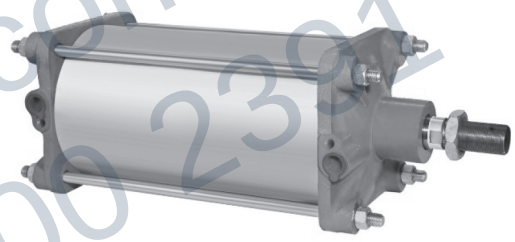
Neles Easyflow™ heavy duty pneumatic cylinders

Series CC

Cylinder diameter 200 to 350 mm



Features

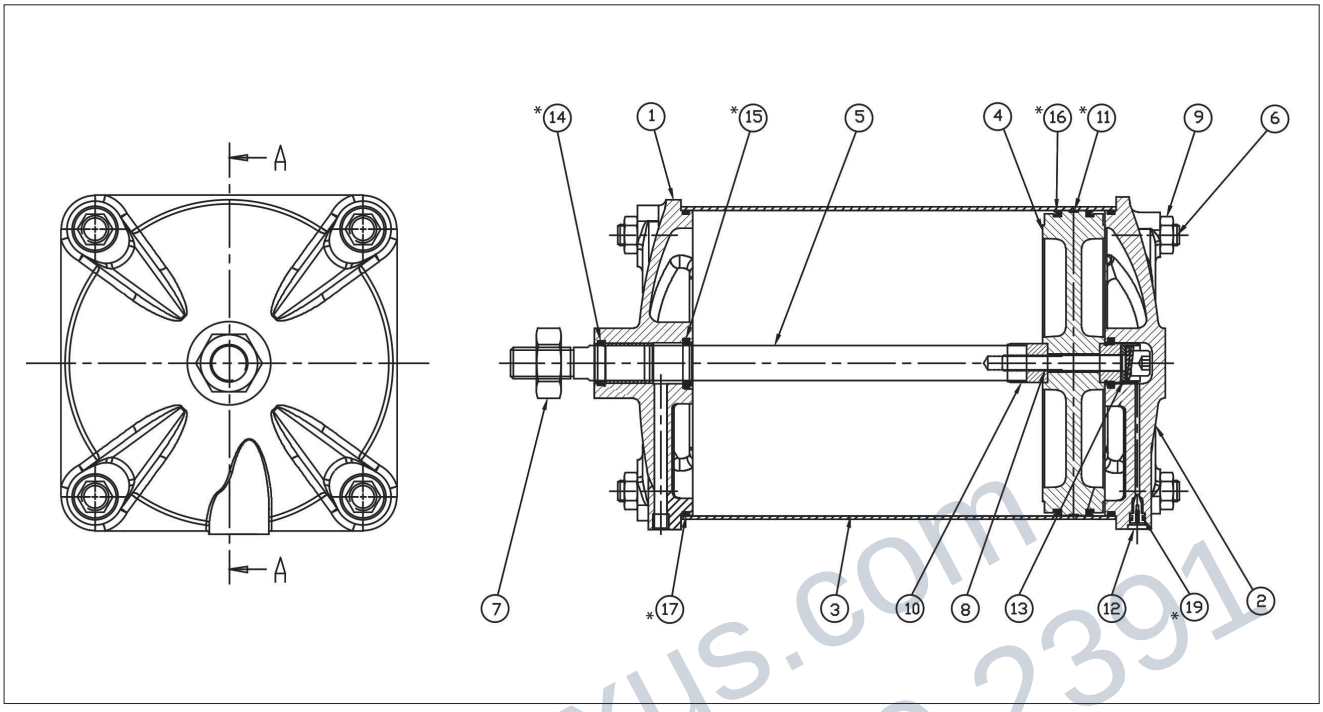
- Heavy duty complete in steel and cast iron construction, epoxy painting
- Cushioning available as default
- Heavy duty mountings manufactured in steel and cast iron
- Piston and piston rod are guided by rigid bearings
- Piston rod is burnished stainless steel
- Long life, life time lubricated.
- Long strokes up to 2500 mm available on request.
- Operating pressure range 1-10 bar
- Operating temperature: -20 °C to 70 °C with NBR seals and -20 °C C to +125°C with Viton
- Operating medium: Compressed air, filtered to minimum 50 µm

Approvals & Certificates

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

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CC series construction



Part	Material	Part no
Cylinder tube	Extruded aluminium for diameter 200, 250 and 300 Seamless MS tube for diameter 350 (Seamless MS tube available on request for diameter 200, 250 and 300)	3
Buffer cap	Aluminium	10
Seals	NBR	17*, 16*
Rod seal	NBR	14*
NUT	HGA steel	9, 7
SHC screw	HGA steel	8
Cushioning plug	HGA steel	12
Piston strip	Carbon filled Teflon	11*

Part	Material	Part no
Tie rod	Mild steel	6
Piston rod	SS410 / SS420	5
Piston	CI casting	4
End covers	CI casting	1, 2
Cushioning seal	NBR	15*
Washer	HGA steel	13
Cusioning plug seal	NBR	19*

* MARKED COMPONENTS ARE THE PARTS OF THE SEAL KIT.

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Cylinder diameter 200 to 350 mm

Force (Output thrust) for double acting cylinders

Double acting cylinder		Force (output thrust) (N)									
Cylinder bore diameter	Piston rod diameter	Position	Pressure (bar)								
			1	2	3	4	5	6	7	8	9	10
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	40	Extend	4909	9818	14727	19636	24545	29454	34363	39272	44181	49090
		Retract	4783	9567	14351	19134	23918	28702	33485	38269	43053	47836
300	40	Extend	7070	14140	21210	28280	35350	42420	49490	56560	63630	70700
		Retract	6943	13887	20831	27775	34719	41662	48606	55550	62494	69438
350	40	Extend	9622	19244	28866	38488	48110	57732	67354	76976	86598	96220
		Retract	9496	18993	28490	37986	47483	56980	66476	75973	85470	94966

