Round cylinders DPRA

Key features

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

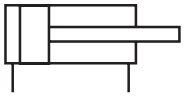
Protection against rotation

[-Q] With protection against rotation

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

Function

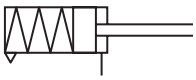
[ ] Double-acting



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

Function

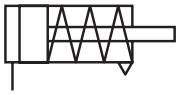
[-P] Single-acting, pulling (piston rod advanced by spring force)



- The cylinder has one pneumatic connection. The piston rod is advanced in its initial position
- When the connection is pressurised with compressed air, the cylinder retracts. It is advanced by a spring

Function

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



- The cylinder has one pneumatic connection. The piston rod is retracted in its initial position
- When the connection is pressurised with compressed air, the cylinder advances. It is retracted by a spring

Piston rod type

[ ] At one end

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

Key features

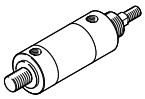
Piston rod type
[H] Through, hollow piston rod

- The piston rod can be used for connection at both ends of the cylinder
- The piston rod is hollow inside, so it can be used to carry vacuum or compressed air
- Identical forces in the forward and return stroke

Piston rod type
[T] Through piston rod

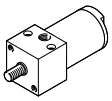
- The piston rod can be used for connection at both ends of the cylinder
- Identical forces in the forward and return stroke

Type of bearing cover
[ ] With mounting thread

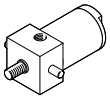


- Including ring nut for combination with end cap type [NG] Without mounting thread

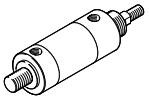
Type of bearing cover
[B] For direct mounting



Type of bearing cover
[M] With trunnion flange

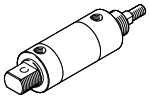


Type of end cap
[ ] Standard

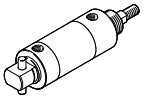


- Including ring nut

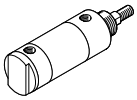
Type of end cap
[U] With swivelling rod eye



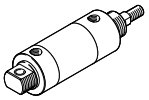
Type of end cap
[ME] With trunnion flange



Type of end cap
[NG] Without mounting thread

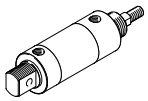


Type of end cap
[UB] With swivelling rod eye and bearing sleeve

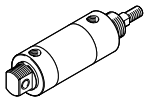


Key features

Type of end cap
[U90] With swivelling rod eye, rotated 90°



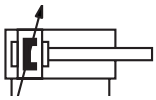
Type of end cap
[UB90] With swivelling rod eye and bearing sleeve, rotated 90°



Compressed air supply port
[P4] Axial

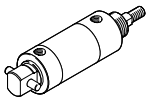
- The front compressed air supply port is located on the side of the cylinder and the rear compressed air supply port is located axially on the cylinder
- Can only be selected with end cap type [NG] without mounting thread

Cushioning
[-PPV] Pneumatic cushioning, adjustable at both ends



- The cylinder is fitted with pneumatic end-position cushioning, which can be adapted by the operator for maximum performance according to the moving mass and speed
- Very powerful

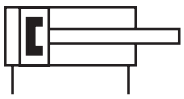
Type of end cap
[ME90] Trunnion flange, rotated 90°



Compressed air supply port
[ ] Lateral

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

Cushioning
[-P] Flexible cushioning rings/plates at both ends



- The cylinder is fitted with flexible polymer end-position cushioning
- No adjustment required
- Saves time

Position sensing
[A] For proximity switch

By using proximity switches, any position can be detected

Key features

Corrosion protection
[-R1] Stainless steel

- For use in damp or dirty environments
- Stainless steel end cap
- Stainless steel piston rod

Corrosion protection
[R3] High corrosion protection

- For use in very damp or very dirty environments
- End cap made of POM
- Stainless steel piston rod
- Temperature range +32 ... +160 °F
- Operating pressure 10 ... 100 psi

Temperature range
[ ] Standard

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

Temperature range
[-T3] –40 ... +225 °F

- The cylinder is intended for use in a temperature range of –40 ...+225 °F

Temperature range
[-T4] +32 ... +300 °F

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

Wiper variant
[A4] Wiper made of NBR

- The wiper prevents dirt from getting into the cylinder

Extended piston rod
[...NE] 0 ... 6 inch

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

Extended piston rod thread
[...NL] 0 ... 6 inch

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

Product range overview

Function	Type	Piston ⌀	Stroke	Protection against rotation	Piston rod type		Type of bearing cap		Type of end cap							Com-pressed air supply port[1]
		[in]	[in]	[Q]	[H]	[T]	[B]	[M]	[U]	[ME]	[NG]	[UB]	[U90]	[ME90]	[UB90]	[P4]
Double-acting	**DPRA**															
	DPRA	9/16	0.0625 ... 12	–	–	■	–	–	–	–	■	■	–	–	■	■
		3/4		–	–	■	■	■	■	■	■	■	–	■	–	■
		7/8		–	–	–	–	–	–	■	■	■	–	■	–	■
		1 1/16		–	■	■	■	■	■	■	■	■	–	■	–	■
		1 1/4		–	■	■	–	–	■	–	■	■	■	–	–	■
		1 1/2		–	■	■	■	■	■	■	■	■	–	■	–	■
		1 3/4		–	–	–	–	–	■	–	■	■	■	–	–	■
		2		–	–	■	–	–	–	–	■	■	–	–	■	■
		2 1/2		–	–	–	–	–	–	–	■	■	–	–	■	■
		3		–	–	–	–	–	–	–	■	■	–	–	■	■
Single-acting	**DPRA-...-P (pulling, piston rod advanced by spring force)** **DPRA-...-S (pushing, piston rod retracted by spring force)**															
	DPRA-...-P DPRA-...-S	9/16	0.0625 ... 6	■	–	–	–	–	–	–	■	■	–	–	■	■
		3/4		■	–	–	–	–	■	■	■	■	–	■	–	■
		7/8		■	–	–	–	–	–	■	■	■	–	■	–	■
		1 1/16		■	–	–	–	–	■	■	■	■	–	■	–	■
		1 1/4		■	–	–	–	–	■	–	■	■	■	–	–	■
		1 1/2		■	–	–	–	–	■	■	■	■	–	■	–	■
		1 3/4		–	–	–	–	–	■	–	■	■	■	–	–	■
		2	0.0625 ... 4	–	–	–	–	–	–	–	■	■	–	–	■	■

1) Can only be selected with end cap type [NG] without mounting thread

Product range overview

Function	Type	Piston ⌀	Stroke	Cushioning		Position sensing	Corrosion protection		Tempera-ture range		Wiper vari-ant	Extended piston rod	Extended piston rod thread
		[in]	[in]	[P]	[PPV]	[A]	[R1]	R3]	[T3]	[T4]	[A4]	[...NE]	[...NL]
Double-acting	**DPRA**												
	DPRA	9/16	0.0625 ... 12	■	–	■	–	–	■	■	–	■	■
		3/4		■	■	■	■	■	■	■	■	■	■
		7/8		■	–	■	–	–	■	■	■	■	■
		1 1/16		■	■	■	■	■	■	■	■	■	■
		1 1/4		■	–	■	■	–	■	■	■	■	■
		1 1/2		■	■	■	■	■	■	■	■	■	■
		1 3/4		■	–	■	–	–	■	■	■	■	■
		2		■	■	■	■	–	■	■	■	■	■
		2 1/2		■	–	■	–	–	■	■	–	■	■
		3		■	–	■	–	–	■	■	–	■	■
Single-acting	**DPRA-...-P (pulling, piston rod advanced by spring force)** **DPRA-...-S (pushing, piston rod retracted by spring force)**												
	DPRA-...-P DPRA-...-S	9/16	0.0625 ... 6	■	–	■	–	–	■	■	–	■	■
		3/4		■	–	■	–	–	■	■	–	■	■
		7/8		■	–	■	–	–	■	■	–	■	■
		1 1/16		■	–	■	–	–	■	■	–	■	■
		1 1/4		■	–	■	–	–	■	■	–	■	■
		1 1/2		■	–	■	–	–	■	■	–	■	■
		1 3/4		■	–	■	–	–	■	■	–	■	■
		2	0.0625 ... 4	■	–	■	–	–	■	■	–	■	■

Type codes

001	Baureihe	
DPRA	Rundzylinder	

002	Einheitensystem	
N	Imperial	

003	Verdrehsicherung	
	Ohne	
Q	Mit Verdrehsicherung	

004	Kolbendurchmesser [„]	
9/16“	9/16“	
3/4“	3/4“	
7/8“	7/8“	
1 1/16“	1 1/16“	
1 1/4“	1 1/4“	
1 1/2“	1 1/2“	
1 3/4“	1 3/4“	
2“	2“	
2 1/2“	2 1/2“	
3“	3“	

005	Hubbereich [„]	
...	0.0625 ... 12	

006	Funktion	
	Doppeltwirkend	
P	Einfachwirkend, ziehend	
S	Einfachwirkend, drückend	

007	Kolbenstangenart	
	Einseitig	
H	Durchgehende, hohle Kolbenstange	
T	Durchgehende Kolbenstange	

008	Lagerdeckelart	
	Mit Befestigungsgewinde	
B	Für Direktmontage	
M	Mit Schwenkzapfen	

009	Abschlussdeckelart	
	Standard	
U	Mit Schwenkauge	
ME	Mit Schwenkzapfen	
NG	Ohne Befestigungsgewinde	
UB	Mit Schwenkauge und Lagerhülse	
U90	Mit Schwenkauge, 90° gedreht	
ME90	Schwenkzapfen, 90° gedreht	
UB90	Mit Schwenkauge und Lagerhülse, 90° gedreht	

010	Druckluftanschluss	
	Lateral	
P4	Axial	

011	Dämpfung	
N	Keine Dämpfung	
P	Elastische Dämpfungsringe/-platten beidseitig	
PPV	Pneumatische Dämpfung, beidseitig einstellbar	

012	Positionserkennung	
	Ohne	
A	Für Näherungsschalter	

013	Korrosionsschutz	
	Standard	
R1	Edelstahl	
R3	Hoher Korrosionsschutz	

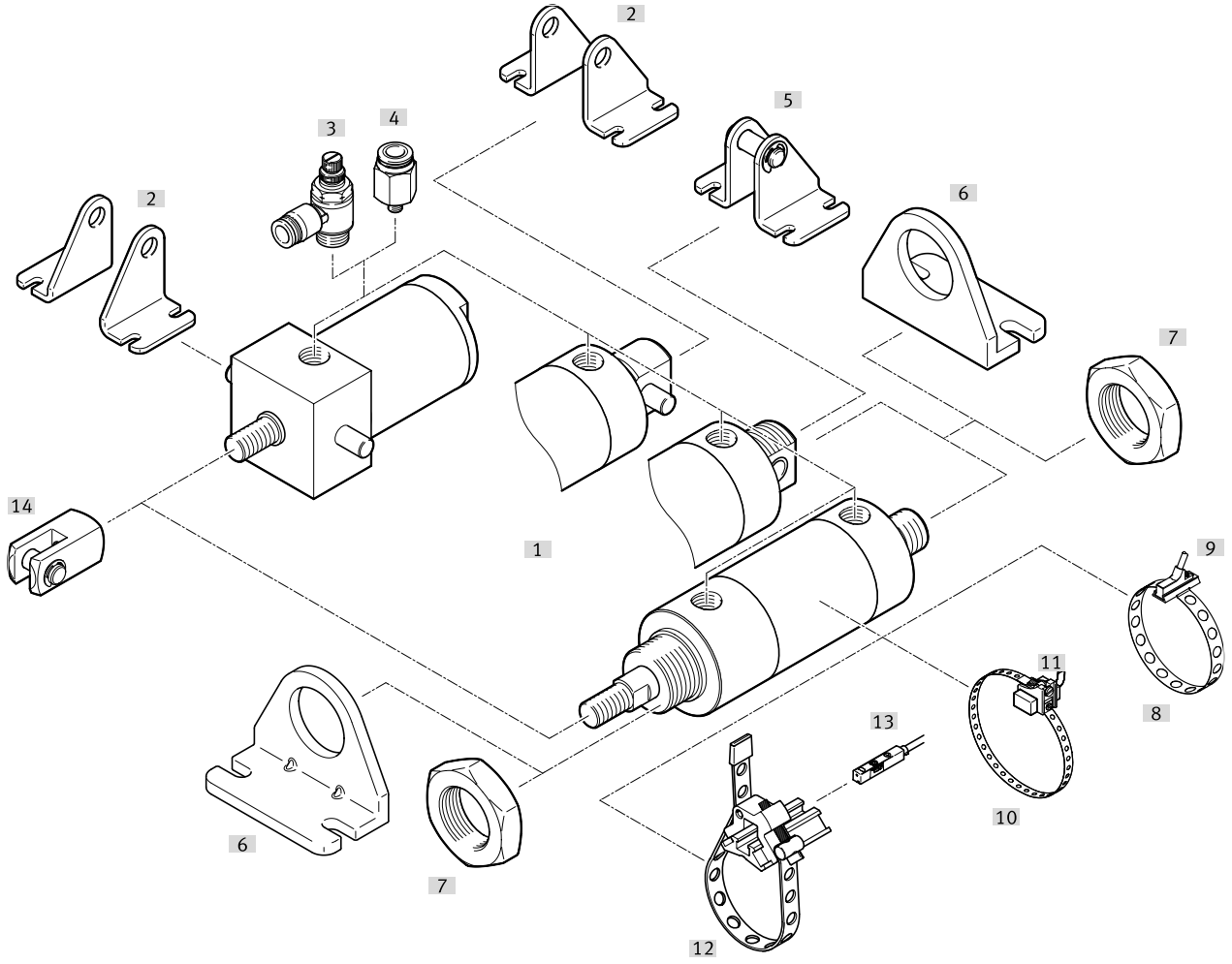
014	Temperaturbereich	
	Standard	
T3	-40 ... +80 °C	
T4	0 ... +150 °C	

015	Abstreifervariante	
	Keine	
A4	Abstreifer aus NBR	

016	Kolbenstangenverlängerung	
	Ohne	
...NE	0.001“ ... 6“	

017	Kolbenstangengewinde-Verlängerung	
	Ohne	
...NL	0.001“ ... 6“	

Peripherals overview



Accessories

	Type/order code	Description	→ Page/Internet
[1]	Round cylinder DPRA	Double-acting	10
		Single-acting	30
[2]	Clevis foot DAMC-C6-...-D	• For mounting the cylinder via the bearing cap/end cap • Permits a swivelling movement in one plane	51
[3]	One-way flow control valve GRLA	For regulating speed	54
[4]	Push-in fitting QB/QBL	For connecting tubing with standard O.D.	54
[5]	Clevis foot DAMC-C6-...-B	• For mounting the cylinder via the end cap • Permits a swivelling movement in one plane	51
[6]	Foot mounting DAMH-C6	For mounting the cylinder via the bearing cap/end cap	50
[7]	Hex nut DAMD	• For directly mounting the cylinder • For fixing the foot mounting DAMH-C6 in place	50
[8]	Sensor bracket SAMH-FB-SH	For proximity switch SDBF-FBS	52
[9]	Proximity switch SDBF-FBS	Can be integrated into sensor bracket SAMH-FB-SH	53
[10]	Sensor bracket SAMH-FB-4-SH	For proximity switch SDBF-FES	52
[11]	Proximity switch SDBF-FES	Can be integrated into sensor bracket SAMH-FB-4-SH	53
[12]	Mounting kit SMBR	For proximity switch SMT/SDBT	53
[13]	Proximity switch SMT/SDBT	Can be integrated in mounting kit SMBR	53
[14]	Rod clevis DARC-C6	Permits a swivelling movement in one plane	52

Datasheet

General technical data											
Piston ø		9/16	3/4	7/8	1 1/16	1 1/4	1 1/2	1 3/4	2	2 1/2	3
Design		Piston									
		Piston rod									
		Cylinder barrel									
Operating mode		Double-acting									
Pneumatic connection		1/8 NPT						1/4 NPT			
Piston rod thread		10-32 UNF-2A	1/4-28 UNF-2A		5/16-24 UNF-2A	7/16-20 UNF-2A		1/2-20 UNF-2A			5/8-18 UNF-2A
Stroke	[in]	0.0625 ... 12									
Cushioning											
[N]		No cushioning									
[P]		Elastic cushioning rings/plates at both ends									
[PPV]		–	1)	–	1)	–	1)	–	1)	–	
Position sensing		Via proximity switch									
Type of mounting		Via lock nut						–			
		With accessories									
Mounting position		Any									

1) Pneumatic cushioning, adjustable at both ends

Operating and environmental conditions											
Piston ø		9/16	3/4	7/8	1 1/16	1 1/4	1 1/2	1 3/4	2	2 1/2	3
Operating pressure	[psi]	10 ... 150[1]									
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]									
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)									
Ambient temperature[2]	[°F]	–40 ... +300									
Corrosion resistance class CRC[3]		1 - Low corrosion stress									
		–	4)	–	4)	–	4)	–			
		–	5)	–	5)			–	5)	–	

1) With [R3] high corrosion protection max. 100 psi
2) Note operating range of proximity switches
3) More information www.festo.com/x/topic/crc
4) 3 - High corrosion stress
5) 4 - Particularly high corrosion stress

Datasheet

Forces [lb] at 80 psi										
Piston ø	9/16	3/4	7/8	1 1/16	1 1/4	1 1/2	1 3/4	2	2 1/2	3
Theoretical force, advancing	19.9	35.3	48.1	70.9	98.2	141.4	192.4	251.3	392.7	565.5
Theoretical force, retracting	17.7	31.4	44.2	64.8	86.1	129.3	176.7	226.8	368.2	530.1

Weight [lb]					
Piston ø	9/16	3/4	7/8	1 1/16	1 1/4
Product weight	45.36 ... 385.55			99.79 ... 598.74	176.9 ... 1097.69

Weight [lb]					
Piston ø	1 1/2	1 3/4	2	2 1/2	3
Product weight	199.58 ... 1238.3	385.55 ... 1374.38	471.74 ... 1832.51	898.11 ... 1954.98	

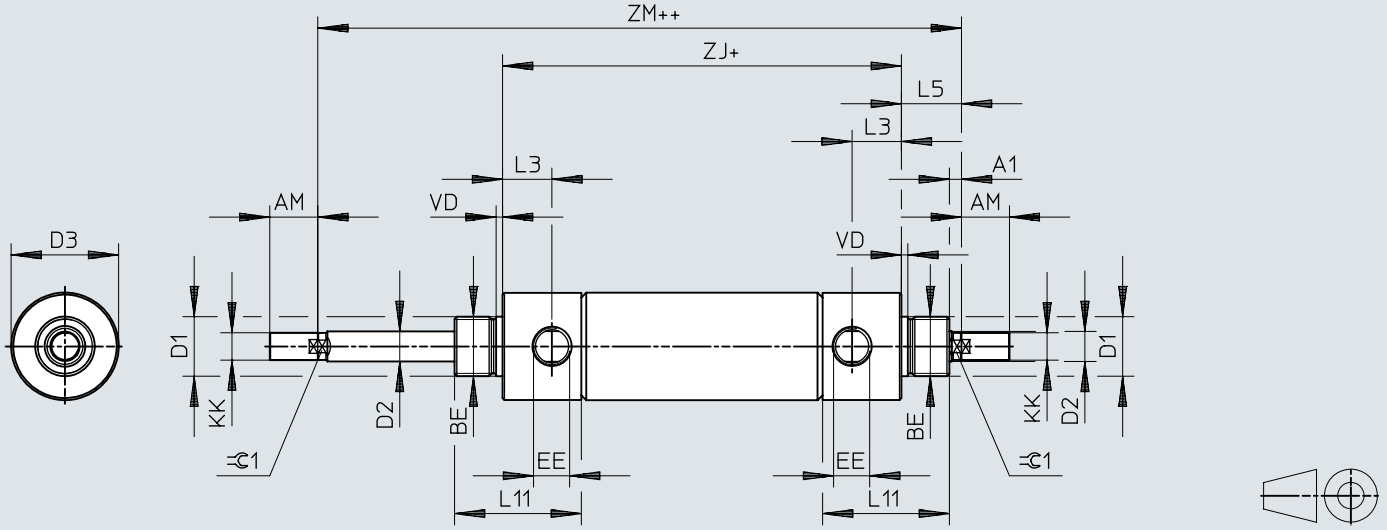
Materials										
Piston ø	9/16	3/4	7/8	1 1/16	1 1/4	1 1/2	1 3/4	2	2 1/2	3
Cover material	Wrought aluminium alloy									
	–	POM	–	POM	–	POM	–			
	–	1)	–	1)			–	1)	–	
Sealing material	FPM									
	NBR									
Piston rod material	High-alloy stainless steel									
Cylinder barrel material	High-alloy stainless steel									
Note on materials	RoHS-compliant									
LABS (PWIS) conformity	VDMA24364 zone III									

1) High-alloy stainless steel

Datasheet

Dimensions Download CAD data ➔ www.festo.com

[T] Through piston rod
[TR3] Through piston rod; high corrosion protection



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

ø [in]	A1	AM	BE		D1 ø	D2 ø	D3 ø		EE	KK
				[TR3]				[TR3]		
9/16	–	0.5	7/16-20 UNF-2A	–	0.437	0.188	0.625	–	1/8 NPT	10-32 UNF-2A
3/4	–	0.5	5/8-18 UNF-2A	5/8-18 UNF-2A	0.624	0.25	0.875	0.875	1/8 NPT	1/4-28 UNF-2A
1 1/16	0.125	0.5	5/8-18 UNF-2A	–	0.624	0.313	1.125	1.180	1/8 NPT	5/16-24 UNF-2A
1 1/4	0.25	0.75	3/4-16 UNF-2A	–	0.749	0.438	1.344	–	1/8 NPT	7/16-20 UNF-2A
1 1/2	0.25	0.75	3/4-16 UNF-2A	1-14 UNF-2A	0.999	0.438	1.562	1.615	1/8 NPT	7/16-20 UNF-2A
2	0.375	0.875	1 1/4-12 UNF-2A	–	1.375	0.625	2.078	–	1/4 NPT	1/2-20 UNF-2A

ø [in]	L1		L2		L3		L5	L11		VD	⫩1
		[TR3]		[TR3]		[TR3]			[TR3]		
9/16	2.938	–	2.188	–	0.375	–	0.375	1	–	0.063	–
3/4	4	4.656	3	3.406	0.469	0.469	0.5	1.343	1.593	0.094	–
1 1/16	4.406	–	3.156	–	0.563	0.512	0.625	1.322	1.317	0.094	0.25
1 1/4	5.563	–	3.813	–	0.75	–	0.875	1.625	–	0.094	0.25
1 1/2	5.125	–	3.375	–	0.625	–	0.875	1.625	–	0.094	0.25
2	6.563	–	4.188	–	0.734	–	1.188	2	–	0.125	0.25

Datasheet

Formula for calculating the length ZM/ZJ

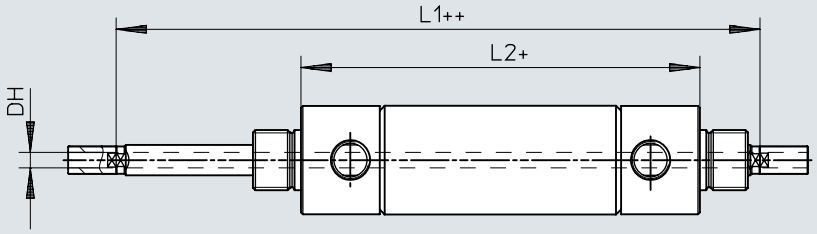
The value O... should be selected for the formula depending on the cushioning and position sensing variants

O0 = N (no cushioning)
O1 = P (flexible cushioning rings/plates at both ends)
O2 = A (for proximity switch)
O3 = PA (flexible cushioning rings/plates at both ends and for proximity switch)
n = stroke length

Stroke [in]	O0	O1	O2	O3	ZM		ZJ	
						[TR3]		[TR3]
Piston ø 9/16								
0.0625 ... 12	0	0.13	0.25	0.38	2.188+n+O...	–	2.938+(2*n)+O...	–
Piston ø 3/4								
0.0625 ... 12	0	0.25	–	0.25	3+n+O...	3.438+n+O...	4+(2*n)+O...	4.438+(2*n)+O...
Piston ø 1 1/16								
0.0625 ... 12	0	0.25	–	0.25	3.156+n+O...	–	4.406+(2*n)+O...	–
Piston ø 1 1/4								
0.0625 ... 12	0	0.25	–	0.25	3.813+n+O...	–	5.563+(2*n)+O...	–
Piston ø 1 1/2								
0.0625 ... 12	0	0.25	–	0.25	3.375+n+O...	–	5.125+(2*n)+O...	–
Piston ø 2								
0.0625 ... 12	0	0.25	–	0.25	4.188+n+O...	–	6.563+(2*n)+O...	–

Dimensions Download CAD data ➔ www.festo.com

[H] Through, hollow piston rod



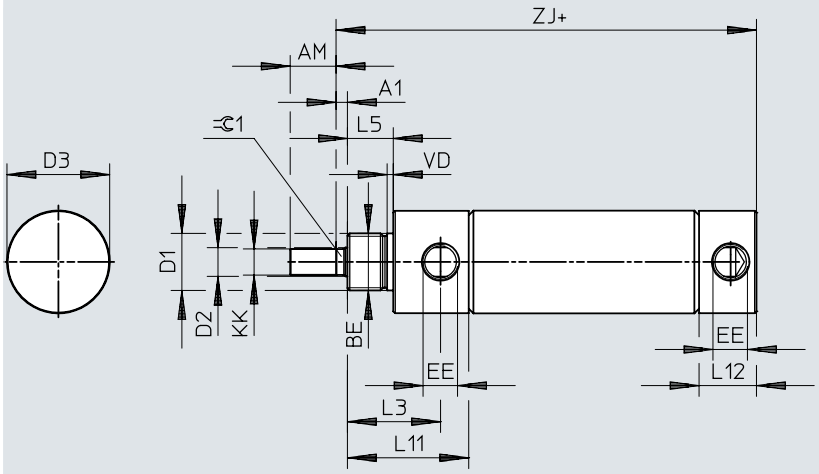
+ = plus stroke length
++ = plus 2x stroke length

ø [in]	DH	L1	L2
1 1/16	0.16	4	2.75
1 1/4	0.25	5.63	3.813
1 1/2	0.25	5.125	3.375

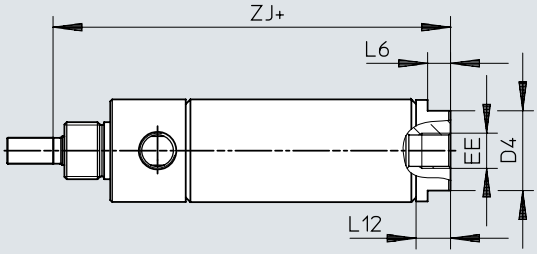
Datasheet

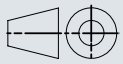
Dimensions Download CAD data ➔ www.festo.com

[ ] End cap type: standard
[NG] Without mounting thread
[NG-R3] Without mounting thread; high corrosion protection



DPRA-N-...-...-NGP4





+ = plus stroke length

ø	A1			AM	BE			D1 ø			D2 ø	D3 ø		
[in]		[NG]	[NG-R3]			[NG]	[NG-R3]		[NG]	[NG-R3]			[NG]	[NG-R3]
9/16	–	–	–	0.5	7/16-20 UNF-2A	7/16-20 UNF-2A	–	0.437	0.437	–	0.188	0.625	0.625	–
3/4	–	–	–	0.5	5/8-18 UNF-2A	5/8-18 UNF-2A	5/8-18 UNF-2A	0.624	0.624	0.624	0.25	0.875	0.875	0.875
7/8	–	–	–	0.5	5/8-18 UNF-2A	5/8-18 UNF-2A	–	0.624	0.624	–	0.25	0.938	0.938	–
1 1/16	0.125	0.125	–	0.5	5/8-18 UNF-2A	5/8-18 UNF-2A	5/8-18 UNF-2A	0.624	0.624	0.624	0.313	1.125	1.125	1.18
1 1/4	–	0.25	–	0.75	–	3/4-16 UNF-2A	–	–	0.749	–	0.438	–	1.344	–
1 1/2	0.25	0.25	0.25	0.75	3/4-16 UNF-2A	3/4-16 UNF-2A	1-14 UNF-2A	0.749	0.749	0.999	0.438	1.563	1.563	1.615
1 3/4	–	0.313	–	0.875	–	1-14 UNF-2A	–	–	1.031	–	0.5	–	1.844	–
2	–	0.375	–	0.875	–	1 1/4-12 UNF-2A	–	–	1.375	–	0.625	–	2.078	–
2 1/2	–	0.375	–	0.875	–	1 3/8-12 UNF-2A	–	–	1.5	–	0.625	–	2.625	–
3	–	0.375	–	1.25	–	1 1/2-12 UNF-2A	–	–	1.625	–	0.75	–	3.156	–

ø	D4 ø		EE	KK	L3			L5		
[in]		[NG]	[NG-R3]			[NG]	[NG-R3]		[NG]	[NG-R3]
9/16	–	0.5	–	10-32 UNF-2B	10-32 UNF-2A	0.75	0.75	–	0.375	0.375	–
3/4	–	0.625	0.625	1/8 NPT	1/4-28 UNF-2A	0.969	0.969	0.969	0.5	0.5	–
7/8	–	0.625	–	1/8 NPT	1/4-28 UNF-2A	0.968	0.968	–	0.5	0.5	–
1 1/16	–	0.875	0.875	1/8 NPT	5/16-24 UNF-2A	1.188	1.188	1.063	0.625	0.625	0.5
1 1/4	–	0.875	–	1/8 NPT	7/16-20 UNF-2A	–	1.625	–	–	0.875	–
1 1/2	–	0.875	0.875	1/8 NPT	7/16-20 UNF-2A	1.5	1.5	1.375	0.875	0.875	0.875
1 3/4	–	1.25	–	1/4 NPT	1/2-20 UNF-2A	–	1.938	–	–	1.063	–
2	–	1.25	–	1/4 NPT	1/2-20 UNF-2A	–	1.922	–	–	1.188	–
2 1/2	–	1.75	–	1/4 NPT	1/2-20 UNF-2A	–	1.84	–	–	1.188	–
3	–	2	–	3/8 NPT	5/8-18 UNF-2A	–	2.094	–	–	1.375	–

Datasheet

ø	L6			L11			L12			VD	⌀G1		
[in]		[NG]	[NG-R3]		[NG]	[NG-R3]		[NG]	[NG-R3]			[NG]	[NG-R3]
9/16	–	0.188	–	1	1	–	0.844	0.375	–	0.063	–	–	–
3/4	–	0.188	0.188	1.34	1.343	1.34	1.348	0.284	0.284	0.094	–	–	–
7/8	–	0.188	–	1.325	1.325	–	1.230	0.325	–	0.067	–	–	–
1 1/16	–	0.188	0.188	1.322	1.322	1.317	1.25	0.375	0.375	0.094	0.25	0.25	–
1 1/4	–	0.25	–	–	1.625	–	–	0.545	–	0.094	–	0.375	–
1 1/2	–	0.25	0.25	1.625	1.625	1.625	1.5	0.438	0.438	0.094	0.375	0.375	0.375
1 3/4	–	0.25	–	–	2.202	–	–	0.39	–	0.094	–	0.438	–
2	–	0.313	–	–	2	–	–	0.5	–	0.125	–	0.5	–
2 1/2	–	0.313	–	–	2	–	–	0.5	–	0.125	–	0.5	–
3	–	0.313	–	–	2.313	–	–	0.563	–	0.188	–	0.625	–

Formula for calculating the length ZJ

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

O0 = N (no cushioning)
O1 = P (flexible cushioning rings/plates at both ends)
O2 = A (for proximity switch)
O3 = PA (flexible cushioning rings/plates at both ends and for proximity switch)
O4 = NG (without mounting thread) or NG-R3 (without mounting thread and high corrosion protection)
n = stroke length

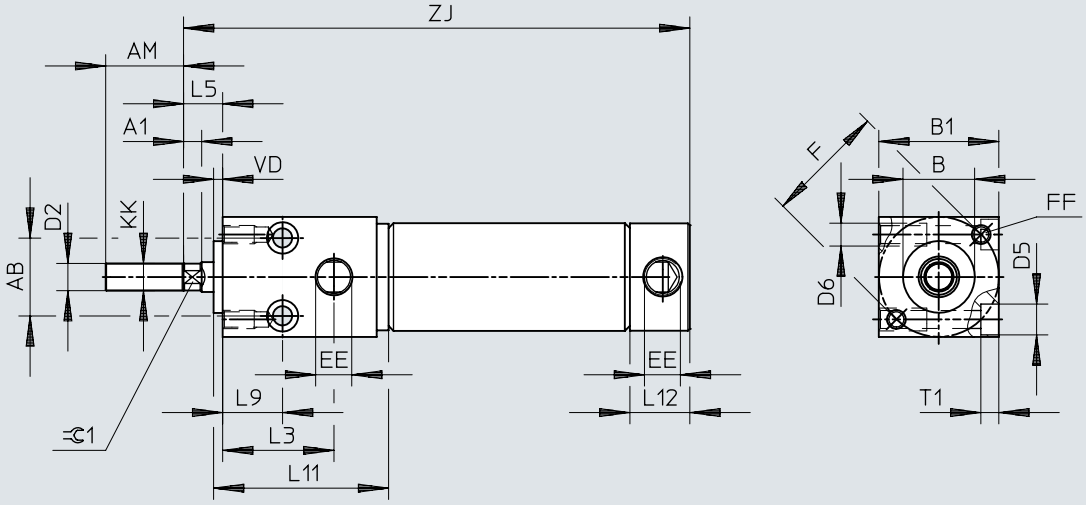
Stroke	O0	O1			O2			O3			O4	ZJ		
[in]			[NG]	[NG-R3]		[NG]	[NG-R3]		[NG]	[NG-R3]	[NG]		[NG]	[NG-R3]
Piston ø 9/16														
0.0625 ... 12	0	0.125	0.125	–	0.25	0.25	–	0.375	0.375	–	0.031	2.312+n+O...	2.281+n+0.031+O...	–
Piston ø 3/4														
0.0625 ... 12	0	–	–	0.281	–	–	0.281	0.125	0.125	0.406	0.44	3.75+n+O...	2.969+n+0.44+O...	3.125+n+O...
Piston ø 7/8														
0.0625 ... 12	0	–	–	–	–	–	–	0.125	0.125	–	0.28	3.218+n+O...	2.938+n+0.28+O...	–
Piston ø 1 1/16														
0.0625 ... 12	0	0.125	0.125	0.375	–	–	0.25	0.125	0.125	0.375	0.25	3.844+n+O...	3.25+n+0.25+O...	3.188+n+O...
Piston ø 1 1/4														
0.0625 ... 12	0	–	–	–	–	–	–	–	0.125	–	0.31	–	4+n+0.31+O...	–
Piston ø 1 1/2														
0.0625 ... 12	0	0.125	0.125	0.375	–	–	0.25	0.25	0.25	0.5	0.19	4.75+n+O...	3.688+n+0.19+O...	3.562+n+O...
Piston ø 1 3/4														
0.0625 ... 12	0	–	–	–	–	–	–	–	–	–	0.56	–	4.688+n+0.56+O...	–
Piston ø 2														
0.0625 ... 12	0	–	0.25	–	–	–	–	–	0.25	–	0.38	–	4.688+n+0.38+O...	–
Piston ø 2 1/2														
0.0625 ... 12	0	–	0.062	–	–	–	–	–	0.062	–	0.38	–	4.688+n+0.38+O...	–
Piston ø 3														
0.0625 ... 12	0	–	0.062	–	–	–	–	–	0.062	–	0.437	–	5.25+n+0.437+O...	–

Datasheet

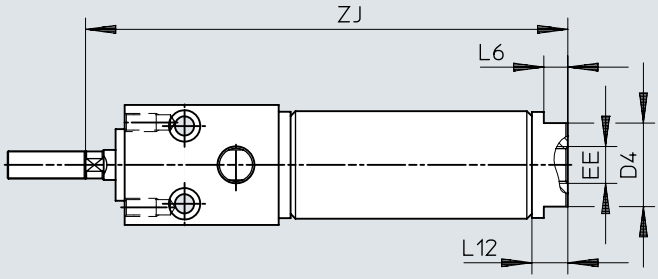
Dimensions Download CAD data ➔ www.festo.com

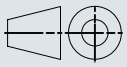
[BNG] For direct mounting, without mounting thread

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

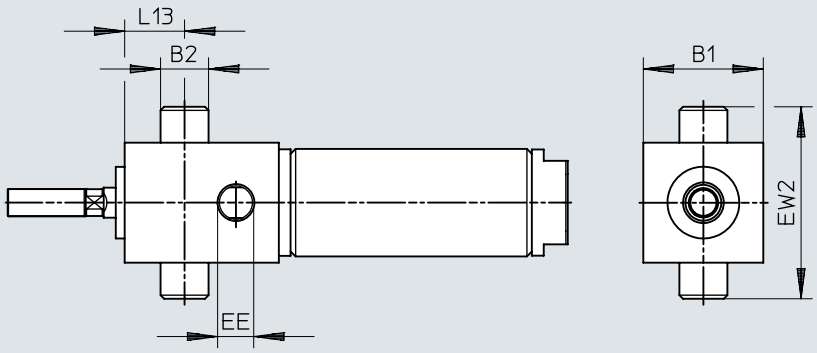


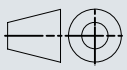
DPRA-N-. . . -. . . -BNGP4





[MNGP4] With trunnion flange, without mounting thread, axial compressed air supply port





ø [in]	A1	AB	AM	B	B1	B2 [MNGP4]	D2 ø	D4 ø [BNGP4]	D5 ø	D6	EE	EW2 [MNGP4]	F
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

ø [in]	FF	KK	L3	L5	L6 [BNGP4]	L9	L11	L12	[BNGP4]	L13 [MNGP4]	T1	VD	=C1
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

Datasheet

Formula for calculating the length ZJ

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

O0 = N (no cushioning)
O1 = P (flexible cushioning rings/plates at both ends)
O2 = A (for proximity switch)
O3 = PA (flexible cushioning rings/plates at both ends and for proximity switch)
n = stroke length

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

Datasheet

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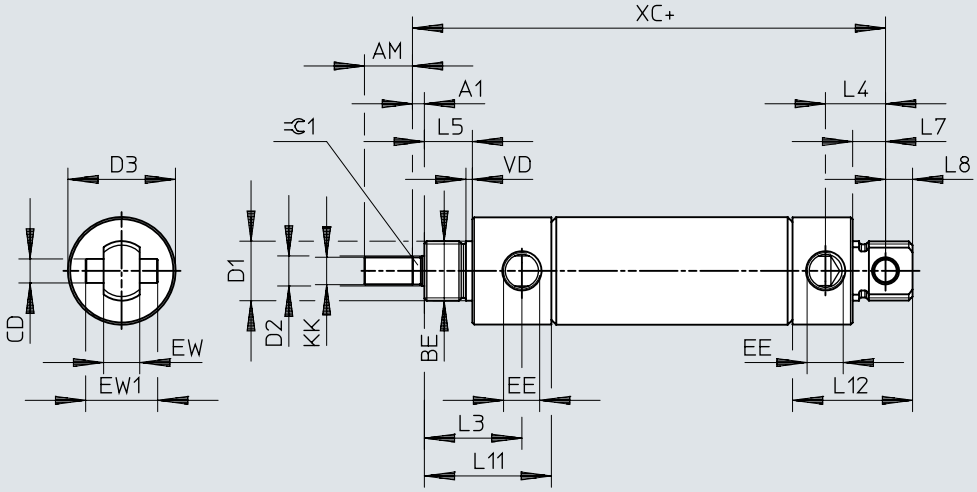
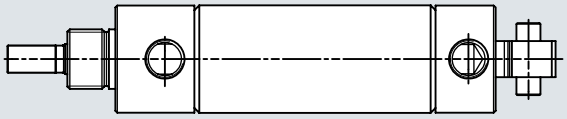
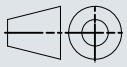
[ME] With trunnion flange

[ME90] With trunnion flange, rotated 90°



DPRA-N-. . . -. . . -ME90





+ = plus stroke length

⌀ [in]	A1	AM	BE	CD ⌀	D1 ⌀	D2 ⌀	D3 ⌀	EE	EW	EW1
3/4	–	0.5	5/8-18 UNF-2A	0.25	0.624	0.25	0.875	1/8 NPT	0.375	0.75
7/8	–	0.5	5/8-18 UNF-2A	0.25	0.624	0.25	0.938	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

⌀ [in]	KK	L3	L4	L5	L7	L8	L11	L12	VD	XC	⌀C1
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	–
7/8	1/4-28 UNF-2A	0.968	0.625	0.5	0.344	0.281	1.325	1.23	0.067	3.563	–
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 1/2	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

Datasheet

Formula for calculating the length XC

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

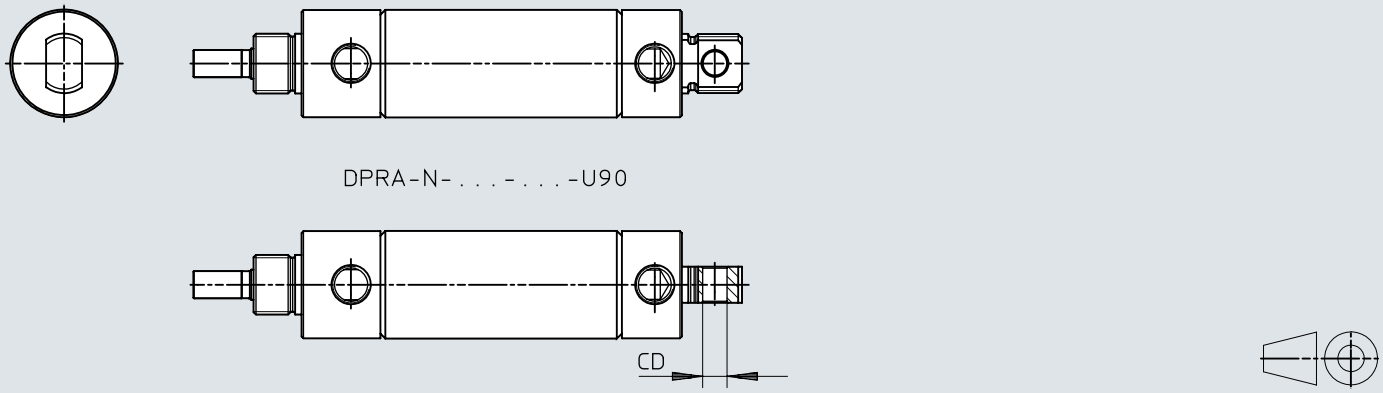
O0 = N (no cushioning)
O1 = P (flexible cushioning rings/plates at both ends)
O2 = A (for proximity switch)
O3 = PA (flexible cushioning rings/plates at both ends and for proximity switch)
n = stroke length

Stroke [in]	O0	O1	O2	O3	XC
Piston ø 3/4					
0.0625 ... 12	0	–	–	0.125	3.75+n+O...
Piston ø 7/8					
0.0625 ... 12	0	–	–	0.125	3.563+n+O...
Piston ø 1 1/16					
0.0625 ... 12	0	0.125	–	0.125	3.844+n+O...
Piston ø 1 1/2					
0.0625 ... 12	0	0.125	–	0.25	4.375+n+O...

Datasheet

Dimensions Download CAD data ➔ www.festo.com

[U] With swivelling rod eye
[U90] With swivelling rod eye, rotated 90°



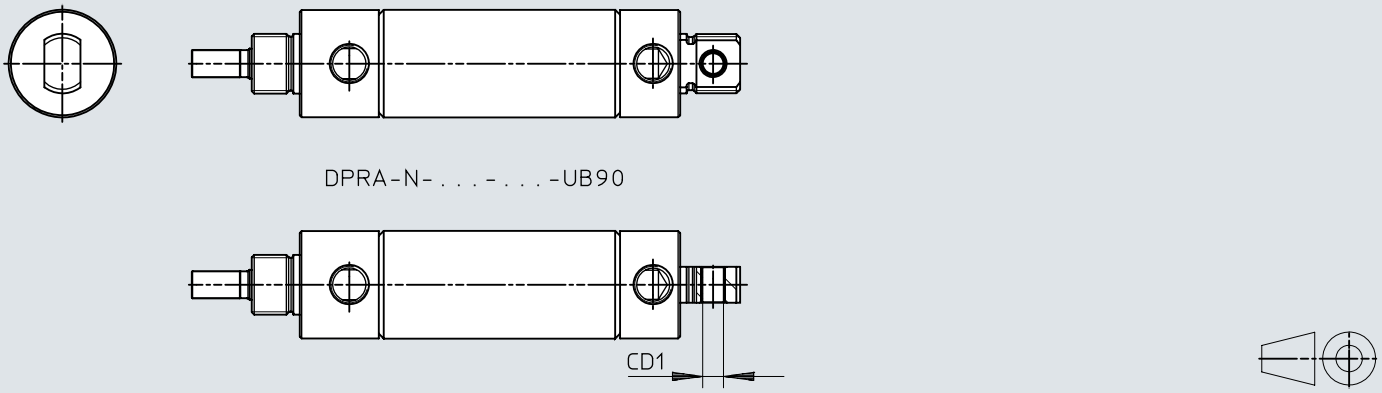
ø [in]	CD ø [U90]
3/4	0.25
1 1/16	0.25
1 1/4	0.251
1 1/2	0.375
1 3/4	0.376

Datasheet

Dimensions Download CAD data ➔ www.festo.com

[UB] With swivelling rod eye and bearing sleeve

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

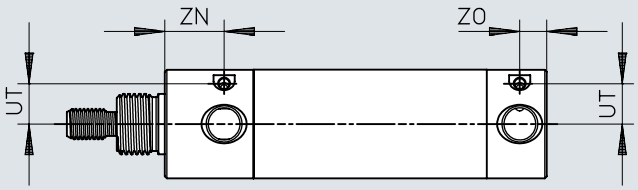


ø [in]	CD1 ø	
		[UB90]
9/16	0.157	0.157
3/4	0.25	–
7/8	0.25	–
1 1/16	0.251	–
1 1/4	0.251	–
1 1/2	0.375	–
1 3/4	0.376	–
2	0.375	0.375
2 1/2	0.376	0.376
3	0.501	0.501

Datasheet

Dimensions Download CAD data ➔ www.festo.com

[-PPV] Pneumatic cushioning, adjustable at both ends
[NG-PPV] Without mounting thread; pneumatic cushioning, adjustable at both ends
[ME-PPV] With trunnion flange; pneumatic cushioning, adjustable at both ends

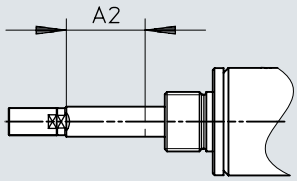


ø	UT			ZO			ZN		
[in]		[NG]	[ME]		[NG]	[ME]		[NG]	[ME]
3/4	0.29	0.29	0.29	0.281	0.281	0.281	0.46	0.46	0.46
1 1/16	0.335	0.335	0.335	0.281	0.281	0.281	0.563	0.563	0.563
1 1/2	0.475	0.475	0.475	0.297	0.297	0.313	0.625	0.625	0.625
2	0.625	0.625	–	0.469	0.469	–	0.737	0.737	–

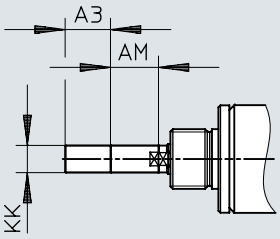
Datasheet

Dimensions Download CAD data ➔ www.festo.com

[...NE] Piston rod extension



[...NL] Piston rod thread extension



ø	A2	A3	AM	KK
[in]	[...NE]	[...NL]		
9/16	1/16 ... 6	1/16 ... 6	0.5	10-32 UNF-2A
3/4	1/16 ... 6	1/16 ... 6	0.5	1/4-28 UNF-2A
7/8	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
3	1/16 ... 6	1/16 ... 6	1.25	5/8-18 UNF-2A

Ordering data

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

Piston Ø	Stroke	Part no.	Type
3/4"	0.5"	8217823	DPRA-N-3/4"-0.5-NGP4-N
	1"	8217824	DPRA-N-3/4"-1-NGP4-N
	1.5"	8217826	DPRA-N-3/4"-1.5-NGP4-N
	2"	8217827	DPRA-N-3/4"-2-NGP4-N
	3"	8217828	DPRA-N-3/4"-3-NGP4-N
	4"	8217829	DPRA-N-3/4"4-NGP4-N
1 1/16"	0.5"	8217854	DPRA-N-1 1/16"-0.5-NGP4-N
	1"	8217838	DPRA-N-1 1/16"-1-NGP4-N
	1.5"	8217853	DPRA-N-1 1/16"-1.5-NGP4-N
	2"	8217845	DPRA-N-1 1/16"-2-NGP4-N
	3"	8217846	DPRA-N-1 1/16"-3-NGP4-N
	4"	8217842	DPRA-N-1 1/16"-4-NGP4-N
	5"	8217844	DPRA-N-1 1/16"-5-NGP4-N
1 1/4"	1"	8217855	DPRA-N-1 1/4"-1-NGP4-N
	2"	8217856	DPRA-N-1 1/4"-2-NGP4-N
	3"	8217857	DPRA-N-1 1/4"-3-NGP4-N
	4"	8217858	DPRA-N-1 1/4"-4-NGP4-N
	5"	8217859	DPRA-N-1 1/4"-5-NGP4-N
1 1/2"	1"	8217879	DPRA-N-1 1/2"-1-NGP4-N
	1.5"	8217866	DPRA-N-1 1/2"-1.5-NGP4-N
	2"	8217867	DPRA-N-1 1/2"-2-NGP4-N
	3"	8217868	DPRA-N-1 1/2"-3-NGP4-N
	4"	8217869	DPRA-N-1 1/2"-4-NGP4-N
	5"	8217870	DPRA-N-1 1/2"-5-NGP4-N
	6"	8217871	DPRA-N-1 1/2"-6-NGP4-N
2"	1"	8217891	DPRA-N-2"-1-NGP4-N
	2"	8217880	DPRA-N-2"-2-NGP4-N
	3"	8217881	DPRA-N-2"-3-NGP4-N
	4"	8217882	DPRA-N-2"-4-NGP4-N
	5"	8217883	DPRA-N-2"-5-NGP4-N
	6"	8217884	DPRA-N-2"-6-NGP4-N

[ME] With trunnion flange

Piston Ø	Stroke	Part no.	Type
3/4"	0.5"	8217830	DPRA-N-3/4"-0.5-ME-N
	1"	8217825	DPRA-N-3/4"-1-ME-N
	1.5"	8217831	DPRA-N-3/4"-1.5-ME-N
	2"	8217832	DPRA-N-3/4"-2-ME-N
	3"	8217833	DPRA-N-3/4"-3-ME-N
	4"	8217834	DPRA-N-3/4"-4-ME-N
	5"	8217835	DPRA-N-3/4"-5-ME-N
1 1/16"	0.5"	8217839	DPRA-N-1 1/16"-0.5-ME-N
	1"	8217840	DPRA-N-1 1/16"-1-ME-N
	1.5"	8217849	DPRA-N-1 1/16"-1.5-ME-N
	2"	8217847	DPRA-N-1 1/16"-2-ME-N
	3"	8217848	DPRA-N-1 1/16"-3-ME-N
	4"	8217843	DPRA-N-1 1/16"-4-ME-N
	5"	8217850	DPRA-N-1 1/16"-5-ME-N
	6"	8217852	DPRA-N-1 1/16"-6-ME-N
1 1/2"	1"	8217872	DPRA-N-1 1/2"-1-ME-N
	1.5"	8217873	DPRA-N-1 1/2"-1.5-ME-N
	2"	8217874	DPRA-N-1 1/2"-2-ME-N
	3"	8217875	DPRA-N-1 1/2"-3-ME-N
	4"	8217876	DPRA-N-1 1/2"-4-ME-N
	5"	8217877	DPRA-N-1 1/2"-5-ME-N
	6"	8217878	DPRA-N-1 1/2"-6-ME-N

Ordering data

[U] With swivelling rod eye

Piston Ø	Stroke	Part no.	Type
1 1/4"	1"	**8217860**	**DPRA-N-1 1/4"-1-U-N**
	2"	**8217865**	**DPRA-N-1 1/4"-2-U-N**
	3"	**8217861**	**DPRA-N-1 1/4"-3-U-N**
	4"	**8217862**	**DPRA-N-1 1/4"-4-U-N**
	5"	**8217863**	**DPRA-N-1 1/4"-5-U-N**
	6"	**8217864**	**DPRA-N-1 1/4"-6-U-N**

[UB] With swivelling rod eye and bearing sleeve

Piston Ø	Stroke	Part no.	Type
2"	1"	**8217885**	**DPRA-N-2"-1-UB-N**
	2"	**8217886**	**DPRA-N-2"-2-UB-N**
	3"	**8217887**	**DPRA-N-2"-3-UB-N**
	4"	**8217888**	**DPRA-N-2"-4-UB-N**
	5"	**8217889**	**DPRA-N-2"-5-UB-N**
	6"	**8217890**	**DPRA-N-2"-6-UB-N**

Ordering data – Modular product system

Ordering table

Piston ø	9/16	3/4	7/8	1 1/16	1 1/4	Conditions	Code		Enter code
Module no.	8180567	8109549	8180568	8109550	8109551				
Series	Round cylinder, double-acting						**DPRA**		DPRA
System of units	Imperial						**-N**		
Protection against rotation	None								
Piston ø	9/16"	3/4"	7/8"	1 1/16"	1 1/4"		**-...''**		
Stroke	0.0625 ... 12"						**-...''**		
Function	Double-acting								
Piston rod type	At one end								
	–			Through, hollow piston rod			**H**		
	–	Through piston rod	–	Through piston rod			**T**		
Type of bearing cover	With mounting thread								
	–	For direct mounting	–	For direct mounting	–	[1][2]	**B**		
	–	With trunnion flange	–	With trunnion flange	–	[1][2]	**M**		
Type of end cap	Standard								
	–	With swivelling rod eye	–	With swivelling rod eye		[1][4][5][10]	**U**		
	–	With trunnion flange			–	[1][4][5][8][17]	**ME**		
	Without mounting thread					[1]	**NG**		
	With swivelling rod eye and bearing sleeve					[1][4][5][8]	**UB**		
	–				With swivelling rod eye, rotated 90°	[1][4][5]	**U90**		
	–	With trunnion flange			–	[1][4][5][17]	**ME90**		
	With swivelling rod eye and bearing sleeve, rotated 90°	–				[1][4][5]	**UB90**		
Compressed air supply port	Lateral								
	Axial					[1][2][14]	**P4**		
Cushioning	No cushioning						**-N**		
	Elastic cushioning rings/plates at both ends					[6]	**-P**		
	–	Pneumatic cushioning, adjustable at both ends	–	Pneumatic cushioning, adjustable at both ends	–	[1][4][7][16]	**-PPV**		
Position sensing	None								
	Via proximity switch					[6]	**A**		

[1] B, M, U, ME, NG, UB, U90, ME90, UB90, P4, cushioning PPV, R1 — Not with H, T
[2] B, M, P4, R1 — Not with standard type of end cap
[4] U, ME, UB, U90, ME90, UB90, cushioning PPV, R1, R3 — Not with M, B
[5] U, ME, UB, U90, ME90, UB90 — Not with P4
[6] Cushioning P, A, R3, T3, T4, A4 — Not with U90, UB90, ME90
[7] Cushioning PPV — Not with P4, U90
Only in combination with standard type of end cap, if piston diameter 3/4", 1 1/16" is selected
[8] ME, UB, T3, T4, A4 — Not with R3
[10] U — Only with piston diameter 3/4", 1 1/16" if R3 is selected
[14] P4 — Mandatory with NG if A or T4 selected
[16] Cushioning PPV, R1 — Not with U
[17] ME, ME90, T3 — Not with R1

Ordering data – Modular product system

Ordering table

Piston ø	9/16	3/4	7/8	1 1/16	1 1/4	Conditions	Code	Enter code
Module no.	8180567	8109549	8180568	8109550	8109551			
Corrosion protection	Standard							
	–	Stainless steel	–	Stainless steel		[1][2][3][4][16]	**-R1**	
	–	High corrosion protection	–	High corrosion protection	–	[3][4][6][9][12]	**-R3**	
Temperature range	Standard –5 ... 165 °F							
	–40 ... +225 °F					[6][8][17]	**-T3**	
	+32 ... +300 °F					[3][6][8][11]	**-T4**	
Wiper variant	None							
	–	Wiper made of NBR				[6][8][9][15]	**A4**	
Extended piston rod	None							
	0 ... 6 inch						**-...NE**	
Extended piston rod thread	None							
	0 ... 6 inch					[13]	**-...NL**	

[1]	B, M, U, ME, NG, UB, U90, ME90, UB90, P4, cushioning PPV, R1	Not with H, T
[2]	B, M, P4, R1	Not with standard type of end cap
[3]	R1, R3, T4	Not with cushioning PPV
[4]	U, ME, UB, U90, ME90, UB90, cushioning PPV, R1, R3	Not with M, B
[6]	Cushioning P, A, R3, T3, T4, A4	Not with U90, UB90, ME90
[8]	ME, UB, T3, T4, A4	Not with R3
[9]	R3, A4	Not with NG if lateral compressed air supply port is selected
[11]	T4	Not with A, cushioning P
[12]	R3	Not with H Only in combination with standard type of end cap, if T is selected
[13]	...NL	Not with ...NE
[15]	A4	Not with T3 Mandatory with R1
[16]	Cushioning PPV, R1	Not with U
[17]	ME, ME90, T3	Not with R1

Ordering data – Modular product system

Ordering table

Piston ø	1 1/2	1 3/4	2	2 1/2	3	Conditions	Code	Enter code
Module no.	8109552	8109553	8109554	8109555	8180569			
Series	Round cylinder, double-acting						**DPRA**	DPRA
System of units	Imperial						**-N**	
Protection against rotation	None							
Piston ø	1 1/2"	1 3/4"	2"	2 1/2"	3"		**-...**	
Stroke	0.0625 ... 12"						**-...**	
Function	Double-acting							
Piston rod type	At one end							
	Through, hollow piston rod	–					**H**	
	Through piston rod	–	Through piston rod	–			**T**	
Type of bearing cover	With mounting thread							
	For direct mounting	–				[1][2]	**B**	
	With trunnion flange	–				[1][2]	**M**	
Type of end cap	Standard	–	Standard	–				
	With swivelling rod eye		–			[1][4][5][10]	**U**	
	With trunnion flange	–				[1][4][5][8][18]	**ME**	
	Without mounting thread					[1][16]	**NG**	
	With swivelling rod eye and bearing sleeve					[1][4][5][8][16]	**UB**	
	–	With swivelling rod eye, rotated 90°	–			[1][4][5][16]	**U90**	
	Trunnion flange, rotated 90°	–				[1][4][5][18]	**ME90**	
	–		With swivelling rod eye and bearing sleeve, rotated 90°			[1][4][5]	**UB90**	
Compressed air supply port	Lateral							
	Axial					[1][2][14]	**P4**	
Cushioning	No cushioning						**-N**	
	Elastic cushioning rings/plates at both ends					[6]	**-P**	
	Pneumatic cushioning, adjustable at both ends	–	Pneumatic cushioning, adjustable at both ends	–		[1][4][7][17]	**-PPV**	
Position sensing	None							
	Via proximity switch					[6]	**A**	

[1]	B, M, U, ME, NG, UB, U90, ME90, UB90, P4, cushioning PPV, R1	Not with H, T
[2]	B, M, P4, R1	Not with standard type of end cap
[4]	U, ME, UB, U90, ME90, UB90, cushioning PPV, R1, R3	Not with M, B
[5]	U, ME, UB, U90, ME90, UB90	Not with P4
[6]	Cushioning P, A, R3, T3, T4, A4	Not with U90, UB90, ME90
[7]	Cushioning PPV	Not with P4, U90
[8]	ME, UB, T3, T4, A4	Not with R3
[10]	U	Only with piston diameter 1 1/2" if R3 is selected
[14]	P4	Mandatory with NG if A or T4 selected
[16]	NG, UB, UB90	Mandatory with piston diameter 2" with piston rod type at one end
[17]	Cushioning PPV, R1	Not with U
[18]	ME, ME90, T3	Not with R1

Ordering data – Modular product system

Ordering table

Piston ø	1 1/2	1 3/4	2	2 1/2	3	Conditions	Code		Enter code
Module no.	8109552	8109553	8109554	8109555	8180569				
Corrosion protection	Standard								
	Stainless steel	–	Stainless steel	–		[1][2][3][4][17]	**-R1**		
	High corrosion protection	–				[3][4][6][9][12]	**-R3**		
Temperature range	Standard –5 ... 165 °F								
	–40 ... +225 °F					[6][8][18]	**-T3**		
	+32 ... +300 °F					[3][6][8][11]	**-T4**		
Wiper variant	None								
	Wiper made of NBR			–		[6][8][9][15]	**A4**		
Extended piston rod	None								
	0 ... 6 inch						**-...NE**		
Extended piston rod thread	None								
	0 ... 6 inch					[13]	**-...NL**		

[1]	B, M, U, ME, NG, UB, U90, ME90, UB90, P4, cushioning PPV, R1	Not with H, T
[2]	B, M, P4, R1	Not with standard type of end cap
[3]	R1, R3, T4	Not with cushioning PPV
[4]	U, ME, UB, U90, ME90, UB90, cushioning PPV, R1, R3	Not with M, B
[6]	Cushioning P, A, R3, T3, T4, A4	Not with U90, UB90, ME90
[8]	ME, UB, T3, T4, A4	Not with R3
[9]	R3, A4	Not with NG if lateral compressed air supply port is selected
[11]	T4	Not with A, cushioning P
[12]	R3	Not with H
		Only in combination with standard type of end cap, if T is selected
[13]	...NL	Not with ...NE
[15]	A4	Not with T3
		Mandatory with R1
[17]	Cushioning PPV, R1	Not with U
[18]	ME, ME90, T3	Not with R1

Datasheet

General technical data									
Piston ø		9/16	3/4	7/8	1 1/16	1 1/4	1 1/2	1 3/4	2
Design		Piston							
		Piston rod							
		Cylinder barrel							
Operating mode									
[S]		Single-acting, pushing (piston rod retracted by spring force)							
[P]		Single-acting, pulling (piston rod advanced by spring force)							
Protection against rotation/guide									
[Q]		Hexagonal piston rod						–	
Pneumatic connection		1/8 NPT						1/4 NPT	
Piston rod thread		10-32 UNF-2A	1/4-28 UNF-2A		5/16-24 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]		Elastic cushioning rings/plates at both ends							
Position sensing		Via proximity switch							
Type of mounting		Via lock nut						–	
		With accessories							
Mounting position		Any							

Operating and environmental conditions									
Piston ø		9/16	3/4	7/8	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]							
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)							
Ambient temperature[1]	[°F]	–40 ... +300							
Corrosion resistance class CRC[2]		1 - Low corrosion stress							
		–	[3]	–	[3]	–	[3]	–	
		–	[4]	–	[4]			–	[4]

1) Note operating range of proximity switches
2) More information www.festo.com/x/topic/crc
3) 3 - High corrosion stress
4) 4 - Particularly high corrosion stress

Datasheet

Forces [lb] at 80 psi[1)]									
Piston ø		9/16	3/4	7/8	1 1/16	1 1/4	1 1/2	1 3/4	2
[P] Single-acting, pulling (piston rod advanced by spring force)									
Stroke start	[in]	15.7	28.4	41.2	61.8	78.6	122.3	165.7	211.8
Stroke end	[in]	13.7	25.4	38.2	58.8	71.1	115.3	152.7	196.8
[S] Single-acting, pushing (piston rod retracted by spring force)									
Stroke start	[in]	17.9	32.3	45.1	67.9	90.7	134.4	181.4	236.3
Stroke end	[in]	17.7	31.4	44.2	64.8	86.1	129.3	176.7	226.8

1) The theoretical forces apply for full strokes only (stroke 1, 2, 3, 4, 5, and 6).
For 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 for full strokes.

Weight [lb]					
Piston ø	9/16	3/4	7/8	1 1/16	1 1/4
Product weight	45.36 ... 385.55			99.79 ... 598.74	176.9 ... 1097.69

Weight [lb]			
Piston ø	1 1/2	1 3/4	2
Product weight	199.58 ... 1238.3	385.55 ... 1374.38	471.74 ... 1832.51

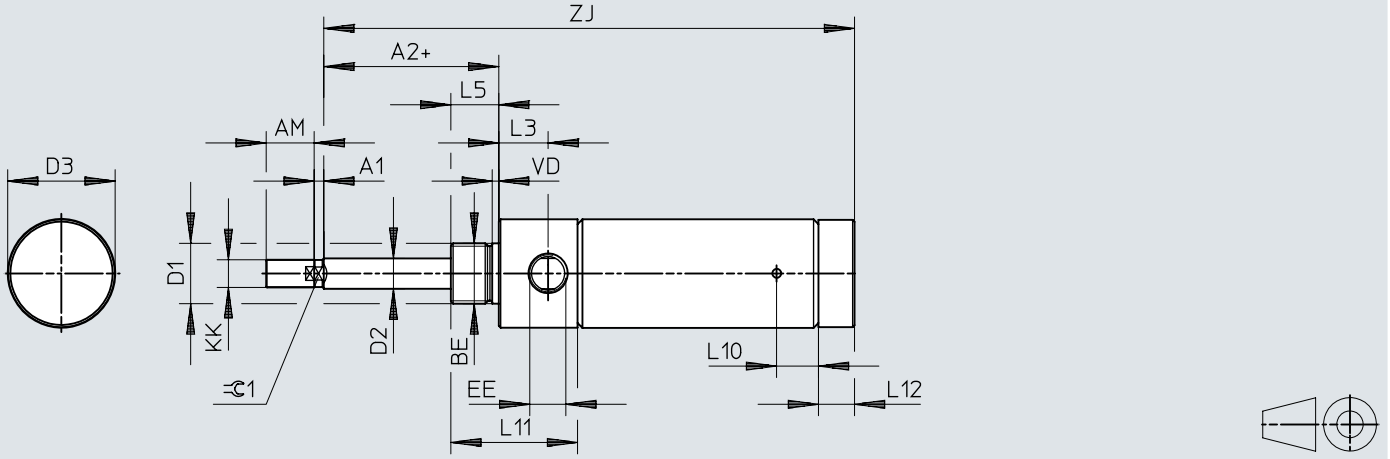
Materials									
Piston ø		9/16	3/4	7/8	1 1/16	1 1/4	1 1/2	1 3/4	2
Cover material		Wrought aluminium alloy							
		–	POM	–	POM	–	POM	–	
		–	1)	–	1)			–	1)
Sealing material		FPM							
		NBR							
Piston rod material		High-alloy stainless steel							
Cylinder barrel material		High-alloy stainless steel							
Note on materials		RoHS-compliant							
LABS (PWIS) conformity		VDMA24364 zone III							

1) High-alloy stainless steel

Datasheet

Dimensions Download CAD data → www.festo.com

[-P] Single-acting, pulling (piston rod advanced by spring force)
[NG] Without mounting thread



+ = plus stroke length

⌀ [in]	A1	A2	AM	BE	D1 ⌀	D2 ⌀	D3 ⌀	EE
9/16	0	0.375	0.5	7/16-20 UNF-2A	0.437	0.188	0.625	10-32 UNF-2B
3/4	0	0.5	0.5	5/8-18 UNF-2A	0.624	0.25	0.875	1/8 NPT
7/8	0	0.5	0.5	5/8-18 UNF-2A	0.624	0.25	0.938	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	11/4-12 UNF-2A	1.375	0.625	2.078	1/4 NPT

⌀ [in]	KK	L3	L5	L10	L11	L12	VD	⌀C1
9/16	10-32 UNF-2A	0.375	0.375	0.3	1	0.375	0.063	–
3/4	1/4-28 UNF-2A	0.469	0.5	0.437	1.343	0.313	0.094	–
7/8	1/4-28 UNF-2A	0.469	0.5	0.35	1.325	0.23	0.67	–
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

Formula for calculating the length ZJ

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

O0 = N (no cushioning)
O1 = P (flexible cushioning rings/plates at both ends)
O2 = A (for proximity switch)
O3 = PA (flexible cushioning rings/plates at both ends and for proximity switch)
n = stroke length

Stroke [in]	O0	O1	O2	O3	ZJ
Piston ⌀ 9/16					
1/16 ... 1	0	0.062	0.531	0.713	2+(2.625*1)-2*(1-n)+O...
1 1/16 ... 2	0	0.062	0.531	0.713	2+(2.625*2)-2*(2-n)+O...
2 1/16 ... 3	0	0.062	0.531	0.713	2+(2.625*3)-2*(3-n)+O...
3 1/16 ... 4	0	0.062	0.531	0.713	2+(2.625*4)-2*(4-n)+O...
4 1/16 ... 5	0	0.062	0.531	0.713	2+(2.625*5)-2*(5-n)+O...
5 1/16 ... 6	0	0.062	0.531	0.713	2+(2.625*6)-2*(6-n)+O...

Datasheet

Formula for calculating the length ZJ

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

O0 = N (no cushioning)
O1 = P (flexible cushioning rings/plates at both ends)
O2 = A (for proximity switch)
O3 = PA (flexible cushioning rings/plates at both ends and for proximity switch)
n = stroke length

Stroke [in]	O0	O1	O2	O3	ZJ
Piston ø 3/4					
1/16 ... 1	0	0.125	0.688	0.89	2.313+(2.687*1)-2*(1-n)+O...
1 1/16 ... 2	0	0.125	0.688	0.89	2.313+(2.687*2)-2*(2-n)+O...
2 1/16 ... 3	0	0.125	0.688	0.89	2.313+(2.687*3)-2*(3-n)+O...
3 1/16 ... 4	0	0.125	0.688	0.89	2.313+(2.687*4)-2*(4-n)+O...
4 1/16 ... 5	0	0.125	0.688	0.89	2.313+(2.687*5)-2*(5-n)+O...
5 1/16 ... 6	0	0.125	0.688	0.89	2.313+(2.687*6)-2*(6-n)+O...
Piston ø 7/8					
1/16 ... 1	0	–	0.531	0.733	2.313+(2.562*1)-2*(1-n)+O...
1 1/16 ... 2	0	–	0.531	0.733	2.313+(2.562*2)-2*(2-n)+O...
2 1/16 ... 3	0	–	0.531	0.733	2.313+(2.562*3)-2*(3-n)+O...
3 1/16 ... 4	0	–	0.531	0.733	2.313+(2.562*4)-2*(4-n)+O...
4 1/16 ... 5	0	–	0.531	0.733	2.313+(2.562*5)-2*(5-n)+O...
5 1/16 ... 6	0	–	0.531	0.733	2.313+(2.562*6)-2*(6-n)+O...
Piston ø 1 1/16					
1/16 ... 1	0	0.125	0.562	0.687	2.5+(2.812*1)-2*(1-n)+O...
1 1/16 ... 2	0	0.125	0.562	0.687	2.5+(2.812*2)-2*(2-n)+O...
2 1/16 ... 3	0	0.125	0.562	0.687	2.5+(2.812*3)-2*(3-n)+O...
3 1/16 ... 4	0	0.125	0.562	0.687	2.5+(2.812*4)-2*(4-n)+O...
4 1/16 ... 5	0	0.125	0.562	0.687	2.5+(2.812*5)-2*(5-n)+O...
5 1/16 ... 6	0	0.125	0.562	0.687	2.5+(2.812*6)-2*(6-n)+O...
Piston ø 1 1/4					
1/16 ... 1	0	–	0.531	0.734	3.219+(2.812*1)-2*(1-n)+O...
1 1/16 ... 2	0	–	0.531	0.734	3.219+(2.812*2)-2*(2-n)+O...
2 1/16 ... 3	0	–	0.531	0.734	3.219+(2.812*3)-2*(3-n)+O...
3 1/16 ... 4	0	–	0.531	0.734	3.219+(2.812*4)-2*(4-n)+O...
4 1/16 ... 5	0	–	0.531	0.734	3.219+(2.812*5)-2*(5-n)+O...
5 1/16 ... 6	0	–	0.531	0.734	3.219+(2.812*6)-2*(6-n)+O...
Piston ø 1 1/2					
1/16 ... 1	0	–	0.5	0.827	2.938+(3*1)-2*(1-n)+O...
1 1/16 ... 2	0	–	0.5	0.827	2.938+(3*2)-2*(2-n)+O...
2 1/16 ... 3	0	–	0.5	0.827	2.938+(3*3)-2*(3-n)+O...
3 1/16 ... 4	0	–	0.5	0.827	2.938+(3*4)-2*(4-n)+O...
4 1/16 ... 5	0	–	0.5	0.827	2.938+(3*5)-2*(5-n)+O...
5 1/16 ... 6	0	–	0.5	0.827	2.938+(3*6)-2*(6-n)+O...
Piston ø 1 3/4					
1/16 ... 1	0	–	0.656	0.735	4.031+(3*1)-2*(1-n)+O...
1 1/16 ... 2	0	–	0.656	0.735	4.031+(3*2)-2*(2-n)+O...
2 1/16 ... 3	0	–	0.656	0.735	4.031+(3*3)-2*(3-n)+O...
3 1/16 ... 4	0	–	0.656	0.735	4.031+(3*4)-2*(4-n)+O...
4 1/16 ... 5	0	–	0.656	0.735	4.031+(3*5)-2*(5-n)+O...
5 1/16 ... 6	0	–	0.656	0.735	4.031+(3*6)-2*(6-n)+O...
Piston ø 2					
1 1/16 ... 0.5	0	–	0.714	0.789	5.234-2*(0.5-n)+O...
9/16 ... 1	0	–	0.714	0.789	5.734-2*(1-n)+O...
1 1/16 ... 1.5	0	–	0.714	0.789	7.534-2*(1.5-n)+O...
1 9/16 ... 2	0	–	0.714	0.789	7.734-2*(2-n)+O...
2 1/6 ... 2.5	0	–	0.714	0.789	8.469-2*(2.5-n)+O...
2 9/16 ... 3	0	–	0.714	0.789	8.696-2*(3-n)+O...
3 1/6 ... 4	0	–	0.714	0.789	11.969-2*(4-n)+O...

Datasheet

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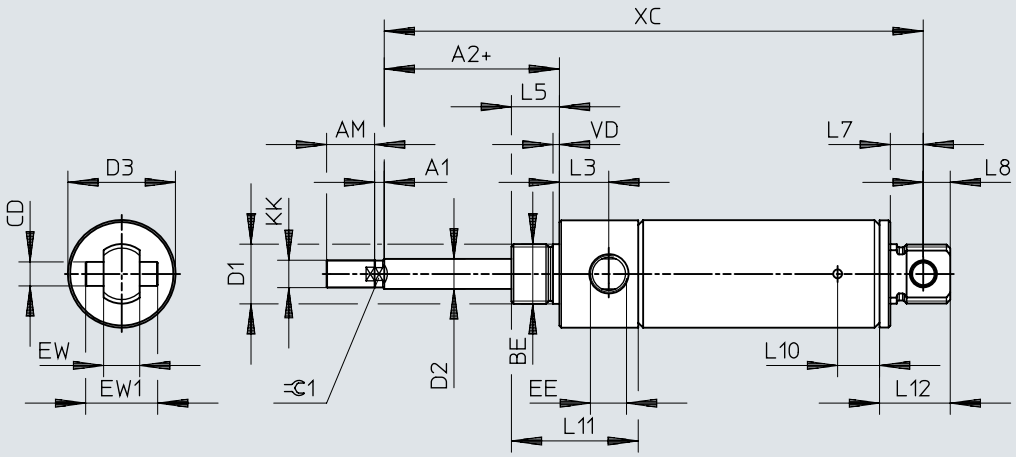
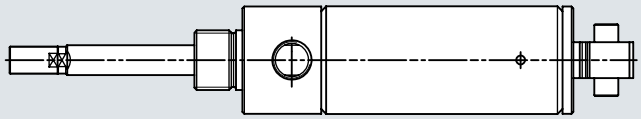
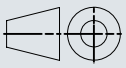
[-P] Single-acting, pulling (piston rod advanced by spring force)
[ME] With trunnion flange
[ME90] Trunnion flange, rotated 90°



DPRA-N-...-...-PME90





+ = plus stroke length

⌀ [in]	A1	A2	AM	BE	CD ⌀	D1 ⌀	D2 ⌀	D3 ⌀	EE	EW
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
7/8	0	0.5	0.5	5/8-18 UNF-2A	0.25	0.624	0.25	0.938	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

⌀ [in]	EW1	KK	L3	L5	L7	L8	L10	L11	L12	VD	⌀C1
3/4	0.75	1/4-28 UNF-2A	0.469	0.5	–	–	0.437	1.343	0.724	0.094	–
7/8	0.75	1/4-28 UNF-2A	0.469	0.5	0.344	0.281	0.35	1.325	0.825	0.067	–
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

Datasheet

Formula for calculating the length XC

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

O0 = N (no cushioning)
O1 = P (flexible cushioning rings/plates at both ends)
O2 = A (for proximity switch)
O3 = PA (flexible cushioning rings/plates at both ends and for proximity switch)
n = stroke length

Stroke [in]	O0	O1	O2	O3	XC
Piston ø 3/4					
1/16 ... 1	0	0.125	0.688	0.89	2.437+(2.687*1)-2*(1-n)+O...
1 1/16 ... 2	0	0.125	0.688	0.89	2.437+(2.687*2)-2*(2-n)+O...
2 1/16 ... 3	0	0.125	0.688	0.89	2.437+(2.687*3)-2*(3-n)+O...
3 1/16 ... 4	0	0.125	0.688	0.89	2.437+(2.687*4)-2*(4-n)+O...
4 1/16 ... 5	0	0.125	0.688	0.89	2.437+(2.687*5)-2*(5-n)+O...
5 1/16 ... 6	0	0.125	0.688	0.89	2.437+(2.687*6)-2*(6-n)+O...
Piston ø 7/8					
1/16 ... 1	0	–	0.531	0.733	2.625+(2.565*1)-2*(1-n)+O...
1 1/16 ... 2	0	–	0.531	0.733	2.625+(2.565*2)-2*(2-n)+O...
2 1/16 ... 3	0	–	0.531	0.733	2.625+(2.565*3)-2*(3-n)+O...
3 1/16 ... 4	0	–	0.531	0.733	2.625+(2.565*4)-2*(4-n)+O...
4 1/16 ... 5	0	–	0.531	0.733	2.625+(2.565*5)-2*(5-n)+O...
5 1/16 ... 6	0	–	0.531	0.733	2.625+(2.565*6)-2*(6-n)+O...
Piston ø 1 1/16					
1/16 ... 1	0	0.125	0.562	0.765	2.656+(2.812*1)-2*(1-n)+O...
1 1/16 ... 2	0	0.125	0.562	0.765	2.656+(2.812*2)-2*(2-n)+O...
2 1/16 ... 3	0	0.125	0.562	0.765	2.656+(2.812*3)-2*(3-n)+O...
3 1/16 ... 4	0	0.125	0.562	0.765	2.656+(2.812*4)-2*(4-n)+O...
4 1/16 ... 5	0	0.125	0.562	0.765	2.656+(2.812*5)-2*(5-n)+O...
5 1/16 ... 6	0	0.125	0.562	0.765	2.656+(2.812*5)-2*(6-n)+O...
Piston ø 1 1/2					
1/16 ... 1	0	–	0.438	0.765	3.875+(3*1)-2*(1-n)+O...
1 1/16 ... 2	0	–	0.438	0.765	3.875+(3*2)-2*(2-n)+O...
2 1/16 ... 3	0	–	0.438	0.765	3.875+(3*3)-2*(3-n)+O...
3 1/16 ... 4	0	–	0.438	0.765	3.875+(3*4)-2*(4-n)+O...
4 1/16 ... 5	0	–	0.438	0.765	3.875+(3*5)-2*(5-n)+O...
5 1/16 ... 6	0	–	0.438	0.765	3.875+(3*6)-2*(6-n)+O...

Datasheet

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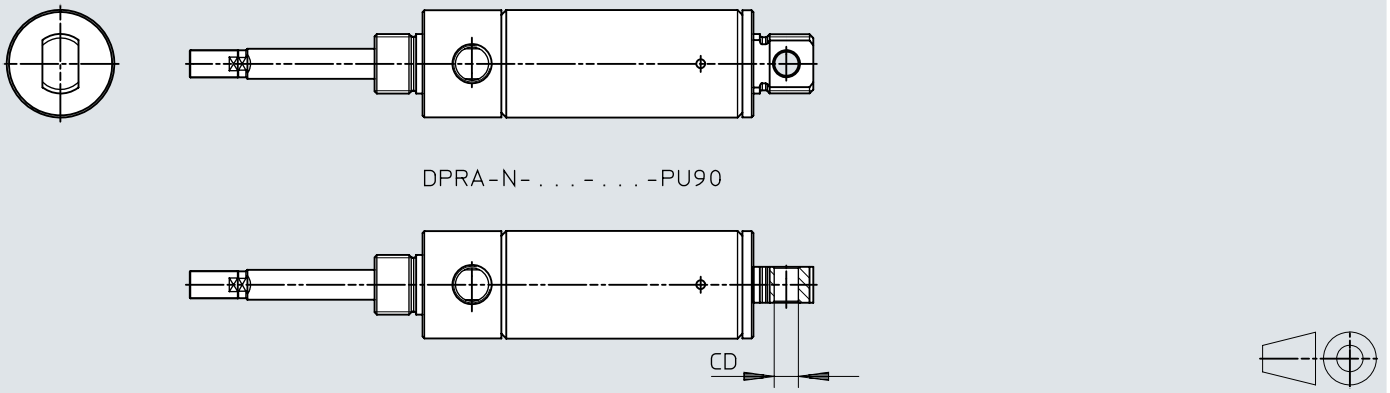
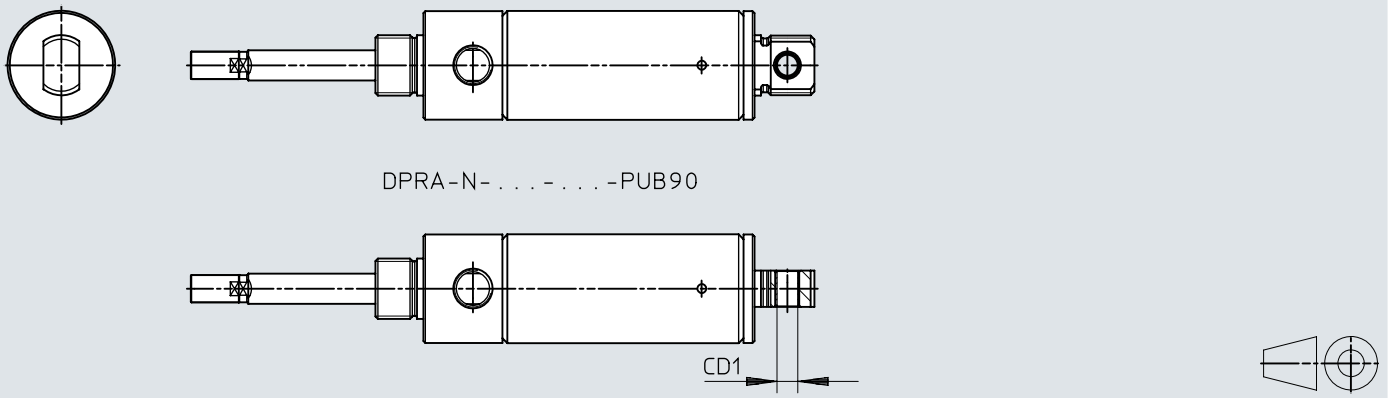
[-P] Single-acting, pulling (piston rod advanced by spring force)
[U] With swivelling rod eye
[U90] With swivelling rod eye, rotated 90°



ø [in]	CD ø [U90]
3/4	0.25
1 1/16	0.25
1 1/4	0.251
1 1/2	0.375
1 3/4	0.376

Dimensions Download CAD data ➔ www.festo.com

[-P] Single-acting, pulling (piston rod advanced by spring force)
[UB] With swivelling rod eye and bearing sleeve
[UB90] With swivelling rod eye and bearing sleeve, rotated 90°

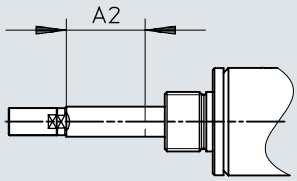


ø [in]	CD1 ø [UB90]
9/16	0.157
3/4	0.25
7/8	0.25
1 1/16	0.25
1 1/4	0.251
1 1/2	0.375
1 3/4	0.376
2	0.375

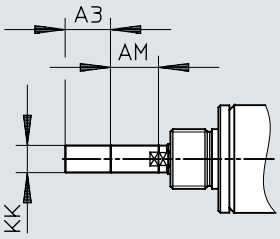
Datasheet

Dimensions Download CAD data ➔ www.festo.com

[...NE] Piston rod extension



[...NL] Piston rod thread extension

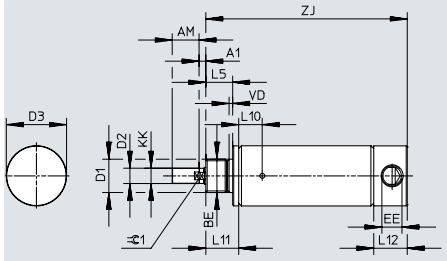


ø	A2	A3	AM	KK
[in]	[...NE]	[...NL]		
9/16	1/16 ... 6	1/16 ... 6	0.5	10-32 UNF-2A
3/4	1/16 ... 6	1/16 ... 6	0.5	1/4-28 UNF-2A
7/8	1/16 ... 6	1/16 ... 6	0.5	1/4-28 UNF-2A
1 1/16	1/16 ... 6	1/16 ... 6	0.5	5/16-24 UNF-2A
1 1/4	1/16 ... 6	1/16 ... 6	0.75	7/16-24 UNF-2A
1 1/2	1/16 ... 6	1/16 ... 6	0.75	7/16-24 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

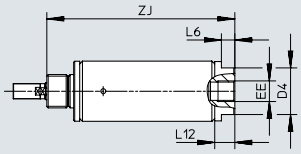
Datasheet

Dimensions Download CAD data ➔ www.festo.com

[S] Single-acting, pushing (piston rod retracted by spring force)
[NG] Without mounting thread
[NGP4] Without mounting thread, axial compressed air supply port



DPRA-N-...-...-SNGP4



ø [in]	A1	AM	BE	D1 ø	D2 ø	D3 ø	D4 ø [NGP4]	EE
9/16	0	0.5	7/16-20 UNF-2A	0.437	0.188	0.625	0.5	10-32 UNF-2B
3/4	0	0.5	1/2-20 UNF-2A	0.5	0.25	0.813	0.625	1/8 NPT
7/8	0.125	0.5	5/8-18 UNF-2A	0.624	0.25	0.938	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	1/8 NPT
2	0.375	0.875	1 1/4-12 UNF-2A	1.375	0.625	2.078	1.250	1/8 NPT

ø [in]	KK	L5	L6 [NGP4]	L10	L11	L12	L12 [NGP4]	VD	⫧1
9/16	10-32 UNF-2A	0.375	0.188	0.3	0.531	0.405	0.375	0.063	–
3/4	1/4-28 UNF-2A	0.438	0.188	0.437	0.563	0.724	0.284	0.094	–
7/8	1/4-28 UNF-2A	0.5	0.188	0.35	0.75	0.605	0.325	0.067	–
1 1/16	5/16-24 UNF-2A	0.5	0.188	0.437	0.613	0.625	0.375	0.094	0.25
1 1/4	7/16-20 UNF-2A	0.625	0.25	0.437	0.791	0.855	0.545	0.094	0.375
1 1/2	7/16-20 UNF-2A	0.625	0.25	0.437	0.438	0.565	0.438	0.094	0.375
1 3/4	1/2-20 UNF-2A	0.75	0.25	0.437	1.014	0.95	0.39	0.094	0.438
2	1/2-20 UNF-2A	0.813	0.313	0.437	1.065	0.88	0.5	0.125	0.5

Formula for calculating the length ZJ

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

O0 = N (no cushioning)
O1 = P (flexible cushioning rings/plates at both ends)
O2 = A (for proximity switch)
O3 = PA (flexible cushioning rings/plates at both ends and for proximity switch)
n = stroke length

Stroke [in]	O0	O1	O2	O3	ZJ	ZJ [NGP4]
Piston ø 9/16						
1/16 ... 1	0	0.062	0.531	0.713	1.561+(1.625*1)-(1-n)+O...	1.531+(1.531*1)-(1-n)+O...
1 1/16 ... 2	0	0.062	0.531	0.713	1.561+(1.625*2)-(2-n)+O...	1.531+(1.531*2)-(2-n)+O...
2 1/16 ... 3	0	0.062	0.531	0.713	1.561+(1.625*3)-(3-n)+O...	1.531+(1.531*3)-(3-n)+O...
3 1/16 ... 4	0	0.062	0.531	0.713	1.561+(1.625*4)-(4-n)+O...	1.531+(1.531*4)-(4-n)+O...
4 1/16 ... 5	0	0.062	0.531	0.713	1.561+(1.625*5)-(5-n)+O...	1.531+(1.531*5)-(5-n)+O...
5 1/16 ... 6	0	0.062	0.531	0.713	1.561+(1.625*6)-(6-n)+O...	1.531+(1.531*6)-(6-n)+O...

Datasheet

Formula for calculating the length ZJ

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

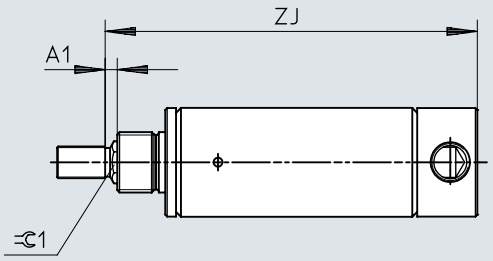
O0 = N (no cushioning)
O1 = P (flexible cushioning rings/plates at both ends)
O2 = A (for proximity switch)
O3 = PA (flexible cushioning rings/plates at both ends and for proximity switch)
n = stroke length

Stroke [in]	O0	O1	O2	O3	ZJ	
						[NGP4]
Piston ø 3/4						
1/16 ... 1	0	0.125	0.688	0.89	1.94+(1.687*1)-(1-n)+O...	1.5+(1.5*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+(1.5*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+(1.5*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+(1.5*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+(1.5*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+(1.5*6)-(6-n)+O...
Piston ø 7/8						
1/16 ... 1	0	–	0.531	0.733	2.124+(1.562*1)-(1-n)+O...	1.844+(1.844*1)-(1-n)+O...
1 1/16 ... 2	0	–	0.531	0.733	2.124+(1.562*2)-(2-n)+O...	1.844+(1.844*2)-(2-n)+O...
2 1/16 ... 3	0	–	0.531	0.733	2.124+(1.562*3)-(3-n)+O...	1.844+(1.844*3)-(3-n)+O...
3 1/16 ... 4	0	–	0.531	0.733	2.124+(1.562*4)-(4-n)+O...	1.844+(1.844*4)-(4-n)+O...
4 1/16 ... 5	0	–	0.531	0.733	2.124+(1.562*5)-(5-n)+O...	1.844+(1.844*5)-(5-n)+O...
5 1/16 ... 6	0	–	0.531	0.733	2.124+(1.562*6)-(6-n)+O...	1.844+(1.844*6)-(6-n)+O...
Piston ø 1 1/16						
1/16 ... 1	0	0.125	0.562	0.765	2.188+(1.562*1)-(1-n)+O...	1.938+(1.938*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+(1.938*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+(1.938*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+(1.938*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+(1.938*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+(1.938*6)-(6-n)+O...
Piston ø 1 1/4						
1/16 ... 1	0	–	0.531	0.734	2.716+(1.812*1)-(1-n)+O...	2.406+(2.406*1)-(1-n)+O...
1 1/16 ... 2	0	–	0.531	0.734	2.716+(1.812*2)-(2-n)+O...	2.406+(2.406*2)-(2-n)+O...
2 1/16 ... 3	0	–	0.531	0.734	2.716+(1.812*3)-(3-n)+O...	2.406+(2.406*3)-(3-n)+O...
3 1/16 ... 4	0	–	0.531	0.734	2.716+(1.812*4)-(4-n)+O...	2.406+(2.406*4)-(4-n)+O...
4 1/16 ... 5	0	–	0.531	0.734	2.716+(1.812*5)-(5-n)+O...	2.406+(2.406*5)-(5-n)+O...
5 1/16 ... 6	0	–	0.531	0.734	2.716+(1.812*6)-(6-n)+O...	2.406+(2.406*6)-(6-n)+O...
Piston ø 1 1/2						
1/16 ... 1	0	–	0.438	0.765	2.378+(1.687*1)-(1-n)+O...	2.188+(2.188*1)-(1-n)+O...
1 1/16 ... 2	0	–	0.438	0.765	2.378+(1.687*2)-(2-n)+O...	2.188+(2.188*2)-(2-n)+O...
2 1/16 ... 3	0	–	0.438	0.765	2.378+(1.687*3)-(3-n)+O...	2.188+(2.188*3)-(3-n)+O...
3 1/16 ... 4	0	–	0.438	0.765	2.378+(1.687*4)-(4-n)+O...	2.188+(2.188*4)-(4-n)+O...
4 1/16 ... 5	0	–	0.438	0.765	2.378+(1.687*5)-(5-n)+O...	2.188+(2.188*5)-(5-n)+O...
5 1/16 ... 6	0	–	0.438	0.765	2.378+(1.687*6)-(6-n)+O...	2.188+(2.188*6)-(6-n)+O...
Piston ø 1 3/4						
1/16 ... 1	0	–	0.656	0.735	3.216+(2*1)-(1-n)+O...	2.656+(2.656*1)-(1-n)+O...
1 1/16 ... 2	0	–	0.656	0.735	3.216+(2*2)-(2-n)+O...	2.656+(2.656*2)-(2-n)+O...
2 1/16 ... 3	0	–	0.656	0.735	3.216+(2*3)-(3-n)+O...	2.656+(2.656*3)-(3-n)+O...
3 1/16 ... 4	0	–	0.656	0.735	3.216+(2*4)-(4-n)+O...	2.656+(2.656*4)-(4-n)+O...
4 1/16 ... 5	0	–	0.656	0.735	3.216+(2*5)-(5-n)+O...	2.656+(2.656*5)-(5-n)+O...
5 1/16 ... 6	0	–	0.656	0.735	3.216+(2*6)-(6-n)+O...	2.656+(2.656*6)-(6-n)+O...
Piston ø 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...

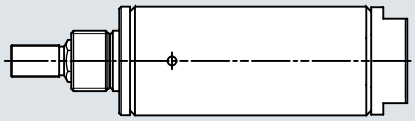
Datasheet

Dimensions Download CAD data ➔ www.festo.com

[S] Single-acting, pushing (piston rod retracted by 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



ø [in]	A1	⌭1
9/16	0.25	0.188
3/4	0.25	0.25
7/8	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

Datasheet

Formula for calculating the length ZJ

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

O0 = N (no cushioning)
O1 = P (flexible cushioning rings/plates at both ends)
O2 = A (for proximity switch)
O3 = PA (flexible cushioning rings/plates at both ends and for proximity switch)
n = stroke length

Stroke [in]	O0	O1	O2	O3	ZJ	
						[NGP4]
Piston ø 9/16						
1/16 ... 1	0	0.062	0.531	0.713	1.811+(1.625*1)-(1-n)+O...	1.781+(1.625*1)-(1-n)+O...
1 1/16 ... 2	0	0.062	0.531	0.713	1.811+(1.625*2)-(2-n)+O...	1.781+(1.625*2)-(2-n)+O...
2 1/16 ... 3	0	0.062	0.531	0.713	1.811+(1.625*3)-(3-n)+O...	1.781+(1.625*3)-(3-n)+O...
3 1/16 ... 4	0	0.062	0.531	0.713	1.811+(1.625*4)-(4-n)+O...	1.781+(1.625*4)-(4-n)+O...
4 1/16 ... 5	0	0.062	0.531	0.713	1.811+(1.625*5)-(5-n)+O...	1.781+(1.625*5)-(5-n)+O...
5 1/16 ... 6	0	0.062	0.531	0.713	1.811+(1.625*6)-(6-n)+O...	1.781+(1.625*6)-(6-n)+O...
Piston ø 3/4						
1/16 ... 1	0	0.125	0.688	0.89	2.19+(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	2.19+(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	2.19+(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	2.19+(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	2.19+(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	2.19+(1.687*6)-(6-n)+O...	1.75+(1.687*6)-(6-n)+O...
Piston ø 7/8						
1/16 ... 1	0	–	0.531	0.733	2.374+(1.562*1)-(1-n)+O...	2.094+(1.687*1)-(1-n)+O...
1 1/16 ... 2	0	–	0.531	0.733	2.374+(1.562*2)-(2-n)+O...	2.094+(1.687*2)-(2-n)+O...
2 1/16 ... 3	0	–	0.531	0.733	2.374+(1.562*3)-(3-n)+O...	2.094+(1.687*3)-(3-n)+O...
3 1/16 ... 4	0	–	0.531	0.733	2.374+(1.562*4)-(4-n)+O...	2.094+(1.687*4)-(4-n)+O...
4 1/16 ... 5	0	–	0.531	0.733	2.374+(1.562*5)-(5-n)+O...	2.094+(1.687*5)-(5-n)+O...
5 1/16 ... 6	0	–	0.531	0.733	2.374+(1.562*6)-(6-n)+O...	2.094+(1.687*6)-(6-n)+O...
Piston ø 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 ø 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 ø 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...

Datasheet

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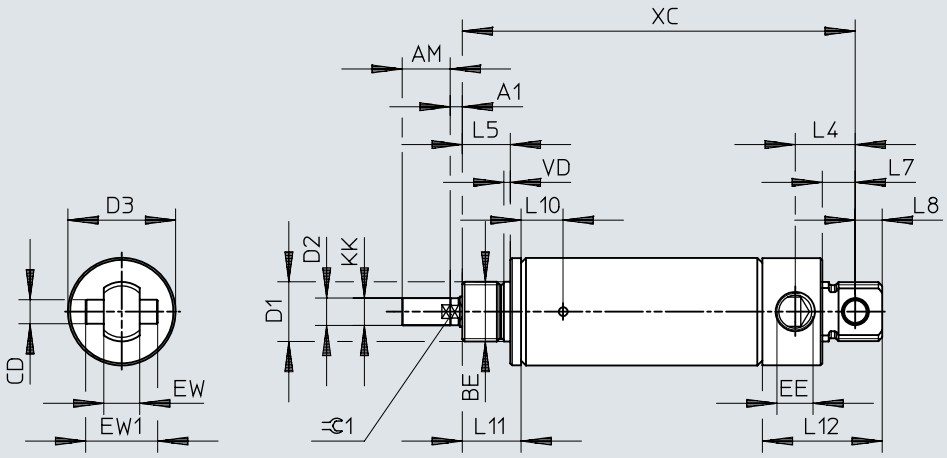
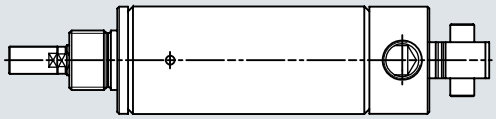
[S] Single-acting, pushing (piston rod retracted by spring force)
[ME] With trunnion flange
[ME90] Trunnion flange, rotated 90°



DPRA-N-...-...-SME90



ø [in]	A1	AM	BE	CD ø	D1 ø	D2 ø	D3 ø	EE	EW	EW1
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
7/8	0	0.5	5/8-18 UNF-2A	0.25	0.624	0.25	0.938	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

ø [in]	KK	L4	L5	L7	L8	L10	L11	L12	VD	⫧1
3/4	1/4-28 UNF-2A	0.625	0.438	0.344	0.281	0.437	0.563	1.348	0.094	–
7/8	1/4-28 UNF-2A	0.625	0.5	0.344	0.281	0.35	0.75	1.23	0.067	–
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

Datasheet

Formula for calculating the length XC

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

O0 = N (no cushioning)
O1 = P (flexible cushioning rings/plates at both ends)
O2 = A (for proximity switch)
O3 = PA (flexible cushioning rings/plates at both ends and for proximity switch)
n = stroke length

Stroke [in]	O0	O1	O2	O3	XC
Piston ø 3/4					
1/16 ... 1	0	0.125	0.688	0.89	2.281+(1.687*1)-(1-n)+O...
1 1/16 ... 2	0	0.125	0.688	0.89	2.281+(1.687*2)-(2-n)+O...
2 1/16 ... 3	0	0.125	0.688	0.89	2.281+(1.687*3)-(3-n)+O...
3 1/16 ... 4	0	0.125	0.688	0.89	2.281+(1.687*4)-(4-n)+O...
4 1/16 ... 5	0	0.125	0.688	0.89	2.281+(1.687*5)-(5-n)+O...
5 1/16 ... 6	0	0.125	0.688	0.89	2.281+(1.687*6)-(6-n)+O...
Piston ø 7/8					
1/16 ... 1	0	–	0.531	0.733	2.469+(1.562*1)-(1-n)+O...
1 1/16 ... 2	0	–	0.531	0.733	2.469+(1.562*2)-(2-n)+O...
2 1/16 ... 3	0	–	0.531	0.733	2.469+(1.562*3)-(3-n)+O...
3 1/16 ... 4	0	–	0.531	0.733	2.469+(1.562*4)-(4-n)+O...
4 1/16 ... 5	0	–	0.531	0.733	2.469+(1.562*5)-(5-n)+O...
5 1/16 ... 6	0	–	0.531	0.733	2.469+(1.562*6)-(6-n)+O...
Piston ø 1 1/16					
1/16 ... 1	0	0.125	0.562	0.765	2.531+(1.562*1)-(1-n)+O...
1 1/16 ... 2	0	0.125	0.562	0.765	2.531+(1.562*2)-(2-n)+O...
2 1/16 ... 3	0	0.125	0.562	0.765	2.531+(1.562*3)-(3-n)+O...
3 1/16 ... 4	0	0.125	0.562	0.765	2.531+(1.562*4)-(4-n)+O...
4 1/16 ... 5	0	0.125	0.562	0.765	2.531+(1.562*5)-(5-n)+O...
5 1/16 ... 6	0	0.125	0.562	0.765	2.531+(1.562*6)-(6-n)+O...
Piston ø 1 1/2					
1/16 ... 1	0	–	0.438	0.765	3.125+(1.687*1)-(1-n)+O...
1 1/16 ... 2	0	–	0.438	0.765	3.125+(1.687*2)-(2-n)+O...
2 1/16 ... 3	0	–	0.438	0.765	3.125+(1.687*3)-(3-n)+O...
3 1/16 ... 4	0	–	0.438	0.765	3.125+(1.687*4)-(4-n)+O...
4 1/16 ... 5	0	–	0.438	0.765	3.125+(1.687*5)-(5-n)+O...
5 1/16 ... 6	0	–	0.438	0.765	3.125+(1.687*6)-(6-n)+O...

Datasheet

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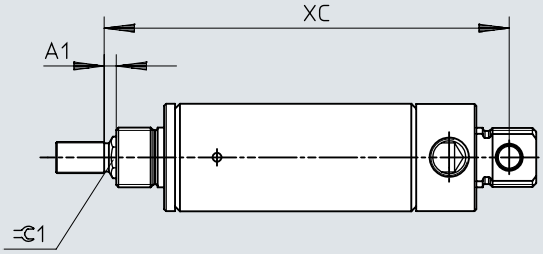
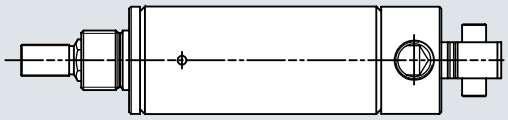
[S] Single-acting, pushing (piston rod retracted by spring force)
[-QME] With protection against rotation; trunnion flange, rotated 90°



DPRA-N-Q-. . . -. . . -SME90



ø [in]	A1	=G1
3/4	0.25	0.25
7/8	0.25	0.25
1 1/16	0.25	0.375
1 1/2	0.375	0.438

Datasheet

Formula for calculating the length XC

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

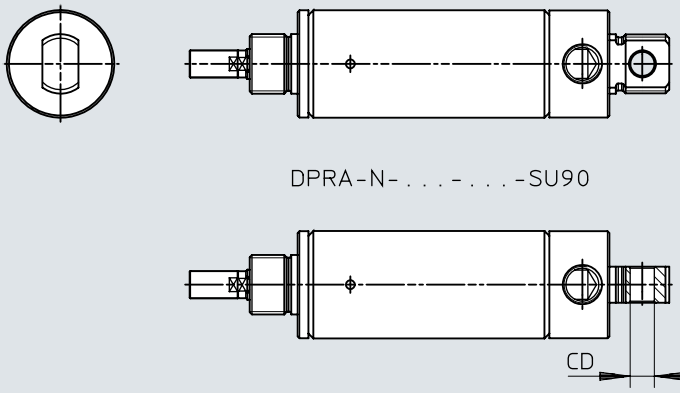
O0 = N (no cushioning)
O1 = P (flexible cushioning rings/plates at both ends)
O2 = A (for proximity switch)
O3 = PA (flexible cushioning rings/plates at both ends and for proximity switch)
n = stroke length

Stroke [in]	O0	O1	O2	O3	XC
Piston ø 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 ø 7/8					
1/16 ... 1	0	–	0.531	0.733	2.719+(1.562*1)-(1-n)+O...
1 1/16 ... 2	0	–	0.531	0.733	2.719+(1.562*2)-(2-n)+O...
2 1/16 ... 3	0	–	0.531	0.733	2.719+(1.562*3)-(3-n)+O...
3 1/16 ... 4	0	–	0.531	0.733	2.719+(1.562*4)-(4-n)+O...
4 1/16 ... 5	0	–	0.531	0.733	2.719+(1.562*5)-(5-n)+O...
5 1/16 ... 6	0	–	0.531	0.733	2.719+(1.562*6)-(6-n)+O...
Piston ø 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 ø 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...

Datasheet

Dimensions Download CAD data ➔ www.festo.com

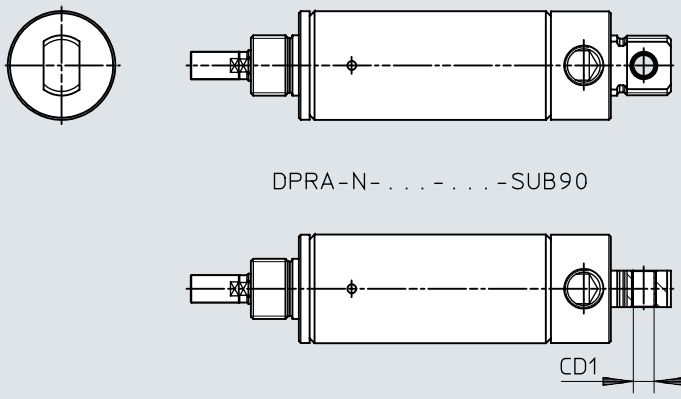
[S] Single-acting, pushing (piston rod retracted by spring force)
[U] With swivelling rod eye
[U90] With swivelling rod eye, rotated 90°
[-QU] With protection against rotation; with swivelling rod eye
[-QU90] With protection against rotation; with swivelling rod eye, rotated 90°



ø	CD ø			
[in]		[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	–	–

Dimensions Download CAD data ➔ www.festo.com

[S] Single-acting, pushing (piston rod retracted by spring force)
[UB] With swivelling rod eye and bearing sleeve
[UB90] With swivelling rod eye and bearing sleeve, rotated 90°

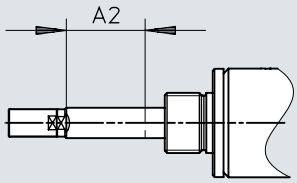


ø	CD1 ø	
[in]		[UB90]
9/16	0.157	0.157
3/4	0.25	–
7/8	0.25	–
1 1/16	0.25	–
1 1/4	0.251	–
1 1/2	0.375	–
1 3/4	0.376	–
2	0.375	0.375

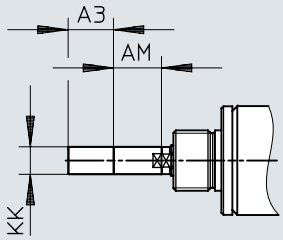
Datasheet

Dimensions Download CAD data ➔ www.festo.com

[...NE] Piston rod extension



[...NL] Piston rod thread extension



ø	A2	A3	AM	KK
[in]	[...NE]	[...NL]		
9/16	1/16 ... 6	1/16 ... 6	0.5	10-32 UNF-2A
3/4	1/16 ... 6	1/16 ... 6	0.5	1/4-28 UNF-2A
7/8	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

[-S] Single-acting, pushing (piston rod retracted by spring force)
[NGP4] Without mounting thread, axial compressed air supply port

Piston Ø	Stroke	Part no.	Type
3/4"	1"	**8217836**	**DPRA-N-3/4"-1-SNGP4-N**
1 1/16"		**8217851**	**DPRA-N-1 1/16"-1-SNGP4-N**

[-S] Single-acting, pushing (piston rod retracted by spring force)
[ME] With trunnion flange

Piston Ø	Stroke	Part no.	Type
3/4"	1"	**8217837**	**DPRA-N-3/4"-1-SME-N**
1 1/16"		**8217841**	**DPRA-N-1 1/16"-1-SME-N**

Ordering data – Modular product system

Ordering table

Piston ø	9/16	3/4	7/8	1 1/16	1 1/4	Conditions	Code	Enter code
Module no.	8180567	8109549	8180568	8109550	8109551			
Series	Round cylinder, single-acting						**DPRA**	DPRA
System of units	Imperial						**-N**	
Protection against rotation	None							
	With protection against rotation						**-Q**	
Piston ø	9/16"	3/4"	7/8"	1 1/16"	1 1/4"		**-...''**	
Stroke	0.0625 ... 6"						**-...''**	
Function	Single-acting, pulling (piston rod advanced by spring force)					[4]	**-P**	
	Single-acting, pushing (piston rod retracted by spring force)					[5]	**-S**	
Piston rod type	At one end							
Type of bearing cover	With mounting thread							
Type of end cap	–	With swivelling rod eye	–	With swivelling rod eye		[1]	**U**	
	–	With trunnion flange			–	[1]	**ME**	
	Without mounting thread						**NG**	
	With swivelling rod eye and bearing sleeve					[1]	**UB**	
	–				With swivelling rod eye, rotated 90°	[1]	**U90**	
	–	Trunnion flange, rotated 90°			–	[1]	**ME90**	
	With swivelling rod eye and bearing sleeve, rotated 90°	–				[1]	**UB90**	
Compressed air supply port	Lateral							
	Axial					[7]	**P4**	
Cushioning	No cushioning						**-N**	
	Elastic cushioning rings/plates at both ends					[2]	**-P**	
Position sensing	None							
	Via proximity switch					[2]	**A**	
Corrosion protection	Standard							
Temperature range	Standard –5 ... 165 °F							
	–40 ... +225 °F					[2]	**-T3**	
	+32 ... +300 °F					[2][3]	**-T4**	
Extended piston rod	None							
	0 ... 6 inch						**-...NE**	
Extended piston rod thread	None							
	0 ... 6 inch					[6]	**-...NL**	

[1] U, ME, UB, U90, ME90, UB90 Not with P4
[2] Cushioning P, A, T3, T4 Not with U90, UB90, ME90
[3] T4 Not with A, cushioning P
[4] Function P Not with Q
[5] Function S Mandatory with Q
[6] ...NL Not with ...NE
[7] P4 Not with function P
Mandatory with NG if function S and cushioning P or A or T4 selected

Ordering data – Modular product system

Ordering table

Piston ø	1 1/2	1 3/4	2	Conditions	Code		Enter code
Module no.	8109552	8109553	8109554				
Series	Round cylinder, single-acting				**DPRA**		DPRA
System of units	Imperial				**-N**		
Protection against rotation	None						
	With protection against rotation	–			**-Q**		
Piston ø	1 1/2"	1 3/4"	2"		**-...''**		
Stroke	0.0625 ... 6"		0.0625 ... 4"		**-...''**		
Function	Single-acting, pulling (piston rod advanced by spring force)			[4]	**-P**		
	Single-acting, pushing (piston rod retracted by spring force)			[5]	**-S**		
Piston rod type	At one end						
Type of bearing cover	With mounting thread						
Type of end cap	With swivelling rod eye		–	[1]	**U**		
	With trunnion flange	–		[1]	**ME**		
	Without mounting thread			[8]	**NG**		
	With swivelling rod eye and bearing sleeve			[1][8]	**UB**		
	–	With swivelling rod eye, rotated 90°	–	[1]	**U90**		
	Trunnion flange, rotated 90°	–		[1]	**ME90**		
	–		With swivelling rod eye and bearing sleeve, rotated 90°	[1][8]	**UB90**		
Compressed air supply port	Lateral						
	Axial			[7]	**P4**		
Cushioning	No cushioning				**-N**		
	Elastic cushioning rings/plates at both ends			[2]	**-P**		
Position sensing	None						
	Via proximity switch			[2]	**A**		
Corrosion protection	Standard						
Temperature range	Standard –5 ... 165 °F						
	–40 ... +225 °F			[2]	**-T3**		
	+32 ... +300 °F			[2][3]	**-T4**		
Extended piston rod	None						
	0 ... 6 inch				**-...NE**		
Extended piston rod thread	None						
	0 ... 6 inch			[6]	**-...NL**		

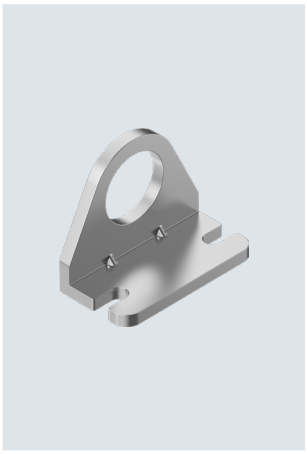
[1] U, ME, UB, U90, ME90, UB90 — Not with P4
[2] Cushioning P, A, T3, T4 — Not with U90, UB90, ME90
[3] T4 — Not with A, cushioning P
[4] Function P — Not with Q
Only with piston diameter 1 3/4" if NG is selected
[5] Function S — Mandatory with Q
[6] ...NL — Not with ...NE
[7] P4 — Not with function P
Mandatory with NG if function S and cushioning P or A or T4 selected
[8] NG, UB, UB90 — Mandatory with piston diameter 2" with piston rod type at one end

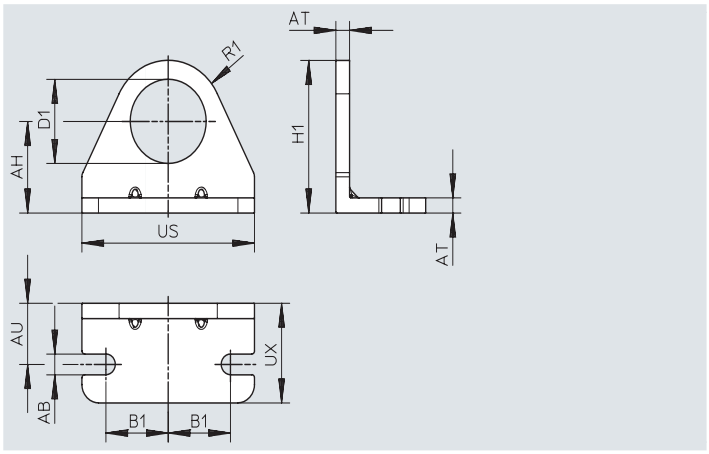
Accessories

Foot mounting DAMH-C6

Material:
Mounting: Steel (galvanised or nickel-plated)

RoHS-compliant
LABS (PWIS) conformity: VD-MA24364-Zone III





Dimensions and ordering data

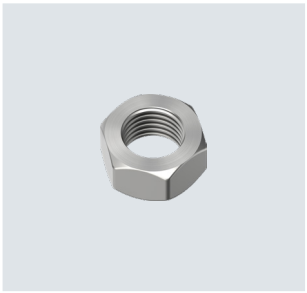
For ø [in]	AB	AH	AT	AU	B1	D1 +0.002	H1	R1	US	UX	Part no.	Type
9/16	0.2	0.563	0.94	0.38	0.5	0.438	0.83	0.38	1.38	0.69	**8180570**	**DAMH-C6-9/16"-1**
3/4[1]; 7/8; 1 1/16	0.26	0.813	0.125	0.56	0.75	0.626	1.38	0.56	1.88	1	**8109921**	**DAMH-C6-1 1/16"-1**
3/4[2]	0.2	0.688	0.94	0.44	0.63	0.501	1.09	0.41	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**
3	0.34	1.89	0.25	1	1.75	1.626	3.14	1.25	4.38	1.63	**8180572**	**DAMH-C6-3"-1**

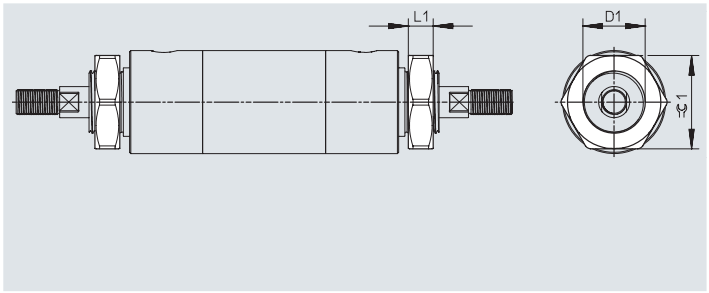
1) For mounting on the end cap
2) For mounting on the bearing cap

Hex nut DAMD

Material:
Nut: Steel (galvanised or nickel-plated)

RoHS-compliant
LABS (PWIS) conformity: VDMA24364-Zone III





Dimensions and ordering data

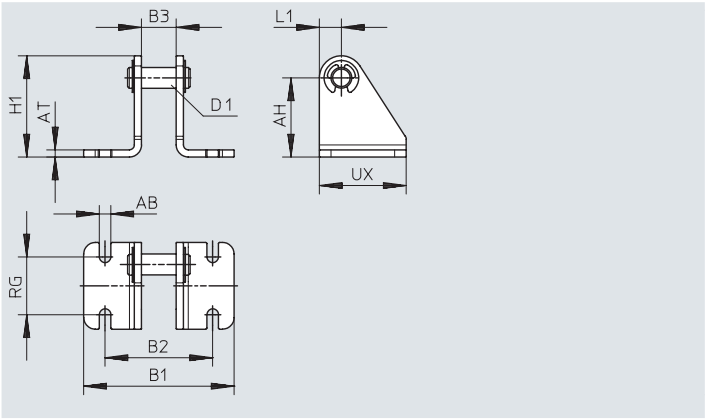
For ø [in]	D1	L1	⌀G1	Part no.	Type
9/16	7/16-20 UNF-2B	0.25	0.687	**8180576**	**DAMD-N-U716**
3/4	1/2-20 UNF-2B	0.31	0.75	**8109934**	**DAMD-N-U1/2**
3/4; 7/8; 1 1/16	5/8-18 UNF-2B	0.38	0.938	**8109935**	**DAMD-N-U58**
1 1/4; 1 1/2	3/4-16 UNF-2B	0.42	1.125	**8109936**	**DAMD-N-U34**
1 3/4	1-14 UNF-2B	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**
3	1 1/2-12 UNF-2B	0.5	2.25	**8180577**	**DAMD-N-U112**

Accessories

Clevis foot DAMC-C6-...-B

Material:
Clevis foot: Steel (galvanised or nickel-plated)
Bolt: Steel (galvanised or nickel-plated)
Lock: Steel (galvanised or nickel-plated)

RoHS-compliant
LABS (PWIS) conformity:
VDMA24364-Zone III



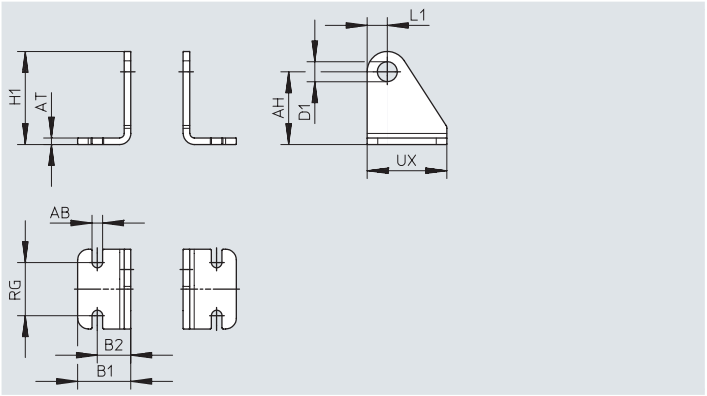
Dimensions and ordering data

For ø [in]	AB	AH	AT	B1	B2	B3	D1 ø	H1	L1	RG	UX	Part no.	Type
9/16	0.2	0.56	0.63	1.34	0.9	0.34	0.157	0.77	0.2	0.5	0.5	**8180573**	**DAMC-C6-9/16“-B**
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**
3	0.26	1.75	0.25	3.88	2.63	0.88	0.5	2.25	0.5	1.25	1.75	**8180575**	**DAMC-C6-3“-B**

Clevis foot DAMC-C6-...-D

Material:
Clevis foot: Steel (galvanised or nickel-plated)

RoHS-compliant
LABS (PWIS) conformity:
VDMA24364-Zone III



Dimensions and ordering data

For ø [in]	AB	AH	AT	B1	B2	D1 ø	H1	L1	RG	UX	Part no.	Type
3/4[1]; 7/8[1]; 1 1/16[1]	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[1]	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[2]; 1 1/16[2]; 1 1/2[2]	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**

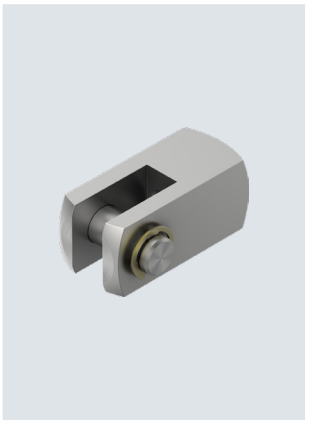
1) For mounting on the end cap with trunnion flange
2) For mounting on the bearing cap with trunnion flange

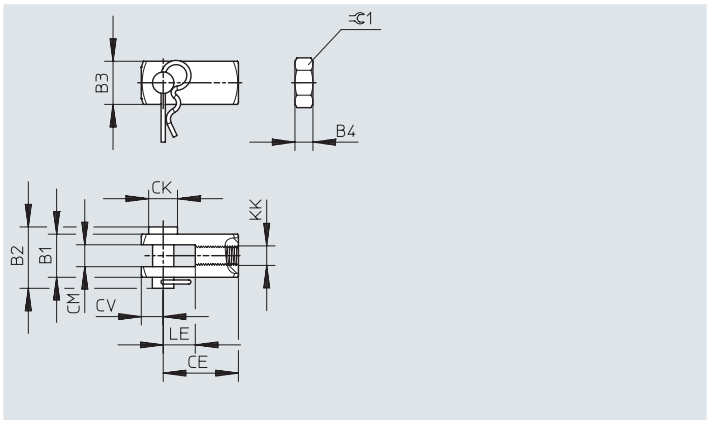
Accessories

Rod clevis DARC-C6

Material:
Rod clevis: Steel (galvanised or nickel-plated)
Bolt: Steel (galvanised or nickel-plated)
Lock: Steel (galvanised or nickel-plated)

RoHS-compliant
LABS (PWIS) conformity: VDMA24364-Zone III





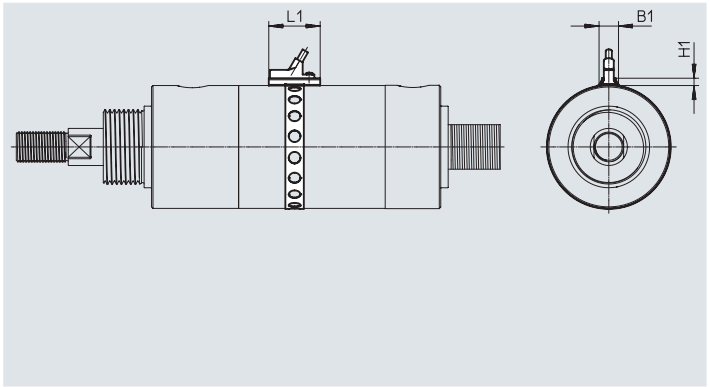
Dimensions and ordering data

For ø [in]	B1	B2	B3	B4	CE	CK	CM	CV	KK	LE	⫦1	Part no.	Type
9/16	0.38	0.62	0.38	0.13	0.75	0.188	0.19	0.19	10-32 UNF-2B	0.37	0.375	**8180578**	**DARC-C6-U10**
3/4; 7/8	0.5	0.77	0.5	0.16	0.94	0.25	0.25	0.25	1/4-28 UNF-2B	0.43	0.44	**8109940**	**DARC-C6-U14**
1 1/16	0.5	0.77	0.5	0.19	0.94	0.25	0.25	0.25	5/16-24 UNF-2B	0.43	0.5	**8109941**	**DARC-C6-U516**
1 1/4; 1 1/2	0.75	1.06	0.75	0.25	1.31	0.375	0.38	0.38	7/16-20 UNF-2B	0.56	0.69	**8109942**	**DARC-C6-U716**
1 3/4; 2; 2 1/2	0.75	1.06	0.75	0.25	1.31	0.375	0.38	0.38	1/2-20 UNF-2B	0.56	0.75	**8109943**	**DARC-C6-U12**
3	1	2.75	1	0.39	2.25	0.5	0.5	0.5	5/8-18 UNF-2B	1	0.938	**8180580**	**DARC-C6-U58**

Sensor bracket SAMH-FB-SH
For proximity switch SDBF-FBS

Material:
Mounting: High-alloy stainless steel
Screw: Steel (galvanised or nickel-plated)

RoHS-compliant
LABS (PWIS) conformity: VDMA24364-Zone III



Dimensions and ordering data

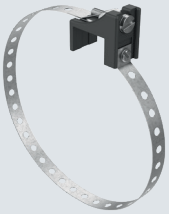
For ø [in]	B1	H1	L1	Part no.	Type
3/4; 1 1/16 ... 2 1/2	0.36	0.26	0.79	**8109945**	**SAMH-FB-SH**

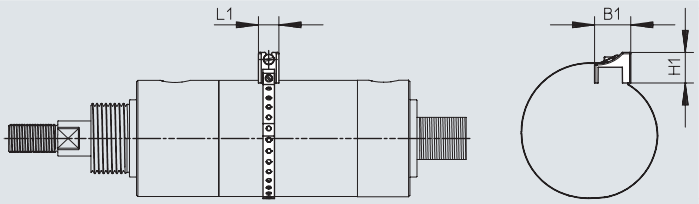
Accessories

Sensor bracket SAMH-FB-4-SH
For proximity switch SDBF-FES

Material:
Mounting: High-alloy stainless steel
Screw: Steel (galvanised or nickel-plated)

RoHS-compliant
LABS (PWIS) conformity:
VDMA24364-Zone III



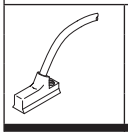


Dimensions and ordering data

For ø [in]	B1	H1	L1	Part no.	Type
9/16 ... 3	0.79	0.67	0.45	**8182282**	**SAMH-FB-4-SH**

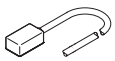
Ordering data – Proximity switch with dovetail slot, magneto-resistive

Datasheets → Internet: sdbf

	For ø [in]	Type of mounting	Switching output	Electrical connection	Part no.	Type
N/O						
	9/16; 3/4; 1 1/16 ... 3	Can be integrated into sensor bracket SAMH-FB-SH	PNP	Cable, 3-core	**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-core	**8106577**	**SDBF-FBS-1L-NU-K-9-N-LE**
				Plug M8x1, 3-pin	**8106578**	**SDBF-FBS-1L-NU-K-0.5-N-M8**

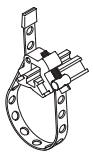
Ordering data – Proximity switch in block design, magneto-resistive

Datasheets → Internet: sdbf

	For ø [in]	Type of mounting	Switching output	Electrical connection	Part no.	Type
N/O						
	9/16 ... 3	Can be integrated into sensor bracket SAMH-FB-4-SH	PNP	Cable, 3-core	**8182046**	**SDBF-FES-1L-PU-K-9-N-LE**
				Plug M8x1, 3-pin	**8182048**	**SDBF-FES-1L-PU-K-N-M8**
			NPN	Cable, 3-core	**8182047**	**SDBF-FES-1L-NU-K-9-N-LE**
				Plug M8x1, 3-pin	**8182049**	**SDBF-FES-1L-NU-K-N-M8**

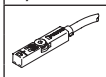
Ordering data – Mounting kits for proximity switches SMT/SDBT

Datasheets → Internet: smbr

Designation	For ø [in]	Part no.	Type
Mounting kit SMBR-8			
	9/16 ... 3	**538937**	**SMBR-8-8/100-S6**

Ordering data – Proximity switch for T-slot, magneto-resistive

Datasheets → Internet: smt

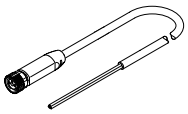
	For ø [in]	Type of mounting	Switching output	Electrical connection	Part no.	Type
N/O						
	9/16 ... 3	Can be integrated in mounting kit SMBR-8-8/100-S6	PNP	Cable, 3-core	**574335**	**SMT-8M-A-PS-24V-E-2.5-OE**
				Cable, 3-core	**574336**	**SMT-8M-A-PS-24V-E-5.0-OE**
				Plug M8x1, 3-pin	**574334**	**SMT-8M-A-PS-24V-E-0.3-M8D**
			NPN	Cable, 3-core	**574338**	**SMT-8M-A-NS-24V-E-2.5-OE**
				Plug M8x1, 3-pin	**574339**	**SMT-8M-A-NS-24V-E-0.3-M8D**

Accessories

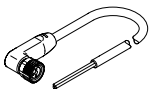
Ordering data – Proximity switch for T-slot, magnetic Hall — Datasheets → Internet: sdbt

	For Ø [in]	Type of mounting	Switching output	Electrical connection	Part no.	Type
N/O or N/C contact, switchable						
	9/16 ... 3	Can be integrated in mounting kit SMBR-8-8/100-S6	PNP, can be switched to NPN	Cable, 3-core	**8059122**	**SDBT-MSX-1L-PU-E-5-N-LE**
				Cable, 3-core	**8059121**	**SDBT-MSX-1L-PU-E-2.5-N-LE**
				Plug M8x1, 3-pin	**8059120**	**SDBT-MSX-1L-PU-E-0.3-N-M8**
			NPN, can be switched to PNP	Cable, 3-core	**8059125**	**SDBT-MSX-1L-NU-E-5-N-LE**
				Cable, 3-core	**8059124**	**SDBT-MSX-1L-NU-E-2.5-N-LE**
				Plug M8x1, 3-pin	**8059123**	**SDBT-MSX-1L-NU-E-0.3-N-M8**

Connecting cables NEBA, straight

	Electrical connection 1, connection technology	Electrical connection 2, connection technology	Electrical connection 2, number of pins/cores	Cable length	Part no.	Type
	M8x1 A-coded to EN 61076-2-104	Open end	3	2.5 m	**8078223**	**NEBA-M8G3-U-2.5-N-LE3**
				5 m	**8078224**	**NEBA-M8G3-U-5-N-LE3**

Connecting cables NEBA, angled

	Electrical connection 1, connection technology	Electrical connection 2, connection technology	Electrical connection 2, number of pins/cores	Cable length	Part no.	Type
	M8x1 A-coded to EN 61076-2-104	Open end	3	2.5 m	**8078230**	**NEBA-M8W3-U-2.5-N-LE3**
				5 m	**8078231**	**NEBA-M8W3-U-5-N-LE3**

Ordering data

	For Ø [in]	Description	Part no.	Type
One-way flow control valve GRLA				Datasheets → Internet: grla
	9/16 ... 1 1/2	For regulating speed	**534658**	**GRLA-1/8-QB-1/4-U**
	1 3/4 ... 3		**534663**	**GRLA-1/4-QB-3/8-U**
Push-in fitting, straight				Datasheets → Internet: qb
	9/16 ... 1 1/2	For connecting tubing with standard O.D.	**533273**	**QB-1/8-1/4-U**
			567773	**QB-1/8-3/8-U**
	1 3/4 ... 3		**533278**	**QB-1/4-3/8-U**
			567771	**QB-1/4-1/2-U**
Push-in fitting, angled				Datasheets → Internet: qbl
	9/16 ... 1 1/2	For connecting tubing with standard O.D.	**533292**	**QBL-1/8-1/4-U**
			567777	**QBL-1/8-3/8-U**
	1 3/4 ... 3		**533297**	**QBL-1/4-3/8-U**
			567775	**QBL-1/4-1/2-U**