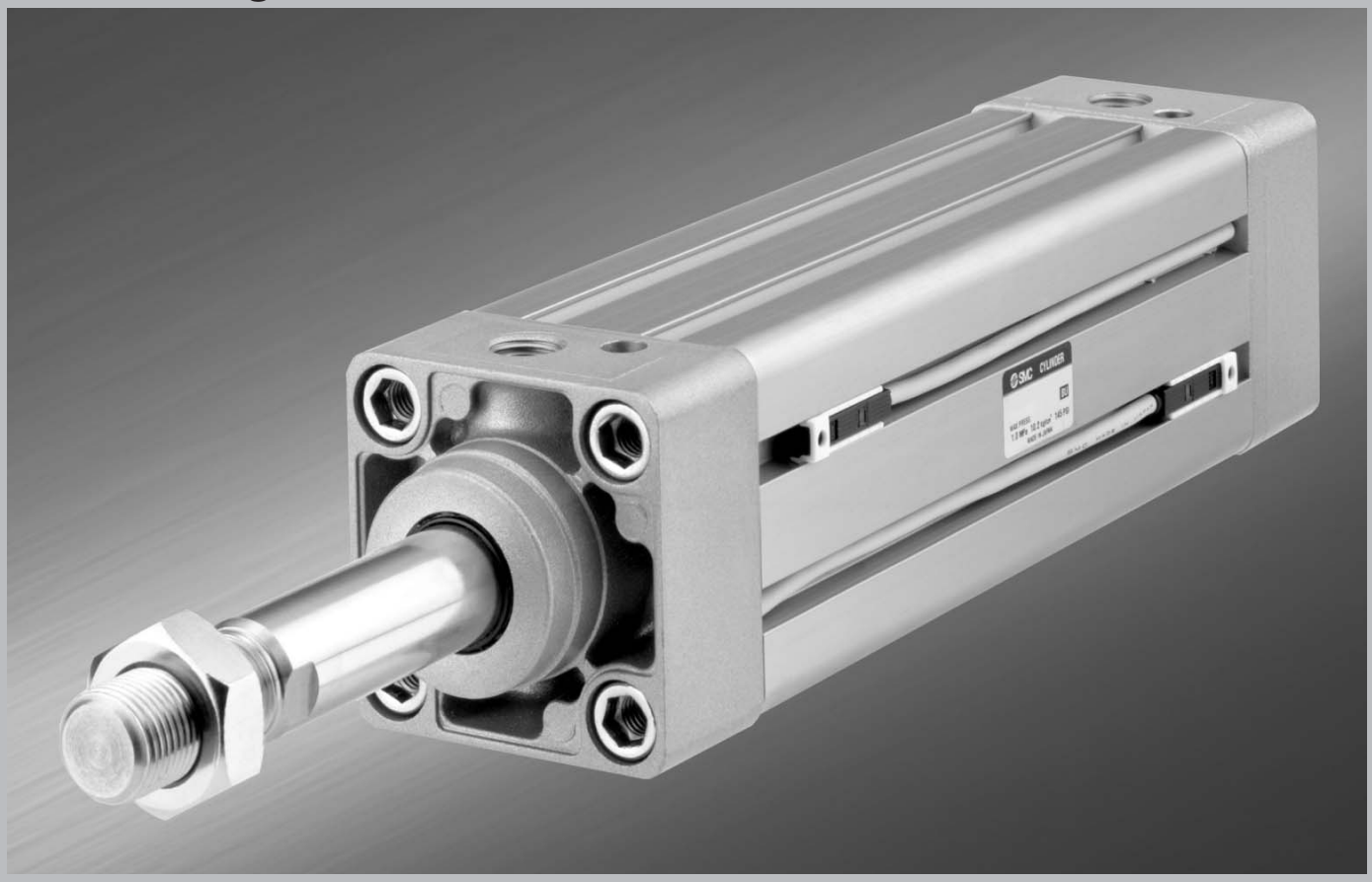
Profile Design ISO/VDMA Cylinder

Series CP95

ø32, ø40, ø50, ø63, ø80, ø100

Profile design with enclosed tie-rods



Series Variations

Series	Action	Type		Basic	Standard variations: Built-in magnet	Standard variations: Stainless steel rod	Option: Heat resistant	Bore (mm)	Page
Standard *Series* ***CP95S*** 	Double acting	Single rod	Non-lube	●	●	●	●	32, 40, 50, 63, 80, 100	6-13-4
		Double rod	Non-lube	●	●	●	●		
Non-rotating Rod *Series* ***CP95K*** 	Double acting	Single rod	Non-lube	●	●	(Standard)	●	32, 40, 50, 63, 80, 100	6-13-14
		Double rod	Non-lube	●	●	(Standard)	●		

ø32, ø40, ø50, ø63, ø80, ø100

Series CP95

Improved end of stroke cushion capacity

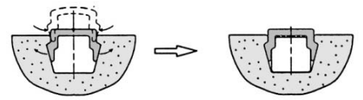
Piston rod lurching has been eliminated at the end of stroke positions by means of a floating seal mechanism.

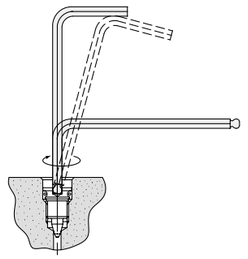
Increased kinetic energy absorption

The absorption of kinetic energy hasbeen increased by nearly 30%, through increased cushion volume and the use of a new cushion seal.

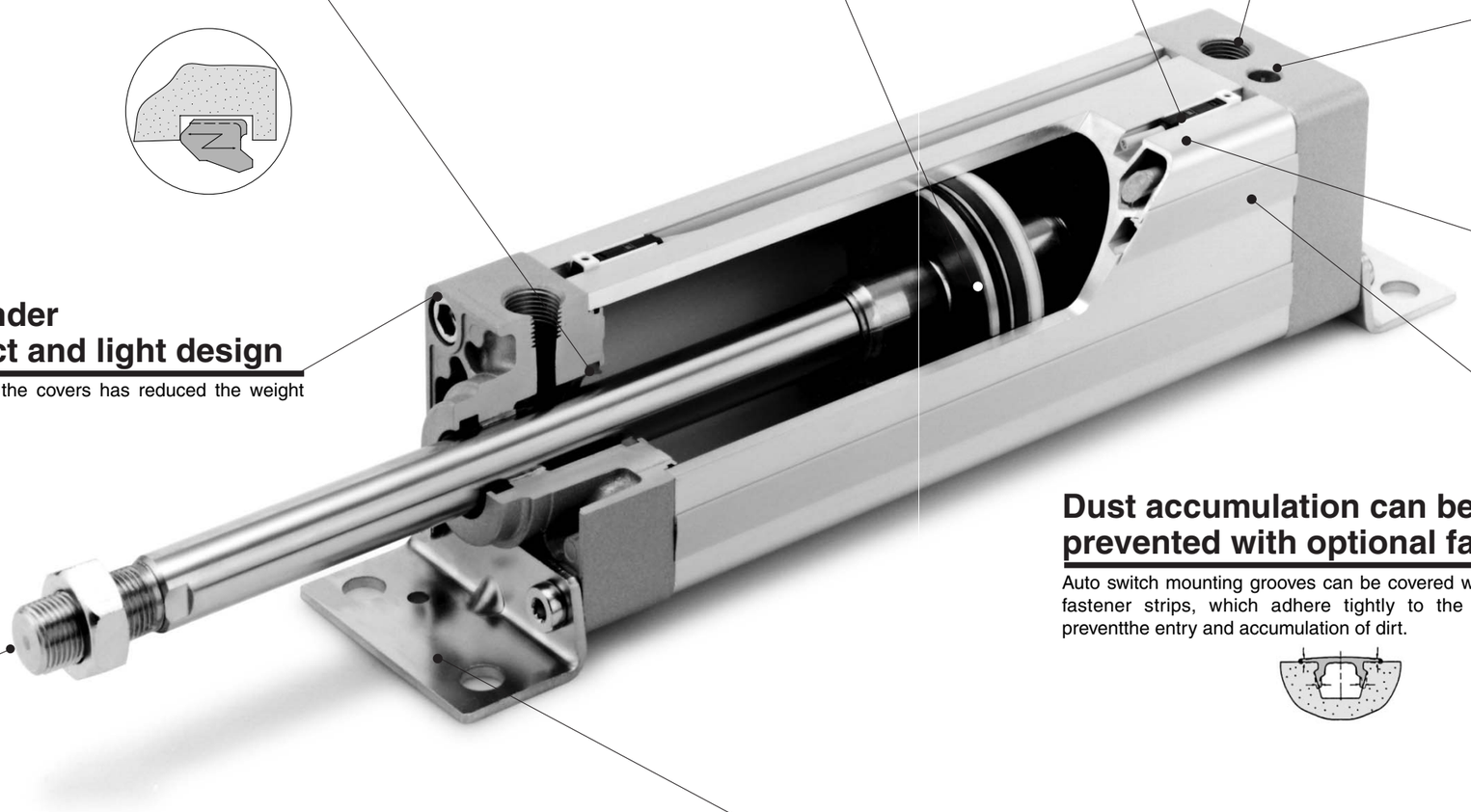
Space-saving auto switch mounting

Space is saved by setting switches completely into grooves provided on 4 surfaces.





Port aperture



Easy end of stroke cushion valve adjustment

Since adjustment of the cushion valve is performed with a hexagon wrench key, even fine control can be easily accomplished. Furthermore, the cushion valve has been recessed so that it does not protrude from the cover.

Appearance improved by enclosing the tie-rods

Tie-rods are enclosed in an extruded aluminium profile barrel, which is integrated with both end covers to achieve a smooth and attractive appearance.

Air cylinder Compact and light design

Die-casting of the covers has reduced the weight by 25%.

