Neles Easyflow™ heavy duty pneumatic cylinders
Series AC

Cylinder Dia: 80 to 350 mm
Series: AC



Features

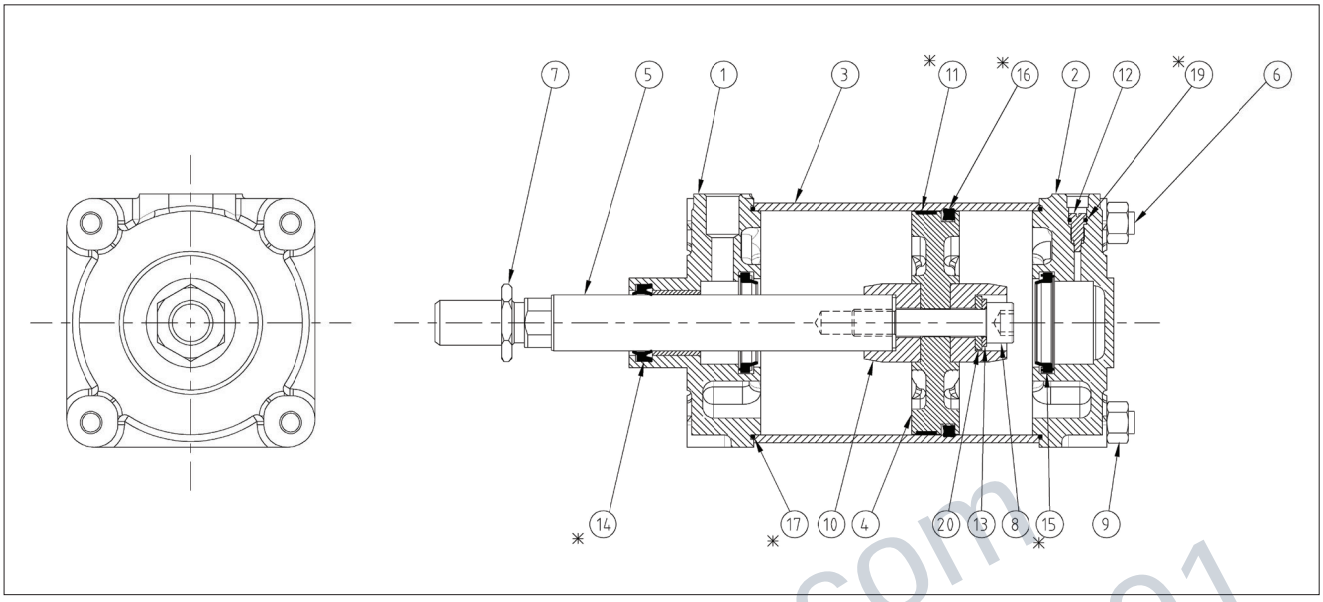
- The AC series comprises of cylinders from 80 to 350
- The Compact heavy duty Cylinders are available in Steel, Cast Iron and Aluminium Construction & are epoxy painted
- The piston & Piston Rod are guided by rigid bearings.
- Piston Rod burnished stainless steel
- Lifetime lubricated with Quad seals, ensuring low friction and a very long life
- Light weight custom designed as per the required application
- Operating pressure range 1-10 bar
- Operating temperature range -20°C to 70°C with NBR seals and -20°C to 125°C with Viton

Approvals & Certificates

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

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AC SERIES CONSTRUCTION



PART	MATERIAL	PART NO
FRONT COVER	C.I. CASTING	1
REAR COVER	C.I. CASTING	2
TUBE	ANODIZED ALUMINIUM / CS / MS	3
PISTON	CI CASTING	4
PISTON ROD	SS 410/ SS 420/ EN8 HARD CROME PLATED	5
TIE ROD	EN8	6
CHECK NUT	HGA Steel	7
SHC SCREW	HGA STEEL	8
HEX NUT	HGA STEEL	9
BUFFER CAP	ALUMINIUM	10
PISTON ROD GUIDE	TEFLON	11*
CUSHIONING SCREW	BRASS/ MS	12
SPRING WASHER	STEEL	13
ROD SEAL	NBR	14*
CUSHIONING SEAL	NBR	15*
QUAD SEAL	NBR	16*
COVER Seal	NBR	17*
CUSIONING SEAL	NBR	19*
PLAIN WASHER	STEEL	20

* MARKED COMPONENTS ARE THE PARTS OF THE SEAL KIT.

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CYLINDER DIA 80 TO 350 MM

Series: AC

Force (Output Thrust) For Double Acting Cylinders

Double Acting Cylinder			Force (output Thrust) (N)									
Cylinder Bore Dia	Piston Rod Dia	Position	Pressure (bar)									
			1	2	3	4	5	6	7	8	9	10
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
125	25	Extend	1228	2455	3682	4909	6136	7364	8591	9817	11045	12272
		Retract	1147	2294	3441	4587	5734	6881	8028	9174	10321	11468
160	32	Extend	2011	4022	6032	8043	10053	12064	14075	16085	18096	20107
		Retract	1885	3770	5655	7540	9425	11310	13195	15080	16965	18850
200	32	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

Note: 0.2 bar pressure is necessary to overcome internal mechanical friction
To obtain uniform speed, the load degree should be less than 60%

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Air consumption

Air consumption		dm³ A.N.R./cm stroke		A.N.R.= dm³ under Norm-conditions					1dm³=1 litre	
Cylinder Dia	1 bar	2 bar	3 bar	4 bar	5 bar	6 bar	7 bar	8 bar	9 bar	10 bar
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
125	0.246	0.369	0.492	0.615	0.738	0.861	0.984	1.107	2.230	1.353
160	0.402	0.604	0.805	1.006	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	5.400
300	1.413	2.120	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	8.660	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.

