



PNEUMATIC ACTUATORS



A C T U A T O R S F O R E V E R Y E N V I R O N M E N T

ACTREG, S.A. manufactures a wide range of pneumatic actuators offering reliable performance across all major valve applications.

The international distribution secures quick availability and more importantly, personalised service for valve manufacturers, valve stockists and contractors.

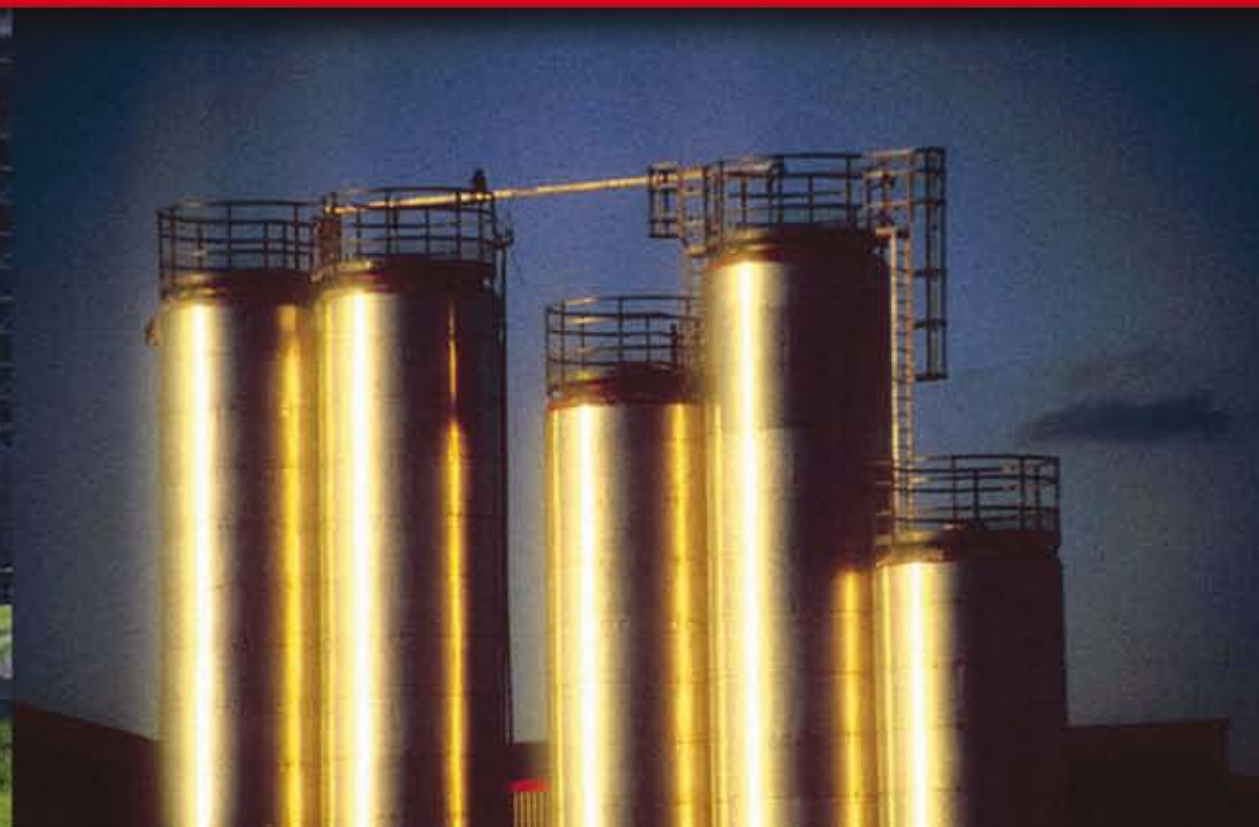
The product, double acting and spring return rack and pinion actuators with torque figures up to 6421 Nm is a superior combination of features for reliable and dependable service for 1/4 turn valves.

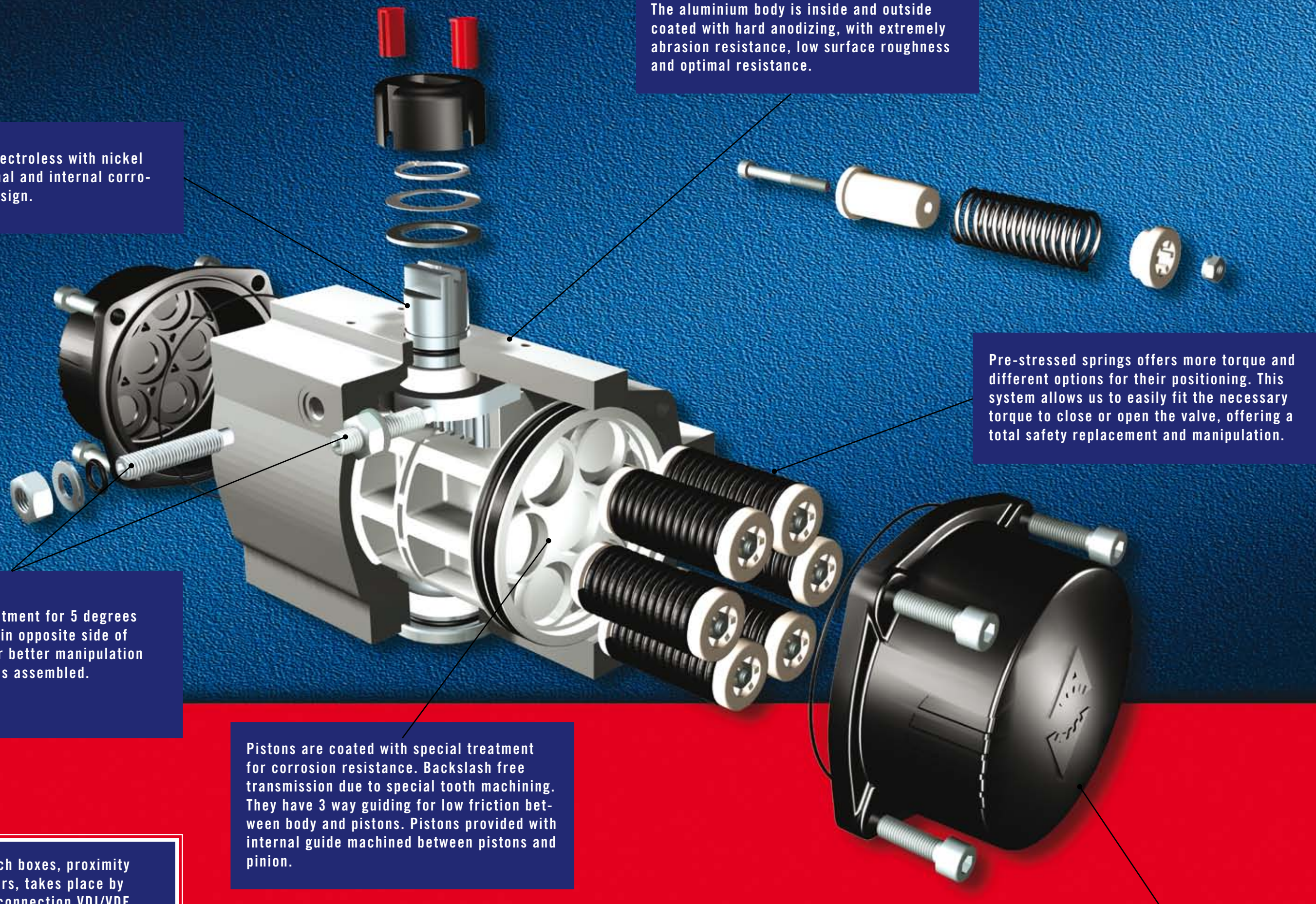
ACTREG pneumatic actuators are manufactured in 14 different sizes, in both double acting (ADA) and spring return (ASR) types.

Engineered to meet all applications and environmental conditions, the precision in design and quality provide long and safe operational performance in valve control.

ACTREG has invested in quality assurance and 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.





Carbon steel shaft electroless with nickel plated against external and internal corrosion. Anti-blowout design.

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

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.

External stroke adjustment for 5 degrees regulation, designed in opposite side of Namur connection for better manipulation when solenoid valve is assembled.

Pistons are coated with special treatment for corrosion resistance. Backlash free transmission due to special tooth machining. They have 3 way guiding for low friction between body and pistons. Pistons provided with internal guide machined between pistons and pinion.

The assembly of switch boxes, proximity switches or positioners, takes place by means of the Namur connection VDI/VDE 3845, carried out like standard in all our models. The height of the axis to fulfil this Norm is of 30mm, for all our products, with which it entails that with a single model of Box or positioner, we can cover all our manufacturing range.

Every single actuator is tested and provided with a unique serial number for traceability. This heat number is stamped in the body.

Different end caps for double or single acting for fast and safety identification without the need to read the label, in addition less air consumption in double acting actuators. Epoxy coated as standard protected against environment corrosion.



ADA 10



SIZES:
20 TO 2100



SIZE: 2500



SIZE: 4000



TYPES OF ACTUATORS DOUBLE ACTING & SPRING RETURN

GENERAL CHARACTERISTICS

- ADA type: Double acting.
- ASR type: Spring return.
- Rack and pinion design.
- Linear torque.
- Rotation angle $90^\circ \pm 5^\circ$
- Antifriction sliding bearings.
- Long life without maintenance.
- Protected against environmental corrosion:
 - Hard anodized Aluminium body,
 - Electroless Nickel Plated pinion,
 - Epoxy coated end caps,
 - Stainless steel bolts, studs and nuts.
- Working temperature: -30°C to 100°C in Standard Construction
 - -15°C to 150°C with FKM O-rings
 - -40°C to 80°C with Silicone O-rings
- Maximum working pressure: 8 bar (116 psig). (Except ADA10 at 10 bar)
- 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)
- Position indicator can be used also to operate mechanical limit switches.

OPTIONS ON REQUEST

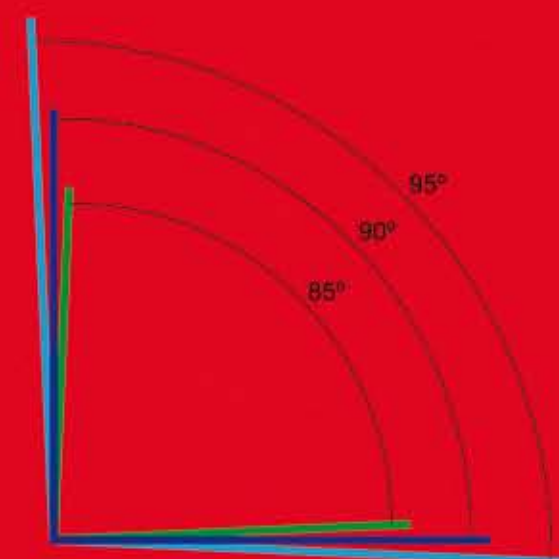
- Epoxy coated body.
- Electroless Nickel Plated body and end caps.
- High temperature construction.
- Low temperature construction.
- Stainless steel pinion
- Fast acting actuators
- Actuators with 100% travel adjustment stroke.

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.



ASSEMBLY VARIATIONS



SPRING COMBINATIONS & CORRECT POSITION OF SPRINGS

ACTUATOR SIZE ASR-20



S.04



S.06



S.08

ACTUATOR SIZE ASR-40 TO 4000



S.04



S. 06



S. 08

(Only for ASR-40 & 80)



S. 10



S.12



S. 14

Depending on air supply pressure, springs function and torque figures of the valve, the required springs force varies. Actreg spring return actuators offer 6 different options, from 2 to 7 springs in each end cap.

The correct position of the springs, in order to optimize its function, is given above.

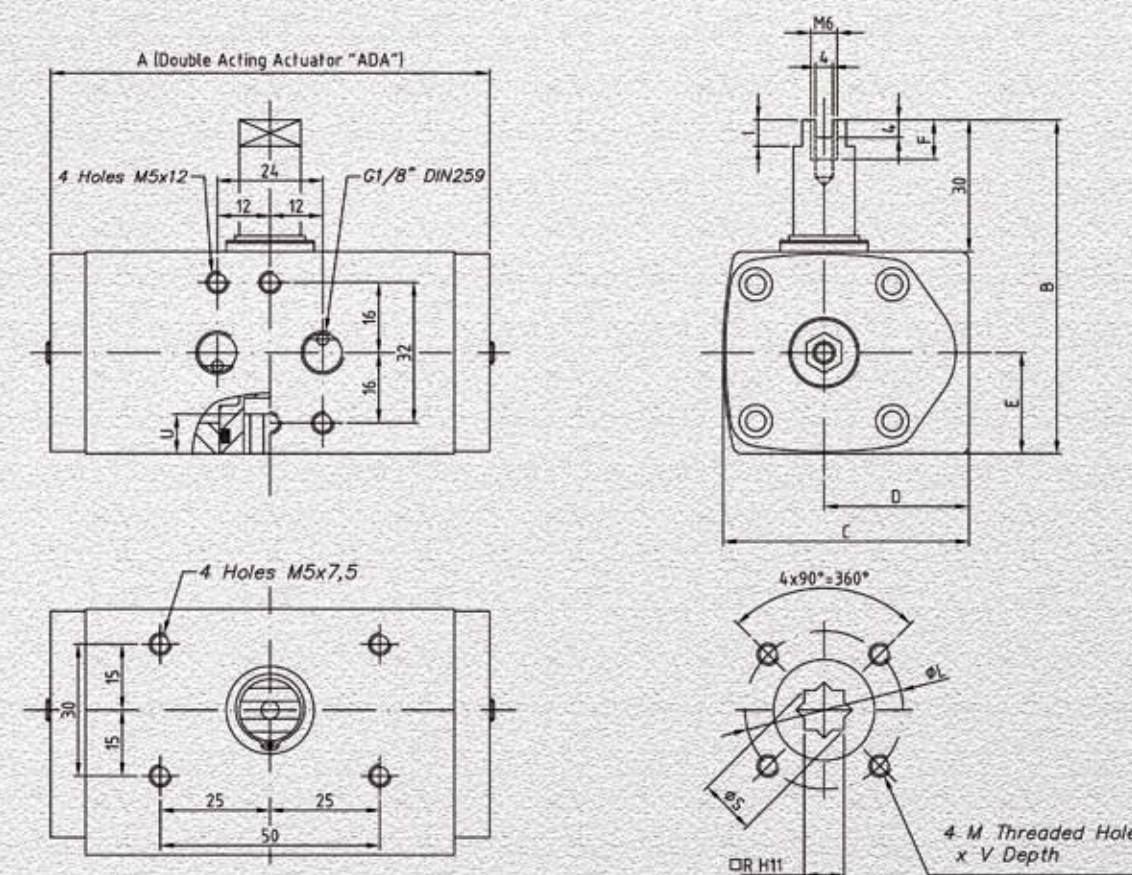
NOTE: Our Standard construction is with the maximum spring combination (S14) except size ASR-20 which is assembled with spring combination (S06).

