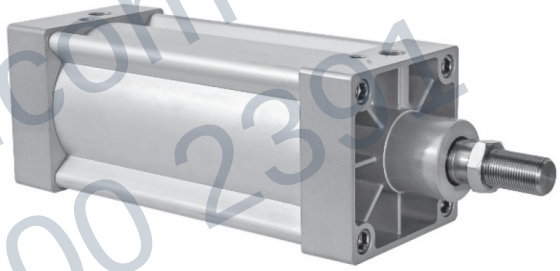
Neles Easyflow™ heavy duty pneumatic cylinders
Series SN

Cylinder diameter 125 to 320 mm as per ISO 15552 and VDMA 24562



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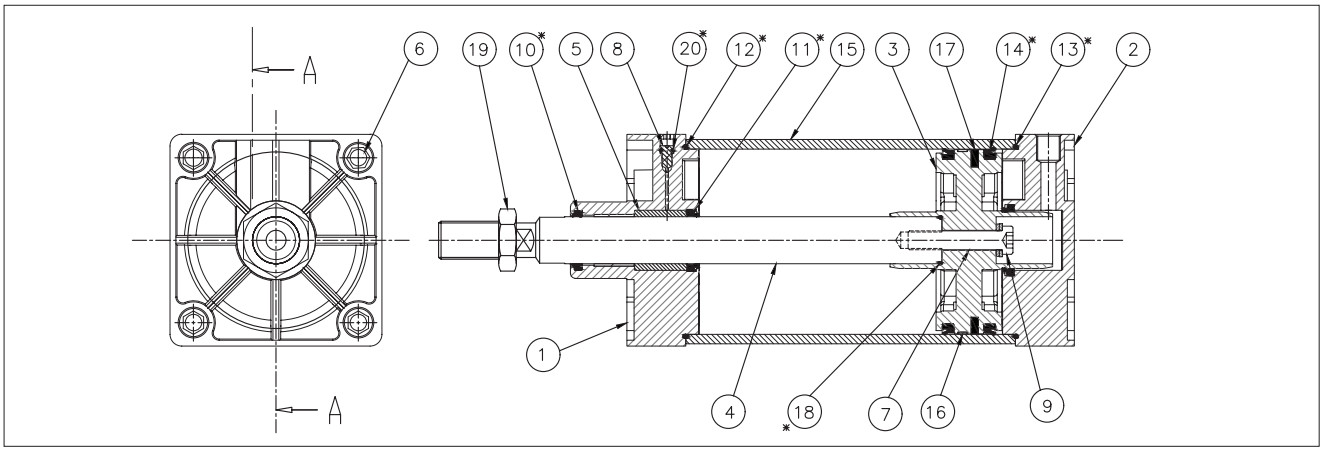
Features

- 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
- Ingress Protection class: IP66M & IP67M

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.

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Series SN

Forces (output thrust) for double acting cylinder

Double acting cylinder		Force (N)									
Bore diameter (mm)	Piston rod diameter (mm)	Pressure (bar)									
		Position	1	2	3	4	5	6	7	8	9	10
125	32	Extend	1228	2455	3682	4909	6136	7364	8591	9817	11045	12272
		Retract	1147	2294	3441	4587	5734	6881	8028	9174	10321	11468
160	40	Extend	2011	4022	6032	8043	10053	12064	14075	16085	18096	20107
		Retract	1885	3770	5655	7540	9425	11310	13195	15080	16965	18850
200	40	Extend	3140	6284	9426	12568	15710	18852	21994	25136	28278	31420
		Retract	3016	6032	9048	12065	15081	18097	21114	24130	27146	30163
250	50	Extend	4909	9817	14726	19635	24544	29452	34361	39270	44179	49087
		Retract	4712	9425	14137	18850	23562	28274	32987	37699	42412	47124
320	63	Extend	8042	16085	24127	32170	40212	48255	56297	64340	72382	80425
		Retract	7731	15462	23192	30923	38654	46385	54115	61846	69577	77308

Max. 0.1 bar for Bore upto 160 & 0.2 bar for bore 200 and above 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

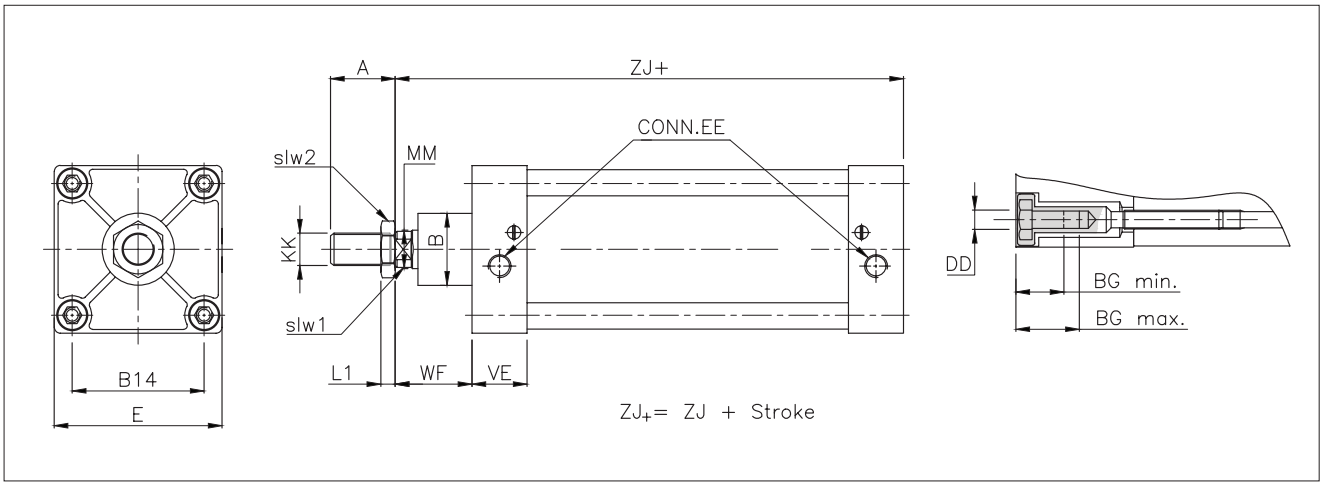
Air consumption		dm³ A.N.R./cm stroke		A.N.R.= dm³ under norm-conditions					1dm³=1 litre	
Cylinder diameter	1 bar	2 bar	3 bar	4 bar	5 bar	6 bar	7 bar	8 bar	9 bar	10 bar
125	0.245	0.368	0.491	0.614	0.736	0.859	0.982	1.105	1.227	1.35
160	0.402	0.603	0.804	1.005	1.207	1.408	1.609	1.81	2.011	2.212
200	0.628	0.942	1.256	1.571	1.885	2.199	2.513	2.827	3.142	3.456
250	0.981	1.472	1.963	2.454	2.945	3.436	3.927	4.418	4.909	4.4
320	1.617	2.426	3.235	4.044	4.853	5.662	6.471	7.281	8.090	8.899

Theoretical values *

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.
- Three stage cylinders
- Tandem cylinders
- Double ended piston rod
- Knocker cylinders
- Quick closing cylinders
- Telescopic cylinders

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CYLINDER Ø 125 - Ø 320 AS PER ISO 15552 and VDMA 24562

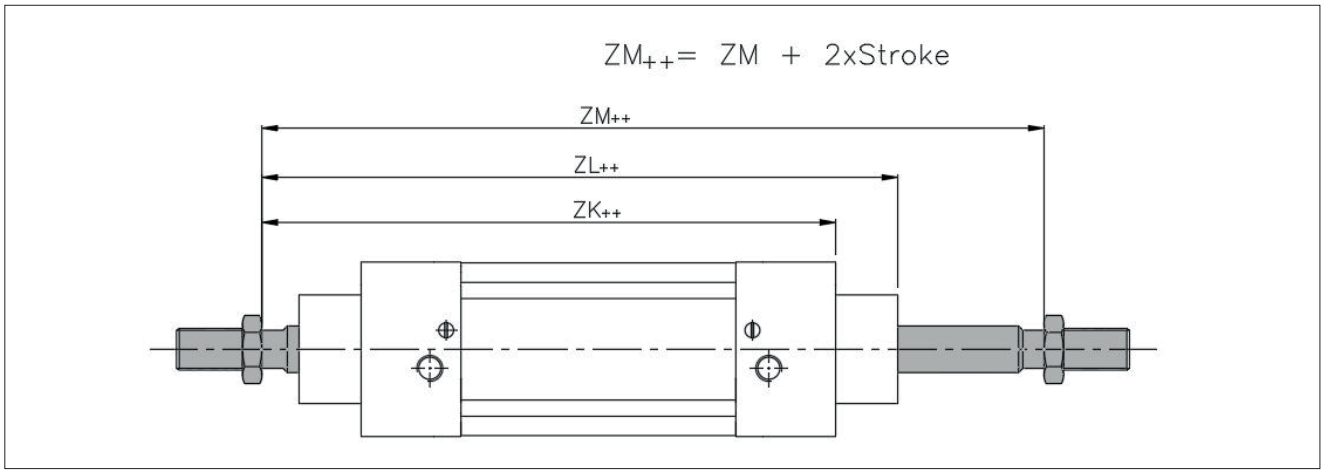


Dimensional details

Cylinder diameter	A	ØB	BG max	DD	E max	EE	KK	MM	b14	VE	WF	ZJ	L1	slw1	slw2
125	54	60	24	M12	140	G1/2	M27 X 2	32	110	46	65	226	12	27	41
160	72	65	32	M16	180	G3/4	M36 X 2	40	140	50	80	260	14	36	55
200	72	75	24	M16	220	G3/4	M36X2	40	175	50	95	275	14	36	49
250	84	90	25	M20	270	G1	M42X2	50	220	52	105	305	20	46	64
320	96	110	28	M24	340	G1	M48X2	63	270	52	120	338	22	55	74

