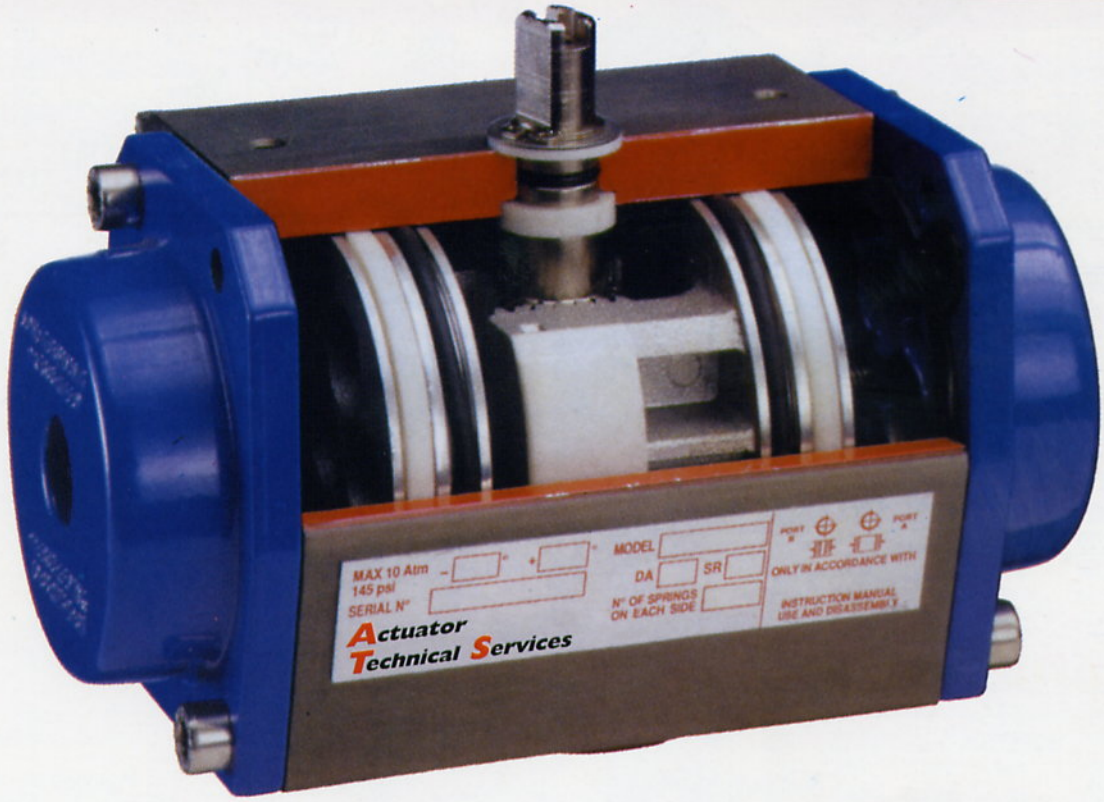
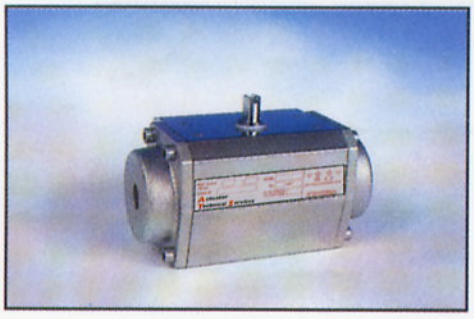
Actuator Technical Services

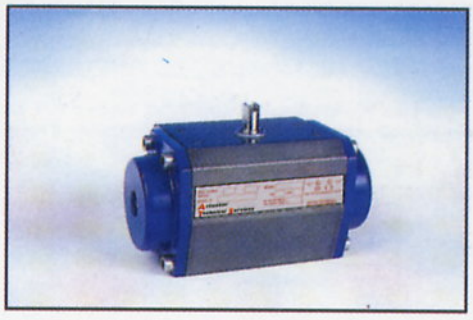
The Manufacture, Sales and Service of Actuators.

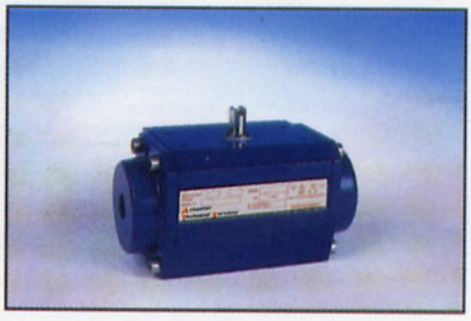
P.O. BOX 2439, KEMPTON PARK, 1620 - PATRICK ROAD, JET PARK. TEL 397-4756/9 - FAX 397-4768

BG Pneumatic Series
Bernard Electric
BG Hydraulic Series









RACK AND PINION PNEUMATIC ACTUATION

ATS SERIES

TECHNICAL DATA AND WORKING CONDITIONS

1 **Operating Media:** Dry or lubricated air, non corrosive and inert gas or light hydraulic oil.

2 **Air Supply:** Double acting from 1 bar to max 10 bar (15 to max 150psi).
Spring return from 2 bar to max 10 bar (30 to max 150 psi).

3 **Operating Temperature:** Standard product from -20° to +80°C (from -4°F to +175°F).
- With silicone o-rings from -40° to +80°C (from -40°F to +175°F).
- With viton o-rings from -20° to +150°C (from -4°F to +300°F).

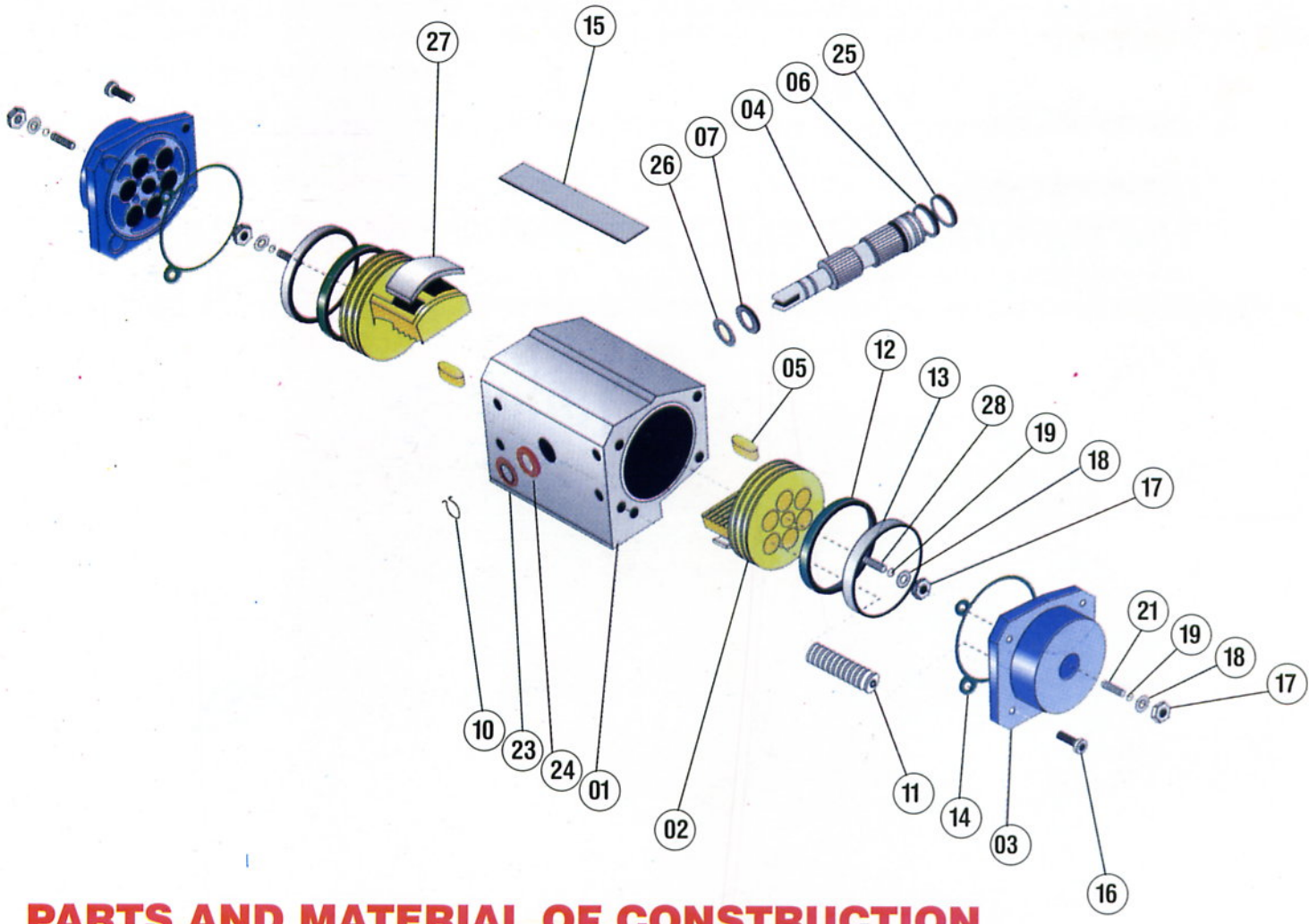
4 **Lubrication:** Factory lubricated for the life of the actuator under normal working conditions.

5 **Construction:** Suitable for indoor or outdoor installations.

6 **External Travel Stop Adjustment:** ±4 degree adjustment on 90 degree stroke.

7 **Internal Travel Stop Adjustment:** ±4 degree adjustment on 0 degree stroke.

8 **Angle Rotation:** 90° - 120° - 180° with ± 4° overtravel adjustment in both directions on 90 degree stroke. Limits on ±4° stroke adjustment in one direction only on 120° ÷ 180° units.



PARTS AND MATERIAL OF CONSTRUCTION

POSITION	QUANT.	DESCRIPTION	MATERIAL	POSITION	QUANT.	DESCRIPTION	MATERIAL
01	1	Body	Aluminum ASTM 6060/3	15	1	Nameplate	Punched aluminium
02	2	Piston	Aluminium ASTM B179	16	8	Cover fastening screw	Inox steel AISI 304
03	2	Cover	Aluminium ASTM B179	17	4	Nut	Inox steel AISI 304
04	1	Shaft	Nickel plated steel/S/steel	18	4	Washer	Inox steel AISI 304
*05	2	Antiejection key	Acetalic resin + 20% PTFE	*19	4	O-ring	NBR - Viton
*06	1	Lower O-ring for shaft	NBR - Viton	21	2	External stop screw	Inox steel AISI 304
*07	1	Upper O-ring for shaft	NBR - Viton	*23	1	Shaft thrust washer	Inox steel AISI 304
10	1	Seeger ring	Inox steel AISI 420	*24	1	Antifriction washer	Acetalic resin + 20% PTFE
11	0 - 12	Spring group		*25	1	Lower pilot ring for shaft	Acetalic resin + 20% PTFE
*12	2	O-ring for piston	NBR - Viton	*26	1	Upper pilot ring for shaft	Acetalic resin + 20% PTFE
*13	2	Antifriction ring for piston	Acetalic resin + 20% PTFE	*27	2	Piston antifriction pad	Acetalic resin + 20% PTFE
*14	2	Cover Gasket	NBR - Viton	28	2	Internal stop screw	Inox steel AISI 304

*PARTS WHICH FORM PART OF SEAL KIT. POSITION INDICATOR OPTIONAL

OPTIONAL BODY PROTECTION

COATING WITH CHEMICAL NICKEL HAVING HIGH PHOSPHOROUS CONTENT

The nickel deposits without electricity are produced by the chemical reduction of nickel in metallic substrata, without using electricity. Dead holes, threads, grooves recesses or inside surfaces receive the same plating quantity as the sharp angles, the corners or the flat surfaces (20-30 um). The standard hardness degree is approx. 45-55 Rockwell C and offers a good resistance to corrosion in salty fog. Please pay attention not to damage the surface by scraping, since this exposes the basic material to corrosion. (On request the pistons may also be nickel-protected.)

STRONG ANODIZED PROTECTION

The electrical process produces a thick anodic coating up to 50 microns. The resulting part resists corrosion from dipping and sodium and chlorine sprays, and also corrosive cracking stress. The oxide coating is perfectly adherent and will not chip, even after sudden temperature changes or at temperatures equal to the aluminium melting point. Aluminium oxide is one of the hardest known materials: 45-65 Rockwell C.

EPOXY-POLYESTER COATING

The epoxy coating is a deposit of powders on clean and sandblasted pieces. The chemical process is easily kept under control and, after coating, the pieces must be subjected to heet treatment. Epoxy painting of actuators is advised where the environment is strongly aggressive. With a normal thickness of 80-100 microns of epoxy coating, resistance to salty fog exceeds 1000 hrs. With the exception of certain solvents, the epoxy coating resists acids and alkali, and also has a good resistence to UV rays. Of course, in order to retain its properties, the coating must not be scratched. (The springs have this standard coating.)

ATS

DOUBLE ACTING TORQUE RATINGS IN NM.

ACTUATOR MODEL AND SIZE	AIR SUPPLY IN BAR								
	2	3	4	5	6	7	8	9	10
ATS 32 DA	2.4	3.6	4.8	6.1	7.3	8.5	9.7	10.9	12.1
ATS 50 DA	5.9	6.9	11.6	14.8	17.7	20.7	23.6	26.6	29.5
ATS 63 DA	10.6	15.8	21.1	26.4	31.7	39.9	42.2	47.5	52.8
ATS 75 DA	22.4	33.7	44.9	56.1	57.3	78.5	89.7	101	112
ATS 85 DA	34.2	51.2	68.3	85.4	102	119	136	153	170
ATS 100 DA	53.2	79.8	106	133	159	185	212	239	265
ATS 115 DA	88	132	176	220	264	308	352	396	440
ATS 125 DA	115	173	231	288	346	404	462	519	577
ATS 140 DA	174	261	348	435	522	609	696	788	870
ATS 160 DA	226	340	454	567	680	794	907	1021	1134
ATS 180 DA	306	459	613	766	915	1072	1225	1373	1531
ATS 200 DA	425	638	851	1063	1276	1489	1702	1914	2127
ATS 270 DA	1033	1550	2067	2584	3101	3618	4135	4652	5169

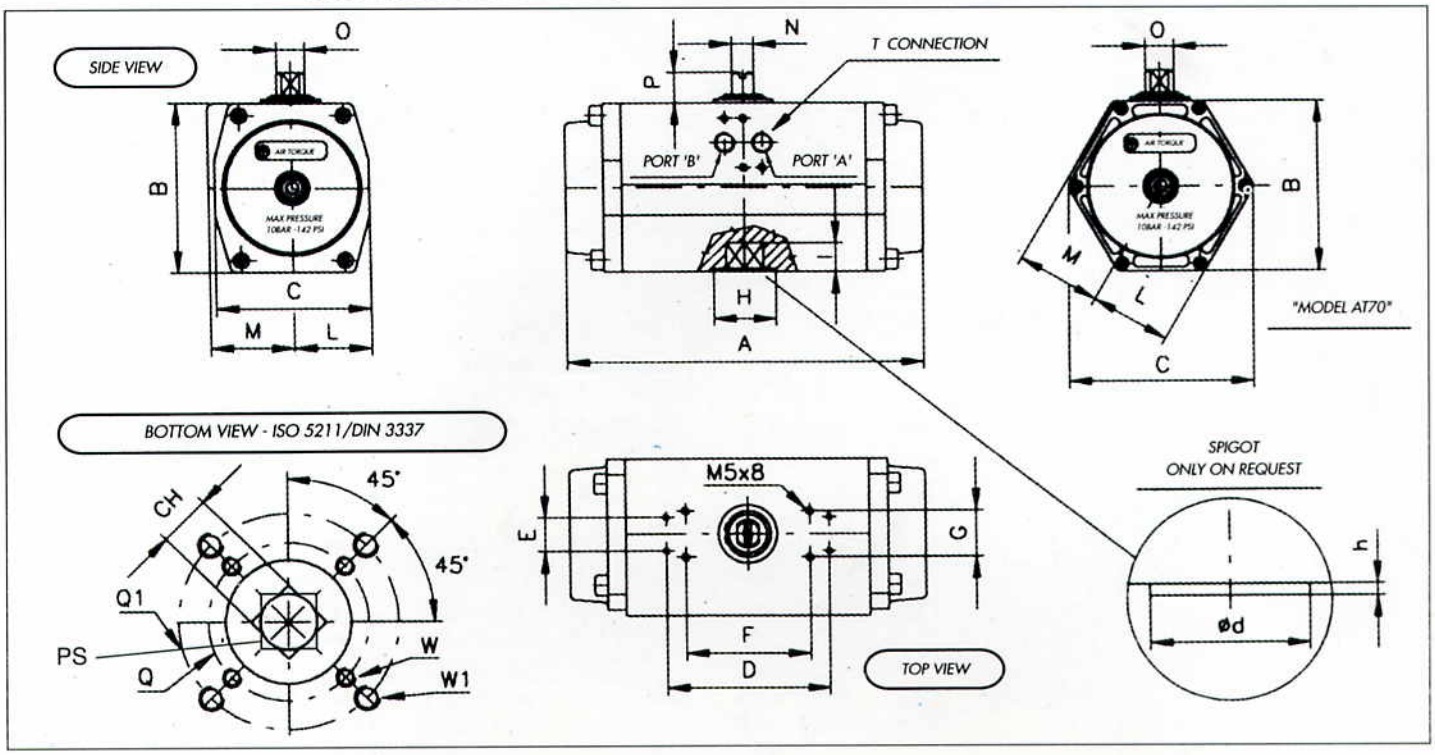
SPRING TORQUE RATINGS IN NM.

ACTUATOR MODEL AND SIZE	SPRING SET NUMBER	AIR SUPPLY IN BAR												SPRING STROKE	
		3		4		5		6		7		8			
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
ATS 50 SR	3	5.2	3.9	8.2	6.8	11.2	9.8	14.1	12.7	17.1	15.7	20.0	18.7	5.0	3.6
	4			7.0	5.2	10.0	8.1	12.9	11.1	15.9	14.0	18.8	17.0	6.6	4.8
	5					8.7	6.5	11.7	9.4	14.7	12.4	17.6	15.3	8.3	6.0
	6							10.5	7.8	13.4	10.7	16.4	13.7	10	7.2
ATS 63 SR	3	9.8	6.7	15.1	12.00	20.4	17.3	25.7	22.5	30.9	27.8	36.2	33.1	9.1	6.0
	4			13.1	9.0	18.4	14.2	23.7	19.5	28.9	24.8	34.2	30.1	12.1	8.0
	5					16.4	11.2	21.7	16.5	26.9	21.8	32.2	27.0	15.2	10
	6							19.7	13.4	25	18.7	30.2	24	18.2	12
ATS75 SR	3	21.4	13.6	32.7	24.8	43.9	36.1	55.1	47.3	66.3	58.5	77.5	69.7	20	12.2
	4			28.6	18.2	39.8	29.4	51.0	40.6	62.2	51.8	73.5	63.0	26.7	16.3
	5					35.7	22.7	47.0	33.9	58.2	45.1	69.4	56.4	33.4	20.3
	6							42.9	27.3	54.1	38.5	65.3	49.7	40.1	24.4
ATS 85 SR	3	33.2	20	50.3	37.0	67.4	54.1	84.4	71.2	101.5	88.3	118.6	105.3	31.3	18
	4			44.3	26.6	61.4	43.7	78.4	60.8	95.5	77.8	112.6	94.9	41.7	24
	5					55.4	33.3	72.4	50.3	89.5	67.4	106.6	84.5	52.1	30
	6							66.4	40	83.5	57	100	74	62.5	36
ATS 100 SR	3	50.6	32.5	77.2	59.09	103.8	85.7	130	112	157	139	184	165	47.3	29.1
	4			67.5	43.34	94.1	69.9	121	97	147	123	174	150	63	38.9
	5					84,4	54.2	111	81	138	107	164	134	78.8	48.6
	6							101	65	128	91.6	154	118	94.5	58.3
ATS 115 SR	3	80.7	51.5	125	95.43	169	139	213	183	257	227	300	271	80.3	51.2
	4			107	68.6	152	113	196	157	239	200	283	244	107	68.2
	5					134	85.6	178	130	222	174	266	218	134	85.3
	6							161	103	205	147	249	191	161	102
ATS 125 SR	3	110	70.1	168	128	226	186	284	243	341	301	399	359	103	62.7
	4			147	93.5	205	151	263	209	320	267	378	324	137	83.5
	5					184	117	242	175	300	232	357	290	172	104
	6							220	140	278	198	336	256	206	125
ATS 140 SR	3	162	106	248	193	336	280	406	314					155	95
	4			216	142	305	229	330	316	477	403			200	132
	5					270	117	357	264	444	351	531	438	258	165
	6							324	210	411	290	498	386	303	193
ATS 160 SR	3	215	141	329	255	442	368	555	481	669	595	782	708	199	125
	4			287	188	400	302	514	415	627	528	741	642	266	167
	5					358	235	472	349	585	462	699	575	332	209
	6							430	282	544	396	657	509	399	251
ATS 180 SR	3	270	175	331	281	513	387							285	190
	4			360	234	519	400	666	540	819	693			379	253
	5					450	292	603	445	756	593	909	752	474	316
	6							540	351	693	504	846	657	563	375
ATS 200 SR	3	398	260	611	473	824	686	1036	898	1249	1111	1462	1324	378	240
	4			531	347	744	560	956	772	1169	985	1382	1198	504	320
	5					664	434	876	646	1089	859	1302	1072	630	400
	6							796	520	1009	733	1222	946	756	480
ATS 270 SR	3	953	628	1470	1145	1987	1662	2504	2179	3021	2696	3538	3213	923	598
	4			1271	838	1788	1354	2305	1871	2821	2388	3388	2905	1230	797
	5					1588	1047	2105	1564	2622	2081	3139	2598	1538	996
	6							1906	1256	2423	1773	2940	2290	1845	1196

GENERAL INFORMATION	NO OF SPRINGS EACH SIDE	THE ABOVE VALUES ARE THE END TORQUE OUTPUT THAT REMAIN AVAILABLE TO OPERATE THE VALVE WHEN THE AIR SUPPLY IS PUT IN PORT 'A' AFTER COMPRESSING THE SPRINGS.	OUTPUT TORQUE AVAILABLE WHEN AIR SUPPLY FAILS

Actuator Technical Services

THE MAINTENANCE OPERATIONS MUST BE DONE IN ACCORDANCE WITH ATS INSTRUCTION MANUAL FOR USE AND MAINTENANCE



	ACTUATOR MODEL	ATS32	ATS50	ATS63	ATS75	ATS85	ATS100	ATS115	ATS125	ATS140	ATS160	ATS180	ATS200	ATS270
		DA	DA.SR	DA.SR	DA.SR	DA.SR	DA.SR	DA.SR	DA.SR	DA.SR	DA.SR	DA.SR	DA.SR	DA.SR
DIMENSIONS in mm	A	115	138	152	202	230	271	308	360	410	464	490	576	684
	B	45	67	83	100	110	125	142	155	180	196	225	240	330
	C	45	58	73	85	98	110	128	140	160	176	195	220	350
	D													
	E													
	F	50	80	80	80	80	80	130	130	130	130	130	130	130
	G	25	30	30	30	30	30	30	30	30	30	30	30	30
	H		30	35	35	55	55	70	70	85	85	100	100	130
	I	10	12	16	16 19	19	19 24	24	24	29	29	38	40	50
	L	22.5	29	36.5	42.5	49	55	64	70	80	88	100	110	153.5
	M	22.5	37	44	49	53	63	69	73	87	91	105	110	160.5
	N	8	8	8	14	14	14	27	27	27	27	32	32	55
	O	12	12	12	18	18	18	36	36	36	36	42	42	80
	P	20	20	20	20	20	20	30	30	30	50	50	50	50
	Q	36	36	50	50	50	70	70	70	102	102	125	140	165
	Q1				70	70	102	102	102	125	125	140		
	W	M5	M5	M6	M6	M6	M8	M8	M8	M10	M10	M12	M16	M20
	W1				M8	M8	M10	M10	M10	M12	M12	M16		
	T - ISO 228	1/8"	1/8"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/2"
	ISO FLANGE	F039	F04	F05	F05/F07	F07	F07/F10	F10	F10	F12	F12	F14	F14	F16
	CH	NA	11	14	14 17	17	17 22	22	22	27	27	36	36	46
	ød	NA	30	35	35 55	55	55 70	70	70	85	85	100	100	130
	h max.		2	3	3 3	3	3 3	3	3	3	3	4	4	5

	ACTUATOR MODEL	ATS32	ATS50		ATS63		ATS75		ATS85		ATS100		ATS115		ATS125		ATS140		ATS160		ATS180		ATS200		ATS270	
		DA	DA	SR	DA	SR	DA	SR	DA	SR	DA	SR	DA	SR	DA	SR	DA	SR	DA	SR	DA	SR	DA	SR	DA	SR
TECHNICAL DATA	VOLUME-Lt	0.05	0.22	0.13	0.44	0.17	0.6	0.23	0.91	0.34	1.6	0.65	2.6	1	3.6	1.5	6	2.5	7.9	3.2	12	8	14	6	22	10
	OPENING TIME-Sec	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.5	0.6	0.7	1	0.8	1.1	1	1.2	1.2	1.4	1.2	2	2	22	3.5	4.5	5	6
	CLOSING TIME-Sec	0.5	0.5	0.5	0.6	0.8	0.6	1	0.8	1.2	0.8	1.2	1	1.5	1	2	18	2.1	1.5	2.5	24	28	4.5	6	5.5	7
	WEIGHT-Kg	0.4	0.9	1	1.5	1.7	2.8	3.1	4.1	4.5	5.9	6.7	8.5	9.9	12	13.5	18	21	22	25	29	37	44	52	90	112

Agent: