

Pneumatic Actuator

Valve Accessories Professional Manufacturer

- MAP Series Pneumatic Actuator
- MAPS Series Pneumatic Actuator
- MPY Series Pneumatic Actuator
- SD Series Gear Box



Web
2023.04



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Introduction & Qualification Certificate

Introduction

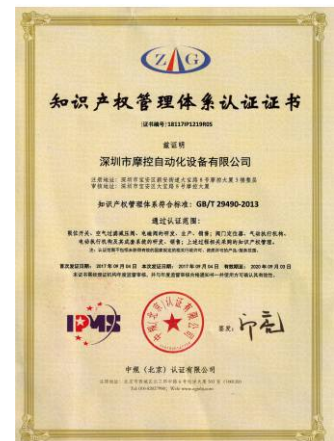
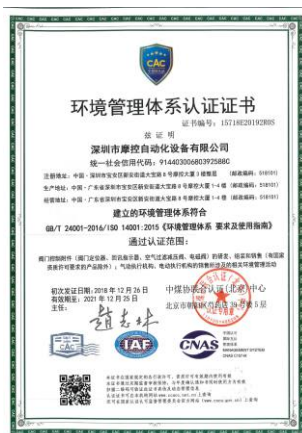
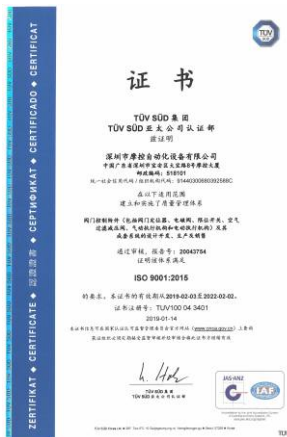
Shenzhen MORC Controls Co., Ltd. was established in October 2008, as Chinese High Technology and New Technology Enterprise and , it mainly engaged in the research, development ,production and sales of valve accessories. The company has gained ISO9001 quality management system and ISO14001 environmental management system certification, and successfully joined the HART Communications Foundation. The products have obtained CE, ATEX, NEPSI, SIL3, 3C as well as other quality and safety certificates.

In June 2022, Anhui MORC Technology Co., Ltd. was officially put into production, with a total area of more than 10,000 square meters, which is the main production base of MORC products.

MORC product range involves in valve positioner, solenoid valve, limit switch, air filter regulator and Pneumatic /Electric Actuator, which are widely used in petrochemical, natural gas, metallurgy, power, new energy, paper-making, foodstuff, pharmaceutical, water treat-ment industries, aerospace industry,shipping and so on. We are also capable of providing complete set of control valve and on-off valve solution as we have a very close relationship with valve manufacturer.

With the rapid development of industrialization, automation and intelligence in the world, MORC will adhere to the development philosophy of "quality first, technology first, continuous improvement, customer satisfaction", provide customers with better products and services, and build MORC into world's leading valve accessories brand.

Qualification Certificate



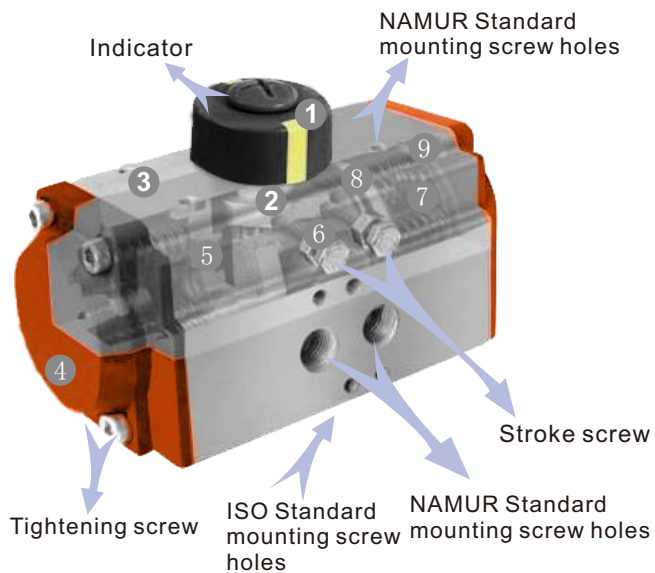
■ Summary

MAP Series Pneumatic Actuator is rotary type actuator with latest technology, nice shape and compact structure, which mainly used for the angle rotation valve control, such as ball valve, butterfly valve and so on.

