

Single acting cylinder

with return spring and elastic cushioning rings in end positions

Type ESW-...-P-B 

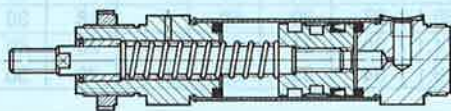
On these cylinders, the bearing cap and cover cap are roller burnished onto the cylinder barrel so as to be pressure tight.

Special designs



Additional components
(sheets 1.310, 1.320):

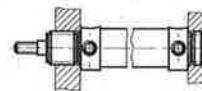
-  Rod clevis, Type SG
-  Rod eye, Type SGS
-  Self-aligning rod coupler, Type FK



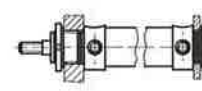
3

Installation of basic cylinder without mounting attachments

Neck mounting
at front at rear

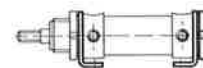
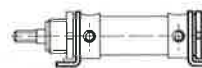


Mounting with nut
at front at rear

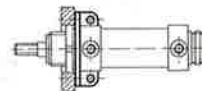


Additional types of mounting attachments

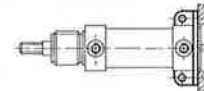
Foot mounting, Type H



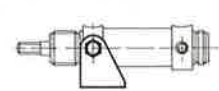
Flange mounting at front
Type FV



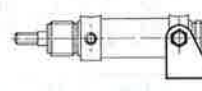
Flange mounting at rear
Type FV



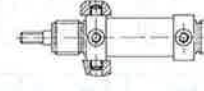
Clevis foot mounting
Type SBS at front



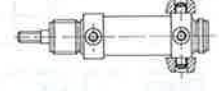
Clevis foot mounting
Type SBS at rear



Pivot Bolt, Type GBS
at front



Pivot Bolt, Type GBS
at rear

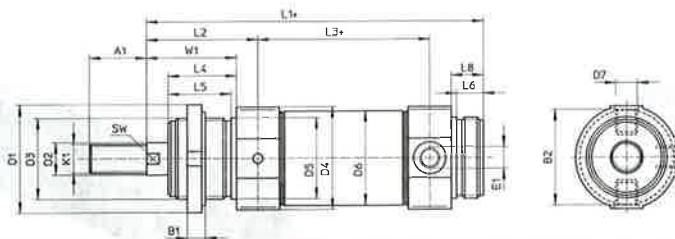


Order code (see overleaf)	Part No. + ESW + piston dia. + stroke length + end position cushioning Example: piston dia. 40 mm, stroke length 50 mm = 161 511 ESW-40-50-P-B
Medium	Compressed air, filtered (lubricated or unlubricated)
Design	Piston cylinder
Max. permissible operating pressure	10 bar
Temperature range	-20 to +80 °C
Materials	Bearing cap and cover cap: anodized aluminium; cylinder barrel: X 5 Cr Ni 18 9; piston rod: X 20 Cr 13, rolled thread; seals: Perbunan
Weights	See overleaf

Piston dia. mm	Standard stroke length mm	Stroke lengths min. – max. mm	Min. thrust at 6 bar* N (≈ kp)	Spring return force min. – max.* in N (≈ kp)						Con- nec- tion
				Stroke 10		Stroke 25		Stroke 50		
32	10, 25, 50	1 to 50	420 (42)	51 (5.1)	53.5 (5.35)	46.8 (4.68)	53.5 (5.35)	40 (4)	53.5 (5.35)	G 1/8
40	10, 25, 50		670 (67)	73.8 (7.38)	78.7 (7.87)	66.2 (6.62)	78.7 (7.87)	55 (5)	78.7 (7.87)	G 1/4
50	10, 25, 50		1100 (110)	71.6 (7.16)	74.5 (7.45)	67.2 (6.72)	74.5 (7.45)	60 (6)	74.5 (7.45)	G 1/4
63	10, 25, 50		1790 (179)	71.6 (7.16)	74.5 (7.45)	67.2 (6.72)	74.5 (7.45)	60 (6)	74.5 (7.45)	G 3/8

