Stainless steel cylinders

FESTO

- Corrosion-resistant in harsh ambient conditions
- Easy-to-clean design
- Wide choice of variants
- Comprehensive range of accessories

Specified types in accordance with ATEX directive for potentially explosive atmospheres
➔ www.festo.com/en/ex

Stainless steel cylinders

Key features

Their applications

Reliable components need to achieve 100% operational reliability, even in harsh operating conditions. The aim is to maximise availability of machinery while minimising downtimes. Stainless steel cylinders are therefore used in applications where the surface finish of normal pneumatic drives would render them non-resistant to the surrounding media. However, designing a corrosion-resistant system involves more than simply selecting a suitable steel – it also requires the selection of a tailored concept for mounting components and accessories.

Their strengths

Festo's stainless steel cylinders are made from highly resistant materials such as 1.4301 and 1.4401. These popular high-alloy, stainless austenitic chrome/nickel and chrome/nickel/molybdenum steels protect against chemical or electrochemical stress as well as damage to the material surface caused by cleaning or detergents. These groups of materials are particularly resistant to uniform surface corrosion and offer increased protection against pitting and crevice corrosion.

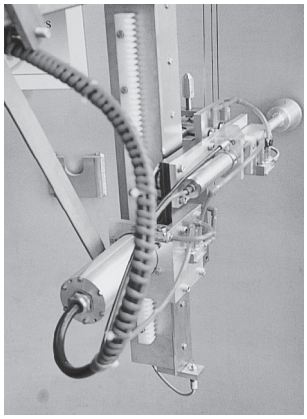
Their advantages

Festo's worldwide service network ensures optimum availability of stainless steel cylinders. As well as a comprehensive range of standard cylinders to DIN ISO 6431 and 6432, we also offer a range of tailored mounting components and accessories. The stainless steel cylinders are assembled with USDA-H1 lubricating grease and wiper seals in accordance with BGVV (Federal Institute for Risk Assessment) guidelines. This means that they are suitable for use in the food industry and for direct contact with food products. We will be pleased to answer any inquiries you may have about future additions to our stainless steel range. Just give us a call.

Good to know

Our many years of experience in the area of stainless steel can be invaluable when you are investigating solutions for harsh environments. Our experts can answer any questions you might have about surface finishes and chemical resistance.

The atmosphere in the curing cellar of a cheese factory consists of an unpleasant mix of ammonia, lactic acid and 98% humidity.



An area subject to radiation of up to 4 sievert/h whilst immersed in fully desalinated water in a manipulator for dismantling nuclear reactor pressure reservoirs and thermal shields.

Stainless steel cylinders

Key features

Resistance

Complete resistance to pitting and crevice corrosion is not always possible, even with ideal application parameters. The following parameters increase the pitting effect of chloride ions:

- Concentration of chloride ions
- Duration of contact
- Temperature
- Decreasing ph value

It must therefore be ensured during design, assembly and operation that all parts of the machinery can be properly cleaned to avoid an accumulation of chloride ions.

Selected sealing materials ensure very high resistance to a wide range of chemical compounds.
Further information on resistance to media can be obtained on the Internet at www.festo.com.

In principle, we recommend that the cylinder be cleaned with the piston rod in the retracted position to avoid the risk of washing out the lifetime lubrication.

Various types of machinery contamination make cleaning processes necessary in many industrial sectors. The degree of cleaning required ranges from wiping the machinery to wet cleaning to foam cleaning with different exposure times and concentrations.

It is therefore impossible to make a general recommendation on compatibility.

Wet cleaning

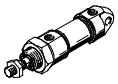
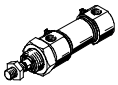
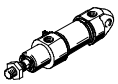
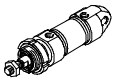
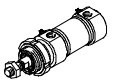
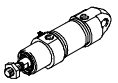
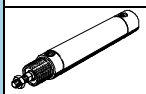
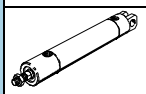
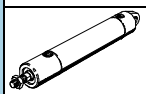
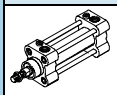
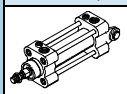
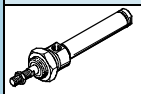
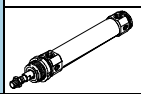
Foam cleaning

Type discontinued CRDG/CRDSW
Available up until 2012

Stainless-steel cylinders

Product range overview

FESTO

Function	Version	Type	Piston ∅ [mm]	Stroke [mm]	Piston rod				
					Through S2	Extended K8	Male thread		Female thread K3
							Extended K2	Special thread K5	
Double-acting	**Standard cylinder to ISO 6432**								
		**CRDSNU** Single-ended piston rod	12, 16	1 … 200	■	■	■	■ above ∅ 25	■ above ∅ 20
			20	1 … 320					
			25	1 … 500					
		**CRDSNU-MQ** Short end cap without swivel mounting	12, 16	1 … 200	–	■	■	■ above ∅ 25	■ above ∅ 20
			20	1 … 320					
			25	1 … 500					
		**CRDSNU-MG** Bearing cap without mounting thread	12, 16	1 … 200	–	■	■	■ above ∅ 25	■ above ∅ 20
			20	1 … 320					
			25	1 … 500					
			25	10, 25, 40, 50, 80, 100, 125, 160, 200	–	–	–	–	–
	Round cylinder								
		**CRDSNU** Single-ended piston rod	32, 40, 50, 63	1 … 500	■	■	■	■	■
		**CRDSNU-MQ** Short end cap without swivel mounting	32, 40, 50, 63	1 … 500	–	■	■	■	■
		**CRDSNU-MG** Bearing cap without mounting thread	32, 40, 50, 63	1 … 500	–	■	■	■	■
			32	10, 25, 40, 50, 80, 100, 125, 160, 200	–	–	–	–	–
		**CRHD-MQ** Bearing cap with male thread	32, 40, 50, 63, 80, 100	10 … 500 Special lengths on request	–	–	–	–	–
		**CRHD-MC** End cap with clevis	32, 40, 50, 63, 80, 100	10 … 500 Special lengths on request	–	–	–	–	–
		**CRHD-MS** End cap with lug	32, 40, 50, 63, 80, 100	10 … 500 Special lengths on request	–	–	–	–	–
	Standard cylinder to ISO 15552 (ISO 6431 and VDMA 24562)								
		**CRDNG** Single-ended piston rod	32, 40, 50, 63, 80, 100, 125	10 … 2,000	■	–	–	–	–
	Standard cylinder with swivel bearing at rear to ISO 15552 (ISO 6431 and VDMA 24562)								
		**CRDNGS** Single-ended piston rod	32, 40, 50, 63, 80, 100, 125	10 … 2,000	–	–	–	–	–
	Round cylinder								
		**CRDG** Single-ended piston rod	12, 16	1 … 200	–	–	–	–	–
			20	1 … 320					
			25 … 63	1 … 500					
		**CRDSW** Single-ended piston rod	32, 40, 50, 63	1 … 500	–	–	–	–	–

Stainless-steel cylinders

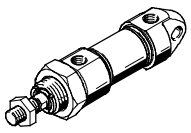
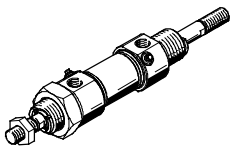
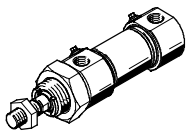
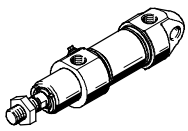
Product range overview

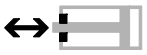
FESTO

Type	Position sensing	Cushioning			Wiper seal material			Heat-resistant seal	Low temperature	→ Page/ Internet
		Fixed	Adjustable	Self-adjusting	Increased chemical resistance	Hard wiper seal	Unlubricated operation			
	A	P	PPV	PPS	A1	A2	A3	S6	TT	
Standard cylinder to ISO 6432										
CRDSNU Single-ended piston rod	■	■	■ above ∅ 20	■ above ∅ 16	■	■	■	■	■	6
CRDSNU-MQ Short end cap without swivel mounting	■	■	■ above ∅ 20	■ above ∅ 16	■	■	■	■	■	6
CRDSNU-MG Bearing cap without mounting thread	■	■	■ above ∅ 20	■ above ∅ 16	■	–	■	■	–	6
	■	–	–	■	■	–	–	–	–	
Round cylinder										
CRDSNU Single-ended piston rod	■	■	■	■	■	■	■	■	■	16
CRDSNU-MQ Short end cap without swivel mounting	■	■	■	■	■	■	■	■	■	16
CRDSNU-MG Bearing cap without mounting thread	■	■	■	■	■	–	■	■	–	16
	■	–	–	■	■	–	–	–	–	
CRHD-MQ Bearing cap with male thread	■	–	■	–	–	–	–	■	–	26
CRHD-MC End cap with clevis	■	–	■	–	–	–	–	■	–	26
CRHD-MS End cap with lug	■	–	■	–	–	–	–	■	–	26
Standard cylinder to ISO 15552 (ISO 6431 and VDMA 24562)										
CRDNG Single-ended piston rod	■	–	■	–	–	–	–	■	–	34
Standard cylinder with swivel bearing at rear to ISO 15552 (ISO 6431 and VDMA 24562)										
CRDNGS Single-ended piston rod	■	–	■	–	–	–	–	■	–	34
Round cylinder										
CRDG Single-ended piston rod	■	■	–	–	–	–	–	–	–	42
CRDSW Single-ended piston rod	■	■	–	–	–	–	–	–	–	48

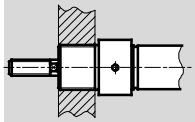
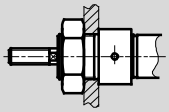
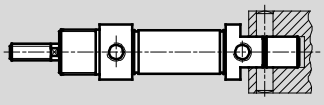
Standard cylinders CRDSNU to ISO 6432, stainless steel

Key features

Variants			
CRDSNU Basic version	CRDSNU-S2: Through piston rod	CRDSNU-MQ: Short end cap without swivel mounting	CRDSNU-MG: Bearing cap without mounting thread
			

Additional variants			
Symbol	Key features		Description
	S2	Through piston rod	For working at both ends with the same force in the forward and return stroke, for attaching external stops
	S6	Heat-resistant seals	Temperature resistance up to max. 120 °C
	K2	Extended male piston rod thread	–
	K3	Female piston rod thread	–
	K5	Special piston rod thread	Metric standard thread to ISO
	K8	Extended piston rod	–
	A1	Wiper seal material	Increased chemical resistance
	A2	Wiper seal material	Hard wiper seal: Cylinder with hard wiper seal
	A3	Wiper seal material	Unlubricated operation: Cleaning processes degrease the piston rod. A special piston rod seal permits a longer service life compared to the standard seal
	TT	Low temperature	Temperature resistance down to max. –40 °C

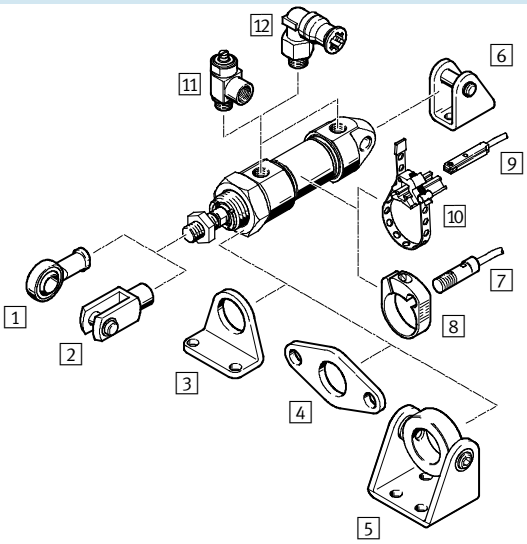
Cushioning types	P cushioning	PPS cushioning	PPV cushioning
Mode of operation	• The drive is equipped with polymer flexible end-position cushioning	• The drive is equipped with self-adjusting end-position cushioning	• The drive is equipped with adjustable end-position cushioning
Application	• Small loads • Low speeds • Low impact energies	• Small to medium loads • Low to medium speeds • Medium impact energies	• Medium to high loads • High speeds • High impact energies
Advantages	• No adjustment required • Time-saving	• No adjustment required • Time-saving • Powerful	• Very powerful

Mounting options		
Threaded mounting	Mounting via hex nut	Swivel mounting at the rear
		

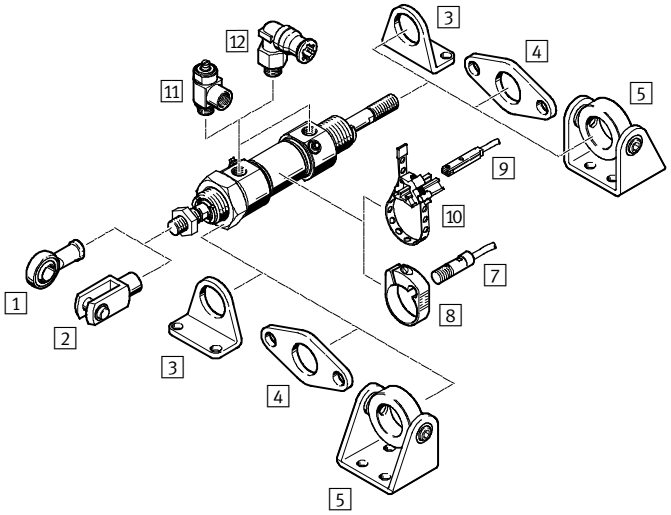
Standard cylinders CRDSNU to ISO 6432, stainless steel

Peripherals overview

CRDSNU-...



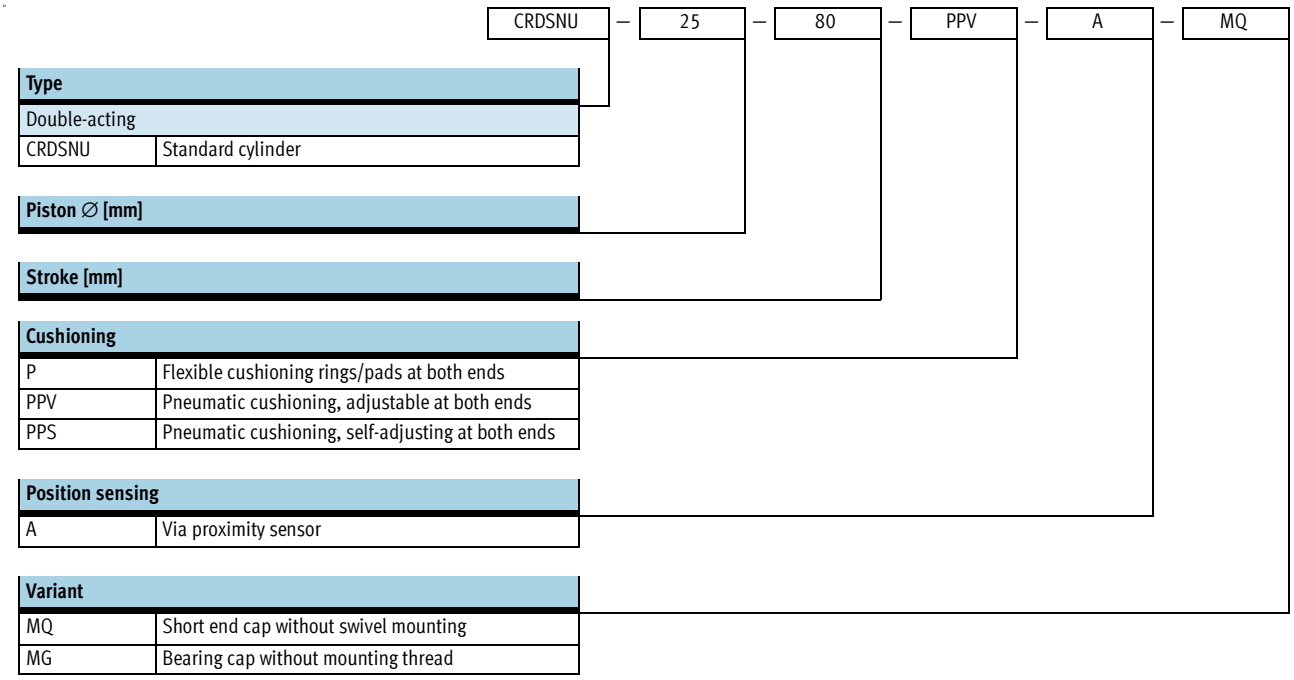
CRDSNU-...-S2



Mounting attachments and accessories							
		Brief description	CRDSNU-				➔ Page/ Internet
			Basic version	MQ	MG	S2	
1	Rod eye CRSGS	With spherical bearing	■	■	■	■	61
2	Rod clevis CRSG	Permits a swivelling movement of the cylinder in one plane	■	■	■	■	61
3	Foot mounting CRHBN	• For bearing caps • With CRDSNU-S2 for bearing and end caps	■	■	–	■	53
4	Flange mounting CRFBN	• For bearing caps • With CRDSNU-S2 for bearing and end caps	■	■	–	■	55
5	Swivel mounting CRSBN	• For bearing caps • With CRDSNU-S2 for bearing and end caps	■	■	–	■	53
6	Clevis foot CRLBN	For end caps	■	–	■	–	58
7	Proximity sensor CRSMEO-4	• Round design • For position sensing	■	■	■	■	61
8	Mounting kit CRSMBR	For proximity sensor CRSMEO-4	■	■	■	■	61
9	Proximity sensor CRSMT-8	• Design for T-slot • For position sensing	■	■	■	■	61
10	Mounting kit SMBR	For proximity sensor CRSMT-8	■	■	■	■	61
11	One-way flow control valve CRGRLA	For regulating speed	■	■	■	■	62
12	Push-in fittings CRQS	For connecting compressed air tubing with standard outside diameter	■	■	■	■	quick star

Standard cylinders CRDSNU to ISO 6432, stainless steel

Type codes



Type	
Double-acting	
CRDSNU	Standard cylinder

Piston ∅ [mm]

Stroke [mm]

Cushioning	
P	Flexible cushioning rings/pads at both ends
PPV	Pneumatic cushioning, adjustable at both ends
PPS	Pneumatic cushioning, self-adjusting at both ends

Position sensing	
A	Via proximity sensor

Variant	
MQ	Short end cap without swivel mounting
MG	Bearing cap without mounting thread

Modular product system

Individually configurable

CRDSNU ➔ 15

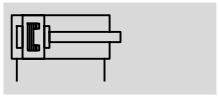
- A1 – Wiper seal for increased chemical resistance
- A2 – Hard wiper seal
- A3 – Wiper seal for unlubricated operation
- S2 – Through piston rod
- K2 – Extended male piston rod thread
- K3 – Female piston rod thread
- K5 – Special piston rod thread
- K8 – Extended piston rod at the front
- S6 – Heat-resistant seals up to max. 120 °C (temperature resistance)
- TT – Low temperature –40 °C ... +80 °C

Standard cylinders CRDSNU to ISO 6432, stainless steel

Technical data

FESTO

Function



- Ø - Diameter
  12 ... 25 mm
- | - Stroke length
  1 ... 500 mm

DIN

General technical data						
Piston ∅			12	16	20	25
Pneumatic connection			M5	M5	G1⁄8	G1⁄8
Piston rod thread			M6	M6	M8	M10x1.25
Constructional design			Piston			
			Piston rod			
			Cylinder barrel			
Cushioning	P		Flexible cushioning rings/pads at both ends			
	PPV		–		Adjustable cushioning at both ends	
	PPS		–	Self-adjusting cushioning at both ends		
Cushioning length	PPV	[mm]	–		15	17
	PPS	[mm]	–	12	15	17
Position sensing			Via proximity sensor			
Type of mounting			Via accessories			
			Via male thread			
Mounting position			Any			

Operating conditions		
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[1]	[bar]	1 ... 10
Suitability for use in the food industry		As per manufacturer's declaration (➔ Support / Downloads)

1) An increase in the minimum operating pressure is possible with variants

Ambient conditions					
Standard cylinder		Basic version	A1	S6	TT
Ambient temperature[1]	[°C]	–20 ... +80	0 ... +80	0 ... +120	–40 ... +80
Corrosion resistance class CRC[2]		3			

1) Note operating range of proximity sensors
2) Corrosion resistance class 3 as per Festo standard 940 070
Components subject to high corrosion stress. 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.

Standard cylinders CRDSNU to ISO 6432, stainless steel

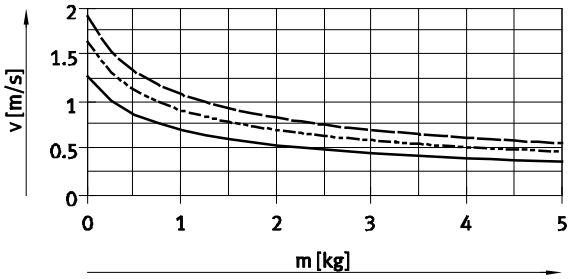
Technical data

Force [N] and impact energy [J]				
Piston ∅	12	16	20	25
Theoretical force at 6 bar, advancing	68	121	188	295
Theoretical force at 6 bar, retracting	51	104	158	247
Impact energy in the end positions for P cushioning[1)]	0.07	0.15	0.20	0.30

1) The values are reduced by approx. 50% at an ambient temperature of 80 °C

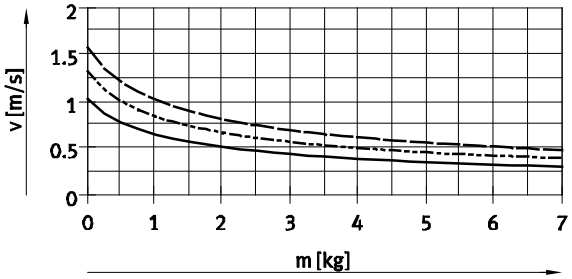
Average piston speed v as a function of applied load m in combination with PPS cushionings

Piston ∅ 16



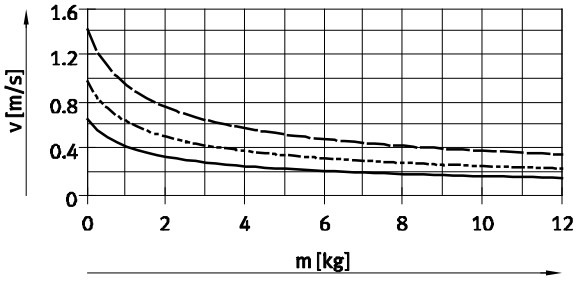
CRDSNU-16-50
CRDSNU-16-100
CRDSNU-16-200

Piston ∅ 20



CRDSNU-20-50
CRDSNU-20-100
CRDSNU-20-200

Piston ∅ 25



CRDSNU-25-50
CRDSNU-25-100
CRDSNU-25-200

Note

Average piston speed
= stroke/movement time

Note

Design software
for flexible cushioning elements
➔ www.festo.com

Additional graphs
for PPS cushioning
➔ www.festo.com

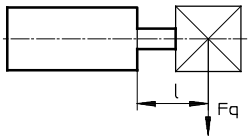
Design software
for PPV cushioning
➔ www.festo.com

Weight [g]				
Piston ∅	12	16	20	25
Basic weight with 0 mm stroke	101	130	310	410
Additional weight per 10 mm stroke	4	5	7	11
Moving load with 0 mm stroke	19	21	42	73
Additional load per 10 mm stroke	2	2	4	6

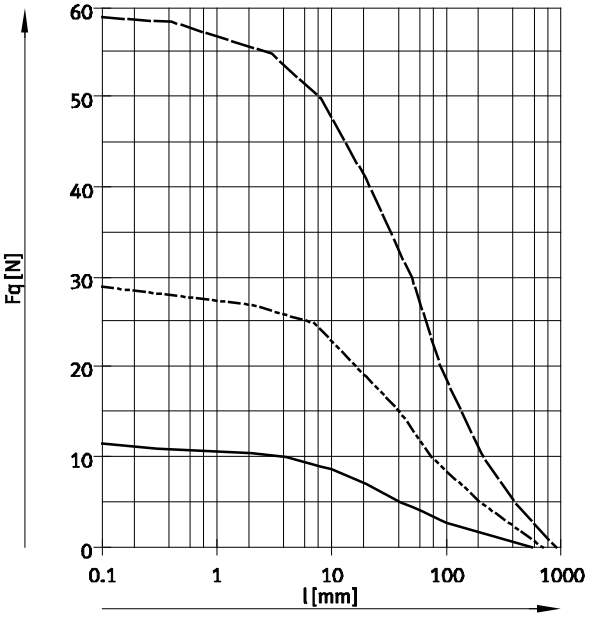
Standard cylinders CRDSNU to ISO 6432, stainless steel

Technical data

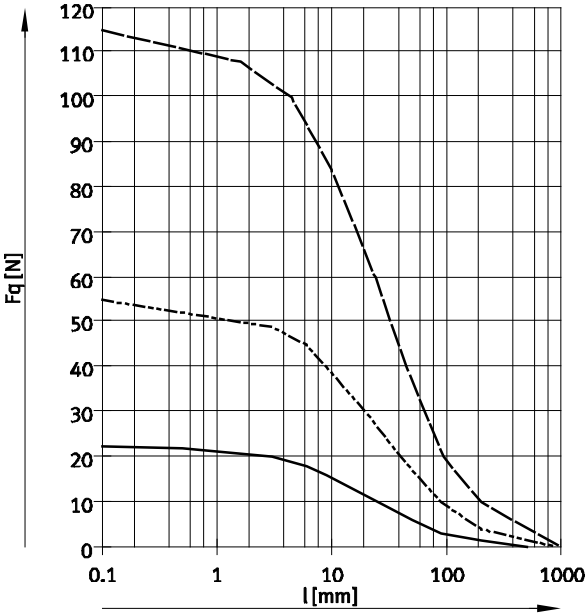
Max. lateral force Fq as a function of projection l



Basic version



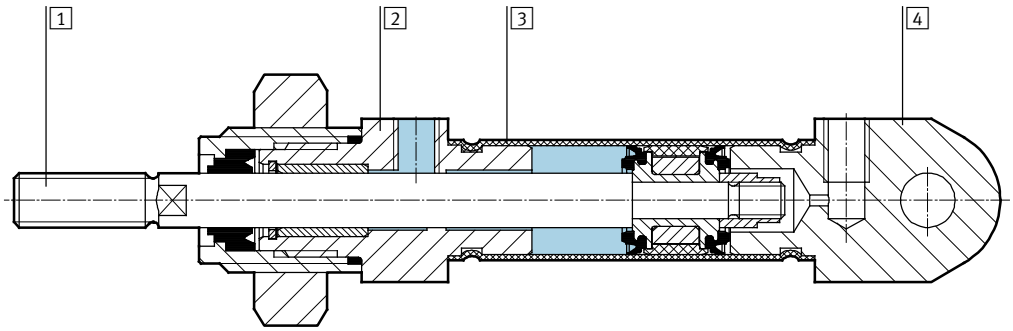
S2 – Through piston rod



— ∅ 12/16
– · – · – ∅ 20
— — — ∅ 25

Materials

Sectional view



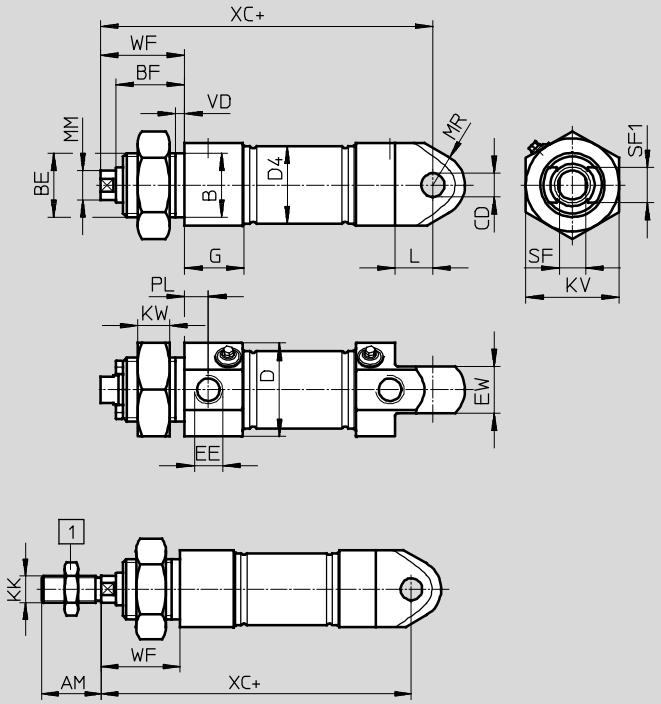
Standard cylinder		Basic version	S6
1	Piston rod	High-alloy stainless steel	
2	Bearing cap	High-alloy stainless steel	
3	Cylinder barrel	High-alloy stainless steel	
4	End cap	High-alloy stainless steel	
–	Seals	Polyurethane	Fluoro elastomer
	Note on materials	RoHS-compliant	
	Certification	Germanischer Lloyd	

Standard cylinders CRDSNU to ISO 6432, stainless steel

Technical data

Dimensions Download CAD data ➔ **www.festo.com**

Basic version



- - Note

1 Piston rod nut is not included in the scope of delivery with ∅ 12 ... 20.

\+ = plus stroke length

∅ [mm]	AM	B ∅ h9	BE	BF	CD ∅ H8	D ∅	D4 ∅
12	16	16	M16x1.5	18	6	20	13.3
16	16	16	M16x1.5	18	6	20	17.3
20	20	22	M22x1.5	20.7	8	30	21.3
25	22	22	M22x1.5	23.5	8	32	26.5

∅ [mm]	EE	EW	G	KK	KV	KW	L	MM ∅
12	M5	12	9.5	M6	24	8	10	6
16	M5	12	9.7	M6	24	8	10	6
20	G⅛	16	20.5	M8	32	11	13	8
25	G⅛	16	20.5	M10x1.25	32	11	13	10

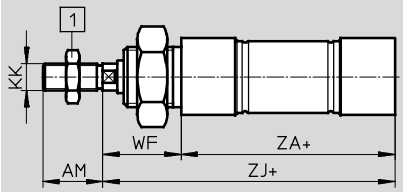
∅ [mm]	MR	PL	SF	SF1	VD	WF	XC ±1
12	8	6	5	9	3.5	22	75
16	8	6	5	9	3.5	22	82
20	11	8.2	7	12	3.5	24	95
25	11	8.2	9	12	3.5	28	104

Standard cylinders CRDSNU to ISO 6432, stainless steel

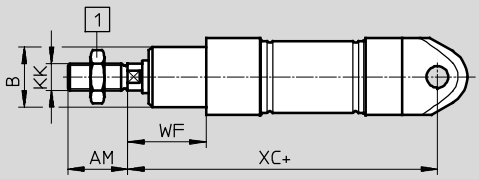
Technical data

Dimensions Download CAD data ➔ **www.festo.com**

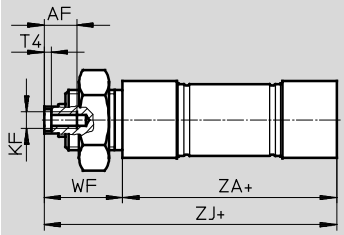
MQ – Short end cap without swivel mounting



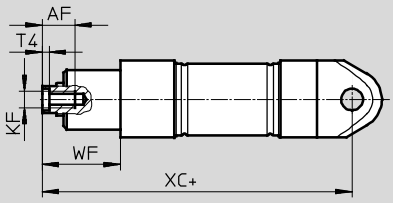
MG – Bearing cap without mounting thread



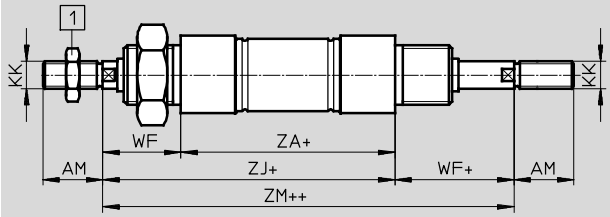
MQ-K3 – Short end cap without swivel mounting, with female piston rod thread



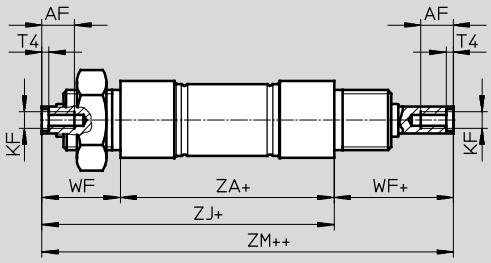
MG-K3 – Bearing cap without mounting thread, with female piston rod thread



S2 – Through piston rod



S2-K3 – Through piston rod, with female thread



- - Note

1 Piston rod nut is not included in the scope of delivery with ∅ 12 ... 20.

\+ = plus stroke length

++ = plus 2x stroke length

∅ [mm]	AF	AM	B ∅ h9	KF	KK
12	–	16	16	–	M6
16	–	16	16	–	M6
20	12	20	22	M4	M8
25	12	22	22	M6	M10x1.25

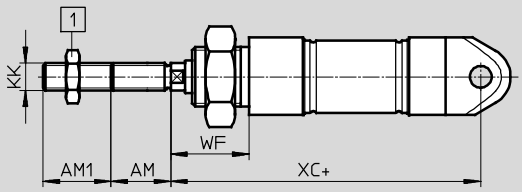
∅ [mm]	T4	WF	XC ±1	ZA	ZJ	ZM
12	–	22	75	50	72	95
16	–	22	82	56	78	101
20	2	24	95	68	92	117
25	2.6	28	104	69.5	97.5	126

Standard cylinders CRDSNU to ISO 6432, stainless steel

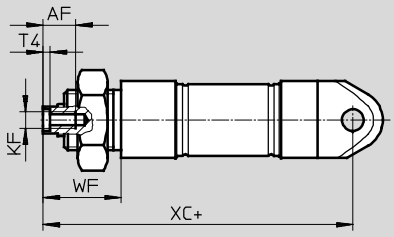
Technical data

Dimensions Download CAD data ➔ **www.festo.com**

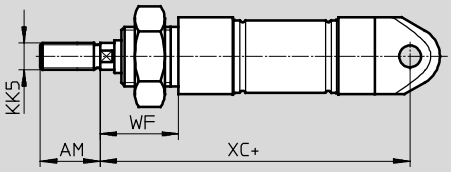
K2 – Extended male piston rod thread



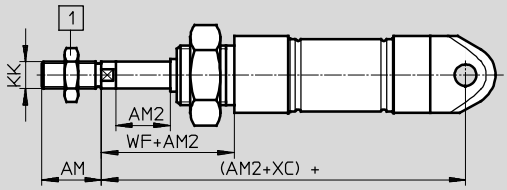
K3 – Female piston rod thread



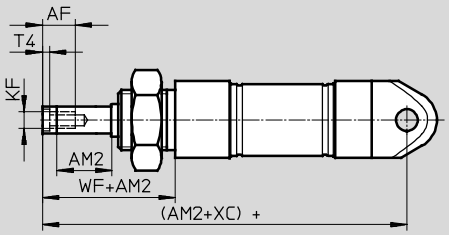
K5 – Special piston rod thread



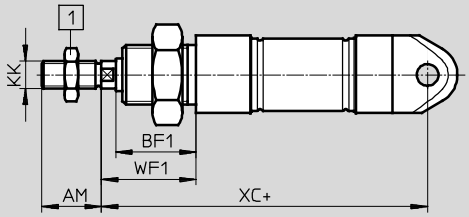
K8 – Extended piston rod



K3-K8 – Extended piston rod, with female thread



TT – Low temperature



- - Note

1 Piston rod nut is not included in the scope of delivery with ∅ 12 … 20.

\+ = plus stroke length

∅ [mm]	AF	AM	AM1 max.	AM2 max.	BF1	KF
12	–	16	1 … 20	1 … 100	24	–
16	–	16	1 … 20	1 … 100	24	–
20	12	20	1 … 25	1 … 100	26.7	M4
25	12	22	1 … 35	1 … 100	29.5	M6

∅ [mm]	KK	KK5	T4	WF	WF1	XC ±1
12	M6	–	–	22	28	75
16	M6	–	–	22	28	82
20	M8	–	2	24	30	95
25	M10x1.25	M10	2.6	28	34	104

Standard cylinders CRDSNU to ISO 6432, stainless steel

Ordering data – Modular products

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Ordering code				
Type	Piston ∅	Stroke	PPS – Pneumatic cushioning, self-adjusting at both ends A – Via proximity sensor MG – Bearing cap without mounting thread A1 – Wiper seal for increased chemical resistance	
	[mm]	[mm]	Part No.	Type
	25	10	**2159636**	**CRDSNU-B-25-10-PPS-A-MG-A1**
		25	**2159637**	**CRDSNU-B-25-25-PPS-A-MG-A1**
		40	**2159638**	**CRDSNU-B-25-40-PPS-A-MG-A1**
		50	**2159639**	**CRDSNU-B-25-50-PPS-A-MG-A1**
		80	**2159640**	**CRDSNU-B-25-80-PPS-A-MG-A1**
		100	**2159641**	**CRDSNU-B-25-100-PPS-A-MG-A1**
		125	**2159642**	**CRDSNU-B-25-125-PPS-A-MG-A1**
		160	**2159643**	**CRDSNU-B-25-160-PPS-A-MG-A1**
		200	**2159644**	**CRDSNU-B-25-200-PPS-A-MG-A1**

Ordering table

Size		12	16	20	25	Conditions	Code		Enter code
M	Module No.	**552787**	**552788**	**552789**	**552790**				
	Version	Stainless steel					**CR**		CR
	Function	Standard cylinder, double-acting, to ISO 6432					**DSNU**		DSNU
	Piston ∅ [mm]	12	16	20	25		**-...**		
	Stroke [mm]	1 ... 200		1 ... 320	1 ... 500		**-...**		
	Cushioning	Flexible cushioning rings/pads at both ends					**-P**		
		–	Pneumatic cushioning, self-adjusting			1	**-PPS**		
		–	–	Pneumatic cushioning, adjustable at both ends			**-PPV**		
O	Position sensing	Via proximity sensor					**-A**		
	Cylinder cap	Short end cap without swivel mounting					**-MQ**		
		Bearing cap without mounting thread					**-MG**		
	Wiper seal material	Increased chemical resistance				1	**-A1**		
		Hard wiper seal				2	**-A2**		
		Unlubricated operation				1	**-A3**		
	Type of piston rod	Through piston rod				3	**-S2**		
	Extended male thread [mm]	Piston rod with extended male thread 1 ... 20		1 ... 25	1 ... 35		**-...K2**		
	Female thread	Piston rod with female thread –	–	(M4)	(M6)	4	**-K3**		
	Special thread	Special piston rod thread –	–	–	M10		**-"..."K5**		
	Extended piston rod [mm]	1 ... 100					**-...K8**		
	Temperature resistance	Heat-resistant seals up to max. 120 °C					**-S6**		
	Low temperature	Seals and lubricating grease from –40 °C ... +80 °C				5	**-TT**		

1 **PPS, A1, A3** Not with S6, TT
2 **A2** Not with MG, S2, K3, S6, TT
3 **S2** Not with MQ, MG
4 **K3** Not with K2, K5
5 **TT** Not with MG, S2, K3, S6

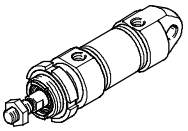
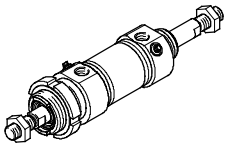
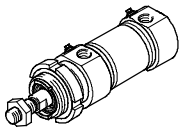
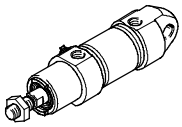
Transfer order code

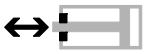
	–	CR	DSNU	–		–		–		–		–		–		–		–		–		–		–		–		–		–	

Round cylinders CRDSNU, stainless steel

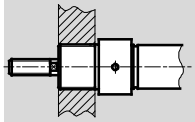
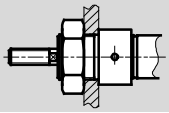
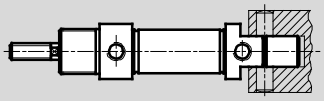
Key features

FESTO

Variants			
CRDSNU: Basic version	CRDSNU-S2: Through piston rod	CRDSNU-MQ: Short end cap without swivel mounting	CRDSNU-MG: Bearing cap without mounting thread
			

Additional variants			
Symbol	Key features		Description
	S2	Through piston rod	For working at both ends with the same force in the forward and return stroke, for attaching external stops
	S6	Heat-resistant seals	Temperature resistance up to max. 120 °C
	K2	Extended male piston rod thread	–
	K3	Female piston rod thread	–
	K5	Special piston rod thread	Metric standard thread to ISO
	K8	Extended piston rod	–
	A1	Wiper seal material	Increased chemical resistance
	A2	Wiper seal material	Hard wiper seal: Cylinder with hard wiper seal
	A3	Wiper seal material	Unlubricated operation: Cleaning processes degrease the piston rod. A special piston rod seal permits a longer service life compared to the standard seal.
	TT	Low temperature	Temperature resistance down to max. –40 °C

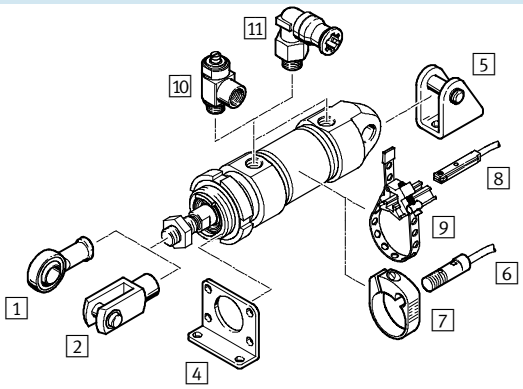
Cushioning types			
	Cushioning P	Cushioning PPS	Cushioning PPV
Mode of operation	• The drive is equipped with polymer flexible end-position cushioning	• The drive is equipped with self-adjusting end-position cushioning	• The drive is equipped with adjustable end-position cushioning
Application	• Small loads • Low speeds • Low impact energies	• Small to medium loads • Low to medium speeds • Medium impact energies	• Medium to high loads • High speeds • High impact energies
Advantages	• No adjustment required • Time-saving	• No adjustment required • Time-saving • Powerful	• Very powerful

Mounting options		
Threaded mounting	Mounting via hex nut	Swivel mounting at the rear
		

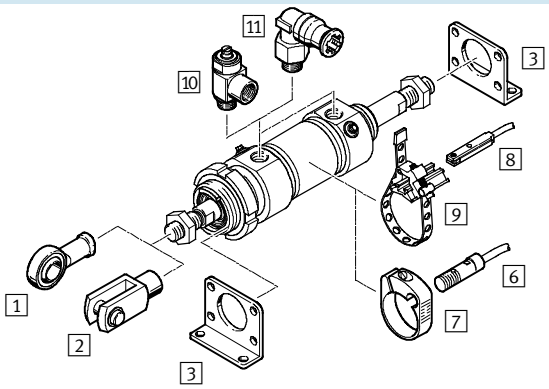
Round cylinders CRDSNU, stainless steel

Peripherals overview

CRDSNU-...