- Multi-function position indicator with namur is convenient for mounting accessories such as positioner, limit switch and so on.
- The pinion is high-precision and integrative, made from nickle plating steel, full conform to the standards of ISO5211, DIN3337, NAMUR Standard. The size can be customized and stainless steel is available.
- The body coat with hard anodized, polyester PTFE or nicke.
- The two independent external travel bolts can accurately agjust $\pm 5^\circ$ at both open and close position.



■ STRUCTURE



1 Indicator

The NAMUR standard indicator is convenient for mounting accessories such as positioner, limit switch and so on.

2 Pinion

The pinion is high-precision and integrative, made from nickle plating steel, full conform to the standards of ISO5211, DIN3337, NAMUR Standard. The size can be customized and stainless steel is available.

3 Actuator Body

According to the different requirements, the extruded aluminum alloy STM6005 body can be coated with hard anodized, polyester PTFE or nickel.

4 End cap

End caps are made of aluminum material , and can be coated with polyester, metel powder, PTFE and nickel.

5 Piston

The twin rack pistons are made of aluminum die-casting coated with hard anodized or steel coated with zinc. Long lifespan, fast operation and reversed rotation by simple reversing.

6 Travel adjustment

The two independent external travel stop adjustment bolts can adjust $\pm 5^\circ$ at both open and close directions easily and precisely.

7 High Performance Spring

Preloaded coating springs are made from the high quality material for resistant to corrosion and longer service life, which can be demounted safely and conveniently to satisfy different requirements of torque by changing quantity of springs.

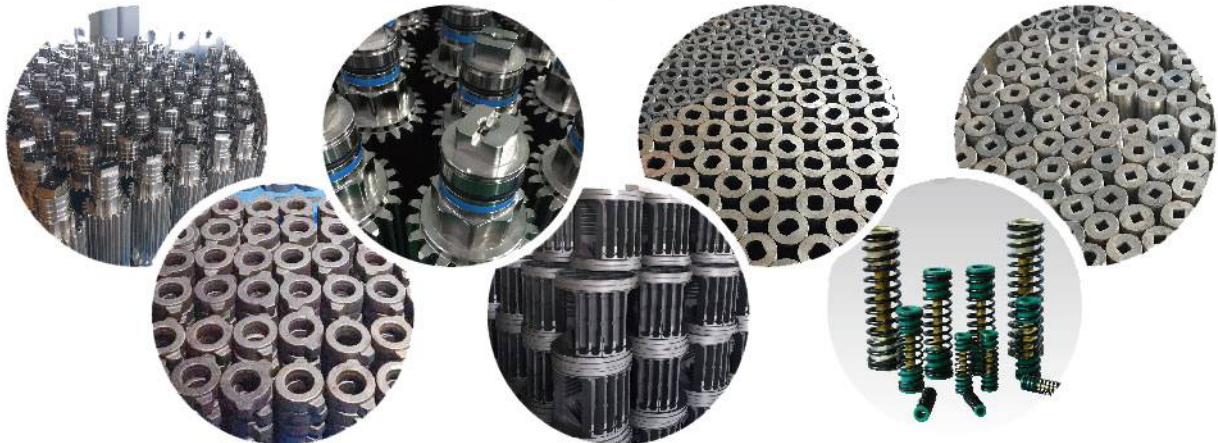
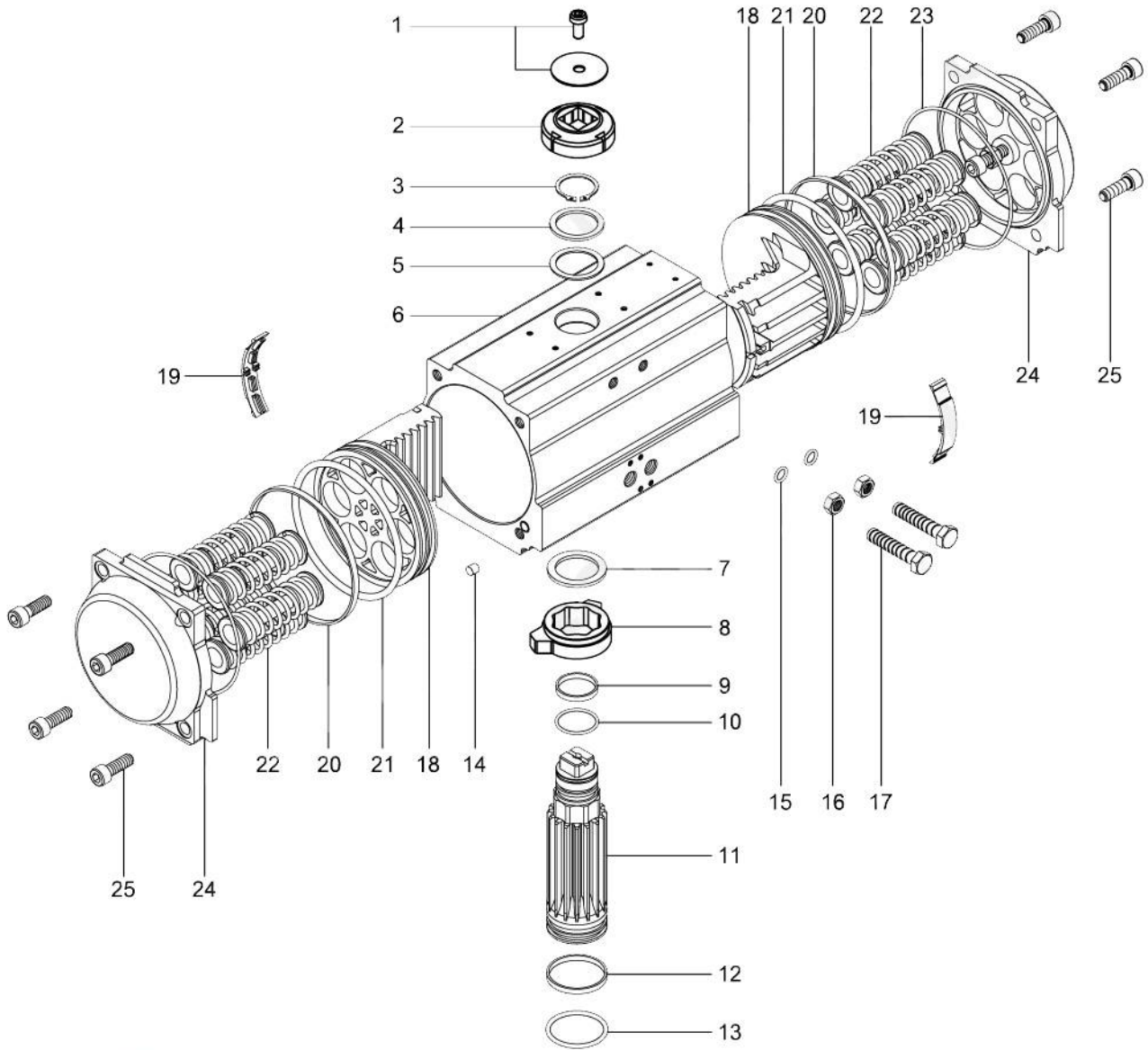
8 Bearings & Guides

