

Round cylinders DPRA

FESTO



Characteristics

At a glance

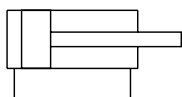
- Double- and single-acting versions
- With and without protection against rotation
- With and without cushioning
- Stainless steel piston rod
- Good running performance and long service life
- The variants can be configured according to individual needs using a modular product system

System of units

[N] Imperial

Function

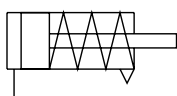
[] Double-acting



- The cylinder has two pneumatic connections which can be pressurized with compressed air one after the other
- When the rear connection is pressurized with compressed air, the cylinder advances. For retraction, the front connection is pressurized with compressed air

Function

[S] Single-acting, pushing (piston rod retracted by means of spring force)



- The cylinder has one pneumatic connection. The piston rod is retracted in its initial position
- When the connection is pressurized with compressed air, the cylinder advances. The retracting movement occurs by means of a spring

Piston rod type

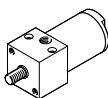
[T] Through piston rod



- The piston rod can be used for connection at both ends of the cylinder
- Identical forces in forward and return stroke

Type of bearing cap

[B] For direct mounting



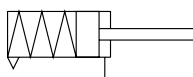
Protection against rotation

[]/[Q] Without/with protection against rotation

- Protection against rotation prevents the piston rod turning during movement
- Application example: position-oriented feeding

Function

[P] Single-acting, pulling (piston rod advanced by means of spring force)



- The cylinder has one pneumatic connection. The piston rod is advanced in its initial position
- When the connection is pressurized with compressed air, the cylinder retracts. The advancing movement occurs by means of a spring

Piston rod type

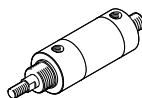
[] At one end



- The piston rod can be used for connection at one end of the cylinder

Type of bearing cap

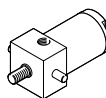
[] With mounting thread



- Including mounting nut when combined with end cap type [NG] Without mounting thread

Type of bearing cap

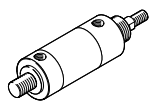
[M] With trunnion flange



Characteristics

Type of end cap

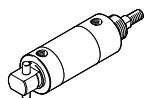
[] Standard



- Including mounting nut

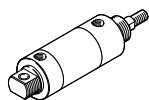
Type of end cap

[ME] With trunnion flange



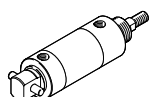
Type of end cap

[UB] With swiveling rod eye and bearing sleeve



Type of end cap

[ME90] Trunnion flange, rotated 90°



Compressed air supply port

[] Lateral

- The compressed air supply ports are located on the side of the cylinder

Cushioning

[N]/[P] No cushioning/flexible cushioning rings/pads
At both ends

- The flexible cushioning rings/pads on the actuator allow a greater amount of impact energy to be absorbed in the end positions
- No adjustment required
- Time-saving

Corrosion protection

[] Standard



- Protects the actuator against corrosion

Temperature range

[T4] +32 ... +300 °F

- The cylinder is intended for use in a temperature range of +32 ... +300 °F

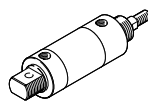
Piston rod thread extension

[]/[...NL] Without/0 ... 6 inch

- The piston rod thread can be extended by 0 ... 6 inch

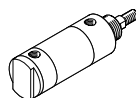
Type of end cap

[U] With swiveling rod eye



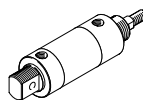
Type of end cap

[NG] Without mounting thread



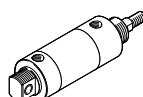
Type of end cap

[U90] With swiveling rod eye, rotated 90°



Type of end cap

[UB90] With swiveling rod eye and bearing sleeve, rotated 90°



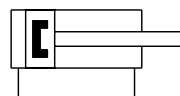
Compressed air supply port

[P4] Axial

- The front compressed air supply port is located on the side of the cylinder and the rear compressed air supply port is located axially on the cylinder
- Only selectable with end cap type [NG] Without mounting thread

Position sensing

[]/[A] Without/for proximity switch



Temperature range

[] Standard

- The cylinder is intended for use in a temperature range of -5 ... +165 °F

Piston rod extension

[]/[...NE] Without/0 ... 6 inch

- The piston rod can be extended by 0 ... 6 inch

Product range overview

Function	Type	Piston diameter	Stroke	System of units	Protection against rotation	Piston rod type	Type of bearing cap		Type of end cap						
		[in]	[in]	[N]	[Q]	[T]	[B]	[M]	[U]	[ME]	[NG]	[UB]	[U90]	[ME90]	[UB90]
Double-acting	DPRA														
	DPRA	3/4	0.0625 ... 12	■	–	■	■	■	–	■	■	■	–	■	–
		1 1/16		■	–	■	■	■	■	■	■	■	–	■	–
		1 1/4		■	–	■	■	■	–	■	■	■	■	–	–
		1 1/2		■	–	■	–	–	■	■	■	■	–	■	–
		1 3/4		■	–	–	–	■	–	■	■	■	■	–	–
		2		■	–	■	–	–	–	–	■	■	–	–	■
		2 1/2		■	–	–	–	–	–	–	■	■	–	–	■
Single-acting	DPRA-...-P (pulling, piston rod advanced by means of spring force)														
	DPRA-...-S (pushing, piston rod retracted by means of spring force)														
	DPRA-...-P DPRA-...-S	3/4	0.0625 ... 6	■	■	–	–	–	–	■	■	■	–	■	–
		1 1/16		■	■	–	–	–	■	■	■	■	–	■	–
		1 1/4		■	■	–	–	–	■	–	■	■	■	–	–
		1 1/2		■	■	–	–	–	■	■	■	■	–	■	–
		1 3/4		■	■	–	–	–	■	–	■	■	■	–	–
		2	0.0625 ... 4	■	■	–	–	–	–	–	■	■	–	–	■

Product range overview

Function	Type	Piston iameter [in]	Stroke [in]	Compressed air supply port ¹⁾ [P4]	Cushioning		Position sensing [A]	Temperature range [T4]	Piston rod extension [-...NE]	Piston rod thread extension [-...NL]
Double-act- ing	DPRA									
	DPRA	3/4	0.0625 ... 12	■	■	■	■	■	■	■
		1 1/16		■	■	■	■	■	■	■
		1 1/4		■	■	■	■	■	■	■
		1 1/2		■	■	■	■	■	■	■
		1 3/4		■	■	■	■	■	■	■
		2		■	■	■	■	■	■	■
		2 1/2		■	■	■	■	■	■	■
Single-act- ing	DPRA-...-P (pulling, piston rod advanced by means of spring force)									
	DPRA-...-S (pushing, piston rod retracted by means of spring force)									
	DPRA-...-P DPRA-...-S	3/4	0.0625 ... 6	■	■	■	■	■	■	■
		1 1/16		■	■	■	■	■	■	■
		1 1/4		■	■	■	■	■	■	■
		1 1/2		■	■	■	■	■	■	■
		1 3/4		■	■	■	■	■	■	■
	2	0.0625 ... 4	■	■	■	■	■	■	■	

1) Only selectable with end cap type [NG] Without mounting thread

Type codes

001	Type	
DPRA	Round cylinder	

002	System of units	
N	Imperial	

003	Protection against rotation	
–	Without	
Q	With protection against rotation	

004	Piston diameter	
-----	-----------------	--

005	Stroke	
-----	--------	--

006	Function	
–	Double-acting	
P	Single-acting, pulling (spring extend)	
S	Single-acting, pushing (spring retract)	

007	Piston rod type	
–	At one end	
T	Through piston rod	

008	Bearing cap type	
–	With mounting thread	
B	For direct mounting	
M	With pivot pin	

009	Type of end cap	
–	Standard	
U	With swivel eye	
ME	With pivot pin	
NG	Without mounting thread	
UB	With swivel eye and bearing sleeve	
U90	With swivel eye, turned 90°	
ME90	Pivot pin, turned 90°	
UB90	With swivel eye and bearing sleeve, turned 90°	

010	Supply port	
–	Lateral	
P4	Axial	

011	Cushioning	
N	No Cushioning	
P	Elastic cushioning rings/plates at both ends	

012	Position sensing	
–	Without	
A	Via proximity sensor	

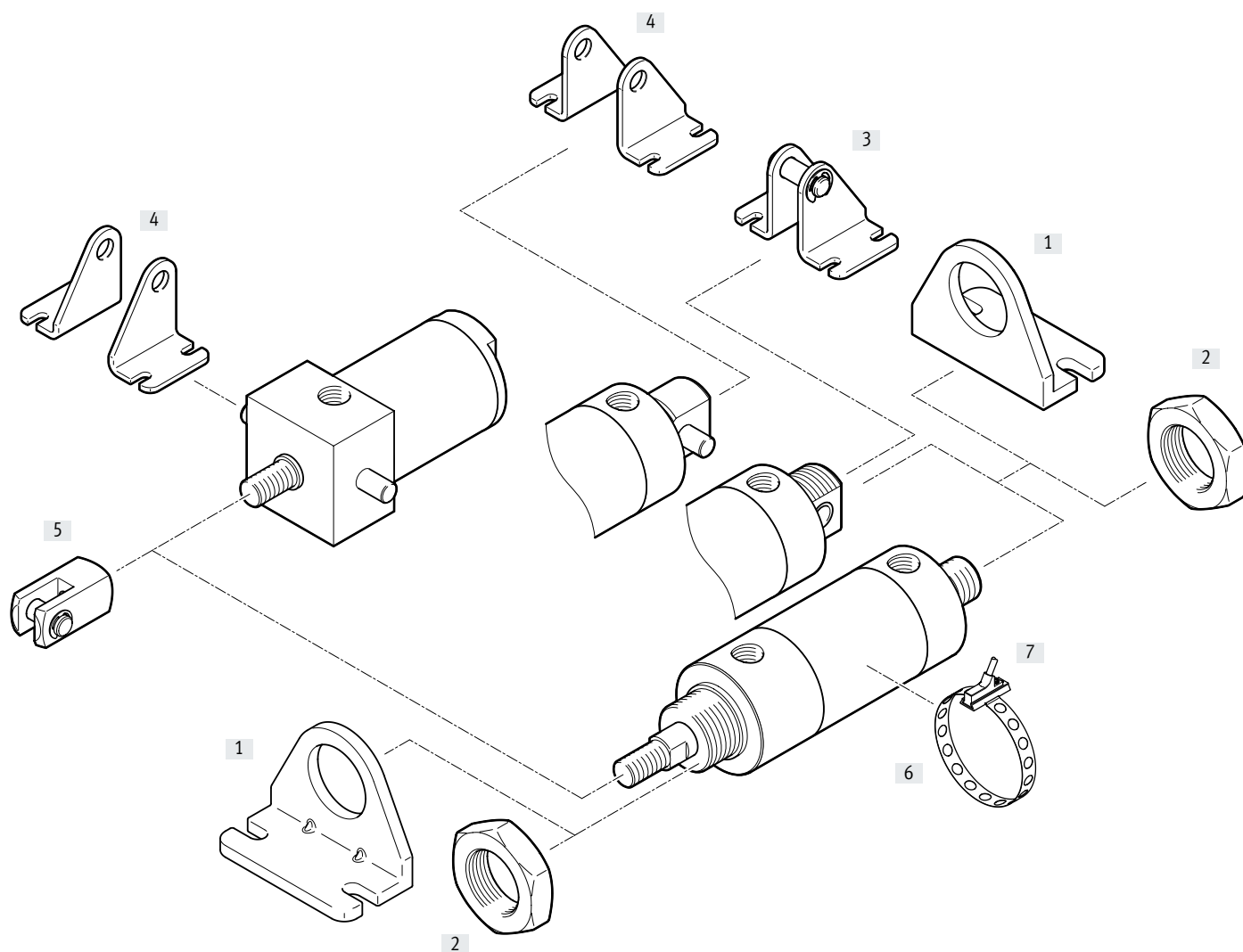
013	Corrosion protection	
–	Standard	

014	Temperature range	
–	Standard	
T4	+32 ... +300 °F	

015	Piston rod extension	
–	Without	
...NE	0 ... 6 inch	

016	Piston rod thread extension	
–	Without	
...NL	0 ... 6 inch	

Peripherals overview

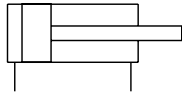


Accessories			
Type/order code	Description	→ Page/Internet	
[1] Foot mounting DAMH-C6	For mounting the cylinder by means of the bearing cap/end cap	36	
[2] Hex nut DAMD	- For directly mounting the cylinder - For fixing the foot mounting DAMH-C6 in place	36	
[3] Clevis foot DAMC-C6-...-B	- For mounting the cylinder by means of the end cap - Permits swivel motion in one plane	37	
[4] Clevis foot DAMC-C6-...-D	- For mounting the cylinder by means of the bearing cap/end cap - Permits swivel motion in one plane	37	
[5] Rod clevis DARC-C6	Permits swivel motion in one plane	38	
[6] Sensor bracket SAMH-FB-SH	For proximity switch SDBF-FBS	38	
[7] Proximity switch SDBF-FBS	Can be integrated into sensor bracket SAMH-FB-SH	38	