CRDSNU-...-S2

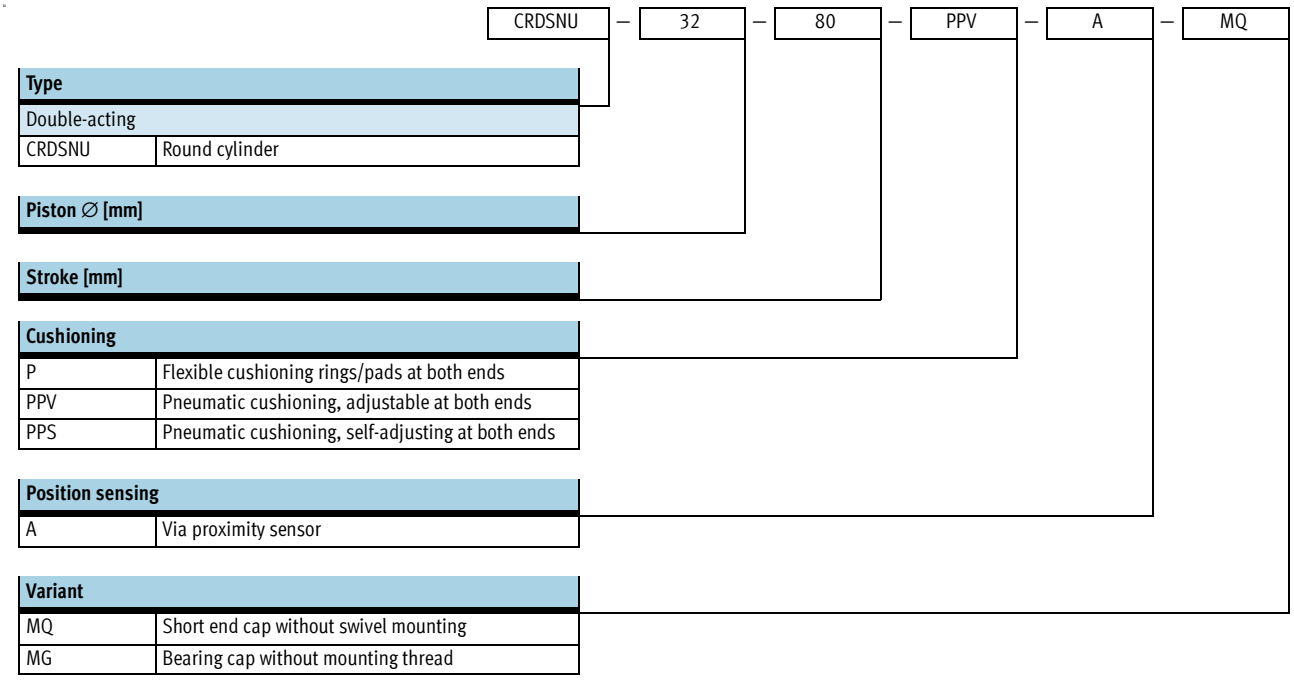


Mounting attachments and accessories

		Brief description	CRDSNU-				→ Page/ Internet
			Basic version	MQ	MG	S2	
1	Rod eye CRSGS	With spherical bearing	■	■	■	■	61
2	Rod clevis CRSG	Permits a swivelling movement of the cylinder in one plane	■	■	■	■	61
3	Foot mounting CRH	• 2 included in the scope of delivery • With CRDSNU-S2 for bearing and end caps	–	–	–	■	54
4	Flange mounting CRFV	• 1 included in the scope of delivery • For bearing caps	■	■	–	–	55
5	Clevis foot CRLBN	For end caps	■	–	■	–	58
6	Proximity sensor CRSMEO-4	• Round design • For position sensing	■	■	■	■	61
7	Mounting kit CRSMBR	For proximity sensor CRSMEO-4	■	■	■	■	61
8	Proximity sensor CRSMT-8	• Design for T-slot • For position sensing	■	■	■	■	61
9	Mounting kit SMBR	For proximity sensor CRSMT-8	■	■	■	■	61
10	One-way flow control valve CRGRLA	For regulating speed	■	■	■	■	62
11	Push-in fitting CRQS	For connecting compressed air tubing with standard O.D.	■	■	■	■	quick star

Round cylinders CRDSNU, stainless steel

Type codes



Type	
Double-acting	
CRDSNU	Round cylinder

Piston ∅ [mm]

Stroke [mm]

Cushioning	
P	Flexible cushioning rings/pads at both ends
PPV	Pneumatic cushioning, adjustable at both ends
PPS	Pneumatic cushioning, self-adjusting at both ends

Position sensing	
A	Via proximity sensor

Variant	
MQ	Short end cap without swivel mounting
MG	Bearing cap without mounting thread

Modular product system

Individually configurable

CRDSNU ➔ 25

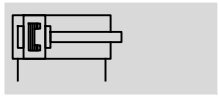
- A1 – Wiper seal for increased chemical resistance
- A2 – Hard wiper seal
- A3 – Wiper seal for unlubricated operation
- S2 – Through piston rod
- K2 – Extended male piston rod thread
- K3 – Female piston rod thread
- K5 – Special piston rod thread
- K8 – Extended piston rod at front
- S6 – Heat-resistant seals up to max. 120 °C (temperature resistance)
- TT – Low temperature –40 °C ... +80 °C

Round cylinders CRDSNU, stainless steel

Technical data

FESTO

Function



- Ø - Diameter
  32 ... 63 mm
- I - Stroke length
  1 ... 500 mm

General technical data						
Piston ∅			32	40	50	63
Pneumatic connection			G⅛	G¼	G¼	G⅜
Piston rod thread			M10x1.25	M12x1.25	M16x1.5	M16x1.5
Design			Piston			
			Piston rod			
			Cylinder barrel			
Cushioning	P		Flexible cushioning rings/pads at both ends			
	PPV		Pneumatic cushioning, adjustable at both ends			
	PPS		Pneumatic cushioning, self-adjusting at both ends			
Cushioning length	PPV	[mm]	14	18	20	21
	PPS	[mm]	14	18	20	21
Position sensing			Via proximity sensor			
Type of mounting			Via accessories			
			With male thread			
Mounting position			Any			

Operating conditions		
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[1]	[bar]	1 ... 10
Suitability for use in the food industry		As per manufacturer's declaration (➔ Support / Downloads)

1) An increase in the minimum operating pressure is possible with variants

Ambient conditions					
Standard cylinder		Basic version	A1	S6	TT
Ambient temperature[1]	[°C]	–20 ... +80	0 ... +80	0 ... +120	–40 ... +80
Corrosion resistance class CRC[2]		3			

1) Note operating range of proximity sensors
2) Corrosion resistance class 3 according to Festo standard 940 070
Components subject to high corrosion stress. 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

Round cylinders CRDSNU, stainless steel

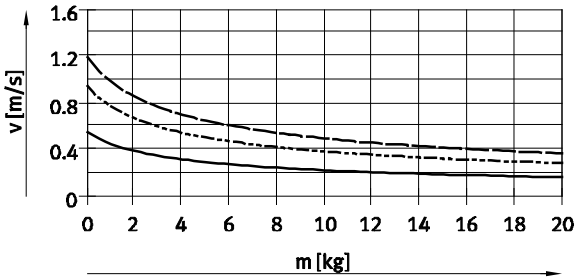
Technical data

Force [N] and impact energy [J]				
Piston ∅	32	40	50	63
Theoretical force at 6 bar, advancing	483	754	1,178	1,870
Theoretical force at 6 bar, retracting	415	633	990	1,682
Impact energy in the end positions for P cushioning[1)]	0.4	0.7	1.0	1.3

1) The values are reduced by approx. 50% at an ambient temperature of 80 °C

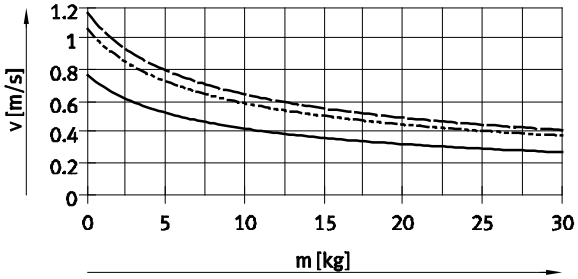
Average piston speed v as a function of applied load m in combination with PPS cushionings

Piston ∅ 32



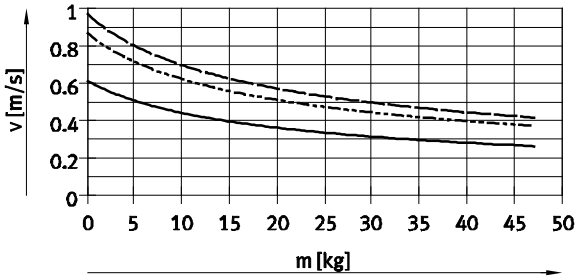
CRDSNU-32-50
CRDSNU-32-100
CRDSNU-32-200

Piston ∅ 40



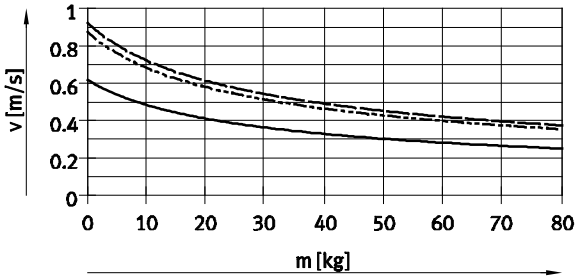
CRDSNU-40-50
CRDSNU-40-100
CRDSNU-40-200

Piston ∅ 50



CRDSNU-50-50
CRDSNU-50-100
CRDSNU-50-200

Piston ∅ 63



CRDSNU-63-50
CRDSNU-63-100
CRDSNU-63-200

Note

Average piston speed
= stroke/movement time

Note

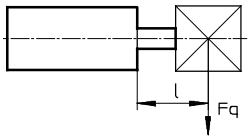
Design software
for flexible cushioning elements
➔ www.festo.com

Additional graphs
for PPS cushioning
➔ www.festo.com

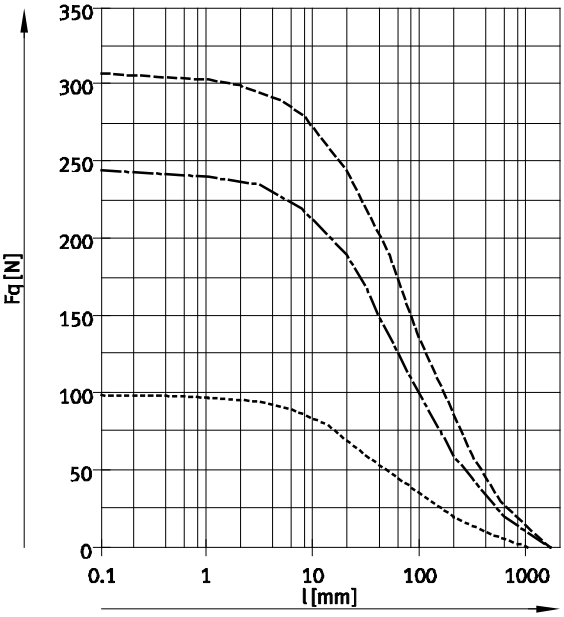
Design software
for PPV cushioning
➔ www.festo.com

Weight [g]				
Piston ∅	32	40	50	63
Basic weight with 0 mm stroke	670	1,327	2,020	2,943
Additional weight per 10 mm stroke	15	24	40	44
Moving load with 0 mm stroke	118	232	416	472
Additional load per 10 mm stroke	9	16	25	25

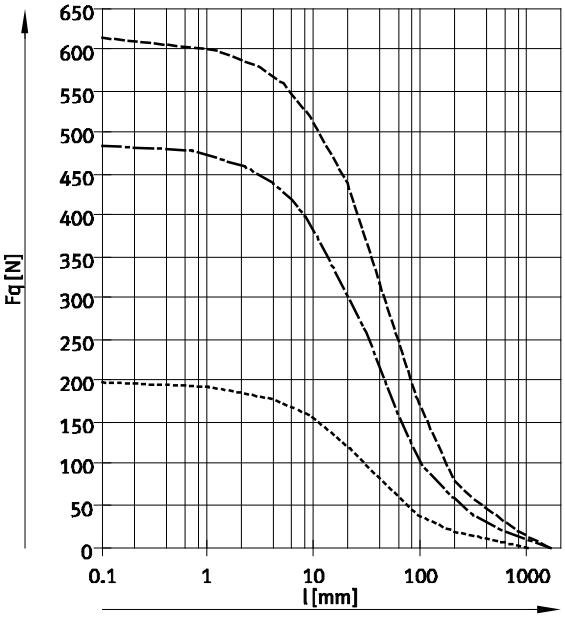
Max. lateral force Fq as a function of projection l



Basic version



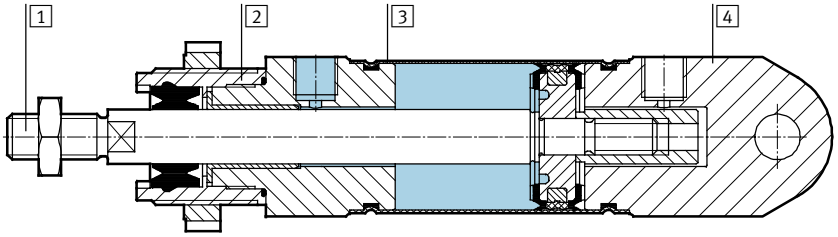
S2 – Through piston rod



---------- ∅ 32
—·—·— ∅ 40
– – – – – – ∅ 50/63

Materials

Sectional view



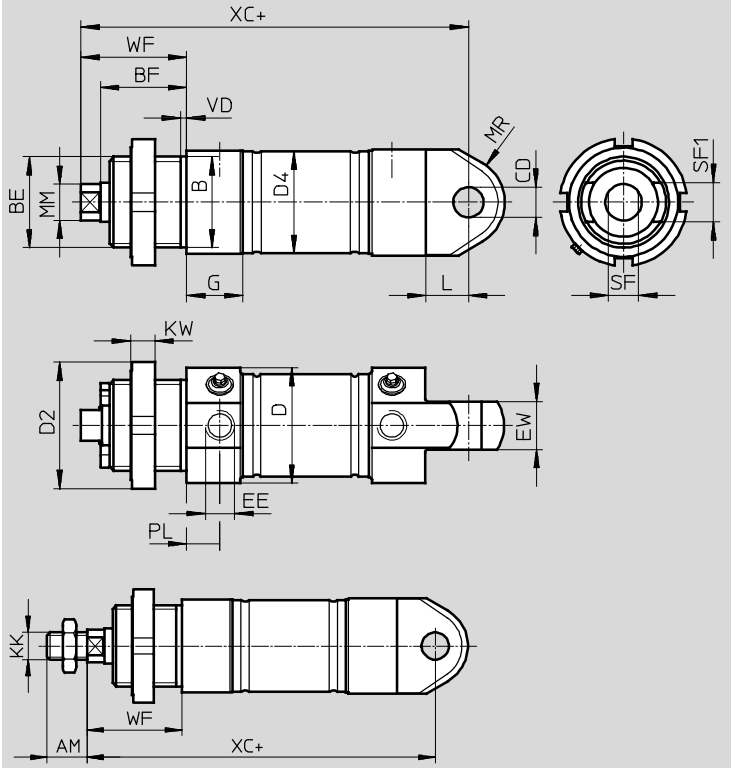
Standard cylinder		Basic version	S6	A3
1	Piston rod	High-alloy stainless steel		
2	Bearing cap	High-alloy stainless steel		
3	Cylinder barrel	High-alloy stainless steel		
4	End cap	High-alloy stainless steel		
–	Seals	Polyurethane	Fluoro elastomer	Polyurethane
	Note on materials	RoHS-compliant		
		–		Contains paint wetting impairment substances

Round cylinders CRDSNU, stainless steel

Technical data

Dimensions Download CAD data ➔ **www.festo.com**

Basic version



\+ = plus stroke length

∅ [mm]	AM	B ∅ h9	BE	BF	CD ∅ H8	D ∅	D2 ∅	D4 ∅
32	22	30	M30x1.5	28.4	10	38	42	33.6
40	24	38	M38x1.5	32	12	49	50	41.6
50	32	45	M45x1.5	36.4	16	57	60	52.4
63	32	45	M45x1.5	36.4	16	70	60	65.4

∅ [mm]	EE	EW	G	KK	KW	L	MM ∅
32	G1⁄8	16	18.6	M10x1.25	8	14	12
40	G1⁄4	18	24.7	M12x1.25	10	16	16
50	G1⁄4	21	24.4	M16x1.5	10	17	20
63	G3⁄8	21	27.4	M16x1.5	10	17	20

∅ [mm]	MR	PL	SF	SF1	VD	WF	XC ±1
32	15	11	10	13	4.3	34	117.5
40	19	12	13	18	4.3	39	139.6
50	22.5	12	17	22	4.3	44	147.2
63	22.5	13	17	22	4.3	44	155.4

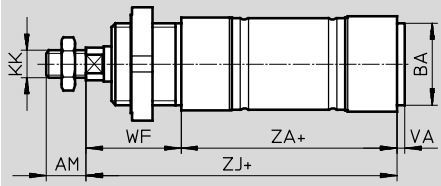
Round cylinders CRDSNU, stainless steel

Technical data

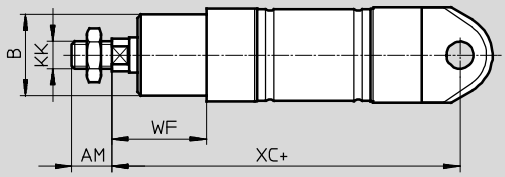
FESTO

Dimensions Download CAD data ➔ **www.festo.com**

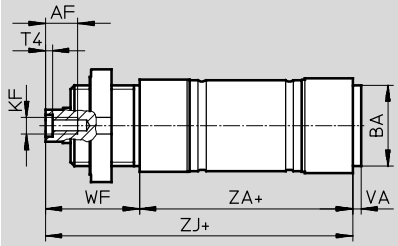
MQ – Short end cap without swivel mounting



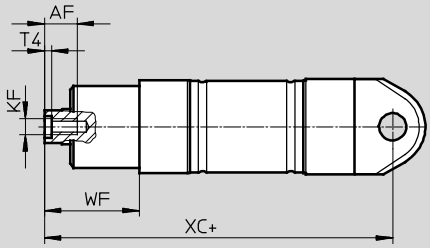
MG – Bearing cap without mounting thread



