

Pneumatic Actuators

Precision Engineering | Reliable Performance | Reliable Quality



Unmatched Quality and Reliability



Comprehensive Product Range



Proven Track Record

Engineered for excellence, Alis pneumatic actuators offers unparalleled precision and reliability. Our state-of-the-art technology ensures optimal performance in every application, from small-scale operations to large industrial systems.



Welcome to 'Alis' Pneumatic Actuators

We invite you to explore our comprehensive range of pneumatic actuators, each designed with a focus on innovation, reliability, and ease of use. Discover how Alis can elevate your operations, offering solutions that not only meet but exceed your expectations.



Advanced Engineering

Alis actuators are engineered for precise control, ensuring accurate valve positioning and reliable operation in critical applications. Made from high-quality materials like cast steel, cf8, cf8m, and cf3m, providing durability and resistance to corrosion.

Versatility and Compatibility

Available In Various Sizes To Meet Different Application Requirements. Compatible With Iso 5211 Flanges And Other Standard Mounting Interfaces, Ensuring Easy Integration With Various Valve Types.

Innovation and Technology

Incorporates the latest advancements in pneumatic actuator technology for superior performance and reliability. Committed to continuous innovation and improvement, ensuring that alis actuators remain at the forefront of the industry.

Alis Pneumatic Valve Actuators Are Distinguished By Their Advanced Engineering, High Efficiency, Robust Construction, And Versatility. With A Focus On Safety, Reliability, And Environmental Sustainability, Alis Actuators Provide Superior Performance And Customizable Solutions To Meet The Diverse Needs Of Various Industries.

Empowering Excellence Across All Fields

Our pneumatic valve actuators are trusted across diverse industries, From oil and gas to pharmaceuticals, ensuring seamless operations in every field.

Engineered for versatility, Alis pneumatic valve actuators excel in a multitude of applications, including chemical processing, water treatment, and manufacturing.

From refining and petrochemicals to HVAC and beyond, our pneumatic valve actuators are the go-to choice for industry leaders across multiple fields

Designed to meet the demands of diverse industries, Alis pneumatic valve actuators provide exceptional performance and reliability in any application.

Why Choose Us

Unmatched Quality and Reliability

At Alis, we pride ourselves on delivering pneumatic actuators that meet the highest standards of quality and reliability. Our actuators are designed and manufactured to withstand the most demanding industrial environments, ensuring consistent and dependable performance.

Advanced Engineering and Innovation

We leverage cutting-edge technology and innovative engineering practices to produce pneumatic actuators that set the industry standard. Our commitment to continuous improvement and innovation ensures that our products are always at the forefront of the market.

Comprehensive Product Range

Our extensive range of pneumatic actuators is designed to meet the diverse needs of our customers. Whether you require actuators for small-scale operations or large industrial applications, we have the right solution for you.

Competitive Pricing

We offer high-quality pneumatic actuators at competitive prices. Our efficient manufacturing processes and economies of scale allow us to provide cost-effective solutions without compromising on quality.

Proven Track Record

With years of experience in the industry, we have built a reputation for excellence. Our pneumatic actuators are trusted by leading companies worldwide, a testament to our commitment to delivering superior products and services.

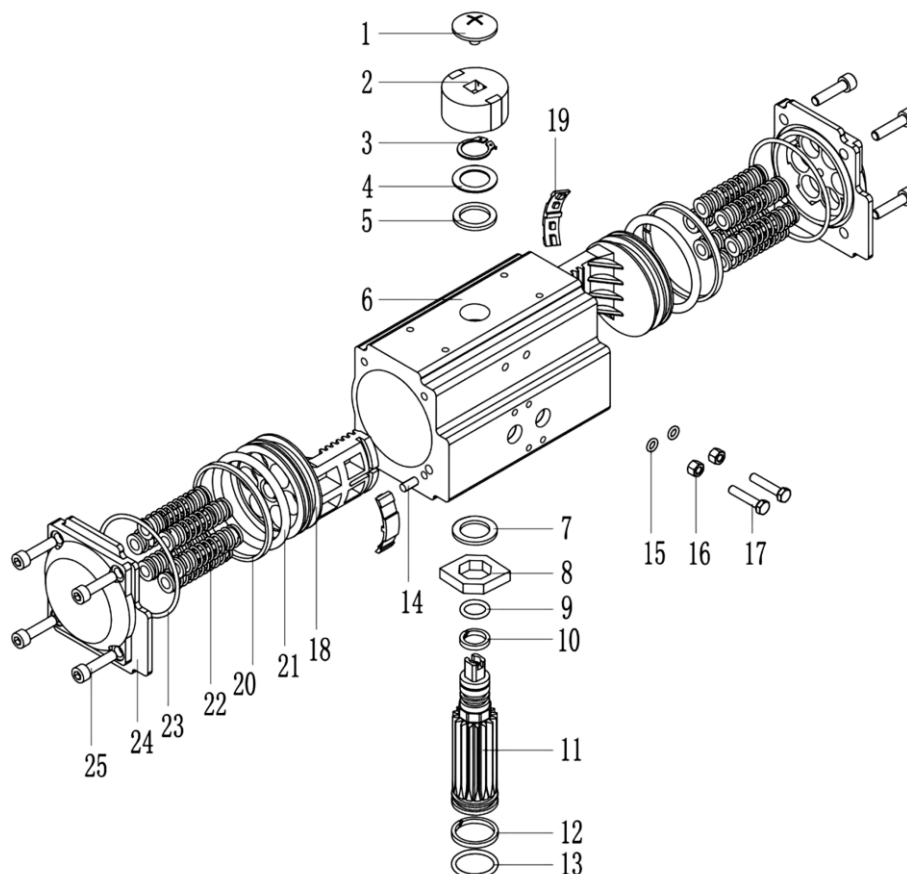
Sustainable Practices

We are committed to sustainable manufacturing practices. Our pneumatic actuators are designed to be energy-efficient, reducing environmental impact while ensuring optimal performance.

Global Reach

Our global distribution network ensures that our pneumatic actuators are available wherever you need them. We are dedicated to providing timely delivery and reliable service, no matter where your operations are located.

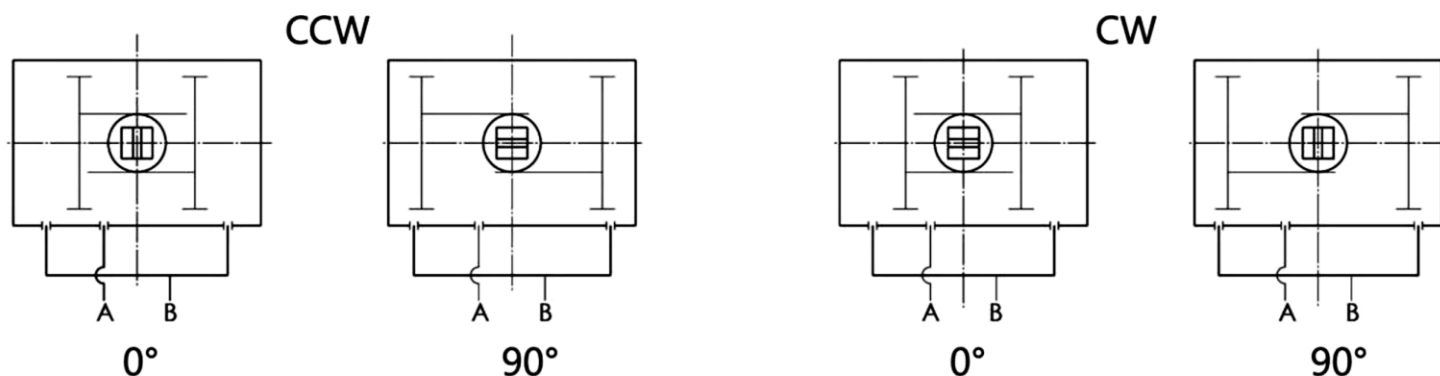
Choose Alis for pneumatic actuators that combine quality, innovation, and exceptional support. Experience the difference that our commitment to excellence can make for your operations.



Parameters

NO.	Description	Qty	Material	Protection	Option Material
1	Indicator Screw	1	Plastic		
2	indicator	1	Plastic		
3	Axis Block	1	Stainless Steel		
4	Metal gasket	1	Stainless Steel		
5	Outside Washer	1	Engineering Plastics		
6	Body	1	Aluminum	Hard Adonized etc	
7	Inside Washer	1	Engineering Plastics		
8	Cam	1	Alloy Steel		
9	Bearing(pinion top)	1	NBR		Viton/Silicone
10	Shaft Support Ring	1	Engineering Plastics		
11	Axis	1	Alloy Steel	Nickel Plated	Stainless Steel
12	Lower Shaft Support Ring	1	Engineering Plastics		
13	Bearing(pinion bottom)	1	NBR		Viton/Silicone
14	Plugs	2	NBR		Viton/Silicone
15	O-Ring (Adjusting Bolt)	2	NBR		Viton/Silicone
16	Screw Nut	2	Stainless Steel		
17	Adjusting Bolt	2	Stainless Steel		
18	Piston	2	Die-Cast Aluminum	Hard Adonized etc	
19	Piston Guides	2	Stainless Steel		
20	Piston Supporting Rings	2	Engineering Plastics		
21	O-Ring (Piston)	2	NBR		Viton/Silicone
22	Spring	0-12	Spring Steel	Dip Coating	
23	Plugs	2	NBR		Viton/Silicone
24	End Cap	2	Die-Cast Aluminum	Powder Polyster Painted etc	
25	End Cap Fastening Bolt	8	Stainless Steel		

Double Acting Actuators



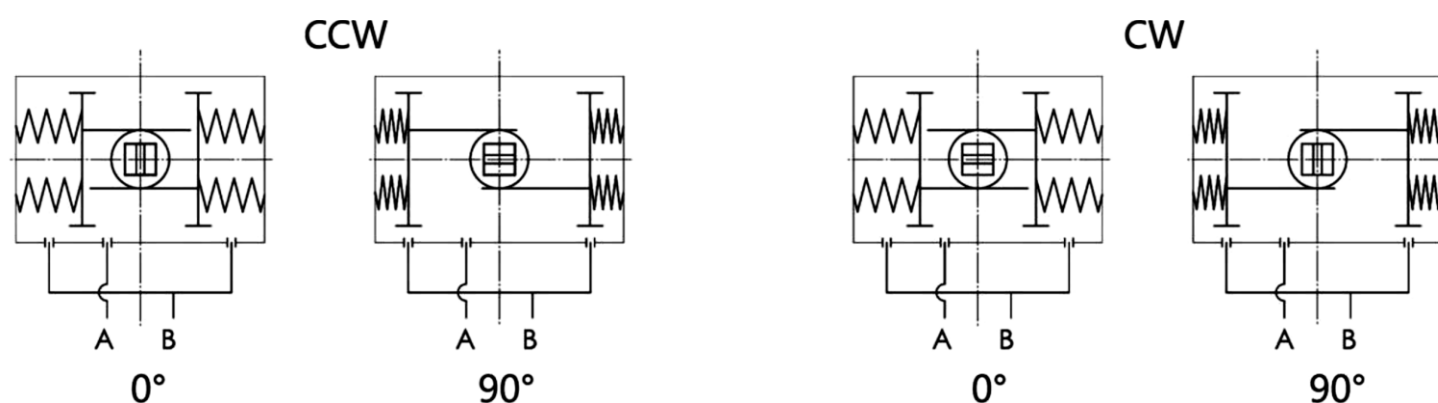
Air to port a forces the pistons outwards, causing the pinion to turn counterclockwise while the air is being exhausted from port A

Air to port b forces the pistons inwards, causing the pinion to turn clockwise while the air is being exhausted from the port A

Air to port A forces the pistons outwards, causing the pinion to turn clockwise while the air is being exhausted from port B

Air to port B forces the pistons inwards, causing the pinion to turn counterclockwise while the air is being exhausted from the port A

Single Acting Actuators (Spring Return)



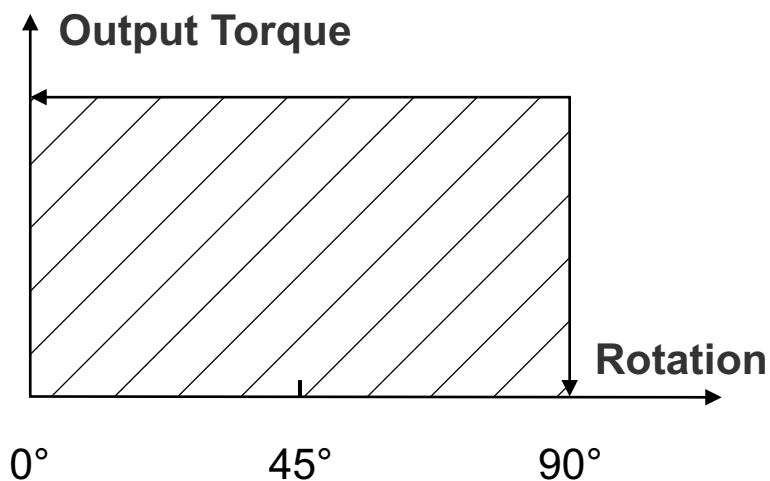
Air to port A forces the pistons outwards, causing the springs to compress, the pinion turns counterclockwise while air is being exhausted from port B.

Loss of air pressure on port A, the stored energy in the springs forces the pistons inwards. The pinion turns clockwise while air is being exhausted from port A

Air to port b forces the pistons outwards, causing the springs to compress, the pinion turns counterclockwise while air is being exhausted from port B.

Loss of air pressure on port A, the stored energy in the springs forces the pistons inwards. The pinion turns clockwise while air is being exhausted from port A

Double Acting Actuators



Air Supply Pressure (bar)										
Model	2	2.5	3	4	4.5	5	5.5	6	7	8
MD-32	3	4	5	6	7	8	8	9	11	12
MD-40	5	6	7	10	11	12	13	14	17	19
MD-52	8	10	12	16	18	20	22	24	28	32
MD-63	15	18	22	29	33	36	40	44	51	58
MD-75	20	25	30	40	45	50	55	60	70	80
MD-83	31	39	47	63	70	78	86	94	110	125
MD-92	45	56	68	90	102	113	124	135	158	181
MD-105	66	83	99	132	149	165	182	198	231	264
MD-125	100	125	150	200	226	251	276	301	351	401
MD-140	171	214	256	342	385	427	470	513	598	684
MD-160	266	332	399	532	598	665	731	798	931	1064
MD-190	426	532	638	851	958	1064	1170	1277	1490	1702
MD-210	532	665	798	1064	1197	1330	1463	1596	1862	2128
MD-240	769	962	1154	1539	1731	1924	2116	2308	2693	3078
MD-270	1170	1462	1754	2339	2632	2924	3216	3509	4094	4679
MD-300	1526	1908	2289	3052	3434	3815	4197	4578	5341	6104
MD-350	2285	2856	3427	4570	5141	5712	6283	6854	7997	9139
MD-400	3256	4070	4884	6512	7326	8140	8954	9768	11396	13024

Size: Double Acting Actuator

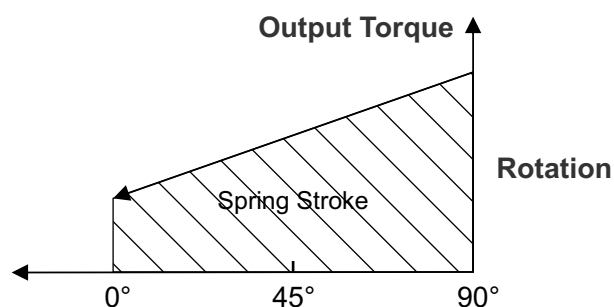
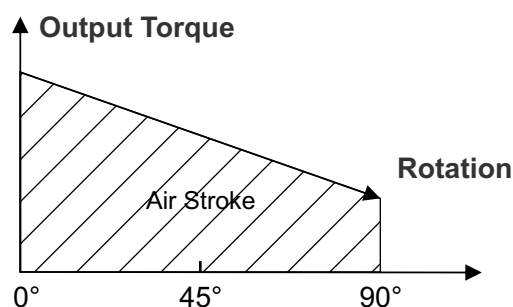
The suggested safety factor for double acting actuators under Normal working conditions is 20%-30%

Example:

- The Torque Needed By Valve= 100n
- The Torque Considered Safety Factor(1+30%)=130nm
- Air Supply=5 Bar

According to the above table, we can choose the minimum model is da105.

Output Torque of Single Acting Actuators (Spring Return)

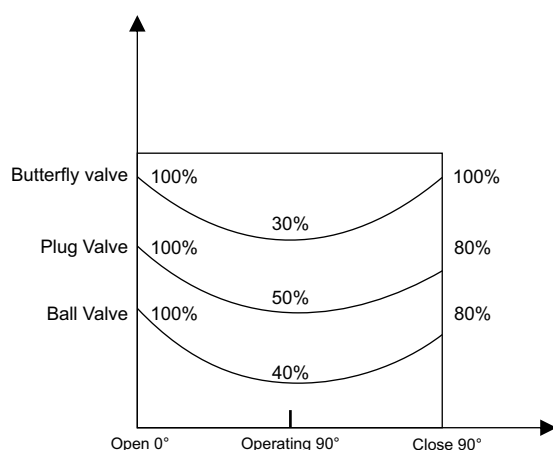


Output Torque of Air to Springs

Air Pressure		2.5 BAR		3 BAR		4 BAR		5 BAR		6 BAR		7 BAR		8 BAR		Spring's Output	
Model	Spring Qty.	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	90° Start	0° End
MS-40	K2	1.3		2.7		5	1.4	7.5	3.1	9.8	4.5					7.5	4.8
	K5	5.7	3.8	7.6	5.7											6.2	4.3
	K6	4.9	2.5	6.9	4.5	10.9	8.5									7.4	5
	K7	4	1.3	6	3.3	9.8	7.3	14	10.4							8.6	5.9
MS-52	K8			5.2	2	9.2	6	13.2	9.1	17.2	14.1					9.9	6.7
	K9			4.3	0.8	8.3	4.8	12.3	7.9	16.3	12.8	20.3	16.8			11.1	7.6
	K10					7.4	3.6	11.5	6.7	15.5	11.6	19.5	15.6			12.4	8.5
	K11					6.6	2.3	10.6	5.4	14.6	10.4	18.6	14.3	22.6	18.3	13.6	9.3
MS-63	K12							9.7	4.2	13.8	9.1	17.8	12.2	21.8	17.1	14.8	10.2
	K5	11.4	7.7	15	11.4	22.3	14.9									10.4	6.8
	K6	10.1	5.7	13.6	9.3	20.9	16.6	28.3	23.9							12.5	8.2
	K7	8.6	3.6	12.5	7.2	19.5	14.5	26.8	21.9							14.6	9.6
MS-75	K8			10.9	5.1	18.2	12.4	25.5	19.8	32.8	27	40.1	34.3			16.7	10.9
	K9					16.8	10.4	24.1	17.7	31.4	24.9	38.7	32.2			18.8	12.3
	K10					14	8.2	22.8	15.6	30	22.8	37.3	30.1	44.7	37.4	20.9	13.7
	K11							21.5	13.5	28.7	20.7	36	28	43.3	35.3	22.9	15
MS-83	K12							20	11.4	27.3	18.6	34.6	25.9	41.9	33.3	25	16.4
	K5	14.5	10.6	19.4	15.5	29.5	25.7									14.5	10.5
	K6	12.4	7.6	17.3	12.6	27.4	22.7	37.5	32.8							17.4	12.7
	K7	10.4	4.8	15.2	9.7	25.3	19.9	35.4	29.9							20.3	14.8
MS-92	K8			13.1	6.8	23.1	16.9	33.3	27	43.2	37	53.3	47			23.2	16.9
	K9					21	14.1	31.2	24.1	41.1	34.1	51.2	44.2			26.1	19
	K10					19	11.1	28.8	21.2	39	31.2	49.1	41.2	59.1	51.2	29	21.1
	K11							27	18.3	37	28.3	47	38.4	57	48.4	31.9	23.2
MS-105	K12							24.9	15.4	34.9	25.4	44.9	35.4	54.9	45.4	34.7	25.3
	K5	23.3	16.1	31.1	24	46.8	39.7									23	15.8
	K6	20.1	11.5	28	19.3	43.7	35.1	59.4	50.7							27.6	19
	K7	17	6.9	24.8	14.8	40.5	30.5	56.2	46.2							32.2	22.1
MS-125	K8			21.7	10.1	37.4	25.8	53.1	41.5	68.8	57.2	84.5	72.9			36.8	25.3
	K9						21.3	49.9	37	65.6	52.6	81.2	68.3			41.4	28.5
	K10						16.6	46.7	32.3	62.4	48	78.1	63.7	93.8	79.3	46	31.6
	K11							43.6	27.7	59.3	43.4	75	59.1	90.6	74.8	50.6	34.8
MS-150	K12							40.4	23.2	56.1	38.9	71.7	54.5	87.4	70.2	55.2	38
	K5	33.1	22	44.2	33.2	66.8	55.9									34.4	23.3
	K6	28.4	15.2	39.6	26.4	62.2	49	84.9	71.6							41.2	28
	K7	23.8	8.2	34.9	19.4	57.5	42.1	80.2	64.7							48.1	32.7
MS-175	K8			31.3	12.6	52.9	35.2	75.5	57.9	98.1	80.5	120.7	103			55	37.3
	K9					48.2	28.4	70.9	51	93.5	73.6	116	96.1			61.9	42
	K10					43.6	21.5	66.2	44.1	88.8	66.7	111.3	89.2	134	111.8	68.7	46.7
	K11							61.5	37.2	84.1	59.9	106.6	82.4	129.2	105	75.6	51.4
MS-200	K12							56.8	30.4	79.4	53	101.9	75.5	124.5	98.1	82.5	56
	K5	51	33.4	67.5	49.9	100.6	83									49.2	31.6
	K6	44.7	23.5	61.1	40	94.2	73.2	127.3	106.2							59.1	38
	K7	38.4	13.7	57.9	30.3	87.9	63.4	121	96.4							68.9	44.3
MS-250	K8			48.5	20.4	81.6	53.5	114.7	86.5	147.7	119.6	180.8	152.7			78.7	50.6
	K9					75.3	43.7	108.4	76.8	141.5	109.8	174.5	142.9			88.6	56.9
	K10					68.9	33.4	102	66.5	135.1	99.6	168.2	132.6	201.2	165.7	98.4	63.3
	K11							95.7	57	128.7	90.1	161.8	123.1	194.8	156.2	108.3	69.6
MS-300	K12							89.4	47.5	122.5	80.6	155.5	113.6	188.6	146.7	118.1	75.9
	K5	73	47	98	72	148	122									79	52
	K6	63	31	88	56	138	107	188	157							94	63
	K7	52	15	77	40	127	90	178	141							110	73
MS-350	K8			67	25	117	75	167	125	217	176	268	226			125	84
	K9					107	59	157	109	207	159	257	210			141	94
	K10					96	44	146	94	196	144	247	194	297	245	157	105
	K11							136	78	186	128	236	178	286	228	173	115
MS-400	K12							125	63	176	113	226	163	276	213	188	125

Output Torque of Air to Springs

Air Pressure		2.5 BAR		3 BAR		4 BAR		5 BAR		6 BAR		7 BAR		8 BAR		Spring's Output	
Model	Spring Qty.	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	90° Start	0° End
MS-140	K5	128	85	171	127	256	213									129	86
	K6	111	59	154	102	239	187	325	273							155	103
	K7	94	33	137	76	222	162	308	247							181	120
	K8			120	50	205	136	291	221	376	307	462	392			206	137
	K9					187	110	273	196	358	281	444	367			232	155
	K10					170	84	256	169	341	255	427	340	512	426	258	172
	K11							238	143	324	229	409	314	495	400	284	189
	K12							221	118	307	203	392	289	478	374	310	206
MS-160	K5	193	124	259	191	392	324									208	140
	K6	165	83	232	149	365	282	498	415							250	168
	K7	137	41	203	107	336	240	469	373							292	196
	K8			176	66	309	199	442	237	575	465	708	598			333	223
	K9					280	157	413	290	546	423	679	556			375	251
	K10					253	115	386	248	519	381	652	514	785	647	417	279
	K11							358	207	491	340	625	473	757	606	458	307
	K12							330	165	463	298	596	431	729	564	500	335
MS-190	K5	332	222	438	329	651	542									309	200
	K6	292	161	398	267	611	480	824	693							371	240
	K7	252	99	358	205	571	418	784	631							433	280
	K8			318	143	531	356	744	569	957	782	1169	995			495	320
	K9					491	295	704	507	917	720	1130	933			557	360
	K10					451	233	664	446	877	658	1090	871	1302	1084	618	400
	K11							624	384	837	597	1050	809	1263	1022	680	440
	K12							584	322	797	535	1010	748	1223	960	742	480
MS-210	K5	390	285	523	418	789	684									380	275
	K6	335	209	468	342	734	608	1000	874							456	330
	K7	280	133	413	266	679	532	945	798							532	385
	K8			358	190	624	456	890	722	1156	988	1422	1254			608	440
	K9					569	380	835	646	1101	912	1367	1178			684	495
	K10					514	304	780	570	1046	836	1312	1102	1578	1368	760	550
	K11							725	494	991	760	1257	1026	1523	1292	836	605
	K12							670	418	936	684	1202	950	1468	1216	912	660
MS-240	K5	552	409	744	600	1129	985									554	410
	K6	470	297	662	489	1047	874	1432	1259							665	492
	K7	388	187	580	379	964	764	1349	1149							775	575
	K8			498	268	883	653	1267	1037	1652	1422	2037	1807			886	656
	K9					800	542	1185	926	1596	1311	1954	1696			998	739
	K10					718	431	1103	816	1488	1201	1872	1586	2257	1970	1108	821
	K11							1021	705	1406	1090	1791	1474	2176	1859	1219	903
	K12							939	594	1323	979	1708	1363	2093	1748	1330	985
MS-270	K5	903	675	1195	968	1779	1552									787	560
	K6	790	519	1083	811	1667	1396	2252	1981							943	672
	K7	679	361	972	654	1556	1238	2141	1823							1101	783
	K8			860	497	1444	1081	2029	1666	2614	2252	3199	2836			1258	895
	K9					1332	923	1917	1509	2502	2094	3087	2678			1416	1007
	K10					1220	767	1805	1352	2390	1937	2974	2521	3560	3107	1572	1119
	K11							1693	1194	2278	1779	2862	2364	3448	2949	1730	1231
	K12							1582	1037	2167	1623	2751	2207	3336	2792	1887	1342
MS-300	K5	1097	729													1061	730
	K6	935	494	1316	875	1916	1402									1273	876
	K7	772	258	1153	639	1754	1166	2517	1929							1485	1022
	K8			991	403	1592	930	2355	1693	3118	2456					1697	1168
	K9					1430	695	2193	1458	2956	2221	3719	2984	4482	3747	1909	1314
	K10							2030	1222	2793	1985	3556	2748	4319	3511	2122	1460
	K11							1868	986	2631	1749	3394	2512	4157	3275	2334	1606
	K12															2546	1752
MS-350	K5	1553	964													1702	1173
	K6	1292	586	1863	1157											2043	1408
	K7	1031	208	1602	779	2745	1922									2383	1642
	K8			1341	401	2484	1544	3626	2686							2724	1877
	K9					2224	1165	3336	2307	4508	3449					3064	2112
	K10					1963	787	3105	1929	4247	3071	5390	4214	6532	5356	3405	2346
	K11							2844	1551	3986	2693	5129	3836	6271	4978	3745	2581
	K12							2584	1172	3726	2314	4869	3557	6011	4599	4086	2816
MS-400	K7	2028	869													2880	1837
	K8	1736	411	2550	1225											3292	2100
	K9			2259	768	3887	2396									3703	2362
	K10			1967	311	3595	1939	5223	3567							4115	2624
	K11					3303	1482	4931	3110	6559	4738					4526	2887
	K12					3012	1025	4640	2653	6268	4281	7895	5908	9523	7536	4938	3149
	K13							4348	2195	5976	3823	7603	5450	9231	7078	5349	3412
	K14							4057	1738	5685	3366	7312	4993	8940	6621	5761	3674
	K15							3765	1281	5393	2909	7020	4536	8648	6164	6172	3937
	K16									5101	2452	6728	4079	8356	5707	6584	4199



For example:

Original maximum torque of butterfly valve=104nm

Torque after opening: $104 \times 30\% = 32\text{nm}$

Air source pressure=5bar

We can choose sr125 k11

Air stroke $0^\circ = 136\text{nm} > 104\text{nm}$

Air stroke $90^\circ = 78\text{nm} > 32\text{nm}$

Spring travel $90^\circ = 173\text{nm} > 32\text{nm}$

Spring travel $0^\circ = 115\text{nm} > 104\text{nm}$

(The above data shows that the butterfly valve can be opened and closed normally.)

Note:

Make sure that the torque necessary to operate the valves is compatible with the actuator Torque (it depends on both actuator type or air supply)

Please note that the requested torque depends not only on the valve, but on the Working conditions and the safety margins of the plant in question too.

Weight Table

Model	32	40	52	63	75	83	92	105	125
MD	0.7kg	1kg	1.4kg	2 kg	2.7kg	3.5kg	4.7kg	5.7kg	8.1kg
MS	-	1.1kg	1.5kg	2.1kg	2.9kg	4kg	5.4kg	7kg	10.5kg

Model	140	160	190	210	240	270	300	350	400
MD	12.3kg	20kg	33kg	37.8kg	56kg	80kg	100.6kg	160kg	197.3kg
MS	16kg	25.4kg	39kg	47.4kg	69.2kg	102.2kg	128.2kg	209.3kg	243kg

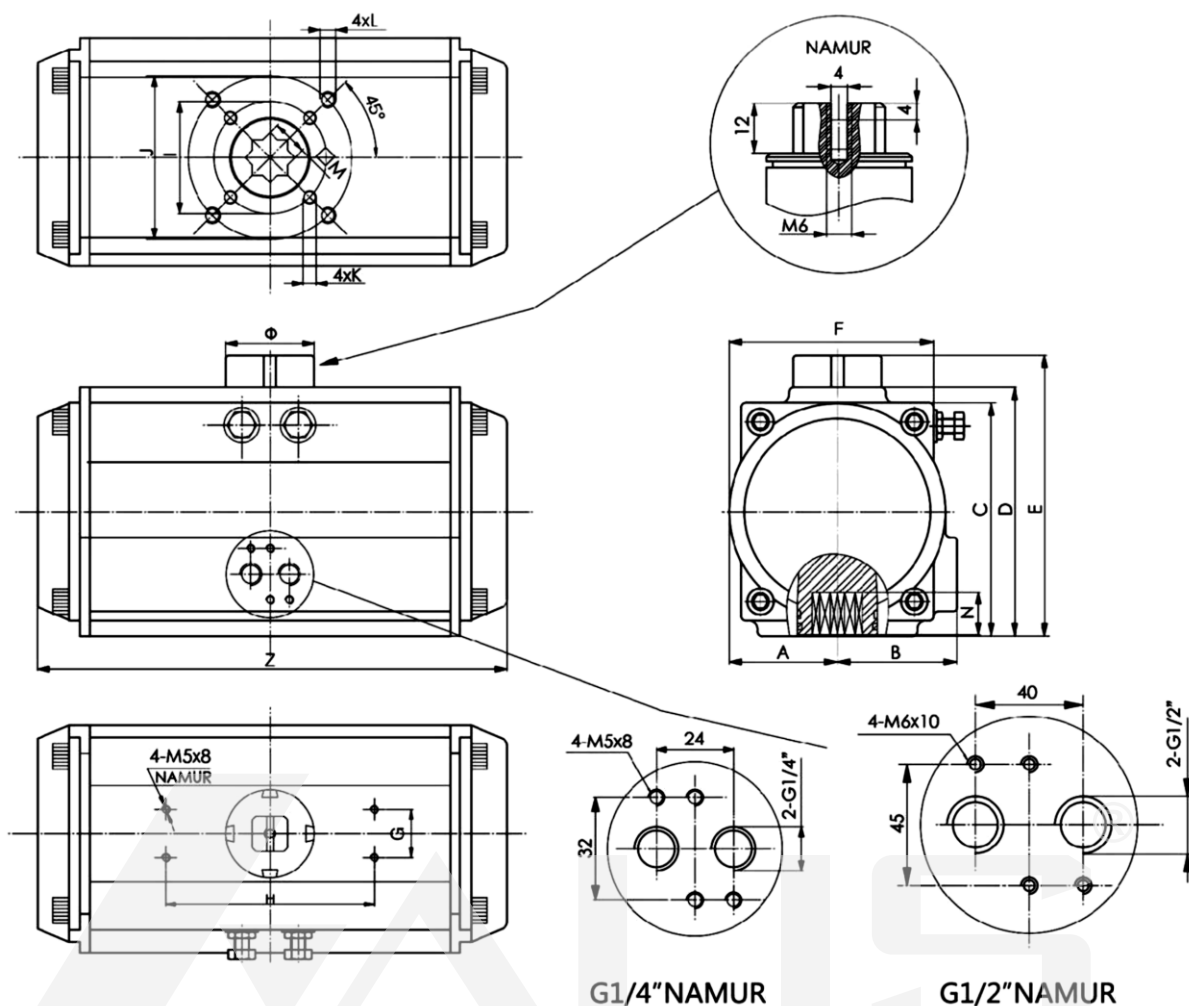
Note: 1. MS is 12 springs, 2. weight is net weight

Air Consumption

Model	Air Volume Opening	Air Volume Closing	Model	Air Volume Opening	Air Volume Closing
32	0.04	0.05	140	2.5	2.2
40	0.08	0.11	160	3.7	3.2
52	0.12	0.16	190	5.9	5.4
63	0.21	0.23	210	7.5	7.5
75	0.3	0.34	240	11	9
83	0.43	0.47	270	17	14
92	0.64	0.73	300	23.8	29.7
105	0.95	0.88	350	35.1	46.3
125	1.6	1.4	400	52.6	56

Air consumption rest with air supply, air volume and action cycle times expressions:

$$L/\text{min} = \frac{\text{Air volume}}{(\text{Air volume opening} + \text{air volume closing})} \times \left[\frac{\text{Air supply (kpa)} + 101.3}{101.3} \right] \times \text{Action cycle times/min}$$



Connection hole

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Z	Φ	Air connection
MD/MS-32	23	23	46	46	66	46	25	50		Φ36		M5x8	9	11	110	Φ40	NAMUR G1/8"
MD/MS-40	28.5	36.5	60	60	80	52	30	80		Φ36	Φ50	M5x8	11	14	122	Φ40	NAMUR G1/4"
MD/MS-52	30	41.5	65.5	72	92	65	30	80		Φ36	Φ50	M5x8	11	14	147	Φ40	NAMUR G1/4"
MD/MS-63	36	47	81	88	108	72	30	80		Φ50	Φ70	M6x10	14	18	168	Φ40	NAMUR G1/4"
MD/MS-75	42	53	94	99.5	119.5	81	30	80		Φ50	Φ70	M6x10	14	18	186	Φ40	NAMUR G1/4"
MD/MS-83	46	57	98.5	108.7	128.7	92	30	80		Φ50	Φ70	M6x10	17	21	212	Φ40	NAMUR G1/4"
MD/MS-92	50	58.5	111	116.5	136.5	98	30	80		Φ50	Φ70	M6x10	17	21	262	Φ40	NAMUR G1/4"
MD/MS-105	57.5	64	122.5	133	153	109.5	30	80		Φ70	Φ102	M8x13	22	26	268	Φ40	NAMUR G1/4"
MD/MS-125	67.5	74.5	145.5	155	185	127.5	30	130		Φ70	Φ102	M8x13	22	26	301	Φ40	NAMUR G1/4"
MD/MS-140	75	77	161	172	202	137.5	30	130		Φ102	Φ125	M10x16	27	31	390	Φ55	NAMUR G1/4"
MD/MS-160	87	87	184	197	227	159	30	130		Φ102	Φ125	M10x16	27	31	458	Φ55	NAMUR G1/4"
MD/MS-190	103	103	215	230	260	189	30	130			Φ140		36	50	534	Φ55	NAMUR G1/4"
MD/MS-210	113	113	235.5	255	285	210	30	130			Φ140		36	50	538	Φ80	NAMUR G1/4"
MD/MS-240	130	130	264.5	289	319	245	30	130			Φ165		46	60	602	Φ80	NAMUR G1/4"
MD/MS-270	147	147	299	326	356	273	30	130			Φ165		46	60	718	Φ80	NAMUR G1/2"
MD/MS-300	162	174	330	350	380	312	30	130			Φ165		46	60	782	Φ80	NAMUR G1/2"
MD/MS-350	190	195	483	410	440	365	30	130		Φ165	Φ254	M20*25	46	60	920	Φ80	NAMUR G1/2"
MD/MS-400	260	260	466	466	496	298	30	130		Φ165	Φ254	M20*25	46	60	940	Φ80	NAMUR G1/2"

All Dimensions Are In mm



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