Max. 0.2 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

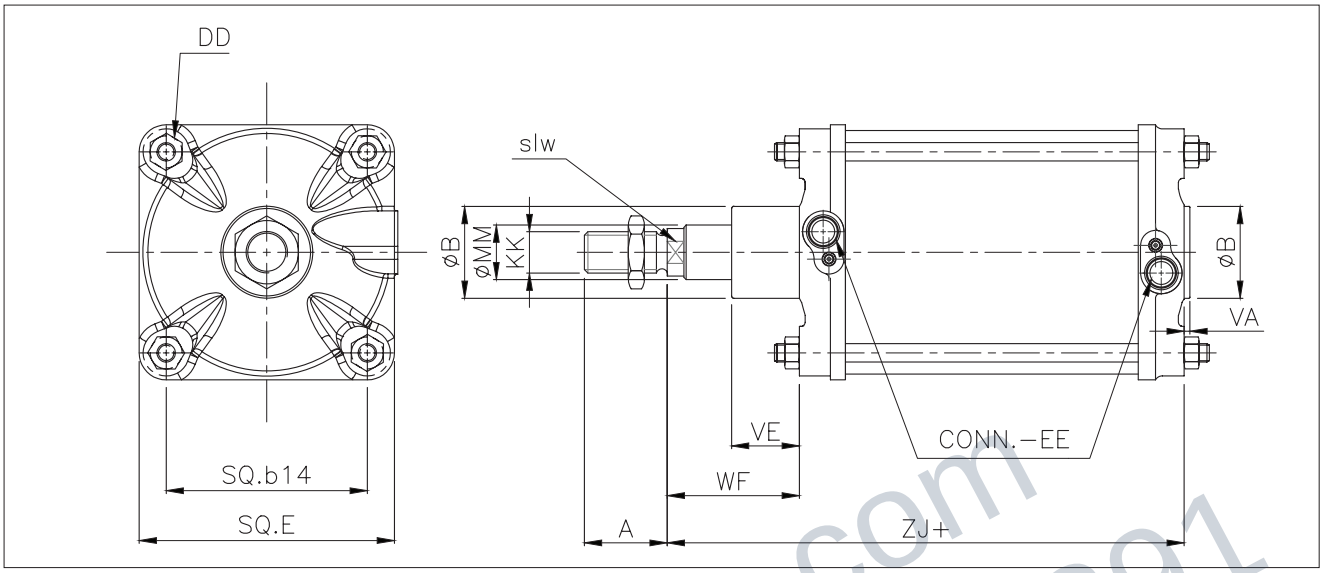
Air consumption		dm^3 A.N.R./cm stroke		A.N.R.= dm^3 under norm-conditions					$1dm^3$=1 litre	
Cylinder diameter	1 bar	2 bar	3 bar	4 bar	5 bar	6 bar	7 bar	8 bar	9 bar	10 bar
200	0.628	0.942	1.256	1.571	1.885	2.199	2.513	2.827	3.142	3.456
250	0.981	1.472	1.963	2.454	2.945	3.436	3.927	4.418	4.909	4.400
300	1.413	2.12	2.827	3.534	4.241	4.948	5.655	6.362	7.069	7.776
350	1.924	2.886	3.848	4.811	5.773	6.735	7.697	8.66	9.622	10.584

Special single acting cylinders can be manufactured for applications, where in large spring forces are required. Please consult Valmet for selection and sizing of single acting linear actuators. We need working forces for your application. Force f1 when spring is not compressed & F2 spring is compressed. Ideally we need either F1 or F2.

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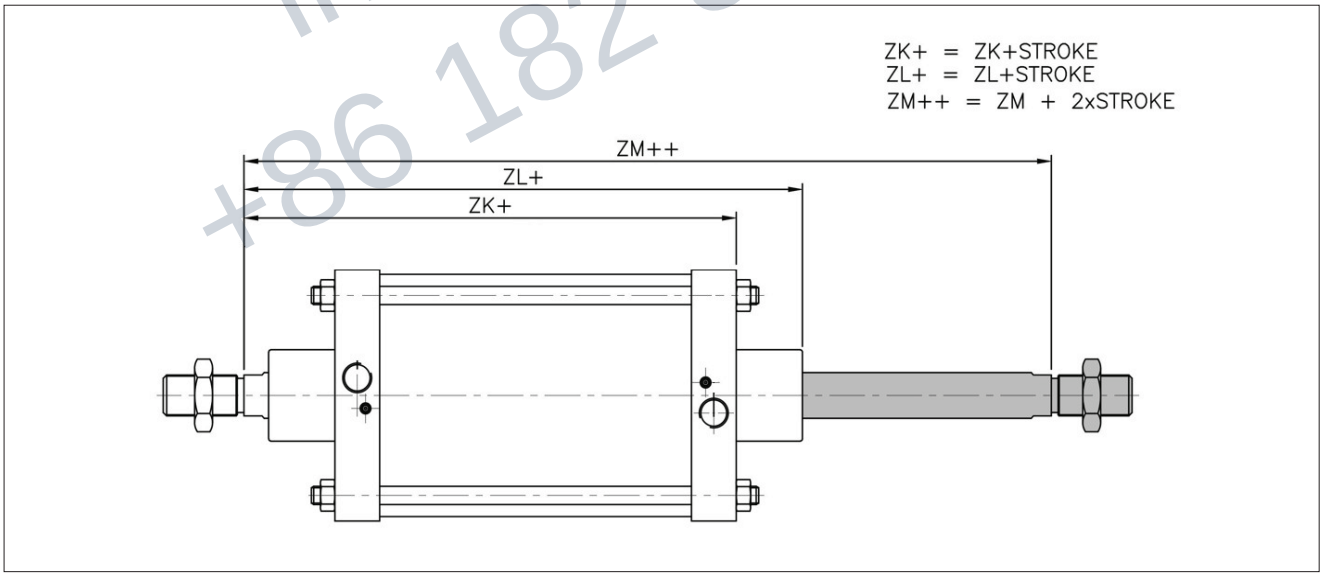
Cylinder diameter 200 to 350 mm

Basic dimensions



Cylinder diameter	A	ØB	DD	E	EE	KK	MM	b14	VA	VE	WF	ZJ	SLW
200	72	80	M16	223	G3/4"	M36 x 2	40	175	6	59	82	240	36
250	72	80	M20	270	G3/4"	M36 x 2	40	210	6	59	82	250	36
300	72	80	M24	320	G3/4"	M36 x 2	40	255	6	49	72	261	36
350	72	80	M24	380	G3/4"	M36 x 2	40	300	6	49	72	269	36

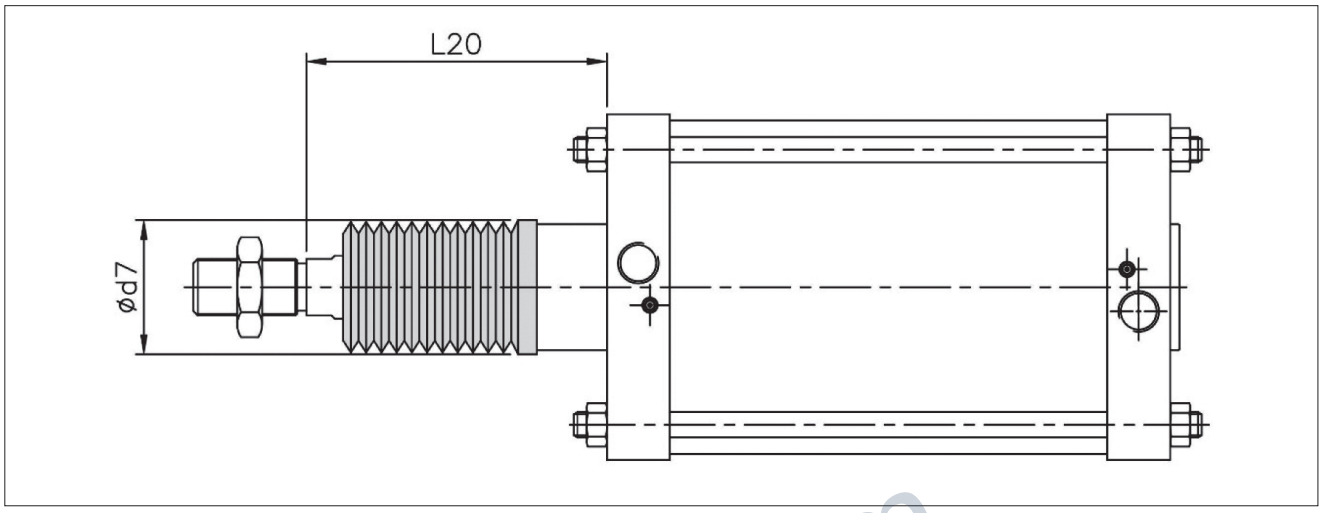
DS – Double ended cylinder



Cylinder diameter	ZK	ZL	ZM
200	240	299	322
250	261	310	332
300	261	310	333
350	269	318	341

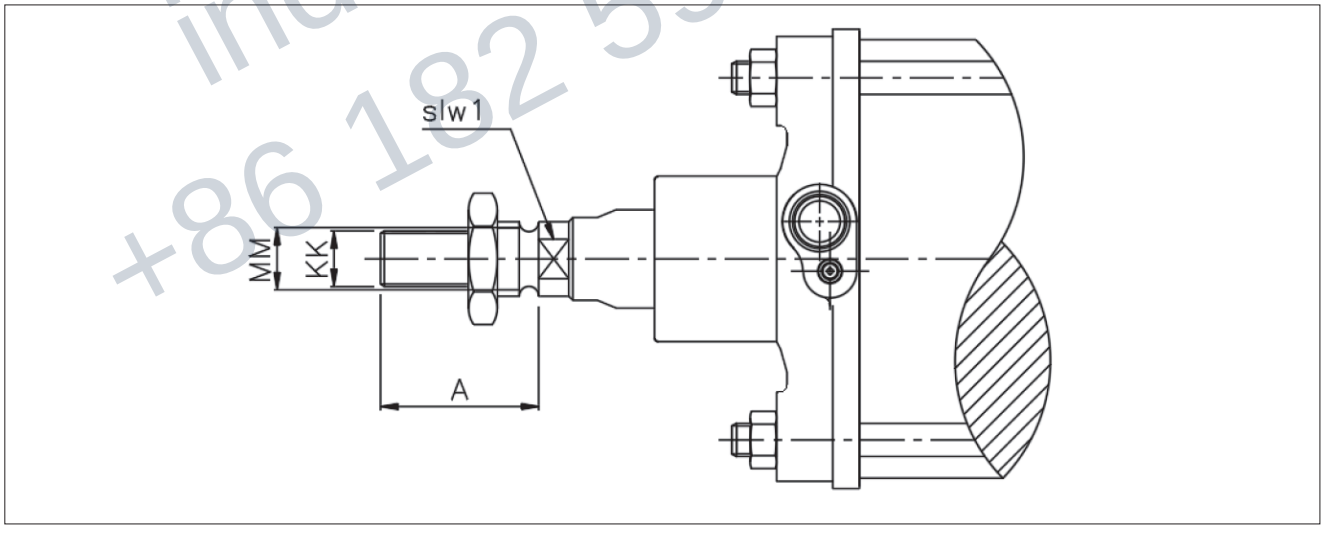
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BG - Bellows



Cylinder diameter	L20 at stroke		Bellow max. diameter Ød7
	0-250	251-1400	
200	192	302	125
250	192	302	125
300	182	292	125
350	182	292	125

PISTON ROD CONNECTION
O – Outer thread with locknut

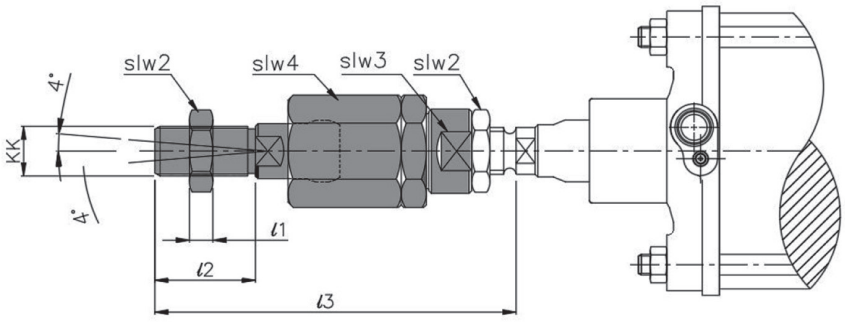


Cylinder diameter	A	KK	MM	SLW1
200	72	M36x2	40	36
250	72	M36x2	40	36
300	72	M36x2	40	36
350	72	M36x2	40	36

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F – Flexible joint

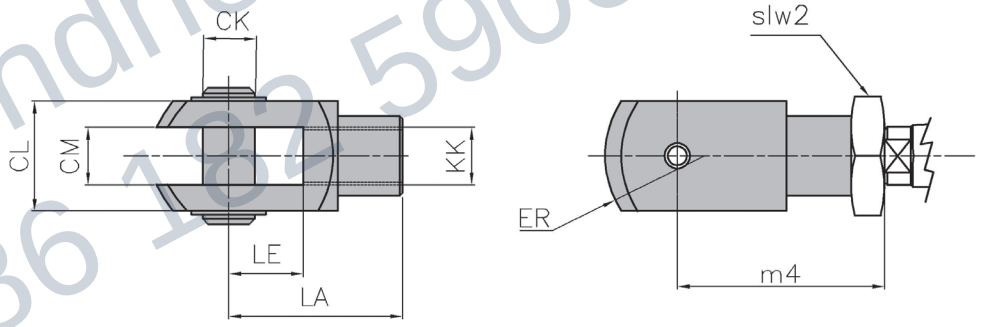




Model no	KK	*l*1	*l* 2	*l* 3 min. - max	slw2	slw3	slw4
F-200	M36 x 2	18	72	281-287	55	75	80
F-250	M36 x 2	18	72	281-287	55	75	80
F-300	M36 x 2	18	72	281-287	55	75	80
F-350	M36 x 2	18	72	281-287	55	75	80

S – Fork with pin

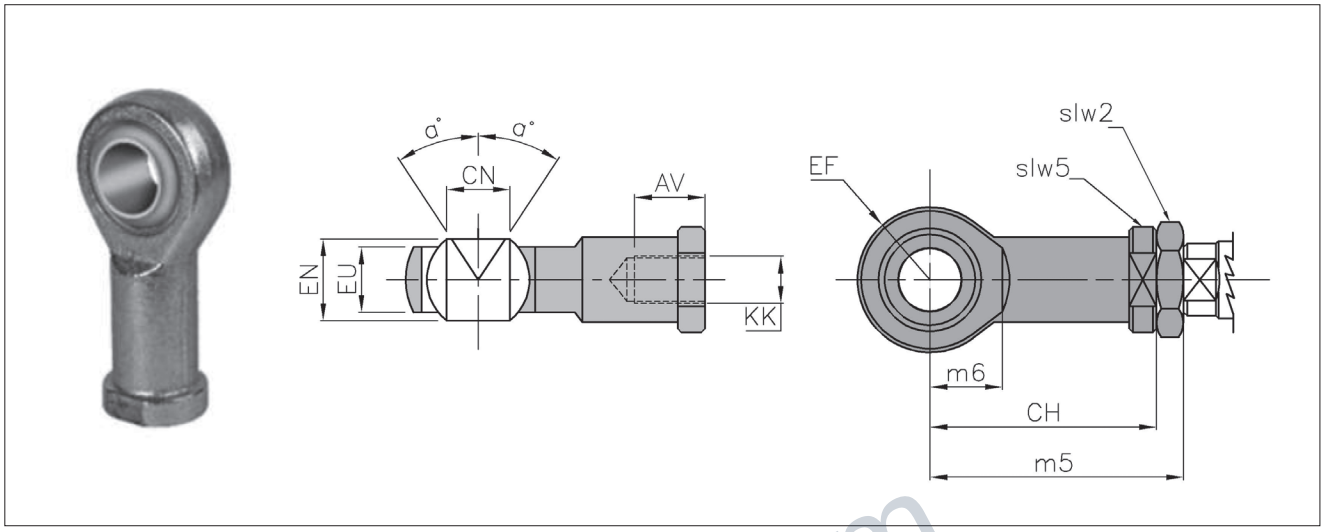




Cylinder diameter	CK (h11)	CL	CM (+0.15, +0.33)	ER max	LE min	KK	LA	m4	slw2
250	35	70	36	46	72	M36X2	144	170-178	55
250	35	70	36	46	72	M36X2	144	170-178	55
300	35	70	36	46	72	M36X2	144	170-178	55
350	35	70	36	46	72	M36X2	144	170-178	55

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W- Ball and socket joint



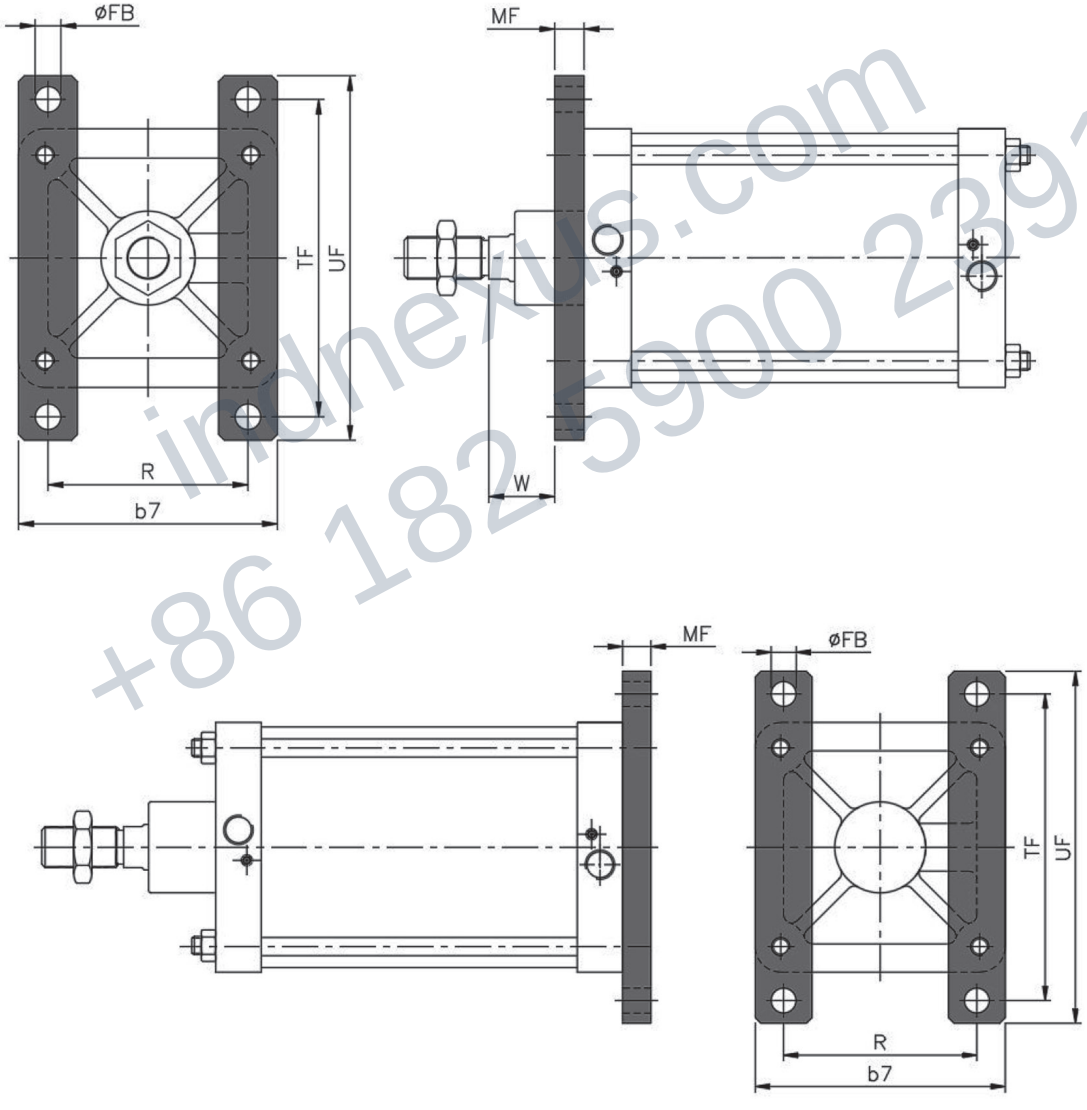
Cylinder diameter	kk	AV (Min)	m5 (Min)	CH	CN	EF max	EN h12	EU	m6	slw 5	slw 2	a°
200	M36x2	56	144	125	35	40	43	28	40	50	50	4°
250	M36x2	56	144	125	35	40	43	28	40	50	50	4°
300	M36x2	56	144	125	35	40	43	28	40	50	50	4°
350	M36x2	56	144	125	35	40	43	28	40	50	50	4°

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Cylinder mountings

F1 – Front flange, F2 – Rear flange

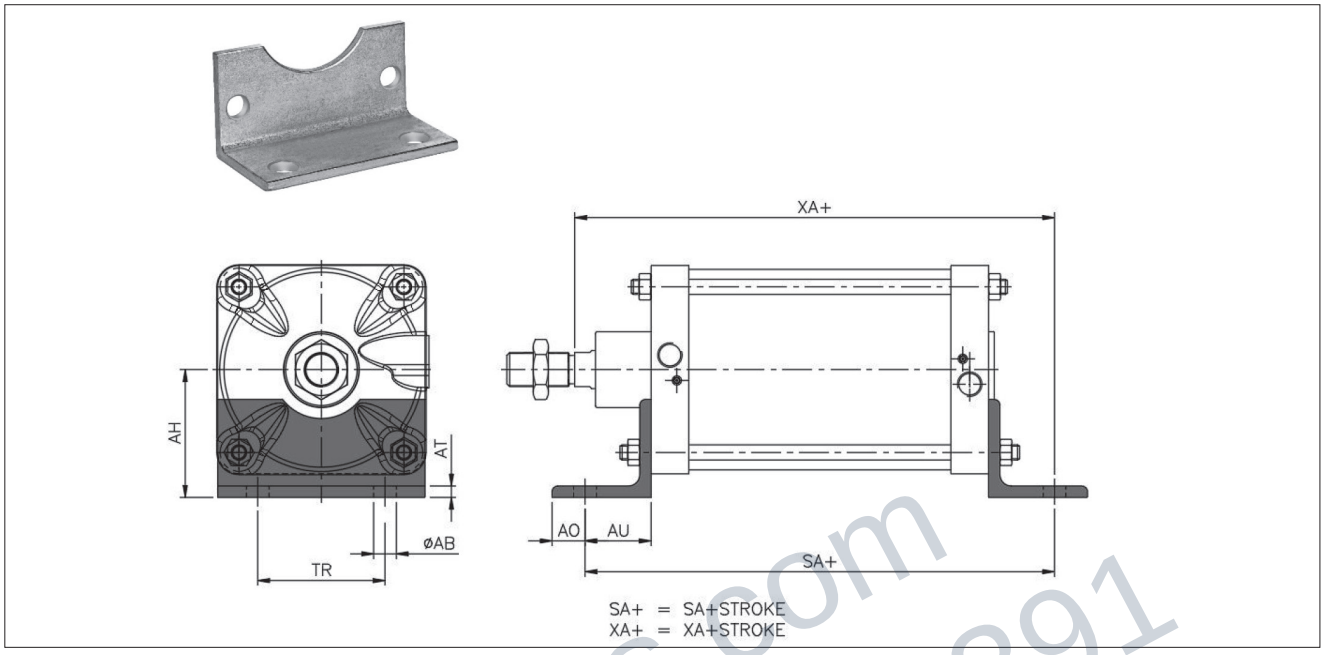




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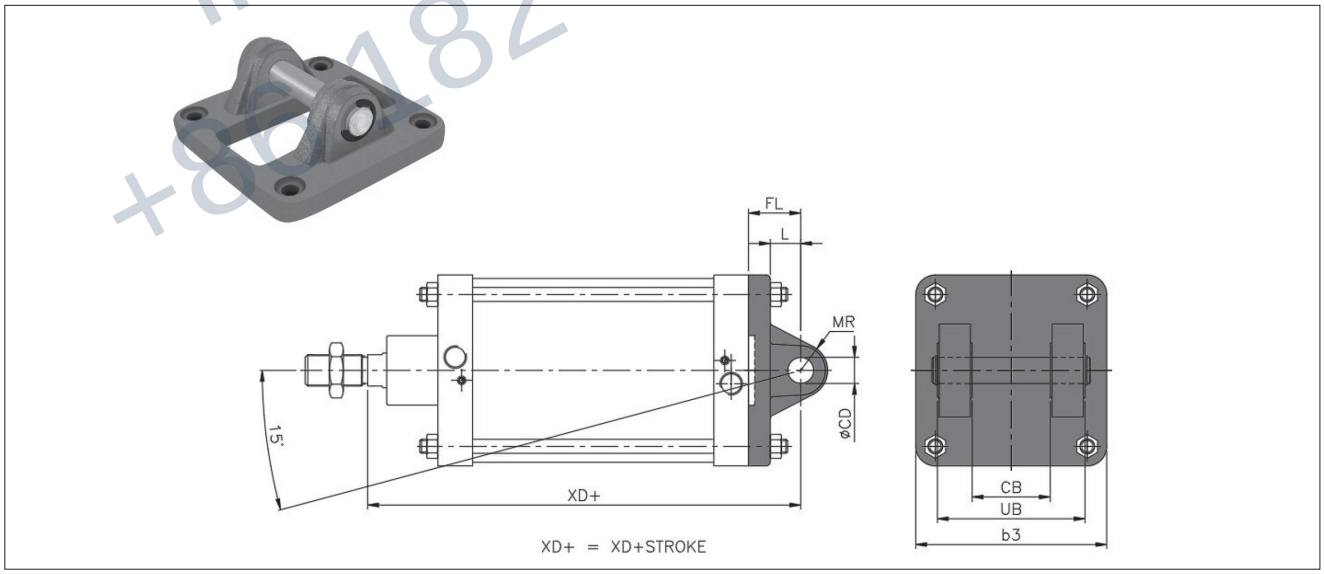
MODEL	R	MF	FB	TF	UF	W	b7
F1-200 F2-200	170	25	22	270	310	57	220
F1-250 F2-250	226	25	22	340	390	57	274
F1-300 F2-300	276	32	30	380	430	52	330
F1-350 F2-350	300	35	32	450	520	50	365

S1 – Pedestal



MODEL	AB	AH	AO	AT	AU	SA	TR	XA
S1-200	24	135	30	12	70	298	135	310
S1-250	28	165	40	20	75	318	165	325
S1-300	32	200	45	20	80	349	230	341
S1-350	35	240	55	25	95	387	320	364

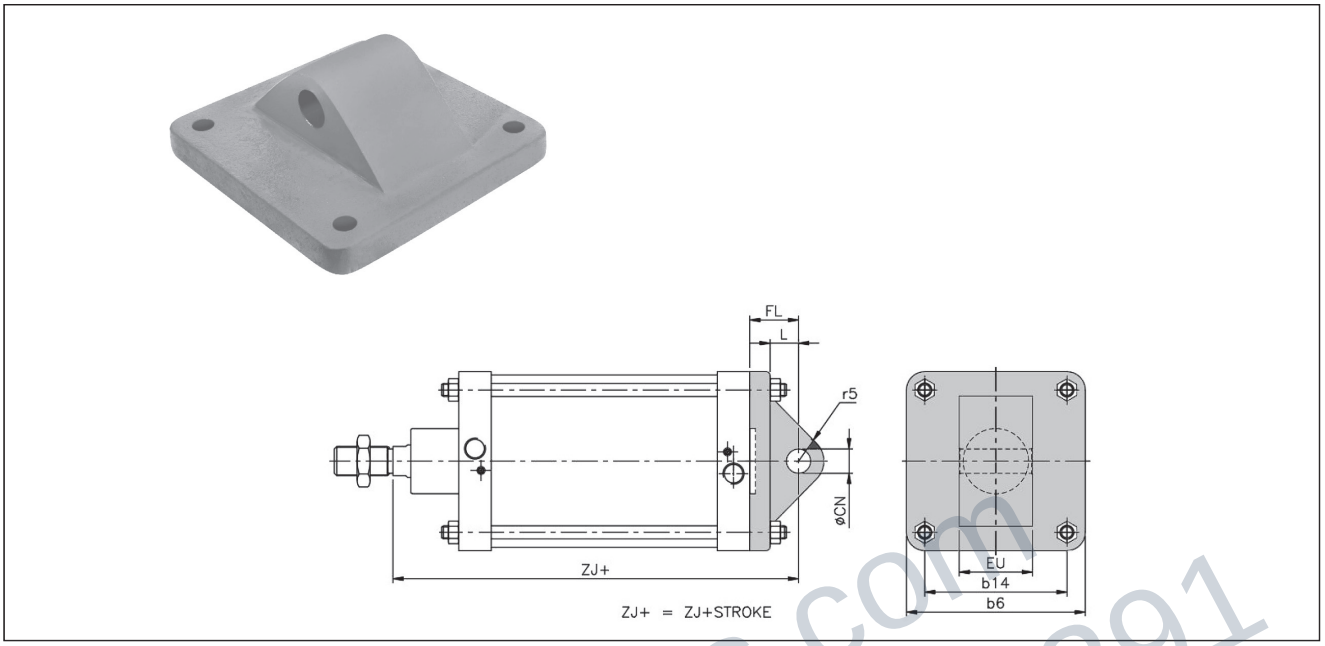
P2 – Female hinge rear



MODEL	CB	øCD	FL	L	MR	UB	XD	b3
P2-200	90	30	60	35	31	170	300	220
P2-250	110	40	70	45	41	200	320	270
P2-300	120	45	80	50	46	220	341	325
P2-350	150	45	92	60	50	360	361	375

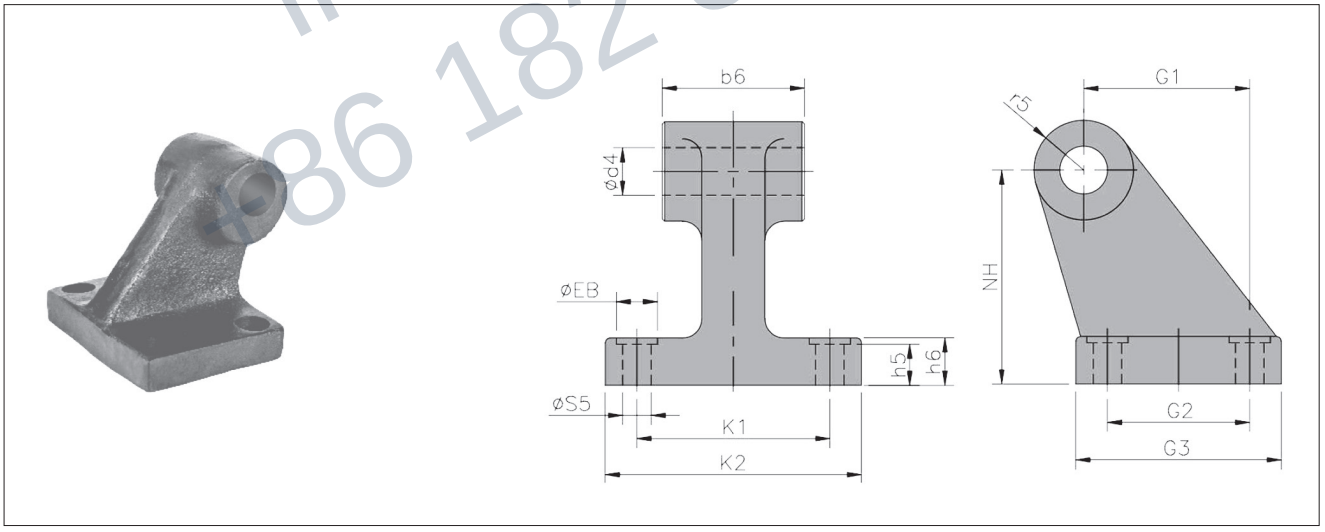
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P4 – Male hinge rear



MODEL	FL	L	EU	b6	ØCN	r5	b14	ZJ
P4-200	60	35	89	220	30	31	175	300
P4-250	70	45	109	270	40	35	210	320
P4-300	80	50	119	330	45	50	255	341
P4-350	92	60	149	380	45	45	300	361

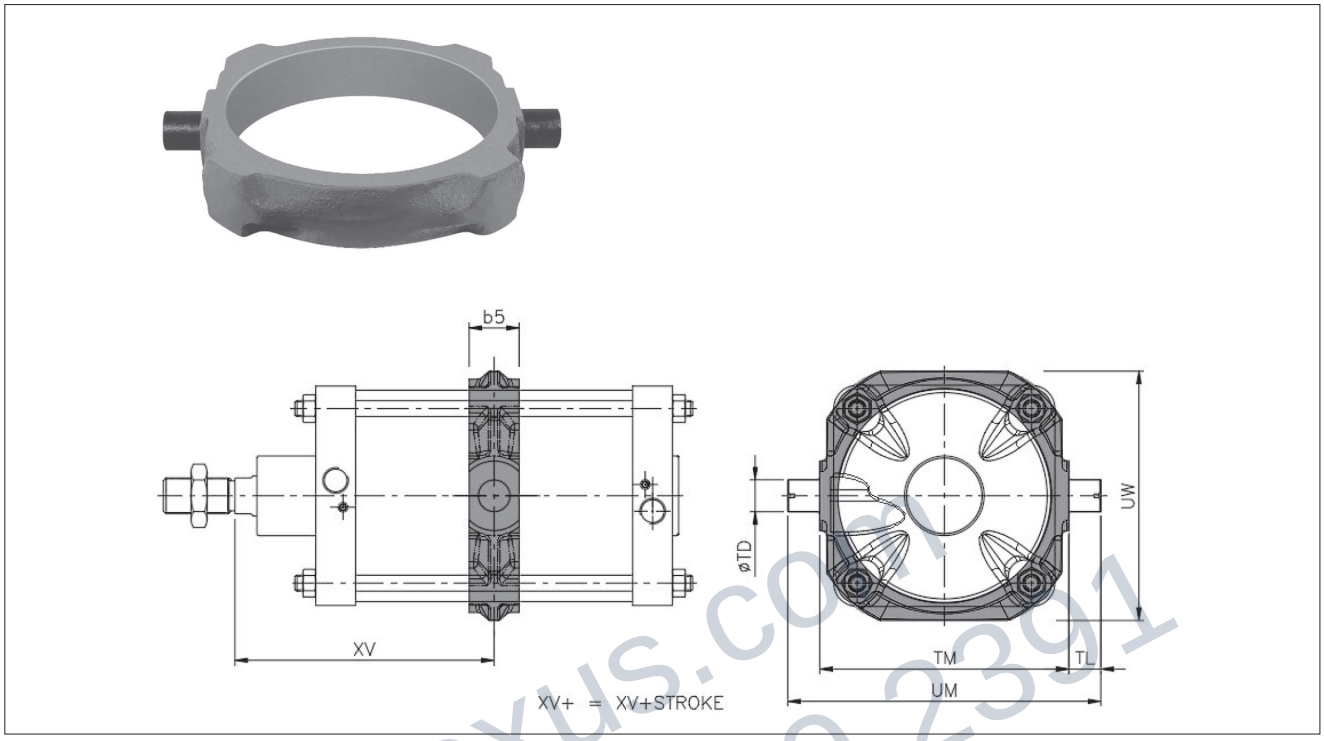
B2 – Male carden hinge



MODEL	G1 JS14	G2 JS14	G3 max	K1 JS14	K2 max	NH JS14	S5 h13	b6 0/0.4	d4 H9	h5 max	h6 max	r5 max	EB min
B2-200	105	90	130	122	162	135	18	90	30	26	30	31.5	30
B2-250	128	110	160	150	200	165	22	109	40	31	35	40	36
B2-300	150	122	186	170	234	200	26	119	45	36	40	45	44
B2-350	165	140	200	190	260	220	26	149	45	36	40	47	44

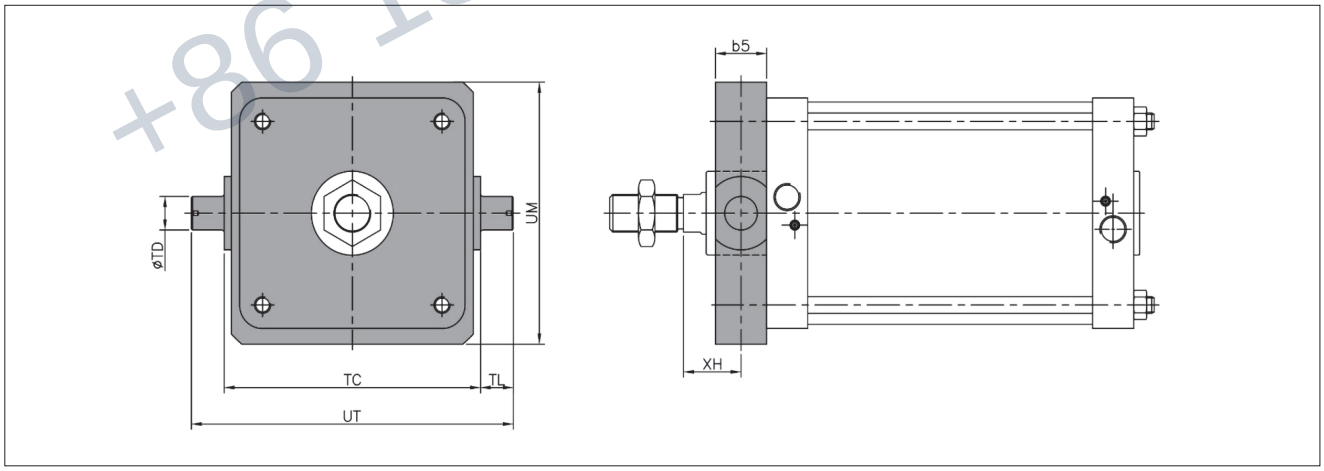
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T4 – Central trunnion



MODEL	øTD	TL	TM	UM	UW	b5	XV
T4-200	32	32	250	314	250	50	160
T4-250	40	40	320	400	320	60	166
T4-300	45	45	390	480	390	70	166.5
T4-350	50	50	440	550	450	80	206.5

T5 – Front trunnion



Model No	øTD	TL	TC	UT	UM	b5	XH
T5-200	32	32	250	314	260	50	57
T5-250	40	40	320	400	270	60	52
T5-300	45	45	390	480	290	70	37
T5-350	50	50	450	550	310	80	32

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How to order

1.	2.	3.	4.	5.	6.	7.	8.	9.
CC	DA	00	BG	NB	200	025	S	P2

1.	Pneumatic cylinder series
CC	CC series (Diameter 200 to 350)

2.	Action
DA	Double acting

3.	Piston ROD MOC
00	SS410 Piston rod (std.)
EN	EN8
ZR	SS304 Piston rod
ZM	SS316 Piston rod

4.	Special cylinder
00	Standard model
BG	Bellows
DS	Double side piston rod

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

6.	Bore
	200
	250
	300
	350

7.	Stroke
	025, 050, 075, 100, 125, 150, 175, 200, 225, 250, 300, 325, 050, 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	Pedestal mounting
F1	Front flange
F2	Rear flange
T4	Central trunnion
T5	Front trunnion

ORDERING EXAMPLE:

1. CC-DA-00-00-NB-200/050. This is a double acting cylinder diameter 200 mm and stroke 50 mm.
2. CC-DA-ZM-BG-AV-200/300+S+P2. This is a double acting cylinder with SS316 piston rod, Bellows provided, with Viton seals for high temperature application, 200 mm is bore, 300 mm is stroke, with fork, female hinge rear.

Note:

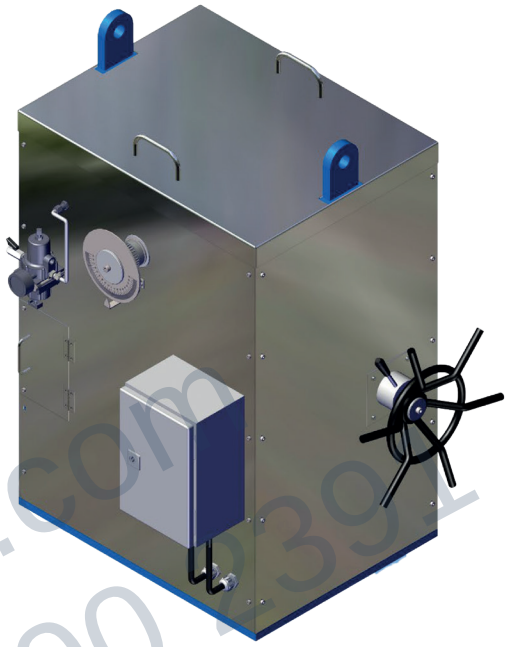
1. Bore sizes exceeding 350 mm, specifically ranging from 400 to 1300 mm, will be processed on an ETO basis.
2. All single-acting cylinders will be ETO, and for configuration 'SA' should be defined in slot 2 instead of 'DA'.

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Custom-Designed, Engineered to Order Solution

Neles Easyflow™ Damper Drive Control Panel





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Stand Mounted Type

The pneumatic actuator system for dampers comprises a power cylinder and a manual override, combined in a structure that's easily portable. Its robust design ensures consistent performance, even in severe conditions such as power plants, steel industries, petrochemical plants, or desert environments. This actuator is capable of delivering moderate torque to precisely control the angles of dampers. Manual operation involves a worm and worm wheel arrangement with an engage-disengage lever and handwheel, enabling the actuator to be positioned as desired.

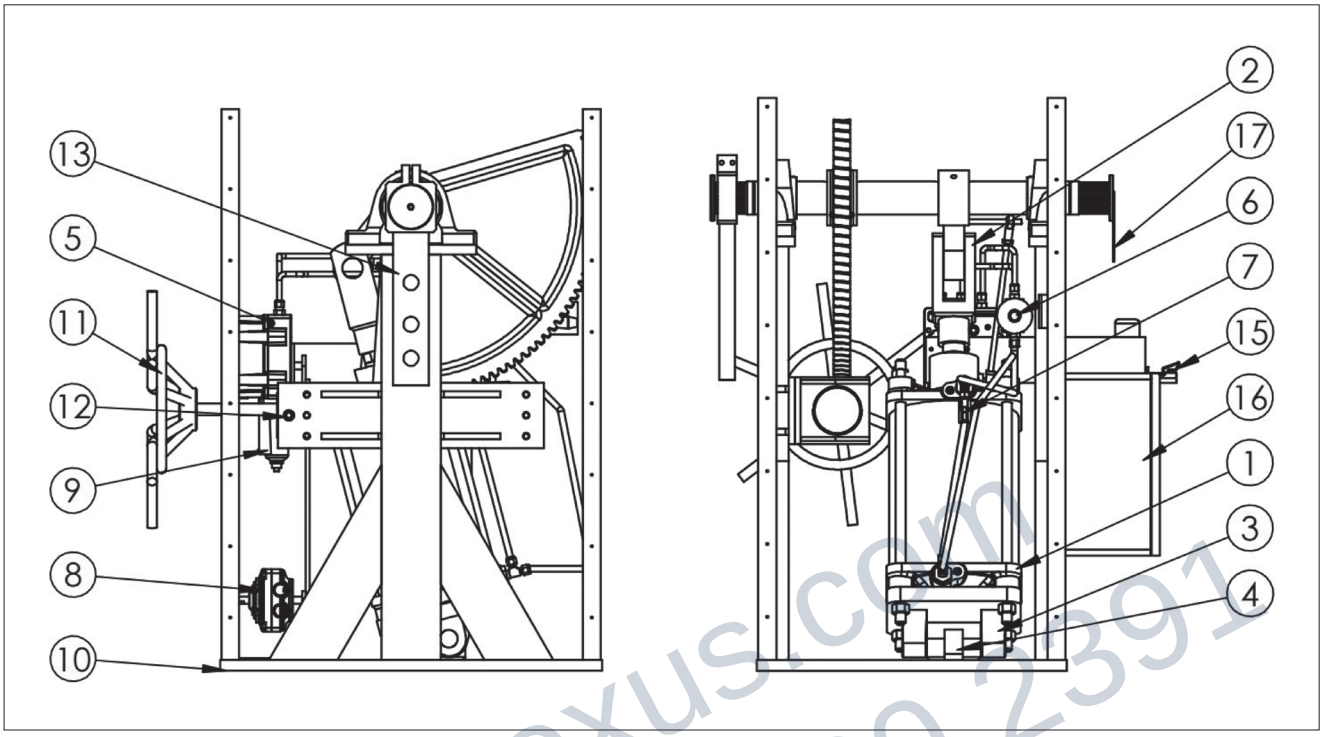
Key Features

- Torque Range available up to 6000 kg-m
- Standard operating temperature -20°C to +70 °C (high temperature on request)
- Lever has 90deg operating angle
- Typical operating pressure 4 bar up to 8 bar
- Portable within steel housing (Optional)
- Easily removable for access / maintenance
- Enclosures (NEMA 4X) (Optional)
- Digital positioner with HART® communications.

Benefits

- Improved Modulation and control
- Improved reliability in high temperature environments
- Accurate & responsive
- Safety & serviceability
- Control modes for safe operation
- Options available for fail-safe or fail-in-place on loss of control input and air supply.
- Automatic & Manual control.

General Arrangement



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Part	Part no.
Double Acting Cylinder	1
Fork	2
Female Rear Hinge	3
Male Rear Hinge	4
Smart Positioner	5
Air Lock Relay (Lock up Valve)	6
Equalising Valve	7
Limit Switch	8
Air Filter Regulator	9
Stand Mounting Panel	10
Hand Wheel	11
Engagement/Dis-Engagement Knob	12
Connecting Lever	13
Flow Control Valve	14
Isolation Valve	15
Junction Box	16
Pointer	17

Note: This solution is an extended version of the referenced series and is fully Engineered to Order.
For any queries or further information, please contact Valmet team.

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