Dust accumulation can be prevented with optional fastener strips

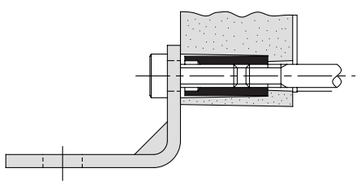
Auto switch mounting grooves can be covered with resin fastener strips, which adhere tightly to the tube to preventthe entry and accumulation of dirt.

Improved mounting accuracy

High accuracy covers and tie rod nuts simplify the mounting process and also extend cylinder life.

Piston rod deflection reduced

Deflection of the piston rod has been reduced by increasing the precision of the bushing and piston rod, and reducing the tolerances.



ISO/VDMA Cylinder: Standard Type
Double Acting with End of Stroke Cushioning
Series CP95
ø32, ø40, ø50, ø63, ø80, ø100

How to Order

Without auto switch CP95S **B** **32** — **100** **W**

With auto switch CP95SD **B** **32** — **100** **W** — **Z76** **S**

Built-in magnet

Mounting style

B	Basic/without bracket
L	Axial foot
F	Head side flange
G	Rod side flange
C	Single rear clevis
D	Double rear clevis

Bore size

32	32 mm
40	40 mm
50	50 mm
63	63 mm
80	80 mm
100	100 mm

Stroke (mm)
(Refer to "Standard Stroke" on page 6-13-6.)

Rod

Nil	Single rod
W	Double rod

Auto switch

Nil	Without auto switch

∗ For the applicable auto switch model, refer to the table below.

Number of auto switches

Nil	2 pcs.
S	1 pc.
3	3 pcs.
n	"n" pcs.

Applicable Auto Switch/Tie-rod Mounting Type

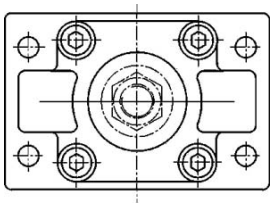
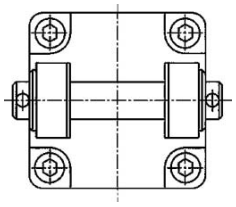
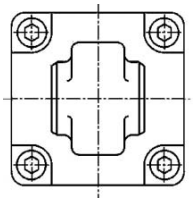
Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC	Load voltage AC	Auto switch model: Electrical entry direction Vertical	Auto switch model: Electrical entry direction Lateral	Lead wire length (m) Note) 0.5 (Nil)	3 (L)	5 (Z)	Applicable load		Mounting bracket
Reed switch	—	Grommet	Yes	3-wire	— 5 V	—	—	**Z76**	●	●	—	IC circuit	—	BMP1-032
				2-wire	24 V —	100 V	—	**Z73**	●	●	●	—	Relay, PLC	
			No		5 V, 12 V	100 V or less	—	**Z80**	●	●	—	IC circuit		
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V 5 V, 12 V	—	**Y69A**	**Y59A**	●	●	○	IC circuit	Relay, PLC	
				3-wire (PNP)			**Y7PV**	**Y7P**	●	●	○			
				2-wire	12 V		**Y69B**	**Y59B**	●	●	○	—		
	Diagnostic indication (2-color indication)			3-wire (NPN)	5 V, 12 V		**Y7NWV**	**Y7NW**	●	●	○	IC circuit		
				3-wire (PNP)			**Y7PWV**	**Y7PW**	●	●	○			
				2-wire	12 V		**Y7BWV**	**Y7BW**	●	●	○	—		
	Water resistant (2-color indication)						—	**Y7BA**	—	●	—			

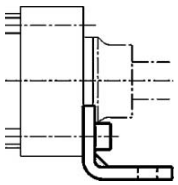
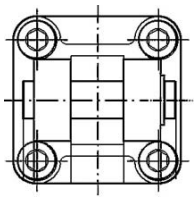
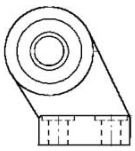
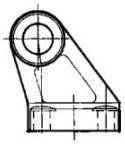
∗ Lead wire length symbols: 0.5 m ····· Nil (Example) A53
3 m ····· L (Example) A53L
5 m ····· Z (Example) A53Z

○: Manufactured upon receipt of order.

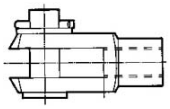
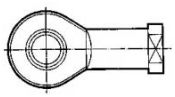
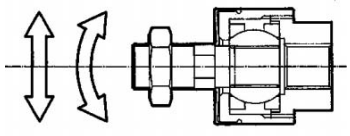
Accessory

Mounting Accessory, Cylinder

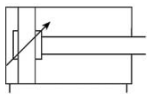
Bore size (mm)	**F** Rod/Head side flange	**D** Female head side clevis (Corresponds to E accessories)	**C** Male head side clevis
	 Supplied with 4 screws	 Supplied with bolt, safety device and 4 screws	 Supplied with 4 screws
32	F5032	D5032	Plain: C5032 / With ball joint: CR5032
40	F5040	D5040	C5040 / CR5040
50	F5050	D5050	C5050 / CR5050
63	F5063	D5063	C5063 / CR6063
80	F5080	D5080	C5080 / CR5080
100	F5100	D5100	C5100 / CR5100
	See page 6-13-10 and 18 for dimensions.	See pages 6-13-10 to 11 and 18 for dimensions.	See pages 6-13-10 to 11 and 18 for dimensions. Note) See page 6-13-11 for male head side clevis with swivel CR50.

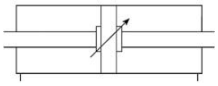
Bore size (mm)	**L** Foot	**DS** Female head side clevis (for ES accessory)	**ES** Angled head side clevis with ball joint	**E** Angled head side clevis
	 Supplied with two pieces			
32	L5032	DS5032	ES5032	E5032
40	L5040	DS5040	ES5040	E5040
50	L5050	DS5050	ES5050	E5050
63	L5063	DS5063	ES5063	E5063
80	L5080	DS5080	ES5080	E5080
100	L5100	DS5100	ES5100	E5100
	See page 6-13-10 and 18 for dimensions.	See page 6-13-12 for dimensions.	See page 6-13-12 for dimensions.	See page 6-13-11 for dimensions.

Mounting Accessory, Rod

Bore size (mm)	**GKM** Rod clevis ISO 8140	**KJ** Piston rod ball joint ISO 8139	**JA** Floating joint
	 Supplied with bolts and safety devices		
32	GKM10-20	KJ10D	JA30-10-125
40	GKM12-24	KJ12D	JA40-12-125
50	GKM16-32	KJ16D	JA50-16-150
63	GKM16-32	KJ16D	JA50-16-150
80	GKM20-40	KJ20D	JAH50-20-150
100	GKM20-40	KJ20D	JAH50-20-150
	See page 6-13-13 for dimensions.	See page 6-13-13 for dimensions.	See page 6-13-13 for dimensions.

Series CP95





Minimum Stroke for Auto Switch Mounting

Refer to page 6-13-20 for “Minimum Stroke for Auto Switch Mounting”.

Made to Order Specifications (For details, refer to page 6-17-19.)

Symbol	Specifications
-XB6	Heat resistant cylinder (150°C)
-XB13	Low speed cylinder (5 to 50 mm/s)
-XC22	Fluoro rubber seals

Specifications

Bore size (mm)	32	40	50	63	80	100
Action	Double acting					
Fluid	Air					
Proof pressure	1.5 MPa					
Max. operating pressure	1.0 MPa					
Min. operating pressure	0.05 MPa					
Ambient and fluid temperature	Without auto switch: –10 to 70°C (No freezing) With auto switch: –10 to 60°C (No freezing)					
Lubrication	Not required (Non-lube)					
Operating piston speed	50 to 1000 mm/s					
Allowable stroke tolerance	Up to 250: $^{+1.0}_{0}$, 251 to 1000: $^{+1.4}_{0}$, 1001 to 1500: $^{+1.8}_{0}$					
Cushion	Both ends (Air cushion)					
Thread tolerance	JIS Class 2					
Port size	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2
Mounting	Basic style, Axial foot style, Rod side flange style, Head side flange style, Single clevis style, Double clevis style					

Standard Stroke

Bore size (mm)	Standard stroke (mm)	Max. * stroke
32	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500	700
40	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500	800
50	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600	1200
63	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600	1200
80	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600, 700, 800	1400
100	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600, 700, 800	1500

Intermediate strokes are available.
* Please consult with SMC for longer strokes.