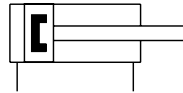
Data sheet

Function

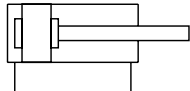
DPRA



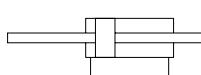
DPRA-...-A



DPRA-...-P



DPRA-...-T



⌀ - Diameter 3/4 ... 2 1/2 inch

l - Stroke length 0.0625 ... 12 inch

General technical data							
Piston diameter	3/4	1 1/16	1 1/4	1 1/2	1 3/4	2	2 1/2
Design	Piston						
	Piston rod						
	Cylinder barrel						
Mode of operation	Double-acting						
Pneumatic connection	1/8 NPT				1/4 NPT		
Piston rod thread	1/8-24 UNF-2A		7/16-20 UNF-2A		1/2-20 UNF-2A		
Stroke	[in]	0.0625 ... 12					
Cushioning							
[N]	No cushioning						
[P]	Flexible cushioning rings/pads at both ends						
Position sensing	For proximity switch						
Type of mounting	With lock nut				–		
	With accessories						
Mounting position	Any						

Operating and environmental conditions							
Piston diameter	3/4	1 1/16	1 1/4	1 1/2	1 3/4	2	2 1/2
Operating pressure [psi]	10 ... 150						
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]						
Information on operating and pilot media	Lubricated operation possible (in which case lubricated operation will always be required)						
Ambient temperature ¹⁾ [°F]	-5 ... +300						
Corrosion resistance class CRC ²⁾	1						

1) Note operating range of proximity switches

2) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. Dry indoor application and protection during transport and storage. Also applies to parts behind coverings, in the non-visible interior area, or parts that are covered in the application (e.g. actuator trunnions).

Forces [lbs] at 80 psi							
Piston diameter	3/4	1 1/16	1 1/4	1 1/2	1 3/4	2	2 1/2
Theoretical force, advancing	35.3	70.9	98.2	141.4	192.4	251.3	392.7
Theoretical force, retracting	31.4	64.8	86.1	129.3	176.7	226.8	368.2

Data sheet

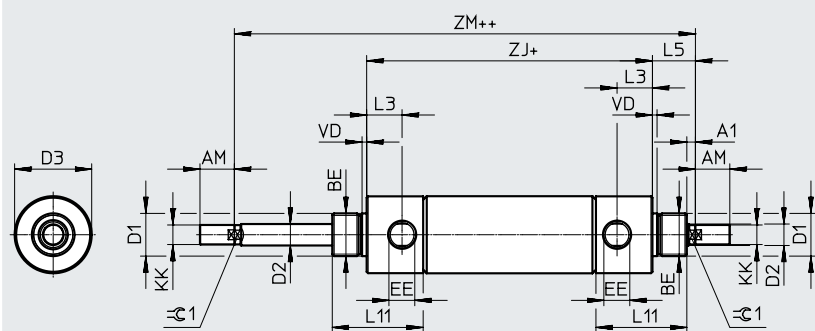
Weights [lb]							
Piston diameter	3/4	1 1/16	1 1/4	1 1/2	1 3/4	2	2 1/2
Product weight	0.1 ... 0.85	0.22 ... 1.32	0.39 ... 2.42	0.44 ... 2.73	0.85 ... 3.03	1.04 ... 4.04	1.98 ... 4.31
Materials							
Piston diameter	3/4	1 1/16	1 1/4	1 1/2	1 3/4	2	2 1/2
Cap material	Wrought aluminum alloy						
Material of seals	FPM						
	NBR						
Material of piston rod	High-alloy stainless steel						
Material of cylinder barrel	High-alloy stainless steel						
Note on materials	Contain paint-wetting impairment substances						
	RoHS-compliant						

Data sheet

Dimensions

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[T] Through piston rod



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

∅	A1	AM	BE	D1 ∅	D2 ∅	D3 ∅	EE
[in]							
3/4	–	0.5	5/8-18 UNF-2A	0.624	0.25	0.875	1/8 NPT
1 1/16	0.125	0.5	5/8-18 UNF-2A	0.624	0.313	1.125	1/8 NPT
1 1/4	0.25	0.75	3/4-16 UNF-2A	0.749	0.438	1.344	1/8 NPT
1 1/2	0.25	0.75	3/4-16 UNF-2A	0.749	0.438	1.562	1/4 NPT
2	0.375	0.875	1 1/4-12 UNF-2A	1.375	0.625	2.078	1/4 NPT

∅	KK	L1	L2	L3	L5	L11	VD	⌀1
[in]								
3/4	1/4-28 UNF-2A	4	3	0.469	0.5	1.343	0.094	–
1 1/16	5/16-24 UNF-2A	4.406	3.156	0.563	0.625	1.322	0.094	0.25
1 1/4	7/16-20 UNF-2A	5.563	3.813	0.75	0.875	1.625	0.094	0.25
1 1/2	7/16-20 UNF-2A	5.125	3.375	0.625	0.875	1.625	0.094	0.25
2	1/2-20 UNF-2A	6.563	4.188	0.734	1.188	2	0.125	0.25

Formula for calculating the length ZM/ZJ

The value O... is to be selected for the formula depending on the cushioning and position sensing variants

O0 = N (no cushioning)

O1 = P (flexible cushioning rings/pads at both ends)

O2 = A (for proximity switch)

O3 = PA (flexible cushioning rings/pads at both ends and for proximity switch)

n = stroke length

Stroke [in]	O0	O1	O2	O3	ZM	ZJ
Piston diameter 3/4						
0.0625 ... 12	0.469	0.5	1.343	0.094	3+n+O...	4+(2*n)+O...
Piston diameter 1 1/16						
0.0625 ... 12	0.563	0.625	1.322	0.094	3.156+n+O...	4.406+(2*n)+O...
Piston diameter 1 1/4						
0.0625 ... 12	0.75	0.875	1.625	0.094	3.813+n+O...	5.563+(2*n)+O...
Piston diameter 1 1/2						
0.0625 ... 12	0.625	0.875	1.625	0.094	3.375+n+O...	5.125+(2*n)+O...
Piston diameter 2						
0.0625 ... 12	0.734	1.188	2	0.125	4.188+n+O...	6.563+(2*n)+O...

Data sheet

Dimensions

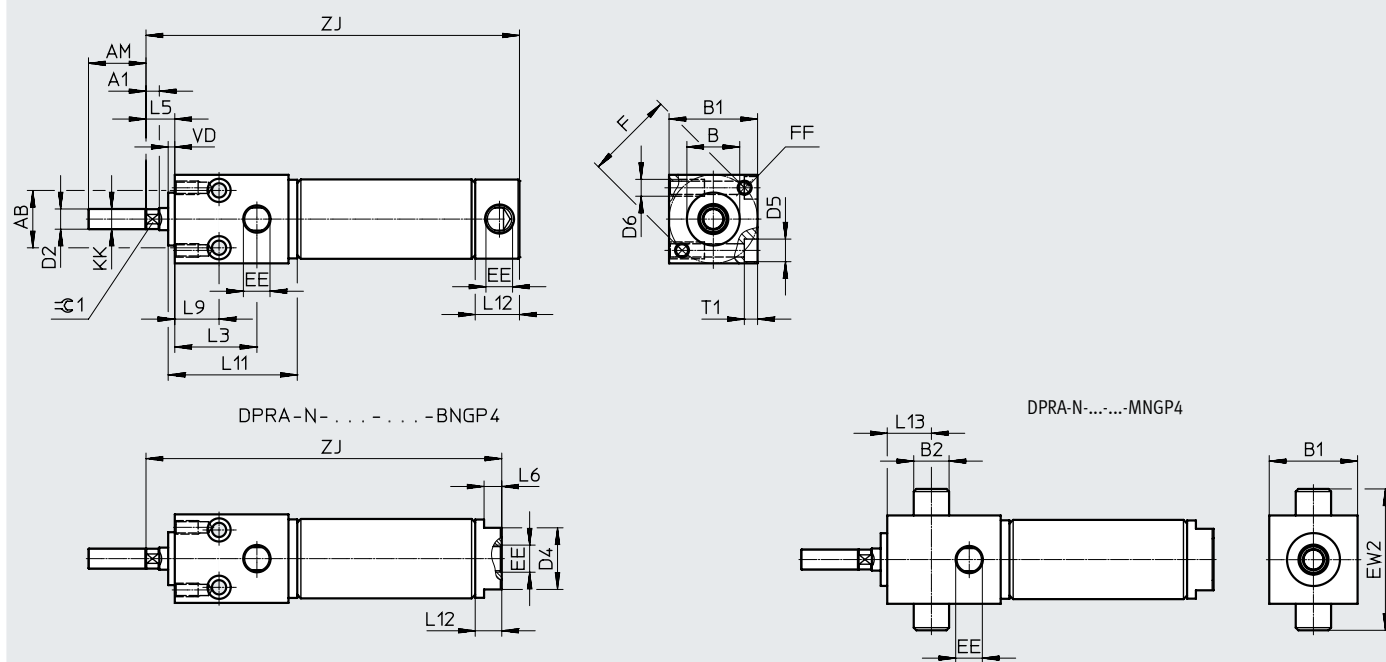
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[BNG] For direct mounting, without mounting thread

[MNGP4] With trunnion flange, without mounting thread, axial

[BNGP4] For direct mounting, without mounting thread, axial compressed air supply port

compressed air supply port



∅	A1	AB	AM	B	B1	B2	D2	D4	D5	D6	EE	EW2	F
[in]						[MNGP4]	∅	∅	∅			[MNGP4]	
3/4	0.188	0.625	0.562	0.625	1	0.5	0.25	0.625	0.332	1/4-20 UNC-2A	1/8 NPT	1.75	1
1 1/16	0.125	0.812	0.75	0.749	1.25	0.5	0.313	0.875	0.328	1/4-20 UNC-2A	1/8 NPT	2	1.25
1 1/2	0.25	1.125	1.25	0.999	1.75	0.5	0.438	0.875	0.406	5/16-18 UNC-2A	1/8 NPT	2.5	1.75

∅	FF	KK	L3	L5	L6	L9	L11	L12		L13	T1	VD	≅G1
[in]					[BNGP4]				[BNGP4]	[MNGP4]			
3/4	10-32 UNF-2B	1/4-28 UNF-2A	0.875	0.344	0.188	0.375	1.233	0.724	0.284	0.0343	0.187	0.093	0.218
1 1/16	10-32 UNF-2B	5/16-24 UNF-2A	1.156	0.468	0.188	0.625	1.7	0.625	0.375	0.625	0.187	0.094	0.25
1 1/2	1/4-20 UNC-2B	7/16-20 UNF-2A	1.531	0.375	0.25	0.875	2	0.628	0.438	0.937	0.259	0.094	0.375

Formula for calculating the length ZJ

The value O... is to be selected for the formula depending on the cushioning and position sensing variants

O0 = N (no cushioning)

O1 = P (flexible cushioning rings/pads at both ends)

O2 = A (for proximity switch)

O3 = PA (flexible cushioning rings/pads at both ends and for proximity switch)

n = stroke length

Stroke	O0	O1	O2	O3	ZJ	
[in]						[BNGP4]
Piston diameter 3/4						
0.0625 ... 12	0	–	–	0.125	3.659+n+O...	3.219+n+O...
Piston diameter 1 1/16						
0.0625 ... 12	0	0.125	–	0.125	4+n+O...	3.75+n+O...
Piston diameter 1 1/2						
0.0625 ... 12	0	0.125	–	0.25	4.378+n+O...	4.188+n+O...

