

Standard cylinders DNC, ISO 15552

Key features

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At a glance



DIN



- Standards-based cylinders to ISO 15552 (corresponds to the withdrawn standards ISO 6431, DIN ISO 6431, VDMA 24 562, NF E 49 003.1 and UNI 10290)

- The modern design and construction save up to 11% on fitting space compared to ordinary standard cylinders, thus permitting a considerably more compact system design

- An extensive range of accessories makes it possible to install the cylinder virtually anywhere
- The widest range of variants on the market provides the right DNC cylinder for every application

Cylinder with clamping units

DNC-KP



- Piston rod can be held or clamped in any position
- Piston rod can be held in position for long periods even with alternating loads, fluctuating operating pressure or leaks in the system

DNCKE



- Suitable for use in safety-related control systems in compliance with EN 954-1, EN 1050, EN 292 and EN 983
- Fail-safe
- Piston rod can be clamped in any position

Cylinder with end-position locking

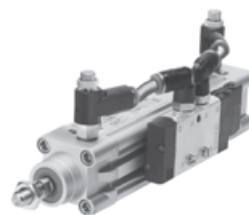
DNC- ... -EL



- Mechanical locking when the end position is reached
- Lock is only automatically released when pressure is supplied to the cylinder
- End-position locking at one or both ends

Cylinder/valve combination

DNC-V1 ... V6



- The cylinder/valve combination is assembled and fitted with tubing ready for connection
- Particularly suitable for decentralised use in larger systems

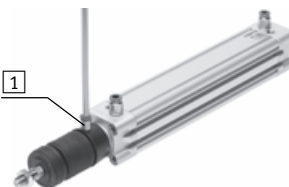
Tandem cylinder

DNCT



- Connection of 2 cylinders with the same piston diameter and stroke in series
- Double the thrust and return force in comparison to a standard cylinder

Longer service life thanks to the bellows kit DADB



The bellows protects the piston rod, the seal and the bearing from the effects of a wide range of media, which has a positive impact on the service life of these components.

The bellows kit is a leak-free system. To prevent unwanted media being drawn in, the supply and exhaust air must be ducted via a pressure compensation hole in the connection part **1**.

The kit protects the piston rod, seal and bearings from a wide range of media, for example:


- dust,
- chips,
- oil,
- grease,
- fuel.

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Type codes

		DNC	–	80	–	320	–	PPV	–	A
Type										
Double-acting										
DNC	Standard cylinder									
Piston Ø [mm]										
Stroke [mm]										
Cushioning										
P	Flexible cushioning rings/pads at both ends									
PPV	Pneumatic cushioning, adjustable at both ends									
Position sensing										
	Without position sensing									
A	Via proximity sensor									

 Note	
<p>The standard cylinder DNC can be ordered using either a fixed part number and type designation or via the modular product system.</p> <p>The type code listed above only</p>	<p>applies to the DNC standard cylinder with fixed part number and type designation.</p> <p>Variants can only be ordered using the modular product system.</p>

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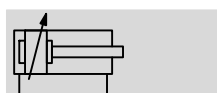
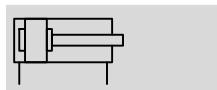
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Technical data

Function

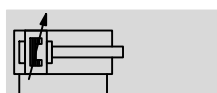
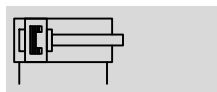
DNC-...

Without position sensing



DNC-...-A-...

With position sensing



Ø - Diameter
32 ... 125 mm

└ - Stroke length
10 ... 2000 mm

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Wearing parts kits

→ page 24



- Standards-based cylinders to ISO 15552 (corresponds to the withdrawn standards ISO 6431, DIN ISO 6431, VDMA 24562, NF E 49 003.1 and UNI 10290)



DIN



General technical data							
Piston Ø	32	40	50	63	80	100	125
Pneumatic connection	G1/8	G1/4	G1/4	G3/8	G3/8	G1/2	G1/2
Piston rod thread	M10x1.25	M12x1.25	M16x1.5	M16x1.5	M20x1.5	M20x1.5	M27x2
	K3	M6	M8	M10	M10	M12	M16
	K5	M10	M12	M16	M16	M20	M27
Constructional design	Piston						
	Piston rod						
	Profile barrel						
Max. torsional backlash of piston rod [°]	Q ±0.65	±0.6	±0.45	±0.45	±0.45	±0.45	–
Cushioning	Flexible cushioning rings/pads at both ends						
	Pneumatic cushioning, adjustable at both ends						
Cushioning length PPV [mm]	20	20	22	22	32	32	42
Position sensing	Via proximity sensor						
Type of mounting	Via female thread						
	Via accessories						
Mounting position	Any						

Note: This product conforms to ISO 1179-1 and to ISO 228-1

Standard cylinders DNC, ISO 15552

Technical data

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Operating and environmental conditions							
Piston Ø	32	40	50	63	80	100	125
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]						
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)						
Operating pressure [bar]	0.6 ... 12						0.6 ... 10
R8	1.5 ... 12						1.5 ... 10
S11	After 10 strokes						
	0.16 ... 12		0.1 ... 12		0.06 ... 12		0.06 ... 10
	After 24 hours						
	0.3 ... 12		0.2 ... 12		0.1 ... 12		0.1 ... 10
Ambient temperature ¹⁾ [°C]	-20 ... +80						
S6	0 ... 120						
Corrosion resistance class CRC ²⁾	2						
R3	3						
Maritime classification ³⁾	See certificate						
ATEX	Specified types → www.festo.com						

1) Note operating range of proximity sensors

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

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Corrosion resistance class CRC 3 to Festo standard FN 940070

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

3) Additional information www.festo.com/sp → Certificates.

Force [N] and impact energy [J]							
Piston Ø	32	40	50	63	80	100	125
Theoretical force at 6 bar, advancing	483	754	1178	1870	3016	4712	7363
S2/S20	415	633	990	1682	2721	4418	6881
Theoretical force at 6 bar, retracting	415	633	990	1682	2721	4418	6881
S2/S20	415	633	990	1682	2721	4418	6881
Max. impact energy at the end positions ¹⁾	0.1	0.2	0.2	0.5	0.9	1.2	5

1) The permissible impact energy is reduced by approx. 10% for variants K10 and S20

Permissible impact velocity:

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

$v_{perm.}$ Permissible impact velocity

$E_{perm.}$ Max. impact energy

$m_{intrinsic}$ Moving load (drive)

m_{load} Moving effective load

Maximum permissible load:

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

 Note

This data represents the maximum values that can be achieved. The maximum permissible impact energy must be observed.

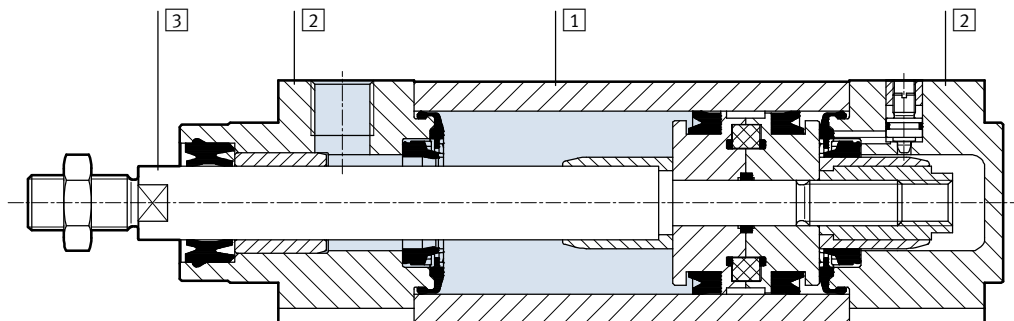
Standard cylinders DNC, ISO 15552

Technical data

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Materials

Sectional view



Standard cylinder	Basic version	K10	R3
1 Profile barrel	Wrought aluminium alloy, smooth anodised		
2 Bearing and end caps	Die-cast aluminium		
3 Piston rod	High-alloy steel	Wrought aluminium alloy, anodised	High-alloy stainless steel
– Seals	Polyurethane, nitrile rubber		
Note on materials	RoHS compliant		

Standard cylinder	R8	S6	S10	S11
1 Profile barrel	Wrought aluminium alloy, smooth anodised			
2 Bearing and end caps	Die-cast aluminium			
3 Piston rod	Tempered steel, hard-chromium plated	High-alloy steel		
– Seals	Polyurethane, nitrile rubber	Fluoro rubber		
Note on materials	RoHS compliant			
	–		Contains PWIS (paint-wetting impairment substances)	

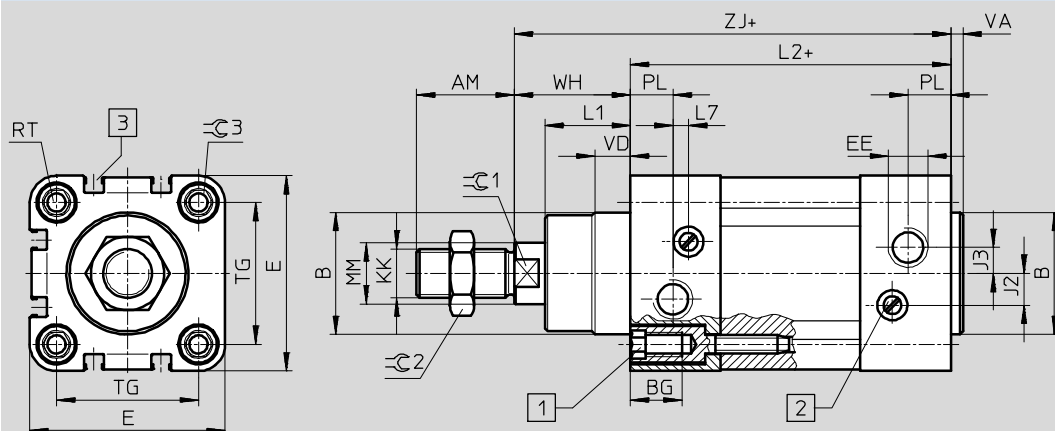
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Technical data

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Dimensions – Basic version

Download CAD data → www.festo.com



- 1 For mounting attachments:
 Ø 32 ... 100: Socket head screw with female thread
 Ø 125: Thread in the end cap
- 2 Regulating screw for adjustable end-position cushioning
- 3 Slot for proximity sensor SME/SMT-8
- + = plus stroke length

Ø [mm]	AM	B Ø d11	BG	E	EE	J2	J3	KK	L1	L2
32	22	30	16	45	G1/8	6	5.2	M10x1.25	18	94
40	24	35	16	54	G1/4	8	6	M12x1.25	21.5	105
50	32	40	17	64	G1/4	10.4	8.5	M16x1.5	28	106
63	32	45	17	75	G3/8	12.4	10	M16x1.5	28.5	121
80	40	45	17	93	G3/8	12.5	8	M20x1.5	34.7	128
100	40	55	17	110	G1/2	12	10	M20x1.5	38.2	138
125	54	60	22	134	G1/2	13	8	M27x2	46	160

Ø [mm]	L7	MM Ø	PL	RT	TG	VA	VD	WH	ZJ	⌀C1	⌀C2	⌀C3
32	3.3	12	15.6	M6	32.5	4	10	26	120	10	16	6
40	3.6	16	14	M6	38	4	10.5	30	135	13	18	6
50	5.1	20	14	M8	46.5	4	11.5	37	143	17	24	8
63	6.6	20	17	M8	56.5	4	15	37	158	17	24	8
80	10.5	25	16.4	M10	72	4	15.7	46	174	22	30	6
100	8	25	18.8	M10	89	4	19.2	51	189	22	30	6
125	14	32	18	M12	110	6	20.5	65	225	27	36	8

• Note: This product conforms to ISO 1179-1 and to ISO 228-1