Accessory

Mounting		Basic style	Foot style	Rod side flange style	Head side flange style	Single clevis style	Double clevis style
Standard	Rod end nut	●	●	●	●	●	●
	Clevis pin	—	—	—	—	—	●
Option	Single clevis	●	●	●	●	●	●
	Double clevis (With pin)	●	●	●	●	●	●
	Rod boot	●	●	●	●	●	●

Theoretical Output

OUT IN (N)

Bore size (mm)	Rod diameter (mm)	Operating direction	Piston area (mm^2)	Operating pressure (MPa)								
				0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
32	12	OUT	804	161	241	322	402	482	563	643	724	804
		IN	691	138	207	276	346	415	484	553	622	691
40	16	OUT	1257	251	377	503	629	754	880	1006	1131	1257
		IN	1056	211	317	422	528	634	739	845	950	1056
50	20	OUT	1963	393	589	785	982	1178	1374	1570	1767	1963
		IN	1649	330	495	660	825	989	1154	1319	1484	1649
63	20	OUT	3117	623	935	1247	1559	1870	2182	2494	2805	3117
		IN	2803	561	841	1121	1402	1682	1962	2242	2523	2803
80	25	OUT	5027	1005	1508	2011	2514	3016	3519	4022	4524	5027
		IN	4536	907	1361	1814	2268	2722	3175	3629	4082	4536
100	30	OUT	7854	1571	2356	3142	3927	4712	5498	6283	7068	7854
		IN	7147	1429	2144	2859	3574	4288	5003	5718	6432	7147

Note) Theoretical out put (N) = Pressure (MPa) x Piston area (mm^2)

Weight/Aluminum Tube

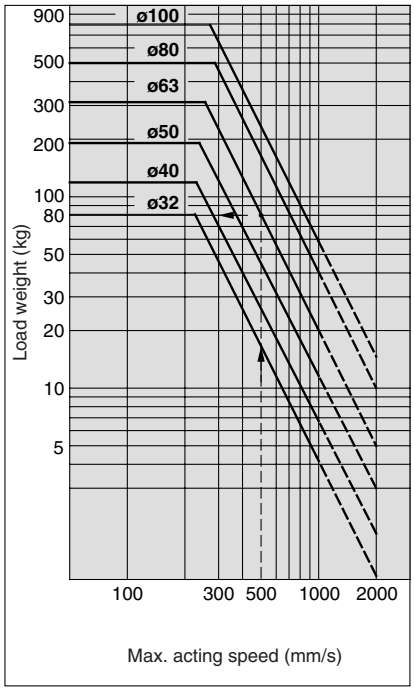
(kg)

Bore size (mm)		**32**	**40**	**50**	**63**	**80**	**100**
Basic weight	Basic style	0.59	0.87	1.44	2.00	3.37	4.45
	Foot style	0.16	0.20	0.38	0.46	0.89	1.09
	Flange style	0.20	0.23	0.47	0.58	1.30	1.81
	Single clevis style	0.16	0.23	0.37	0.60	1.07	1.73
	Double clevis style	0.20	0.32	0.45	0.71	1.28	2.11
Additional weight per each 50 mm of stroke	All mounting brackets	0.11	0.16	0.26	0.27	0.42	0.56
Accessory	Single rod clevis	0.07	0.11	0.22	0.22	0.40	0.40
	Double clevis (With pin)	0.09	0.15	0.34	0.34	0.69	0.69

Calculation: (Example) CP95SD40-100
- Basic weight ····· 0.87 (kg) (Basic, ø40)
- Mounting ····· 0.32 (kg) (Double clevis)
- Additional weight ··· 0.16 (kg/50 st)
- Cylinder stroke ····· 100 (st)

0.87 + 0.16 x 100 ÷ 50 + 0.32 = 1.51 kg

Allowable Kinetic Energy

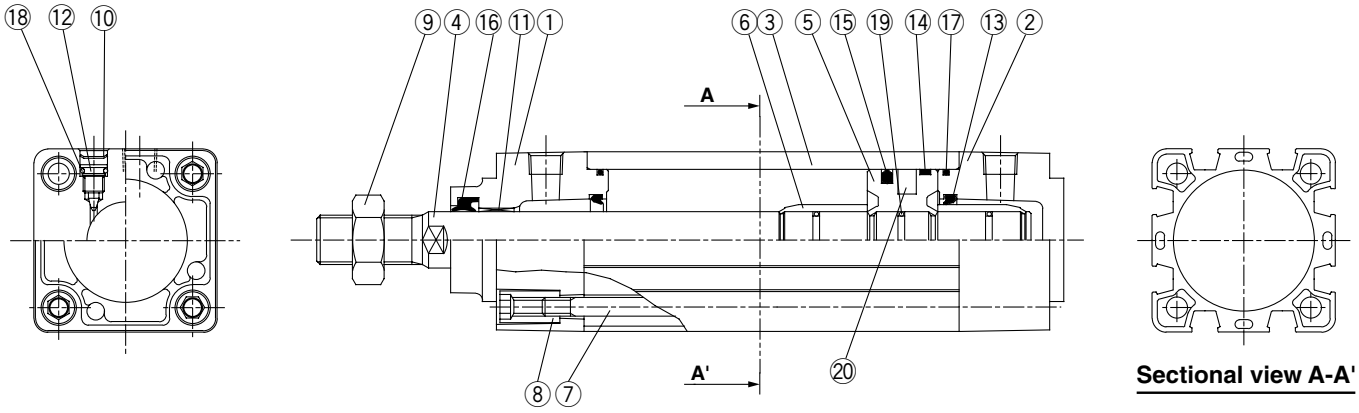


Example: Load limit at rod end when air cylinder ø63 is actuated with max. actuating speed 500 mm/s. See the intersection of lateral axis 500 mm/s and ø63 line, and extend the intersection to left.
Thus the allowable load is 80 kg.

Series CP95

Construction

[First angle projection]



Component Parts

No.	Description	Material
①	Rod cover	Aluminum die-casted
②	Head cover	Aluminum die-casted
③	Cylinder tube	Aluminum alloy
④	Piston rod	Carbon steel
⑤	Piston	Aluminum alloy
⑥	Cushion ring	Brass
⑦	Tie-rod	Steel
⑧	Tie-rod nut	Steel
⑨	Rod end nut	Steel
⑩	Snap ring	Steel for spring
⑪	Bushing	Lead-bronze casted
⑫	Cushion valve	Steel
⑬	Cushion seal	Urethan rubber
⑭	Wear ring	Resin
⑮	Piston seal	NBR
⑯	Rod seal	NBR
⑰	Cylinder tube gasket	NBR
⑱	Cushioning valve seal	NBR
⑲	Piston/rod gasket	NBR
⑳	Magnet	

Replacement Parts: Seal Kit

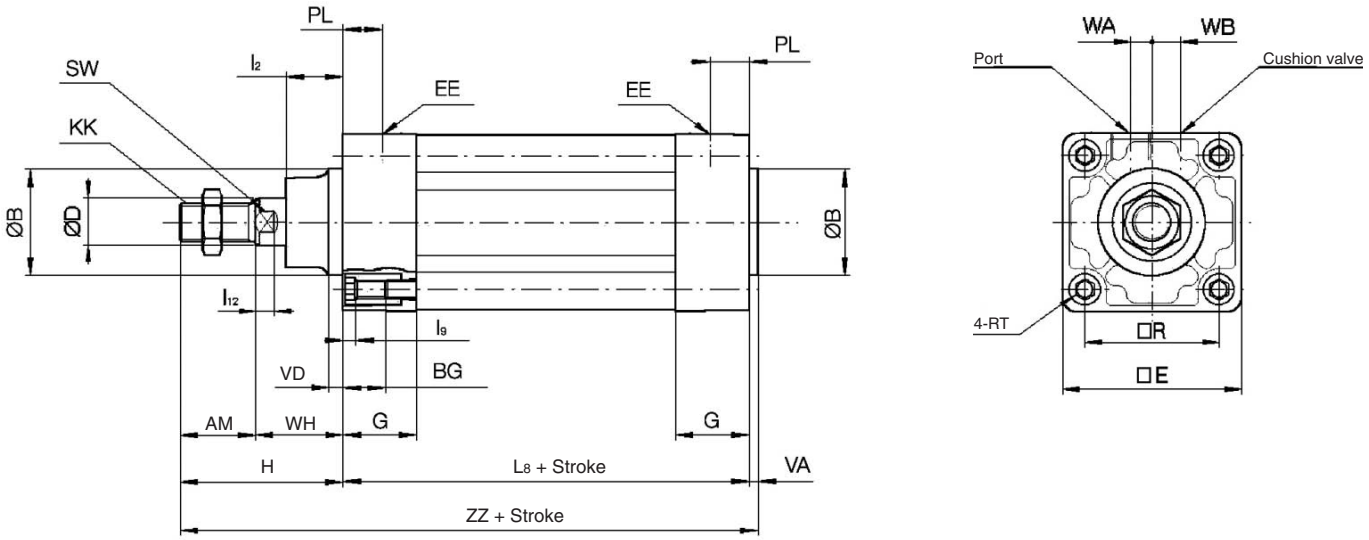
Bore size (mm)	Part no.	Contents
32	CS95-32	Kits include items ⑬ to ⑰.
40	CS95-40	
50	CS95-50	
63	CS95-63	
80	CS95-80	
100	CS95-100	

∗ Seal kits consist of items ⑬ to ⑰ contained in one kit, and can be ordered using the order number for each respective tube bore size.

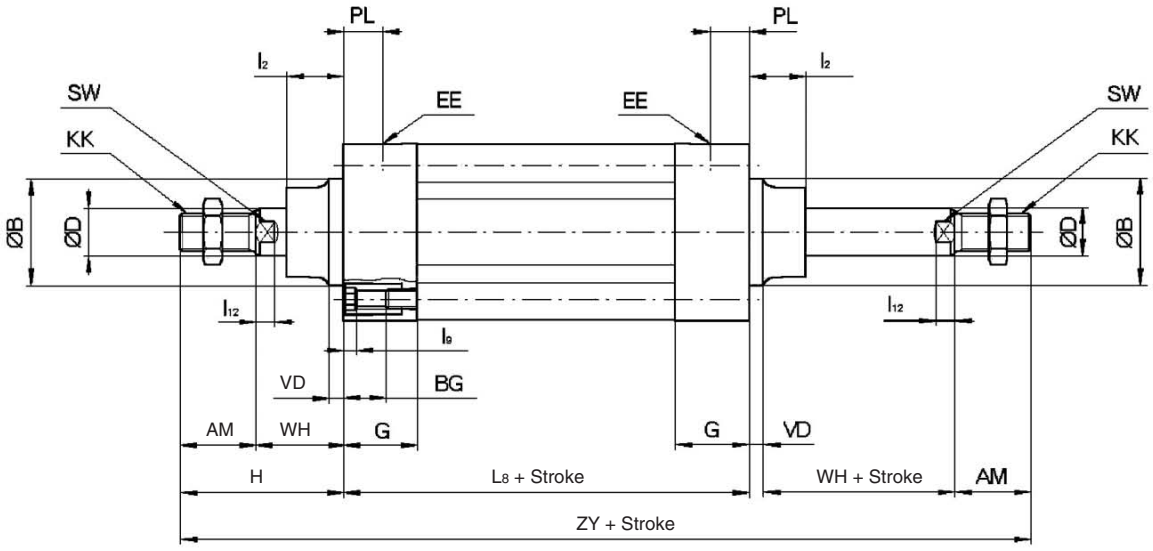
Dimensions: Without Mounting Bracket

[First angle projection]

CP95S□B Bore size-Stroke



CP95S□B Bore size-Stroke W



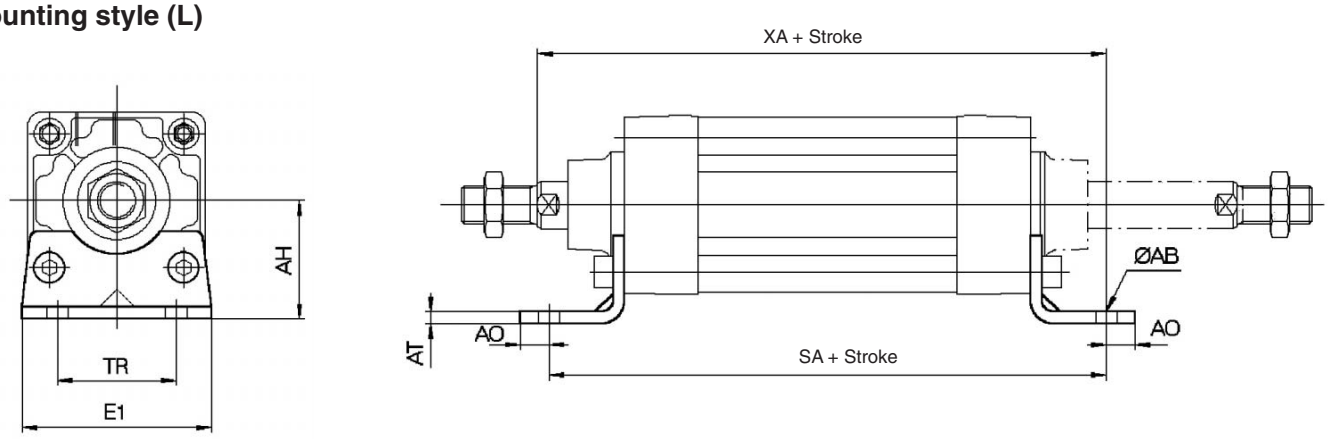
Bore size (mm)	AM	øB	øD	EE	PL	RT	l12	KK	SW	G	BG (MIN)	L8	VD	VA	WA	WB	WH	ZZ	ZY	□E	□R	l2	l9
32	22	30	12	G 1/8	13	M6 x 1	6	M10 x 1.25	10	27	16	94	4	4	4	6.5	26	146	190	46	32.5	15	4
40	24	35	16	G 1/4	14	M6 x 1	6.5	M12 x 1.25	13	27	16	105	4	4	4	9	30	163	213	52	38	17	4
50	32	40	20	G 1/4	15.5	M8 x 1.25	8	M16 x 1.5	16	31.5	16	106	6	4	5	10.5	37	179	244	65	46.5	24	5
63	32	45	20	G 3/8	16.5	M8 x 1.25	8	M16 x 1.5	16	31.5	16	121	6	4	9	12	37	194	259	75	56.5	24	5
80	40	45	25	G 3/8	19	M10 x 1.5	10	M20 x 1.5	21	38	16	128	8	4	11.5	14	46	218	300	95	72	30	5
100	40	55	30	G 1/2	19	M10 x 1.5	10	M20 x 1.5	21	38	16	138	8	4	17	15	51	233	320	114	89	32	5

Series CP95

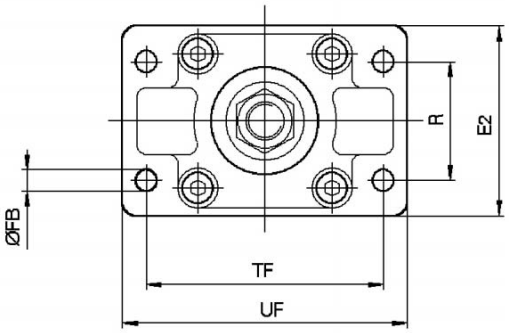
Dimensions: Cylinder Mounting Accessory L, F, G, C and D

[First angle projection]

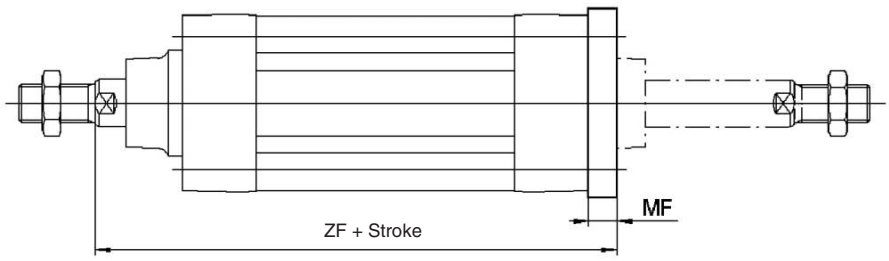
Mounting style (L)



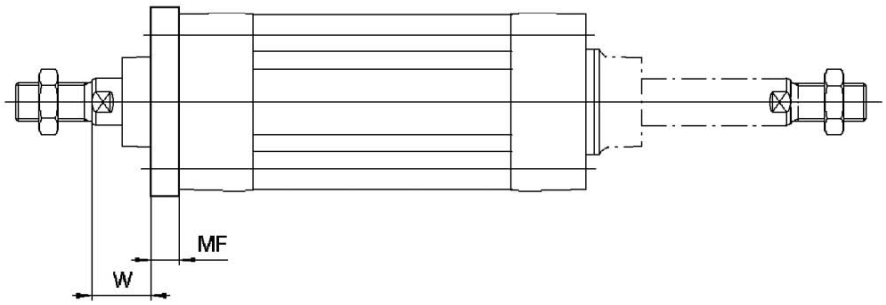
Mounting style (F, G)



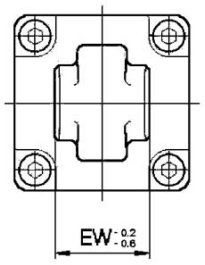
Head side mounting (G)



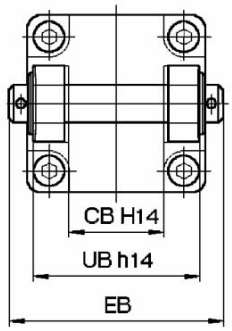
Rod side mounting (F)

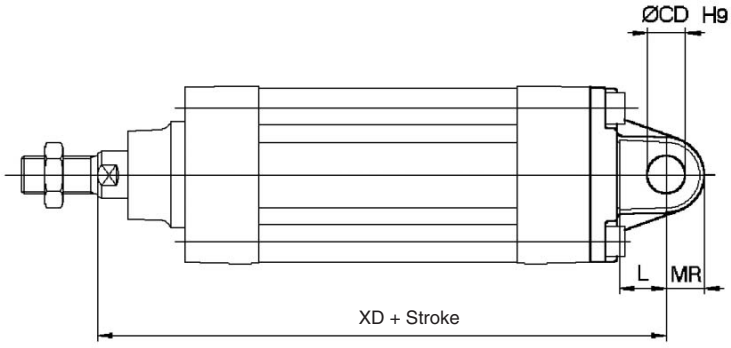


Mounting style (C)



Mounting style (D)



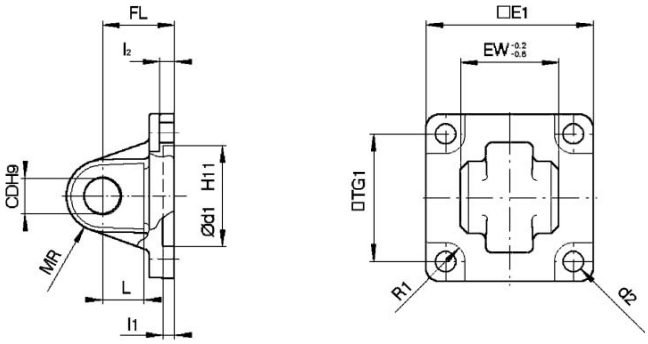


Bore size (mm)	E_1	R	W	MF	ZF	øFB	CD	EB	L	XD	UB	CB	EW	MR	TR	AO	AT	XA	SA	AH	øAB	TF	UF	E_2
32	48	32	16	10	130	7	10	65	12	142	45	26	26	9.5	32	10	4.5	144	142	32	7	64	79	50
40	55	36	20	10	145	9	12	75	15	160	52	28	28	12	36	11	4.5	163	161	36	10	72	90	55
50	68	45	25	12	155	9	12	80	15	170	60	32	32	12	45	12	5.5	175	170	45	10	90	110	70
63	80	50	25	12	170	9	16	90	20	190	70	40	40	16	50	12	5.5	190	185	50	10	100	120	80
80	100	63	30	16	190	12	16	110	20	210	90	50	50	16	63	14	6.5	215	210	63	12	126	153	100
100	120	75	35	16	205	14	20	140	25	230	110	60	60	20	75	16	6.5	230	220	71	14.5	150	178	120

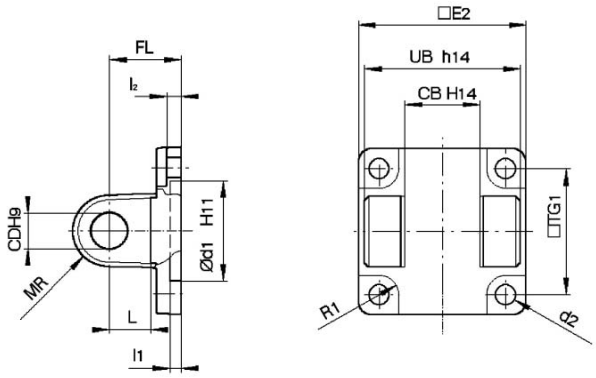
Dimensions: Cylinder Mounting Accessory C, D, E and CR

[First angle projection]

Mounting style (C)

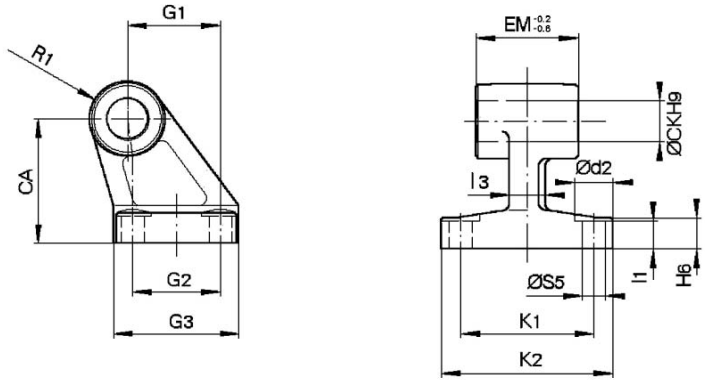


Mounting style (D)



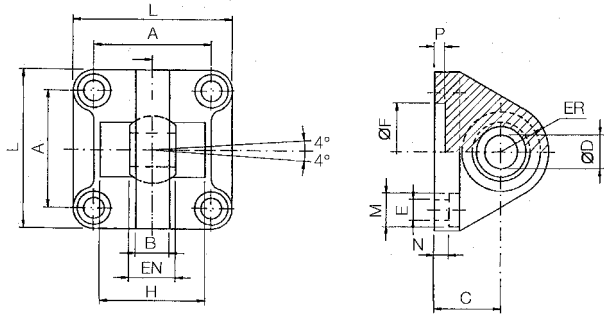
Bore size (mm)	□E1	EW	□TG1	FL	l1	L	l2	ød1	CD	MR	d2	R1	□E2	UB	CB
32	45	26	32.5	22	5	12	5.5	30	10	9.5	6.6	6.5	48	45	26
40	51	28	38	25	5	15	5.5	35	12	12	6.6	6.5	56	52	28
50	64	32	46.5	27	5	15	6.5	40	12	12	9	8.5	64	60	32
63	74	40	56.5	32	5	20	6.5	45	16	16	9	8.5	75	70	40
80	94	50	72	36	5	20	10	45	16	16	11	11	95	90	50
100	113	60	89	41	5	25	10	55	20	20	11	12	115	110	60

Mounting style (E)



Bore size (mm)	ød2	øCK	øS5	K1	K2	l3	G1	l1	G2	EM	G3	CA	H6	R1
32	11	10	6.6	38	51	10	21	7	18	26	31	32	8	10
40	11	12	6.6	41	54	10	24	9	22	28	35	36	10	11
50	15	12	9	50	65	12	33	11	30	32	45	45	12	12
63	15	16	9	52	67	14	37	11	35	40	50	50	12	15
80	18	16	11	66	86	18	47	12.5	40	50	60	63	14	15
100	18	20	11	76	96	20	55	13.5	50	60	70	71	15	19

Mounting style (CR): Head side clevis with ball joint



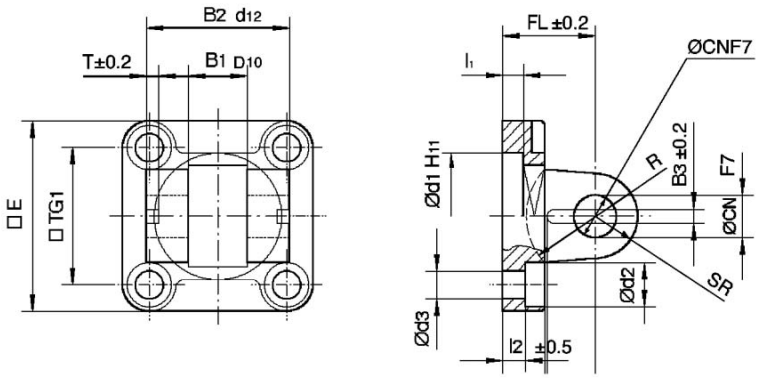
Bore size (mm)	A	B	C	D	EN	ER	F	E	L	M	N	P	H
	±0.2	max	±0.2	H7	–0.1	max	H11	H13		H13	±0.5		±0.5
32	32.5	10.5	22	10	14	15	30	6.6	45	10.5	5.5	5	—
40	38	12	25	12	16	18	35	6.6	55	11	5.5	5	—
50	46.5	15	27	16	21	20	40	9	65	15	6.5	5	51
63	56.5	15	32	16	21	23	45	9	75	15	6.5	5	—
80	72	18	36	20	25	27	45	11	95	18	10	5	—
100	89	18	41	20	25	30	55	11	115	18	10	5	—

Series CP95

Dimensions: Cylinder Mounting Accessory DS and ES

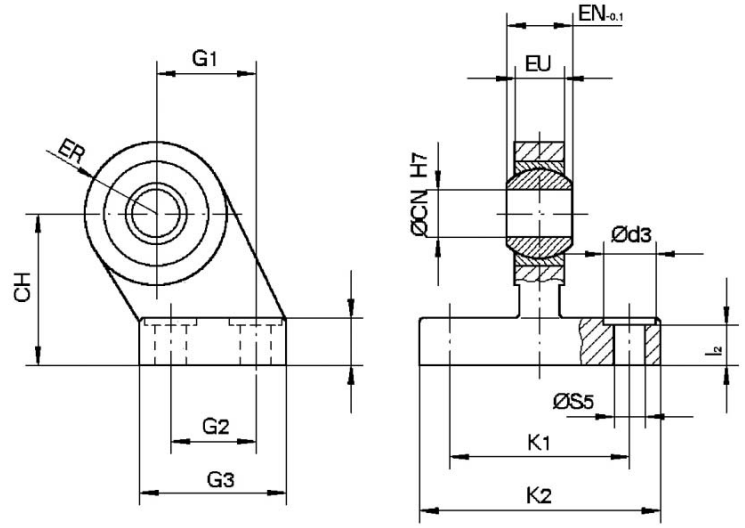
[First angle projection]

Mounting style (DS)



Bore size (mm)	□E	B_1	B_2	B_3	□TG_1	T	l_1 (min)	l_2	FL	H	ød_1	ød_2	ød_3	CN	SR (max)	R
32	45	14	34	3.3	32.5	3	5	5.5	22	10	30	10.5	6.6	10	11	17
40	55	16	40	4.3	38	4	5	5.5	25	10	35	11	6.6	12	13	20
50	65	21	45	4.3	46.5	4	5	6.5	27	10	40	15	9	16	18	22
63	75	21	51	4.3	56.5	4	5	6.5	32	12	45	15	9	16	18	25
80	95	25	65	4.3	72	4	5	10	36	16	45	18	11	20	22	30
100	115	25	75	6.3	89	4	5	10	41	16	55	18	11	20	22	32

Mounting style (ES)



Bore size (mm)	ød_3	øCN	øS5	K1	K2	l_2	G_1	G_2	G_3	EN	EU	CH	H_6	ER
32	11	10	6.6	38	51	8.5	21	18	31	14	10.5	32	10	15
40	11	12	6.6	41	54	8.5	24	22	35	16	12	36	10	18
50	15	16	9	50	65	10.5	33	30	45	21	15	45	12	20
63	15	16	9	52	67	10.5	37	35	50	21	15	50	12	23
80	18	20	11	66	86	11.5	47	40	60	25	18	63	14	27
100	18	20	11	76	96	12.5	55	50	70	25	18	71	15	30

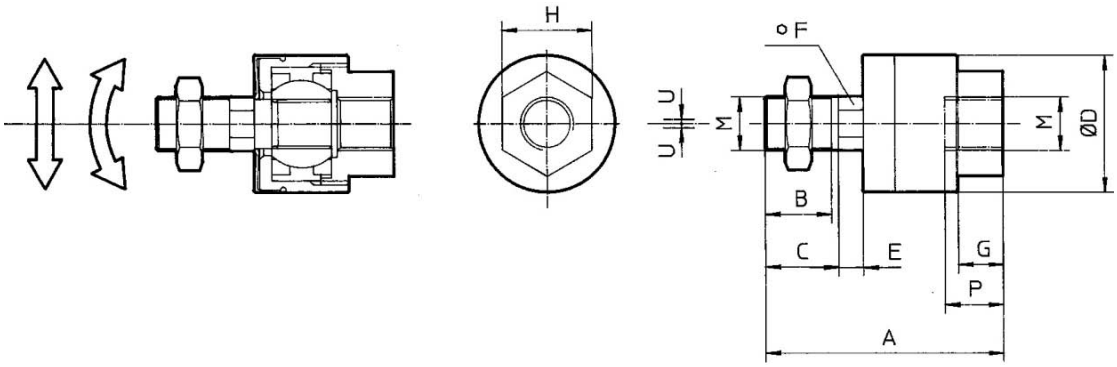
Dimensions: Piston Rod Mounting Accessory

[First angle projection]

Floating Joint JA

Steel

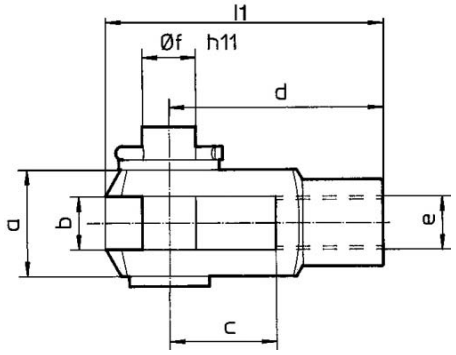
Bore size (mm)	M	Part no.	A	B	C	øD	E	F	G	H	P	U	Load (kN)	Weight (g)	Angle
32	M10 x 1.25	**JA30-10-125**	49.5	19.5	—	24	5	8	8	17	9	0.5	2.5	70	± 5°
40	M12 x 1.25	**JA40-12-125**	60	20	—	31	6	11	11	22	13	0.75	4.4	160	
50, 63	M16 x 1.5	**JA50-16-150**	71.5	22	—	41	7.5	14	13.5	27	15	1.0	11	300	
80, 100	M20 x 1.5	**JAH50-20-150**	101	28	31	59.5	11.5	24	16	32	18	2.0	18	1080	



Rod Clevis GKM (ISO 8140), Supplied with Bolt and Safety Device

Steel

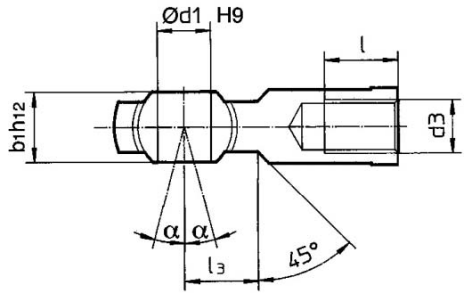
Bore size (mm)	e	Part no.	b	d	øf h11	l1	c	a
32	M10 x 1.25	**GKM10-20**	$10^{+0.50}_{+0.15}$	40	10	52	20	20
40	M12 x 1.25	**GKM12-24**	$12^{+0.50}_{+0.15}$	48	12	62	24	24
50, 63	M16 x 1.5	**GKM16-32**	$16^{+0.50}_{+0.15}$	64	16	83	32	32
80, 100	M20 x 1.5	**GKM20-40**	$20^{+0.60}_{+0.15}$	80	20	105	40	40

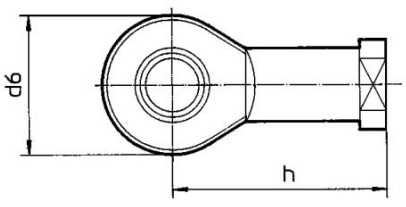


Piston Rod Ball Joint KJ (ISO 8139)

Steel

Bore size (mm)	d_3	Part no.	$ød_1$ H9	h	d_6 (max)	b_1	l	a	l_3
32	M10 x 1.25	**KJ10D**	10	43	28	14	20	13°	14
40	M12 x 1.25	**KJ12D**	12	50	32	16	22	13°	16
50, 63	M16 x 1.5	**KJ16D**	16	64	42	21	28	15°	26
80, 100	M20 x 1.5	**KJ20D**	20	77	50	25	33	15°	26





ISO/VDMA Cylinder: Non-rotating Type
Double Acting with End of Stroke Cushioning
Series CP95K
ø32, ø40, ø50, ø63, ø80, ø100

How to Order

Without auto switch **CP95K** **B** **32** — **100** **W**

With auto switch **CP95KD** **B** **32** — **100** **W** — **Z76** **S**

Built-in magnet

Mounting style

B	Basic/without bracket
L	Axial foot
F	Head side flange
G	Rod side flange
C	Single rear clevis
D	Double rear clevis

Bore size

32	32 mm
40	40 mm
50	50 mm
63	63 mm
80	80 mm
100	100 mm

Stroke (mm)
(Refer to "Standard Stroke" on page 6-13-16.)

Rod

Nil	Single rod
W	Double rod

Auto switch

Nil	Without auto switch

∗ For the applicable auto switch model, refer to the table below.

Number of auto switches

Nil	2 pcs.
S	1 pc.
3	3 pcs.
n	"n" pcs.

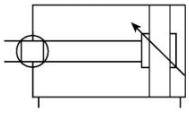
Applicable Auto Switch/Tie-rod Mounting Type

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC	Load voltage DC	Load voltage AC	Auto switch model: Electrical entry direction Vertical	Auto switch model: Electrical entry direction Lateral	Lead wire length (m) Note): 0.5 (Nil)	3 (L)	5 (Z)	Applicable load		Mounting bracket
Reed switch	—	Grommet	Yes	3-wire	—	5 V	—	—	**Z76**	●	●	—	IC circuit	—	BMP1-032
				2-wire	24 V	—	100 V	—	**Z73**	●	●	●	—	Relay, PLC	
			No			5 V, 12 V	100 V or less	—	**Z80**	●	●	—	IC circuit	PLC	
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	**Y69A**	**Y59A**	●	●	○	IC circuit	Relay, PLC	
				3-wire (PNP)				**Y7PV**	**Y7P**	●	●	○			
				2-wire		12 V		**Y69B**	**Y59B**	●	●	○	—		
	Diagnostic indication (2-color indication)			3-wire (NPN)		5 V, 12 V		**Y7NWV**	**Y7NW**	●	●	○	IC circuit		
				3-wire (PNP)				**Y7PWV**	**Y7PW**	●	●	○			
				2-wire		12 V		**Y7BWV**	**Y7BW**	●	●	○	—		
	Water resistant (2-color indication)							—	**Y7BA**	—	●	—			

∗ Lead wire length symbols: 0.5 m ····· Nil (Example) A53
3 m ····· L (Example) A53L
5 m ····· Z (Example) A53Z

○: Manufactured upon receipt of order.

ISO/VDMA Cylinder: Non-rotating Type
Double Acting w/ End of Stroke Cushioning
Series CP95K



Specifications

Bore size (mm)	32	40	50	63	80	100
Action	Double acting					
Fluid	Air					
Proof pressure	1.5 MPa					
Max. operating pressure	1.0 MPa					
Min. operating pressure	0.05 MPa					
Ambient and fluid temperature	Without auto switch: –10 to 70°C (No freezing) With auto switch: –10 to 60°C (No freezing)					
Lubrication	Not required (Non-lube)					
Operating piston speed	50 to 1000 mm/s					
Allowable stroke tolerance	Up to 250: $^{+1.0}_{0}$, 251 to 1000: $^{+1.4}_{0}$, 1001 to 1500: $^{+1.8}_{0}$					
Cushion Note)	Both ends (Air cushion)					
Thread tolerance	JIS Class 2					
Port size	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2
Mounting	Basic style, Axial foot style, Rod side flange style, Head side flange style, Single clevis style, Double clevis style					
Non-rotating accuracy	ø32, ø40	±0.5°				
	ø50, ø63	±0.5°				
	ø80, ø100	±0.3°				
Allowable rotating torque (N·m) max.	ø32	0.25	ø80	0.79		
	ø40	0.45	ø100	0.93		
	ø50, ø63	0.64	—	—		

Note) Absorbable kinetic energy by cushion mechanism is identical to double acting single rod.

Accessory

Mounting		Basic style	Foot style	Rod side frange style	Head side frange style	Single clevis style	Double clevis style
Standard	Rod end nut	●	●	●	●	●	●
	Clevis pin	—	—	—	—	—	●
Option	Single rod clevis	●	●	●	●	●	●
	Double rod clevis (With pin)	●	●	●	●	●	●
	Rod boot	●	●	●	●	●	●

Weight/Aluminum Tube

(kg)

Bore size (mm)		32	40	50	63	80	100
Basic weight	Basic style	0.59	0.87	1.44	2.00	3.37	4.45
	Axial foot style	0.16	0.20	0.38	0.46	0.89	1.09
	Flange style	0.20	0.23	0.47	0.58	1.30	1.81
	Single clevis style	0.16	0.23	0.37	0.60	1.07	1.73
	Double clevis style	0.20	0.32	0.45	0.71	1.28	2.11
Additional weight per each 50 mm of stroke	All mounting brackets	0.11	0.16	0.26	0.27	0.42	0.56
Accessory	Single rod clevis	0.07	0.11	0.22	0.22	0.40	0.40
	Double clevis (With pin)	0.09	0.15	0.34	0.34	0.69	0.69

Calculation: (Example) CP95KD40-100
- Basic weight ····· 0.87 (kg) (Basic)
- Additional weight ··· 0.16 (kg/50 st)
- Cylinder stroke ····· 100 (st)
- Mounting ····· 0.32 (kg) (Double clevis)

0.87 + 0.16 x 100 ÷ 50 + 0.32 = 1.51 kg

Series CP95K

Standard Stroke

Bore size (mm)	Standard stroke (mm)
32	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500
40	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500
50	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600
63	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600
80	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600, 700, 800
100	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600, 700, 800

Intermediate strokes are available.

Minimum Stroke for Auto Switch Mounting

Refer to page 6-13-19 on “Minimum Strokes for Auto Switch Mounting”.