Made from low friction, long-life compound material, to avoid the direct contact between metals. The maintenance and replacement are easy and convenient.

9 O-rings

NBR rubber O-rings provide trouble-free operation at standard temperature ranges. For high and low temperature applications Viton or Silicone.

■ Part and Material

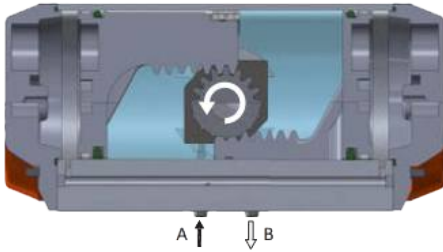


Parts and Material

No.	Description	Qty	Standard Material	Protection	Optional material
1	Indicator screw/washer	1	Stainless Steel		
2	Indicator	1	Plastic		
3	Spring clip	1	Stainless Steel		
4	Thrust washer	1	Stainless Steel		
5	Outside washer	1	Engineering Plastics		
6	Body	1	Extruded Aluminum Alloy	Hard Anodized Etc	
7	Inside washer	1	Engineering Plastics		
8	Cam	1	Alloy Steel		
9	Bearing(pinion top)	1	Nbr		Viton/Silicone
10	O-ring (pinion top)	1	Engineering Plastics		
11	Pinion	1	Alloy Steel	Nickel Plated	Stainless Steel
12	Bearing(pinion bottom)	1	Engineering Plastics		
13	O-ring (pinion bottom)	1	Nbr		Viton/Silicone
14	Plug	2	Nbr		Viton/Silicone
15	O-ring(Adjust screw)	2	Nbr		Viton/Silicone
16	Nut(Adjust screw)	2	Stainless Steel		
17	Adjust screw	2	Stainless Steel		
18	Piston	2	Cast Aluminum/casting	Anodized/zinc Galvanized	Stainless Steel
19	Guide(Piston)	2	Engineering Plastics		
20	Bearing(Piston)	2	Engineering Plastics		
21	O-ring(Piston)	2	Nbr		Viton/Silicone
22	Spring	0~12	Spring Steel	Dip Coating	
23	O-ring(End cap)	2	Nbr		Viton/Silicone
24	End cap	2	Cast Aluminum	Powder Polyster Painted Etc	
25	Cap screw	8	Stainless Steel		