ADAPTORS

“Together with the actuator up to size 200 included, we supply a stem adaptor wich allows the mounting of the actuator on different ISO 5211 shaft dimensions. Other adaptors with different dimensions are available under request.”



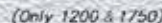
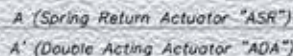
NEW SIZE ADA 10



DOUBLE ACTING & SPRING RETURN ACTUATORS GENERAL DIMENSIONS IN mm

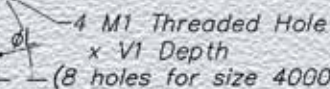
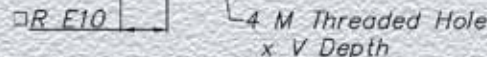
SIZE	A	B	C	D	E	F	I	R	øS	ISO 5211	øL	MxV	U
10	100	76	56	33	23	9	6	9	12,5	F03	36	M5x8	10

SIZES:

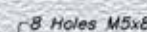
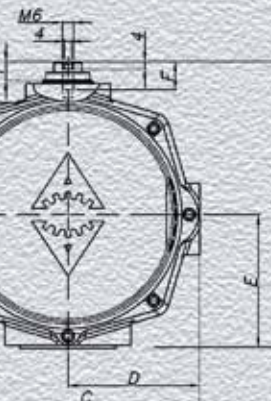
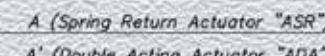


SIZES: ●20●40●130

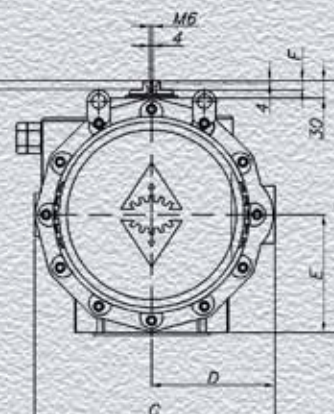
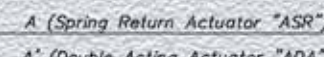
200•300•850•1200•4000



SIZE	A	A'	B	C	D	E	F	I	R	ρS	ISO 5211	ρL	MxV	ISO 5211	ρL1	M1xV1	ρT	X	U
20	163	145	96	76	48	34	9	6	9	12,5	F03	36	M5X8	F05	50	M6x10	25	2	10
20	163	145	96	76	48	34	9	6	14	18,1	F05	50	M6x10				35	3	12
20	163	145	96	76	48	34	9	6	14	18,1	F04	42	M5x10				35	3	12
40	195	158	115	91	56	45	9	6	14	18,1	F04	42	M5x10				35	3	12
40	195	158	115	91	56	45	9	6	14	18,1	F05	50	M6x10				35	3	12
80	217	177	137	111	66	55	12	8	17	22,5	F05	50	M6x10	F07	70	M8x16	55	3	19
130	258	196	147	122	71	60	15	8	17	22,5	F05	50	M6x10	F07	70	M8x16	55	3	22
200	299	225	165	135,5	78	70	15	10	17	22,5	F07	70	M8x16	F10	102	M10x16	55	3	23
300	348,5	273	182	152,5	86	80	16	12	22	28,5	F07	70	M8x16	F10	102	M10x16	70	3	24
500	397	304	199	173	96	85	17	15	22	28,5	F10	102	M10x16				70	3	32
850	473	372	221	191,5	106	98	15	15	27	36,5	F10	102	M10x17	F12	125	M12x20	85	3	39
1200	560	439	249	212,5	116	114	16	15	36	48,5	F10	102	M10x17	F14	140	M16x26	100	4	48
1750	601	461	280	242,5	131	130	16	15	36	48,5	F14	140	M16x26				100	4	50
2100	702	510	313	276,5	148	147	16	15	46	65,1	F16	165	M20x29				130	4	55