CYLINDER DIA 80 TO 350 MM

Series: AC

Type Codes								
Pneumatic Cylinder series	**Action**	**Piston ROD MOC**	**Special Cylinder ***	**Seals**	**Bore**	**Stroke**	**Piston Rod Connection**	**Cylinder mounting**
AC Series (Dia 80 to 350)	DA - Double Acting	00 - SS410 Piston Rod (std.) EN - EN8 ZR - SS304 Piston Rod ZM - SS316 Piston Rod	BG - Bellows DS - Double side piton rod	NB - NBR (std.) AV - Viton	080 100 125 160 200 250 300 350	025, 050, 075, 100, 125, 150, 175, 200, 225, 250, 300, 325, 350, 375, 400, 425, 450, 500	S - Fork with Pin F - Flexible Joint W - Ball and Socket Joint	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:

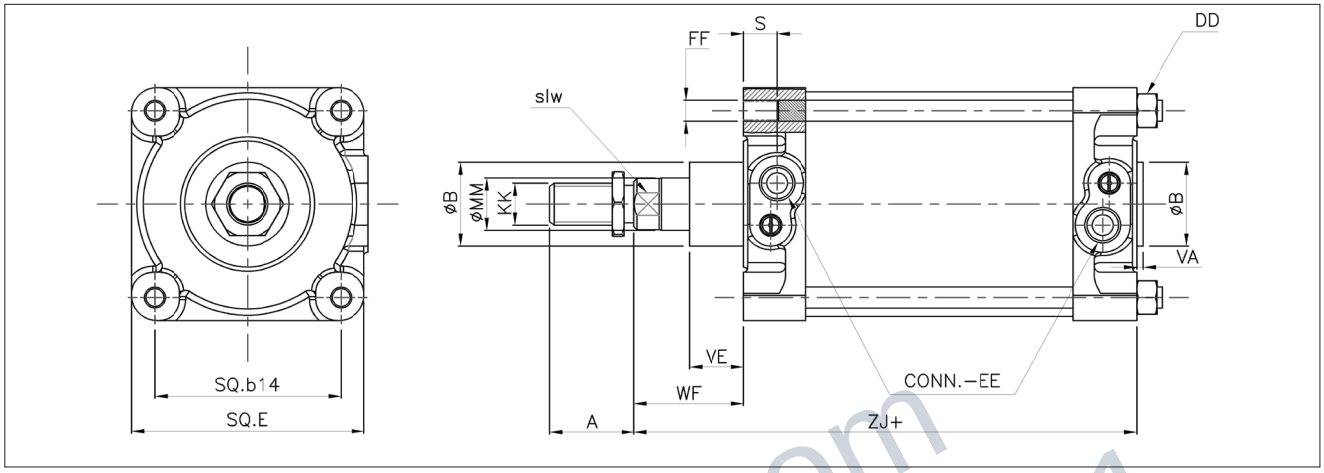
1. AC-DA-00-00-NB-300/500. This is a double acting cylinder Dia 300 mm and stroke 500 mm
2. AC-DA-ZM-BG-AV-200/300+S+P2. This is a double acting cylinder with SS316 piston rod, Bellows Provided, with Viton seals for High Temp application, 200 mm is Bore, 300 mm is stroke, with Fork, Female Hinge Rear

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CYLINDER DIA 80 TO 350 MM

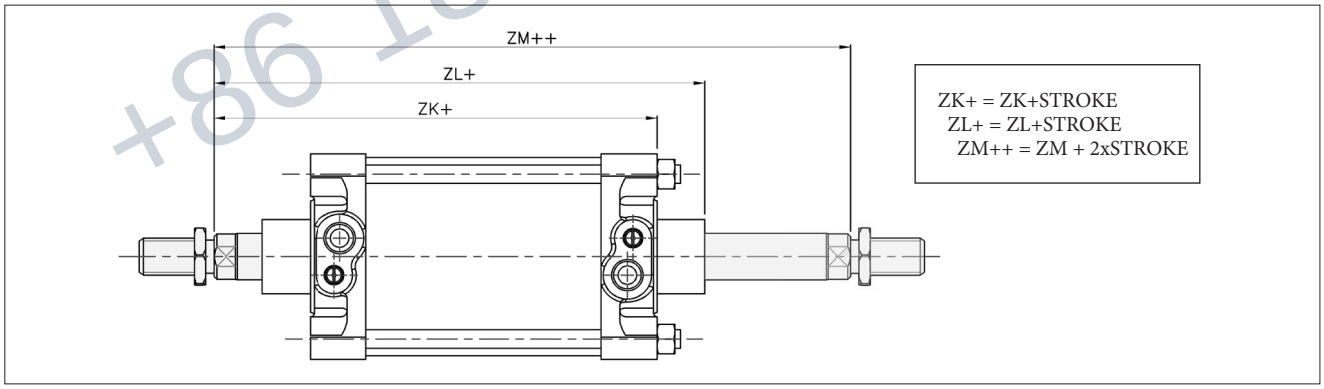
Series: AC

BASIC DIMENSIONS



Cylinder diameter	A	ØB	DD	E	EE	KK	MM	b14	VA	VE	WF	ZJ	FF	S
80	40	40	M10	90	G3/8”	M20X1.5	25	72	3	26	41	129	M10	15
100	40	40	M10	110	G3/8”	M20X1.5	25	89	3	26	40	128	M10	15
125	40	40	M12	136	G3/8”	M20X1.5	25	110	3	26	40	128	M12	15
160	54	50	M16	175	G3/8”	M27X2	32	140	5	28	46	137	M12	15
200	54	50	M16	220	G3/8”	M27X2	32	175	4	28	46	137	M16	15
250	72	65	M20	270	G1/2”	M36X2	40	210	6	43	66	169	M20	18
300	72	65	M24	320	G3/4”	M36X2	40	255	6	43	66	189	M24	19.5
350	72	65	M24	380	G3/4”	M36X2	40	300	6	43	66	204	M24	21

DS – Double ended cylinder

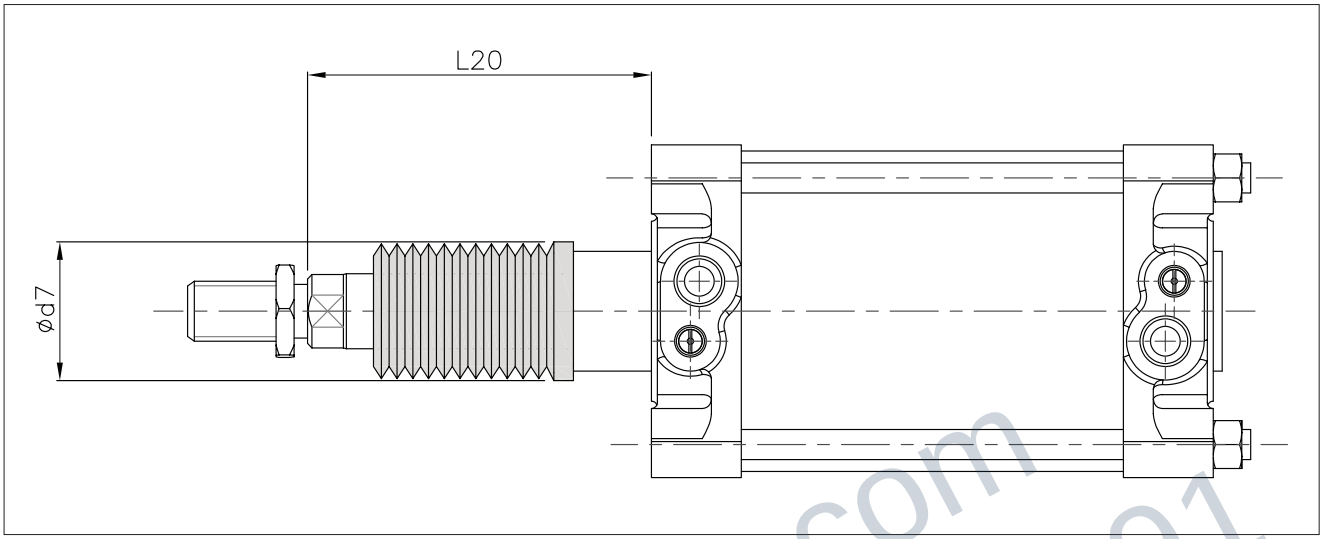


Cylinder diameter	ZK	ZL	ZM
80	129	155	170
100	128	154	168
125	128	154	168
160	137	165	183
200	137	165	183
250	169	212	235
300	189	232	255
350	204	247	270

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AC SERIES CONNECTION DIMENSIONS

BG-BELLOW

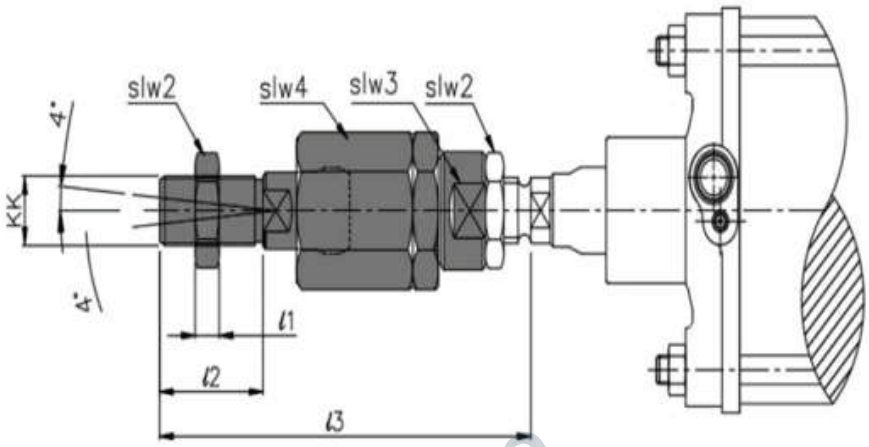


Cylinder diameter	L20 at stroke		Bellow diameter
	1-750	701-1400	
80	121	201	60
100	121	201	60
125	150	260	115
160	156	266	115
200	156	266	125
250	176	286	125
300	176	286	125
350	176	286	125

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F-FLEXIBLE JOINT

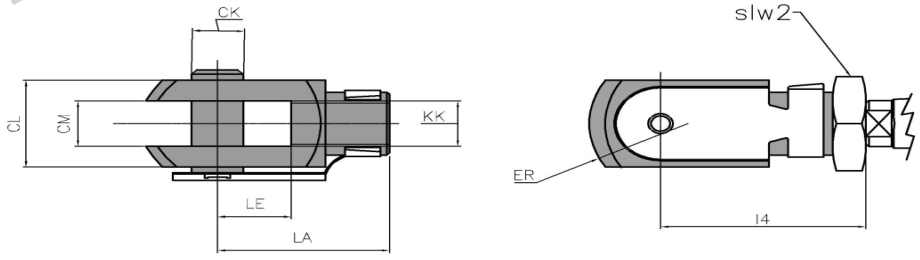




Cylinder diameter	KK	l1	l2	l3 min.-max	s/w2	s/w3	s/w4
80	M20 x 1.5	10	40	136-140	30	30	41
100	M20 x 1.5	10	40	136-140	30	30	41
125	M20 x 1.5	10	40	136-140	30	30	41
160	M27 x 2	13,5	54	169-174	41	54	62
200	M27 x 2	13,5	54	169-174	41	54	62
250	M36 X 2	14	72	281-287	55	75	80
300	M36 X 2	14	72	281-287	55	75	80
350	M36 X 2	14	72	281-287	55	75	80

S-FORK WITH P



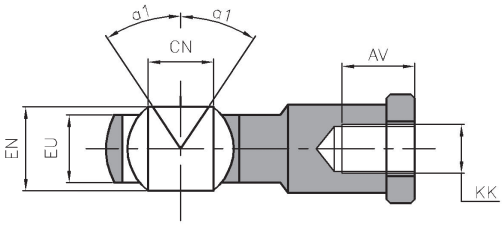


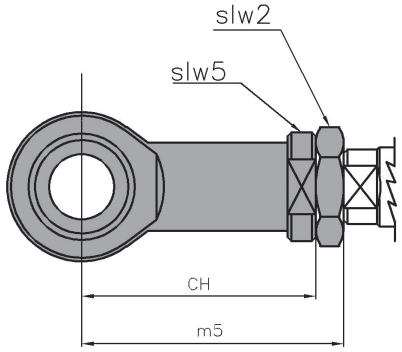
Cylinder diameter	KK	CK (h11)	CL	CM (+0.15, +0.33)	ER (max)	LE (min)	LA	I4 (min)	slw2
80	M20x1.5	20	40	20	27	40	80	90	30
100	M20x1.5	20	40	20	27	40	80	90	30
125	M20x1.5	20	40	20	27	40	80	90	30
160	M27x2	25	50	25	38	50	100	112	41
200	M27x2	25	50	25	38	50	100	112	41
250	M36x2	35	70	35	46	72	144	158	55
300	M36x2	35	70	35	46	72	144	158	55
350	M36x2	35	70	35	46	72	144	158	55