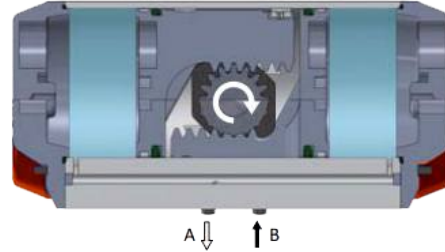
■ Operating Principle

Double Acting Actuators

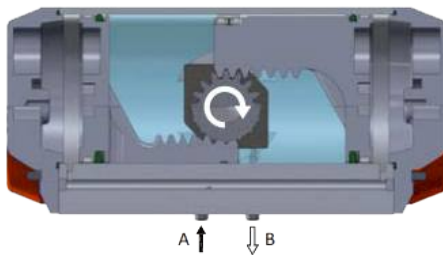


Air to Counter-clockwise Rotation

Air to Port A forces the pistons outward, causing the pinion to turn counterclockwise while the air is being exhausted from Port B.

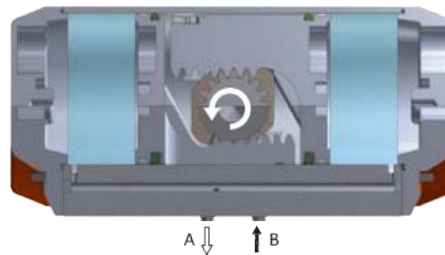


Air to Port B forces the pistons inwards, causing the pinion to turn clockwise while the air is being exhausted from Port A.



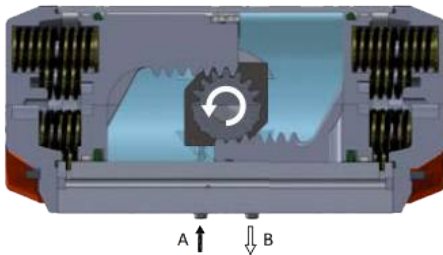
Air to Clockwise Rotation

Air to Port A forces the pistons outward, causing the pinion to turn clockwise while the air is being exhausted from Port B.



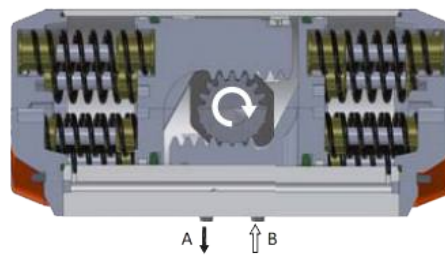
Air to Port B forces the pistons inwards, causing the pinion to turn counterclockwise while the air is being exhausted from Port A.

Spring Return Actuators

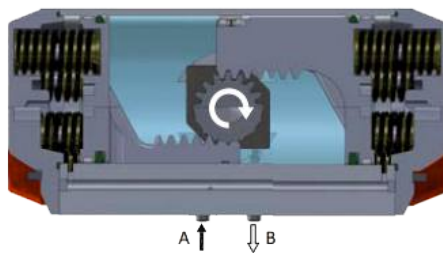


Air to Open Spring to Close

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

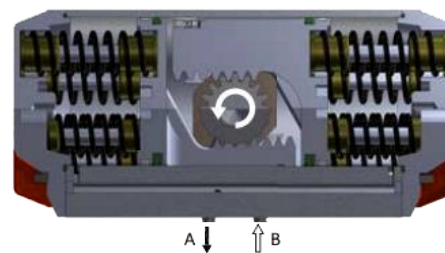


Loss of air pressure on port A, the stored energy in the springs forces the pistons inwards. The pinion turns clockwise while air is being exhausted from port A.



Air to Close Spring to Open

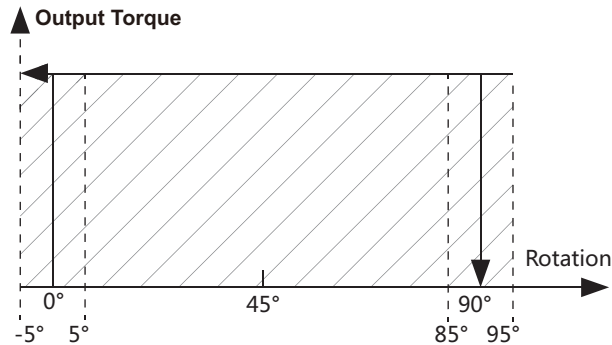
Air to port A forces the pistons outward, causing the springs to compress. The pinion turns counterclockwise while air is being exhausted from port B.



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.

■ Output Torque

Output Torque of Double Acting Actuators



Unit: Nm

Model	Air supply pressure (Unit: bar)									
	2	2.5	3	4	4.5	5	5.5	6	7	8
MAP32D	3	4	5	6	7	8	8	9	11	12
MAP40D	5	6	7	10	11	12	13	14	17	19
MAP52D	8	10	12	16	18	20	22	24	28	32
MAP63D	15	18	22	29	33	36	40	44	51	58
MAP75D	20	25	30	40	45	50	55	60	70	80
MAP83D	31	39	47	63	70	78	86	94	110	125
MAP92D	45	56	68	90	102	113	124	135	158	181
MAP105D	66	83	99	132	149	165	182	198	231	264
MAP125D	100	125	150	200	226	251	276	301	351	401
MAP140D	171	214	256	342	385	427	470	513	598	684
MAP160D	266	332	399	532	598	665	731	798	931	1064
MAP190D	426	532	638	851	958	1064	1170	1277	1490	1702
MAP210D	532	665	798	1064	1197	1330	1463	1596	1862	2128
MAP240D	769	962	1154	1539	1731	1924	2116	2308	2693	3078
MAP270D	1170	1462	1754	2339	2632	2924	3216	3509	4094	4679
MAP300D	1526	1908	2289	3052	3434	3815	4197	4578	5341	6104
MAP350D	2285	2856	3427	4570	5141	5712	6283	6854	7997	9139
MAP400D	3256	4070	4884	6512	7326	8140	8954	9768	11396	13024

Sizing: Double Acting Actuator

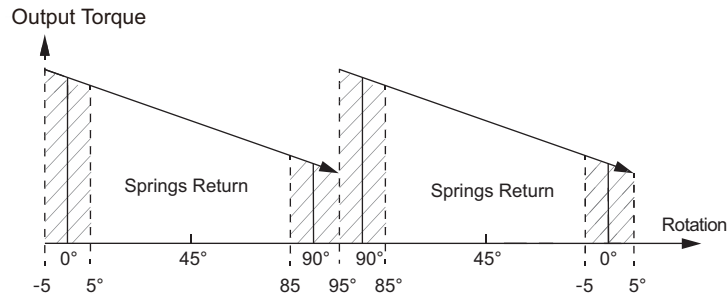
The suggested safety factor for double acting actuators under normal working conditions is 20%-30%.

Example:

- The torque needed by valve=100N·m
- The torque considered safety factor (1+30%)=130N
- Air Supply=5Bar

According to the above table, we can choose the minimum model is MAP160D.

Output Torque of Spring Return Actuators



Unit: Nm

Air Pressure		Output Torque of Spring Return Actuators(Nm)															
Model	Spring Qty.	2.5bar		3bar		4bar		5bar		6bar		7bar		8bar		Springs' output	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
MAP52S	5	5.7	3.8	7.6	5.7											6.2	4.3
	6	4.9	2.5	6.9	4.5	10.9	8.5									7.4	5.0
	7	4.0	1.3	6.0	3.3	9.8	7.3	14.0	10.4							8.6	5.9
	8			5.2	2.0	9.2	6.0	13.2	9.1	17.2	14.1					9.9	6.7
	9			4.3	0.8	8.3	4.8	12.3	7.9	16.3	12.8	20.3	16.8			11.1	7.6
	10					7.4	3.6	11.5	6.7	15.5	11.6	19.5	15.6			12.4	8.5
	12					6.6	2.3	10.6	5.4	14.6	10.4	18.6	14.3	22.6	18.3	13.6	9.3
MAP63S	5	11.4	7.7	15.0	11.4	22.3	14.9									10.4	6.8
	6	10.1	5.7	13.6	9.3	20.9	16.6	28.3	23.9							12.5	8.2
	7	8.6	3.6	12.5	7.2	19.5	14.5	26.8	21.9							14.6	9.6
	8			10.9	5.1	18.2	12.4	25.5	19.8	32.8	27.0	40.1	34.3			16.7	10.9
	9					16.8	10.4	24.1	17.7	31.4	24.9	38.7	32.2			18.8	12.3
	10					14.0	8.2	22.8	15.6	30.0	22.8	37.3	30.1	44.7	37.4	20.9	13.7
	12								21.5	13.5	28.7	20.7	36.0	28.0	43.3	35.3	22.9
MAP75S	5	14.5	10.6	19.4	15.5	29.5	25.7									14.5	10.5
	6	12.4	7.6	17.3	12.6	27.4	22.7	37.5	32.8							17.4	12.7
	7	10.4	4.8	15.2	9.7	25.3	19.9	35.4	29.9							20.3	14.8
	8			13.1	6.8	23.1	16.9	33.3	27.0	43.2	37.0	53.3	47			23.2	16.9
	9					21.0	14.1	31.2	24.1	41.1	34.1	51.2	44.2			26.1	19.0
	10					19.0	11.1	28.8	21.2	39.0	31.2	49.1	41.2	59.1	51.2	29.0	21.1
	12								27.0	18.3	27.0	28.3	47.0	38.4	57.0	48.4	31.9
MAP83S	5	23.3	16.1	31.1	24.0	46.8	39.7									23.0	15.8
	6	20.1	11.5	28.0	19.3	43.7	35.1	59.4	50.7							27.6	19.0
	7	17.0	6.9	24.8	14.8	40.5	30.5	56.2	46.2							32.2	22.1
	8			21.7	10.1	37.4	25.8	53.1	41.5	68.8	57.2	84.5	72.9			36.8	25.3
	9					34.2	21.3	49.9	37.0	65.6	52.6	81.2	68.3			41.4	28.5
	10					31.0	16.6	46.7	32.3	62.4	48.0	78.1	63.7	93.8	79.3	46.0	31.6
	12								43.6	27.7	59.3	43.4	75.0	59.1	90.6	74.8	50.6
MAP92S	5	31.3	22.0	44.2	24.0	66.8	55.9									34.4	23.3
	6	28.4	15.2	39.6	19.3	62.2	49.0	84.8	71.6							41.2	28.0
	7	23.8	8.2	34.9	14.8	57.5	42.1	80.2	64.7							48.1	32.7
	8			31.3	12.6	52.9	35.2	75.5	57.9	98.1	80.5	120.7	103.0			55.0	37.3
	9					48.2	28.4	70.9	51.0	93.5	73.6	116.0	96.1			61.9	42.0
	10					43.6	21.5	66.2	44.1	88.8	66.7	111.3	89.2	134.0	111.8	68.7	46.7
	12								61.5	37.2	84.1	59.9	106.6	82.4	129.2	105.0	75.6
MAP105S	5	51.0	33.4	67.5	49.9	100.6	83.0									49.2	31.6
	6	44.7	23.5	61.1	40.0	94.2	73.2	127.3	106.2							59.1	38.0
	7	38.4	13.7	54.9	30.3	87.9	63.4	121.0	96.4							68.9	44.3
	8			48.5	20.4	81.6	53.5	114.7	86.5	147.7	119.6	180.8	152.7			78.7	50.6
	9					75.3	43.7	108.4	78.6	141.5	109.8	174.5	142.9			88.6	56.9
	10					68.9	33.4	102.0	66.5	135.1	99.6	168.2	132.6	201.2	165.7	98.4	63.3
	12								95.7	57.0	128.7	90.1	161.8	123.1	194.8	156.2	108.3
MAP125S	5	73	47	98	72	148	122									79	52
	6	63	31	88	56	138	107	188	157							94	63
	7	52	15	77	40	127	90	178	141							110	73
	8			67	25	117	75	167	125	217	176	268	226			125	84
	9					107	59	157	109	207	159	257	210			141	94
	10					96	44	146	94	196	144	247	194	297	245	157	105
	12								136	78	186	128	236	178	286	228	173
								125	63	176	113	226	163	276	213	188	125