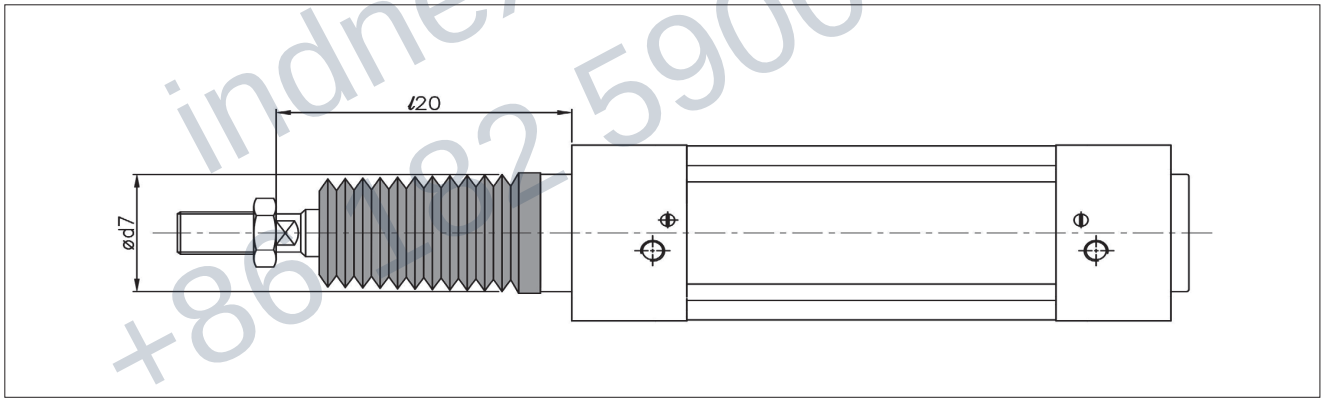
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Dimensions for special models



DS – Double ended piston rod

Cylinder diameter	ZK	ZL	ZM
125	226	271	292
160	260	318	342
200	275	345	370
250	305	372	410
320	340	422	460

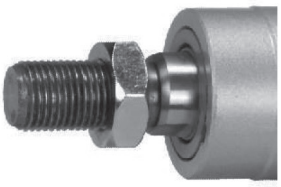


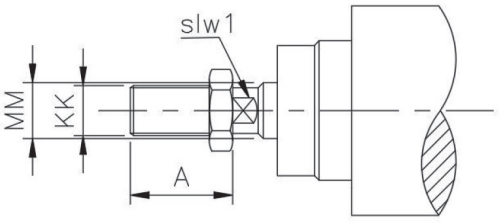
BG - Bellows

Cylinder diameter	L20 at stroke		Bellow diameter Ød7
	0-700	701-1400	
125	175	290	115
160	190	290	115
200	205	315	125
250	215	325	125
320	230	340	160

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Piston rod connection

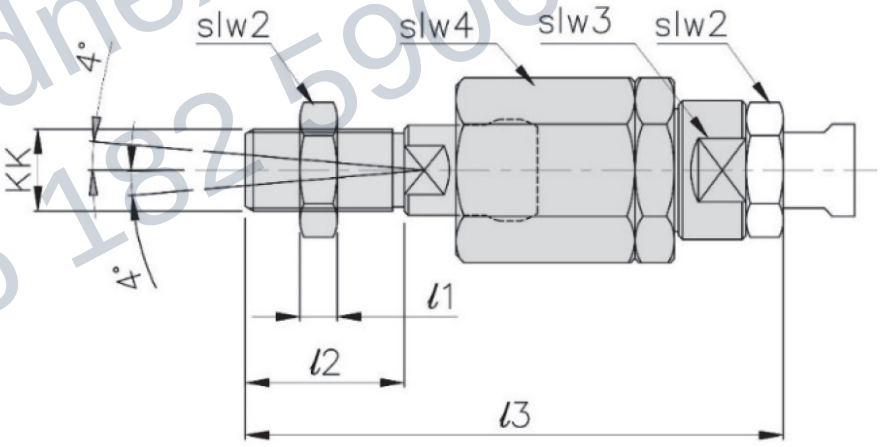




O - Outer thread with locknut

Cylinder diameter	A	KK	MM h9	SLW1
125	54	M27x2	32	27
160	72	M36x2	40	36
200	72	M36X2	40	36
250	84	M42X2	50	46
320	96	M48X2	63	55



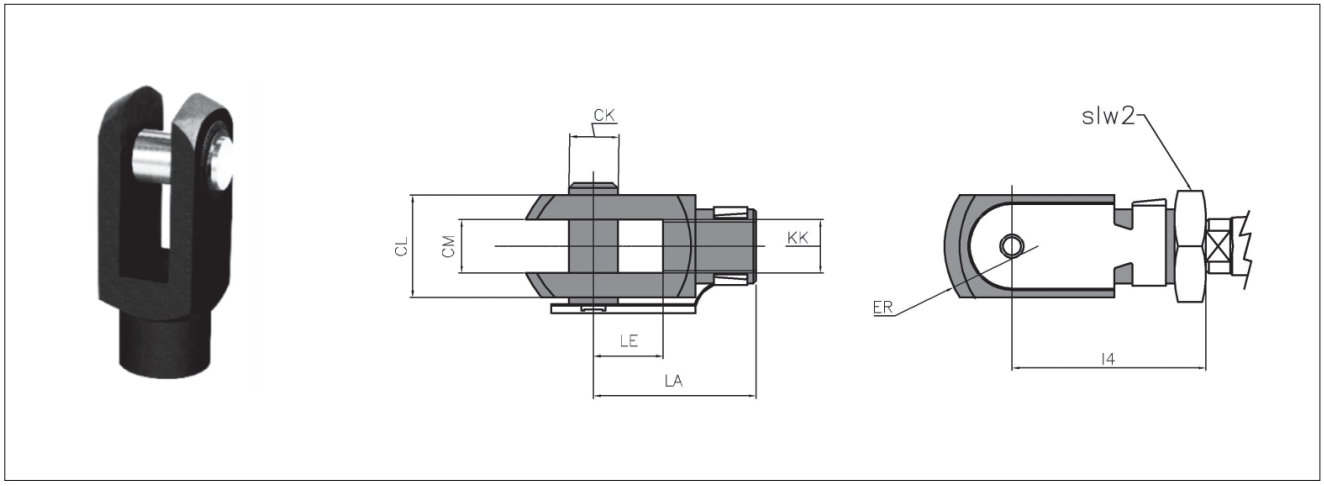


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F – Flexible joint

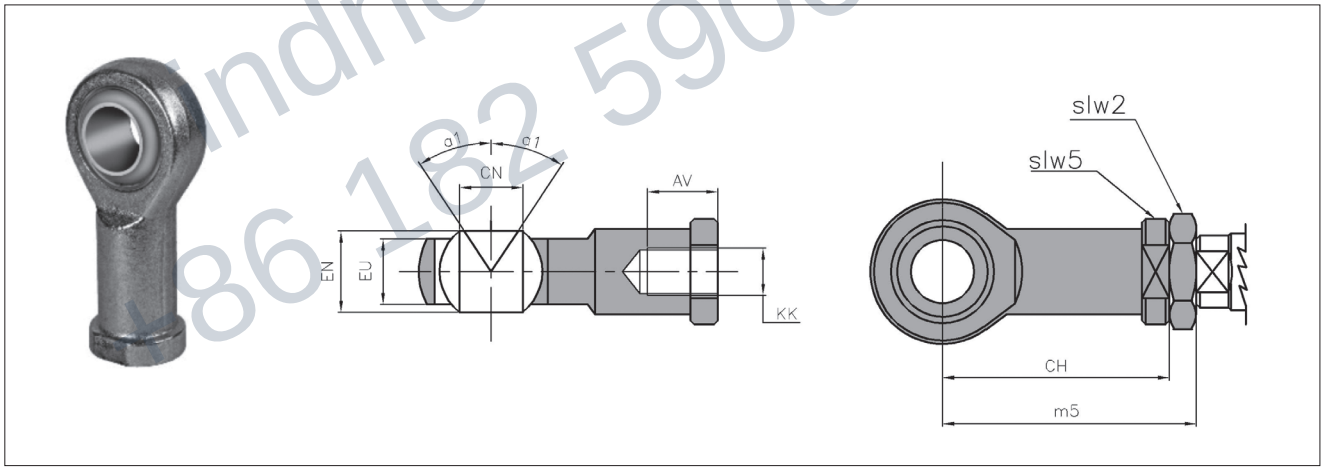
Model No	KK	l 1	l 2	l 3 min. - max	slw2	slw3	slw4
F-125	M27 x 2	13.5	54	169-174	41	54	62
F-160	M36 x 2	18	72	281-287	55	75	80

S – Fork with pin



Model NO	CK (h11)	CL	CM (+0.15, +0.33)	ER max	LE min	l4 (min)	slw2	KK	LA
S-125	25	55	25	38	50	112	41	M27X2	100
S-160	35	70	35	46	72	158	55	M36X2	144
S-200	35	70	35	46	72	158	49	M36X2	144
S-250	40	85	40	70	84	188	64	M42X2	168
S-320	50	96	50	80	96	214	74	M48X2	192

W- Ball and socket joint

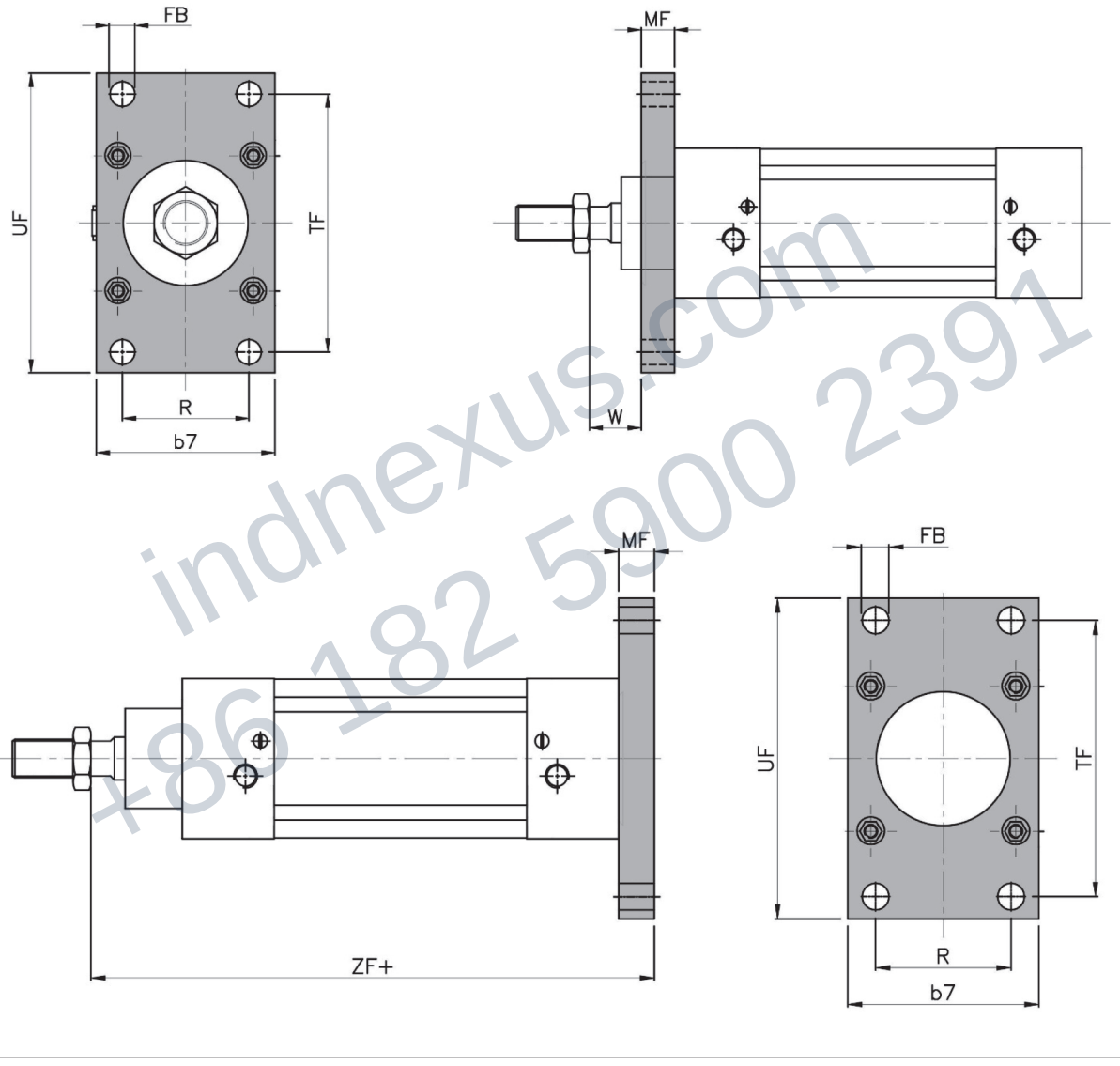


Cylinder diameter	CH	CN	EF max	EN h12	EU	m5	m6	slw2	slw5	a1	KK	AV (Min)
W-125	110	30	35	37	25	122	35	41	41	4°	M27x2	51
W-160	125	35	40	43	28	144	41	50	50	4°	M36x2	56
W-200	125	35	40	43	28	139	41	49	50	4	M36X2	56
W-250	142	40	45	49	33	162	46	64	55	4	M42X2	60
W-320	160	50	58	60	45	182	59	74	65	4	M48X2	65

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Cylinder mountings



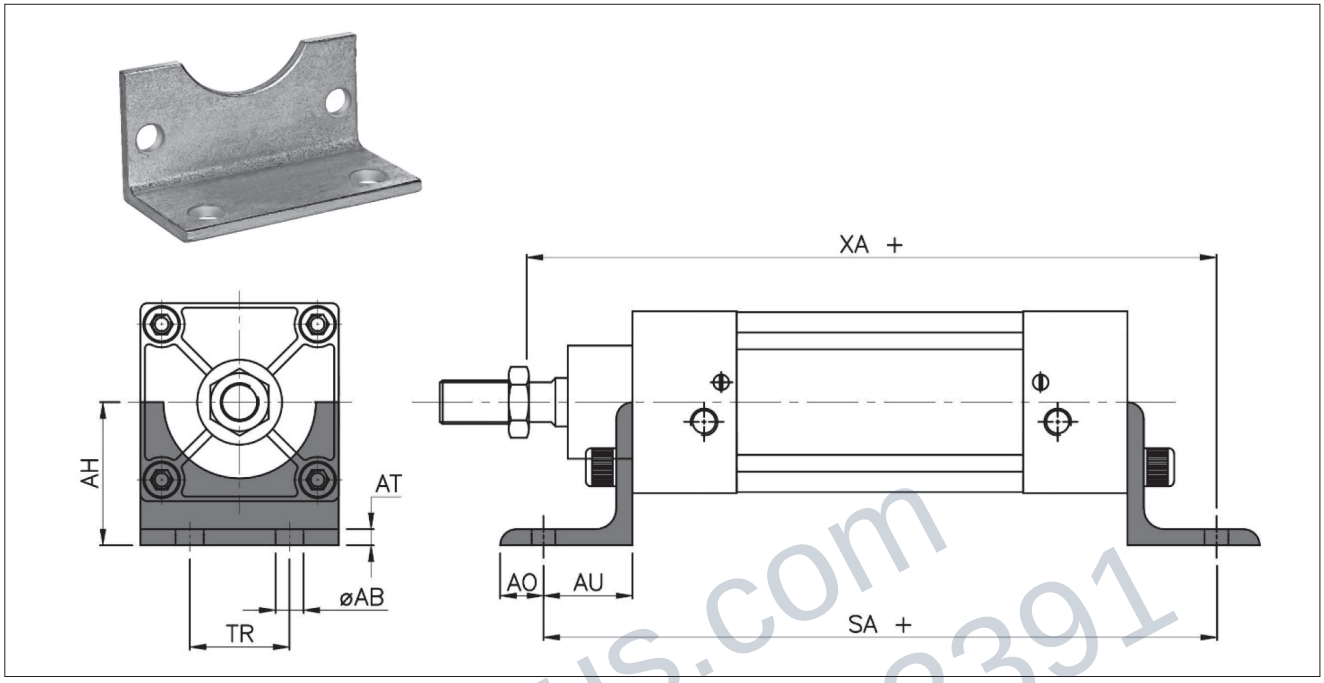


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F1 – Front flange, F2 – Rear flange

Model	FB H13	MF	R JS14	TF JS14	UF max	ZF	b7 max	w
F1-125 F2-125	16	20	90	180	220	245	140	45
F1-160 F2-160	18	20	115	230	275	281	175	60
F1-200, F2-200	22	25	135	270	320	300	220	70
F1-250, F2-250	26	25	165	330	395	330	270	80
F1-320, F2-320	33	30	200	400	475	370	340	90

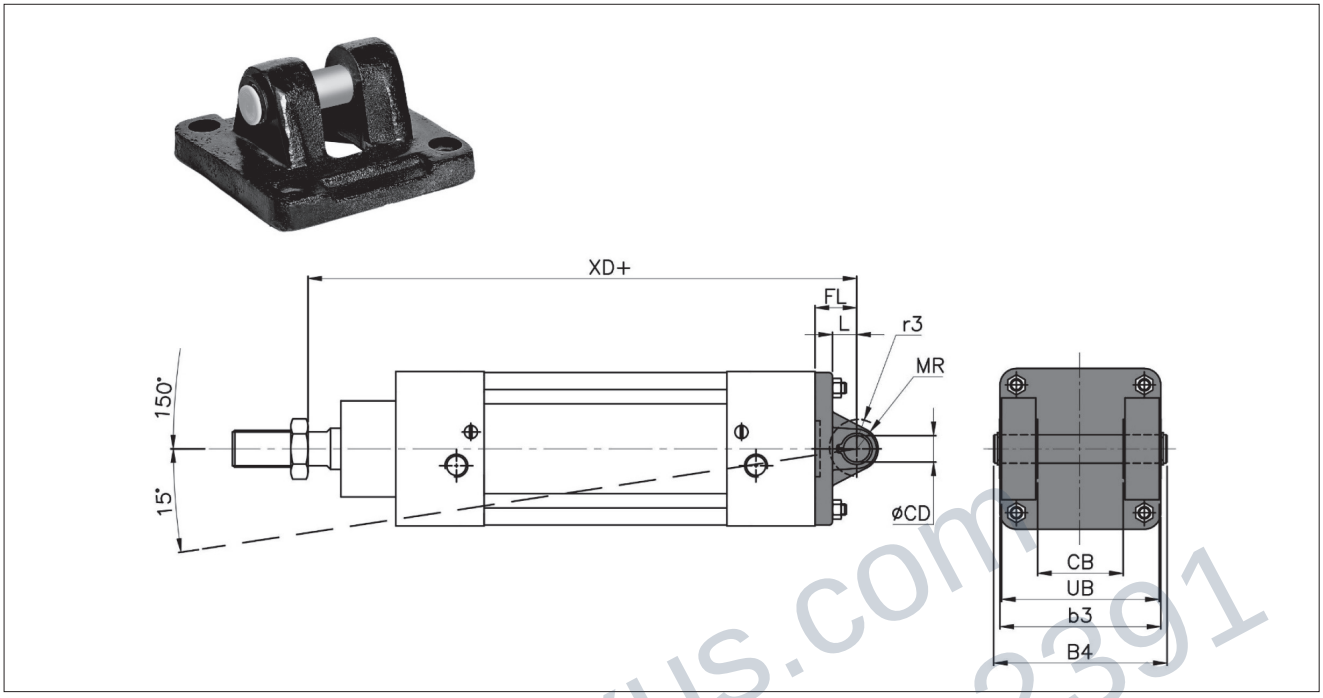
S1 - Pedestal



Model	AB H13	AH ±0,5	AO	AT	AU	SA	TR ±0,3	XA
MS1-125	16	90	20	8	45	251	90	271
MS1-160	18	115	20	10	60	300	115	320
MS1-200	24	135	35	12	70	320	135	345
MS1-250	28	165	40	20	75	350	165	380
MS1-320	35	200	45	23	85	390	200	425

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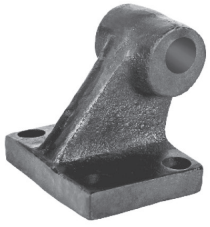
P2 – Female hinge rear

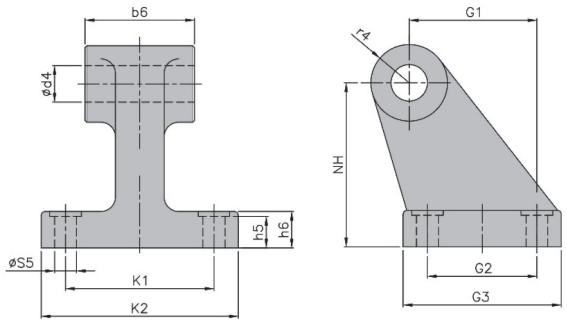


Model No	CB d10	CD h9	FL	L	MR max	UB d12	XD	b3 max	b4 max	r3 max
P2-125	70	25	50	30	26	130	276	139	140	26
P2-160	90	30	55	35	31	170	315	175	205	31
P2-200	90	30	60	35	31	170	335	172	180	31
P2-250	110	40	70	45	41	200	375	202	210	41
P2-320	120	45	80	50	46	220	420	223	235	46

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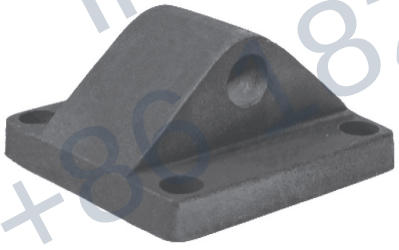
B2 – Male cardon hinge

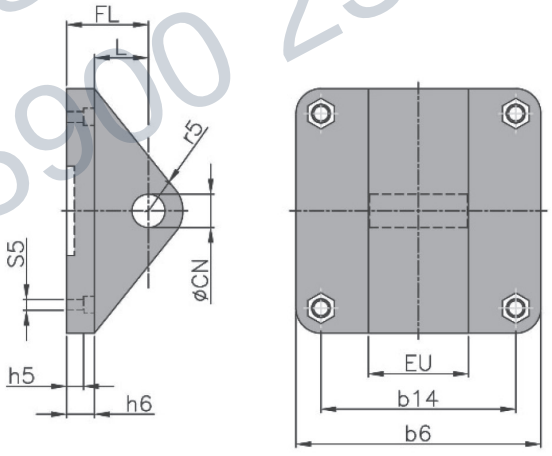




Model No	G1 JS14	G2 JS14	G3 max	K1 JS14	K2 max	NH JS15	S5 H13	b6 0/-4.0	d4 H9	h5	h6 max	r4 max
B2-125	70	60	90	94	124	90	11	70	25	6	20	19
B2-160	97	88	126	118	156	115	14	90	30	23	25	31
B2-200	105	90	130	122	162	135	18	90	30	26	30	31.5
B2-250	128	110	160	150	200	165	22	110	40	30.5	35	40
B2-320	150	122	186	170	234	200	26	120	45	35.5	40	45

P4 – Male hinge rear

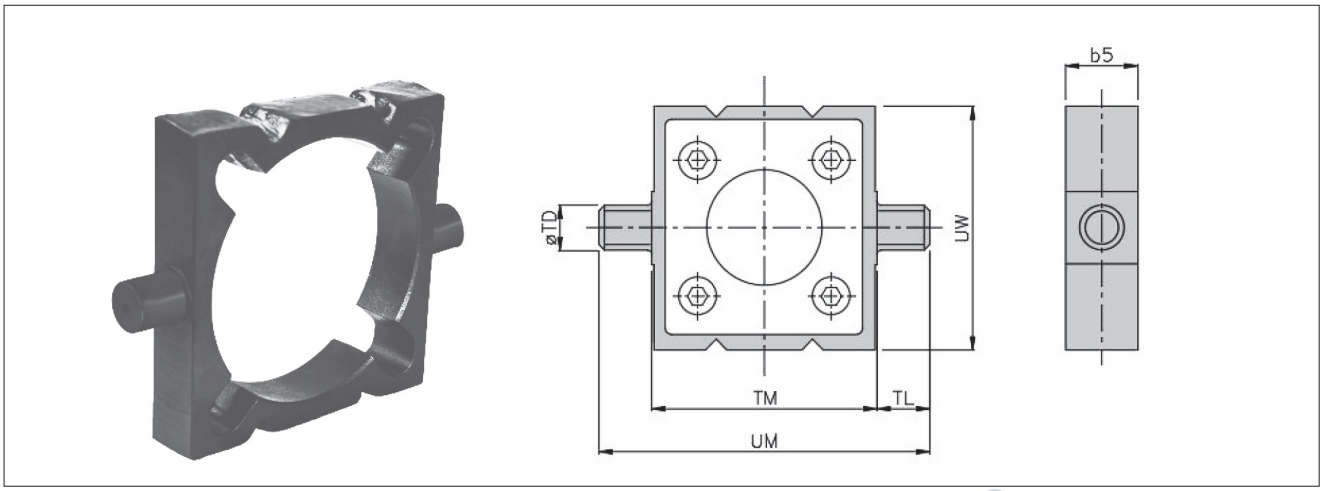




Model No	FL	L	EU	CN	h6	S5	h5	r5	b14	b6
P4-125	50	30	69	25	20	13	7	22	110	138
P4-160	55	34	89	32	25	17	19	20	140	174
P4-200	60	35	90	30	25	17	7	31	175	220
P4-250	70	45	110	40	25	21	11	41	220	270
P4-320	80	50	120	45	30	25	11	46	270	340

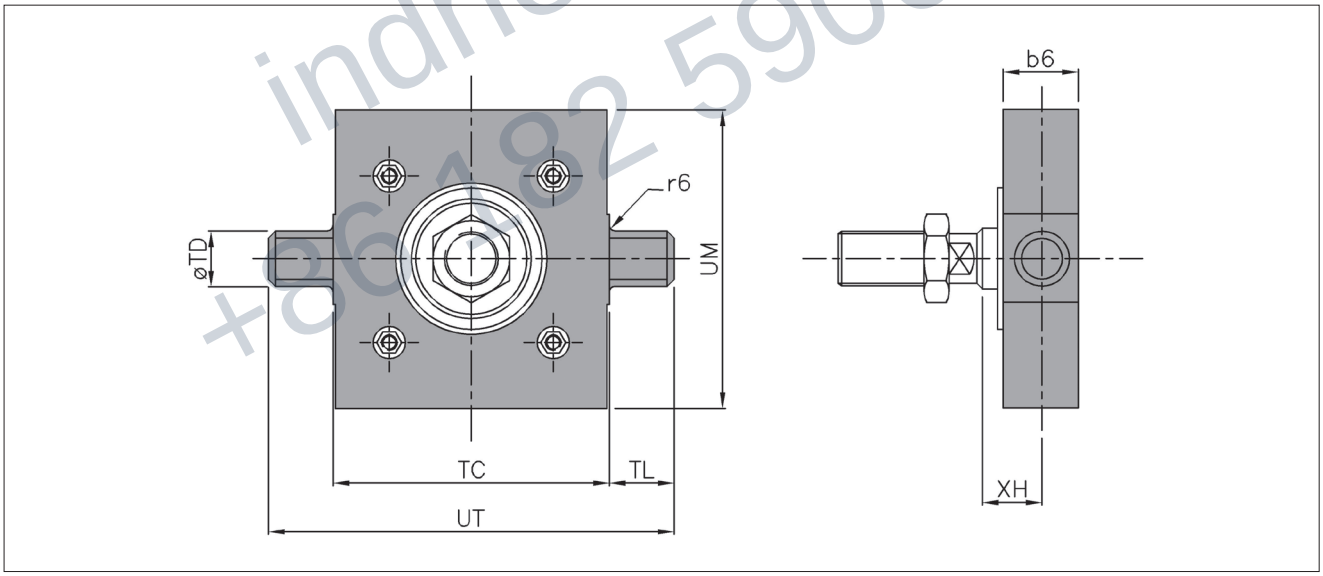
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T4 – Central trunnion



Model No	TD e9	TL h14	TM h14	UM	UW max	b5 max
T4-125	25	25	160	210	152	30
T4-160	32	32	200	264	220	40
T4-200	32	32	250	314	260	50
T4-250	40	40	320	400	320	58
T4-320	50	50	400	500	400	68

T5 – Front trunnion



Model No	TC h14	TD e9	TL h14	UM	UT	XH	r6	b6
T5-125	160	25	25	146	210	40	2	50
T5-160	200	32	32	200	264	55	2.5	50
T5-200	250	32	32	260	314	70	2.5	50
T5-250	320	40	40	320	400	76	3	58
T5-320	400	50	50	400	500	86	3	68

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How to order

1.	2.	3.	4.	5.	6.	7.	8.	9.
SN	DA	00	BG	NB	125	025	S	P2

1.	Pneumatic cylinder series
SN	Diameter 125, 160, 200, 250 & 320

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) (std.)
AV	Viton (-20 °C TO +125 °C)

6.	Bore
	125, 160, 200, 250, 320

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 carden hinge
S1	Pedastal mounting
F1	Front flange
F2	Rear flange
T4	Central trunnion
T5	Front trunnion

ORDERING EXAMPLE:

1. SN-DA-00-00-NB-125/300. This is a double acting cylinder diameter 125 mm and stroke 300 mm.
2. SN-DA-ZM-BG-AV-160/300+S+P2. This is a double acting cylinder with SS316 piston rod, bellows provided, with Viton seals for high temperature application, 160 mm is bore, 300 mm is stroke, with fork, female hinge rear.

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