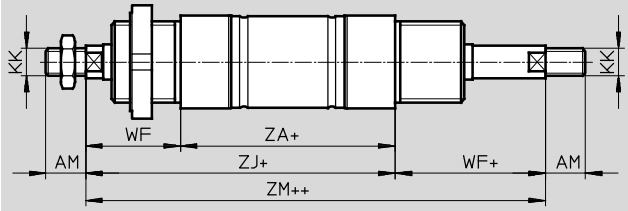
MQ-K3 – Short end cap without swivel mounting, with female piston rod thread



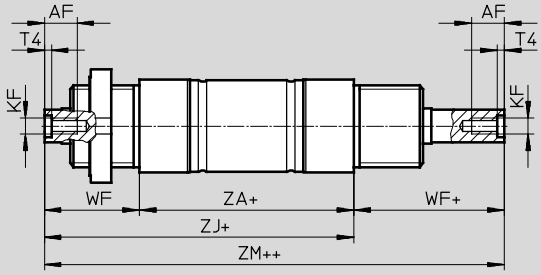
MG-K3 – Bearing cap without mounting thread, with female piston rod thread



S2 – Through piston rod



S2-K3 – Through piston rod, with female thread



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

∅ [mm]	AF	AM	B ∅ h9	BA h9	KF	KK
32	12	22	30	30	M6	M10x1.25
40	12	24	38	38	M8	M12x1.25
50	16	32	45	45	M10	M16x1.5
63	16	32	45	45	M10	M16x1.5

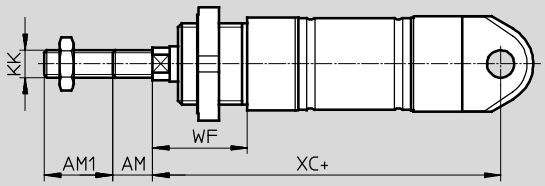
∅ [mm]	T4	VA	WF	XC ±1	ZA	ZJ	ZM
32	2.6	3	34	118	69.5	104	138
40	3.3	4	39	140	84.6	124	163
50	4.7	4	44	147	86.2	130	175
63	4.7	4	44	156	94.2	139	183

Round cylinders CRDSNU, stainless steel

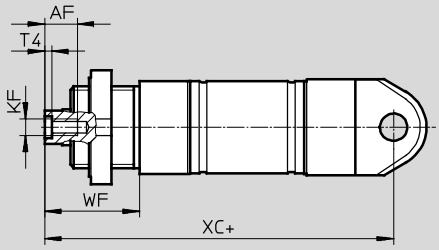
Technical data

Dimensions Download CAD data ➔ **www.festo.com**

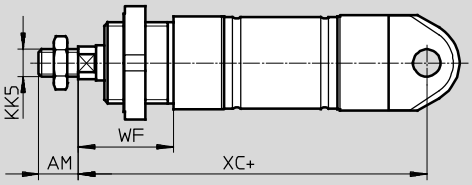
K2 – Extended male piston rod thread



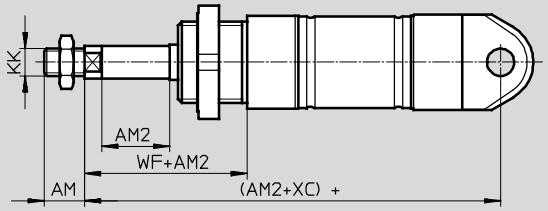
K3 – Female piston rod thread



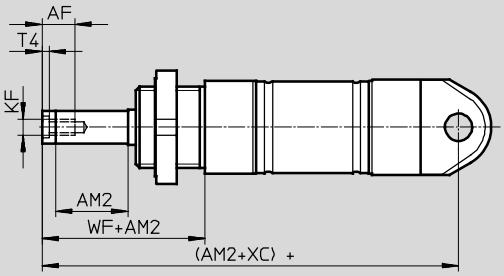
K5 – Special piston rod thread



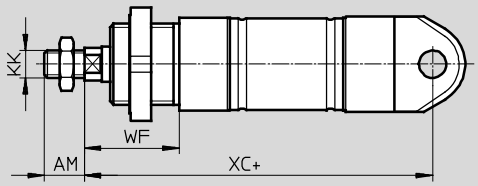
K8 – Extended piston rod



K3-K8 – Extended piston rod, with female thread



TT – Low temperature



\+ = plus stroke length

∅ [mm]	AF	AM	AM1 max.	AM2 max.	KF
32	12	22	1 ... 35	1 ... 500	M6
40	12	24	1 ... 35	1 ... 500	M8
50	16	32	1 ... 70	1 ... 500	M10
63	16	32	1 ... 70	1 ... 500	M10

∅ [mm]	KK	KK5	T4	WF	XC ±1
32	M10x1.25	M10	2.6	34	118
40	M12x1.25	M12	3.3	39	140
50	M16x1.5	M16	4.7	44	147
63	M16x1.5	M16	4.7	44	156

Round cylinders CRDSNU, stainless steel

Ordering data – Modular products

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Ordering code				
Type	Piston ∅	Stroke	PPS – Pneumatic cushioning, self-adjusting at both ends A – Via proximity sensor MG – Bearing cap without mounting thread A1 – Wiper seal for increased chemical resistance	
	[mm]	[mm]	Part No.	Type
	32	10	**2176399**	**CRDSNU-B-32-10-PPS-A-MG-A1**
		25	**2176400**	**CRDSNU-B-32-25-PPS-A-MG-A1**
		40	**2176401**	**CRDSNU-B-32-40-PPS-A-MG-A1**
		50	**2176402**	**CRDSNU-B-32-50-PPS-A-MG-A1**
		80	**2176403**	**CRDSNU-B-32-80-PPS-A-MG-A1**
		100	**2176404**	**CRDSNU-B-32-100-PPS-A-MG-A1**
		125	**2176405**	**CRDSNU-B-32-125-PPS-A-MG-A1**
		160	**2176406**	**CRDSNU-B-32-160-PPS-A-MG-A1**
		200	**2176407**	**CRDSNU-B-32-200-PPS-A-MG-A1**

Ordering table									
Size		32	40	50	63	Condi-tions	Code		Enter code
M	Module No.	**552791**	**552792**	**552793**	**552794**				
	Version	Stainless steel					**CR**		CR
	Function	Round cylinder, double-acting					**DSNU**		DSNU
	Piston ∅ [mm]	32	40	50	63		**-...**		
	Stroke [mm]	1 ... 500					**-...**		
	Cushioning	Flexible cushioning rings/pads at both ends					**-P**		
		Pneumatic cushioning, self-adjusting				1	**-PPS**		
		Pneumatic cushioning, adjustable at both ends					**-PPV**		
O	Position sensing	Via proximity sensor					**-A**		
	Cylinder cap	Short end cap without swivel mounting					**-MQ**		
		Bearing cap without mounting thread					**-MG**		
	Wiper seal material	Increased chemical resistance				1	**-A1**		
		Hard wiper seal				2	**-A2**		
		Unlubricated operation				1	**-A3**		
	Type of piston rod	Through piston rod				3	**-S2**		
	Extended male thread [mm]	Piston rod with extended male thread 1 ... 35		1 ... 70			**-...K2**		
	Female thread	Female piston rod thread M6	M8	M10	M10	4	**-K3**		
	Special thread	Piston rod with special thread M10	M12	M16	M16		**-"..."K5**		
	Extended piston rod [mm]	1 ... 500					**-...K8**		
	Temperature resistance	Heat-resistant seals up to max. 120 °C					**-S6**		
	Low temperature	Seals and lubricating grease from –40 °C ... +80 °C				5	**-TT**		

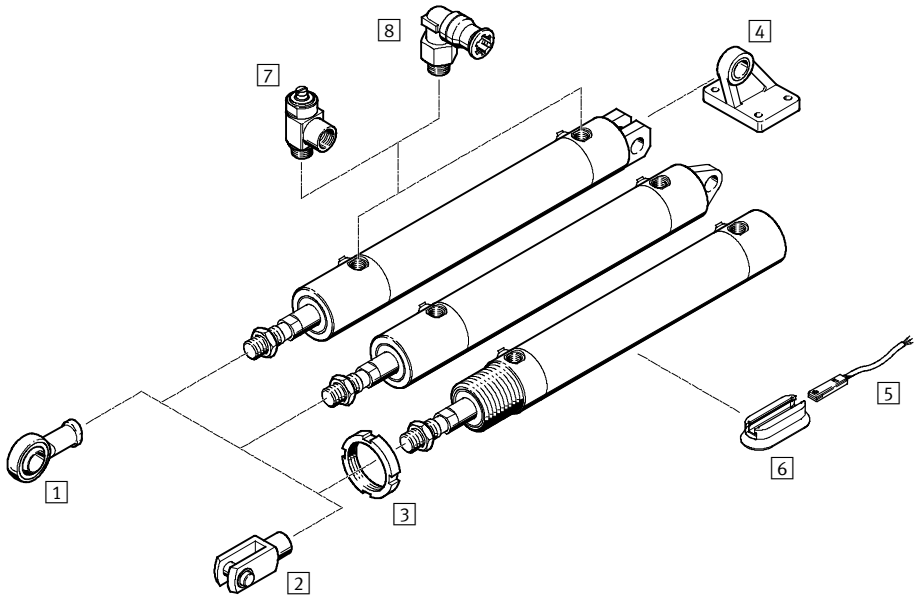
1 **PPS, A1, A3** Not with S6, TT
2 **A2** Not with MG, S6, TT
3 **S2** Not with MQ, MG
4 **K3** Not with K2, K5
5 **TT** Not with MG, S6

Transfer order code

	–	CR	DSNU	–		–		–		–		–		–		–		–		–		–		–		–		–		–	

Round cylinders CRHD, stainless steel

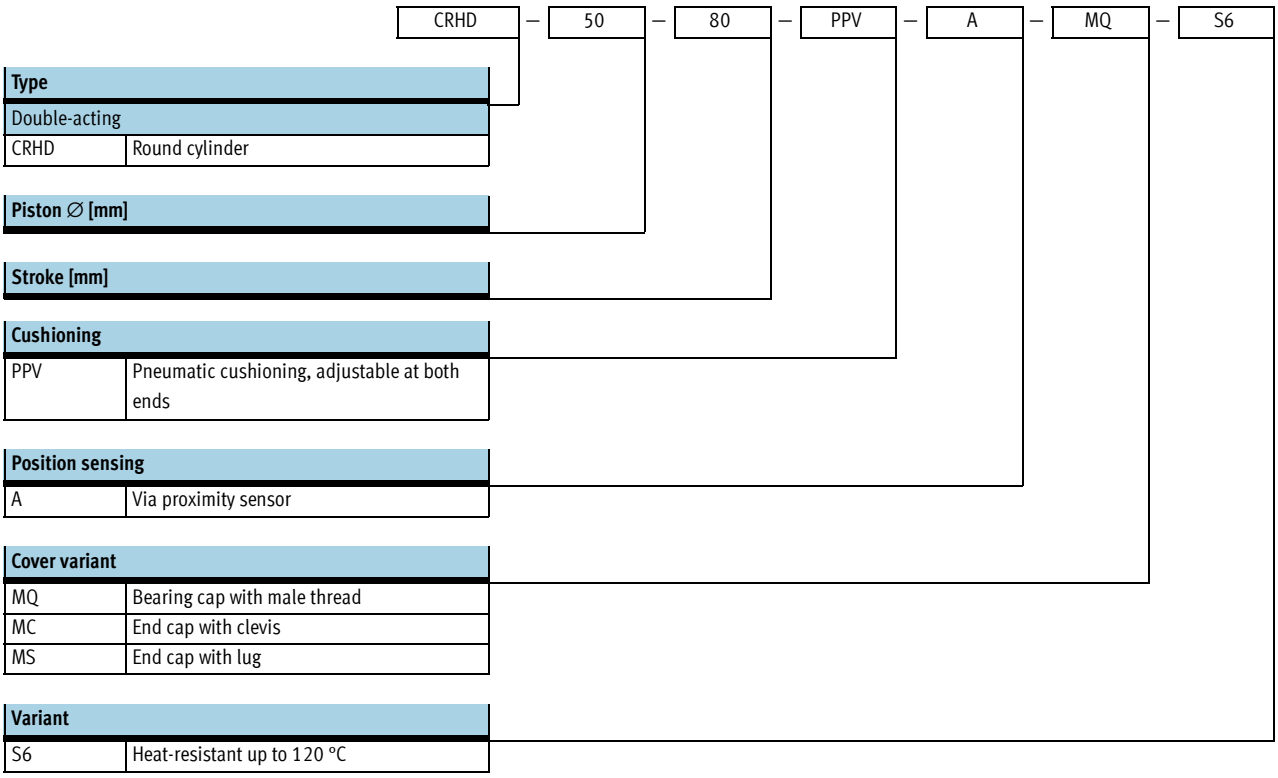
Peripherals overview



Mounting attachments and accessories					
	Brief description	CRHD-MQ	CRHD-MC	CRHD-MS	→ Page/Internet
1 Rod eye CRSGS	With spherical bearing	■	■	■	61
2 Rod clevis CRSG	Permits a swivelling movement of the cylinder in one plane	■	■	■	61
3 Ring nut CR	For bearing caps	■	–	–	60
4 Clevis foot CRLMC	For end caps	–	■	–	60
5 Proximity sensor CRSMT	With LED for operating status indication	■	■	■	61
6 Mounting kit CRSMB-8-32/100	For proximity sensor CRSMT	■	■	■	61
7 One-way flow control valve CRGRLA	For regulating speed	■	■	■	62
8 Push-in fittings CRQS	For connecting compressed air tubing with standard outside diameter	■	■	■	quick star

Round cylinders CRHD, stainless steel

Type codes

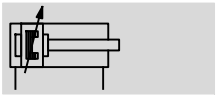


Round cylinders CRHD, stainless steel

Technical data

FESTO

Function



- Ø - Diameter 32 ... 100 mm
- | - Stroke length 10 ... 500 mm
- www.festo.com

Variants

S6

The variant S6 is not suitable for direct contact with food products because of the seals and the grease used.

General technical data						
Piston ∅	32	40	50	63	80	100
Pneumatic connection	G1⁄8	G1⁄8	G1⁄4	G3⁄8	G3⁄8	G3⁄8
Piston rod thread	M10x1.25	M12x1.25	M16x1.5	M16x1.5	M20x1.5	M20x1.5
Constructional design	Piston					
	Piston rod					
	Cylinder barrel					
Cushioning	Pneumatic cushioning, adjustable at both ends					
Cushioning length	17	19.5	21	21	31	31
Position sensing	Via proximity sensor					
Type of mounting	Via accessories					
Mounting position	Any					

Operating and environmental conditions		
Variant	CRHD	S6
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	1 ... 10 bar	
Ambient temperature[1] [°C]	–20 ... +80	0 ... +120
Corrosion resistance class CRC[2]	4	

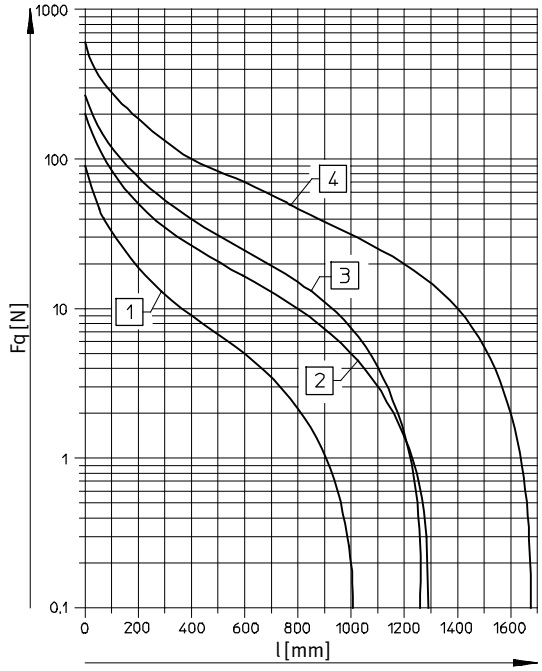
1) Note operating range of proximity sensors
2) Corrosion resistance class 4 as per Festo standard 940 070
Components subject to particularly high corrosion stress. Parts used with aggressive media, e.g. in the food or chemical industry. These applications should be supported with special tests with the media if required.

Force [N]						
Piston ∅	32	40	50	63	80	100
Theoretical force at 6 bar, advancing	483	754	1,178	1,870	3,016	4,712
Theoretical force at 6 bar, retracting	415	633	990	1,682	2,721	4,418

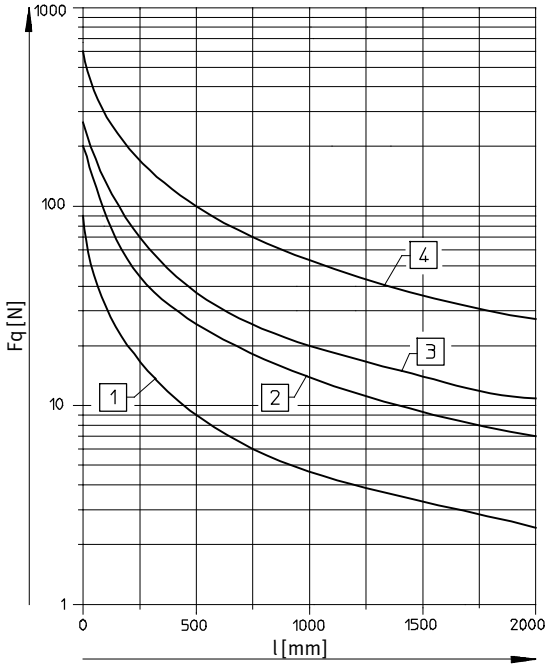
Weight [g]						
Piston ∅	32	40	50	63	80	100
Basic weight with 10 mm stroke	676	1,196	1,849	2,977	5,172	8,472
Additional weight per 10 mm stroke	26	42	57	65	100	115
Moving load with 10 mm stroke	106	198	340	398	717	968
Additional load per 10 mm stroke	9	16	25	25	38	38

Permissible lateral force Fq as a function of stroke length l

Horizontal mounting



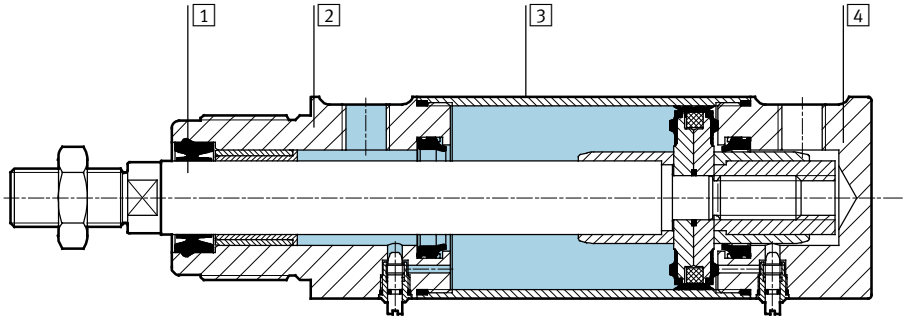
Vertical mounting



1 ∅ 32
2 ∅ 40
3 ∅ 50, 63
4 ∅ 80, 100

Materials

Sectional view



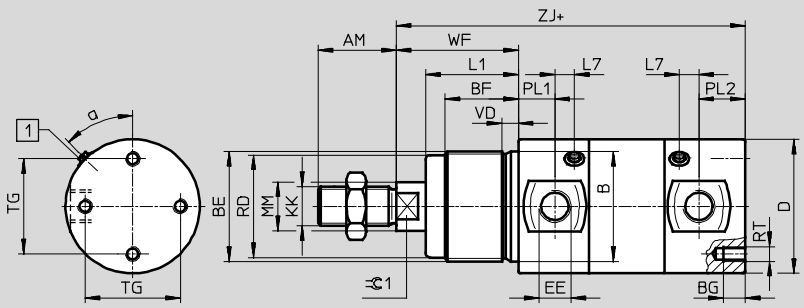
Round cylinder		Basic version	S6
1	Piston rod	High-alloy stainless steel	
2	Bearing cap	High-alloy stainless steel	
3	Cylinder barrel	High-alloy stainless steel	
4	End cap	High-alloy stainless steel	
–	Seals	Polyurethane, nitrile rubber	Fluoro elastomer