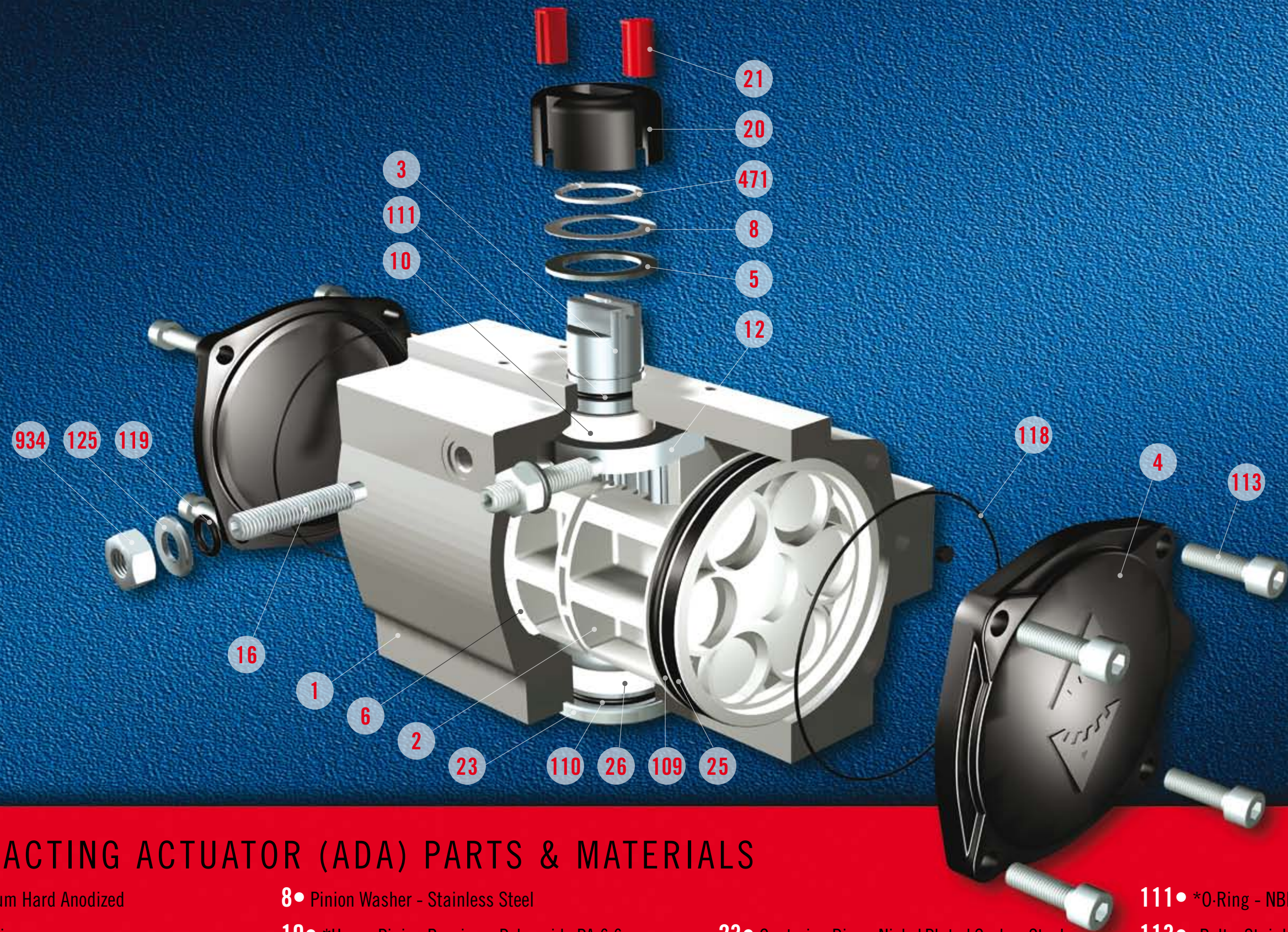
SIZES: ●2500



SIZES: •4000

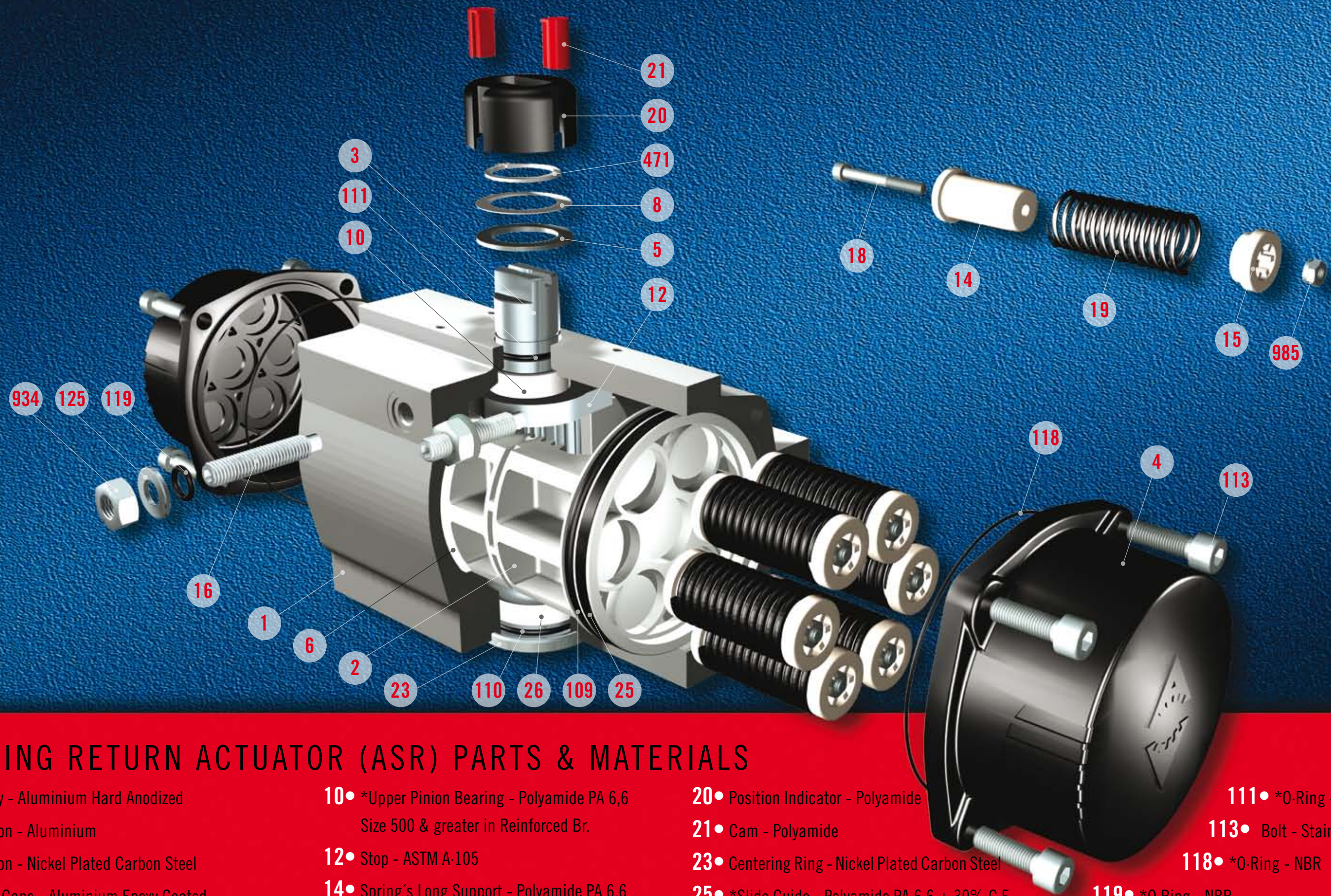
SIZE	A	A'	B	C	D	E	F	I	R	ρS	ISO 5211	ρL	MxV	ISO 5211	ρL1	M1xV1	ρT	X	U
2 500	738	518	383	356	177,5	176,5	16	15	46	60,2	F16	165	M20x29				130	4	58
4 000	940	630	434	415	213	201	16	15	55	72,5	F16	165	M20x30	F25	254	M16x30	200	4	60

NOTE: See page 8 for the ISO Detail.



DOUBLE ACTING ACTUATOR (ADA) PARTS & MATERIALS

- | | | | |
|--|--|---|-------------------------------------|
| 1• Body - Aluminium Hard Anodized | 8• Pinion Washer - Stainless Steel | 23• Centering Ring - Nickel Plated Carbon Steel | 111• *O-Ring - NBR |
| 2• Piston - Aluminium | 10• *Upper Pinion Bearing - Polyamide PA 6,6
Size 500 & greater in Reinforced Br. | 25• *Slide Guide - Polyamide PA 6,6 + 30% G.F. | 113• Bolt - Stainless Steel |
| 3• Pinion - Nickel Plated Carbon Steel | 12• Stop - ASTM A-105 | 26• *Lower Pinion Bearing - Polyamide PA 6,6 | 118• *O-Ring - NBR |
| 4• End Caps - Aluminium Epoxy Coated | 16• Adjustament Stroke Screw - Stainless Steel | 41• **Stop Washer Pinion - Stainless Steel | 119• *O-Ring - NBR |
| 5• *Soft Washer Pinion- Polyamide PA 6.6 | 20• Position Indicator - Polyamide | 109• *O-Ring - NBR | 125• Washer - Stainless Steel |
| 6• *Slide Piston - Polyamide PA 6,6 + 30% G.F. | 21• Cam - Polyamide | 110• *O-Ring - NBR | 471• *Slip Washer - Stainless Steel |
| 7• **Lug - Nickel Plated Carbon Steel | | | 934• Nut - Stainless Steel |



SPRING RETURN ACTUATOR (ASR) PARTS & MATERIALS

- | | | | |
|--|--|---|-------------------------------------|
| 1• Body - Aluminium Hard Anodized | 10• *Upper Pinion Bearing - Polyamide PA 6,6
Size 500 & greater in Reinforced Br. | 20• Position Indicator - Polyamide | 111• *O-Ring - NBR |
| 2• Piston - Aluminium | 12• Stop - ASTM A-105 | 21• Cam - Polyamide | 113• Bolt - Stainless Steel |
| 3• Pinion - Nickel Plated Carbon Steel | 14• Spring's Long Support - Polyamide PA 6.6 | 23• Centering Ring - Nickel Plated Carbon Steel | 118• *O-Ring - NBR |
| 4• End Caps - Aluminium Epoxy Coated | 15• Spring's Short Support - Polyamide PA 6.6 | 25• *Slide Guide - Polyamide PA 6,6 + 30% G.F. | 119• *O-Ring - NBR |
| 5• *Soft Washer Pinion- Polyamide PA 6.6 | 16• Adjustament Stroke Screw-Stainless Steel | 26• *Lower Pinion Bearing - Polyamide PA 6,6 | 125• Washer - Stainless Steel |
| 6• *Slide Piston - Polyamide PA 6,6 + 30% G.F. | 18• Bolt - Stainless Steel | 41• **Stop Washer Pinion - Stainless Steel | 471• *Slip Washer - Stainless Steel |
| 7• **Lug - Nickel Plated Carbon Steel | 19• Spring - DIN 2076 · D-5.6 | 109• *O-Ring - NBR | 934• Nut - Stainless Steel |
| 8• Pinion Washer - Stainless Steel | | 110• *O-Ring - NBR | 985• Nut - Stainless Steel |

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

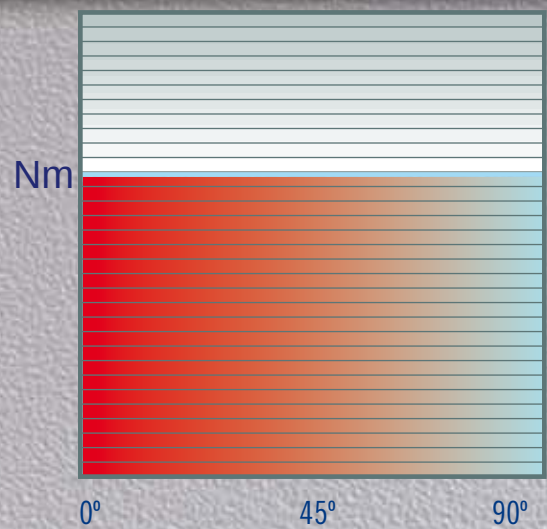
Double Acting Actuator Torque Output in Nm																								
Size	TYPE	Output Torque For Double Acting in Nm																				Weight (Kg)		
		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		6 bar		6,5 bar		7 bar					8 bar	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°		0°	90°
10	D	6		8		9		10		11		11,5		12		12		13		14		15		0,64
20	D	9,7		11,4		13		14,6		16,2		17,8		19,5		21,1		23		26	-	-		1,4
40	D	20,3		23,7		27,1		30,5		33,9		37,3		41		44		47		54	-	-		2,1
80	D	38,5		44,9		51,3		57,7		64,1		70,5		77		83		90		103	-	-		3
130	D	59,1		68,9		78,7		88,6		98,4		108,3		118		128		138		157	-	-		3,8
200	D	88		102		117		131		146		161		175		190		205		234	-	-		5,6
300	D	145		170		194		218		242		267		291		315		339		388	-	-		8,5
500	D	217		253		289		325		361		397		433		469		505		577	-	-		11,2
850	D	359		419		479		538		598		658		718		778		837		957	-	-		16,9
1200	D	519		606		692		779		865		952		1038		1125		1211		1384	-	-		25,8
1750	D	707		824		942		1060		1178		1295		1413		1531		1649		1884	-	-		32,5
2100	D	1086		1267		1448		1629		1810		1991		2172		2353		2534		2896	-	-		40,8
2500	D	1730		2019		2307		2596		2884		3172		3461		3749		4038		4614	-	-		69,6
4000	D	2408		2809		3210		3612		4013		4414		4816		5217		5618		6421	-	-		129,4

▲ DOUBLE ACTING ACTUATOR TORQUE OUTPUT in Nm
▼ SPRING RETURN ACTUATOR TORQUE OUTPUT in Nm

Spring Return Actuator Torque Output in Nm																								
Size	TYPE	Output Torque For Double Acting in Nm																		Spring stroke		Weight (Kg)		
		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		6 bar		6,5 bar		7 bar					8 bar	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°		0°	90°
20	S04			8	5	9	7	11	8	13	10	14	12	16	13	17	15	19	17	22	20	4	7	1,51
	S06 A									11	7	12	9	14	10	15	12	17	13	20	17	7	11	1,54
	S08											10	5	12	7	14	9	15	10	18	14	9	15	1,56
40	S04	16	14	20	17	23	20	26	24	30	27	33	30	37	34	40	37	43	41	50	47	5	8	2,17
	S06	14	10	18	14	21	17	24	20	28	24	31	27	34	30	38	34	41	37	48	44	7	12	2,20
	S08			15	10	19	14	22	17	26	20	29	24	32	27	36	30	39	34	46	41	10	16	2,23
	S10							20	14	24	17	27	20	30	24	34	27	37	30	44	37	12	20	2,26
	S12									21	13	25	17	28	20	32	24	35	27	42	34	15	24	2,29
80	S14 A											23	13	26	17	30	20	33	24	40	30	17	28	2,32
	S04	31	27	38	34	44	40	50	46	57	53	63	59	70	66	76	72	82	78	95	91	9	13	3,28
	S06	27	21	34	28	40	34	47	41	53	47	59	53	66	60	72	66	79	73	92	86	13	20	3,36
	S08					37	29	43	35	49	41	56	48	62	54	69	61	75	67	88	80	17	27	3,43
	S10							39	29	46	36	52	42	59	49	65	55	71	61	84	74	22	33	3,51
130	S12									42	30	48	36	55	43	61	49	68	56	81	69	26	40	3,58
	S14 A											45	31	51	37	58	44	64	50	77	63	30	47	3,65
	S06	43	36	52	46	62	56	72	65	82	75	92	85	102	95	111	105	121	115	141	134	19	27	4,40
	S08			47	38	57	48	67	58	76	68	86	77	96	87	106	97	116	107	135	127	26	36	4,50
	S10					51	40	61	50	71	60	81	70	91	80	100	89	110	99	130	119	32	45	4,60
200	S12							56	42	65	52	75	62	85	72	95	82	105	92	124	111	39	54	4,70
	S14 A											70	54	80	64	89	74	99	84	119	103	45	64	4,80
	S06	61	49	76	63	90	78	105	92	119	107	134	122	149	136	163	151	178	166	207	195	31	46	6,50
	S08			67	50	81	65	96	79	111	94	125	109	140	123	154	138	169	152	198	182	42	61	6,70
	S10					72	52	87	66	102	81	116	96	131	110	146	125	160	139	189	169	52	77	6,90
300	S12							78	53	93	68	107	83	122	97	137	112	151	126	180	156	63	92	7,00
	S14 A											99	70	113	84	128	99	142	113	172	143	73	107	7,30
	S06	102	75	126	99	151	123	175	148	199	172	223	196	247	220	272	245	296	269	344	317	51	83	9,65
	S08			112	76	136	100	160	124	185	148	209	173	233	197	257	221	281	245	330	294	68	111	9,92
	S10					122	76	146	101	170	125	194	149	219	173	243	198	267	222	315	270	85	138	10,20
500	S12							131	77	156	101	180	126	204	150	228	174	253	198	301	247	102	166	10,50
	S14 A											165	102	190	126	214	151	238	175	287	223	119	193	10,80
	S06	152	119	188	155	224	191	260	227	296	263	333	299	369	335	405	371	441	407	513	480	76	115	13,33
	S08	131	86	167	122	203	158	239	194	275	231	311	267	347	303	383	339	419	375	492	447	101	153	13,84
	S10					181	126	217	162	254	198	290	234	326	270	362	306	398	342	470	414	126	192	14,35
850	S12							196	129	232	165	268	201	304	238	340	274	376	310	449	382	152	230	14,85
	S14 A											247	169	283	205	319	241	355	277	427	349	177	268	15,36
	S06	260	209	320	269	380	328	440	388	500	448	559	508	619	568	679	627	739	687	858	807	116	177	19,7
	S08	227	159	287	218	347	278	407	338	467	398	526	458	586	518	646	577	706	637	826	757	155	236	20,3
	S10			254	168	314	228	374	288	434	348	494	408	553	467	613	527	673	587	793	707	193	295	20,9
1200	S12							341	238	401	298	461	358	521	417	580	477	640	537	760	657	232	353	21,6
	S14 A											428	307	488	367	547	427	607	487	727	607	271	412	22,2
	S06	373	289	460	376	546	462	633	549	720	635	806	722	893	808	979	895	1066	981	1239	1154	171	271	30,1
	S08	325	213	411	299	498	386	584	472	671	559	758	645	844	732	931	818	1017	905	1190	1078	229	361	31,1
	S10	276	136	363	222	449	309	536	395	622	482	709	569	795	655	882	742	969	828	1142	1001	286	451	32,2
1750	S12					401	232	487	319	574	405	660	492	747	578	833	665	920	751	1093	924	343	541	33,2
	S14 A									525	329	612	415	698	502	785	588	871	675	1044	848	400	631	34,3
	S06	477	349	595	466	712	584	830	702	948	820	1066	937	1183	1055	1301	1173	1419	1291	1654	1526	270	421	39,3
	S08	400	229	518	347	636	465	754	582	871	700	989	818	1107	936	1225	1053	1342	1171	1578	1407	360	562	41,0
	S10			441	228	559	345	677	463	795	581	912	699	1030	816	1148	934	1266	1052	1501	1287	451	702	42,7
2100	S12							600	344	718	461	836	579	954	697	1071	815	1189	933	1425	1168	541	843	44,4
	S14 A									642	342	759	460	877	578	995	695	1113	813	1348	1049	631	983	46,0
	S06	702	509	883	690	1064	871	1245	1052	1426	1233	1607	1414	1788	1595	1969	1776	2150	1957	2512	2319	384	577	44,6
	S08	574	316	755	497	936	678	1117	859	1298	1040	1479	1221	1660	1402	1841	1583	2022	1764	2384	2126	512	770	46,6
	S10			627	305	808	486	989	667	1170	848	1351	1029	1532	1210	1713	1391	1894	1572	2256	1934	640	962	48,6
2500	S12							861	474	1042	655	1223	836	1404	1017	1585	1198	1766	1379	2128	1741	768	1154	50,6
	S14 A									914	463	1095	644	1276	825	1457	1006	1638	1187	2000	1549	886	1347	52,6
	S06	1299	1045	1587	1333	1876	1622	2164	1910	2453	2199	2741	2487	3029	2775	3318	3064	3606	3352	4183	3929	508	806	85,9
	S08	1155	816	1444	1105	1732	1393	2020	1682	2309	1970	2597	2258	2886	2547	3174	2835	3462	3124	4039	3700	677	1075	89,4
	S10			1300	876	1588	1165	1877	1453	2165	1742	2453	2030	2742	2318	3030	2607	3319	2895	3895	3702	846	1343	92,9
4000	S12					1444	936	1733	1225	2021	1513	2310	1802	2598	2090	2886	2378	3175	2667	3752	3243	1015	1613	96,4
	S14 A							1589	996	1877	1285	2166	1573	2454	1861	2742	2150	3031	2438	3608	3015	1184	1882	99,9
	S06	1763	1262	2165	1663	2566	2065	2967	2466	3369	2867	3770	3269									758	1348	158,7
	S08	1549	880	1950	1282	2351	1683	2752	2084	3154	2485	3555	2887	3956	3288	4358	3689	4759	4091	5068	4399	1011	1797	164,7
	S10					2136	1301	2538	1702	2939	2104	3340	2505	3742	2906	4143	3307	4544	3709	4853	4017	1264	2246	170,8
4000	S12							2323	1320	2724	1722	3125	2123	3527	2524	3928	2926	4329	3327	4638	3636	1516	2696	176,9
	S14 A											2911	1741	3312	2142	3713	2544	4115	2945	4423	3254	1769	3145	182,9

DOUBLE ACTING ACTUATOR (ADA)

In double acting actuators, the pinion rotation and its reversal are obtained by reversing the supply to the two input ports. The output torques obtainable mainly depend on the cylinder diameter and the supply pressure: by increasing one or both factors, the available torque also increases. The friction should usually be negligible. As shown in diagram (A), the torque of ADA actuator is constant throughout the entire rotation and relevant reversal. The advised safety factor, in addition to the operation torque is approx. 20%.