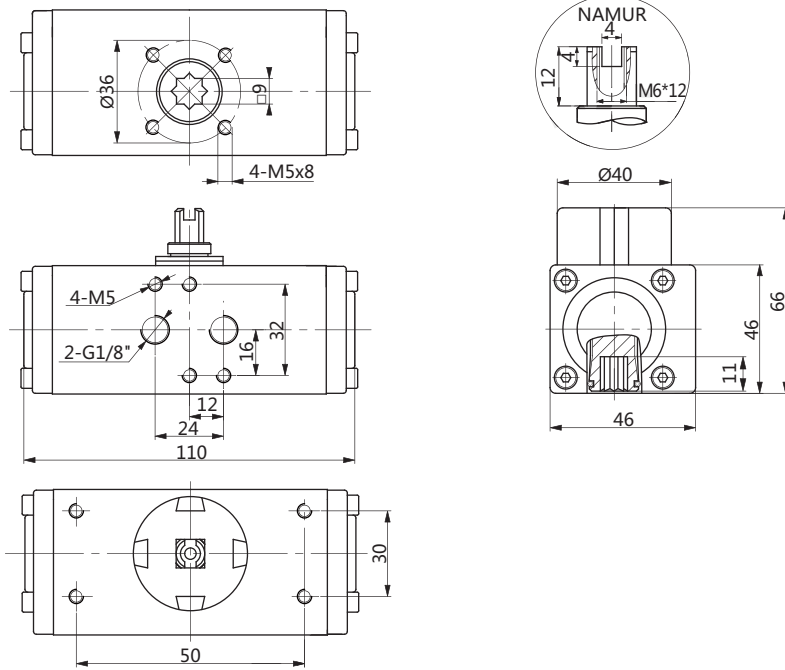
MAP series Pneumatic Actuator

Unit: Nm

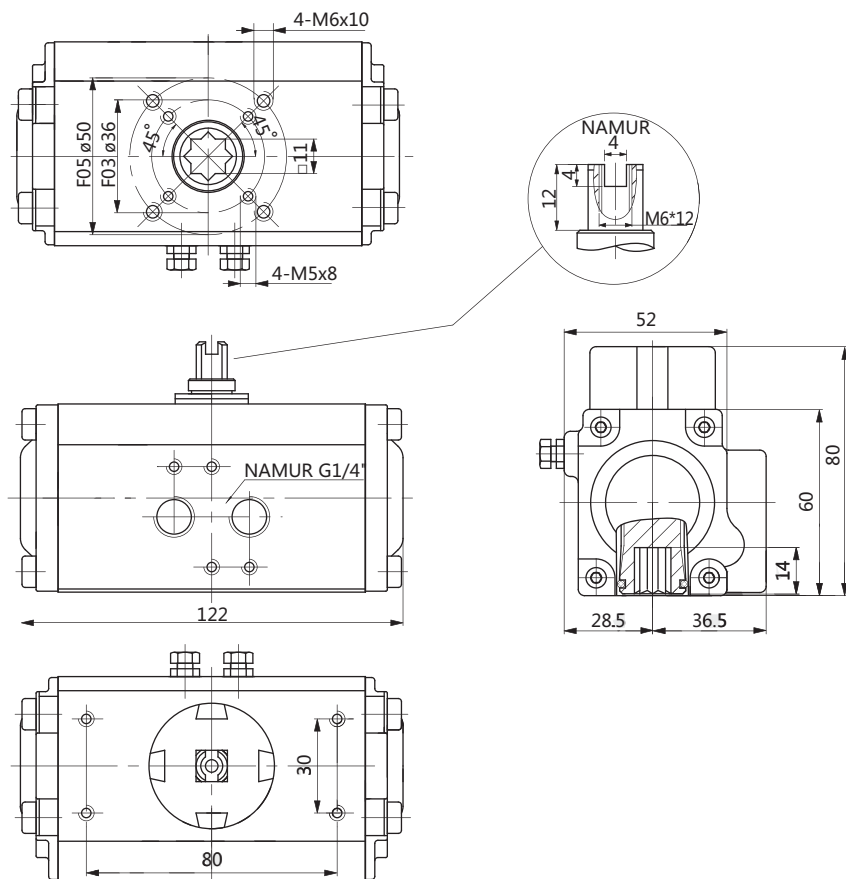
Output Torque of Spring Return Actuators(Nm)																		
Air Pressure		2.5bar		3bar		4bar		5bar		6bar		7bar		8bar		Springs' output		
Model	Spring Qty.	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°	
MAP140S	5	128	85	171	127	256	213									129	86	
	6	111	59	154	102	239	187	325	273							155	103	
	7	94	33	137	76	222	162	308	247							181	120	
	8				120	50	205	136	291	221	376	307	462	392			206	137
	9						187	110	273	196	358	281	444	367			232	155
	10						170	84	256	169	341	255	427	340	512	426	258	172
	11								238	143	324	229	409	314	495	400	284	189
12								221	118	307	203	392	289	478	374	310	206	
MAP160S	5	193	124	259	191	392	324									208	140	
	6	165	83	232	149	365	282	498	415							250	168	
	7	137	41	203	107	336	240	469	373							292	196	
	8				176	66	309	199	442	237	575	465	708	598			333	223
	9						280	157	413	290	546	423	679	556			375	251
	10						253	115	386	248	519	381	652	514	785	647	417	279
	11								358	207	491	340	624	473	757	606	458	307
12								330	165	463	298	596	431	729	564	500	335	
MAP190S	5	332	222	438	329	651	542									309	200	
	6	292	161	398	267	611	480	824	693							371	240	
	7	252	99	358	205	571	418	784	631							433	280	
	8				318	143	531	356	744	569	957	782	1169	995			495	320
	9						491	295	704	507	917	720	1130	933			557	360
	10						451	233	664	446	877	658	1090	871	1302	1084	618	400
	11								624	384	837	597	1050	809	1263	1022	680	440
12								584	322	797	535	1010	748	1223	960	742	480	
MAP210S	5	390	285	523	418	789	684									380	275	
	6	335	209	468	342	734	608	1000	874							456	330	
	7	280	133	413	266	679	632	945	798							532	385	
	8				358	190	624	456	890	722	1156	988	1422	1254			608	440
	9						569	380	835	646	1101	912	1367	1178			684	495