Round cylinders CRHD, stainless steel

Technical data

Dimensions CRHD- ... -MQ Download CAD data ➔ **www.festo.com**

Bearing cap with male thread



1 Regulating screw for end-position cushioning

\+ = plus stroke length

∅ [mm]	α	AM	B ∅ h9	BE	BF	BG	D ∅	EE	KK	L1
32	50°	22	30	M30x1.5	25	8	36	G1/8	M10x1.25	30
40	45°	24	38	M38x1.5	29	8	45	G1/8	M12x1.25	35
50	45°	32	45	M45x1.5	30	8	55	G1/4	M16x1.5	38
63	45°	32	45	M45x1.5	30	10	68	G3/8	M16x1.5	38
80	45°	40	50	M50x2	30	15	86	G3/8	M20x1.5	38
100	45°	40	50	M50x2	30	15	106	G3/8	M20x1.5	38

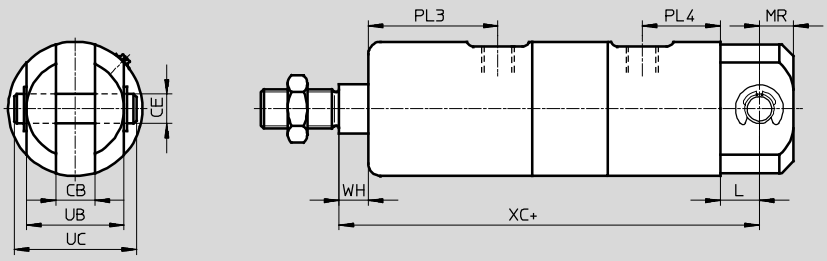
∅ [mm]	L7	MM ∅	RD ∅	RT	PL1	PL2	TG	VD	WF	ZJ	=C1
32	5	12	27	M5	13	21	22	7	38	120	10
40	8	16	35	M6	15	18	30	7	45	135	13
50	5	20	42	M6	15	19	39	6.25	50	143	17
63	8	20	42	M8	17	24	49	6.25	50	158	17
80	9	25	47	M10	18	31	65	7.5	50	174	22
100	13	25	47	M10	22	30	82	7.5	50	189	22

Round cylinders CRHD, stainless steel

Technical data

Dimensions CRHD- ... -MC Download CAD data ➔ **www.festo.com**

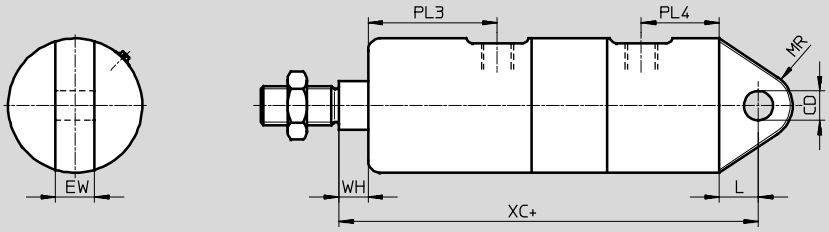
End cap with clevis



\+ = plus stroke length

Dimensions CRHD- ... -MS Download CAD data ➔ **www.festo.com**

End cap with lug



\+ = plus stroke length

∅	CB	CD ∅	CE ∅	EW	L	MR	PL3	PL4	UB	UC	WH	XC
[mm]	+0.2/+0.1	H9	e8	−0.1/−0.2					−0.1/−0.2			
32	10	10	10	10	15	12	43	28	26	35	8	142
40	12	12	12	12	16	14	50	27	32	43	10	160
50	16	12	12	16	16	14	53	30	40	51	12	170
63	16	16	16	16	22	18	55	34	40	53	12	190
80	20	16	16	20	22	20	56	45	60	73	12	210
100	20	20	20	20	27	25	60	43.5	60	73	12	230

Round cylinders CRHD, stainless steel

Technical data

Ordering data				
Type	Piston ∅ [mm]	Stroke [mm]	Part No.	Type
MQ – Bearing cap with male thread				
	32	10 … 500	**195507**	**CRHD-32-…-PPV-A-MQ**
	40		**195508**	**CRHD-40-…-PPV-A-MQ**
	50		**195509**	**CRHD-50-…-PPV-A-MQ**
	63		**195510**	**CRHD-63-…-PPV-A-MQ**
	80		**195511**	**CRHD-80-…-PPV-A-MQ**
	100		**195512**	**CRHD-100-…-PPV-A-MQ**
S6 – Heat-resistant up to 120°C				
	32	10 … 500	**195543**	**CRHD-32-…-PPV-A-MQ-S6**
	40		**195544**	**CRHD-40-…-PPV-A-MQ-S6**
	50		**195545**	**CRHD-50-…-PPV-A-MQ-S6**
	63		**195546**	**CRHD-63-…-PPV-A-MQ-S6**
	80		**195547**	**CRHD-80-…-PPV-A-MQ-S6**
	100		**195548**	**CRHD-100-…-PPV-A-MQ-S6**
MC – End cap with clevis (pivot pin and lock included in the scope of delivery)				
	32	10 … 500	**195513**	**CRHD-32-…-PPV-A-MC**
	40		**195514**	**CRHD-40-…-PPV-A-MC**
	50		**195515**	**CRHD-50-…-PPV-A-MC**
	63		**195516**	**CRHD-63-…-PPV-A-MC**
	80		**195517**	**CRHD-80-…-PPV-A-MC**
	100		**195518**	**CRHD-100-…-PPV-A-MC**

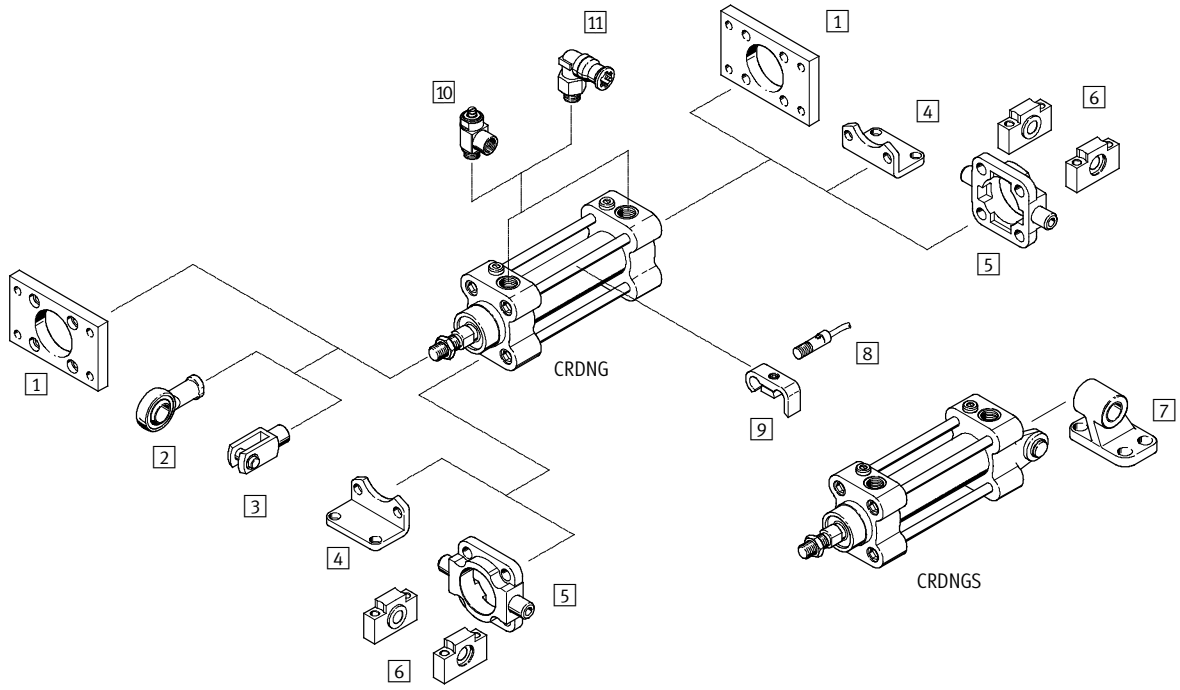
Round cylinders CRHD, stainless steel

Technical data

Ordering data				
Type	Piston ∅ [mm]	Stroke [mm]	Part No.	Type
S6 – Heat-resistant up to 120°C				
	32	10 … 500	**195549**	**CRHD-32-…-PPV-A-MC-S6**
	40		**195550**	**CRHD-40-…-PPV-A-MC-S6**
	50		**195551**	**CRHD-50-…-PPV-A-MC-S6**
	63		**195552**	**CRHD-63-…-PPV-A-MC-S6**
	80		**195553**	**CRHD-80-…-PPV-A-MC-S6**
	100		**195554**	**CRHD-100-…-PPV-A-MC-S6**
MS – End cap with lug				
	32	10 … 500	**195519**	**CRHD-32-…-PPV-A-MS**
	40		**195520**	**CRHD-40-…-PPV-A-MS**
	50		**195521**	**CRHD-50-…-PPV-A-MS**
	63		**195522**	**CRHD-63-…-PPV-A-MS**
	80		**195523**	**CRHD-80-…-PPV-A-MS**
	100		**195524**	**CRHD-100-…-PPV-A-MS**
S6 – Heat-resistant up to 120 °C				
	32	10 … 500	**195555**	**CRHD-32-…-PPV-A-MS-S6**
	40		**195556**	**CRHD-40-…-PPV-A-MS-S6**
	50		**195557**	**CRHD-50-…-PPV-A-MS-S6**
	63		**195558**	**CRHD-63-…-PPV-A-MS-S6**
	80		**195559**	**CRHD-80-…-PPV-A-MS-S6**
	100		**195560**	**CRHD-100-…-PPV-A-MS-S6**

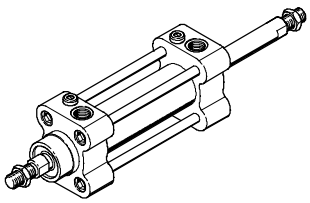
Standard cylinders CRDNG to ISO 15552, stainless steel

Peripherals overview



Variant

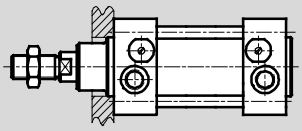
CRDNG-S2



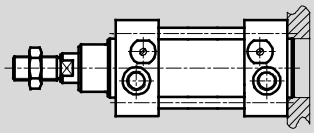
Mounting options

CRDNG

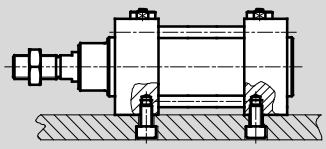
Mounting at front



Mounting at rear

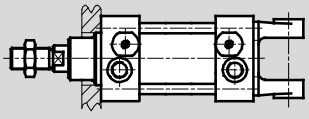


Mounting from below

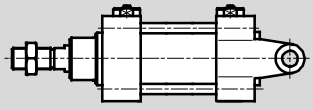


CRDNGS

Mounting at front



Mounting on swivel flange



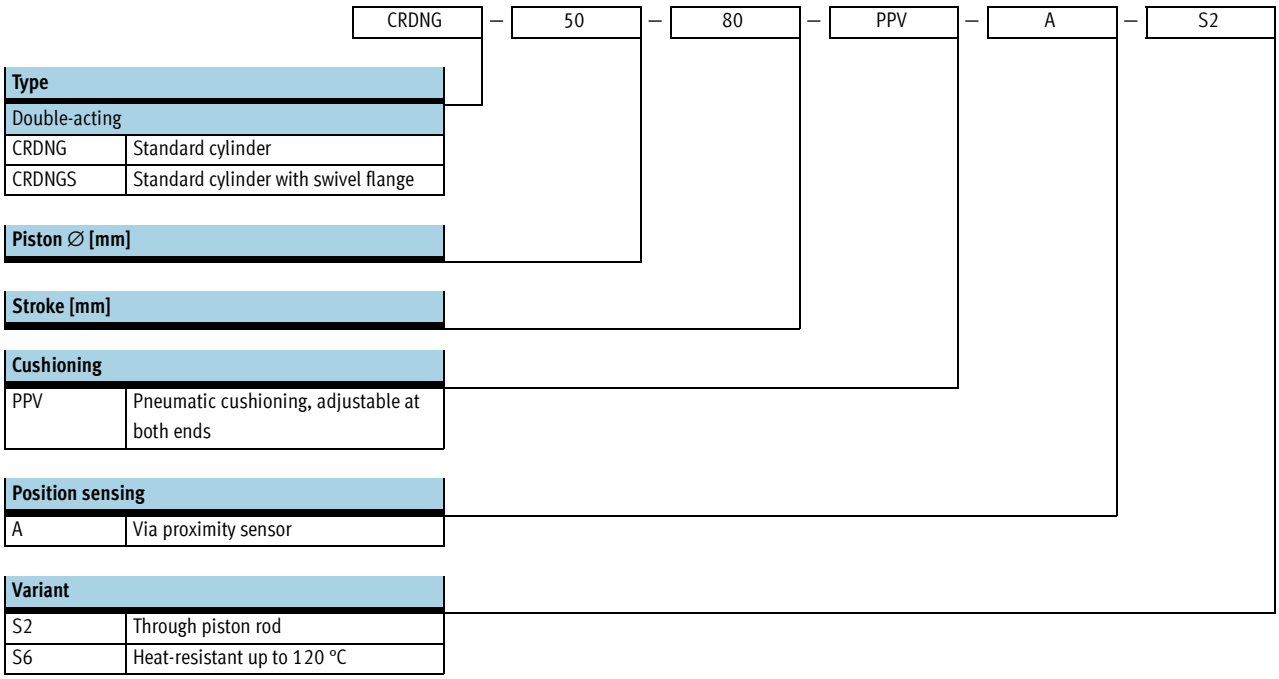
Standard cylinders CRDNG to ISO 15552, stainless steel

Peripherals overview

Mounting attachments and accessories				
	Brief description	CRDNG	CRDNGS	→ Page/Internet
1 Flange mounting CRFNG	For bearing or end caps	■	–	56
2 Rod eye CRSGS	With spherical bearing	■	■	61
3 Rod clevis CRSG	Permits a swivelling movement of the cylinder in one plane	■	■	61
4 Foot mounting CRHNC	For bearing and end caps	■	–	54
5 Trunnion flange CRZNG	For bearing and end caps in combination with trunnion supports CRLNZG	■	–	57
6 Trunnion support CRLNZG	For supporting trunnion flange CRZNG	■	–	57
7 Clevis foot CRLNG	For variant with swivel flange	–	■	58
8 Proximity sensor CRSMEO-4	With LED for operating status indication	■	■	61
9 Mounting kit CRSMB	For proximity sensor CRSMEO-4	■	■	61
10 One-way flow control valve CRGRLA	For regulating speed	■	■	62
11 Push-in fittings CRQS	For connecting compressed air tubing with standard outside diameter	■	■	quick star

Standard cylinders CRDNG to ISO 15552, stainless steel

Type codes



Type	
Double-acting	
CRDNG	Standard cylinder
CRDNGS	Standard cylinder with swivel flange

Piston ∅ [mm]

Stroke [mm]

Cushioning	
PPV	Pneumatic cushioning, adjustable at both ends

Position sensing	
A	Via proximity sensor

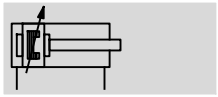
Variant	
S2	Through piston rod
S6	Heat-resistant up to 120 °C

Standard cylinders CRDNG to ISO 15552, stainless steel

Technical data

FESTO

Function



Diameter
32 ... 125 mm

Stroke length
10 ... 2,000 mm

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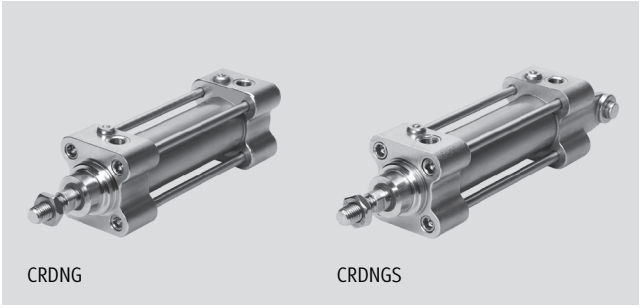
Wearing parts kits
➔ 41

Variants

S2

S6

The variant S6 is not suitable for direct contact with food products because of the seals and the grease used.



CRDNG CRDNGS

Conforms to
- ISO 15552
- ISO 6431
- VDMA 24562
- NFE 49003.1
- UNI 10290

General technical data							
Piston ∅	32	40	50	63	80	100	125
Pneumatic connection	G⅛	G¼	G¼	G⅜	G⅜	G½	G½
Piston rod thread	M10x1.25	M12x1.25	M16x1.5	M16x1.5	M20x1.5	M20x1.5	M27x2
Constructional design	Piston						
	Piston rod						
	Cylinder barrel						
Cushioning	Pneumatic cushioning, adjustable at both ends						
Cushioning length [mm]	20	20	23	23	30	30	40
Position sensing	Via proximity sensor						
Type of mounting	Via accessories						
	Via female thread						
Mounting position	Any						

Operating and environmental conditions		
Variant	CRDNG/CRDNGS	S6
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	0.6 ... 10 bar	
Ambient temperature[1] [°C]	–20 ... +80	0 ... +120
Corrosion resistance class CRC[2]	4	

1) Note operating range of proximity sensors
2) Corrosion resistance class 4 as per Festo standard 940 070
Components subject to particularly high corrosion stress. Parts used with aggressive media, e.g. in the food or chemical industry. These applications should be supported with special tests with the media if required.

Force [N]							
Piston ∅	32	40	50	63	80	100	125
Theoretical force at 6 bar, advancing	482	753	1,178	1,870	3,015	4,712	7,360
Theoretical force at 6 bar, retracting	415	633	990	1,682	2,720	4,418	6,880

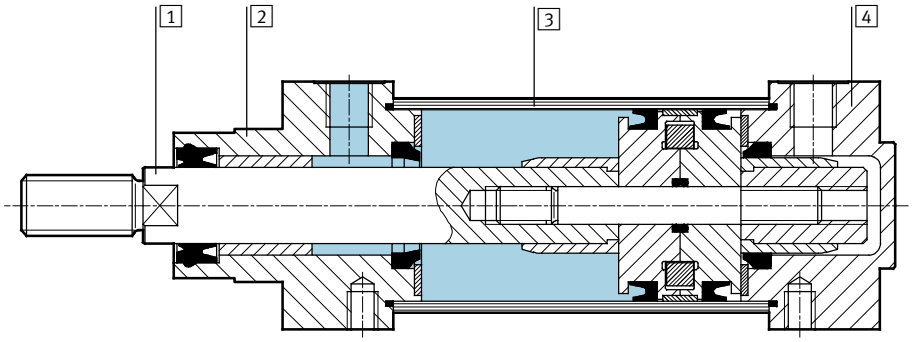
Standard cylinders CRDNG to ISO 15552, stainless steel

Technical data

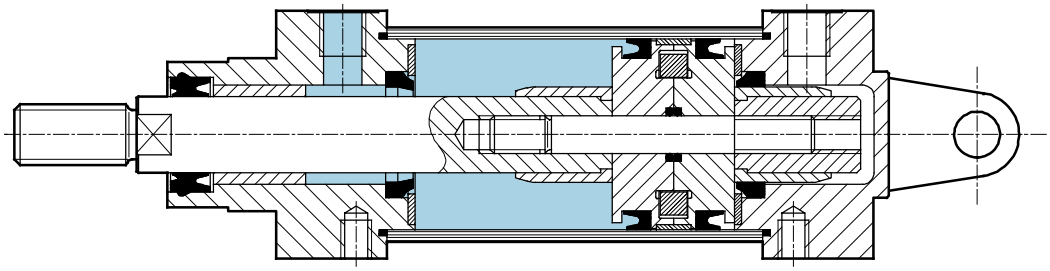
Weight [g]							
Piston ∅	32	40	50	63	80	100	125
CRDNG							
Basic weight with 0 mm stroke	1,045	1,360	2,160	3,455	5,935	8,070	
Additional weight per 10 mm stroke	20	30	60	60	100	110	
CRDNGS							
Basic weight with 0 mm stroke	1,070	1,460	2,330				
Additional weight per 10 mm stroke	20	30	60				

Materials

Sectional view CRDNG



Sectional view CRDNGS



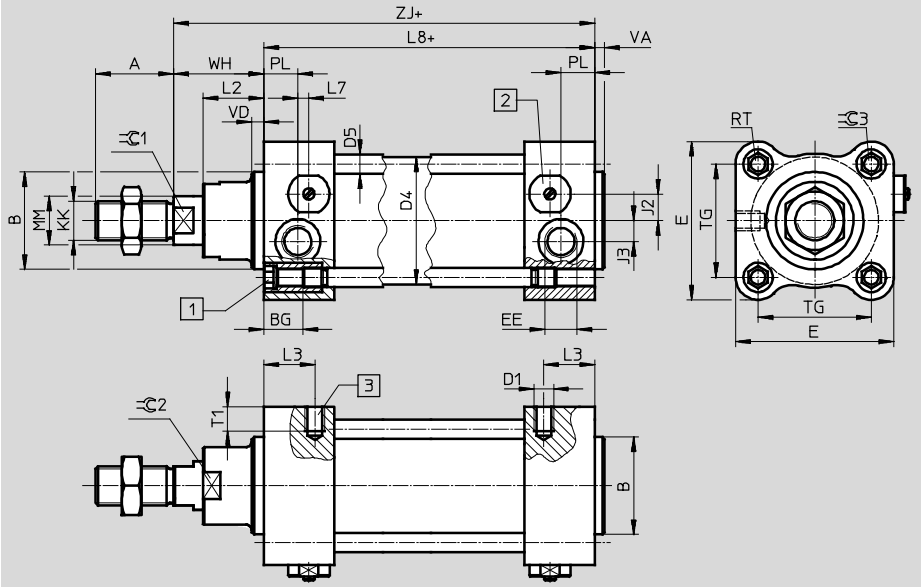
Standard cylinder		Basic version	S6
1	Piston rod	High-alloy stainless steel	
2	Bearing cap	Stainless steel casting	
3	Cylinder barrel	High-alloy stainless steel	
4	End cap	Stainless steel casting	
–	Tie rod	High-alloy stainless steel	
–	Seals	Polyurethane, nitrile rubber	Fluoro elastomer

Standard cylinders CRDNG to ISO 15552, stainless steel

Technical data

Dimensions CRDNG Download CAD data ➔ **www.festo.com**

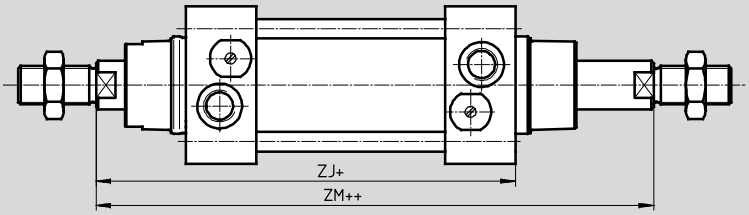
Basic version



1 Socket head screw with female thread
2 Cover for adjustable end-position cushioning
3 Threaded hole for direct mounting

\+ = plus stroke length

S2 – Through piston rod



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

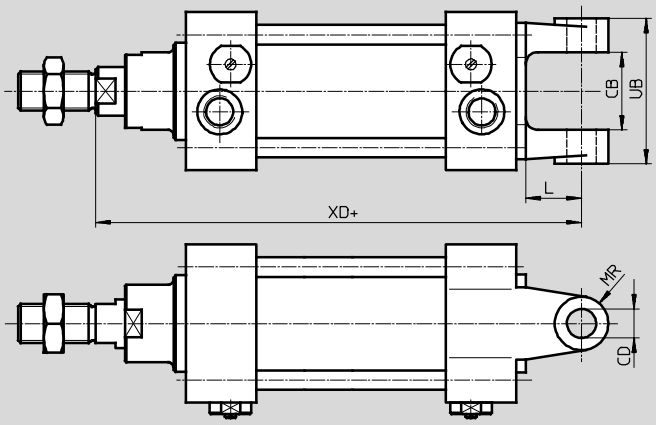
∅ [mm]	A	B ∅ e11	BG	D1	D4 ∅	D5 ∅	E	EE	J2	J3	KK	L2	L3
32	22	30	16	M6	33.6	6	50	G⅛	7	5.7	M10x1.25	16	13
40	24	35	16	M6	41.6	6	55	G¼	10	6.5	M12x1.25	18	16.5
50	32	40	16	M8	52.4	8	65	G¼	11.5	8.6	M16x1.5	25	21
63	32	45	16	M10	65.4	8	75	G⅜	14.5	12	M16x1.5	25	22
80	40	45	23	M10	82.8	10	100	G⅜	15	13	M20x1.5	31	22.5
100	40	55	23	M12	102.8	10	120	G½	23	14	M20x1.5	36	22.5
125	54	60	23	M12	128.6	12	145	G½	28.5	8	M27x2	31	23.5

∅ [mm]	L7	L8	MM ∅	PL	RT	T1	TG	VA	VD	WH	ZJ	ZM	⌯C1	⌯C2	⌯C3
32	5.3	94 +0.4	12	13	M6	9	32.5	4	5	26	120	148	10	26	6
40	2.5	105 +0.4/–0.6	16	14	M6	9	38	4	5	30	135	167	13	30	6
50	4.5	106 +0.4/–0.6	20	14	M8	10	46.5	4	5	37	143	183	17	34	8
63	5	121 +0.4/–0.6	20	18	M8	12	56.5	4	5	37	158	199	17	36	8
80	6	128 +0.4/–0.6	25	17	M10	15	72	4	5	46	174	222	22	41	10
100	9	138 +0.4/–0.6	25	18	M10	18	89	4	5	51	189	240	22	41	10
125	4.5	160 +0.4/–0.6	32	27	M12	18	110	6	6	66	226	292	27	50	12

Standard cylinders CRDNG to ISO 15552, stainless steel

Technical data

Dimensions – CRDNGS



\+ = plus stroke length

∅ [mm]	CB H14	CD ∅ H9	L	MR	UB	XD
32	26	10	18	9	45	142
40	28	12	21	10	52	160
50	32	12	23	11	60	170
63	40	16	28	13	70	190
80	50	16	32	13	90	210
100	60	20	37	17	110	230
125	70	25	44	23	130	276

Standard cylinders CRDNG to ISO 15552, stainless steel

Technical data

Ordering data				
Variant	Piston ∅ [mm]	Stroke [mm]	Part No.	Type
CRDNG				
	32	10 … 2,000	**160884**	**CRDNG-32-…-PPV-A**
	40	10 … 2,000	**160885**	**CRDNG-40-…-PPV-A**
	50	10 … 2,000	**160886**	**CRDNG-50-…-PPV-A**
	63	10 … 2,000	**160887**	**CRDNG-63-…-PPV-A**
	80	10 … 2,000	**160888**	**CRDNG-80-…-PPV-A**
	100	10 … 2,000	**160889**	**CRDNG-100-…-PPV-A**
	125	10 … 2,000	**185280**	**CRDNG-125-…-PPV-A**
S6 – Heat-resistant up to 120 °C				
	32	10 … 2,000	**185293**	**CRDNG-32-…-PPV-A-S6**
	40	10 … 2,000	**185294**	**CRDNG-40-…-PPV-A-S6**
	50	10 … 2,000	**185295**	**CRDNG-50-…-PPV-A-S6**
	63	10 … 2,000	**185296**	**CRDNG-63-…-PPV-A-S6**
	80	10 … 2,000	**185297**	**CRDNG-80-…-PPV-A-S6**
	100	10 … 2,000	**185298**	**CRDNG-100-…-PPV-A-S6**
	125	10 … 2,000	**185299**	**CRDNG-125-…-PPV-A-S6**
S2 – Through piston rod				
	32	10 … 2,000	**185282**	**CRDNG-32-…-PPV-A-S2**
	40	10 … 2,000	**185283**	**CRDNG-40-…-PPV-A-S2**
	50	10 … 2,000	**185284**	**CRDNG-50-…-PPV-A-S2**
	63	10 … 2,000	**185285**	**CRDNG-63-…-PPV-A-S2**
	80	10 … 2,000	**185286**	**CRDNG-80-…-PPV-A-S2**
	100	10 … 2,000	**185287**	**CRDNG-100-…-PPV-A-S2**
	125	10 … 2,000	**185288**	**CRDNG-125-…-PPV-A-S2**
CRDNGS				
	32	10 … 2,000	**160890**	**CRDNGS-32-…-PPV-A**
	40	10 … 2,000	**160891**	**CRDNGS-40-…-PPV-A**
	50	10 … 2,000	**160892**	**CRDNGS-50-…-PPV-A**
	63	10 … 2,000	**160893**	**CRDNGS-63-…-PPV-A**
	80	10 … 2,000	**160894**	**CRDNGS-80-…-PPV-A**
	100	10 … 2,000	**160895**	**CRDNGS-100-…-PPV-A**
	125	10 … 2,000	**185281**	**CRDNGS-125-…-PPV-A**
S6 – Heat-resistant up to 120 °C				
	32	10 … 2,000	**185300**	**CRDNGS-32-…-PPV-A-S6**
	40	10 … 2,000	**185301**	**CRDNGS-40-…-PPV-A-S6**
	50	10 … 2,000	**185302**	**CRDNGS-50-…-PPV-A-S6**
	63	10 … 2,000	**185303**	**CRDNGS-63-…-PPV-A-S6**
	80	10 … 2,000	**185304**	**CRDNGS-80-…-PPV-A-S6**
	100	10 … 2,000	**185305**	**CRDNGS-100-…-PPV-A-S6**
	125	10 … 2,000	**185306**	**CRDNGS-125-…-PPV-A-S6**

Ordering data – Wearing parts kits					
Piston ∅ [mm]	Part No.	Type	Piston ∅ [mm]	Part No.	Type
32	**125713**	**CRDNG/S-32-…-PPV-A**[1)]	63	**125716**	**CRDNG/S-63-…-PPV-A**[1)]
40	**125714**	**CRDNG/S-40-…-PPV-A**[1)]	80	**125717**	**CRDNG/S-80-…-PPV-A**[1)]
50	**125715**	**CRDNG/S-50-…-PPV-A**[1)]	100	**125718**	**CRDNG/S-100-…-PPV-A**[1)]

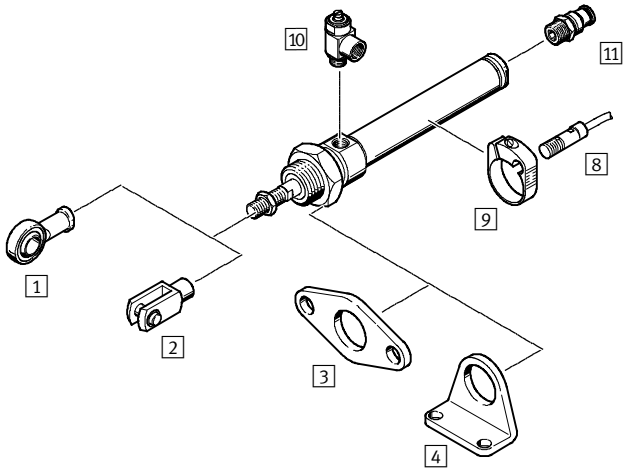
1) Assembly grease included in the scope of delivery

Round cylinders CRDG, stainless steel

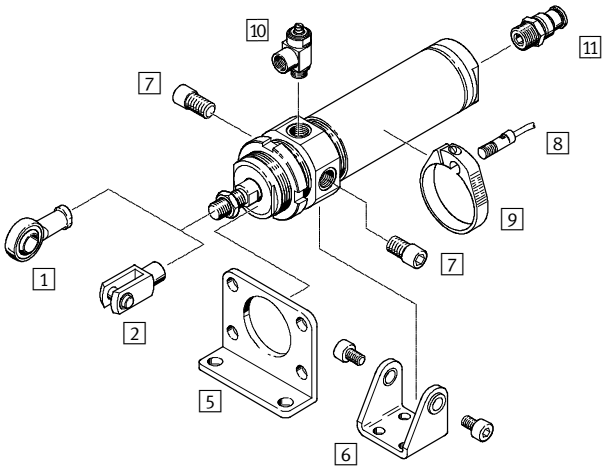
Peripherals overview

CRDG

Piston ∅ 12 ... 25 mm



Piston ∅ 32 ... 63 mm



Round cylinders CRDG, stainless steel

Peripherals overview

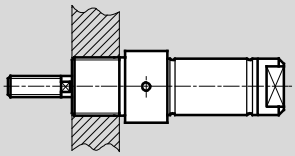
FESTO

Mounting attachments and accessories				
	Brief description	Piston ∅ 12 ... 25 mm	Piston ∅ 32 ... 63 mm	→ Page/Internet
1 Rod eye CRSGS	With spherical bearing	■	■	61
2 Rod clevis CRSG	Permits a swivelling movement of the cylinder in one plane	■	■	61
3 Flange mounting CRFBN	For bearing caps	■	–	55
4 Foot mounting CRHBN	For bearing caps	■	–	53
5 Flange mounting CRFV	For bearing caps	–	■	55
6 Clevis foot CRSBS	For bearing caps	–	■	59
7 Threaded pin CRGBS	For bearing caps	–	■	59
8 Proximity sensor CRSMEO-4	With LED for operating status indication	■	■	61
9 Mounting kit CRSMBR	For proximity sensor CRSMEO-4	■	■	61
10 One-way flow control valve CRGRLA	For regulating speed	■	■	62
11 Push-in fittings CRQS	For connecting compressed air tubing with standard outside diameter	■	■	quick star

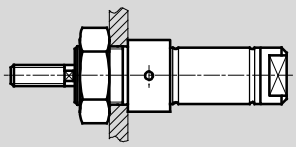
Mounting options

Piston ∅ 12 ... 25 mm

Threaded mounting

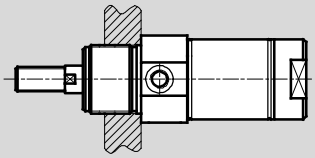


Mounting via hex nut

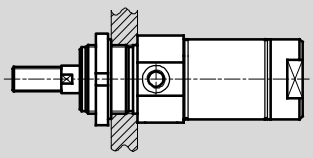


Piston ∅ 32 ... 63 mm

Threaded mounting



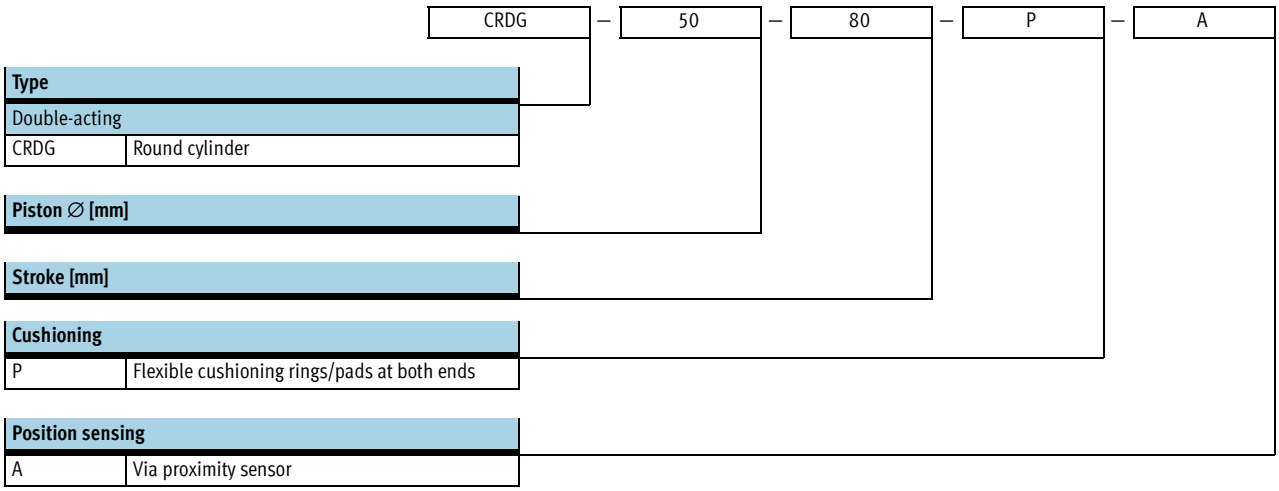
Mounting via slotted nut



- 1 - Type discontinued
Available up until 2012

Round cylinders CRDG, stainless steel

Type codes

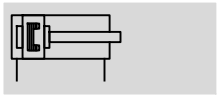


Round cylinders CRDG, stainless steel

Technical data

FESTO

Function



Diameter
12 ... 63 mm

Stroke length
1 ... 500 mm

www.festo.com

General technical data								
Piston ∅	12	16	20	25	32	40	50	63
Pneumatic connection	M5	M5	G1⁄8	G1⁄8	G1⁄8	G1⁄4	G1⁄4	G3⁄8
Piston rod thread	M6	M6	M8	M10x1.25	M10x1.25	M12x1.25	M16x1.5	M16x1.5
Constructional design	Piston							
	Piston rod							
	Cylinder barrel							
Cushioning	Flexible cushioning rings/pads at both ends							
Position sensing	Via proximity sensor							
Type of mounting	Via accessories							
	Via male thread							
Mounting position	Any							

Operating and environmental conditions	
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	1 ... 10 bar
Ambient temperature[1] [°C]	–20 ... +80
Corrosion resistance class CRC[2]	4

1) Note operating range of proximity sensors
2) Corrosion resistance class 4 as per Festo standard 940 070
Components subject to particularly high corrosion stress. Parts used with aggressive media, e.g. in the food or chemical industry. These applications should be supported with special tests with the media if required.

Force [N]								
Piston ∅	12	16	20	25	32	40	50	63
Theoretical force at 6 bar, advancing	68	121	189	295	483	754	1,178	1,870
Theoretical force at 6 bar, retracting	51	104	158	247	415	633	990	1,682

Weight [g]								
Piston ∅	12	16	20	25	32	40	50	63
Basic weight with 0 mm stroke	80	120	270	360	560	1,160	1,950	2,964
Additional weight per 10 mm stroke	4	6	8	12	18	22	35	41

- Type discontinued
Available up until 2012

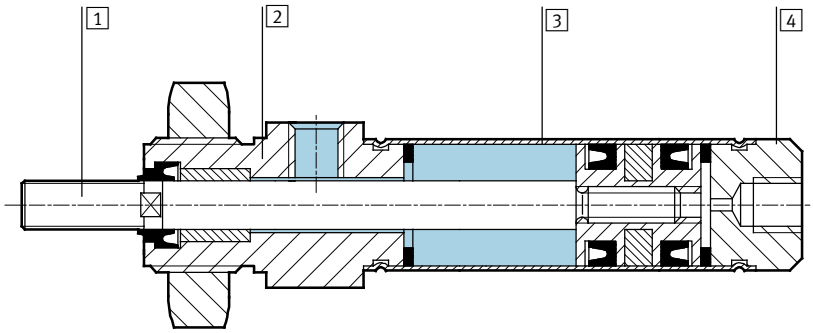
Round cylinders CRDG, stainless steel

Technical data

FESTO

Materials

Sectional view

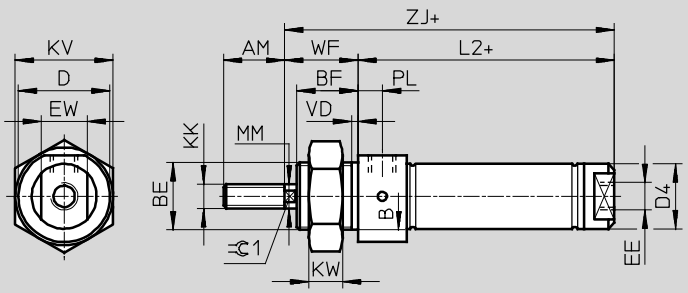


Round cylinder		
1	Piston rod	High-alloy stainless steel
2	Bearing cap	High-alloy stainless steel
3	Cylinder barrel	High-alloy stainless steel
4	End cap	High-alloy stainless steel
–	Seals	Polyurethane

Dimensions

Download CAD data ➔ **www.festo.com**

Piston ∅ 12 ... 25 mm



\+ = plus stroke length

∅ [mm]	AM	B ∅ h9	BE	BF	D ∅	D4 ∅	EE	EW	KK	KV	KW	MM ∅	L2	PL	VD	WF	ZJ	⌀1
12	16	16	M16x1.5	16	20	13.3	M5	11	M6	24	8	6	44	6	2	22	66	5
16	16	16	M16x1.5	16	20	17.3	M5	15	M6	24	8	6	51	6	2	22	73	5
20	20	22	M22x1.5	19	30	21.3	G1⁄8	18	M8	32	11	8	60	8.2	2	24	84	7
25	22	22	M22x1.5	21	30	26.5	G1⁄8	22	M10x1.25	32	11	10	61	8.2	2	28	89	9

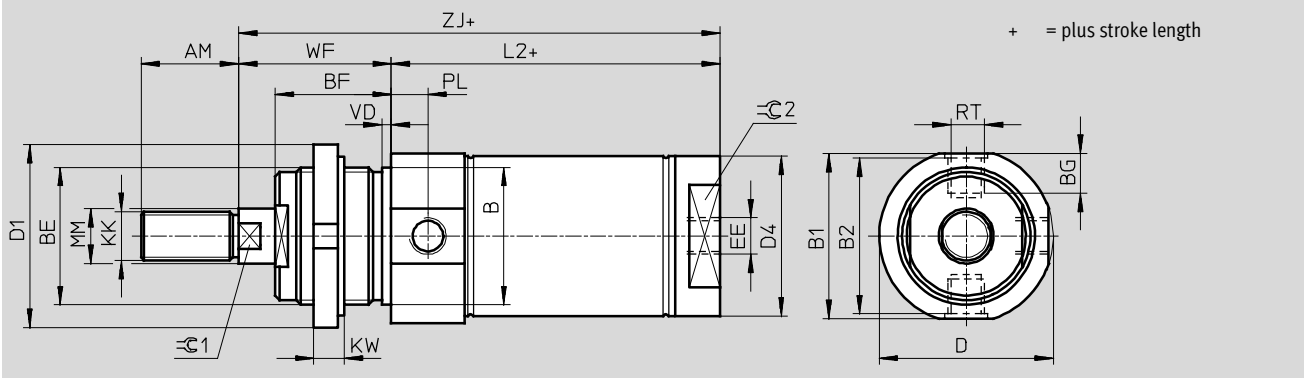
Round cylinders CRDG, stainless steel

Technical data

FESTO

Dimensions Download CAD data ➔ **www.festo.com**

Piston ∅ 32 ... 63 mm



∅ [mm]	AM	B ∅ h9	B1	B2	BE	BF	BG	D ∅	D1 ∅	D4 ∅	EE
32	20	30	38	36.8	M30x1.5	30	6.6	40	42	33.6	G1⁄8
40	24	38	46	44.8	M38x1.5	35	9.6	49	50	41.6	G1⁄4
50	32	45	57	55.8	M45x1.5	38	12.6	59	60	52.4	G1⁄4
63	32	45	70	67	M45x1.5	38	15.5	70	60	65.4	G3⁄8

∅ [mm]	KK	KW	MM ∅	L2	RT	PL	VD	WF	ZJ	=C1	=C2
32	M10x1.25	8	12	85.7	M8x1	9	2	38.2	123.9	10	27
40	M12x1.25	10	16	100	M10x1	12	3	45.2	145.2	13	36
50	M16x1.5	10	20	107.6	M12x1.5	12	3	50.2	157.8	17	46
63	M16x1.5	10	20	117.8	M14x1.5	13	3	50.2	168	17	55

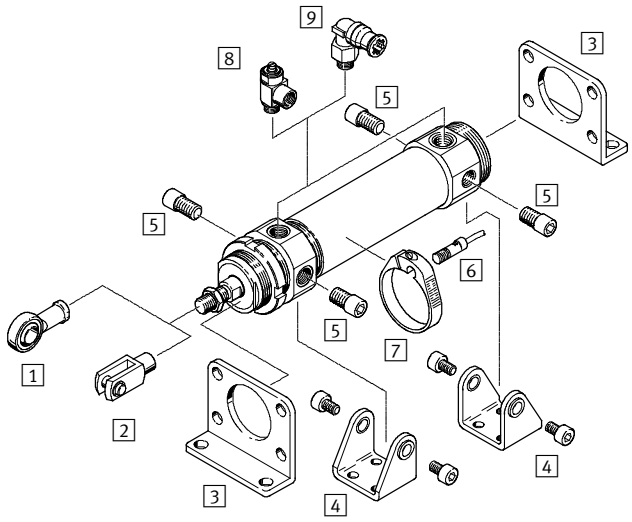
Ordering data

	Piston ∅ [mm]	Stroke [mm]	Part No.	Type
	12	1 ... 200	**160980**	**CRDG-12-...-P-A**
	16		**160981**	**CRDG-16-...-P-A**
	20	1 ... 320	**160982**	**CRDG-20-...-P-A**
	25	1 ... 500	**160983**	**CRDG-25-...-P-A**
	32		**160984**	**CRDG-32-...-P-A**
	40		**160985**	**CRDG-40-...-P-A**
	50		**160986**	**CRDG-50-...-P-A**
	63		**160987**	**CRDG-63-...-P-A**

Round cylinders CRDSW, stainless steel

FESTO

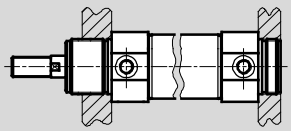
Peripherals overview



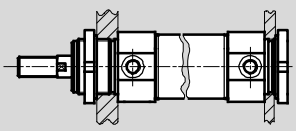
Mounting attachments and accessories		
	Brief description	**➔ Page/Internet**
1 Rod eye CRSGS	With spherical bearing	61
2 Rod clevis CRSG	Permits a swivelling movement of the cylinder in one plane	61
3 Foot mounting CRH (2 pieces)	For bearing and end caps	54
3 Flange mounting CRFV	For bearing and end caps	55
4 Clevis foot CRSBS	For bearing and end caps	59
5 Threaded pin CRGBS	For bearing and end caps	59
6 Proximity sensor CRSMEO-4	With LED for operating status indication	61
7 Mounting kit CRSMBR	For proximity sensor CRSMEO-4	61
8 One-way flow control valve CRGRLA	For regulating speed	62
9 Push-in fittings CRQS	For connecting compressed air tubing with standard outside diameter	quick star

Mounting options

Threaded mounting

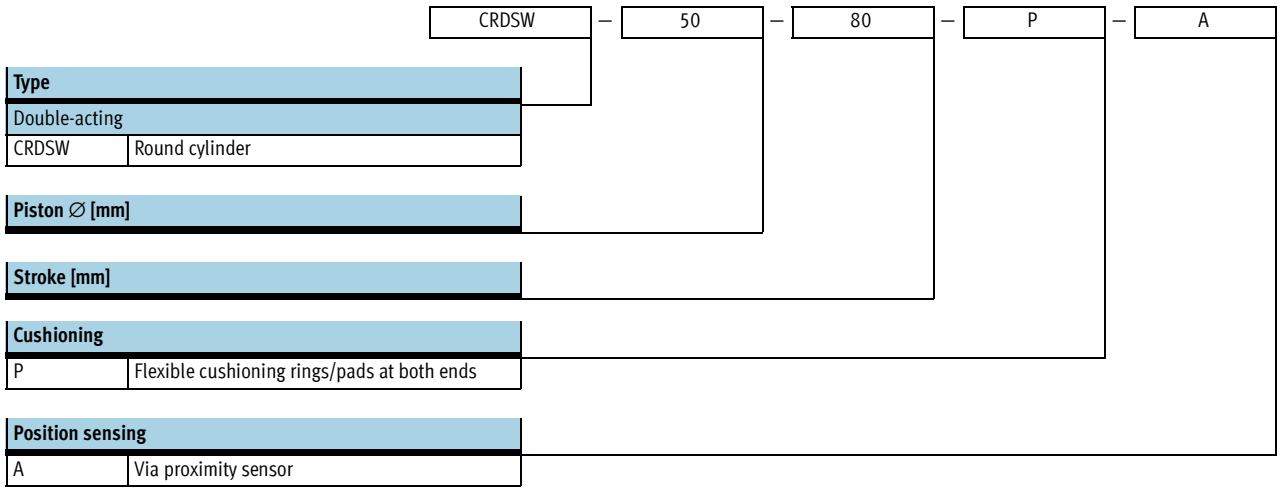


Mounting via slotted nut



Round cylinders CRDSW, stainless steel

Type codes



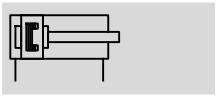
Type discontinued
Available up until 2012

Round cylinders CRDSW, stainless steel

Technical data

FESTO

Function



Diameter
32 ... 63 mm

Stroke length
1 ... 500 mm

www.festo.com

General technical data				
Piston ∅	32	40	50	63
Pneumatic connection	G⅛	G¼	G¼	G⅜
Piston rod thread	M10x1.25	M12x1.25	M16x1.5	M16x1.5
Constructional design	Piston			
	Piston rod			
	Cylinder barrel			
Cushioning	Flexible cushioning rings/pads at both ends			
Position sensing	Via proximity sensor			
Type of mounting	Via accessories			
	Via male thread			
Mounting position	Any			

Operating and environmental conditions	
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	1 ... 10 bar
Ambient temperature[1] [°C]	–20 ... +80
Corrosion resistance class CRC[2]	4

1) Note operating range of proximity sensors
2) Corrosion resistance class 4 as per Festo standard 940 070
Components subject to particularly high corrosion stress. Parts used with aggressive media, e.g. in the food or chemical industry. These applications should be supported with special tests with the media if required.

Force [N]				
Piston ∅	32	40	50	63
Theoretical force at 6 bar, advancing	483	754	1,178	1,870
Theoretical force at 6 bar, retracting	415	633	990	1,682

Weight [g]				
Piston ∅	32	40	50	63
Basic weight with 0 mm stroke	670	1,460	1,960	3,325
Additional weight per 10 mm stroke	18	22	35	41

Note

ProPneu
sizing software
➔ www.festo.com

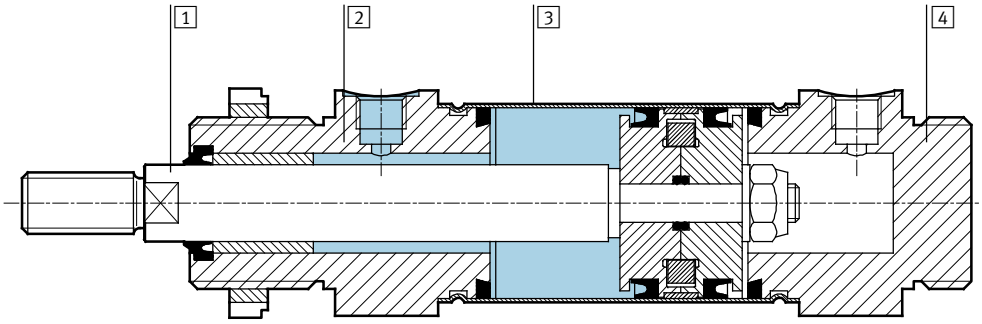
Round cylinders CRDSW, stainless steel

Technical data

FESTO

Materials

Sectional view



Round cylinder		
1	Piston rod	High-alloy stainless steel
2	Bearing cap	High-alloy stainless steel
3	Cylinder barrel	High-alloy stainless steel
4	End cap	High-alloy stainless steel
–	Seals	Polyurethane

- Type discontinued
Available up until 2012

Round cylinders CRDSW, stainless steel

Technical data

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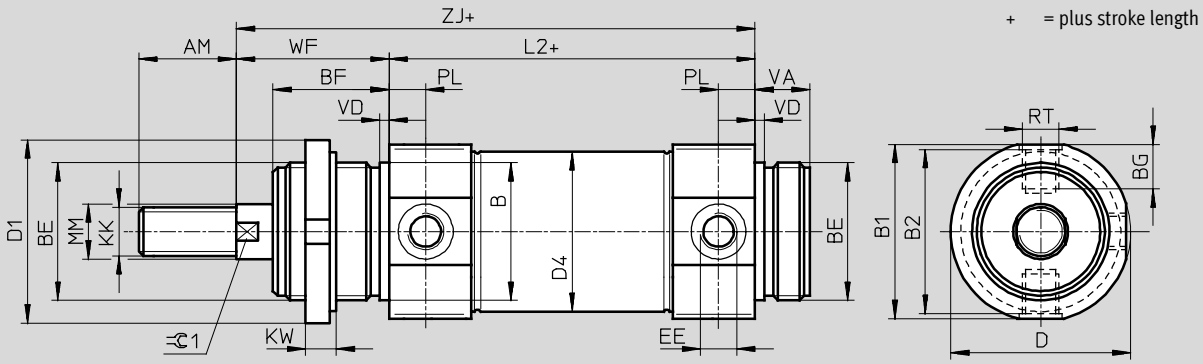
Dimensions Download CAD data ➔ **www.festo.com**



∅ [mm]	AM	B ∅ h9	B1	B2	BE	BF	BG	D ∅	D1 ∅	D4 ∅	EE
32	20	30	38	36.8	M30x1.5	30	6.6	40	42	33.6	G1⁄8
40	24	38	46	44.8	M38x1.5	35	9.6	49	50	41.6	G1⁄4
50	32	45	57	55.8	M45x1.5	38	12.6	59	60	52.4	G1⁄4
63	32	45	70	67	M45x1.5	38	15.5	70	60	65.4	G3⁄8

∅ [mm]	KK	KW	MM ∅	L2	RT	PL	VA	VD	WF	ZJ	⫧1
32	M10x1.25	8	12	96	M8x1	9	14	2	38.2	134	10
40	M12x1.25	10	16	113	M10x1	12	16	3	45.2	158	13
50	M16x1.5	10	20	120	M12x1.5	12	18	3	50.2	170	17
63	M16x1.5	10	20	124	M14x1.5	13	18	3	50.2	174	17

Ordering data

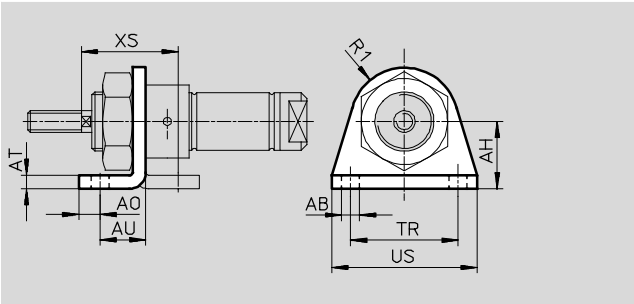
	Piston ∅ [mm]	Stroke [mm]	Part No.	Type
	32	1 … 500	**160676**	**CRDSW-32-…-P-A**
	40		**160677**	**CRDSW-40-…-P-A**
	50		**160678**	**CRDSW-50-…-P-A**
	63		**160679**	**CRDSW-63-…-P-A**

Foot mounting CRHBN

Scope of delivery:
CRHBN-... x1: 1 foot
CRHBN-... x2: 2 feet, 1 nut

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


CRHBN-... x2



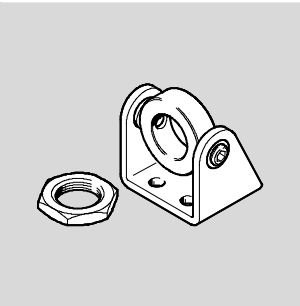
Dimensions and ordering data

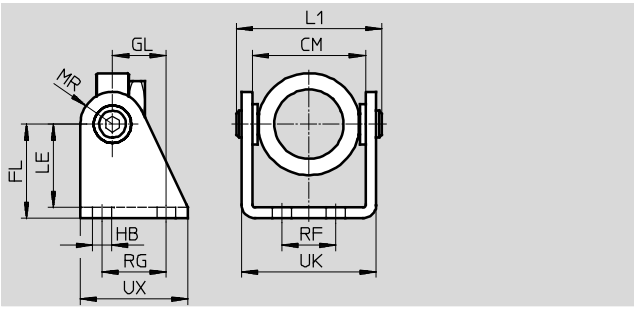
For ∅ [mm]	AB ∅	AH	AO	AT	AU	R1	TR	US	XS	CRC[1]	Weight [g]	Part No.	Type
12	5.5	20	6	4	14	13	32	42	32	4	40	**161866**	**CRHBN-12/16x1**
16	5.5	20	6	4	14	13	32	42	32	4	97	**162999**	**CRHBN-12/16x2**
20	6.6	25	8	5	17	20	40	54	36	4	55	**161867**	**CRHBN-20/25x1**
25	6.6	25	8	5	17	20	40	54	40	4	100	**162998**	**CRHBN-20/25x2**

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

Swivel mounting CRSBN

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





Dimensions and ordering data

For ∅ [mm]	CM	FL	GL	HB ∅	L1	LE	MR	RF	RG	UK	UX	CRC[1]	Weight [g]	Part No.	Type
20 25	38.1	35	20	7	55	31	12	20	24	50.1	40	4	230	**552904**	**CRSBN-20/25**

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

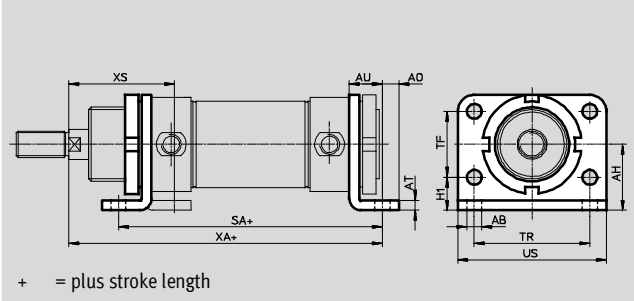
Accessories for stainless steel cylinders

Technical data

FESTO

Foot mounting CRH

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



\+ = plus stroke length

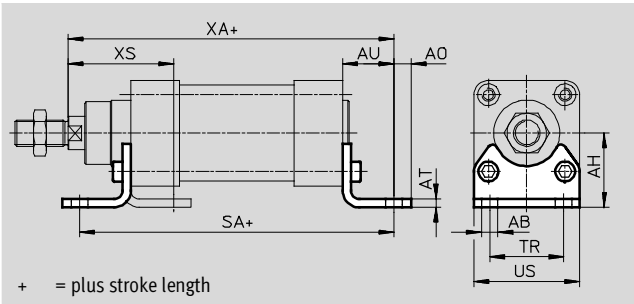
Dimensions and ordering data

For ∅ [mm]	AB ∅	AH	AO	AT	AU	H1	SA	TF	TR	US	XA	XS	CRC[1]	Weight [g]	Part No.	Type
32	7	28	7	4	14	14	124	28	52	66	148	48	4	237	**162951**	**CRH-32**
40	9	33	10	5	20	18	153	30	60	80	178	60	4	341	**162952**	**CRH-40**
50	9	40	10	6	20	20	160	40	70	90	190	64	4	559	**162953**	**CRH-50**
63	9	45	10	6	20	20	164	50	76	96	195	64	4	680	**162954**	**CRH-63**

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

Foot mounting CRHNC

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



\+ = plus stroke length

Dimensions and ordering data

For ∅ [mm]	AB ∅	AH	AO	AT	AU	SA	TR	US	XA	XS	CRC[1]	Weight [g]	Part No.	Type
32	7	32	6.5	4	24	142	32	45	144.7	45.7	4	135	**176937**	**CRHNC-32**
40	10	36	9	4	28	160.8	36	54	163.6	53.8	4	180	**176938**	**CRHNC-40**
50	10	45	9.5	5	31	167.9	45	64	175	63.1	4	325	**176939**	**CRHNC-50**
63	10	50	12.5	5	32	184.9	50	75	191.5	64.6	4	405	**176940**	**CRHNC-63**
80	12	63	15	6	41	209.9	63	93	215.5	81.6	4	820	**176941**	**CRHNC-80**
100	14.5	71	17.5	6	41	220.1	75	110	229.6	85.5	4	1,000	**176942**	**CRHNC-100**
125	16.5	90	22	8	45	250	90	131	270	102	4	1,840	**176943**	**CRHNC-125**

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

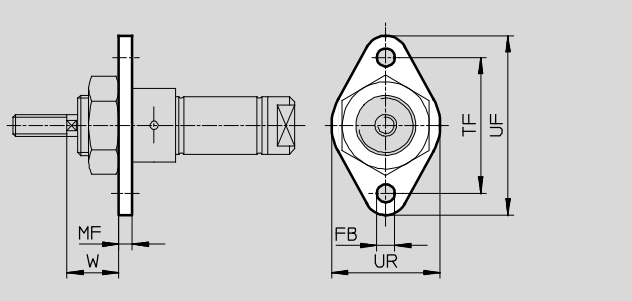
Accessories for stainless steel cylinders

Technical data

FESTO

Flange mounting CRFBN

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



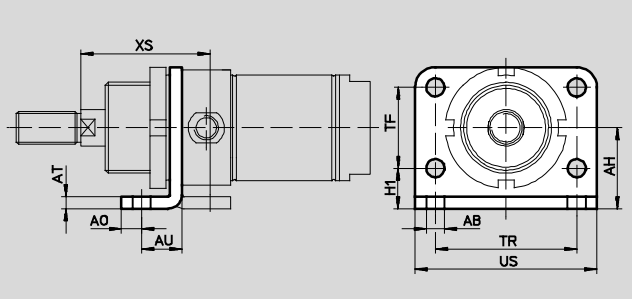
Dimensions and ordering data

For ∅ [mm]	FB ∅	MF	TF	UF	UR	W	CRC[1]	Weight [g]	Part No.	Type
12, 16	5.5	4	40	53	30	18	4	25	**161864**	**CRFBN-12/16**
20	6.6	5	50	66	40	19	4	45	**161865**	**CRFBN-20/25**
25	6.6	5	50	66	40	23	4	45	**161865**	**CRFBN-20/25**

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

Foot mounting CRFV

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



Dimensions and ordering data

For ∅ [mm]	AB ∅	AH	AO	AT	AU	H1	TF	TR	US	XS	CRC[1]	Weight [g]	Part No.	Type
32	7	28	7	4	14	14	28	52	66	48	4	102	**161858**	**CRFV-32**
40	9	33	10	5	20	18	30	60	80	60	4	190	**161859**	**CRFV-40**
50	9	40	10	6	20	20	40	70	90	64	4	290	**161860**	**CRFV-50**
63	9	45	10	6	20	20	50	76	96	64	4	365	**161861**	**CRFV-63**

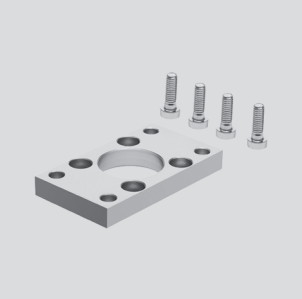
1) Corrosion resistance class 4 as per Festo standard 940 070
Components subject to particularly high corrosion stress. Parts used with aggressive media, e.g. in the food or chemical industry. These applications should be supported with special tests with the media if required.

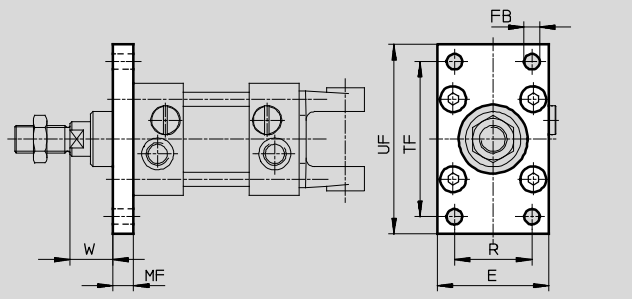
Accessories for stainless steel cylinders

Technical data

Flange mounting CRFNG

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





Dimensions and ordering data

For ∅ [mm]	E	FB ∅	MF	R	TF	UF	W	CRC[1]	Weight [g]	Part No.	Type
32	45	7	10	32	64	80	16	4	225	**161846**	**CRFNG-32**
40	54	9	10	36	72	90	20	4	300	**161847**	**CRFNG-40**
50	65	9	12	45	90	110	25	4	540	**161848**	**CRFNG-50**
63	75	9	12	50	100	120	25	4	680	**161849**	**CRFNG-63**
80	93	12	16	63	126	150	30	4	1,500	**161850**	**CRFNG-80**
100	110	14	16	75	150	175	35	4	2,100	**161851**	**CRFNG-100**
125	132	16	20	90	180	210	45	4	3,780	**185363**	**CRFNG-125**

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

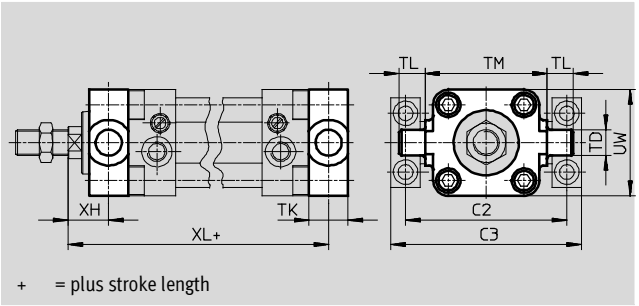
Accessories for stainless steel cylinders

Technical data

FESTO

Trunnion flange CRZNG

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



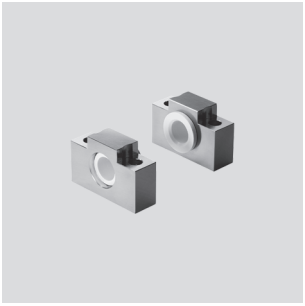
Dimensions and ordering data

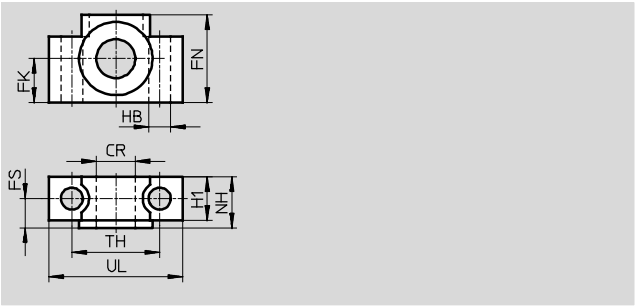
For ∅ [mm]	C2	C3	TD ∅ e9	TK	TL	TM	UW	XH	XL	CRC[1]	Weight [g]	Part No.	Type
32	71	86	12	16	12	50	50	18	128	4	150	**161852**	**CRZNG-32**
40	87	105	16	20	16	63	55	20	145	4	285	**161853**	**CRZNG-40**
50	99	117	16	24	16	75	65	25	155	4	473	**161854**	**CRZNG-50**
63	116	136	20	24	20	90	75	25	170	4	687	**161855**	**CRZNG-63**
80	136	156	20	28	20	110	100	32	188	4	1,296	**161856**	**CRZNG-80**
100	164	189	25	38	25	132	120	32	208	4	2,254	**161857**	**CRZNG-100**
125	192	217	25	50	25	160	150	40	250	4	3,484	**185362**	**CRZNG-125**

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

Trunnion supports CRLNZG

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





Dimensions and ordering data

For ∅ [mm]	CR ∅ D11	FK ∅ ±0.1	FN	FS	H1	HB ∅ H13	NH	TH ±0.2	UL	CRC[1]	Weight [g]	Part No.	Type
32	12	15	30	10.5	15	6.6	18	32	46	4	205	**161874**	**CRLNZG-32**
40, 50	16	18	36	12	18	9	21	36	55	4	323	**161875**	**CRLNZG-40/50**
63, 80	20	20	40	13	20	11	23	42	65	4	435	**161876**	**CRLNZG-63/80**
100/125	25	25	50	16	24.5	14	28.5	50	75	4	739	**161877**	**CRLNZG-100/125**

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

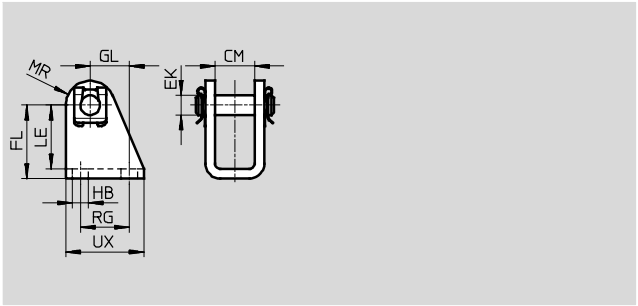
Accessories for stainless steel cylinders

Technical data

FESTO

Clevis foot CRLBN

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



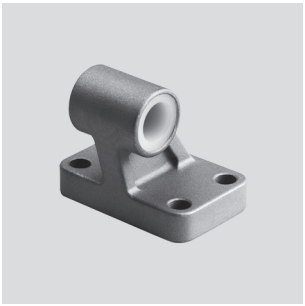
Dimensions and ordering data

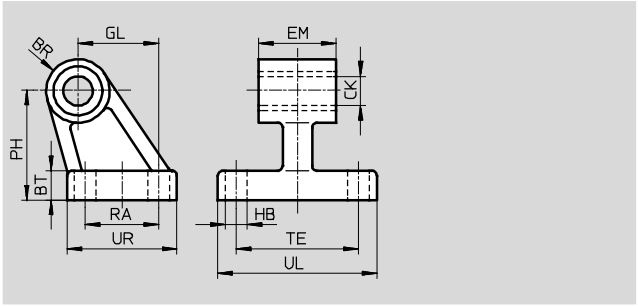
For ∅ [mm]	CM	EK ∅	FL	GL	HB	LE	MR	RG	UX	CRC[1]	Weight [g]	Part No.	Type
12, 16	12.1	6	27 +0.3/–0.2	13	5.5	24	7	15	25	4	55	**161862**	**CRLBN-12/16**
20, 25	16.1	8	30 +0.4/–0.2	16	6.6	26	10	20	32	4	62	**161863**	**CRLBN-20/25**
32	16.1	10	35 +0.4/–0.2	18.5	6.6	31	11	24	35	4	107	**195866**	**CRLBN-32**
40	18.1	12	40 +0.4/–0.2	24.5	9	35	13	30	45	4	184	**195867**	**CRLBN-40**
50, 63	21.1	16	45 +0.5/–0.2	28	9	39	14	34	50	4	289	**195868**	**CRLBN-50/63**

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

Clevis foot CRLNG

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





Dimensions and ordering data

For ∅ [mm]	BR	BT	CK ∅ D11	EB ∅ H13	EM –0.4	GL	HB ∅ H13	OF	PH	RA	TE	UL	UR	CRC[1]	Weight [g]	Part No.	Type
32	10	8	10	–	25.8	21	6.6	–	32	18	38	51	31	4	120	**161840**	**CRLNG-32**
40	11	10	12	–	27.8	24	6.6	–	36	22	41	54	35	4	160	**161841**	**CRLNG-40**
50	12	12	12	–	31.8	33	9	–	45	30	50	65	45	4	280	**161842**	**CRLNG-50**
63	15	12	16	15	39.8	37	9	10.8	50	35	52	67	50	4	375	**161843**	**CRLNG-63**
80	15	14	16	18	49.8	47	11	12.7	63	40	66	86	60	4	580	**161844**	**CRLNG-80**
100	19	15	20	18	59.8	55	11	13.7	71	50	76	96	70	4	935	**161845**	**CRLNG-100**
125	22	20	25	20	69.8	70	14	18.6	90	60	94	124	90	4	2,530	**176951**	**CRLNG-125**

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

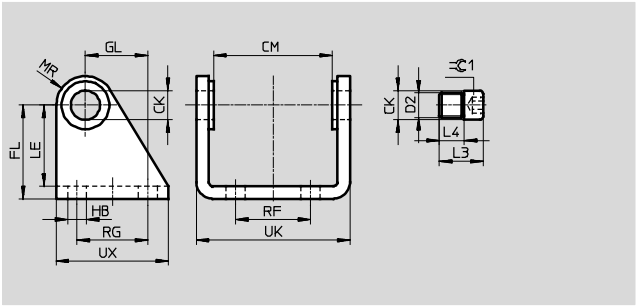
Accessories for stainless steel cylinders

Technical data

FESTO

Clevis foot CRSBS

Material:
High-alloy steel



Dimensions and ordering data

For ∅ [mm]	CK ∅ H8/f7	CM	D1 ∅	D2	FL	GL	H1	HB ∅	L3	L4	LE
32	10	38.1	15	M8x1	35	20	4	7	14.5	6.5	31
40	12	46.1	20	M10x1	40	27	5	9	18.5	9	36
50	14	57.1	23	M12x1.5	45	30	6	9	23	12	39
63	16	70.4	23	M14x1.5	50	34	6	9	29	16	44

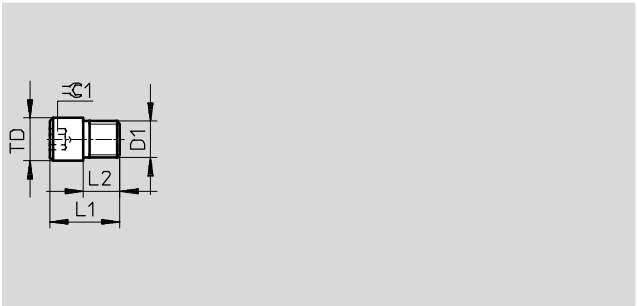
For ∅ [mm]	MR	RF	RG	UK	UX	⫧1	CRC[1]	Weight [g]	Part No.	Type
32	12	20	24	50.1	40	5	4	130	**162955**	**CRSBS-32**
40	13	28	30	60.1	50	6	4	200	**162956**	**CRSBS-40**
50	14	36	34	74.1	54	6	4	310	**162957**	**CRSBS-50**
63	15	42	35	88.1	65	8	4	440	**162958**	**CRSBS-63**

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

Pivot bolt CRGBS

for swivel mounting

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



Dimensions and ordering data

For ∅ [mm]	D1	L1	L2	TD ∅ f8	⫧1	CRC[1]	Weight [g]	Part No.	Type
32	M8x1	14.5	6.5 ±0.1	10	5	4	10	**163132**	**CRGBS-32**
40	M10x1	18.5	9 ±0.1	12	6	4	20	**163133**	**CRGBS-40**
50	M12x1.5	23	12 ±0.2	14	6	4	40	**163134**	**CRGBS-50**
63	M14x1.5	29	16 ±0.2	16	8	4	65	**163135**	**CRGBS-63**

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

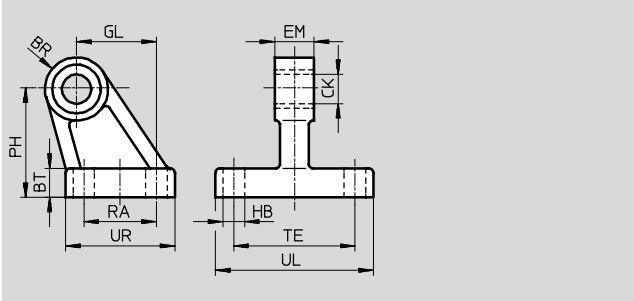
Accessories for stainless steel cylinders

Technical data

FESTO

Clevis foot CRLMC

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



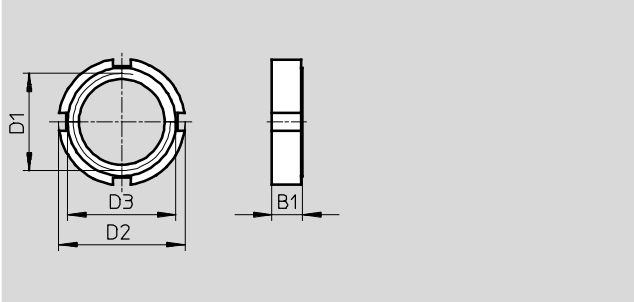
Dimensions and ordering data

For ∅ [mm]	BR	BT	CK ∅ D11	EB ∅ H13	EM −0.4	GL	HB ∅ H13	OF	PH	RA	TE	UL	UR	CRC[1]	Weight [g]	Part No.	Type
32	10	8	10	–	10	21	6.6	–	32	18	38	51	31	4	101	**197320**	**CRLMC-32**
40	11	10	12	–	12	24	6.6	–	36	22	41	54	35	4	139	**197321**	**CRLMC-40**
50	12	12	12	–	16	33	9	–	45	30	50	65	45	4	242	**197322**	**CRLMC-50**
63	15	12	16	15	16	37	9	10.8	50	35	52	67	50	4	303	**197323**	**CRLMC-63**
80	15	14	16	18	20	47	11	12.7	63	40	66	86	60	4	515	**197324**	**CRLMC-80**
100	19	15	20	18	20	55	11	13.7	71	50	76	96	70	4	761	**197325**	**CRLMC-100**

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

Ring nut CR

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



Dimensions and ordering data

For ∅ [mm]	B1	D1	D2	D3	CRC[1]	Weight [g]	Part No.	Type
32	8	M30x1.5	42	36	4	40	**197326**	**CR-M30x1,5**
40	10	M38x1.5	50	48	4	61	**197327**	**CR-M38x1,5**
50, 63	10	M45x1.5	60	56	4	89	**197328**	**CR-M45x1,5**
80, 100	13	M50x2	75	67	4	228	**197329**	**CR-M50x2**

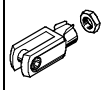
1) Corrosion resistance class 4 as per Festo standard 940 070
Components subject to particularly high corrosion stress. Parts used with aggressive media, e.g. in the food or chemical industry. These applications should be supported with special tests with the media if required.

Accessories for stainless steel cylinders

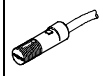
Technical data

Ordering data – Piston rod attachments — Technical data ➔ Internet: crsg

	For ∅	Part No.	Type
Rod eye CRSGS			
	12, 16	**195580**	**CRSGS-M6**
	20	**195581**	**CRSGS-M8**
	32	**195582**	**CRSGS-M10x1,25**
	40	**195583**	**CRSGS-M12x1,25**
	50, 63	**195584**	**CRSGS-M16x1,5**
	80, 100	**195585**	**CRSGS-M20x1,5**
	125	**195586**	**CRSGS-M27x2**

	For ∅	Part No.	Type
Rod clevis CRSG			
	12, 16	**13567**	**CRSG-M6**
	20	**13568**	**CRSG-M8**
	32	**13569**	**CRSG-M10x1,25**
	40	**13570**	**CRSG-M12x1,25**
	50, 63	**13571**	**CRSG-M16x1,5**
	80, 100	**13572**	**CRSG-M20x1,5**
	125	**185361**	**CRSG-M27x2**

Ordering data – Proximity sensors, magnetic reed CRSMEO — Technical data ➔ Internet: crsmeo

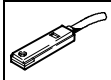
	Electrical connection / Cable	Cable length [m]	Part No.	Type
	N/O contact			
	Corrosion resistant			
	3-wire	2.5	**161 775**	**CRSMEO-4-K-LED-24**

Ordering data – Mounting kits — Technical data ➔ Internet: crsmb

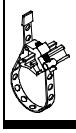
	For ∅	Part No.	Type
Mounting kit CRSMBR			
	12	**164581**	**CRSMBR-12**
	16	**164582**	**CRSMBR-16**
	20	**164583**	**CRSMBR-20**
	25	**164584**	**CRSMBR-25**
	32	**163888**	**CRSMBR-32**
	40	**163889**	**CRSMBR-40**
	50	**163890**	**CRSMBR-50**
	63	**163891**	**CRSMBR-63**

	For ∅	Part No.	Type
Mounting kit CRSMB			
	32	**161763**	**CRSMB-32**
	40	**161764**	**CRSMB-40**
	50	**161765**	**CRSMB-50**
	63	**161766**	**CRSMB-63**
	80	**161767**	**CRSMB-80**
	100	**161768**	**CRSMB-100**
	125	**185365**	**CRSMB-125**

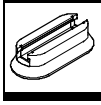
Ordering data – Proximity sensors, magneto-resistive CRSMT — Technical data ➔ Internet: crsmt

	Switching output	Electrical connection / Cable	Cable length [m]	Part No.	Type
	N/O contact				
	PNP	3-wire	2.5	**525563**	**CRSMT-8-PS-K2,5-LED-24**
			5.0	**525564**	**CRSMT-8-PS-K5-LED-24**

Ordering data – Mounting kit SMBR — Technical data ➔ Internet: smbr

		Part No.	Type
	For standard cylinder CRDSNU	**538937**	**SMBR-8-8/100-S6**

Ordering data – Mounting kit CRSMB — Technical data ➔ Internet: crsmb

		Part No.	Type
	For round cylinder CRHD	**525565**	**CRSMB-8-32/100**

Accessories for stainless steel cylinders

Technical data

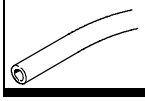
Ordering data – One-way flow control valves CRGRLA — Technical data ➔ Internet: crgrla

	Connection		Material	Part No.	Type
	Thread	For push-in fitting			
	M5	CRQS/CRQSL/CRQST	Electrolytically polished stainless steel casting	**161403**	**CRGRLA-M5-B**
	G1/8			**161404**	**CRGRLA-1/8-B**
	G1/4			**161405**	**CRGRLA-1/4-B**
	G3/8			**161406**	**CRGRLA-3/8-B**
	G1/2			**161407**	**CRGRLA-1/2-B**

Ordering data – Air reservoirs CRVZS — Technical data ➔ Internet: crvzs

	Connection	Volume	Material	Part No.	Type
	Thread	[l]			
	G1/8	0.1	High-alloy stainless steel	**160233**	**CRVZS-0,1**
	G1/4	0.4		**160234**	**CRVZS-0,4**
	G1/4	0.75		**160235**	**CRVZS-0,75**
	G1/2	2		**160236**	**CRVZS-2**
	G1, G3/8	5		**192159**	**CRVZS-5**
	G1, G3/8	10		**160237**	**CRVZS-10**

Ordering data – Tubing — Technical data ➔ Internet: tubing

	Standard outside diameter	**PLN, PFAN**