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W- BALL & SOCKET JOINT





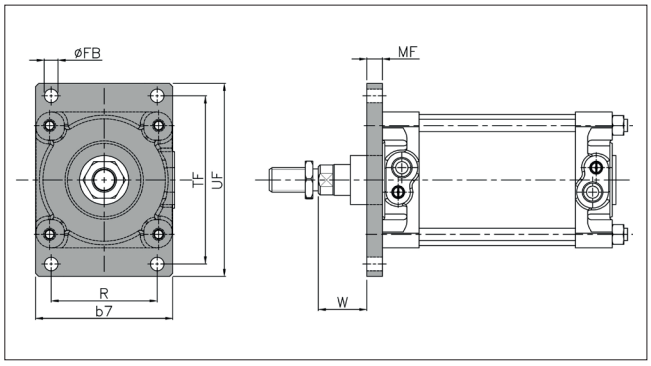


Cylinder diameter	KK	CN	EU	EN	CH	AV (min)	L4 (min)	Slw2	Slw5	a°
80	M20x1.5	20	18	25	77	33	87	30	30	4°
100	M20x1.5	20	18	25	77	33	87	30	30	4°
125	M20x1.5	20	18	25	77	33	87	30	30	4°
160	M27x2	30	25	37	110	51	122	41	41	4°
200	M27x2	30	25	37	110	51	122	41	41	4°
250	M36x2	35	28	43	125	56	144	51	55	4°
300	M36x2	35	28	43	125	56	144	51	55	4°
350	M36x2	35	28	43	125	56	144	51	55	4°

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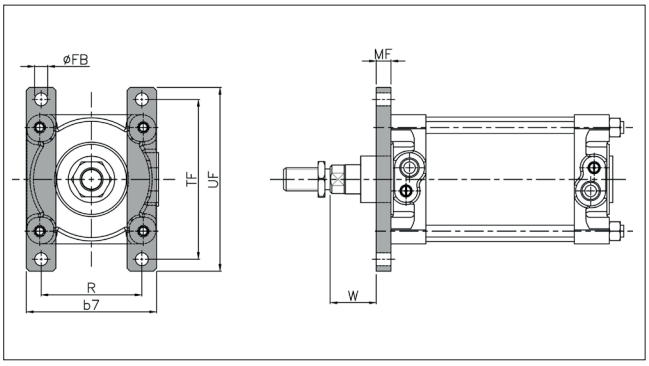
CYLINDER MOUNTINGS
F1 – FRONT FLANGE

Cylinder Dia 100 - Dia 160S



MODEL	FB H13	MF	R JS14	TF JS14	UF	b7 MAX	W
F1-80	12	15	63	126	150	100	25
F1-100	14	15	75	150	172	120	25
F1-125	16	20	90	180	220	140	20
F1-160	18	20	115	230	275	175	26

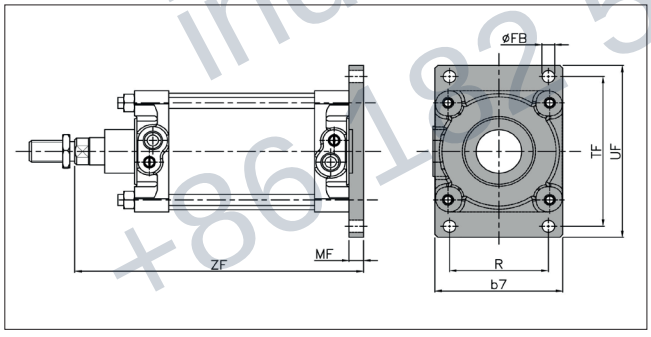
Cylinder Dia 200 - Dia 350



MODEL	FB H13	MF	R JS14	TF JS14	UF	b7 MAX	W
F1-200	22	25	170	270	310	220	21
F1-250	22	25	226	340	390	274	41
F1-300	30	32	276	380	430	331	34
F1-350	32	35	300	450	520	365	31

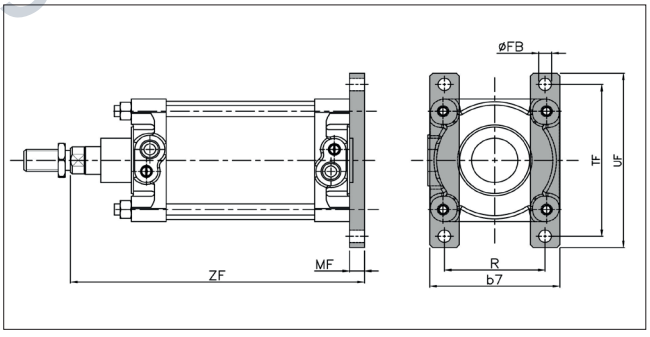
F1 – RARE FLANGE

Cylinder Dia 100 - Dia 160



MODEL	FB H13	MF	R JS14	TF JS14	UF	b7 MAX	ZF
F2-80	12	15	63	126	150	100	144
F2-100	14	15	75	150	172	120	143
F2-125	16	20	90	180	220	140	148
F2-160	18	20	115	230	275	175	157

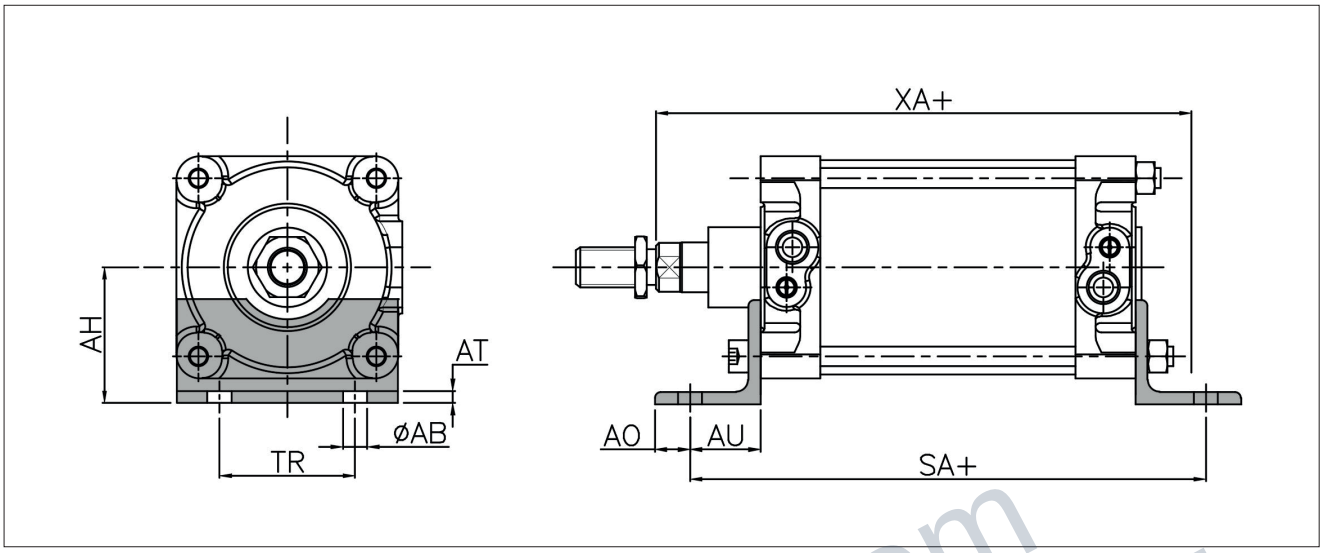
Cylinder Dia 200 - Dia350



MODEL	FB H13	MF	R JS14	TF JS14	UF	b7 MAX	ZF
F2-200	22	25	170	270	310	220	162
F2-250	22	25	226	340	390	274	194
F2-300	30	32	276	380	430	331	221
F2-350	32	35	300	450	520	365	239

