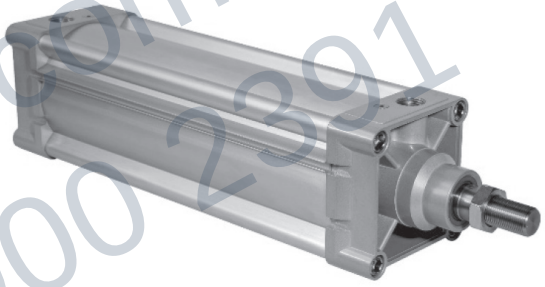
Neles Easyflow™ heavy duty pneumatic cylinders
Series SC

Cylinder diameter 32 to 100 mm as per ISO 15552 and VDMA 24562.



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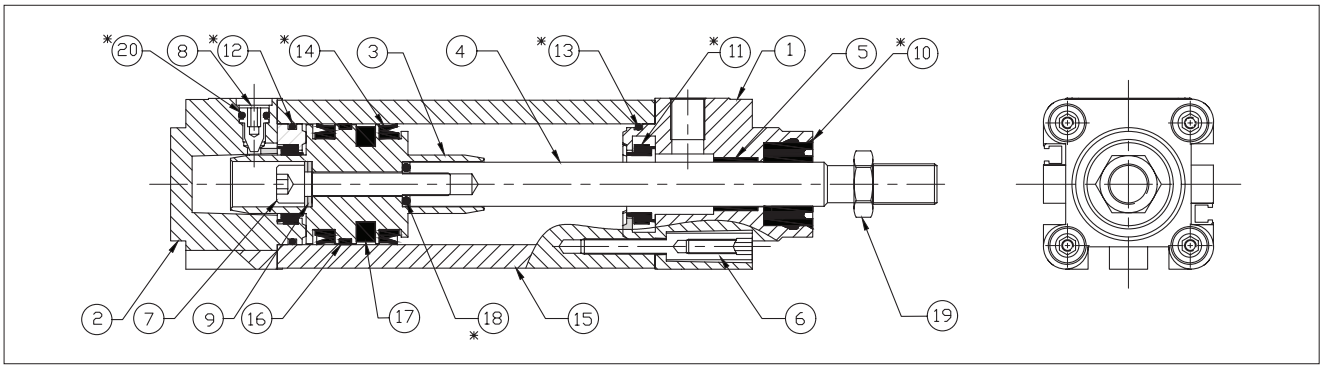
Features

- According to ISO 15552 & VDMA 24562
- Cylinder tube from extruded profile aluminium micro honed for extremely low friction.
- Cylinder barrel treated for special anodizing to reduce friction.
- Adjustable cushioning at both ends.
- High energy absorption due to special seal profile.
- Lubrication not necessary (maintain once started oil mist lubrication)
- Operating pressure range 1-10 bar
- Operating temperature: -20 °C to 70 °C with NBR seals and -20 °C to +125 °C with Viton
- Operating medium: Compressed air, filtered to minimum 50 µm
- Permanent magnet is standard.

Approvals & Certificates

- Approved to ATEX 2014/34/EU
- CE
- SIL 3 Capable
- Ingress Protection class: IP66M & IP67M

SC series construction



Part	Material	Part no
Cylinder tube	Anodized aluminium	15
Cover	Aluminium	1, 2
Piston rod	Stainless steel (SS 410/SS 420)	4
Piston	Aluminium	3
Cover seal	NBR	12*, 13*
Lip seal	NBR	14*
Piston rod guide	Phosphor bronze	5
Washer	Steel	9
Cushioning screw	Steel	8

Part	Material	Part no
Cushioning seal	NBR	11*
Rod seal	Polyurethane	10*
O ring	NBR	18*
Cover bolt	Galvanized steel	6
Permanent magnet	-	17
SHC screw	HGA steel	7
Piston guide	High polymer	16
Lock nut	Steel	19
O-ring	NBR	20*

NOTE-1: * MARKED COMPONENTS ARE THE PARTS OF THE SEAL KIT.

Forces (output thrust) for double acting cylinder

Double acting cylinder		Force (N)									
Bore diameter (mm)	Piston rod diameter (mm)	Pressure (bar)									
			1	2	3	4	5	6	7	8	9	10
32	12	Extend	80	160	240	320	400	480	560	640	720	800
		Retract	69	138	207	276	345	414	483	552	621	690
40	16	Extend	126	252	378	504	630	756	882	1008	1134	1260
		Retract	105	211	311	422	528	633	739	844	950	1055
50	20	Extend	196	392	588	788	980	1176	1372	1568	1764	1960
		Retract	165	330	495	660	825	990	1155	1320	1485	1650
63	20	Extend	312	624	936	1248	1560	1872	2184	2496	2808	3120
		Retract	281	562	843	1124	1405	1686	1967	2248	2529	2810
80	25	Extend	503	1006	1509	2012	2515	3018	3521	4024	4527	5030
		Retract	453	903	1359	1812	2265	2718	3171	3624	4077	4530
100	25	Extend	785	1570	2355	3140	3925	4710	5495	6280	7065	7850
		Retract	736	1473	2209	2946	3682	4419	5156	5892	6639	7365

Max. 0.1 bar is necessary to deal with the mechanical friction
To obtain a uniform speed, the load degree is not to be chosen over 60%