* Theoretical values

Type ESW-...-P-B



+ = plus stroke length

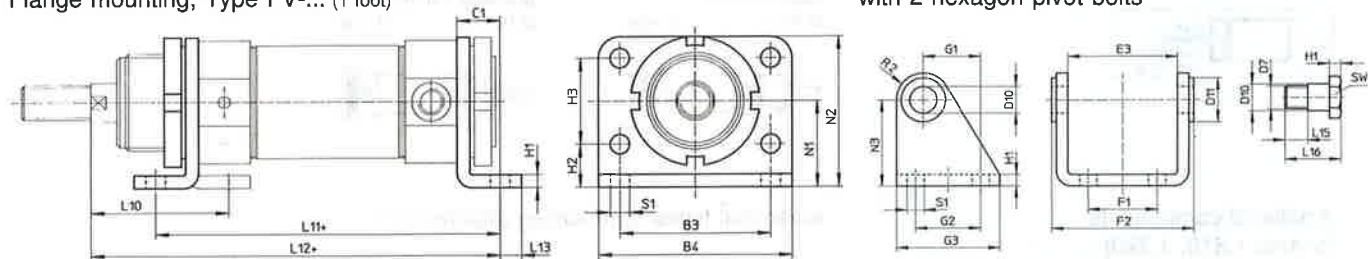
Piston dia. mm	A ₁	B ₁	B ₂	D ₁ dia.	D ₂ , f ₈ dia.	D ₃	D ₄ dia.	D ₅ , h ₉ dia.	D ₆ dia.	D ₇	E ₁	J ₁	J ₂	K ₁	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	L ₈	SW	W ₁
32	20	8	37	42	16	M30 × 1.5	38	30	33.6	M8 × 1	G 1/8	32.5	36.5	M10	148	47	78	30	28	12	14	10	38
40	24	10	45	50	16	M38 × 1.5	46	38	41.6	M10 × 1	G 1/4	36.5	38.5	M12	174	57	89	35	32	13	16	12	45
50	32	10	56	60	20	M45 × 1.5	57	45	52.4	M12 × 1.5	G 1/4	41.5	42	M16	188	62	96	38	35	15	18	16	50
63	32	10	69	60	20	M45 × 1.5	70	45	65.4	M14 × 1.5	G 3/8	47.5	47.5	M16	193	64	98	38	35	15	18	16	51

Additional mounting attachments (state piston dia. when ordering)

Foot mounting, Type H-... (2 feet + 1 nut)

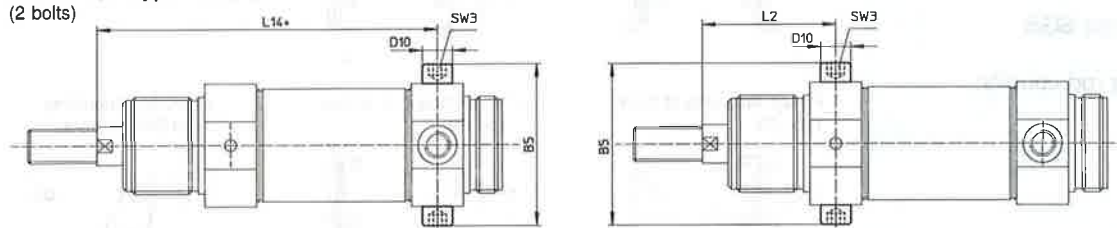
Flange mounting, Type FV-... (1 foot)

Clevis foot mounting, Type SBS-...-B
with 2 hexagon pivot bolts



Pivot Bolt, Type GBS-...

(2 bolts)



Piston dia. mm	B ₃	B ₄	B ₅	C ₁	D ₇	D ₁₀ , H ₈ f ₇ dia.	D ₁₁ dia.	E ₃	F ₁	F ₂	G ₁	G ₂	G ₃	H ₁	H ₂	H ₃
32	52	66	50	14	M8 × 1	10	15	38.1	20	50.1	20	24	40	4	14	28
40	60	80	60	20	M10 × 1	12	20	46.1	28	60.1	27	30	50	5	18	30
50	70	90	74	20	M12 × 1.5	14	23	57.1	36	74.1	30	34	54	6	20	40
63	76	96	89	20	M14 × 1.5	16	23	70.1	42	88.1	34	35	65	6	20	50

Piston dia. mm	L ₁₀	L ₁₁	L ₁₂	L ₁₃	L ₁₄	L ₁₅	L ₁₆	N ₁	N ₂	N ₃	R ₂	S ₁	SW ₃	SW ₄
32	48	124	148	7	125	6.5	17.5	28	49	35	12	7	5	13
40	60	153	178	10	146	9	22	33	58	40	13	9	6	17
50	64	160	190	10	158	12	27.5	40	70	45	14	9	6	19
63	65	164	195	10	162	16	32.1	45	80	50	16	9	8	19

Basic-cylinder

Order code		Weight kg	Order code		Weight kg	Order code		Weight kg	Order code		Weight kg
Part No.	Type dia. stroke		Part No.	Type dia. stroke		Part No.	Type dia. stroke		Part No.	Type dia. stroke	
161461	ESW-32-10-P-B	0.385	161509	ESW-40-10-P-B	0.760	161557	ESW-50-10-P-B	1.305	161605	ESW-63-10-P-B	1.710
161462	ESW-32-25-P-B	0.405	161510	ESW-40-25-P-B	0.785	161558	ESW-50-25-P-B	1.350	161606	ESW-63-25-P-B	1.770
161463	ESW-32-50-P-B	0.445	161511	ESW-40-50-P-B	0.835	161559	ESW-50-50-P-B	1.435	161607	ESW-63-50-P-B	1.865
161460	ESW-32-...-P-B		161508	ESW-40-...-P-B		161556	ESW-50-...-P-B		161604	ESW-63-...-P-B	

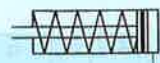
Mounting attachments

Order code		Weight kg	Order code		Weight kg	Order code		Weight kg	Order code		Weight kg
Part No.	Type dia.		Part No.	Type dia.		Part No.	Type dia.		Part No.	Type dia.	
3667	H-32	0.235	3754	FV-32	0.110	161612	SBS-32-B	0.160	9236	GBS-32	0.010
3668	H-40	0.435	3765	FV-40	0.190	161613	SBS-40-B	0.225	9237	GBS-40	0.020
3669	H-50	0.665	3775	FV-50	0.300	161614	SBS-50-B	0.380	9238	GBS-50	0.040
3700	H-63	0.800	3785	FV-63	0.395	161615	SBS-63-B	0.530	9239	GBS-63	0.065

Single acting cylinder

with return spring and elastic cushioning rings in end positions

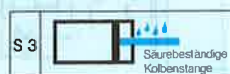
Type ESW-...-P-A-B



On these cylinders, the bearing cap and cover cap are roller burnished onto the cylinder barrel so as to be pressure tight.

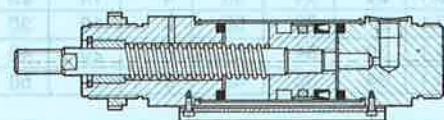
There is a permanent magnet on the cylinder piston, the magnetic field of which actuates reed-type proximity switches.

Special designs



Additional components
(sheets 1.310, 1.320):

- Rod clevis, Type SG
- Rod eye, Type SGS
- Self-aligning rod coupling Type FK



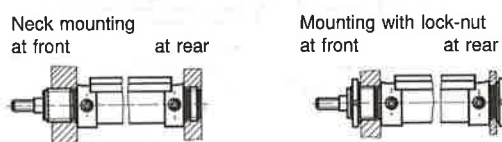
3

One or more proximity switches can be fastened to the DUO rail on the cylinder. These switches permit non-contact sensing of the end or intermediate positions of the cylinder.

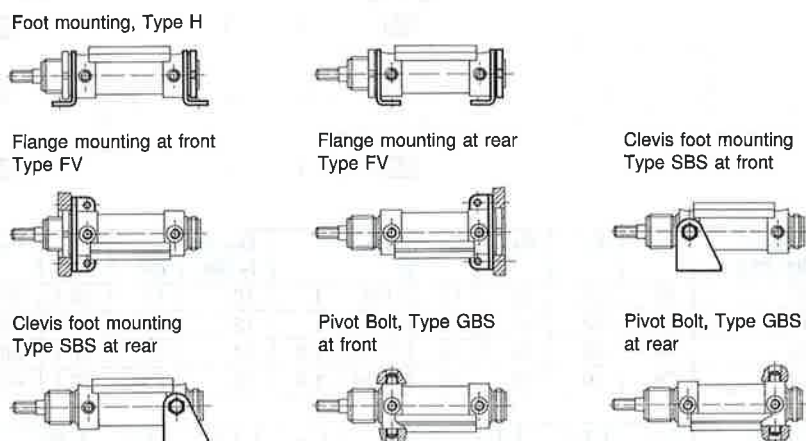
Proximity switches with pneumatic or electrical output signals have identical dimensions and can be combined on the duo rail.