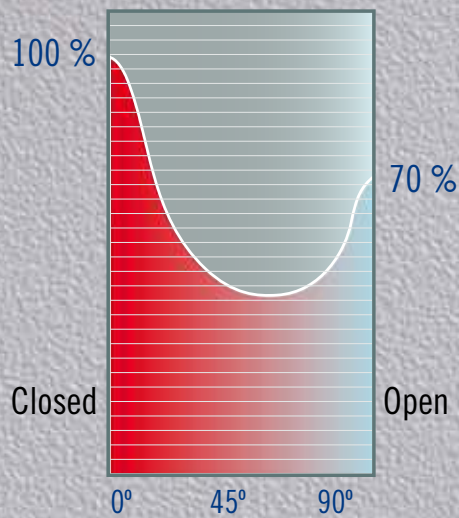


• Torque

BALL VALVE

The performance of the ball valve is based on the concept of a drilled ball with two seats. Rotation of the ball permits or prevents the passage of fluid. The torque needed to open or close the valve is of course generated by the friction between ball and seats and stem and packing. From the diagram it can be observed that the max. torque point is attained when, in presence of pressure, the closed valve starts to open.

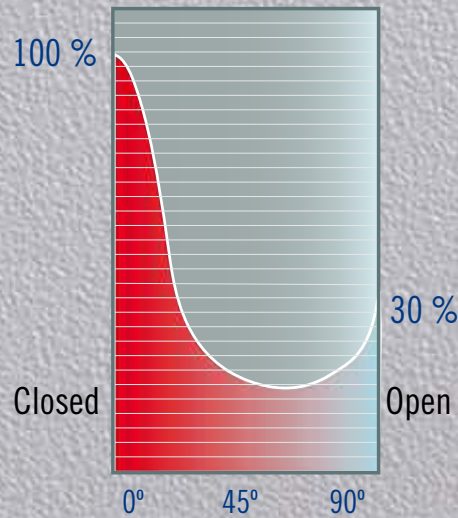
Operations Torque for Ball Valves



BUTTERFLY VALVE

The performance of the butterfly valve is based on the concept of a disc rotating on an axis inside a sealed duct. The open or closed of the valve position is obtained by the rotation of the disc through its shaft. The torque needed to drive a butterfly is generated by the friction between the disc and the seat, through the rod joint and also due to the differential pressure being exerted on the disc. From the diagram it can be observed that the maximum torque is attained in the closed position of the valve and that it is reduced after a small rotation

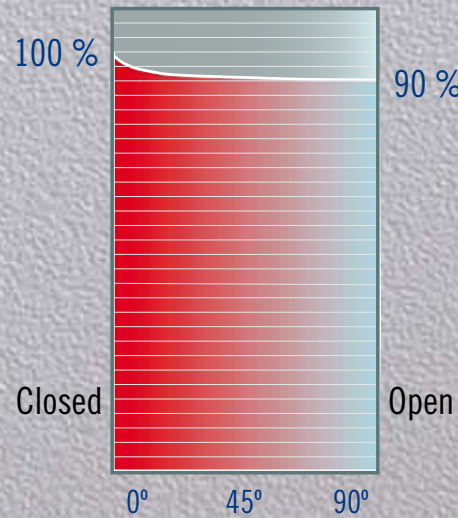
Operations Torque for butterfly Valves



PLUG VALVE

The performance of the plug valve is similar to that of the ball valve and is based on the concept of a drilled plug conical or cilindrical. The rotation of the pin in the seat allows the valve to open and close. The operation torque is not affected by the fluid pressure but is generated from the friction between the rotating parts. As shown in the diagram, the maximum torque point occurs when the valve is in closed position, but remains high anyway throughout the complete rotation.

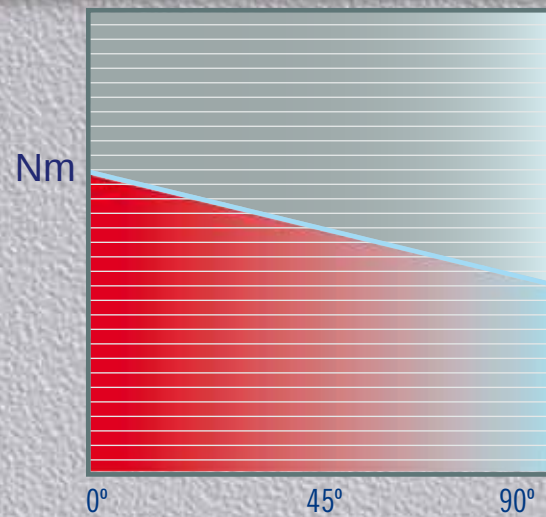
Operations Torque for Plug Valves



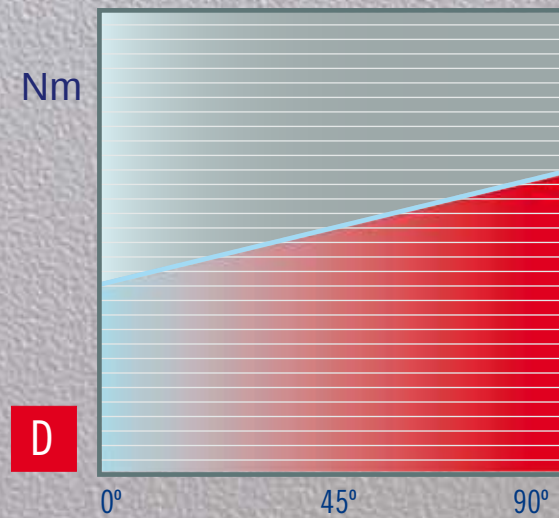
STROKE TIMES OBTAINED WITH NO RESISTANT TORQUE													
AIR PRESSURE: 6 bar-TIMES: s (seconds) - DOUBLE ACTING													
	20	40	80	130	200	300	500	850	1200	1750	2100	2500	4000
Opening	0,04	0,08	0,11	0,15	0,15	0,30	0,40	0,80	1,20	1,80	2,3	2,80	3,00
Closing	0,09	0,08	0,10	0,15	0,22	0,40	0,50	0,90	1,50	2,00	2,6	3,10	3,50

SPRING RETURN ACTUATOR (ASR)

In spring return actuators, springs are used to reverse the rotation of the pinion. The output torque depends not only on the cylinder diameter and the supply pressure but also on the presence of the springs, which should be compressed to guarantee the return. As shown in diagram (C), the available torque at 0° progressively reduces during the rotation due to the springs compression. On the contrary, as shown in diagram (D), the return force at 90° progressively decreases up to 0° for the same reason. Owing to the higher friction present, the safety coefficient advised in this case is approx. 30%.



• Torque with Air



• Torque with Spring

STROKE TIMES OBTAINED WITH NO RESISTANT TORQUE													
AIR PRESSURE: 6 bar-TIMES: s (seconds) - SPRING RETURN													
	20	40	80	130	200	300	500	850	1200	1750	2100	2500	4000
Opening	0,12	0,20	0,27	0,32	0,50	0,70	0,90	2,20	2,30	2,80	3,3	3,80	4,30
Closing	0,18	0,29	0,40	0,50	0,60	0,85	1,10	2,60	2,80	3,20	3,7	4,20	5,00

ACTREG CERTIFICATES

ACTREG, S.A. has a Management System certified in accordance with the requirements of ISO 9001:2000 by BVQI for the design, development, manufacturing and distribution of pneumatic actuators and accesories 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 have met manufacturer design process requirements of Safety integrity Level (SIL) 3. This is intended to achieve sufficient integrity against systematic errors of design by the manufacturer.

GOST-R certificate Approval of Company Products by GOST (Russian Federation).



CERTIFICATE OF CONFORMITY: IEC 61508

ACTREG, S.A. certifies that the ACTREG actuators are suitable for use in safety related systems up to and including SIL 3 according to IEC EN 61508.

The reachable results from internal assessment, carried out by the notified company Bureau Veritas (Ref.: 859-1985759/09/R058/0 and 859-1985759/09/R057/0) and based on the field experience obtained from ACTREG are as follows:

Acronym	Description	Values
A ₀	Dangerous Failure Rate	1.04E-08
PFD	Probability of Failure on Demand	4.58E-05
PFH	Probability of Failure per Hour	1.04E-08
SFF	Safe Failure Fraction	0.9
MTBF	Mean Time Between Failure (year)	10926
MTTR	Mean Time To Repair	8 hours

According to the field experience and the technical documents of ACTREG, the actuators are suitable for use in safety loops SIL 3.

Sant Boi de Llobregat (Barcelona) Spain
4th March 2009
Quality Assurance Manager



Ref: ACT

DECLUTCHABLE

General Characteristics

- Aluminium housing
- Actreg's direct mounting
- User-friendly
- Rugged construction
- Compact design – low weight
- Double adjustment stroke
- Sealed to IP-65
- Integral top flange
- Iso 5211 double drilling



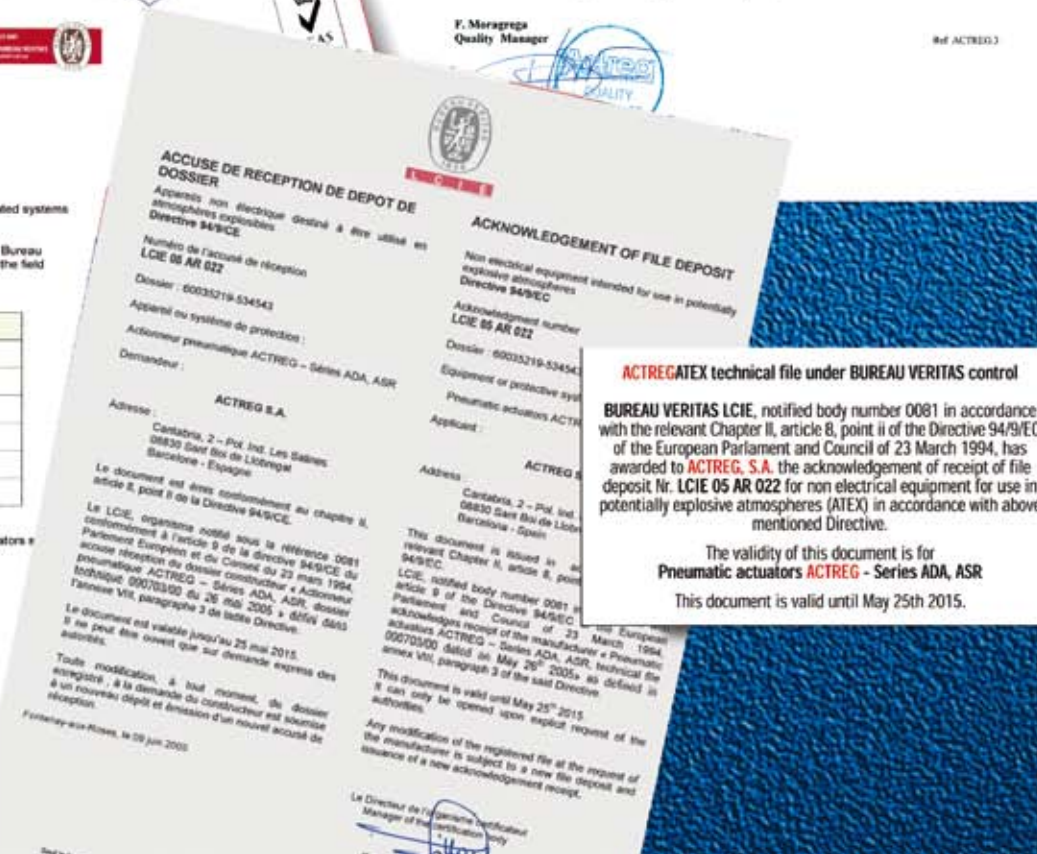
LIMIT SWITCH BOX

DESIGN

This kind of limit switch box applies compact design to offer a mini-type weather proof protection in aluminium die-cast enclosure and O-ring. The bracket is designed according to ISO 5211 and NAMUR standard.

FEATURES

- Compact and beautiful design: -Mini type aluminum die-casting cover and housing with powder coated in black color.
- Bolts on visual position indicates: secure waterproof.
- “Quick-set” cam: With spring loaded splinted cam, no need to adjust again after initial setting and easy setting without tool.
- Multipoint terminal strip: Standard 8 points and enough strips for connection.
- Dual cable entries: 2xG ½ (Standard); 2-M 20x1.5 or 2x1/2 NPT (Option)
- Captive cover bolts; No worry to loose bolts while cover opens.
- Easy mounting: NAMUR standard Stainless steel shaft and bracket.
- The boxes are manufactured in acc. with NAMUR (VDI/VDE 3845)
- The boxes complies with the “Low voltage Directive” (73/23 CEE + 93/68/CEE) criteria as described in the European Community Directives.
- Enclosure Housing IP 67 acc. to UNE 20-324-93.
- Position indicator of great visibility Open / Closed.
- PG 9 standard gland.
- Temperature rating determined by electromechanic or inductive limit switches.
- Adjustable bracket for all kind of actuator ISO 5211.
- Other options under request.





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ACTREG China, Shanghai

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Authorized Dealer: