

BUTTERFLY VALVES WITH ACTREG PNEUMATIC ACTUATOR

FEATURES

Pneumatic butterfly valves are intended for the automatic opening /closing of common fluid pipes. The valve body is made of grey cast iron. The different configurations of the butterfly materials and of the liner make it suitable for many applications. Wafer mounting with centring ears between PN10/16 and ANSI 150 flanges. The long neck allows installation on insulated pipes. The ISO 5211 mounting pad allows the actuator to be directly assembled. The ACTREG (adjustable stops) pneumatic motorisation is available in double effect and spring-return with numerous options.

LIMITS OF USE

Fluid pressure : PS	16 bar up to DN 300
Fluid temperature : TS	According to the table below
Prohibited uses	Steam, naturel gas
Ambiant temperature	-10°C / +80°C
Motor compressed air	mini 6 bar / maxi 10 bar



AVAILABLES MODELS

DN 32/40 to DN 300.

Connection between flanges PN10/16 and ANSI 150 RF.

Double effect and spring-return actuator.



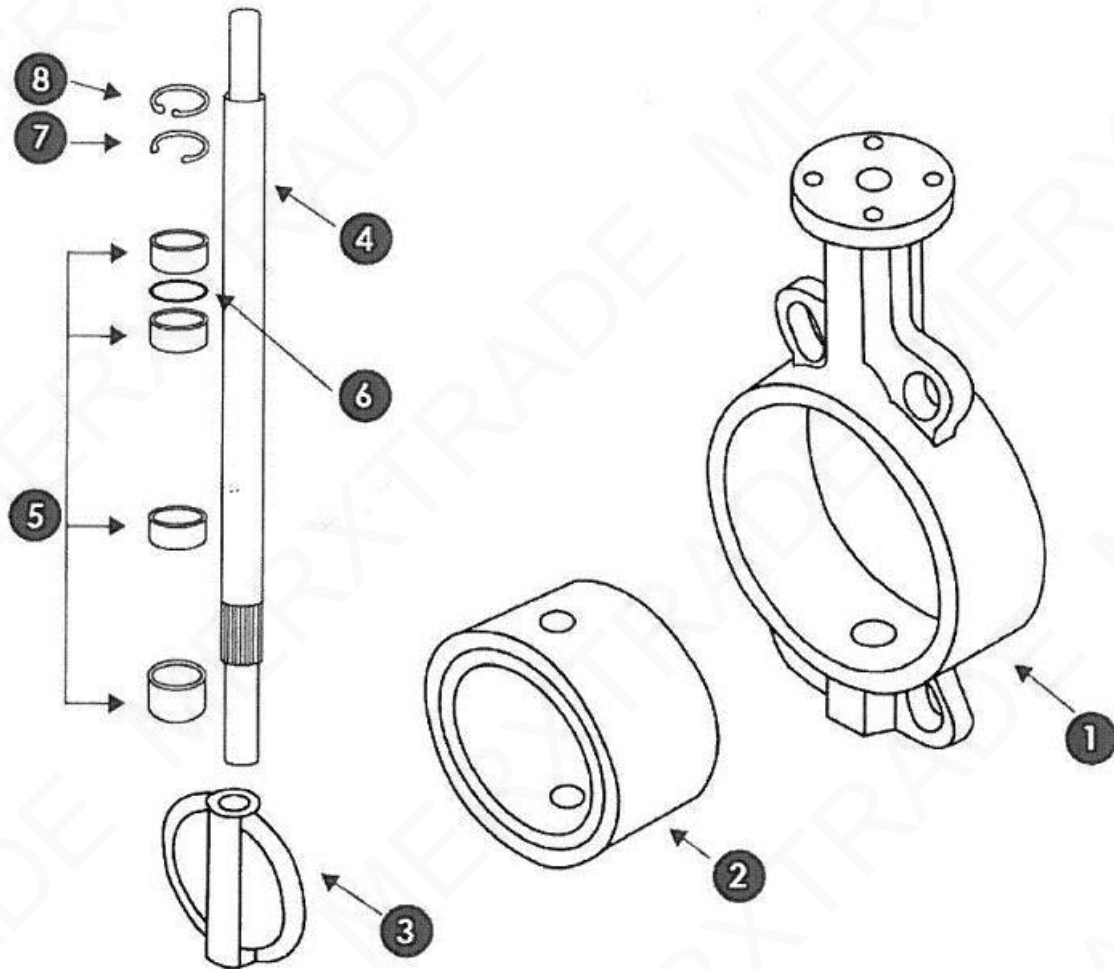
	Butterfly	Liner	Example of applications	TS min	TS max
	Stainless steel	NBR	Liquid hydrocarbous - compressed air	-10°C	+90°C
	Stainless steel	EPDM	Demineralised water - alkalis	-10°C	+110°C
	Cast iron	EPDM	Cold water - warm water	-10°C	+110°C

DIRECTIVES AND MANUFACTURING STANDARDS

SUBJECT	Standard	ON	SUBJECT	Standard
Pressure Equipment Directive 2014/68/EC	Cat. III module H	0035	Final test	API 598
Face to face dimension	ISO 5752 série 20		Actuator pilot connection	NAMUR
Flange dimension	EN 1092-1		Switch box connection	VDI/VDE 3845
Connection Motorisation	ISO 5211 :		SIL 3 level (actuator alone)	EN 61508

BUTTERFLY VALVES WITH ACTREG PNEUMATIC ACTUATOR

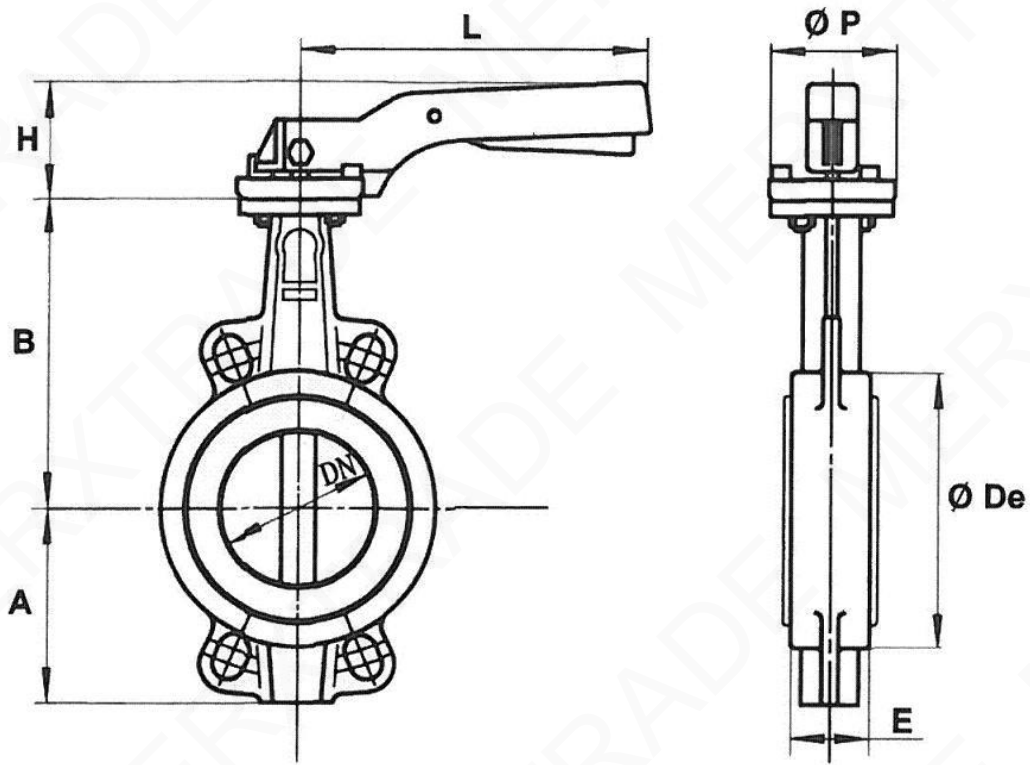
CONSTRUCTION



No.	Name	Type	Type	Type
1	Body	GS EN GJS-250 Cast iron		
2	Liner	NBR	EPDM	EPDM
3	Butterfly	1.4408 SS	1.4408 SS	Nickel-plated GJS-400-15 cast iron
4	Through shaft	416 SS		
5	Bearing	PTFE		
6	O-ring	NBR	NBR	NBR
7	Circlips	Steel		
8	Circlips	Steel		

BUTTERFLY VALVES WITH ACTREG PNEUMATIC ACTUATOR

DIMENSIONS (mm)



DN	32/40	50	65	80	100	125	150	200	250	300
A	61	77	87,5	95	107	121	144	171	205	235
B	130	136,5	142	158	180	192	215	242	280	310
Ø De	82	95	109	127	152	180	207	260	315	370
E	33	43	46	46	52	56	56	60	68	78
H	74	74	74	74	74	79	79	37	37	37
L	200	200	200	200	200	278	278	355	507	507
Ø P	65	65	65	65	65	90	90	125	150	150
Weight (kg)	1,8	2,5	2,9	3,2	4,2	6,7	7,7	14,7	23,4	33,8

FLOW-RATE COEFFICIENT Kv (m³/h)

DN	32/40	50	65	80	100	125	150	200	250	300
Kv	78	98	167	258	512	872	1347	2675	4555	7037

BUTTERFLY VALVES WITH ACTREG PNEUMATIC ACTUATOR

ACTREG PNEUMATIC MOTORISATION

The ACTREG motorisation offered as standard includes:

- rack and pinion actuator of anodised aluminium.
- a safety coefficient of 1.3 minimum compared to the nominal torque of the valve.
- air non-lubricated dry motor, minimum 6 bar pressure.
- an upstream / downstream pressure difference $\Delta P=10$ bar max.

The actuator assembly is of the following types:

- direct assembly with DN 32 to DN 200 aluminium motorisation mounting pad.
- yoke + stainless steel drive according to the EN 15081 standard for DN 250 to DN 300.

DN	Double-effect	V (liters)	Time (s)*	Spring-return	V (liters)	Time (s)*
32/40	ADA 20	0,13	0,1	ASR 40/6	0,27	0,2
50	ADA 20	0,13	0,1	ASR 40/6	0,27	0,2
65	ADA 40	0,27	0,1	ASR 80/6	0,64	0,3
80	ADA 40	0,27	0,1	ASR 80/6	0,64	0,3
100	ADA 80	0,64	0,3	ASR 130/6	0,77	0,5
125	ADA 80	0,64	0,3	ASR 200/6	1,20	0,6
150	ADA 130	0,77	0,3	ASR 300/6	1,96	0,9
200	ADA 200	1,20	0,6	ASR 500/6	2,95	1,1
250	ADA 300	1,96	0,9	ASR 500/6	2,95	1,1
300	ADA 500	2,95	1,1	ASR 850/6	4,70	2,6

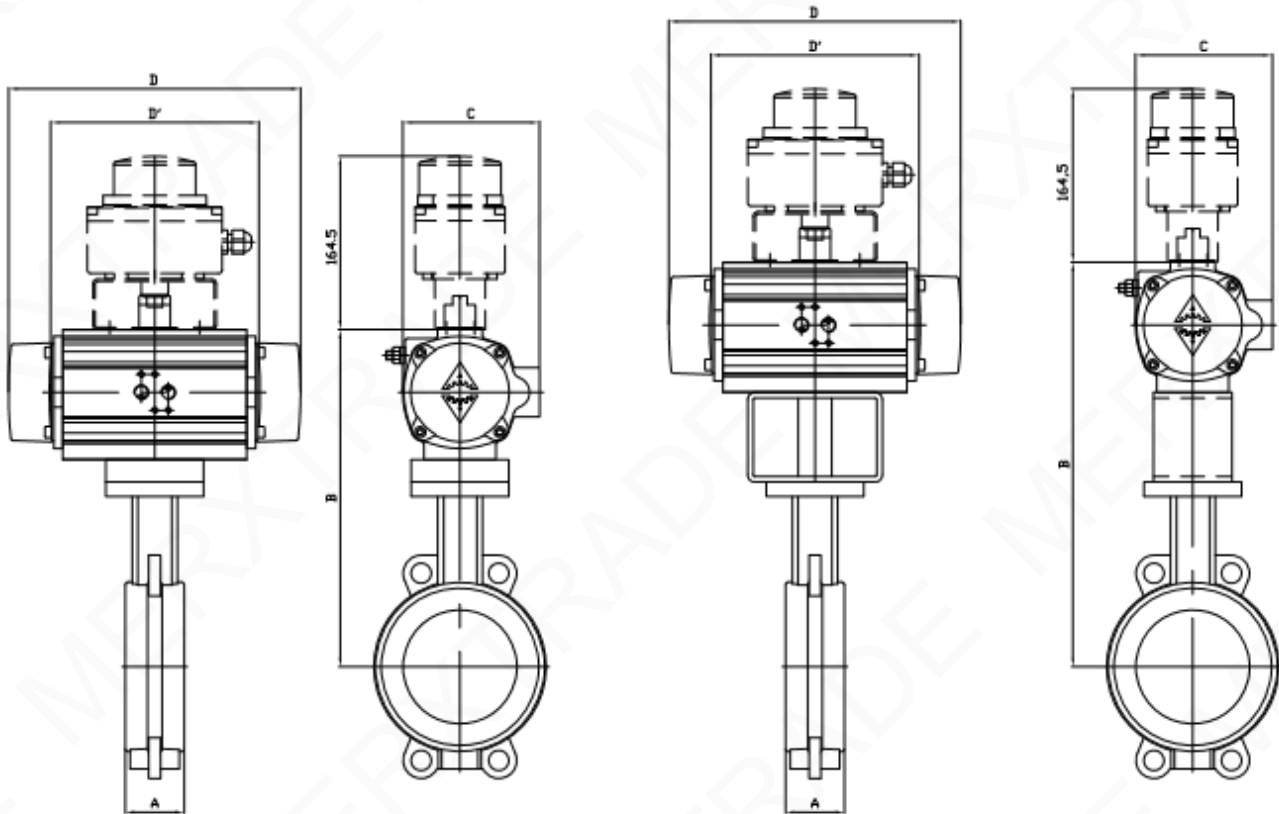
For any other operating conditions, please contact us.

*indicative time of the no-load actuator for opening or closing.

OPTIONS OF MOTORISATION

There are a multitude of options for which we ask you to consult our commercial services:

1	actuators dimensioned for a compressed air pressure of 3, 4 or 5 bar
2	actuator dimensioned for an upstream / downstream pressure difference ΔP greater than 10 bar
4	Actuator for very low (-40°C) or very high (+150°C) ambient temperatures.
5	Robinet automatique de sécurité avec coefficient de sécurité renforcé et temps de fermeture < 1 s,
7	manual override with declutchable gear box
8	compressed air filter regulator
9	All types of piloting solenoid valves
10	all types of switch boxes
12	apid exhaust
13	flow-rate limiters - exhaust brakes
14	Air lock



* : montage avec platine H=80mm

DN	40		50		65		80		100	
ACTREG	ADA20	ASR40	ADA20	ASR40	ADA40	ASR80	ADA40	ASR80	ADA80	ASR130
A	33		43		46		46		52	
B	210	235	216.5	241.5	247	269	263	285	307	317
C	76	91	76	91	91	111	86	111	111	122
D	-	195	-	195	-	217	-	217	-	258
D'	145	-	145	-	158	-	158	-	177	-
KG	3.63	4.56	4.13	5.05	5.34	7.1	6.1	7.82	8.02	9.9

DN	125		150		200		250		300	
ACTREG	ADA80	ASR200	ADA130	ASR300	ADA200	ASR500	ADA300	ASR500	ADA500	ASR850
A	56		56		60		68		78	
B	325	353	358	393	392	426	512*	529*	559*	581*
C	111	135.5	122	152.5	135.5	173	152.5	173	173	191.5
D	-	299	-	348.5	-	397	-	397	-	473
D'	177	-	196	-	225	-	273	-	304	-
KG	9.83	14.22	12.8	19.82	19.2	29.4	41.1	48.3	51.9	63.53



The art of power and perfection

PNEUMATIC ACTUATORS





The art of power and perfection

RACK AND PINION
Aluminium housing

TORQUES UP TO
6,500 Nm

ACTUATORS IN
14 different sizes

We are a manufacturer of rack and pinion aluminium housing actuators with torque figures up to 6,500 Nm and scotch yoke actuators for heavy duty service up to 250,000 Nm. Our products offer reliable and dependable service for ¼ turn valves.

Engineered and built to withstand most of the applications and environmental conditions, the precision in design and quality provides a long and safe operational performance in valve control.

ACTREG has invested in quality assurance, state-of-the-art machining and testing facilities in order to assist customers in safely controlling their processes.

ACTREG engineers are happy to help you with your automation demands.



The art of power and



SCOTCH YOKE
Heavy duty service

TORQUES UP TO
250,000 Nm

ACTUATORS IN
25 different sizes

Certificates

ACTREG, S.A. has a quality Management System certified in accordance with the requirements of ISO 9001:2008 for the design, development, manufacturing and distribution of pneumatic actuators and accessories for valves. Certified by BVQI No. ESPMDD005463.

ADA/ASR 10 up to ADA/ASR 300 are classified as category SEP in accordance with the requirements of Pressure Equipment Directive 97/23/EC. ADA/ASR 500 up to ADA/ASR 4000 are classified as Category I, Procedure module A.

All ACTREG pneumatic actuators are classified for use in potentially explosive atmospheres as Group II Category 2, suitable for zones 1, 2, 21 and 22 in accordance with Annex VIII of Directive 94/9/CE (ATEX). Technical file is deposited in LCIE, No. LCIE 05 AR 022.

ACTREG pneumatic actuators have got SIL 3 (Safety integral level 3) certificate. The ACTREG actuators meets manufacturer design process requirements of Safety integral Level (SIL) 3. This is intended to achieve sufficient integrity against systematic errors of design by the manufacturer.



perfection

MAIN FEATURES & CHARACTERISTICS

- 1 BODY**

The aluminium body is inside and outside coated with hard anodizing, with extremely abrasion resistance, low surface roughness and optimal resistance.
 - 2 PINION**

Carbon steel shaft electroless nickel plated against external and internal corrosion. Anti-blowout design.
 - 3 ADJUSTMENT STROKE**

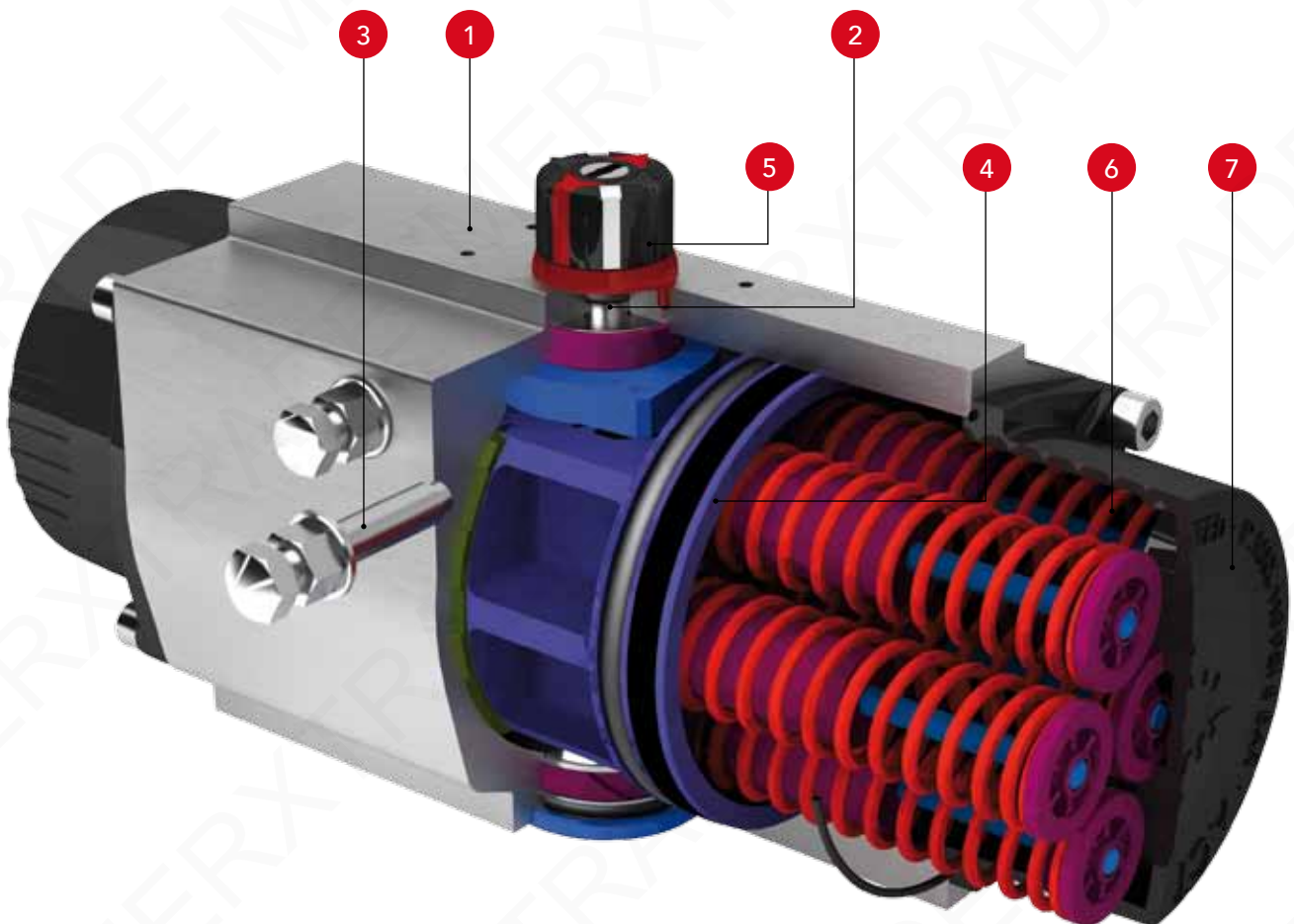
External stroke adjustment for 5 degrees regulation, placed on the opposite side of Namur connection for better manipulation when the solenoid valve is assembled.
 - 4 PISTONS**

Pistons are coated with special treatment for corrosion resistance. Backlash is avoided by a special tooth machining. The pistons have a 3 way guide for low friction between body and pistons. The pistons are also provided with an integral guide machined between pistons and pinion.
 - 5 POSITION INDICATOR**

Multi-function indicator suitable for mechanical or inductive switches is a standard feature. Many different combinations without the need to buy external indicators.
 - 6 SPRINGS**

Pre-stressed springs offers more torque and different options for their positioning. This system allows us to easily fit the necessary torque to close or open the valve, offering a total safety replacement and manipulation.
 - 7 END CAPS**

Different end caps for double or single acting for fast and safety identification without the need to read the label. End caps are epoxy coated as standard protecting them against environment corrosion.
- + Every single actuator is tested and provided with a unique serial number for traceability. This heat number is stamped on the body.
 - + The assembly of switch boxes, proximity switches or positioners, takes place by means of the Namur connection VDI/VDE 3845, which is a standard feature in all our models. The height of the axis to fulfil this Norm is of 30 mm, for all our products, with which it entails that with a single model of Box or positioner, we can cover all our manufacturing range.



Types of Actuators

Double Acting & Spring Return



ADA
DOUBLE
ACTING
ACTUATOR



ASR
SPRING
RETURN
ACTUATOR

Rack and pinion design | Linear torque | Rotation angle $90^\circ \pm 5^\circ$ | Antifriction sliding bearings | Long life without maintenance | Total safety for springs replacement | Mounting of solenoid valves acc. NAMUR Std. | Mounting of devices acc. NAMUR VDI/VDE 3845 Std. | Coupling according to ISO 5211 and DIN 3337 (Octagonal drive) | Multi-function position indicator suitable for mechanical and inductives direct switches.

Working temperature:

- 30 °C to 100 °C in Standard Construction.
- 15 °C to 150 °C with FKM O-rings (high temperature execution).
- 40 °C to 80 °C with Silicone O-rings (low temperature execution).
- 55° C to 80° C with Silicone O-rings and 316 pinion (extreme low temperature).

Maximum working pressure:

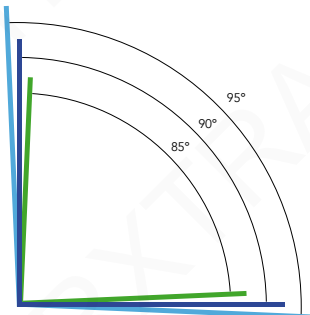
8 bar (116 psig). (Except ADA10 at 10 bar)

Bi-Directional Travel Stops

ACTREG pneumatic actuators are provided with bi-directional pinion travel stops.

Side located stops allow a full $\pm 5^\circ$ travel adjustment between 85° and 95° . These travel stops are designed to absorb the maximum rated torque of the actuator and the maximum impact loads associated with recommended travel speed.

Adjustment of the counterclockwise and clockwise rotation limits is accomplished by unscrewing the locking nuts, turning the respective left and right stop studs to reduce or increase the travel angle and screwing the locking nuts.



Options On Request

- Stainless steel pinion (grade 304 and 316).
- Fast acting actuators.
- Actuators with 100% travel adjustment stroke.
- Actuators fire proof (K-mass, blanket, other executions,...).

Coatings for special applications

Actreg Pneumatic actuators shall be protected against external corrosion resistant by proper material selection or surface treatment.

Actreg coatings are according to EN 15714-3 and are indicated to:

Standard execution

Anticorrosive C3 according EN-ISO 12944-2

PARTS & PROTECTION	DESCRIPTION	COATING
BODY	Hard anodized	25 - 30 μm
END CAPS	Epoxy painted	80 - 90 μm
STEM	Carbon steel + ENP	25 - 30 μm

Execution A1

Anticorrosive C5-I according to EN-ISO 12944-2

PARTS & PROTECTION	DESCRIPTION	COATING
BODY	Epoxy painted	80 - 90 μm
END CAPS	Epoxy painted	80 - 90 μm
STEM	SS 304	

Execution A2

Anticorrosive C5-M according to EN-ISO 12944-2

PARTS & PROTECTION	DESCRIPTION	COATING
BODY	Epoxy painted	80 - 90 μm
END CAPS	Epoxy painted	80 - 90 μm
STEM	SS 316	

Execution B

Anticorrosive C4 according to EN-ISO 12944-2

PARTS & PROTECTION	DESCRIPTION	COATING
BODY	Epoxy painted	80 - 90 μm
END CAPS	Epoxy painted	80 - 90 μm
STEM	Carbon steel + ENP	25 - 30 μm

Execution C

Anticorrosive C5-I according to EN-ISO 12944-2

PARTS & PROTECTION	DESCRIPTION	COATING
BODY	Hard anodized + ENP	25 - 30 μm
END CAPS	ENP	80 - 90 μm
STEM	Carbon steel + ENP	25 - 30 μm

Multi-function position indicator



Inductive switch indicating open or closed position



Mechanical switches indicating open and close



Inductive switches indicating open and closed position



Namur connection for direct mounting switch box



Inductive switches indicating open and closed position (45° detecting switches...)

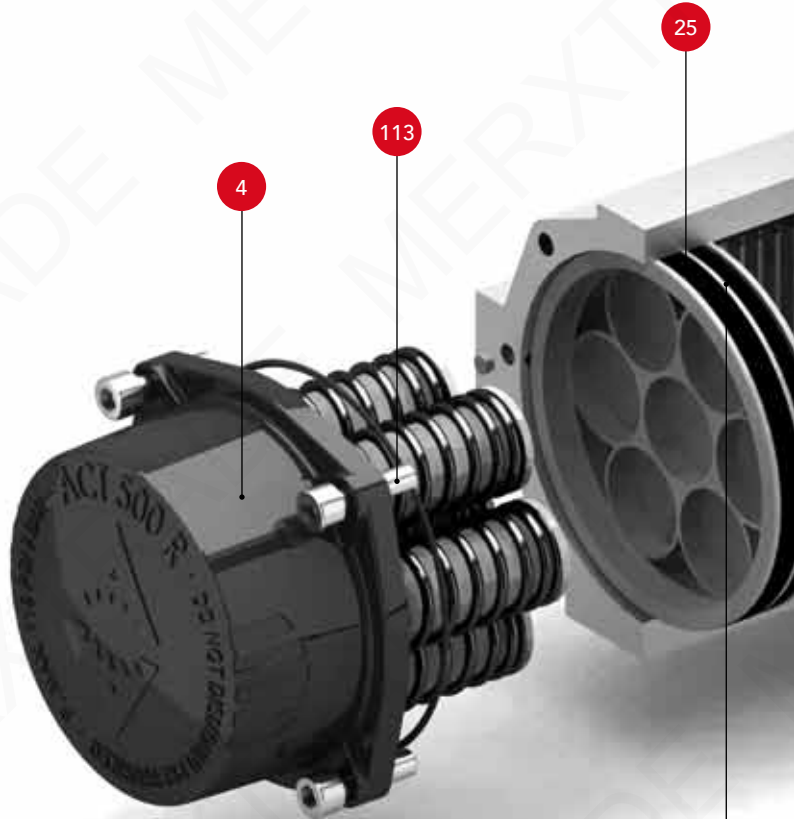


Inductive switches indicating open and closed position (up/down detecting switches...)

PARTS & MATERIALS

- 1 Body
Aluminium Hard Anodized
- 2 Piston
Aluminium
- 3 Pinion
Nickel Plated Carbon Steel
- 4 End Caps
Aluminium Epoxy Coated
- 5 Soft Pinion Washer *
Polyamide PA 6,6
- 6 Slide Piston *
Polyamide PA 6,6 + 30% G.F.
- 7 Lug **
Nickel Plated Carbon Steel
- 8 Pinion Washer
Stainless Steel
- 10 Upper Pinion Bearing
Polyamide PA 6,6 Size 500 & greater in Reinforced Br.
- 12 Stop
ASTM A 105
- 14 Spring's Long Support
Polyamide PA 6,6
- 15 Spring's Short Support
Polyamide PA 6,6
- 16 Leveling Screw
Stainless Steel
- 18 Bolt
Stainless Steel
- 19 Spring
DIN 2076 · D-5.6
- 20 Position Indicator
Polypropylene
- 21 Cam
Polypropylene
- 23 Centering Ring
Nickel Plated Carbon Steel
- 25 Slide Guide *
Polyamide PA 6,6 + 30% G.F.
- 26 Lower Pinion Bearing *
Polyamide PA 6,6
- 41 Stop Washer Pinion **
Stainless Steel
- 109 O-Ring *
NBR
- 110 O-Ring *
NBR

SPRING RETURN ACTUATOR (ASR)



- 111 O-Ring *
NBR
- 113 Bolt
Stainless Steel
- 118 O-Ring *
NBR
- 119 O-Ring *
NBR
- 125 Washer
Stainless Steel
- 471 Slip Washer *
Stainless Steel
- 934 Nut
Stainless Steel
- 985 Nut
Stainless Steel

POSITION INDICATOR

FROM SIZE 20 TO 850

FROM SIZE 1200 TO 4000



Inserts
Stainless Steel

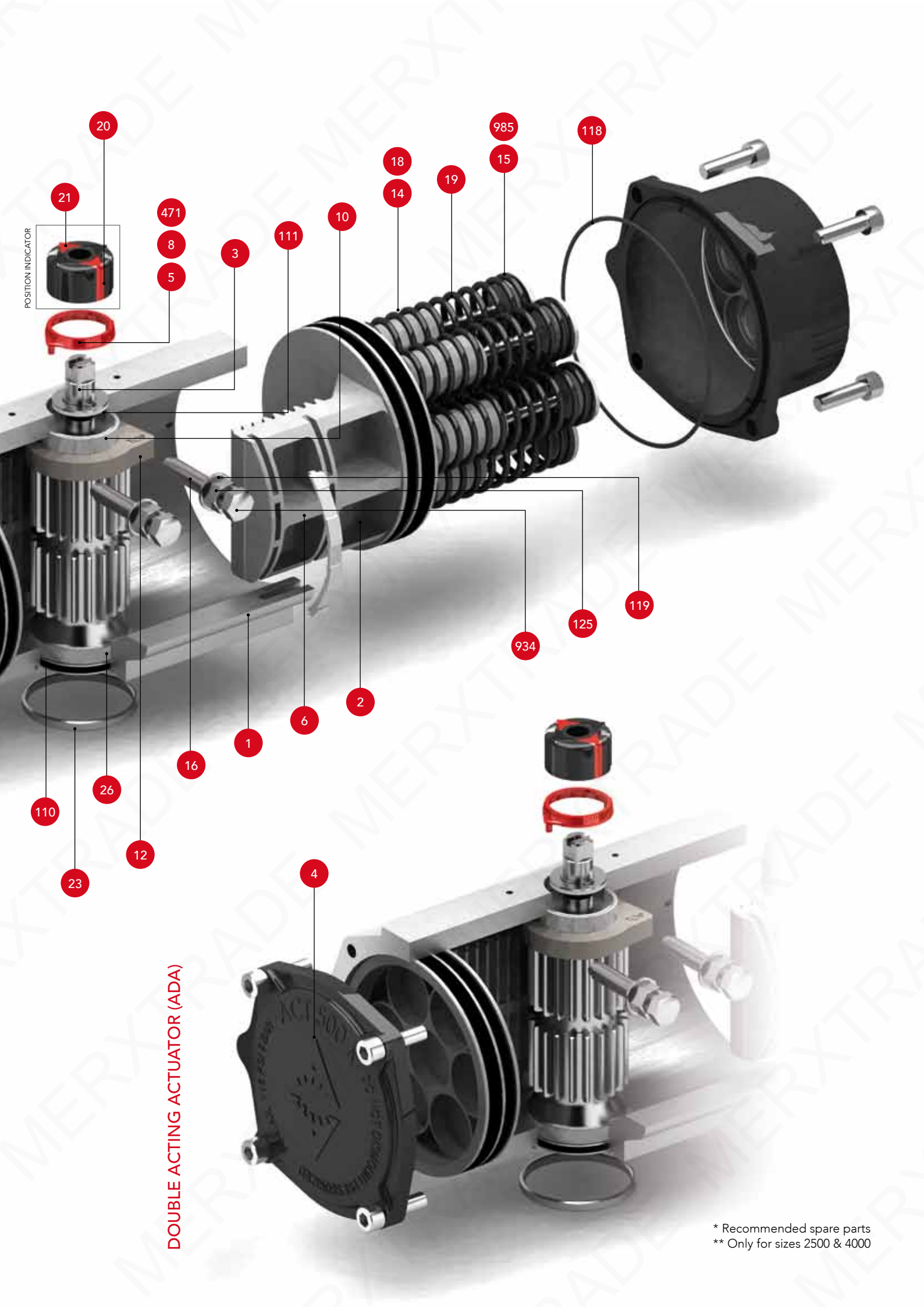
Position indicator & Cams
Polypropylene

25

4

113

109



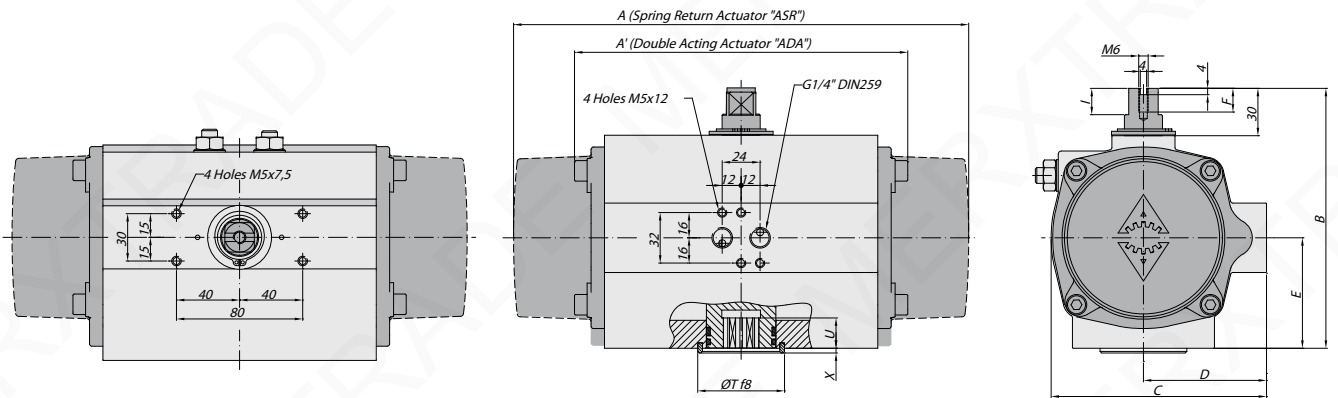
POSITION INDICATOR

DOUBLE ACTING ACTUATOR (ADA)

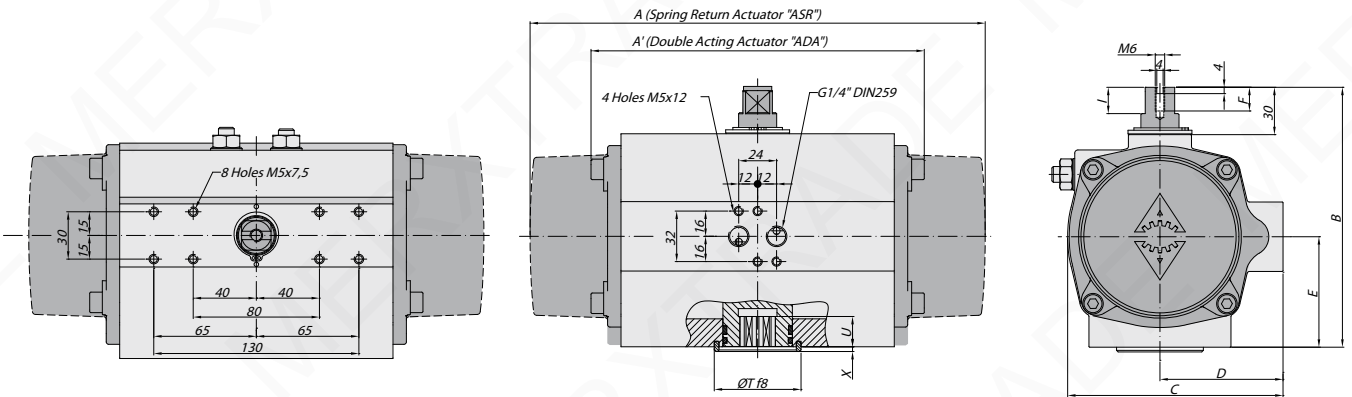
* Recommended spare parts
** Only for sizes 2500 & 4000

GENERAL DIMENSIONS

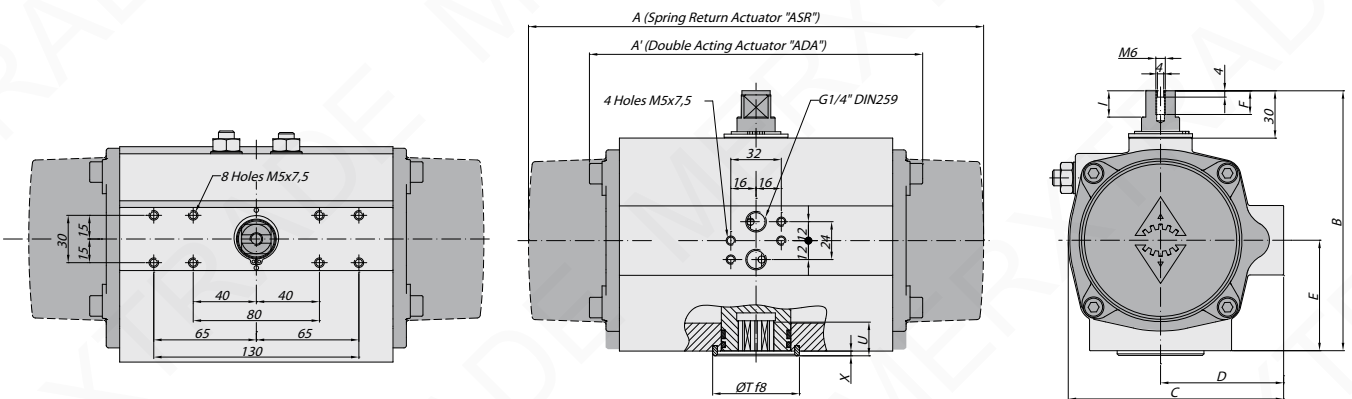
SIZES 10 | 20 | 40 | 80 | 130 | 200 | 300 | 500 | 850



SIZES 1200 | 1750



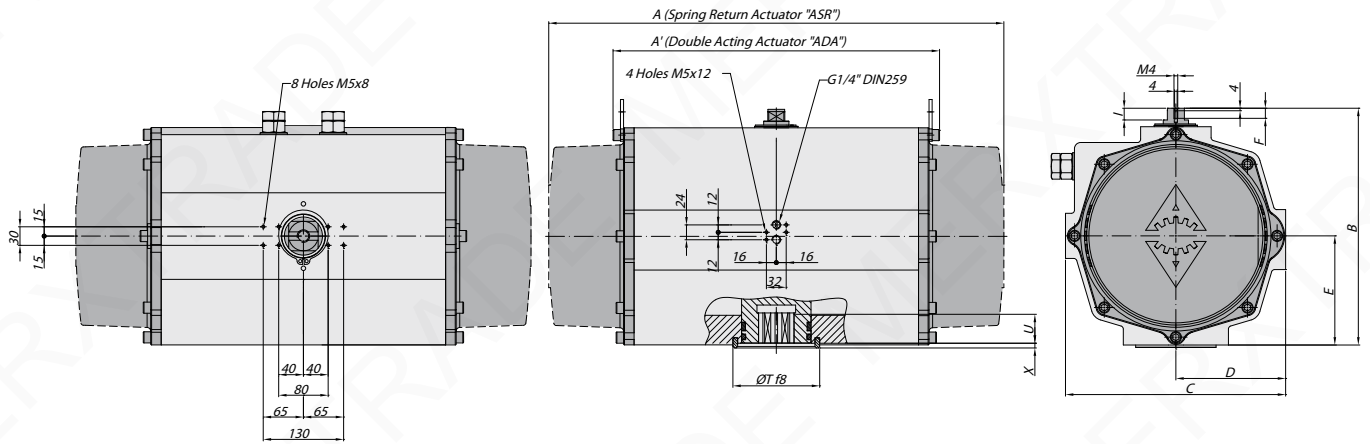
SIZES 2100



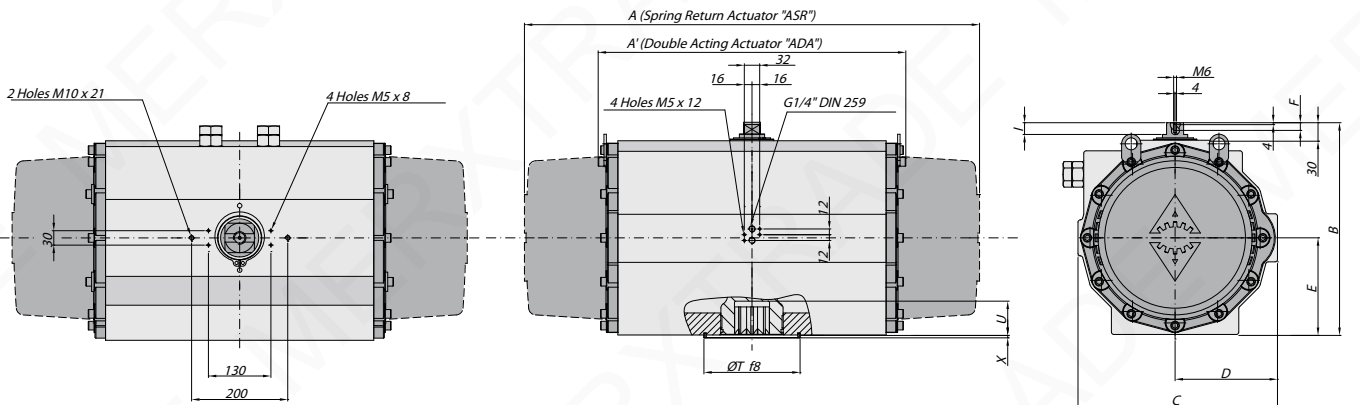
DOUBLE ACTING & SPRING RETURN ACTUATORS GENERAL DIMENSIONS in mm

SIZE	A	A'	B	C	D	E	F	I	R	øS	ISO 5211	øL	MxV	ISO 5211	øL1	M1xV1	øT	X	U
10	-	100	76	56	33	23	9	6	9	12.5	F03	36	M5x8	-	-	-	11	2	12
20	163	145	96	76	48	34	9	12.5	9	12.5	F03	36	M5x8	F05	50	M6x10	25	2	10
20	163	145	96	76	48	34	9	12.5	14	18.1	F05	50	M6x10	-	-	-	35	3	12
20	163	145	96	76	48	34	9	12.5	14	18.1	F04	42	M5x10	-	-	-	35	3	12
40	195	158	115	91	56	45	9	12.5	14	18.1	F04	42	M5x10	-	-	-	35	3	12
40	195	158	115	91	56	45	9	12.5	14	18.1	F05	50	M6x10	-	-	-	35	3	12
80	217	177	137	111	66	55	12	12.5	17	22.5	F05	50	M6x10	F07	70	M8x16	55	3	19
130	258	196	147	122	71	60	12	12.5	17	22.5	F05	50	M6x10	F07	70	M8x16	55	3	22
200	299	225	165	135.5	78	70	12	12.5	17	22.5	F07	70	M8x16	F10	102	M10x16	55	3	23

SIZES 2500



SIZES 4000



ISO 5211 DETAIL

SIZES

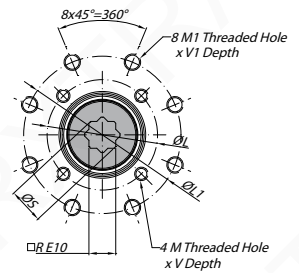
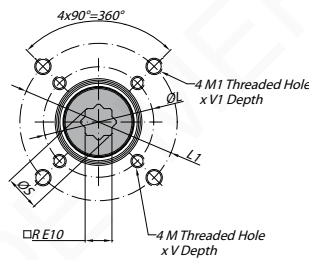
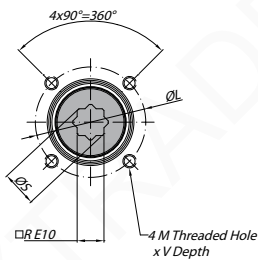
10 | 20 | 40 | 500 | 1750 | 2100 | 2500

SIZES

20 | 80 | 130 | 200 | 300 | 850 | 1200

SIZES

4000



DOUBLE ACTING & SPRING RETURN ACTUATORS GENERAL DIMENSIONS in mm

SIZE	A	A'	B	C	D	E	F	I	R	øS	ISO 5211	øL	MxV	ISO 5211	øL1	M1xV1	øT	X	U
300	348.5	273	182	152.5	86	80	12	12.5	22	28.5	F07	70	M8x16	F10	102	M10x16	70	3	24
500	397	304	199	173	96	85	12	12.5	22	28.5	F10	102	M10x16	-	-	-	70	3	32
850	473	372	221	191.5	106	98	12	12.5	27	36.5	F10	102	M10x17	F12	125	M12x20	85	3	39
1200	560	439	249	212.5	116	114	16	18.6	36	48.5	F10	102	M10x17	F14	140	M16x26	100	4	48
1750	601	461	280	242.5	131	130	16	18.6	36	48.5	F14	140	M16x26	-	-	-	100	4	50
2100	702	510	313	276.5	148	147	16	18.6	46	60.1	F16	165	M20x29	-	-	-	130	4	50
2500	738	518	383	356	177.5	176.5	16	18.6	46	60.2	F16	165	M20x29	-	-	-	130	4	58
4000	940	630	434	415	213	201	16	18.6	55	72.5	F16	165	M20x30	F25	254	M16x30	200	4	60