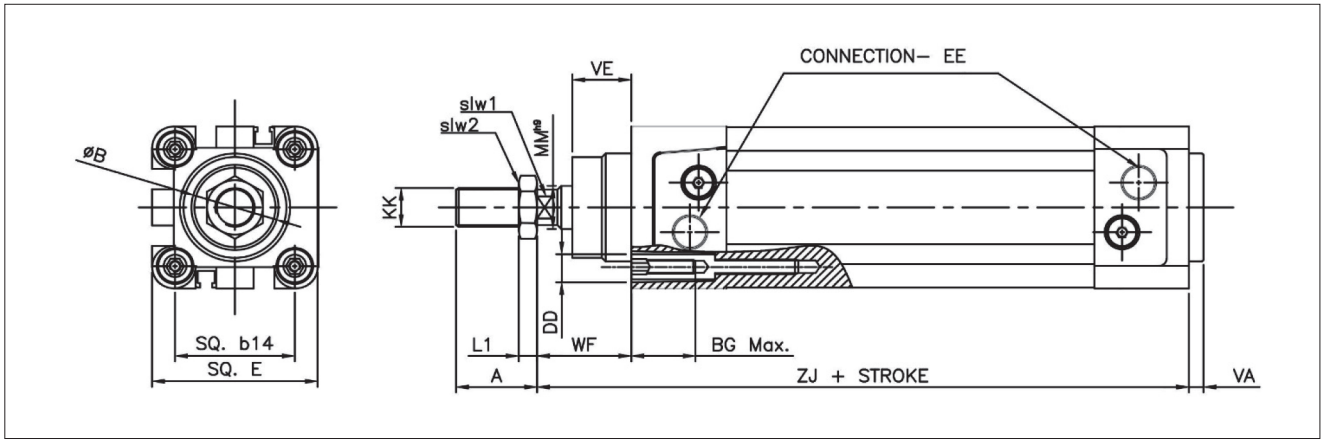
Air consumption

Air consumption		dm^3 A.N.R./cm stroke		A.N.R.= dm^3 under norm-conditions					$1dm^3$=1 litre	
Cylinder diameter	1 bar	2 bar	3 bar	4 bar	5 bar	6 bar	7 bar	8 bar	9 bar	10 bar
32	0.017	0.025	0.033	0.041	0.049	0.057	0.065	0.073	0.081	0.089
40	0.026	0.038	0.05	0.063	0.076	0.088	0.1	0.113	0.126	0.139
50	0.04	0.059	0.079	0.099	0.118	0.138	0.158	0.177	0.197	0.22
63	0.063	0.094	0.125	0.156	0.188	0.219	0.25	0.281	0.312	0.343
80	0.101	0.151	0.202	0.252	0.302	0.352	0.403	0.453	0.503	0.554
100	0.158	0.236	0.315	0.393	0.472	0.55	0.629	0.708	0.786	0.865

Special spring return cylinder can be manufactured for application, where in larger spring forces are needed. Please consult Valmet. We need working forces for your application.
Force F1 when the spring is not compressed & F2 when spring is compressed Ideally we need either F1 or F2
Customised cylinders are available and we supply many customise cylinders for various applications.
- Following versions are available on request
- Three stage cylinders
- Tandem cylinders
- Double ended piston rod
- Knocker cylinders

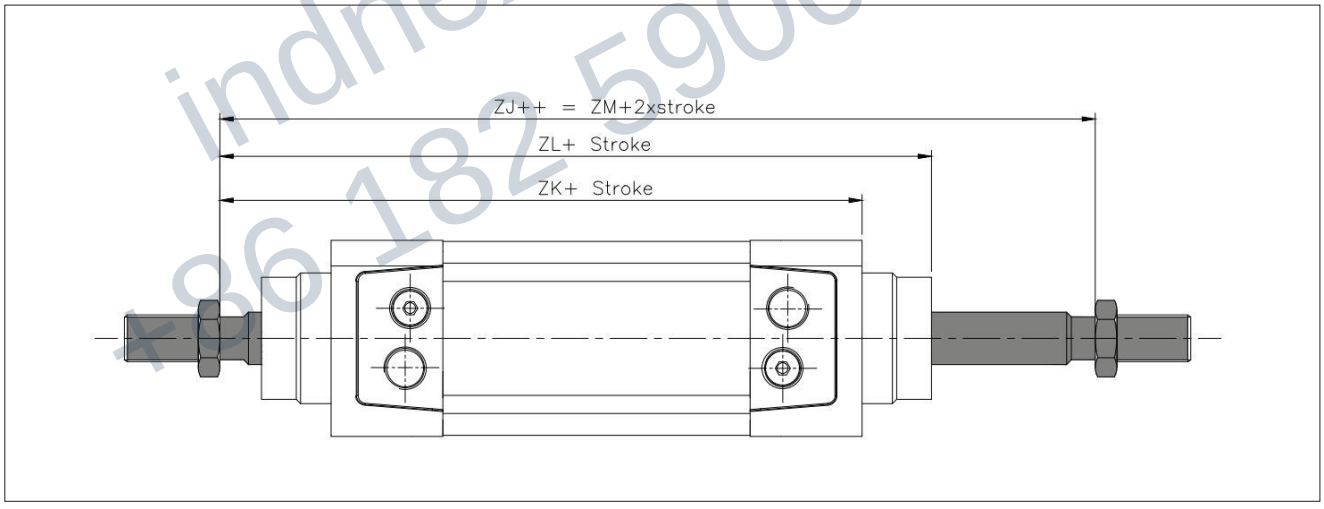
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Basic cylinder dimensions