Theoretical Output

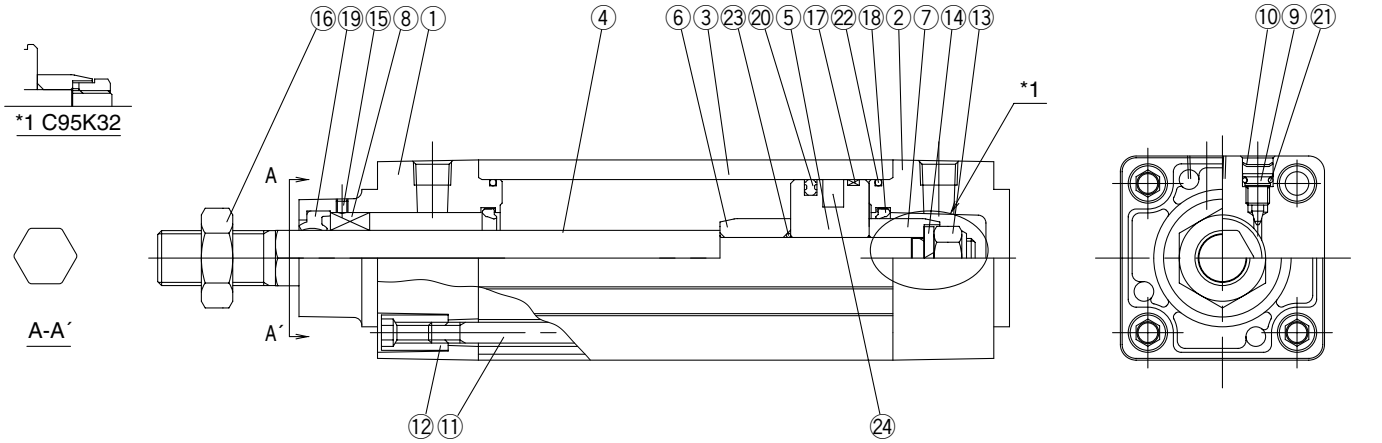
OUT side is identical to double acting single rod. Refer to table below for IN side.

Bore size (mm)	Piston area (mm^2)	Bore size (mm)	Piston area (mm^2)
32	675	**63**	2804
40	1082	**80**	4568
50	1651	**100**	7223

Theoretical output (N) =
Pressure (MPa) x Piston area (mm^2)

Construction

[First angle projection]



Component Parts

No.	Description	Material
①	Rod cover	Aluminum die-casted
②	Head cover	Aluminum die-casted
③	Cylinder tube	Aluminum alloy
④	Piston rod	Stainless steel
⑤	Piston	Aluminum alloy
⑥	Cushion ring A	Rolled steel
⑦	Cushion ring B	Rolled steel
⑧	Bushing	Oil impregnated sintered alloy
⑨	Cushion valve	Steel
⑩	Snap ring	Steel for spring
⑪	Tie-rod	Carbon Steel
⑫	Tie-rod nut	Steel
⑬	Piston nut	Steel

No.	Description	Material
⑭	Spring washer	Steel wire
⑮	Set screw	Chrome-molybdenum steel
⑯	Rod end nut	Steel
⑰	Wear ring	Resin
⑱	Cushion seal	Urethan rubber
⑲	Rod seal	NBR
⑳	Piston seal	NBR
㉑	Cushion valve seal	NBR
㉒	Cylinder tube gasket	NBR
㉓	Piston gasket	NBR
㉔	Magnet	

Replacement Parts: Seal Kit

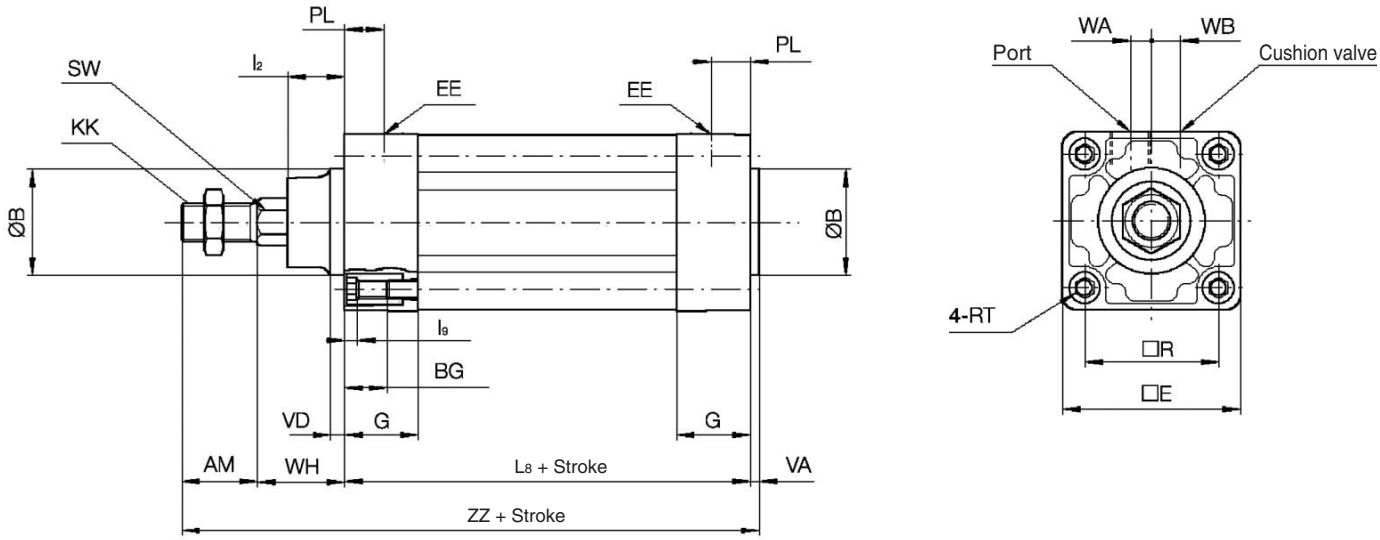
Bore size (mm)	Kit no.	Contents
32	CK95-32	Kits include items ⑰ to ⑳ and ㉒.
40	CK95-40	
50	CK95-50	
63	CK95-63	
80	CK95-80	
100	CK95-100	

∗ Seal kits consist of items ⑰ to ⑳ and ㉒ contained in one kit, and can be ordered using the order number for each respective tube bore size.

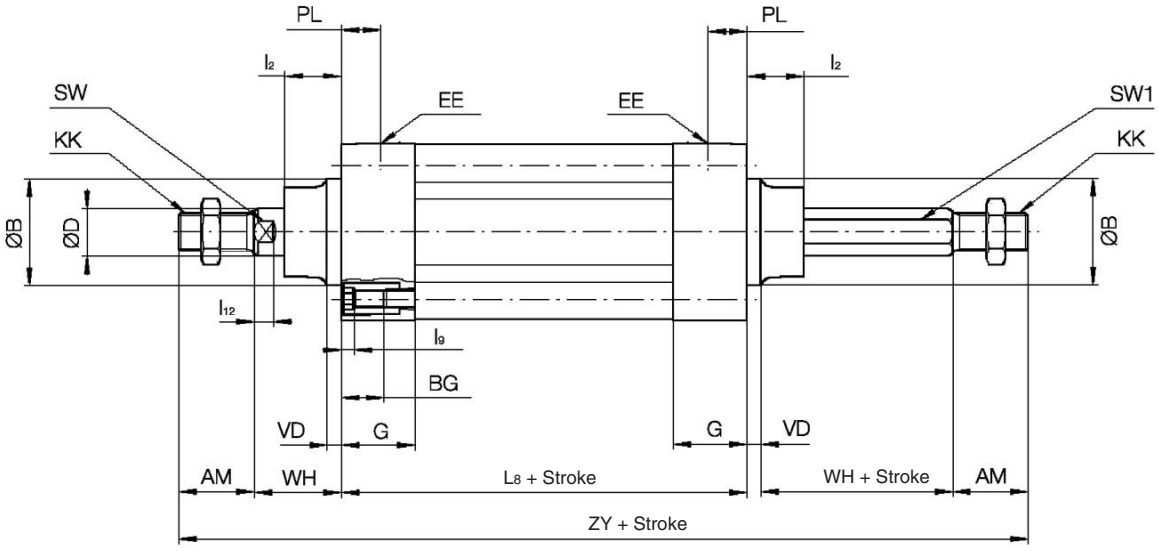
Dimensions: Non-rotating Rod Specifications

[First angle projection]

CP95K□B Bore size - Stroke



CP95K□B Bore size - Stroke W



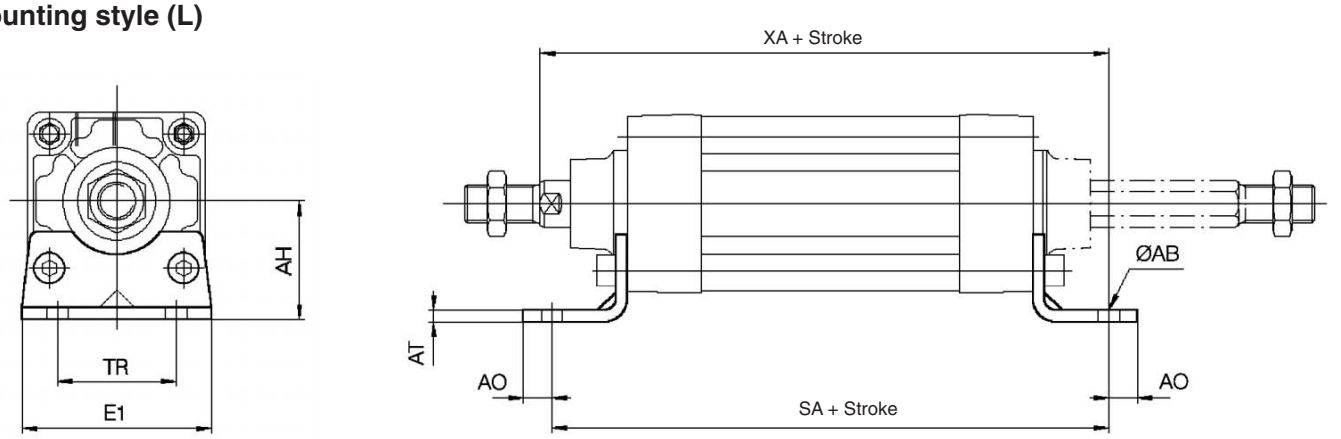
Bore size (mm)	AM	øB	øD	EE	PL	RT	l12	KK	SW	G	BG (MIN)	L8	VD	VA	WA	WB	WH	ZZ	ZY	□E	□R	l2	l9
32	22	30	12	G 1/8	13	M6 x 1.0	6	M10 x 1.25	10	27	16	94	4	4	4	6.5	26	146	190	46	32.5	15	4
40	24	35	16	G 1/4	14	M6 x 1.0	6.5	M12 x 1.25	13	27	16	105	4	4	4	9	30	163	213	52	38	17	4
50	32	40	20	G 1/4	15.5	M8 x 1.25	8	M16 x 1.5	16	31.5	16	106	6	4	5	10.5	37	179	244	65	46.5	24	5
63	32	45	20	G 3/8	16.5	M8 x 1.25	8	M16 x 1.5	16	31.5	16	121	6	4	9	12	37	194	259	75	56.5	24	5
80	40	45	25	G 3/8	19	M10 x 1.5	10	M20 x 1.5	21	38	16	128	8	4	11.5	14	46	218	300	95	72	30	5
100	40	55	30	G 1/2	19	M10 x 1.5	10	M20 x 1.5	21	38	16	138	8	4	17	15	51	233	320	114	89	32	5