Proximity switches see sheet 1.350

Installation of basic cylinder without mounting attachments



Additional types of mounting attachments

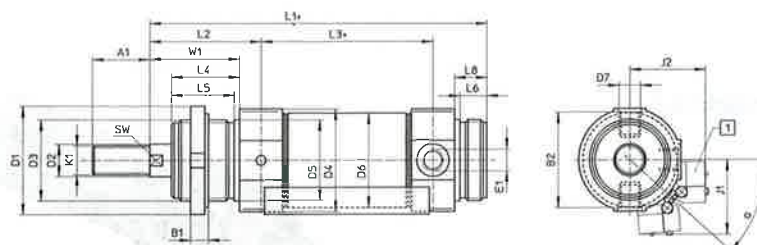


Order code (see overleaf)	Part No. + ESW + piston dia. + stroke length + end position cushioning + sensing Example: piston dia. 40 mm, stroke length 25 mm = 161 514 ESW-40-25-P-A-B
Medium	Compressed air, filtered (lubricated or unlubricated)
Design	Piston cylinder
Max. permissible operating pressure	10 bar
Temperature range	-20 to +80 °C
Materials	Bearing cap and cover cap: anodized aluminium; cylinder barrel: X 5 Cr Ni 18 9; piston rod: X 20 Cr 13, rolled thread; seals: Perbunan
Weights	See overleaf

Piston dia. mm	Standard stroke length mm	Stroke lengths min. – max. mm	Min. thrust at 6 bar* N (≈ kp)	Spring return force min. – max.* in N (≈ kp)						Con- nec- tion
				Stroke 10		Stroke 25		Stroke 50		
32	10, 25, 50	1 to 50	420 (42)	51 (5.1)	53.5 (5.35)	46.8 (4.68)	53.5 (5.35)	40 (4)	53.5 (5.35)	G 1/8
40	10, 25, 50		670 (67)	73.8 (7.38)	78.7 (7.87)	66.2 (6.62)	78.7 (7.87)	55 (5)	78.7 (7.87)	G 1/4
50	10, 25, 50		1100 (110)	71.6 (7.16)	74.5 (7.45)	67.2 (6.72)	74.5 (7.45)	60 (6)	74.5 (7.45)	G 1/4
63	10, 25, 50		1790 (179)	71.6 (7.16)	74.5 (7.45)	67.2 (6.72)	74.5 (7.45)	60 (6)	74.5 (7.45)	G 3/8

* Theoretical values

Type ESW-...-P-B



- ① Reed switch
Type SMPO-1-H-B
(pneumatic output signal)
Type SME-1
(electrical output signal)

+ = plus stroke length

Piston dia. mm	A ₁	B ₁	B ₂	D ₁ dia.	D ₂ , f ₈ dia.	D ₃	D ₄ dia.	D ₅ , h ₉ dia.	D ₆ dia.	D ₇	E ₁	J ₁	J ₂	K ₁	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	L ₈	SW	W ₁	α
32	20	8	37	42	12	M30 × 1.5	38	30	33.6	M8 × 1	G 1/8	32.5	36.5	M10	148	47	78	30	28	12	14	10	38	30° 30'
40	24	10	45	50	16	M38 × 1.5	46	38	41.6	M10 × 1	G 1/4	36.5	38.5	M12	174	57	89	35	32	13	16	12	45	41°
50	32	10	56	60	20	M45 × 1.5	57	45	52.4	M12 × 1.5	G 1/4	41.5	42	M16	188	62	96	38	35	15	18	16	50	42°
63	32	10	69	60	20	M45 × 1.5	70	45	65.4	M14 × 1.5	G 3/8	47.5	47.5	M16	193	64	98	38	35	15	18	16	51	42°

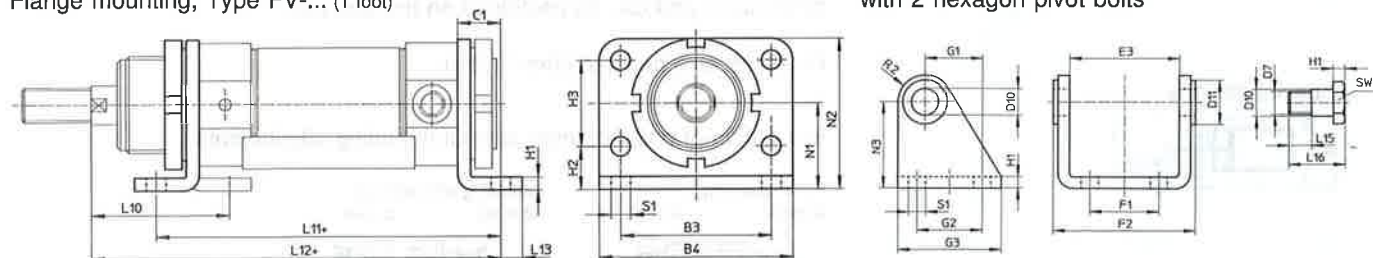
Additional mounting attachments (state piston dia. when ordering)

Foot mounting, Type H-... (2 feet + 1 nut)

Flange mounting, Type FV-... (1 foot)

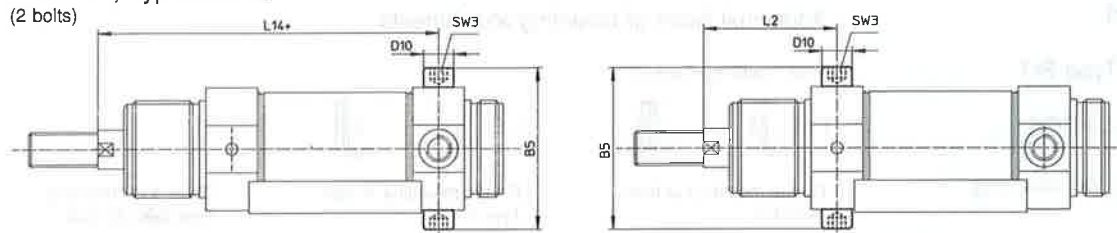
Clevis foot mounting, Type SBS-...-B

with 2 hexagon pivot bolts



Pivot Bolt, Type GBS-...

(2 bolts)



Piston dia. mm	B ₃	B ₄	B ₅	C ₁	D ₇	D ₁₀ , H ₈ f ₇ dia.	D ₁₁ dia.	E ₃	F ₁	F ₂	G ₁	G ₂	G ₃	H ₁	H ₂	H ₃
32	52	66	50	14	M8 × 1	10	15	38.1	20	50.1	20	24	40	4	14	28
40	60	80	60	20	M10 × 1	12	20	46.1	28	60.1	27	30	50	5	18	30
50	70	90	74	20	M12 × 1.5	14	23	57.1	36	74.1	30	34	54	6	20	40
63	76	96	89	20	M14 × 1.5	16	23	70.1	42	88.1	34	35	65	6	20	50

Piston dia. mm	L ₁₀	L ₁₁	L ₁₂	L ₁₃	L ₁₄	L ₁₅	L ₁₆	N ₁	N ₂	N ₃	R ₂	S ₁	SW ₃	SW ₄
32	48	124	148	7	125	6.5	17.5	28	49	35	12	7	5	13
40	60	153	178	10	146	9	22	33	58	40	13	9	6	17
50	64	160	190	10	158	12	27.5	40	70	45	14	9	6	19
63	65	164	195	10	162	16	32.1	45	80	50	16	9	8	19

Order code		Weight	Order code		Weight	Order code		Weight	Order code		Weight
Part No.	Type dia. stroke	kg	Part No.	Type dia. stroke	kg	Part No.	Type dia. stroke	kg	Part No.	Type dia. stroke	kg
161465	ESW-32-10-P-A-B	0.410	161513	ESW-40-10-P-A-B	0.780	161561	ESW-50-10-P-A-B	1.395	161609	ESW-63-10-P-A-B	1.730
161466	ESW-32-25-P-A-B	0.435	161514	ESW-40-25-P-A-B	0.815	161562	ESW-50-25-P-A-B	1.385	161610	ESW-63-25-P-A-B	1.790
161467	ESW-32-50-P-A-B	0.480	161515	ESW-40-50-P-A-B	0.870	161563	ESW-50-50-P-A-B	1.475	161611	ESW-63-50-P-A-B	1.895
161464	ESW-32-...-P-A-B		161512	ESW-40-...-P-A-B		161560	ESW-50-...-P-A-B		161608	ESW-63-...-P-A-B	

Mounting attachments

Order code		Weight	Order code		Weight	Order code		Weight	Order code		Weight
Part No.	Type dia.	kg	Part No.	Type dia.	kg	Part No.	Type dia.	kg	Part No.	Type dia.	kg
3667	H-32	0.235	3754	FV-32	0.110	161612	SBS-32-B	0.160	9236	GBS-32	0.010
3668	H-40	0.435	3765	FV-40	0.190	161613	SBS-40-B	0.225	9237	GBS-40	0.020
3669	H-50	0.665	3775	FV-50	0.300	161614	SBS-50-B	0.380	9238	GBS-50	0.040
3700	H-63	0.800	3785	FV-63	0.395	161615	SBS-63-B	0.530	9239	GBS-63	0.065