Cylinder diameter	A	ØB	BG max	DD	E max	EE	KK	MM	b14	VA	VE	WF	ZJ	L1	slw1	slw2
32	22	30	16	M6	45	G 1/8	M10x1.25	12	32.5	4	16	26	120	5	10	17
40	24	35	16	M6	54	G 1/4	M12x1.25	16	38	4	20	30	135	7	13	19
50	32	40	20	M8	64	G 1/4	M16x1.5	20	46.5	4	27	38.5	144.5	8	17	24
63	32	45	21	M8	75	G 3/8	M16x1.5	20	56.5	4	27	37	158	8	17	24
80	40	45	22	M10	93	G 3/8	M20x1.5	25	72	4	35	47.5	175.5	10	22	30
100	40	55	22	M10	110	G 1/2	M20x1.5	25	89	4	38	52.5	190.5	10	22	30

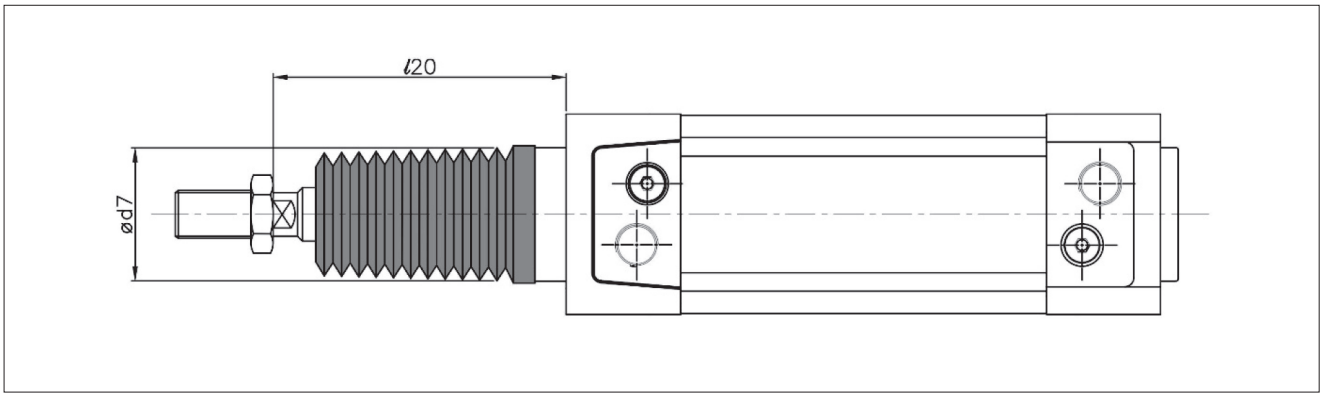
DS – Double ended piston rod



Cylinder diameter	ZK	ZL	ZM
32	120	136	146
40	135	155	165
50	144.5	172	183
63	158	185	195
80	175.5	211	223
100	190.5	229	243

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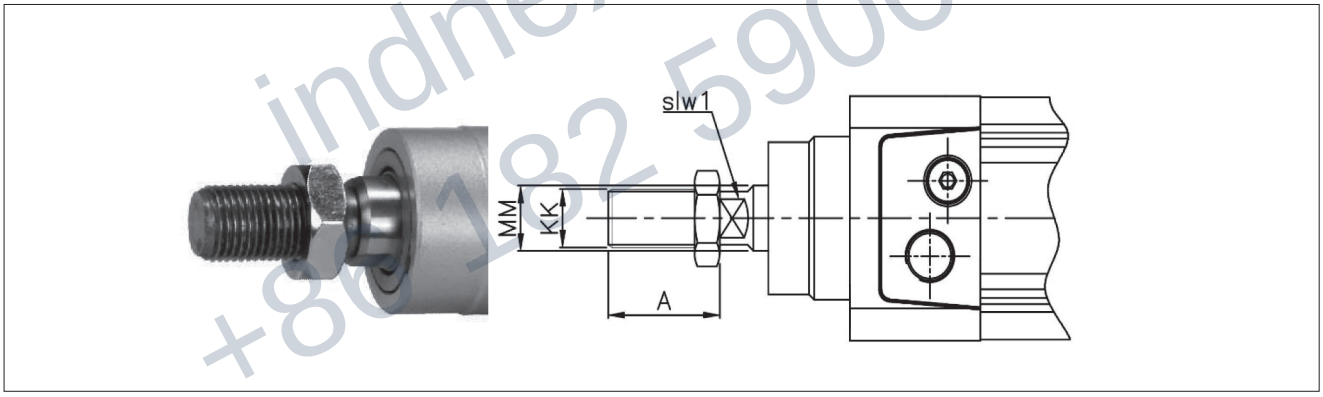
BG – Bellows



Cylinder diameter	L20 at stroke			Bellow diameter Ød7
	1-150	151-300	301-450	
32	86	146	206	50
40	90	150	210	50

Cylinder diameter	L20 at stroke			Bellow diameter Ød7
	0-250	251-500	501-750	
50	119	199	279	60
63	117	197	277	60
80	128	208	288	60
100	133	213	293	60