Series CP95K

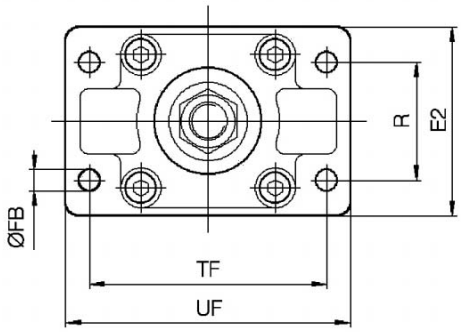
Dimensions: Cylinder Mounting Accessory L, F, G, C and D

[First angle projection]

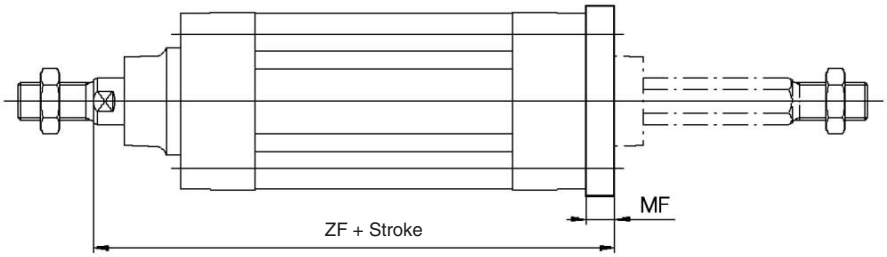
Mounting style (L)



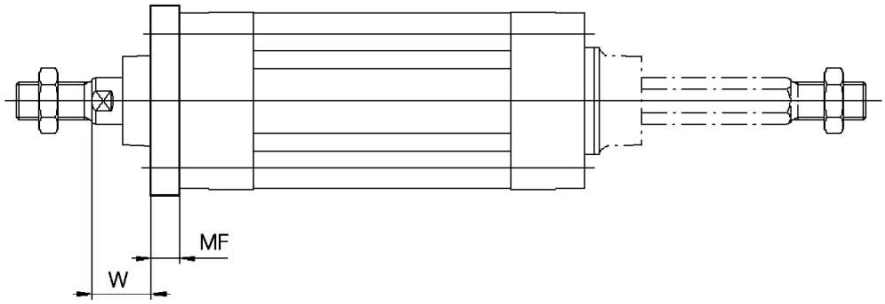
Mounting style (F, G)



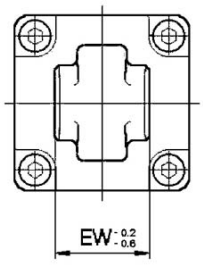
Head side mounting (G)



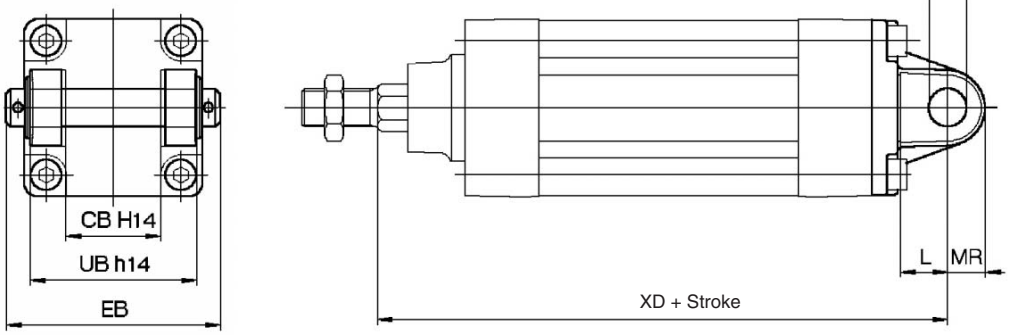
Rod side mounting (F)



Mounting style (C)



Mounting style (D)



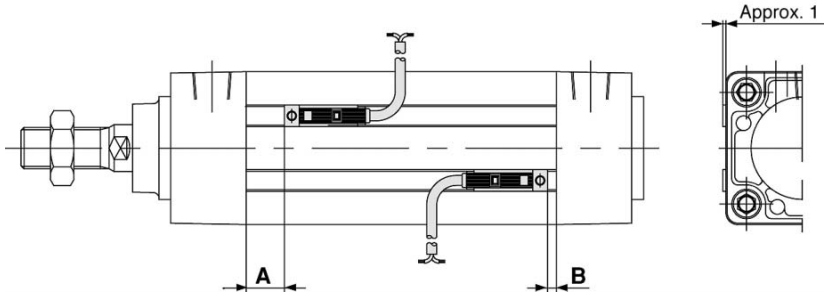
Bore size (mm)	E_1	R	W	MF	ZF	øFB	CD	EB	L	XD	UB	CB	EW	MR	TR	AO	AT	XA	SA	AH	øAB	TF	UF	E_2
32	48	32	16	10	130	7	10	65	12	142	45	26	26	9.5	32	10	4.5	144	142	32	7	64	79	50
40	55	36	20	10	145	9	12	75	15	160	52	28	28	12	36	11	4.5	163	161	36	10	72	90	55
50	68	45	25	12	155	9	12	80	15	170	60	32	32	12	45	12	5.5	175	170	45	10	90	110	70
63	80	50	25	12	170	9	16	90	20	190	70	40	40	16	50	12	5.5	190	185	50	10	100	120	80
80	100	63	30	16	190	12	16	110	20	210	90	50	50	16	63	14	6.5	215	210	63	12	126	153	100
100	120	75	35	16	205	14	20	140	25	230	110	60	60	20	75	16	6.5	230	220	71	14.5	150	178	120

Minimum Stroke for Auto Switch

Type	Auto switch model	No. of auto switches mounted *	ø32	ø40	ø50	ø63	ø80	ø100
Reed switch	D-Z73L	2 pcs.	25				15	
	D-Z80L	1 pcs.						
Solid state switch	D-Y59BL	2 pcs.	25				15	
	D-Y69BL D-Y7PL	1 pcs.						

* Auto switches are mounted on the same side but in different grooves of the cylinder.

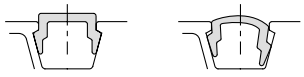
Recommended Mounting Position for Stroke Ends



Bore size (mm)	D-Z73L, D-Z80L, D-Y7PL D-Y59BL, D-Y69BL	
	A	B
32	14	1
40	25	1
50	16	2
63	31	2
80	21.5	5.5
100	31.5	5.5

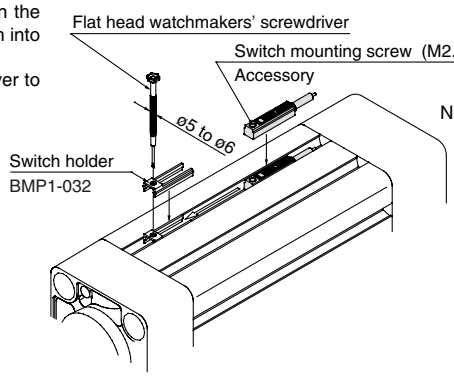
Mounting of Auto Switch

When attaching an auto switch, first take a switch holder between your fingers and press it into a switch mounting groove. When doing this, confirm that it is set in the correct mounting orientation, or reattach if necessary. Next, insert an auto switch into the groove and slide it until it is positioned under the switch holder.
After establishing the mounting position, use a watchmakers flat head screwdriver to tighten the switch mounting screw which is included.



Correct **Incorrect**

Switch holder: BMP1-032



Note) When tightening the auto switch mounting screw, use a watchmakers' screw driver with a handle about 5 to 6 mm in diameter. Tighten to a torque of approximately 0.05 to 0.1 N·m (0.51 to 1.02 kgf·cm). As a rule, it is turned about 90° past the point at which tightening can be felt.

How to Order Auto Switch, Holder and Groove Cover

Auto Switch Holder Band

Bore size (mm)	Part no.	
	Auto switch	Switch holder
32	D-Z73L D-Z80L D-Y7PL D-Y59BL D-Y69BL	BMP1-032
40		
50		
63		
80		
100		

Groove Cover of Square Tube

Bore size (mm)	Part no.	Cylinder length without stroke
32	CP95-AL□	41.5 mm
40		52.5 mm
50		44.5 mm
63		59.5 mm
80		53.5 mm
100		63.5 mm

□ Write the required length of the groove cover in the box.

Groove covers are available in progressive rates of 1 meter. Please indicate round figures when ordering.

Order example: Groove cover for CP95SB63-160
59.5 mm + 160 mm = 239.5 x 8 grooves = 1916 mm
[Cylinder length without stroke] [Stroke] [8 grooves in the square tube]

Length to order: 1916 mm corresponds to a groove cover of 2 m for each cylinder
Order no.: **CP95-AL (2) length in meters**