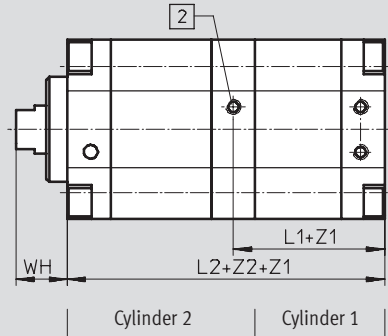


## Dimensions – Variants

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

2 cylinders

with male thread



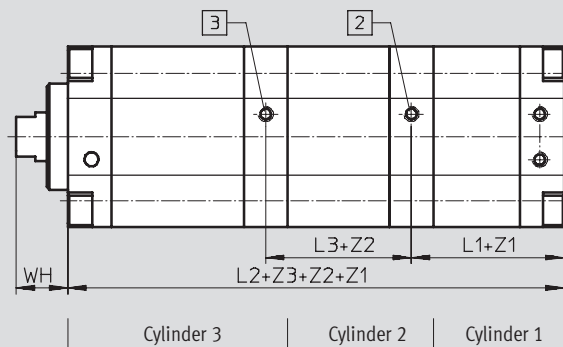
2 Cylinder 2 advancing

Z1 Stroke of cylinder 1  
Z2 Stroke of cylinder 2

- Note

A piston rod with male thread also exists for the ADVUP variants comprising 3, 4 or 5 cylinders.

3 cylinders



2 Cylinder 2 advancing

Z1 Stroke of cylinder 1

3 Cylinder 3 advancing

Z2 Stroke of cylinder 2

Z3 Stroke of cylinder 3

∅ [mm]	AM	KK	L1	L2		L3	WH
				2 cylinders	3 cylinders		
25 <sup>1)</sup>	22	M10x1.25	39	78	110.5	32.5	11.5
40 <sup>1)</sup>	24	M12x1.25	45.3	90.5	128.5	38	16.5
63 <sup>1)</sup>	32	M16x1.5	50.3	100.5	143	42.5	21.5
100 <sup>1)</sup>	40	M20x1.5	67.8	135.5	193.5	58	27

1) Nut for piston rod thread included in scope of delivery.

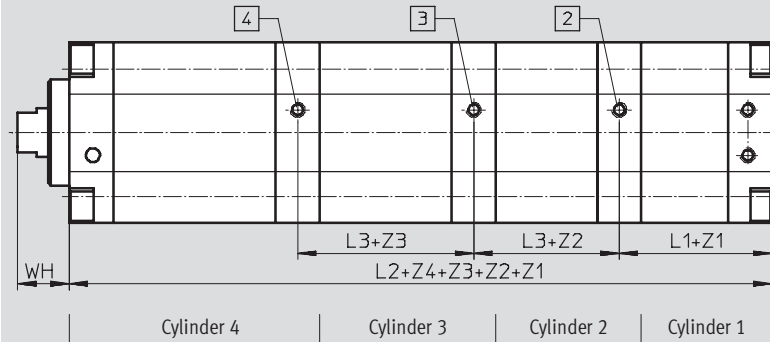
# Multi-position cylinders ADVUP

Technical data

## Dimensions – Variants

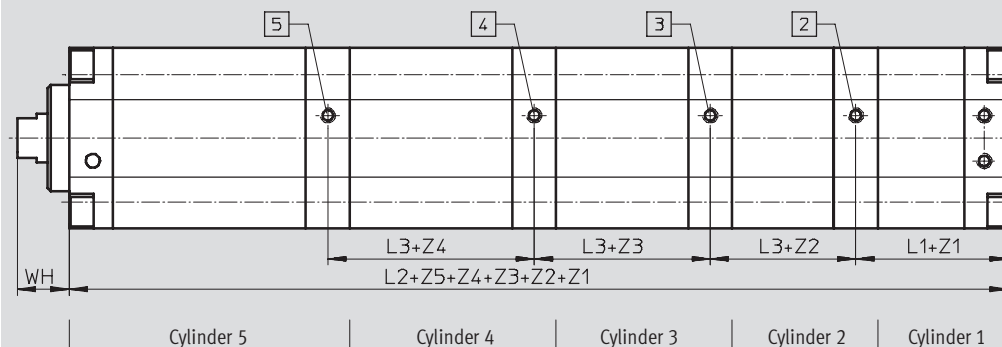
Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)