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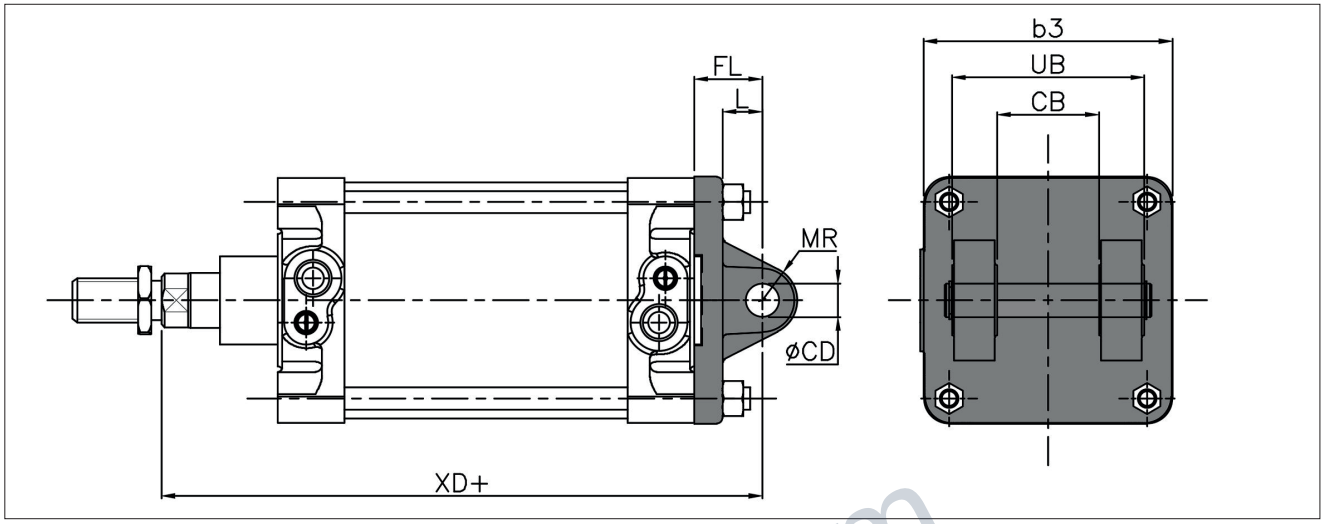
S1 – PEDESTAL



MODEL	AB	AH	AO	AT	AU	SA	TR	XA
S1-80	12	55	14	6	41	170	63	170
S1-100	14	71	14	6	41	170	75	169
S1-125	16	90	20	8	45	178	90	173
S1-160	18	115	20	10	60	211	115	197
S1-200	24	135	30	12	70	231	135	207
S1-250	28	165	40	20	75	253	165	244
S1-300	32	200	45	20	80	283	230	269
S1-350	35	240	55	25	95	328	320	299

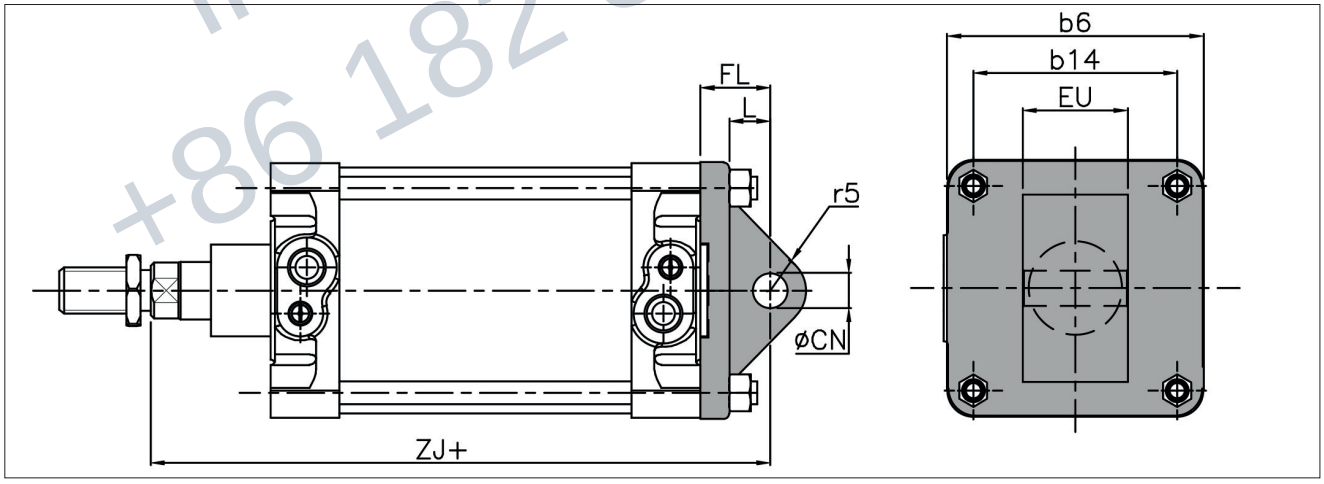
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P2 – FEMALE HINGE REAR



MODEL	CB	øCD	FL	L	MR	UB	XD	b3
P2-80	50	16	36	23	16	90	165	98
P2-100	60	20	41	25	18	100	169	114
P2-120	70	25	50	30	26	130	178	140
P2-160	90	30	55	35	31	170	192	220
P2-200	90	30	60	35	31	175	197	220
P2-250	110	40	70	45	41	200	239	270
P2-300	120	45	80	50	46	220	269	325
P2-350	150	45	92	60	50	260	296	375

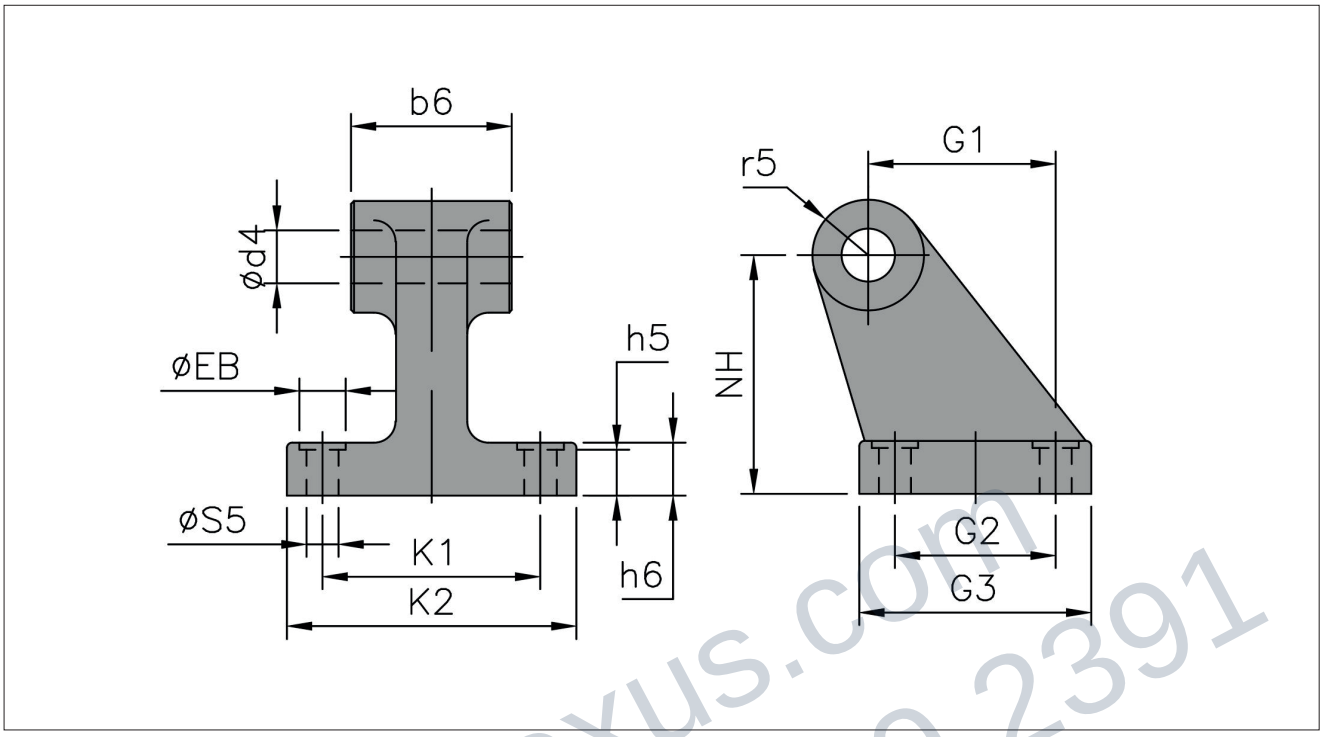
P4 – MALE HINGE REAR



MODEL	FL	L	EU	b6	ØCN	r5	b14	ZJ+
P4-80	36	22	49	95	16	15	72	165
P4-100	41	26	59	114	20	19	89	169
P4-125	50	30	69	135	25	22	110	178
P4-160	55	34	89	174	30	26	140	192
P4-200	60	35	89	220	30	31	175	197
P4-250	70	45	109	270	40	35	210	239
P4-300	80	50	119	330	45	50	225	269
P4-350	92	60	149	380	45	50	300	296

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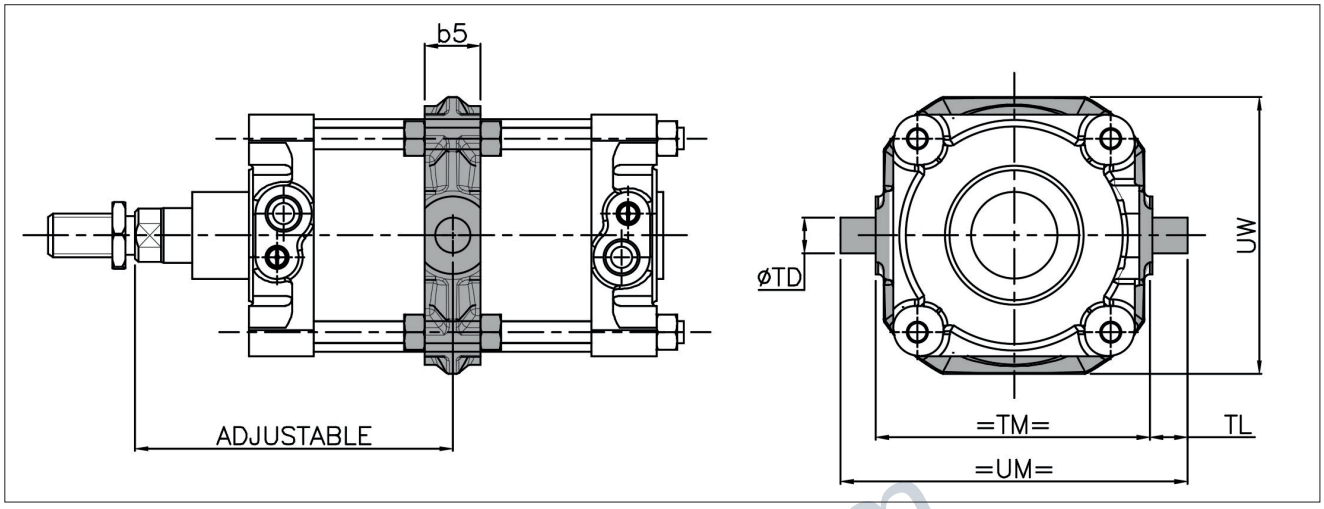
B2 – MALE CARDEN HINGE