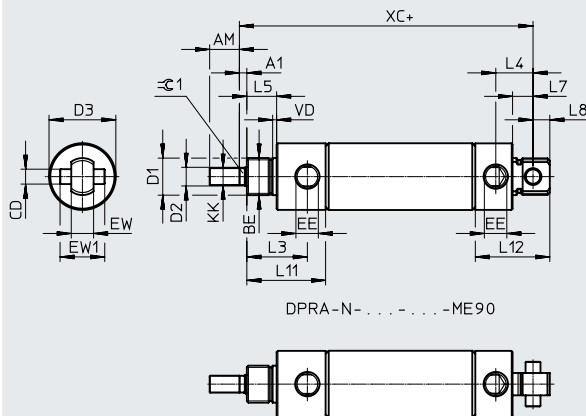
Data sheet

Dimensions

Download CAD data → www.festo.com

[ME] With trunnion flange

[ME90] With trunnion flange, rotated 90°



∅	A1	AM	BE	CD	D1	D2	D3	EE	EW	EW1
[in]				∅	∅	∅	∅			
3/4	–	0.5	5/8-18 UNF-2A	0.25	0.624	0.25	0.875	1.8 NPT	0.375	0.75
1 1/16	0.125	0.5	5/8-18 UNF-2A	0.25	0.624	0.313	1.125	1.8 NPT	0.375	0.75
1 1/4	0.25	0.75	3/4-16 UNF-2A	–	0.749	0.438	1.344	1.8 NPT	0.5	–
1 1/2	0.25	0.75	3/4-16 UNF-2A	0.375	0.749	0.438	1.563	1.8 NPT	0.625	1

∅	KK	L3	L4	L5	L7	L8	L11	L12	VD	XC	⊖1
[in]											
3/4	1/4-28 UNF-2A	0.969	0.625	0.5	0.344	0.281	1.34	1.348	0.094	3.75	–
1 1/16	5/16-24 UNF-2A	1.188	0.625	0.625	0.344	0.281	1.322	1.25	0.094	3.844	0.25
1 1/4	7/16-20 UNF-2A	1.625	0.781	0.875	0.406	0.406	1.625	1.625	0.094	4.719	0.375
1 1/2	7/16-20 UNF-2A	1.5	0.813	0.875	0.5	0.375	1.625	1.5	0.094	4.375	0.375

Formula for calculating the length XC

The value O... is to be selected for the formula depending on the cushioning and position sensing variants

O0 = N (no cushioning)

O1 = P (flexible cushioning rings/pads at both ends)

O2 = A (for proximity switch)

O3 = PA (flexible cushioning rings/pads at both ends and for proximity switch)

n = stroke length

Stroke	O0	O1	O2	O3	XC
[in]					
Piston diameter 3/4					
0.0625 ... 12	0	–	–	–	3.75+n+O...
Piston diameter 1 1/16					
0.0625 ... 12	0	0.125	–	0.125	3.844+n+O...
Piston diameter 1 1/4					
0.0625 ... 12	0	–	–	0.125	4.719+n+O...
Piston diameter 1 1/2					
0.0625 ... 12	0	0.125	–	0.25	4.375+n+O...

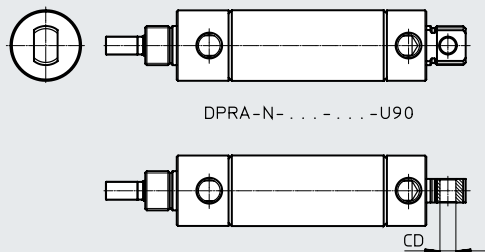
Data sheet

Dimensions

Download CAD data → www.festo.com

[U] With swiveling rod eye

[U90] With swiveling rod eye, rotated 90°



Ø [in]	CD Ø	
		[U90]
3/4	0.25	0.25
1 1/16	0.25	0.25
1 1/4	0.25	0.25
1 1/2	0.375	0.375
1 3/4	0.376	0.376

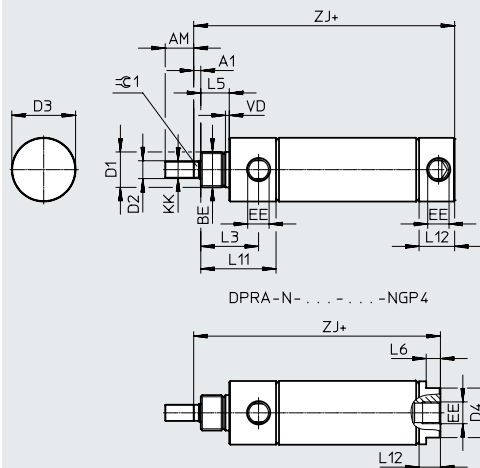
Data sheet

Dimensions

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[NG] Without mounting thread

[NGP4] Without mounting thread, axial compressed air supply port



∅	A1	AM	BE	D1 ∅	D2 ∅	D3 ∅	D4 ∅	EE
[in]							[NGP4]	
3/4	–	0.5	5/8-18 UNF-2A	0.624	0.25	0.875	0.625	1/8 NPT
1 1/16	0.125	0.5	5/8-18 UNF-2A	0.624	0.313	1.125	0.875	1/8 NPT
1 1/4	0.25	0.75	3/4-16 UNF-2A	0.749	0.438	1.344	0.875	1/8 NPT
1 1/2	0.25	0.75	3/4-16 UNF-2A	0.749	0.438	1.563	0.875	1/8 NPT
1 3/4	0.313	0.875	1-14 UNF-2A	1.031	0.5	1.844	1.25	1/4 NPT
2	0.375	0.875	1 1/4-12 UNF-2A	1.375	0.625	2.078	1.25	1/4 NPT
2 1/2	0.375	0.875	1 3/8-12 UNF-2A	1.5	0.625	2.625	1.75	1/4 NPT

∅	KK	L3	L5	L6	L11	L12		VD	≈G1
[in]				[NGP4]			[NGP4]		
3/4	1/4-28 UNF-2A	0.969	0.5	0.188	1.343	0.724	0.284	0.94	–
1 1/16	5/16-24 UNF-2A	1.188	0.625	0.188	1.322	0.625	0.375	0.94	0.25
1 1/4	7/16-20 UNF-2A	1.625	0.875	0.25	1.625	0.855	0.545	0.94	0.375
1 1/2	7/16-20 UNF-2A	1.5	0.875	0.25	1.625	0.628	0.438	0.94	0.375
1 3/4	1/2-20 UNF-2A	1.938	1.063	0.25	2.02	0.95	0.39	0.94	0.438
2	1/2-20 UNF-2A	1.922	1.188	0.313	–	0.88	0.5	0.125	0.5
2 1/2	1/2-20 UNF-2A	1.84	1.188	0.313	–	0.88	0.5	0.125	0.5

Data sheet

Formula for calculating the length Z)

The value O... is to be selected for the formula depending on the cushioning and position sensing variants

O0 = N (no cushioning)

O1 = P (flexible cushioning rings/pads at both ends)

O2 = A (for proximity switch)

O3 = PA (flexible cushioning rings/pads at both ends and for proximity switch)

n = stroke length

Stroke [in]	O0	O1	O2	O3	Z)	
						[NGP4]
Piston diameter 3/4						
0.0625 ... 12	0	–	–	–	3.409+n+O...	2.969+n+O...
Piston diameter 1 1/16						
0.0625 ... 12	0	0.125	–	0.125	3.5+n+O...	3.25+n+O...
Piston diameter 1 1/4						
0.0625 ... 12	0	–	–	0.125	4.31+n+O...	4+n+O...
Piston diameter 1 1/2						
0.0625 ... 12	0	0.125	–	0.25	3.878+n+O...	3.688+n+O...
Piston diameter 1 3/4						
0.0625 ... 12	0	–	–	–	5.248+n+O...	4.688+n+O...
Piston diameter 2						
0.0625 ... 12	0	0.25	–	0.25	5.068+n+O...	4.688+n+O...
Piston diameter 2 1/2						
0.0625 ... 12	0	0.062	–	0.062	5.068+n+O...	4.688+n+O...

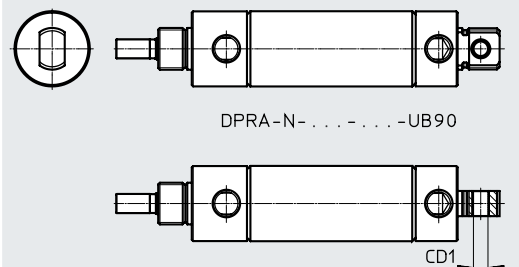
Data sheet

Dimensions

Download CAD data → www.festo.com

[UB] With swiveling rod eye and bearing sleeve

[UB90] With swiveling rod eye and bearing sleeve, rotated 90°



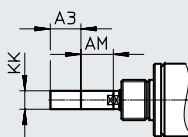
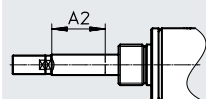
∅	CD1	
[in]		[UB90]
2	0.375	0.375
2 1/2	0.376	0.376

Dimensions

Download CAD data → www.festo.com

[...NE] Piston rod extension

[...NL] Piston rod thread extension



∅	A2	A3	AM	KK
[in]	[...NE]		[...NL]	
3/4	1/16 ... 6	1/16 ... 6	0.5	1/4-28 UNF-2A
1 1/16	1/16 ... 6	1/16 ... 6	0.5	5/16-24 UNF-2A
1 1/4	1/16 ... 6	1/16 ... 6	0.75	7/16-24 UNF-2A
1 1/2	1/16 ... 6	1/16 ... 6	0.75	7/16-24 UNF-2A
1 3/4	1/16 ... 6	1/16 ... 6	0.875	1/2-20 UNF-2A
2	1/16 ... 6	1/16 ... 6	0.875	1/2-20 UNF-2A
2 1/2	1/16 ... 6	1/16 ... 6	0.875	1/2-20 UNF-2A

Ordering data – Modular product system

Ordering table										
Piston diameter	3/4	1 1/16	1 1/4	1 1/2	1 3/4	2	2 1/2	Conditions	Code	Enter code
Module No.	8109549	8109550	8109551	8109552	8109553	8109554	8109555			
Function	Round cylinder, double-acting								DPRA	DPRA
System of units	Imperial								-N	
Protection against rotation	Without									
Piston diameter	3/4"	1 1/16"	1 1/4"	1 1/2"	1 3/4" ¹⁾	2" ¹⁾	2 1/2" ¹⁾	-..."		
Stroke	0.0625 ... 12"								-..."	
Function	Double-acting									
Piston rod type	At one end									
	Through piston rod				–	Through piston rod	–		T	
Type of bearing cap	With mounting thread									
	For direct mounting	–	For direct mounting	–				[1] [3] [4]	B	
	With trunnion flange	–	With trunnion flange	–				[1] [3] [4]	M	
Type of end cap	Standard				–					
	With swiveling rod eye					–			[3] [4]	U
	With trunnion flange	–	With trunnion flange	–				[3] [4]	ME	
	Without mounting thread							[3]	NG	
	With swiveling rod eye and bearing sleeve							[3] [4]	UB	
	–	With swiveling rod eye, rotated 90°	–	With swiveling rod eye, rotated 90°	–			[3] [4]	U90	
	Trunnion flange, rotated 90°	–	Trunnion flange, rotated 90°	–				[3] [4]	ME90	
	–					With swiveling rod eye and bearing sleeve, rotated 90°		[3] [4]	UB90	
Compressed air supply port	Lateral									
	Axial							[1] [3] [4] [5]	P4	
Cushioning	No cushioning								-N	
	Flexible cushioning rings/pads at both ends							[2]	-P	
Position sensing	Without									
	For proximity switch							[2]	A	
Corrosion protection	Standard									
Temperature range	Standard									
	+32 ... +300 °F							[2] [6]	T4	
Piston rod extension	Without									
	0 ... 6 inch								-...NE	
Piston rod thread extension	Without									
	0 ... 6 inch							[7]	-...NL	

[1] B, M, P4

[2] A, T4

[3] B, M, U, ME, NG, U90, ME90, UB90, P4

[4] U, ME, UB, U90, ME90, UB90

[5] P4

[6] T4

[7] ---NL

1) Not with standard type of end cap

Not with standard type of end cap

Not with U90, UB90, ME90

Not with T

Not with M, B, P4

Mandatory specification with NG if double-acting function or A or T4 selected

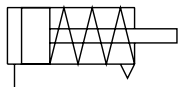
Not with P, A

Not with ---NE

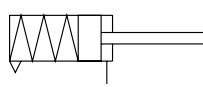
Data sheet

Function

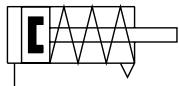
DPRA-...-S



DPRA-...-P



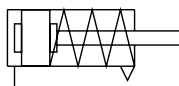
DPRA-...-S-...-A



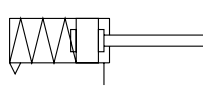
DPRA-...-P-...-A



DPRA-...-S-...-P



DPRA-...-P-...-P



- - Diameter 3/4 ... 2 inch
- - Stroke length 0.0625 ... 6 inch

General technical data						
Piston diameter	3/4	1 1/16	1 1/4	1 1/2	1 3/4	2
Design	Piston					
	Piston rod					
	Cylinder barrel					
Mode of operation						
[S]	Single-acting, pushing (piston rod retracted by means of spring force)					
[P]	Single-acting, pulling (piston rod advanced by means of spring force)					
Protection against rotation/guide	Hexagonal piston rod					
Pneumatic connection	1/8 NPT				1/4 NPT	
Piston rod thread	1/8-24 UNF-2A		7/16-20 UNF-2A		1/2-20 UNF-2A	
Stroke [in]	0.0625 ... 6					0.0625 ... 4
Cushioning						
[N]	No cushioning					
[P]	Flexible cushioning rings/pads at both ends					
Position sensing	For proximity switch					
Type of mounting	With lock nut				–	
	With accessories					
Mounting position	Any					

Operating and environmental conditions						
Piston diameter	3/4	1 1/16	1 1/4	1 1/2	1 3/4	2
Operating pressure [psi]	10 ... 150					
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]					
Information on operating and pilot media	Lubricated operation possible (in which case lubricated operation will always be required)					
Ambient temperature ¹⁾ [°F]	-5 ... +300					
Corrosion resistance class CRC ²⁾	1					

1) Note operating range of proximity switches

2) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. Dry indoor application and protection during transport and storage. Also applies to parts behind coverings, in the non-visible interior area, or parts that are covered in the application (e.g. actuator trunnions).

Data sheet

Forces [lbs] at 80 psi¹⁾							
Piston diameter		3/4	1 1/16	1 1/4	1 1/2	1 3/4	2
[P] Single-acting, pulling (spring extend)							
Start of stroke	[in]	28,4	61,8	78,6	122,3	165,7	211,8
End of stroke	[in]	25,4	58,8	71,1	115,3	152,7	196,8
[S] Single-acting, pushing (spring retract)							
Start of stroke	[in]	32,3	67,9	90,7	134,4	181,4	236,3
End of stroke	[in]	31,4	64,8	86,1	129,3	176,7	226,8

1) The theoretical forces only apply to whole strokes (stroke 1, 2, 3, 4, 5 and 6).

With intermediate strokes, the force at the start of the stroke is reduced due to higher spring preload. At the end of the stroke, the force corresponds to that of whole strokes.

Weights [lb]							
Piston diameter		3/4	1 1/16	1 1/4	1 1/2	1 3/4	2
Product weight		0.1 ... 0.85	0.22 ... 1.32	0.39 ... 2.42	0.44 ... 2.73	0.85 ... 3.03	1.04 ... 4.04

Materials							
Piston diameter		3/4	1 1/16	1 1/4	1 1/2	1 3/4	2
Cap material		Wrought aluminum alloy					
Material of seals		FPM					
		NBR					
Material of piston rod		High-alloy stainless steel					
Material of cylinder barrel		High-alloy stainless steel					
Note on materials		Contain paint-wetting impairment substances					
		RoHS-compliant					

Data sheet

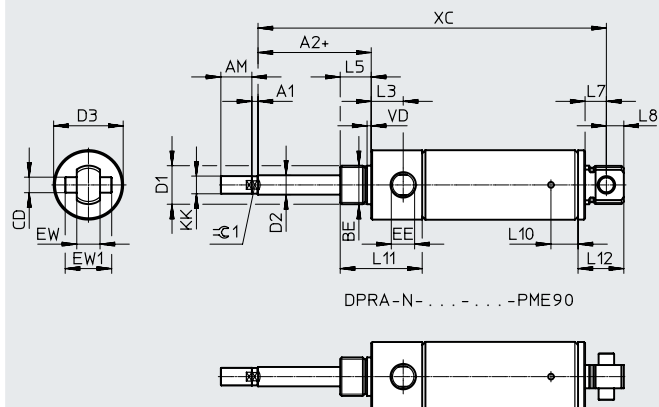
Dimensions

Download CAD data → www.festo.com

[P] Single-acting, pulling (piston rod advanced by means of spring force)

[ME] With trunnion flange

[ME90] Trunnion flange, rotated 90°



+= plus stroke length

∅	A1	A2	AM	BE	CD ∅	D1 ∅	D2 ∅	D3 ∅	EE	EW
[in]										
3/4	0	0.5	0.5	5/8-18 UNF-2A	0.25	0.624	0.25	0.875	1.8 NPT	0.375
1 1/16	0.125	0.5	0.5	5/8-18 UNF-2A	0.25	0.624	0.313	1.125	1.8 NPT	0.375
1 1/2	0.25	0.625	1.25	3/4-16 UNF-2A	0.375	0.749	0.438	1.563	1.8 NPT	0.625

∅	EW1	KK	L3	L5	L7	L8	L10	L11	L12	VD	⊥1
[in]											
3/4	0.75	1/4-28 UNF-2A	0.469	0.5	–	–	0.437	1.343	0.724	0.094	–
1 1/16	0.75	5/16-24 UNF-2A	0.563	0.5	0.344	0.281	0.437	1.322	0.915	0.094	0.25
1 1/2	1	7/16-20 UNF-2A	0.625	0.625	0.5	0.375	0.437	1.625	1.745	0.094	0.375

Data sheet

Formula for calculating the length XC

The value O... is to be selected for the formula depending on the cushioning and position sensing variants

O0 = N (no cushioning)

O1 = P (flexible cushioning rings/pads at both ends)

O2 = A (for proximity switch)

O3 = PA (flexible cushioning rings/pads at both ends and for proximity switch)

n = stroke length

Stroke [in]	O0	O1	O2	O3	XC
Piston diameter 3/4					
1/16 ... 1	0	0.125	0.688	0.89	$2.437+(2.687*1)-2*(1-n)+0...$
1 1/16 ... 2	0	0.125	0.688	0.89	$2.437+(2.687*2)-2*(2-n)+0...$
2 1/16 ... 3	0	0.125	0.688	0.89	$2.437+(2.687*3)-2*(3-n)+0...$
3 1/16 ... 4	0	0.125	0.688	0.89	$2.437+(2.687*4)-2*(4-n)+0...$
4 1/16 ... 5	0	0.125	0.688	0.89	$2.437+(2.687*5)-2*(5-n)+0...$
5 1/16 ... 6	0	0.125	0.688	0.89	$2.437+(2.687*6)-2*(6-n)+0...$
Piston diameter 1 1/16					
1/16 ... 1	0	0.125	0.562	0.765	$2.656+(2.812*1)-2*(1-n)+0...$
1 1/16 ... 2	0	0.125	0.562	0.765	$2.656+(2.812*2)-2*(2-n)+0...$
2 1/16 ... 3	0	0.125	0.562	0.765	$2.656+(2.812*3)-2*(3-n)+0...$
3 1/16 ... 4	0	0.125	0.562	0.765	$2.656+(2.812*4)-2*(4-n)+0...$
4 1/16 ... 5	0	0.125	0.562	0.765	$2.656+(2.812*5)-2*(5-n)+0...$
5 1/16 ... 6	0	0.125	0.562	0.765	$2.656+(2.812*6)-2*(6-n)+0...$
Piston diameter 1 1/2					
1/16 ... 1	0	–	0.438	0.765	$3.875+(3*1)-2*(1-n)+0...$
1 1/16 ... 2	0	–	0.438	0.765	$3.875+(3*2)-2*(2-n)+0...$
2 1/16 ... 3	0	–	0.438	0.765	$3.875+(3*3)-2*(3-n)+0...$
3 1/16 ... 4	0	–	0.438	0.765	$3.875+(3*4)-2*(4-n)+0...$
4 1/16 ... 5	0	–	0.438	0.765	$3.875+(3*5)-2*(5-n)+0...$
5 1/16 ... 6	0	–	0.438	0.765	$3.875+(3*6)-2*(6-n)+0...$

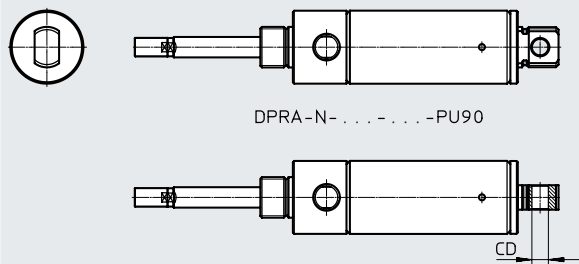
Dimensions

Download CAD data → www.festo.com

[P] Single-acting, pulling (piston rod advanced by means of spring force)

[U] With swiveling rod eye

[U90] With swiveling rod eye, rotated 90°



∅		CD	
[in]		∅	[U90]
3/4	0.25		0.25
1 1/16	0.25		0.25
1 1/2	0.375		0.375

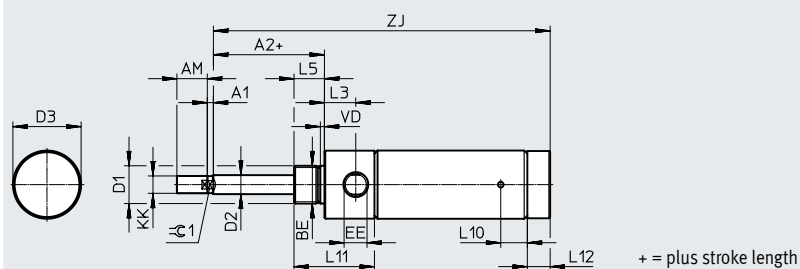
Data sheet

Dimensions

Download CAD data → www.festo.com

[P] Single-acting, pulling (piston rod advanced by means of spring force)

[NG] Without mounting thread



∅	A1	A2	AM	BE	D1 ∅	D2 ∅	D3 ∅	EE
[in]								
3/4	0	0.5	0.5	5/8-18 UNF-2A	0.624	0.25	0.875	1.8 NPT
1 1/16	0.125	0.5	0.5	5/8-18 UNF-2A	0.624	0.313	1.125	1.8 NPT
1 1/4	0.25	0.0625	0.75	3/4-16 UNF-2A	0.749	0.438	1.344	1.8 NPT
1 1/2	0.25	0.625	1.25	3/4-16 UNF-2A	0.749	0.438	1.563	1.8 NPT
1 3/4	0.313	0.75	0.875	1-14 UNF-2A	1.031	0.5	1.844	1.4 NPT
2	0.375	0.813	9.875	1 1/4-12 UNF-2A	1.375	0.625	2.078	1.4 NPT

∅	KK	L3	L5	L10	L11	L12	VD	⌀1
[in]								
3/4	1/4-28 UNF-2A	0.469	0.5	0.437	1.343	0.313	0.094	–
1 1/16	5/16-24 UNF-2A	0.563	0.5	0.437	1.322	0.477	0.094	0.25
1 1/4	7/16-20 UNF-2A	0.75	0.625	0.437	1.625	0.522	0.094	0.375
1 1/2	7/16-20 UNF-2A	0.625	0.625	0.437	1.625	0.683	0.094	0.375
1 3/4	1/2-20 UNF-2A	0.875	0.75	0.437	2.202	0.259	0.094	0.438
2	1/2-20 UNF-2A	0.734	0.813	0.437	2	0.376	0.125	0.5

Data sheet

Formula for calculating the length Z]

The value O... is to be selected for the formula depending on the cushioning and position sensing variants

O0 = N (no cushioning)

O1 = P (flexible cushioning rings/pads at both ends)

O2 = A (for proximity switch)

O3 = PA (flexible cushioning rings/pads at both ends and for proximity switch)

n = stroke length

Stroke [in]	O0	O1	O2	O3	Z]
Piston diameter 3/4					
1/16 ... 1	0	0.125	0.688	0.89	$2.313 + (2.687 \cdot 1) - 2 \cdot (1 - n) + O...$
1 1/16 ... 2	0	0.125	0.688	0.89	$2.313 + (2.687 \cdot 2) - 2 \cdot (2 - n) + O...$
2 1/16 ... 3	0	0.125	0.688	0.89	$2.313 + (2.687 \cdot 3) - 2 \cdot (3 - n) + O...$
3 1/16 ... 4	0	0.125	0.688	0.89	$2.313 + (2.687 \cdot 4) - 2 \cdot (4 - n) + O...$
4 1/16 ... 5	0	0.125	0.688	0.89	$2.313 + (2.687 \cdot 5) - 2 \cdot (5 - n) + O...$
5 1/16 ... 6	0	0.125	0.688	0.89	$2.313 + (2.687 \cdot 6) - 2 \cdot (6 - n) + O...$
Piston diameter 1 1/16					
1/16 ... 1	0	0.125	0.562	0.687	$2.5 + (2.812 \cdot 1) - 2 \cdot (1 - n) + O...$
1 1/16 ... 2	0	0.125	0.562	0.687	$2.5 + (2.812 \cdot 2) - 2 \cdot (2 - n) + O...$
2 1/16 ... 3	0	0.125	0.562	0.687	$2.5 + (2.812 \cdot 3) - 2 \cdot (3 - n) + O...$
3 1/16 ... 4	0	0.125	0.562	0.687	$2.5 + (2.812 \cdot 4) - 2 \cdot (4 - n) + O...$
4 1/16 ... 5	0	0.125	0.562	0.687	$2.5 + (2.812 \cdot 5) - 2 \cdot (5 - n) + O...$
5 1/16 ... 6	0	0.125	0.562	0.687	$2.5 + (2.812 \cdot 6) - 2 \cdot (6 - n) + O...$
Piston diameter 1 1/4					
1/16 ... 1	0	–	0.531	0.734	$3.219 + (2.812 \cdot 1) - 2 \cdot (1 - n) + O...$
1 1/16 ... 2	0	–	0.531	0.734	$3.219 + (2.812 \cdot 2) - 2 \cdot (2 - n) + O...$
2 1/16 ... 3	0	–	0.531	0.734	$3.219 + (2.812 \cdot 3) - 2 \cdot (3 - n) + O...$
3 1/16 ... 4	0	–	0.531	0.734	$3.219 + (2.812 \cdot 4) - 2 \cdot (4 - n) + O...$
4 1/16 ... 5	0	–	0.531	0.734	$3.219 + (2.812 \cdot 5) - 2 \cdot (5 - n) + O...$
5 1/16 ... 6	0	–	0.531	0.734	$3.219 + (2.812 \cdot 6) - 2 \cdot (6 - n) + O...$
Piston diameter 1 1/2					
1/16 ... 1	0	–	0.5	0.827	$2.938 + (3 \cdot 1) - 2 \cdot (1 - n) + O...$
1 1/16 ... 2	0	–	0.5	0.827	$2.938 + (3 \cdot 2) - 2 \cdot (2 - n) + O...$
2 1/16 ... 3	0	–	0.5	0.827	$2.938 + (3 \cdot 3) - 2 \cdot (3 - n) + O...$
3 1/16 ... 4	0	–	0.5	0.827	$2.938 + (3 \cdot 4) - 2 \cdot (4 - n) + O...$
4 1/16 ... 5	0	–	0.5	0.827	$2.938 + (3 \cdot 5) - 2 \cdot (5 - n) + O...$
5 1/16 ... 6	0	–	0.5	0.827	$2.938 + (3 \cdot 6) - 2 \cdot (6 - n) + O...$
Piston diameter 1 3/4					
1/16 ... 1	0	–	0.656	0.735	$4.031 + (3 \cdot 1) - 2 \cdot (1 - n) + O...$
1 1/16 ... 2	0	–	0.656	0.735	$4.031 + (3 \cdot 2) - 2 \cdot (2 - n) + O...$
2 1/16 ... 3	0	–	0.656	0.735	$4.031 + (3 \cdot 3) - 2 \cdot (3 - n) + O...$
3 1/16 ... 4	0	–	0.656	0.735	$4.031 + (3 \cdot 4) - 2 \cdot (4 - n) + O...$
4 1/16 ... 5	0	–	0.656	0.735	$4.031 + (3 \cdot 5) - 2 \cdot (5 - n) + O...$
5 1/16 ... 6	0	–	0.656	0.735	$4.031 + (3 \cdot 6) - 2 \cdot (6 - n) + O...$
Piston diameter 2					
1 1/16 ... 0.5	0	–	0.714	0.789	$5.234 - 2 \cdot (0.5 - n) + O...$
9/16 ... 1	0	–	0.714	0.789	$5.734 - 2 \cdot (1 - n) + O...$
1 1/16 ... 1.5	0	–	0.714	0.789	$7.534 - 2 \cdot (1.5 - n) + O...$
1 9/16 ... 2	0	–	0.714	0.789	$7.734 - 2 \cdot (2 - n) + O...$
2 1/6 ... 2.5	0	–	0.714	0.789	$8.469 - 2 \cdot (2.5 - n) + O...$
2 9/16 ... 3	0	–	0.714	0.789	$8.696 - 2 \cdot (3 - n) + O...$
3 1/6 ... 4	0	–	0.714	0.789	$11.969 - 2 \cdot (4 - n) + O...$

Data sheet

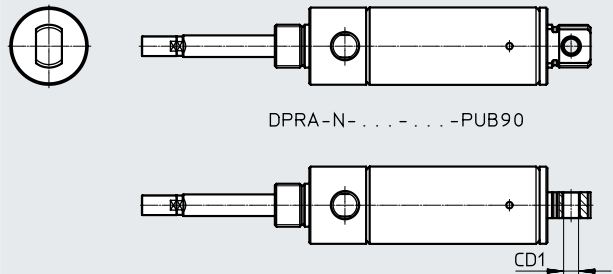
Dimensions

Download CAD data → www.festo.com

[P] Single-acting, pulling (piston rod advanced by means of spring force)

[UB] With swiveling rod eye and bearing sleeve

[UB90] With swiveling rod eye and bearing sleeve, rotated 90°



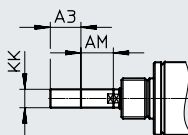
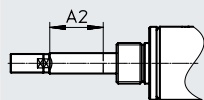
∅	CD1	
[in]	[UB90]	
2	0.375	0.375

Dimensions

Download CAD data → www.festo.com

[...NE] Piston rod extension

[...NL] Piston rod thread extension



∅	A2	A3	AM	KK
[in]	[...NE]	[...NL]		
3/4	1/16 ... 6	1/16 ... 6	0.5	1/4-28 UNF-2A
1 1/16	1/16 ... 6	1/16 ... 6	0.5	5/16-24 UNF-2A
1 1/4	1/16 ... 6	1/16 ... 6	0.75	7/16-24 UNF-2A
1 1/2	1/16 ... 6	1/16 ... 6	0.75	7/16-24 UNF-2A
1 3/4	1/16 ... 6	1/16 ... 6	0.875	1/2-20 UNF-2A
2	1/16 ... 6	1/16 ... 6	0.875	1/2-20 UNF-2A

Data sheet

Dimensions

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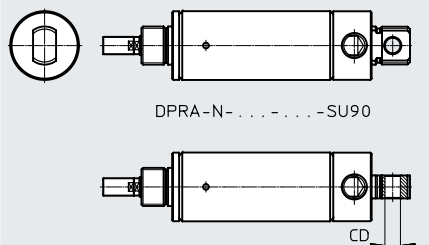
[S] Single-acting, pushing (piston rod retracted by means of spring force)

[U] With swiveling rod eye

[U90] With swiveling rod eye, rotated 90°

[QU] With protection against rotation, with swiveling rod eye

[QU90] With protection against rotation, with swiveling rod eye, rotated 90°



Ø [in]	CD Ø			
		[U90]	[QU]	[QU90]
3/4	0.25	0.25	0.25	0.25
1 1/16	0.25	0.25	0.25	0.25
1 1/4	0.251	0.251	0.251	0.251
1 1/2	0.375	0.375	0.375	0.375
1 3/4	0.376	0.376	–	–

Data sheet

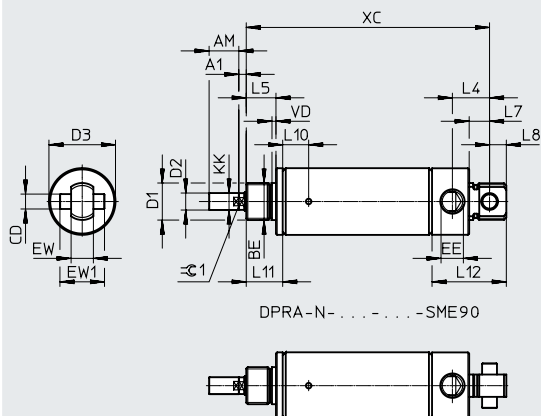
Dimensions

Download CAD data → www.festo.com

[S] Single-acting, pushing (piston rod retracted by means of spring force)

[ME] With trunnion flange

[ME90] Trunnion flange, rotated 90°



∅	A1	AM	BE	CD	D1	D2	D3	EE	EW	EW1
[in]				∅	∅	∅	∅			
3/4	0	0.5	1/2-20 UNF-2A	0.25	0.5	0.25	0.875	1.8 NPT	0.375	0.75
1 1/16	0.125	0.5	5/8-18 UNF-2A	0.25	0.624	0.313	1.125	1.8 NPT	0.375	0.75
1 1/2	0.25	0.75	3/4-16 UNF-2A	0.375	0.749	0.438	1.563	1.8 NPT	0.625	1

∅	KK	L4	L5	L7	L8	L10	L11	L12	VD	⌀1
[in]										
3/4	1/4-28 UNF-2A	0.625	0.438	0.344	0.281	0.437	0.563	1.348	0.094	–
1 1/16	5/16-24 UNF-2A	0.625	0.5	0.344	0.281	0.437	0.613	1.25	0.094	0.25
1 1/2	7/16-20 UNF-2A	0.813	0.625	0.5	0.375	0.437	0.438	1.5	0.094	0.375

Data sheet

Formula for calculating the length XC

The value O... is to be selected for the formula depending on the cushioning and position sensing variants

O0 = N (no cushioning)

O1 = P (flexible cushioning rings/pads at both ends)

O2 = A (for proximity switch)

O3 = PA (flexible cushioning rings/pads at both ends and for proximity switch)

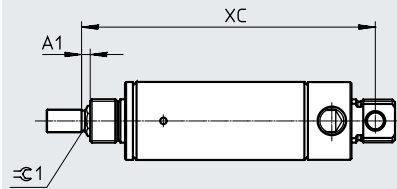
n = stroke length

Stroke [in]	O0	O1	O2	O3	XC
Piston diameter 3/4					
1/16 ... 1	0	0.125	0.688	0.89	$2.281 + (1.687 \cdot 1) - (1 \cdot n) + O...$
1 1/16 ... 2	0	0.125	0.688	0.89	$2.281 + (1.687 \cdot 2) - (2 \cdot n) + O...$
2 1/16 ... 3	0	0.125	0.688	0.89	$2.281 + (1.687 \cdot 3) - (3 \cdot n) + O...$
3 1/16 ... 4	0	0.125	0.688	0.89	$2.281 + (1.687 \cdot 4) - (4 \cdot n) + O...$
4 1/16 ... 5	0	0.125	0.688	0.89	$2.281 + (1.687 \cdot 5) - (5 \cdot n) + O...$
5 1/16 ... 6	0	0.125	0.688	0.89	$2.281 + (1.687 \cdot 6) - (6 \cdot n) + O...$
Piston diameter 1 1/16					
1/16 ... 1	0	0.125	0.562	0.765	$2.531 + (1.562 \cdot 1) - (1 \cdot n) + O...$
1 1/16 ... 2	0	0.125	0.562	0.765	$2.531 + (1.562 \cdot 2) - (2 \cdot n) + O...$
2 1/16 ... 3	0	0.125	0.562	0.765	$2.531 + (1.562 \cdot 3) - (3 \cdot n) + O...$
3 1/16 ... 4	0	0.125	0.562	0.765	$2.531 + (1.562 \cdot 4) - (4 \cdot n) + O...$
4 1/16 ... 5	0	0.125	0.562	0.765	$2.531 + (1.562 \cdot 5) - (5 \cdot n) + O...$
5 1/16 ... 6	0	0.125	0.562	0.765	$2.531 + (1.562 \cdot 6) - (6 \cdot n) + O...$
Piston diameter 1 1/2					
1/16 ... 1	0	–	0.438	0.765	$3.125 + (1.687 \cdot 1) - (1 \cdot n) + O...$
1 1/16 ... 2	0	–	0.438	0.765	$3.125 + (1.687 \cdot 2) - (2 \cdot n) + O...$
2 1/16 ... 3	0	–	0.438	0.765	$3.125 + (1.687 \cdot 3) - (3 \cdot n) + O...$
3 1/16 ... 4	0	–	0.438	0.765	$3.125 + (1.687 \cdot 4) - (4 \cdot n) + O...$
4 1/16 ... 5	0	–	0.438	0.765	$3.125 + (1.687 \cdot 5) - (5 \cdot n) + O...$
5 1/16 ... 6	0	–	0.438	0.765	$3.125 + (1.687 \cdot 6) - (6 \cdot n) + O...$

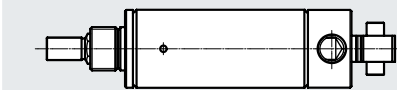
Data sheet

Dimensions Download CAD data → www.festo.com

- [S] Single-acting, pushing (piston rod retracted by means of spring force)
- [QME] With protection against rotation, trunnion flange, rotated 90°



DPRA-N-Q- -SME90



∅	A1	≡C1
[in]		
3/4	0.25	0.25
1 1/16	0.25	0.375
1 1/2	0.375	0.438

Data sheet

Formula for calculating the length XC

The value O... is to be selected for the formula depending on the cushioning and position sensing variants

O0 = N (no cushioning)

O1 = P (flexible cushioning rings/pads at both ends)

O2 = A (for proximity switch)

O3 = PA (flexible cushioning rings/pads at both ends and for proximity switch)

n = stroke length

Stroke [in]	O0	O1	O2	O3	XC
Piston diameter 3/4					
1/16 ... 1	0	0.125	0.688	0.89	$2.531+(1.687*1)-(1-n)+O...$
1 1/16 ... 2	0	0.125	0.688	0.89	$2.531+(1.687*2)-(2-n)+O...$
2 1/16 ... 3	0	0.125	0.688	0.89	$2.531+(1.687*3)-(3-n)+O...$
3 1/16 ... 4	0	0.125	0.688	0.89	$2.531+(1.687*4)-(4-n)+O...$
4 1/16 ... 5	0	0.125	0.688	0.89	$2.531+(1.687*5)-(5-n)+O...$
5 1/16 ... 6	0	0.125	0.688	0.89	$2.531+(1.687*6)-(6-n)+O...$
Piston diameter 1 1/16					
1/16 ... 1	0	0.125	0.562	0.765	$2.781+(1.562*1)-(1-n)+O...$
1 1/16 ... 2	0	0.125	0.562	0.765	$2.781+(1.562*2)-(2-n)+O...$
2 1/16 ... 3	0	0.125	0.562	0.765	$2.781+(1.562*3)-(3-n)+O...$
3 1/16 ... 4	0	0.125	0.562	0.765	$2.781+(1.562*4)-(4-n)+O...$
4 1/16 ... 5	0	0.125	0.562	0.765	$2.781+(1.562*5)-(5-n)+O...$
5 1/16 ... 6	0	0.125	0.562	0.765	$2.781+(1.562*6)-(6-n)+O...$
Piston diameter 1 1/2					
1/16 ... 1	0	–	0.438	0.765	$3.25+(1.687*1)-(1-n)+O...$
1 1/16 ... 2	0	–	0.438	0.765	$3.25+(1.687*2)-(2-n)+O...$
2 1/16 ... 3	0	–	0.438	0.765	$3.25+(1.687*3)-(3-n)+O...$
3 1/16 ... 4	0	–	0.438	0.765	$3.25+(1.687*4)-(4-n)+O...$
4 1/16 ... 5	0	–	0.438	0.765	$3.25+(1.687*5)-(5-n)+O...$
5 1/16 ... 6	0	–	0.438	0.765	$3.25+(1.687*6)-(6-n)+O...$

Data sheet

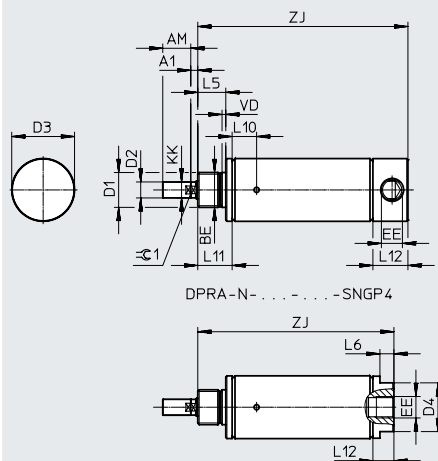
Dimensions

Download CAD data → www.festo.com

[S] Single-acting, pushing (piston rod retracted by means of spring force)

[NG] Without mounting thread

[NGP4] Without mounting thread, axial compressed air supply port



∅	A1	AM	BE	D1 ∅	D2 ∅	D3 ∅	D4 ∅	EE
[in]							[NGP4]	
3/4	0	0.5	1/2-20 UNF-2A	0.5	0.25	0.813	0.625	1.8 NPT
1 1/16	0.125	0.5	5/8-18 UNF-2A	0.624	0.313	1.125	0.875	1.8 NPT
1 1/4	0.25	0.75	3/4-16 UNF-2A	0.749	0.438	1.344	0.875	1.8 NPT
1 1/2	0.25	0.75	3/4-16 UNF-2A	0.749	0.438	1.563	0.875	1.8 NPT
1 3/4	0.313	0.875	1-14 UNF-2A	1.031	0.5	1.844	1.250	1.4 NPT
2	0.375	0.875	1 1/4-12 UNF-2A	1.375	0.625	2.078	1.250	1.4 NPT

∅	KK	L5	L6	L10	L11	L12	VD	≈G1
[in]			[NGP4]					
3/4	1/4-28 UNF-2A	0.438	0.188	0.437	0.563	0.724	0.284	0.094
1 1/16	5/16-24 UNF-2A	0.5	0.188	0.437	0.613	0.625	0.375	0.094
1 1/4	7/16-20 UNF-2A	0.625	0.25	0.437	0.791	0.855	0.545	0.094
1 1/2	7/16-20 UNF-2A	0.625	0.25	0.437	0.438	0.565	0.438	0.094
1 3/4	1/2-20 UNF-2A	0.75	0.25	0.437	1.014	0.95	0.39	0.094
2	1/2-20 UNF-2A	0.813	0.313	0.437	1.065	0.88	0.5	0.125

Data sheet

Formula for calculating the length Z)

The value O... is to be selected for the formula depending on the cushioning and position sensing variants

O0 = N (no cushioning)

O1 = P (flexible cushioning rings/pads at both ends)

O2 = A (for proximity switch)

O3 = PA (flexible cushioning rings/pads at both ends and for proximity switch)

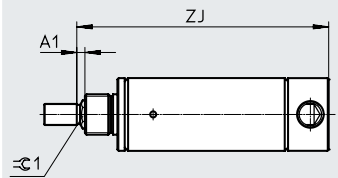
n = stroke length

Stroke [in]	O0	O1	O2	O3	Z)	
						[NGP4]
Piston diameter 3/4						
1/16 ... 1	0	0.125	0.688	0.89	$1.94+(1.687*1)-(1-n)+O...$	$1.5+(1.687*1)-(1-n)+O...$
1 1/16 ... 2	0	0.125	0.688	0.89	$1.94+(1.687*2)-(2-n)+O...$	$1.5+(1.687*2)-(2-n)+O...$
2 1/16 ... 3	0	0.125	0.688	0.89	$1.94+(1.687*3)-(3-n)+O...$	$1.5+(1.687*3)-(3-n)+O...$
3 1/16 ... 4	0	0.125	0.688	0.89	$1.94+(1.687*4)-(4-n)+O...$	$1.5+(1.687*4)-(4-n)+O...$
4 1/16 ... 5	0	0.125	0.688	0.89	$1.94+(1.687*5)-(5-n)+O...$	$1.5+(1.687*5)-(5-n)+O...$
5 1/16 ... 6	0	0.125	0.688	0.89	$1.94+(1.687*6)-(6-n)+O...$	$1.5+(1.687*6)-(6-n)+O...$
Piston diameter 1 1/16						
1/16 ... 1	0	0.125	0.562	0.765	$2.188+(1.562*1)-(1-n)+O...$	$1.938+(1.562*1)-(1-n)+O...$
1 1/16 ... 2	0	0.125	0.562	0.765	$2.188+(1.562*2)-(2-n)+O...$	$1.938+(1.562*2)-(2-n)+O...$
2 1/16 ... 3	0	0.125	0.562	0.765	$2.188+(1.562*3)-(3-n)+O...$	$1.938+(1.562*3)-(3-n)+O...$
3 1/16 ... 4	0	0.125	0.562	0.765	$2.188+(1.562*4)-(4-n)+O...$	$1.938+(1.562*4)-(4-n)+O...$
4 1/16 ... 5	0	0.125	0.562	0.765	$2.188+(1.562*5)-(5-n)+O...$	$1.938+(1.562*5)-(5-n)+O...$
5 1/16 ... 6	0	0.125	0.562	0.765	$2.188+(1.562*6)-(6-n)+O...$	$1.938+(1.562*6)-(6-n)+O...$
Piston diameter 1 1/4						
1/16 ... 1	0	–	0.531	0.734	$2.716+(1.812*1)-(1-n)+O...$	$2.406+(1.812*1)-(1-n)+O...$
1 1/16 ... 2	0	–	0.531	0.734	$2.716+(1.812*2)-(2-n)+O...$	$2.406+(1.812*2)-(2-n)+O...$
2 1/16 ... 3	0	–	0.531	0.734	$2.716+(1.812*3)-(3-n)+O...$	$2.406+(1.812*3)-(3-n)+O...$
3 1/16 ... 4	0	–	0.531	0.734	$2.716+(1.812*4)-(4-n)+O...$	$2.406+(1.812*4)-(4-n)+O...$
4 1/16 ... 5	0	–	0.531	0.734	$2.716+(1.812*5)-(5-n)+O...$	$2.406+(1.812*5)-(5-n)+O...$
5 1/16 ... 6	0	–	0.531	0.734	$2.716+(1.812*6)-(6-n)+O...$	$2.406+(1.812*6)-(6-n)+O...$
Piston diameter 1 1/2						
1/16 ... 1	0	–	0.438	0.765	$2.378+(1.687*1)-(1-n)+O...$	$2.188+(1.687*1)-(1-n)+O...$
1 1/16 ... 2	0	–	0.438	0.765	$2.378+(1.687*2)-(2-n)+O...$	$2.188+(1.687*2)-(2-n)+O...$
2 1/16 ... 3	0	–	0.438	0.765	$2.378+(1.687*3)-(3-n)+O...$	$2.188+(1.687*3)-(3-n)+O...$
3 1/16 ... 4	0	–	0.438	0.765	$2.378+(1.687*4)-(4-n)+O...$	$2.188+(1.687*4)-(4-n)+O...$
4 1/16 ... 5	0	–	0.438	0.765	$2.378+(1.687*5)-(5-n)+O...$	$2.188+(1.687*5)-(5-n)+O...$
5 1/16 ... 6	0	–	0.438	0.765	$2.378+(1.687*6)-(6-n)+O...$	$2.188+(1.687*6)-(6-n)+O...$
Piston diameter 1 3/4						
1/16 ... 1	0	–	0.565	0.735	$3.216+(2*1)-(1-n)+O...$	$2.656+(2*1)-(1-n)+O...$
1 1/16 ... 2	0	–	0.565	0.735	$3.216+(2*2)-(2-n)+O...$	$2.656+(2*2)-(2-n)+O...$
2 1/16 ... 3	0	–	0.565	0.735	$3.216+(2*3)-(3-n)+O...$	$2.656+(2*3)-(3-n)+O...$
3 1/16 ... 4	0	–	0.565	0.735	$3.216+(2*4)-(4-n)+O...$	$2.656+(2*4)-(4-n)+O...$
4 1/16 ... 5	0	–	0.565	0.735	$3.216+(2*5)-(5-n)+O...$	$2.656+(2*5)-(5-n)+O...$
5 1/16 ... 6	0	–	0.565	0.735	$3.216+(2*6)-(6-n)+O...$	$2.656+(2*6)-(6-n)+O...$
Piston diameter 2						
1 1/16 ... 0.5	0	–	0.461	0.789	$4.911-(0.5-n)+O...$	$4.531-(0.5-n)+O...$
9/16 ... 1	0	–	0.461	0.789	$5.411-(1-n)+O...$	$5.031-(1-n)+O...$
1 1/16 ... 1.5	0	–	0.461	0.789	$6.911-(1.5-n)+O...$	$6.531-(1.5-n)+O...$
1 9/16 ... 2	0	–	0.461	0.789	$7.411-(2-n)+O...$	$7.031-(2-n)+O...$
2 1/6 ... 2.5	0	–	0.461	0.789	$8.161-(2.5-n)+O...$	$7.781-(2.5-n)+O...$
2 9/16 ... 3	0	–	0.461	0.789	$8.661-(3-n)+O...$	$8.281-(3-n)+O...$
3 1/6 ... 4	0	–	0.461	0.789	$11.598-(4-n)+O...$	$11.218-(4-n)+O...$

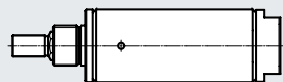
Data sheet

Dimensions Download CAD data → www.festo.com

- [S] Single-acting, pushing (piston rod retracted by means of spring force)
- [QNG] With protection against rotation, without mounting thread
- [QNGP4] With protection against rotation, without mounting thread, axial compressed air supply port



DPRA-N-Q-...-SNGP4



∅	A1	⌀1
[in]		
3/4	0.25	0.25
1 1/16	0.25	0.375
1 1/4	0.25	0.438
1 1/2	0.375	0.438

Data sheet

Formula for calculating the length Z)

The value O... is to be selected for the formula depending on the cushioning and position sensing variants

O0 = N (no cushioning)

O1 = P (flexible cushioning rings/pads at both ends)

O2 = A (for proximity switch)

O3 = PA (flexible cushioning rings/pads at both ends and for proximity switch)

n = stroke length

Stroke [in]	00	01	02	03	Z)	
						[NGP4]
Piston diameter 3/4						
1/16 ... 1	0	0.125	0.688	0.89	1.94+(1.687*1)-(1-n)+O...	1.75+(1.687*1)-(1-n)+O...
1 1/16 ... 2	0	0.125	0.688	0.89	1.94+(1.687*2)-(2-n)+O...	1.75+(1.687*2)-(2-n)+O...
2 1/16 ... 3	0	0.125	0.688	0.89	1.94+(1.687*3)-(3-n)+O...	1.75+(1.687*3)-(3-n)+O...
3 1/16 ... 4	0	0.125	0.688	0.89	1.94+(1.687*4)-(4-n)+O...	1.75+(1.687*4)-(4-n)+O...
4 1/16 ... 5	0	0.125	0.688	0.89	1.94+(1.687*5)-(5-n)+O...	1.75+(1.687*5)-(5-n)+O...
5 1/16 ... 6	0	0.125	0.688	0.89	1.94+(1.687*6)-(6-n)+O...	1.75+(1.687*6)-(6-n)+O...
Piston diameter 1 1/16						
1/16 ... 1	0	0.125	0.562	0.765	2.188+(1.562*1)-(1-n)+O...	1.938+(1.562*1)-(1-n)+O...
1 1/16 ... 2	0	0.125	0.562	0.765	2.188+(1.562*2)-(2-n)+O...	1.938+(1.562*2)-(2-n)+O...
2 1/16 ... 3	0	0.125	0.562	0.765	2.188+(1.562*3)-(3-n)+O...	1.938+(1.562*3)-(3-n)+O...
3 1/16 ... 4	0	0.125	0.562	0.765	2.188+(1.562*4)-(4-n)+O...	1.938+(1.562*4)-(4-n)+O...
4 1/16 ... 5	0	0.125	0.562	0.765	2.188+(1.562*5)-(5-n)+O...	1.938+(1.562*5)-(5-n)+O...
5 1/16 ... 6	0	0.125	0.562	0.765	2.188+(1.562*6)-(6-n)+O...	1.938+(1.562*6)-(6-n)+O...
Piston diameter 1 1/4						
1/16 ... 1	0	–	0.531	0.734	2.716+(1.812*1)-(1-n)+O...	2.406+(1.812*1)-(1-n)+O...
1 1/16 ... 2	0	–	0.531	0.734	2.716+(1.812*2)-(2-n)+O...	2.406+(1.812*2)-(2-n)+O...
2 1/16 ... 3	0	–	0.531	0.734	2.716+(1.812*3)-(3-n)+O...	2.406+(1.812*3)-(3-n)+O...
3 1/16 ... 4	0	–	0.531	0.734	2.716+(1.812*4)-(4-n)+O...	2.406+(1.812*4)-(4-n)+O...
4 1/16 ... 5	0	–	0.531	0.734	2.716+(1.812*5)-(5-n)+O...	2.406+(1.812*5)-(5-n)+O...
5 1/16 ... 6	0	–	0.531	0.734	2.716+(1.812*6)-(6-n)+O...	2.406+(1.812*6)-(6-n)+O...
Piston diameter 1 1/2						
1/16 ... 1	0	–	0.438	0.75	2.378+(1.687*1)-(1-n)+O...	2.188+(1.687*1)-(1-n)+O...
1 1/16 ... 2	0	–	0.438	0.75	2.378+(1.687*2)-(2-n)+O...	2.188+(1.687*2)-(2-n)+O...
2 1/16 ... 3	0	–	0.438	0.75	2.378+(1.687*3)-(3-n)+O...	2.188+(1.687*3)-(3-n)+O...
3 1/16 ... 4	0	–	0.438	0.75	2.378+(1.687*4)-(4-n)+O...	2.188+(1.687*4)-(4-n)+O...
4 1/16 ... 5	0	–	0.438	0.75	2.378+(1.687*5)-(5-n)+O...	2.188+(1.687*5)-(5-n)+O...
5 1/16 ... 6	0	–	0.438	0.75	2.378+(1.687*6)-(6-n)+O...	2.188+(1.687*6)-(6-n)+O...

Data sheet

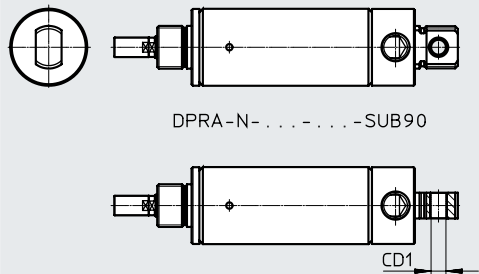
Dimensions

Download CAD data → www.festo.com

[S] Single-acting, pushing (piston rod retracted by means of spring force)

[UB] With swiveling rod eye and bearing sleeve

[UB90] With swiveling rod eye and bearing sleeve, rotated 90°



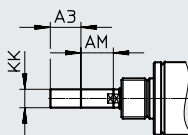
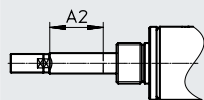
∅	CD1	
[in]	[UB90]	
2	0.375	0.375

Dimensions

Download CAD data → www.festo.com

[...NE] Piston rod extension

[...NL] Piston rod thread extension



∅	A2	A3	AM	KK
[in]	[...NE]	[...NL]		
3/4	1/16 ... 6	1/16 ... 6	0.5	1/4-28 UNF-2A
1 1/16	1/16 ... 6	1/16 ... 6	0.5	5/16-24 UNF-2A
1 1/4	1/16 ... 6	1/16 ... 6	0.75	7/16-24 UNF-2A
1 1/2	1/16 ... 6	1/16 ... 6	0.75	7/16-24 UNF-2A
1 3/4	1/16 ... 6	1/16 ... 6	0.875	1/2-20 UNF-2A
2	1/16 ... 6	1/16 ... 6	0.875	1/2-20 UNF-2A

Ordering data – Modular product system

Ordering table									
Piston diameter	3/4	1 1/16	1 1/4	1 1/2	1 3/4	2	Conditions	Code	Enter code
Module No.	8109549	8109550	8109551	8109552	8109553	8109554			
Function	Round cylinder, single-acting							DPRA	DPRA
System of units	Imperial							-N	
Protection against rotation	Without								
	With protection against rotation							-Q	
Piston diameter	3/4"	1 1/16"	1 1/4"	1 1/2"	1 3/4"	2"		-"	
Stroke	0.0625 ... 6"							-"	
Function	Single-acting, pulling (piston rod advanced by means of spring force)						[1] [2] [3] [4]	-P	
	Single-acting, pushing (piston rod retracted by means of spring force)						[2] [5]	-S	
Piston rod type	At one end								
Type of bearing cap	With mounting thread								
Type of end cap	With swiveling rod eye					-	[7]	U	
	With trunnion flange		-	With trunnion flange	-		[7]	ME	
	Without mounting thread							NG	
	With swiveling rod eye and bearing sleeve						[7]	UB	
	-		With swiveling rod eye, rotated 90°	-	With swiveling rod eye, rotated 90°	-	[7]	U90	
	Trunnion flange, rotated 90°		-	Trunnion flange, rotated 90°	-		[7]	ME90	
	-					With swiveling rod eye and bearing sleeve, rotated 90°	[7]	UB90	
Compressed air supply port	Lateral								
	Axial						[6] [7] [8]	P4	
Cushioning	No cushioning							-N	
	Flexible cushioning rings/pads at both ends						[3]	-P	
Position sensing	Without								
	For proximity switch						[3]	A	
Corrosion protection	Standard								
Temperature range	Standard								
	+32 ... +300 °F						[3] [9]	T4	
Piston rod extension	Without								
	0 ... 6 inch							-"NE	
Piston rod thread extension	Without								
	0 ... 6 inch						[10]	-"NL	

- | | |
|--------------------------------|--|
| [1] P | Not with Q |
| [2] P, S | Only with stroke 0.0625 ... 4 with piston diameter 2 |
| | Only with stroke 0.0625 ... 6 with piston diameter 1 1/16, 1 1/4, 1 1/2, 1 3/4 |
| [3] P, A, T4 | Not with U90, UB90, ME90 |
| [4] P | Only with piston diameter 1 3/4 if NG selected |
| [5] S | Mandatory specification with Q |
| [6] P4 | Not with P |
| [7] U, ME, UB, U90, ME90, UB90 | Not with P4 |
| [8] P4 | Mandatory specification with NG if S and P or A or T4 selected |
| [9] T4 | Not with P, A |
| [10] ...NL | Not with ...NE |

Accessories

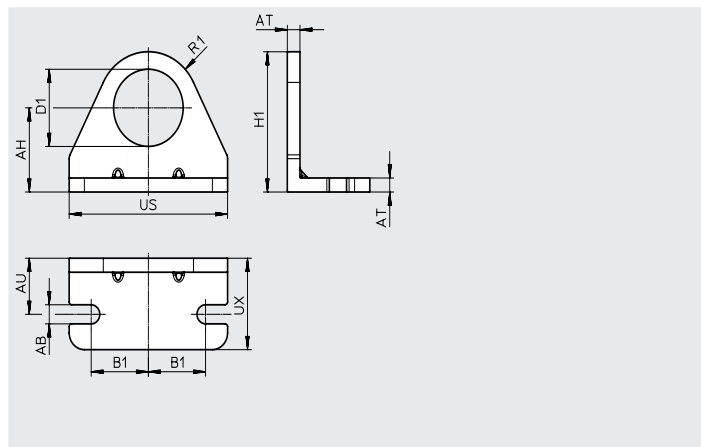
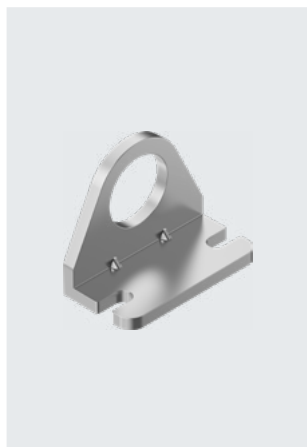
Foot mounting DAMH-C6

Material:

Mounting: steel (galvanized or nickel-plated)

RoHS-compliant

Contains paint-wetting impairment substances



Dimensions and ordering data

for $\varnothing$ [in]	AB	AH	AT	AU	B1	D1 +0.002	H1	R1	US	UX	Part No.	Type
3/4 ¹⁾ ; 1 1/16	0.26	0.813	0.125	0.56	0.75	0.626	1.38	0.56	1.88	1	8109921	DAMH-C6-1 1/16"-1
3/4 ²⁾	0.2	0.688	0.94	0.44	0.63	0.501	1.09	0.41	1.63	0.75	8109922	DAMH-C6-3/4"-1
1 1/4; 1 1/2	0.28	1	0.125	0.75	0.94	0.751	1.75	0.75	2.5	1.5	8109923	DAMH-C6-1 1/2"-1
1 3/4	0.34	1.250	0.188	0.88	1.13	1.032	2.13	0.91	3	1.5	8109924	DAMH-C6-1 3/4"-1
2	0.34	1.5	0.25	1	1.13	1.376	2.5	1	3.13	1.63	8109925	DAMH-C6-2"-1
2 1/2	0.34	1.75	0.25	1	1.44	1.501	3	1.25	3.75	1.63	8109926	DAMH-C6-2 1/2"-1

1) For mounting on the end cap

2) For mounting on the bearing cap

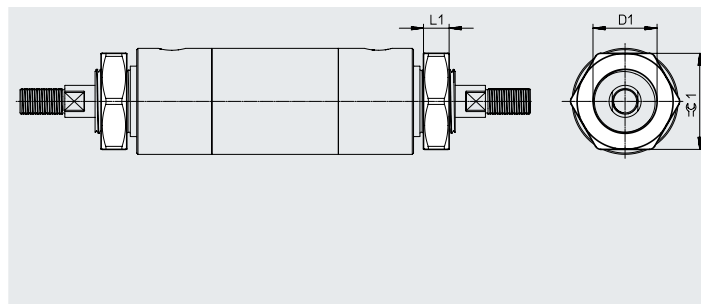
Hex nut DAMD

Material:

Nut: steel (galvanized or nickel-plated)

RoHS-compliant

Contains paint-wetting impairment substances



Dimensions and ordering data

for $\varnothing$ [in]	D1	L1	$\approx \varnothing 1$	Part No.	Type
3/4 ¹⁾	1/2-20 UNF-2B	0.31	0.75	8109934	DAMD-N-U1/2
3/4 ²⁾ ; 1 1/16	5/8-18 UNF-2B	0.38	0.938	8109935	DAMD-N-U58
1 1/4; 1 1/2	3/4-16 UNF-2B	0.42	1.125	8109936	DAMD-N-U34
1 3/4	1-14 UNF-2B	0.55	1.5	8109937	DAMD-N-U1S
2	1 1/4-12 UNF-2B	0.5	1.875	8109938	DAMD-N-U114
2 1/2	1 3/8-12 UNF-2B	0.5	2.062	8109939	DAMD-N-138

1) For mounting on the end cap

2) For mounting on the bearing cap

Accessories

Clevis foot DAMC-C6-...-B

Material:

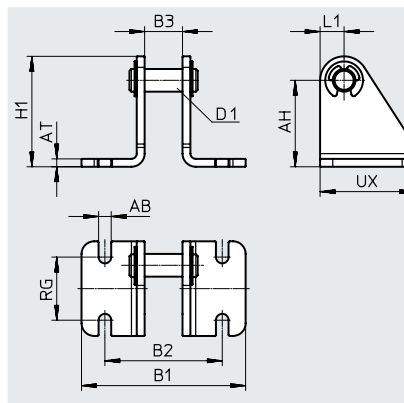
Clevis foot: steel (galvanized or nickel-plated)

Bolt: steel (galvanized or nickel-plated)

Lock: steel (galvanized or nickel-plated)

RoHS-compliant

Contains paint-wetting impairment substances



Dimensions and ordering data

for $\varnothing$ [in]	AB	AH	AT	B1	B2	B3	D1 $\varnothing$	H1	L1	RG	UX	Part No.	Type
3/4; 1 1/16	0.26	0.88	0.125	2	1.25	0.38	0.25	1.19	0.31	0.75	1.13	8109927	DAMC-C6-1 1/16"-B
1 3/4	0.26	1.38	0.250	2.88	2	0.63	0.375	1.75	0.38	1	1.5	8109928	DAMC-C6-1 3/4"-B
1 1/4	0.26	0.88	0.125	2.12	1.38	0.5	0.25	1.19	0.31	0.75	1.13	8109929	DAMC-C6-1 1/4"-B
2; 2 1/2	0.26	1.38	0.250	3	2.13	0.75	0.375	1.75	0.38	1	1.5	8109930	DAMC-C6-2"-B

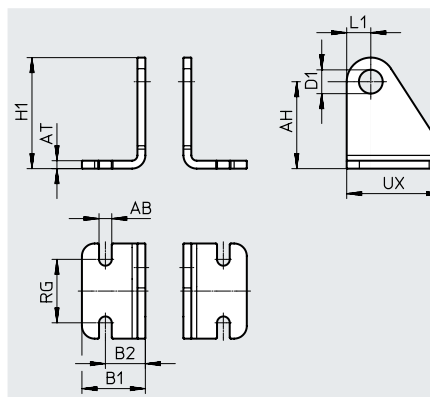
Clevis foot DAMC-C6-...-D

Material:

Clevis foot: steel (galvanized or nickel-plated)

RoHS-compliant

Contains paint-wetting impairment substances



Dimensions and ordering data

for $\varnothing$ [in]	AB	AH	AT	B1	B2	D1 $\varnothing$	H1	L1	RG	UX	Part No.	Type
1 3/4; 1 1/16	0.26	0.88	0.125	0.81	0.44	0.25	1.19	0.31	0.75	1.13	8109931	DAMC-C6-3/4"-D
1 1/2	0.26	1.38	0.125	1	0.63	0.375	1.75	0.38	1	1.5	8109932	DAMC-C6-1 1/2"-D
3/4 ¹⁾ ; 1 1/16 ¹⁾ ; 1 1/2 ¹⁾	0.26	1.38	0.25	1.13	0.69	0.5	1.75	0.38	1	1.5	8109933	DAMC-C6-1 1/16"-D

1) For mounting on the end cap with trunnion flange

Accessories

Rod clevis DARC-C6

Material:

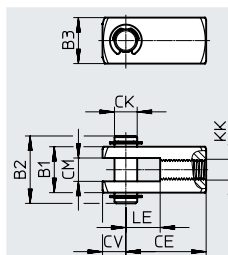
Rod clevis: steel (galvanized or nickel-plated)

Bolt: steel (galvanized or nickel-plated)

Lock: steel (galvanized or nickel-plated)

RoHS-compliant

Contains paint-wetting impairment substances



Dimensions and ordering data

for Ø [in]	B1	B2	B3	CE	CK	CM	CV	KK	LE	Part No.	Type
3/4	0.5	0.68	0.5	0.94	0.25	0.25	0.25	1/4-28 UNF-2B	0.43	8109940	DARC-C6-U14
1 1/16	0.5	0.68	0.5	0.94	0.25	0.25	0.25	5/16-24 UNF-2B	0.43	8109941	DARC-C6-U516
1 1/4; 1 1/2	0.75	1.03	0.75	1.31	0.375	0.38	0.38	7/16-20 UNF-2B	0.56	8109942	DARC-C6-U716
1 3/4; 2; 2 1/2	0.75	1.03	0.75	1.31	0.375	0.38	0.38	1/2-20 UNF-2B	0.56	8109943	DARC-C6-U12

Sensor bracket SAMH-FB-SH

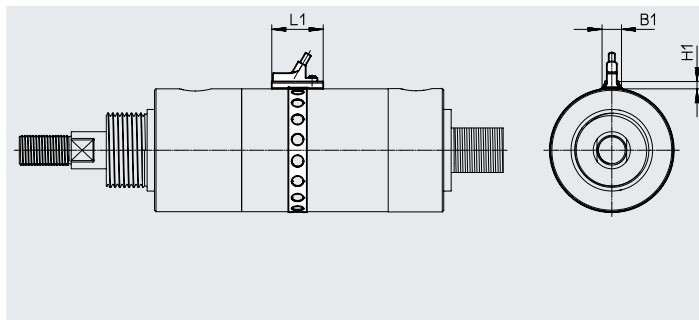
Material:

Mounting: high-alloy stainless steel

Screw: steel (galvanized or nickel-plated)

RoHS-compliant

Contains paint-wetting impairment substances



Dimensions and ordering data

for Ø [in]	B1	H1	L1	Part No.	Type
3/4 ... 2 1/2	0.36	0.26	0.79	8109945	SAMH-FB-SH

Ordering data – Magnetoresistive proximity switch for dovetail slot

Data sheets → Internet: sdbf

	for Ø [in]	Type of mounting	Switching output	Electrical connection	Part No.	Type
N/O contact						
	3/4 ... 2 1/2	Can be inserted in slot lengthwise	PNP	Cable, 3-wire	8106575	SDBF-FBS-1L-PU-K-9-N-LE
				Plug M8x1, 3-pin	8106576	SDBF-FBS-1L-PU-K-0,5-N-M8
			NPN	Cable, 3-wire	8106577	SDBF-FBS-1L-NU-K-9-N-LE
				Plug M8x1, 3-pin	8106578	SDBF-FBS-1L-NU-K-0,5-N-M8