### 4 cylinders



- |   |   |
|---|---|
| <p>2 Cylinder 2 advancing</p> <p>3 Cylinder 3 advancing</p> <p>4 Cylinder 4 advancing</p> | <p>Z1 Stroke of cylinder 1</p> <p>Z2 Stroke of cylinder 2</p> <p>Z3 Stroke of cylinder 3</p> <p>Z4 Stroke of cylinder 4</p> |
|---|---|

### 5 cylinders



- |   |  |
|---|--|
| <p>2 Cylinder 2 advancing</p> <p>3 Cylinder 3 advancing</p> <p>4 Cylinder 4 advancing</p> <p>5 Cylinder 5 advancing</p> | <p>Z1 Stroke of cylinder 1</p> <p>Z2 Stroke of cylinder 2</p> <p>Z3 Stroke of cylinder 3</p> <p>Z4 Stroke of cylinder 4</p> <p>Z5 Stroke of cylinder 5</p> |
|---|--|

∅ [mm]	L1	L2		L3	WH
		4 cylinders	5 cylinders		
25 <sup>1)</sup>	39	143	175.5	32.5	11.5
40 <sup>1)</sup>	45.3	166.5	204.5	38	16.5
63 <sup>1)</sup>	50.3	185.5	228	42.5	21.5
100 <sup>1)</sup>	67.8	251.5	309.5	58	27

1) Nut for piston rod thread included in scope of delivery.

# Multi-position cylinders ADVUP, female thread

Ordering data – Modular product system



M Mandatory data					O Options					
Module No.	Drive system	Size	Cushioning	Position sensing	Mid-position					Temperature-resistant
					1	2	3	4	5	
161 147	ADVUP	25	P	A	...Z1	...Z2	...Z3	...Z4	...Z5	S6
161 148		40								
161 149		63								
161 150		100								
<b>Ordering example</b>										
161 147	ADVUP	- 25	- P	- A	- 40Z1	- 95Z2	-	-	-	- S6

Ordering table								
Size	25	40	63	100	Condi-tions	Code	Enter code	
M Module No.	161 147	161 148	161 149	161 150				
Drive system	Compact multi-position cylinders					ADVUP		ADVUP
Size	25	40	63	100		-...		
Cushioning	Flexible cushioning rings/plates at both ends					-P		-P
Position sensing	For proximity sensing					-A		-A
1. Mid-position [mm]	1 ... 200	1 ... 300	1 ... 300	1 ... 400	1	-...Z1		
2. Mid-position [mm]	1 ... 300	1 ... 1000	1 ... 1000	1 ... 1000	1 2	-...Z2		
3. Mid-position [mm]	1 ... 300	1 ... 1000	1 ... 1000	1 ... 1000	1 2	-...Z3		
4. Mid-position [mm]	1 ... 300	1 ... 1000	1 ... 1000	1 ... 1000	1 2	-...Z4		
5. Mid-position [mm]	1 ... 300	1 ... 1000	1 ... 1000	1 ... 1000	1 2	-...Z5		
Temperature-resistant	Heat-resistant seals to max. 120° C					-S6		

- 1 Z1 ... Z5 For the selected mid-positions the following must apply:  
 The end of the retracted piston rod is the reference point for all mid-positions!  
 Z1 < Z2 < Z3 < Z4 < Z5: each subsequent mid-position must be larger than the one that precedes it.  
 Maximum overall length (sum of all individual strokes):  
 Z1 + Z2 + Z3 + Z4 + Z5 ≤ 500 mm at Ø 25  
 Z1 + Z2 + Z3 + Z4 + Z5 ≤ 2000 mm at Ø 40 ... 100.

- 2 Z2 ... Z5 Max. permissible stroke except for the last position (visible piston rod) in mm:  
 200 mm for Ø 25;  
 300 mm for Ø 40, 63;  
 400 mm for Ø 100.

Transfer order code

# Multi-position cylinders ADVUP, male thread

Ordering data – Modular product system



M Mandatory data						O Options					
Module No.	Drive system	Size	Thread type	Cushioning	Position sensing	Mid-position					Temperature-resistant
						1	2	3	4	5	
197 277	ADVUP	25	A	P	A	...Z1	...Z2	...Z3	...Z4	...Z5	S6
197 278		40									
197 279		63									
197 280		100									
<b>Ordering example</b>											
<b>197 278</b>	<b>ADVUP</b>	<b>- 25</b>	<b>- A</b>	<b>- P</b>	<b>- A</b>	<b>- 20Z1</b>					

Ordering table								
Size	25	40	63	100	Condi-tions	Code	Enter code	
M Module No.	197 277	197 278	197 279	197 280				
Drive system	Compact multi-position cylinders					ADVUP		ADVUP
Size	25	40	63	100		-...		
Thread type	Male thread					-A		-A
Cushioning	Flexible cushioning rings/plates at both ends					-P		-P
Position sensing	For proximity sensing					-A		-A
1. Mid-position [mm]	1 ... 200	1 ... 300	1 ... 300	1 ... 400	1	-...Z1		
2. Mid-position [mm]	1 ... 300	1 ... 1000	1 ... 1000	1 ... 1000	1 2	-...Z2		
3. Mid-position [mm]	1 ... 300	1 ... 1000	1 ... 1000	1 ... 1000	1 2	-...Z3		
4. Mid-position [mm]	1 ... 300	1 ... 1000	1 ... 1000	1 ... 1000	1 2	-...Z4		
5. Mid-position [mm]	1 ... 300	1 ... 1000	1 ... 1000	1 ... 1000	1 2	-...Z5		
Temperature-resistant	Heat-resistant seals to max. 120° C					-S6		

**1 Z1 ... Z5** For the selected mid-positions the following must apply:  
 The end of the retracted piston rod is the reference point for all mid-positions!  
 $Z1 < Z2 < Z3 < Z4 < Z5$ : each subsequent mid-position must be larger than the one that precedes it.  
 Maximum overall length (sum of all individual strokes):  
 $Z1 + Z2 + Z3 + Z4 + Z5 \leq 500 \text{ mm at } \varnothing 25$   
 $Z1 + Z2 + Z3 + Z4 + Z5 \leq 2000 \text{ mm at } \varnothing 40 \dots 100.$

**2 Z2 ... Z5** Max. permissible stroke except for the last mid-position (visible piston rod) in mm:  
 200 mm for  $\varnothing 25$ ;  
 300 mm for  $\varnothing 40, 63$ ;  
 400 mm for  $\varnothing 100.$

Transfer order code

# Multi-position cylinders ADVUP

Accessories

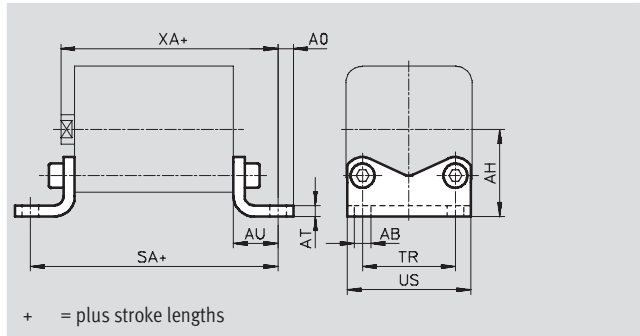


## Foot mounting HUA

Material:

Galvanised steel

Free of copper, PTFE and silicone



Dimensions and ordering data										
For Ø	AB Ø	AH	AO	AT	AU	SA				TR
						2 cylinders <sup>1)</sup>	3 cylinders <sup>2)</sup>	4 cylinders <sup>3)</sup>	5 cylinders <sup>4)</sup>	
25	6.6	29	6.25	4	16	110	142.5	175	207.5	26
40	9	40.5	8.25	5	20	130.5	168.5	206.5	244.5	42
63	11	56.5	11.75	6	27	154.5	197	239.5	282	62
100	13.5	81	11.75	8	33	201.5	259.5	317.5	375.5	103

For Ø	US	XA				CRC <sup>5)</sup>	Weight [g]	Part No.	Type
		2 cylinders <sup>1)</sup>	3 cylinders <sup>2)</sup>	4 cylinders <sup>3)</sup>	5 cylinders <sup>4)</sup>				
25	38	105.5	138	170.5	203	2	90	157 311	HUA-25
40	58	127	165	203	241	2	201	157 313	HUA-40
63	85	149	191.5	234	276.5	2	550	157 315	HUA-63
100	126	195.5	253.5	311.5	369.5	2	1,050	157 317	HUA-100

- 1) plus stroke length X1+X2
- 2) plus stroke length X1+X2+X3
- 3) plus stroke length X1+X2+X3+X4
- 4) plus stroke length X1+X2+X3+X4+X5

5) 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



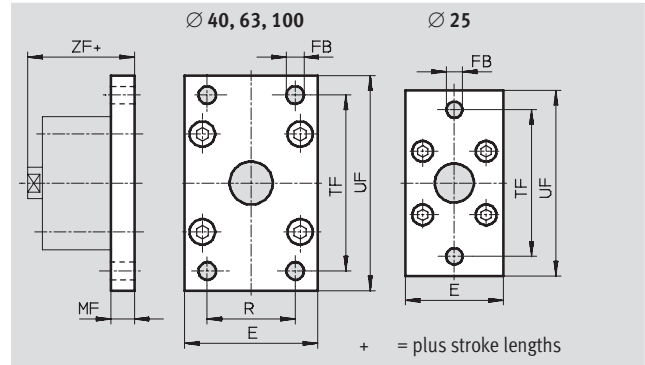
# Multi-position cylinders ADVUP

Accessories



## Flange mounting FUA

Material:  
Clear anodised aluminium



Dimensions and ordering data														
For Ø	E	FB Ø	MF	R	TF	UF	ZF				CRC <sup>5)</sup>	Weight [g]	Part No.	Type
							2 cylinders <sup>1)</sup>	3 cylinders <sup>2)</sup>	4 cylinders <sup>3)</sup>	5 cylinders <sup>4)</sup>				
25	40	6.6	10	–	60	76	99.5	132	164.5	197	2	87	157 301	FUA-25
40	60	9	10	36	82	102	117	155	193	231	2	180	157 303	FUA-40
63	87	9	15	50	110	130	137	179.5	222	264.5	2	550	157 305	FUA-63
100	128	14	15	75	163	190	177.5	235.5	293.5	351.5	2	1 035	157 307	FUA-100

- 1) plus stroke length X1+X2
- 2) plus stroke length X1+X2+X3
- 3) plus stroke length X1+X2+X3+X4
- 4) plus stroke length X1+X2+X3+X4+X5
- 5) 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

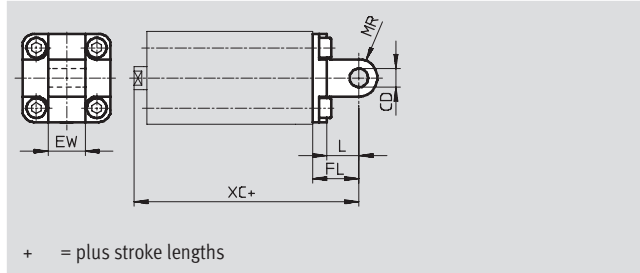
# Multi-position cylinders ADVUP

Accessories



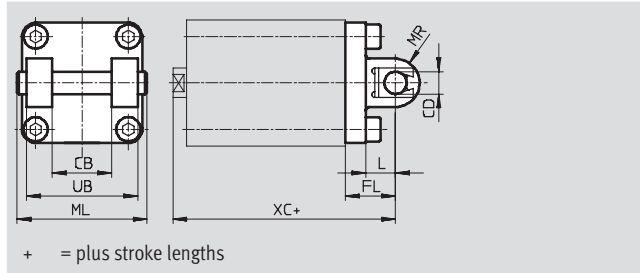
## Swivel flange SUA for piston $\varnothing$ 25 mm

Material:  
Anodised aluminium  
Free of copper, PTFE and silicone



## for piston $\varnothing$ 40, 63, 100 mm

Material:  
Anodised aluminium  
Free of copper, PTFE and silicone




Dimensions and ordering data								
For $\varnothing$	CB	CD $\varnothing$	EW	FL	L	ML	MR	UB
25	–	8	16	20	14	–	8	–
40	28	12	–	25	16	62	12	52
63	40	16	–	32	21	82	16	70
100	60	20	–	41	26	126	20	110

For $\varnothing$	XC				Weight [g]	Part No.	Type
	2 cylinders <sup>1)</sup>	3 cylinders <sup>2)</sup>	4 cylinders <sup>3)</sup>	5 cylinders <sup>4)</sup>			
25	109.5	142	174.5	207	86	157 321	SUA-25
40	132	170	208	246	320	157 323	SUA-40
63	154	196.5	239	281.5	760	157 325	SUA-63
100	203.5	261.5	319.5	377.5	1 900	157 327	SUA-100

- 1) plus stroke length X1+X2
- 2) plus stroke length X1+X2+X3
- 3) plus stroke length X1+X2+X3+X4
- 4) plus stroke length X1+X2+X3+X4+X5


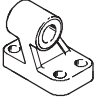
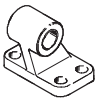
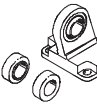
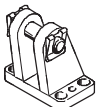
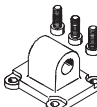
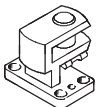
For $\varnothing$	Max. stroke length
25	50 mm
40	100 mm
63	100 mm
100	150 mm





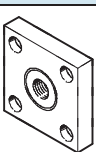
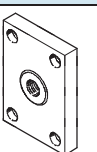
-  Note  
The maximum stroke length may not be exceeded when combining cylinders and swivel flanges.

# Multi-position cylinders ADVUP

Accessories

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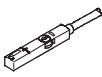

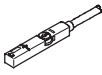
Ordering data – Mounting attachments				Technical data → 1 / 10.1-2			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
<b>Clevis foot LBN</b>				<b>Clevis foot LNG</b>			
	25	6 059	LBN-20/25		40	33 891	LNG-40
					63	33 893	LNG-63
					100	33 895	LNG-100
<b>Clevis foot LN</b>				<b>Clevis foot LSN</b>			
	40	5 148	LN-40		40	5 562	LSN-40
	63	5 150	LN-63		63	5 564	LSN-63
	100	5 152	LN-100		100	5 566	LSN-100
<b>Clevis foot LBG</b>				<b>Swivel flange SNCL</b>			
	40	31 762	LBG-40		40	174 405	SNCL-40
	63	31 764	LBG-63		63	174 407	SNCL-63
	100	31 766	LBG-100		100	174 409	SNCL-100
<b>Right-angle clevis foot LQG</b>							
	25	–	–				
	40	31 769	LQG-40				
	63	31 771	LQG-63				
	100	31 773	LQG-100				

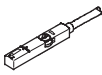


Ordering data – Piston rod attachments				Technical data → 1 / 10.3-3			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
<b>Rod eye SGS</b>				<b>Rod clevis SGA</b>			
	25	9 261	SGS-M10x1,25		25	32 954	SGA-M10x1,25
	40	9 262	SGS-M12x1,25		40	10 767	SGA-M12x1,25
	63	9 263	SGS-M16x1,5		63	10 768	SGA-M16x1,5
	100	9 264	SGS-M20x1,5		100	10 769	SGA-M20x1,5
<b>Rod clevis SG</b>				<b>Self-aligning rod coupler FK</b>			
	25	6 144	SG-M10x1,25		25	6 140	FK-M10x1,25
	40	6 145	SG-M12x1,25		40	6 141	FK-M12x1,25
	63	6 146	SG-M16x1,5		63	6 142	FK-M16x1,5
	100	6 147	SG-M20x1,5		100	6 143	FK-M20x1,5
<b>Coupling piece KSG</b>				<b>Coupling piece KSZ</b>			
	25	32 963	KSG-M10x1,25		25	36 125	KSZ-M10x1,25
	40	32 964	KSG-M12x1,25		40	36 126	KSZ-M12x1,25
	63	32 965	KSG-M16x1,5		63	36 127	KSZ-M16x1,5
	100	32 966	KSG-M20x1,5		100	36 128	KSZ-M20x1,5



# Multi-position cylinders ADVUP


Accessories

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Ordering data – Proximity switches for T-slot, magneto-resistive					Technical data → <a href="http://www.festo.com/catalogue/sm">www.festo.com/catalogue/sm</a>	
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type
<b>N/O contact</b>						
	Insertable in the slot from above, flush with cylinder profile	PNP	Cable, 3-wire	2,5	543 867	SMT-8M-PS-24V-K-2,5-OE
			Plug M8x1, 3-pin	0,3	543 866	SMT-8M-PS-24V-K-0,3-M8D
			Plug M12x1, 3-pin	0,3	543 869	SMT-8M-PS-24V-K-0,3-M12
		NPN	Cable, 3-wire	2,5	543 870	SMT-8M-NS-24V-K-2,5-OE
Plug M8x1, 3-pin	0,3		543 871	SMT-8M-NS-24V-K-0,3-M8D		
	Insertable in the slot lengthwise, flush with the cylinder profile	PNP	Cable, 3-wire	2,5	175 436	SMT-8-PS-K-LED-24-B
			Plug M8x1, 3-pin	0,3	175 484	SMT-8-PS-S-LED-24-B
<b>N/C contact</b>						
	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 switches for T-slot, magnetic reed					Technical data → <a href="http://www.festo.com/catalogue/sm">www.festo.com/catalogue/sm</a>	
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type
<b>N/O contact</b>						
	Insertable in the slot from above, flush with cylinder profile	Contacting	Cable, 3-wire	2,5	543 862	SME-8M-DS-24V-K-2,5-OE
				5,0	543 863	SME-8M-DS-24V-K-5,0-OE
			Cable, 3-wire	2,5	543 872	SME-8M-ZS-24V-K-2,5-OE
			Plug M8x1, 3-pin	0,3	543 861	SME-8M-DS-24V-K-0,3-M8D
	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
<b>N/C contact</b>						
	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 → <a href="http://www.festo.com/catalogue/nebu">www.festo.com/catalogue/nebu</a>	
	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
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2,5	541 363	NEBU-M12G5-K-2.5-LE3
			5	541 364	NEBU-M12G5-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
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2,5	541 367	NEBU-M12W5-K-2.5-LE3
			5	541 370	NEBU-M12W5-K-5-LE3

Ordering data – Slot cover for T-slot				
	Mounting	Length	Part No.	Type
	Insertable from above	2x 0.5 m	151 680	ABP-5-S

# Multi-position cylinders ADVUP

Accessories

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Ordering data – One-way flow control valves				Technical data → Volume 2			
	Connection		Material	Part No.	Type		
	Thread	For tubing OD					
<b>For exhaust air</b>							
	M5	3	Metal design	193 137	GRLA-M5-QS-3-D		
		4		193 138	GRLA-M5-QS-4-D		
		6		193 139	GRLA-M5-QS-6-D		
	G1/8	3		193 142	GRLA-1/8-QS-3-D		
		4		193 143	GRLA-1/8-QS-4-D		
		6		193 144	GRLA-1/8-QS-6-D		
		8		193 145	GRLA-1/8-QS-8-D		
	G1/4	6		193 146	GRLA-1/4-QS-6-D		
		8		193 147	GRLA-1/4-QS-8-D		
		10		193 148	GRLA-1/4-QS-10-D		
	<b>For supply air</b>						
		M5		3	Metal design	193 153	GRLZ-M5-QS-3-D
4			193 154	GRLZ-M5-QS-4-D			
6			193 155	GRLZ-M5-QS-6-D			
G1/8		3	193 156	GRLZ-1/8-QS-3-D			
		4	193 157	GRLZ-1/8-QS-4-D			
		6	193 158	GRLZ-1/8-QS-6-D			
		8	193 159	GRLZ-1/8-QS-8-D			