MODEL	G1 JS14	G2 JS14	G3 max	K1 JS14	K2 max	NH JS14	ØS5 h13	b6 0/0.4	Ød4 H9	h5 max	h6 max	r5 max	EB min
LB2-80	47	40	62	66	87	63	11	49.8	16	6	14	15	-
LB2-100	55	50	72	76	97	71	11	59.8	20	7	15	19	-
LB2-125	70	60	90	94	124	90	11	69	25	6	20	22.5	20
LB2-160	97	88	126	118	156	115	13	89	30	23	25	31	20
LB2-200	105	90	130	122	162	135	18	89	30	26	30	31.5	30
LB2-250	128	110	160	150	200	135	22	109	40	30.5	35	40	36
LB2-300	150	122	186	170	234	200	26	119	45	35.5	40	45	44
LB2-350	165	140	200	190	260	220	26	149	45	36	40	47	44

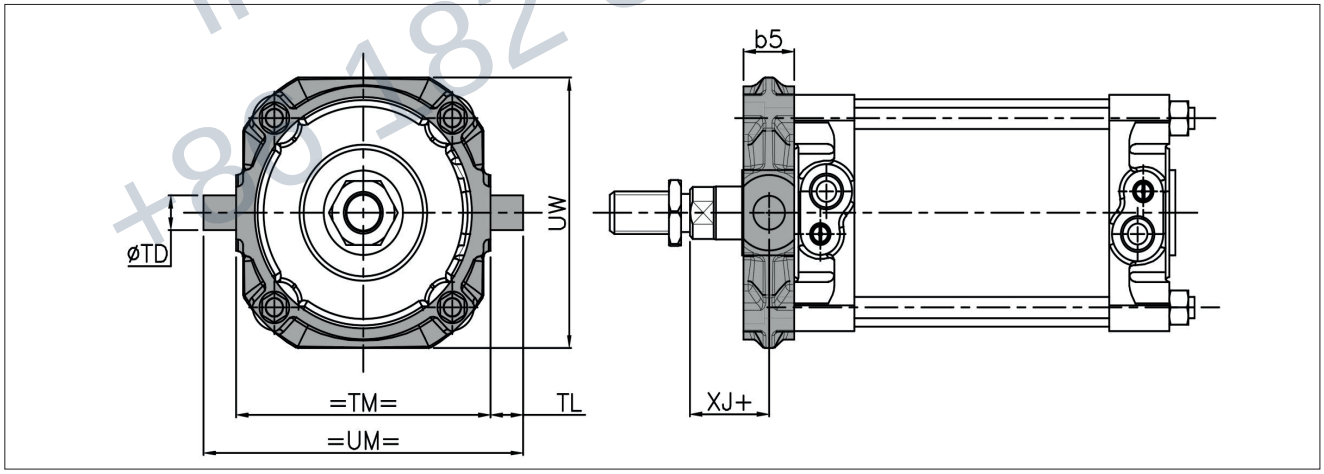
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T4 – CENTRAL TRUNNION



MODEL	øTD	TL	TM	UM	UW	b5
MT4-80	20	20	110	150	105	28
MT4-100	25	25	132	182	145	48
MT4-125	25	25	160	210	152	32
MT4-160	32	32	200	264	220	50
MT4-200	32	32	250	314	250	50
MT4-250	40	40	320	400	320	60
MT4-300	45	45	390	480	390	70
MT4-350	50	50	450	550	450	80

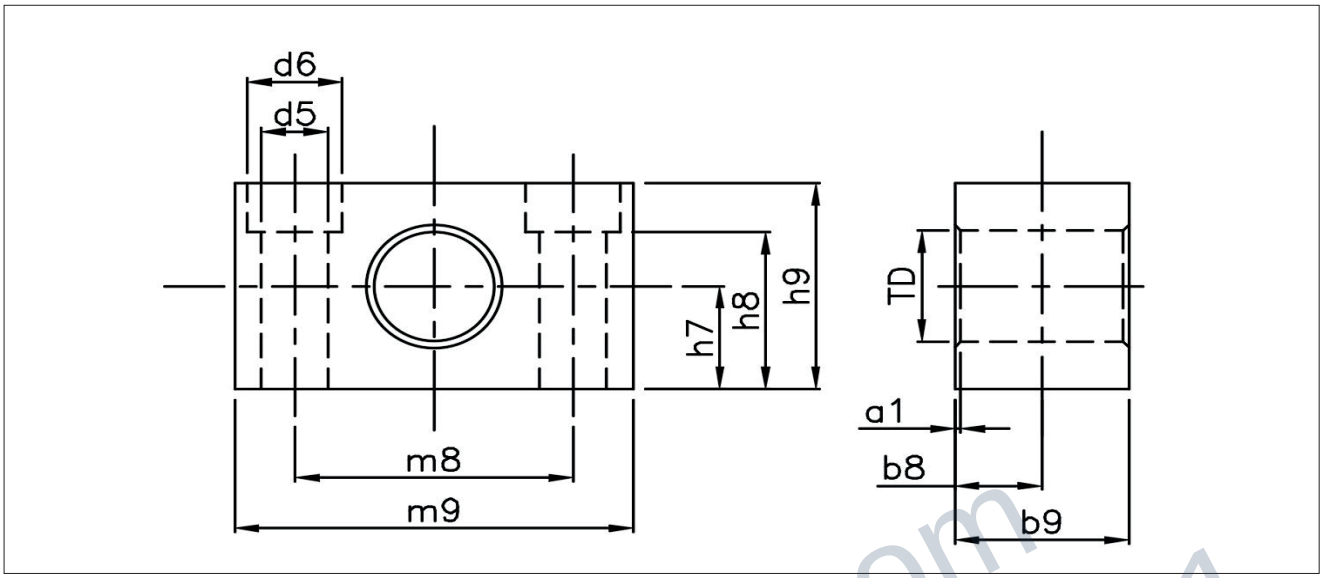
T5 – FRONT TRUNNION



MODEL	øTD	TL	TM	UM	UW	XJ	b5
MT5-80	20	20	110	150	100	25	32
MT5-100	25	25	132	182	110	26	40
MT5-125	25	25	160	210	146	26	50
MT5-160	32	32	200	264	220	30	50
MT5-200	30	32	250	314	250	30	50
MT5-250	40	40	320	400	270	44	60
MT5-300	40	45	390	480	390	44	70
MT5-350	40	50	450	550	450	44	80

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MTO-1



MODEL	a1	b8	b9	d5	d6	h7	h8	h9	m8	m9	TD H8
MTO-100	1.5	12.5	25	13.5	20	25	37	50	50	75	25
MTO-125	1.5	12.5	25	13.5	20	25	37	50	50	75	25
MTO-160	2	20	40	18	25	30	42.5	60	60	92	32
MTO-200	2	20	40	18	25	30	42.5	60	60	92	32
MTO-250	3	28	56	22	33	35	49.4	70	90	140	40
MTO-300	2	30	60	22	32	40	58	80	100	150	45
MTO-350	2	35	70	26	38	45	66	90	110	170	50

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How to order

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

1.	Pneumatic cylinder series
AC	AC series (Diameter 80 to 350)

2.	Action
DA	Double acting

3.	Piston Rod MOC
00	SS410 Piston rod (std.) Up to 300
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
	080
	100
	125
	160
	200
	250
	300
	350

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	Pedestal mounting
F1	Front flange
F2	Rear flange
T4	Central trunnion
T5	Front trunnion

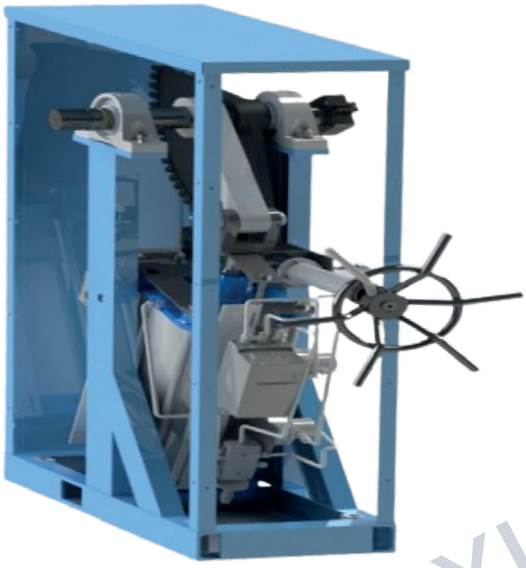
ORDERING EXAMPLE:

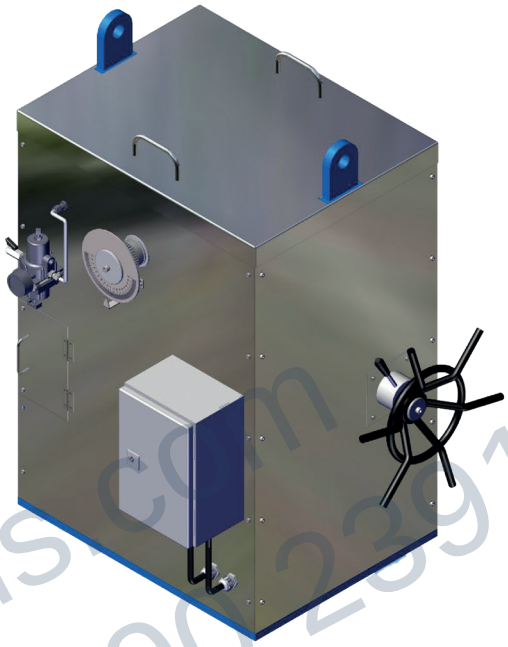
1. AC-DA-00-00-NB-300/050. This is a double acting cylinder diameter 300 mm and stroke 50 mm
2. AC-DA-ZM-BG-AV-200/300+S+P2. This is a double acting cylinder with SS316 piston rod, Bellows provided, with Viton seals for high temperature application, 200 mm is bore, 300 mm is stroke, with fork, female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

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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.

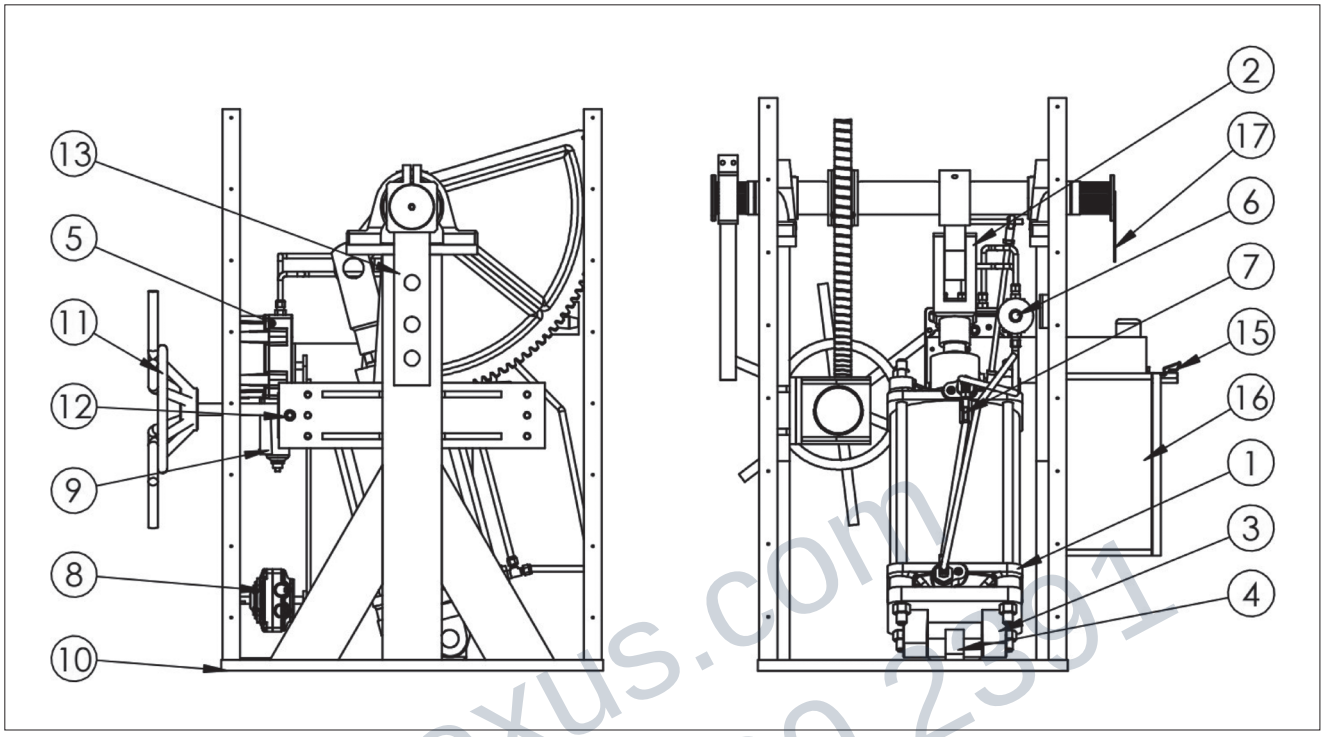
Key Features

- 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



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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