PISTON ROD CONNECTION
O – Outer thread with locknut

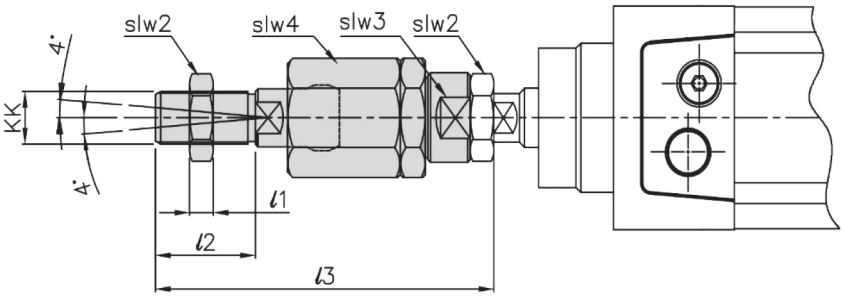


Diameter	A (0 TO +0.5)	KK	MM h9	SLW1
32	22	M10 x 1.25	12	10
40	24	M12 x 1.25	16	13
50	32	M16 x 1.5	20	17
63	32	M16 x 1.5	20	17
80	40	M20 x 1.5	25	22
100	40	M20 x 1.5	25	22

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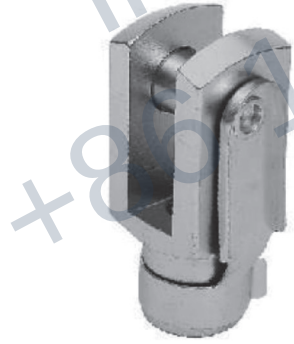
F – Flexible joint

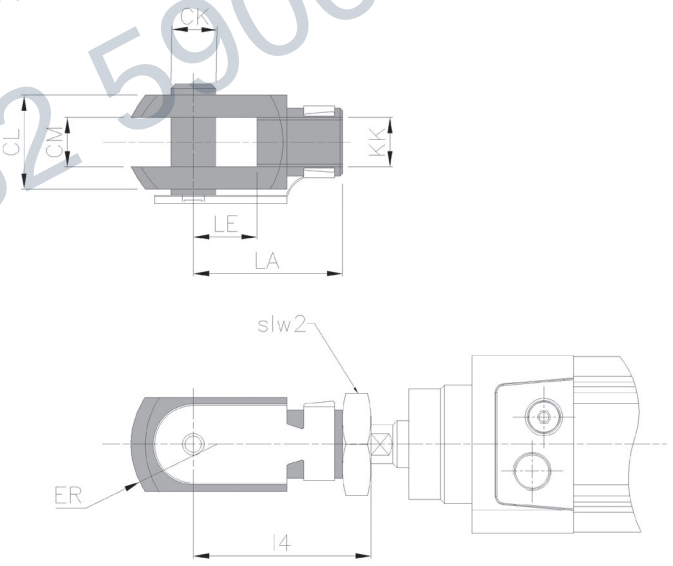




Ø	KK	l1	l2	l3 min. - max	slw2	slw3	slw4
32	M10 x 1.25	5	20	78-82	17	19	30
40	M12 x 1.25	6	24	85-88	19	19	30
50	M16 x 1.5	8	32	116-119	24	30	41
63	M16 x 1.5	8	32	116-119	24	30	41
80	M20 x 1.5	10	40	136 - 140	30	30	41
100	M20 x 1.5	10	40	136 - 140	30	30	41

S – Fork with pin

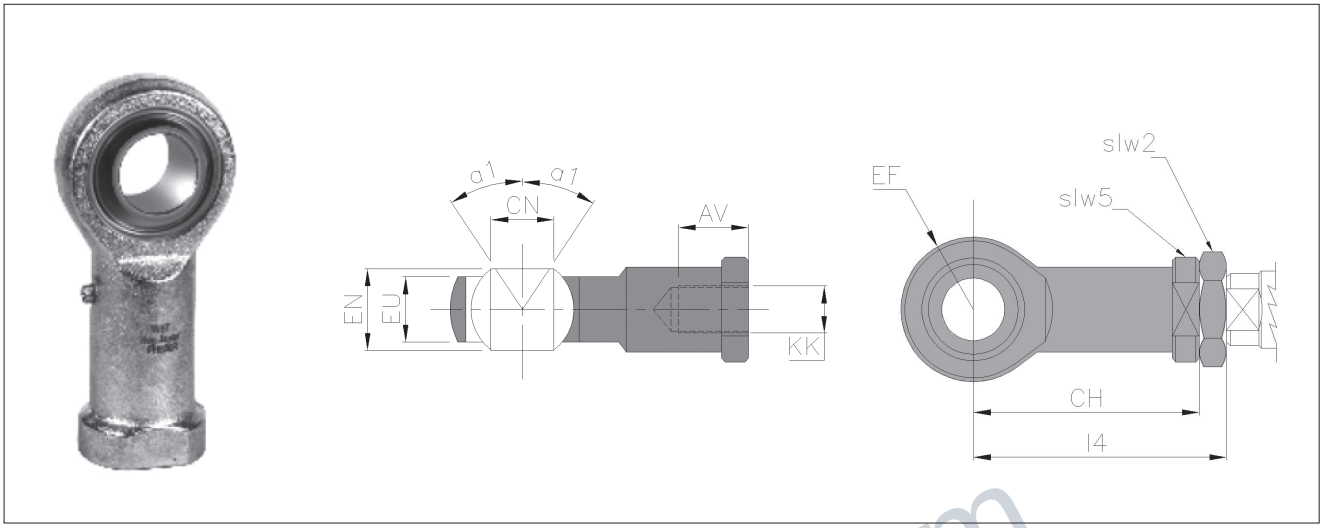




Cylinder diameter	KK	CK (h11)	CL	CM (+0.15, +0.33)	ER max	LE min	LA	l4	slw2
32	M10X1.25	10	20	10	13	20	40	45	18
40	M10X1.25	12	24	12	17	24	48	55	21
50	M16X1.5	16	32	16	21	32	64	72	27
63	M16X1.5	16	32	16	21	32	64	72	27
80	M20X1.5	20	40	20	27	40	80	90	33
100	M20X1.5	20	40	20	27	40	80	90	33

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W- Ball and socket joint

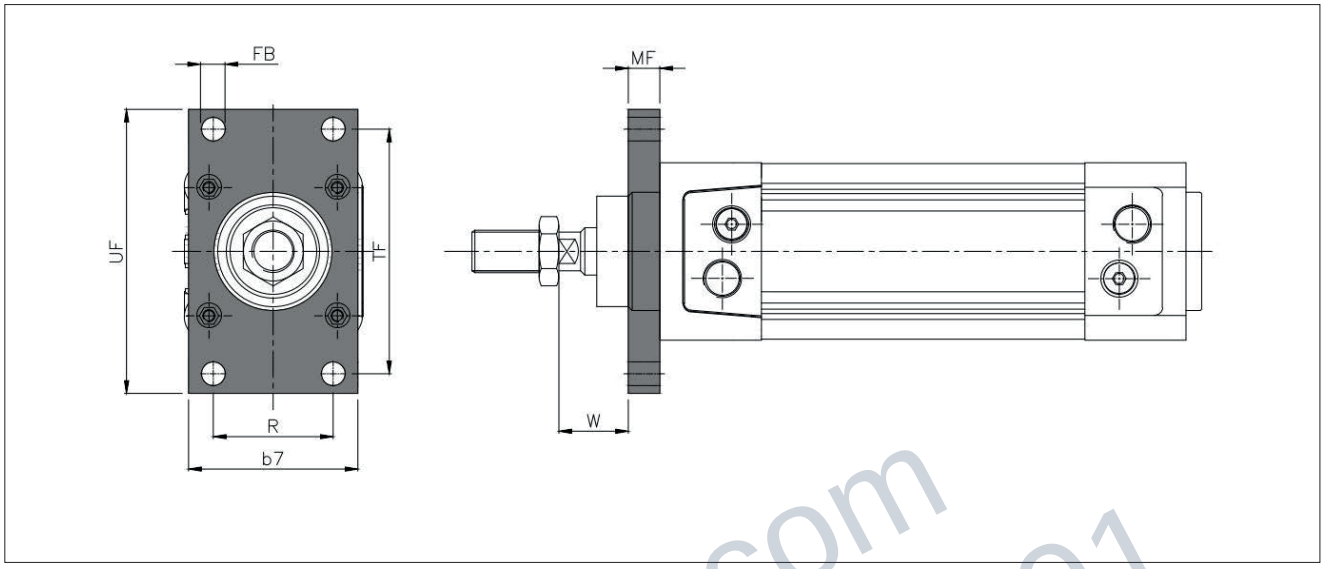


Cylinder diameter	KK	CN	EU	EN	CH	AV (Min)	L4 (Min)	Slw2	Slw5
32	M10x1.25	10	10.5	14	43	20	48	17	17
40	M10x1.25	12	12	16	50	22	57	19	19
50	M16x1.5	16	15	21	64	28	72	24	22
63	M16x1.5	16	15	21	64	28	72	24	22
80	M20x1.5	20	18	25	77	33	87	30	30
100	M20x1.5	20	18	25	77	33	87	30	30

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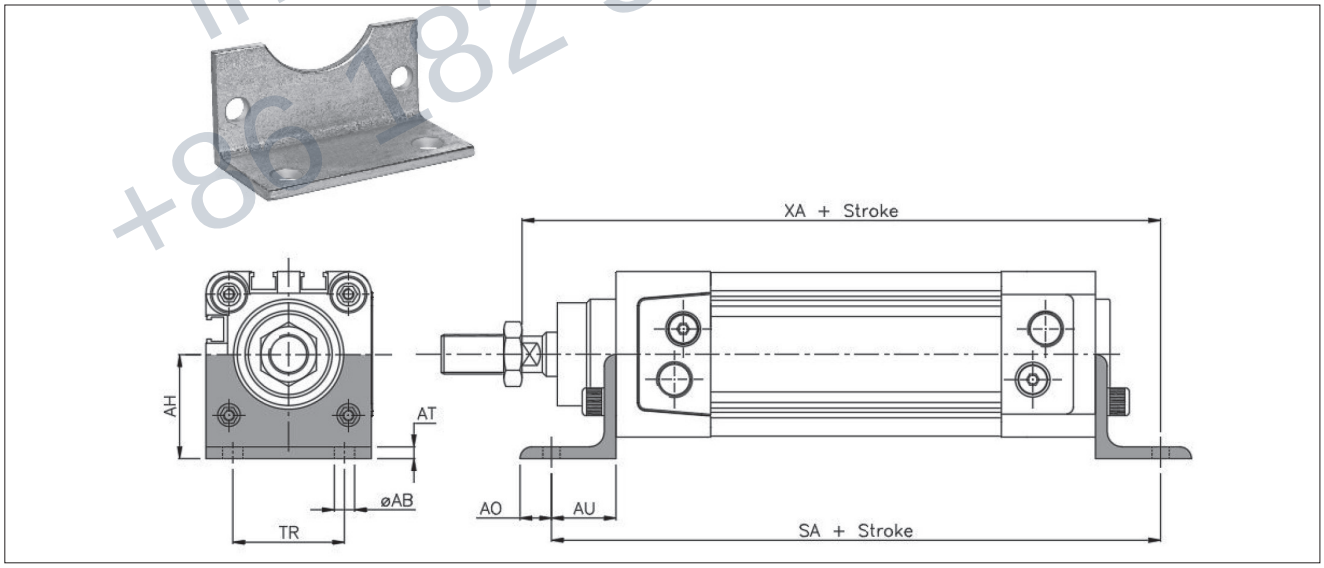
Cylinder mountings

F1 – Front flange, F2 – Rear flange



MODEL	FB H13	MF	R JS14	TF JS14	UF max	b7 max	W
F-32	7	10	32	64	80	50	16
F-40	9	10	36	72	90	53.5	20
F-50	9	12	45	90	110	65	25
F-63	9	12	50	100	120	75	25
F-80	12	15	63	126	150	100	32.5
F-100	14	15	75	150	172	120	37.5

S1 – Pedestal

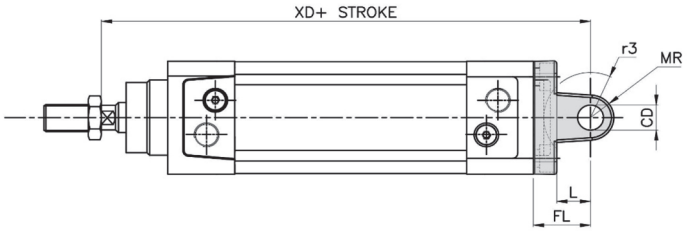


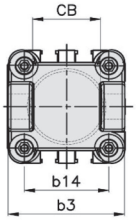
Model	AB H13	AH ±0,5	AO	AT	AU	SA	TR ±0,3	XA
MS1-32	7	30	6	4	24	143	32	142
MS1-40	9	35	7	5	28	168	36	161
MS1-50	9	40	8	6	32	176.5	45	170
MS1-63	9	40	8	6	32	190	50	185
MS1-80	12	55	14	6	41	216.5	63	210
MS1-100	14	55	14	6	41	231.5	75	220

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P2 – Female hinge rear



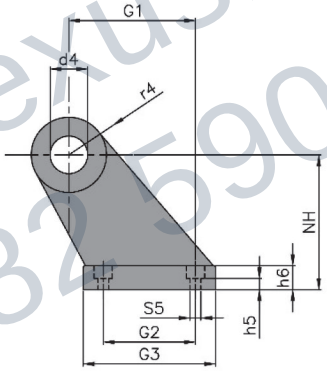


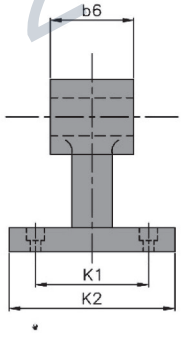


Model No	FL	L	CD	CB	MR	b3	b14	r3	XD
P2-32	22	13	10	26	9	49	32.5	12	142
P2-40	25	15.5	12	28	10	55	38	15	160
P2-50	27	16	12	32	10	65	46.5	15	172
P2-63	32	20	16	40	14	75	56.5	20	190
P2-80	36	23	16	50	16	98	72	20	212
P2-100	41	25	20	60	18	115	89	25	231

B2 – Male cardon hinge



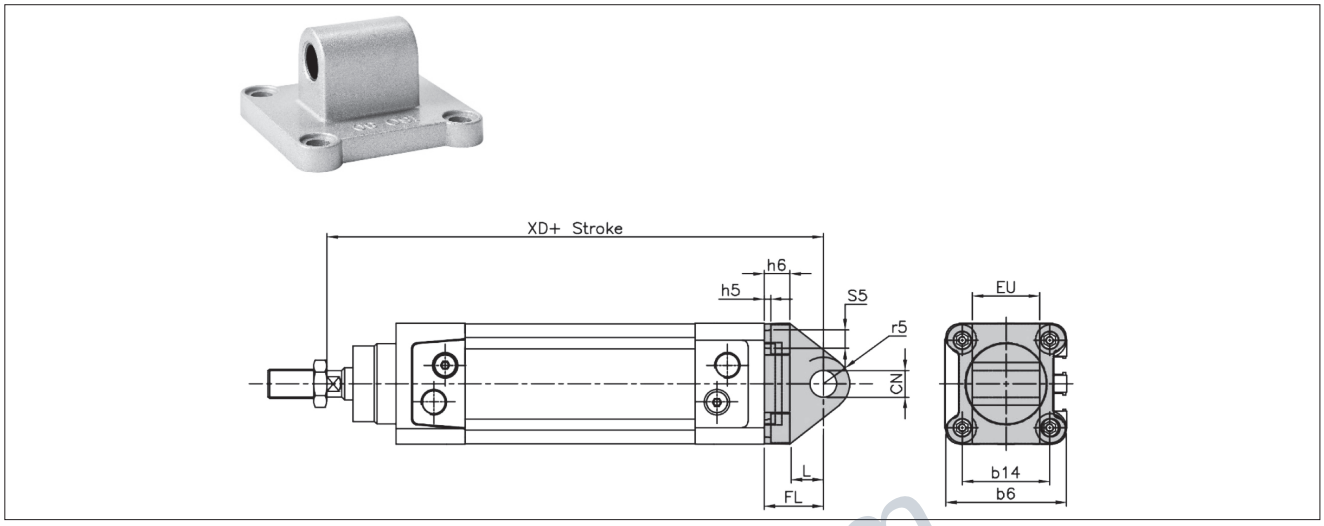




Model No	G1 JS14	G2 JS14	G3 max	K1 JS14	K2 max	NH JS15	S5 H13	b6 0/-4.0	d4 H9	h5	h6 max	r4 max
B2-32	21	18	33	38	52	32	5.5	25.8	10	2.2	8	9.5
B2-40	24	22	37	41	55	36	5.5	27.8	12	4.4	10	10.5
B2-50	33	30	47	50	66	45	6.6	31.8	12	5.3	12	12.5
B2-63	37	35	52	52	68	50	6.6	39.8	16	5.3	12	14.5
B2-80	47	40	62	66	87	63	11	49.8	16	6	14	14.5
B2-100	55	50	72	76	97	71	11	59.8	20	7	15	18.5

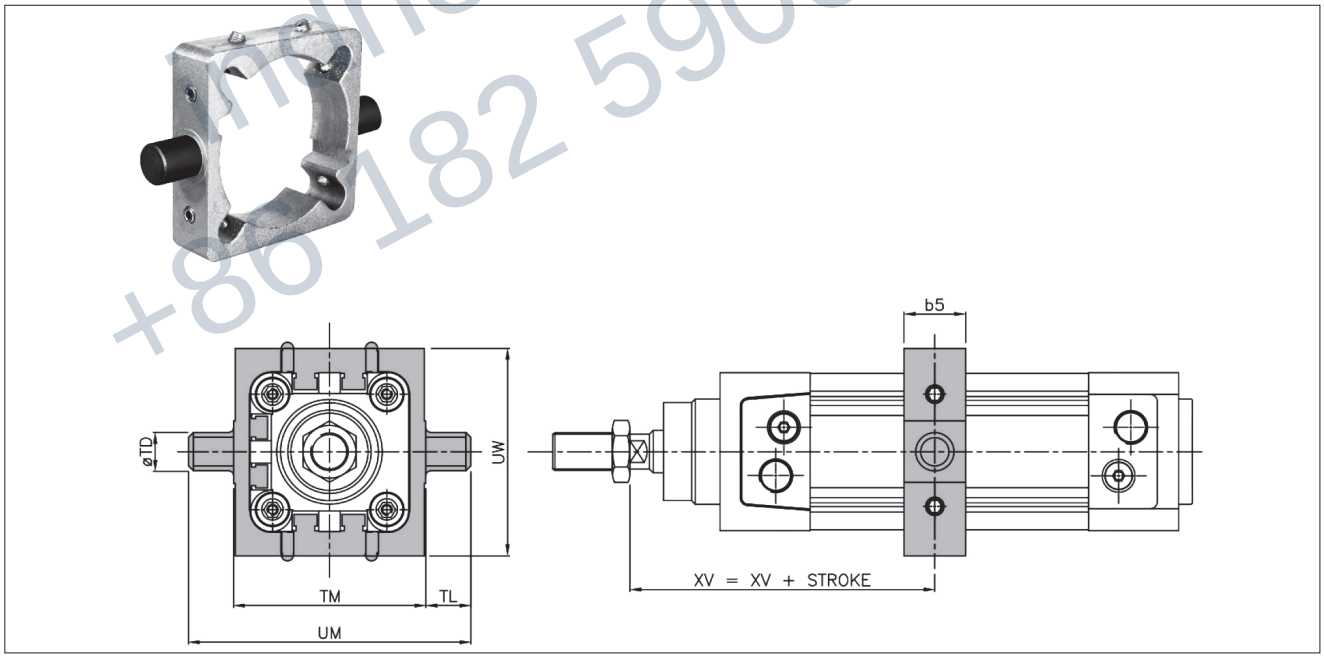
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P4 – Male hinge rear



Model No	FL	L	EU	CN	h6	S5	h5	r5	b14	b6	XD
P4-32	22	12	25	10	10	6.5	3.5	10	32.5	46	142
P4-40	25	16	27	12	9	7	3	10	38	54	160
P4-50	27	15	31	12	12	9	3	13	46.5	65	172
P4-63	32	20	39	16	12	9	3	12	56.5	75	190
P4-80	36	22	49	16	14	11	5	15	72	95	212
P4-100	41	26	59	20	15	11	6	19	89	114	231

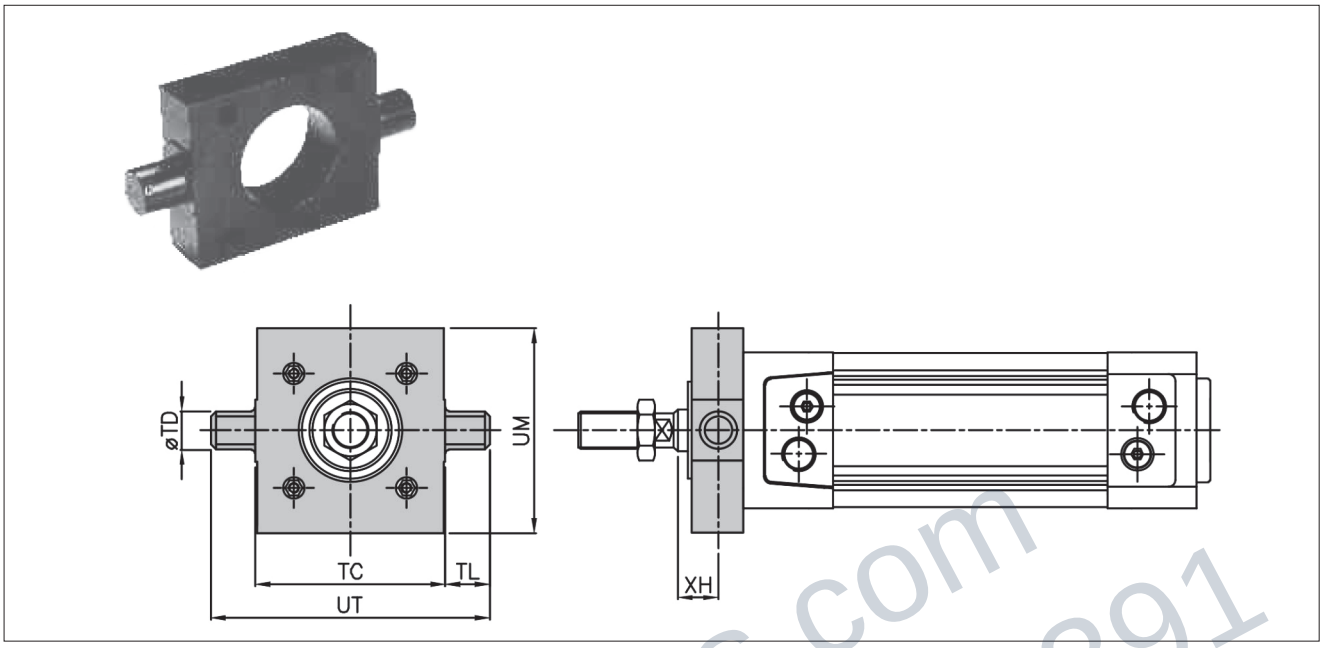
T4 – Central trunnion



Model no	TD e9	TL h14	TM h14	UM	UW max	XV min - max	b5 max
T4-32	12	12	54	74	53	59-76	20
T4-40	16	16	63	95	63	71-95	22
T4-50	16	16	75	107	73	79-104	21
T4-63	20	20	90	130	90	86-109	28
T4-80	20	20	110	150	105	99-124	28
T4-100	25	25	132	182	145	112-131	48

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T5 – Front trunnion



Model No	ØTD	TC h14	TL e9	TL h14	UM	UT	XH
T5-40	16	63	16	16	60	95	20
T5-50	16	75	16	16	65	107	25
T5-63	20	90	20	20	75	130	25
T5-80	20	110	20	20	100	150	30.5
T5-100	25	132	25	25	110	182	32.5

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How to order

1.	2.	3.	4.	5.	6.	7.	8.	9.
SC	DA	00	BG	NB	032	025	S	P2

1.	Pneumatic cylinder series
SC	Diameter 32 to 100

2.	Action
DA	Double Acting
SA	Single Acting

3.	Piston rod MOC
00	SS410 / SS420
EN	EN8
ZR	SS304
ZM	SS316

4.	Special cylinder
00	Standard model
DS	Double side piston rod
RS	Reed switch (2 pcs.)
BG	Bellows

5.	Seals
NB	NBR (-20 °C TO +70 °C)
AV	VITON (-20 °C TO +125 °C)

6.	Bore
	032
	040
	050
	063
	080
	100

7.	Stroke
	025, 050, 075, 100, 125, 150, 175, 200, 225, 250, 300, 325, 350, 375, 400, 425, 450, 475, 500

8.	Piston rod connection
S	Fork with pin
F	Flexible joint
W	Ball and socket joint

9.	Cylinder mounting
P2	Female hinge rear
P4	Male hinge rear
B2	Male cardan hinge
S1	Pedestals mounting
F1	Front flange
F2	Rear flange
T4	Central trunnion
T5	Front trunnion

ORDERING EXAMPLE:

1. SC-DA-00-00-NB-032/050. This is a double acting cylinder diameter 32 mm and stroke 50 mm.
2. SC-DA-ZM-BG-AV-080/300+S+P2. This is a double acting cylinder with SS316 piston rod, bellows provided, with Viton seals for high temperature application, 80 mm is bore, 300 mm is stroke, with fork, female hinge rear.

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