	10						514	304	780	570	1064	836	1312	1102	1578	1368	760	550
	11								725	494	991	760	1257	1026	1523	1292	836	605
12								670	418	936	684	1202	950	1468	1216	912	660	
MAP240S	5	552	409	744	600	1129	985									554	410	
	6	470	297	622	489	1047	874	1432	1259							665	492	
	7	388	187	580	379	964	764	1349	1149							775	575	
	8				498	268	883	653	1267	1037	1652	1422	2037	1807			886	656
	9						800	542	1185	926	1569	1311	1954	1696			998	739
	10						718	431	1103	816	1488	1201	1872	1586	2257	1970	1108	821
	11								1021	705	1406	1090	1791	1474	2176	1859	1219	903
12								939	594	1323	979	1708	1363	2093	1748	1330	985	
MAP270S	5	903	675	1195	968	1779	1552									787	560	
	6	790	519	1083	811	1667	1396	2252	1981							943	672	
	7	679	361	972	654	1556	1238	2141	1823							1101	783	
	8				860	497	1444	1081	2029	1666	2614	2252	3199	2836			1258	895
	9						1332	923	1917	1509	2502	2094	3087	2678			1416	1007
	10						1220	767	1805	1352	2390	1937	2974	2521	3560	3107	1572	1119
	11								1693	1194	2278	1779	2862	2364	3448	2949	1730	1231
12								1582	1037	2167	1623	2751	2207	3336	2792	1887	1342	
MAP300S	5	1097	729													1061	730	
	6	935	494	1316	875											1273	876	
	7	772	258	1153	639	1916	1402									1485	1022	
	8				991	403	1754	1160	2517	1929						1697	1168	
	9						1592	930	2355	1693	3118	2456				1909	1314	
	10						1430	695	2193	1458	2956	2221	3719	2984	4482	3747	2122	1460
	11								2030	1222	2793	1985	3556	2748	4319	3511	2334	1606
12								1868	986	2631	1749	3394	2512	4157	3275	2546	1752	
MAP350S	5	1553	964													1702	1173	
	6	1292	586	1863	1157											2043	1408	
	7	1031	208	1602	779	2745	1922									2383	1642	
	8				1341	401	2484	1544	3626	2686						2724	1877	
	9						2224	1165	3336	2307	4508	3449				3064	2112	
	10						1963	787	3105	1929	4247	3071	5390	4214	6532	5356	3405	2346
	11								2844	1551	3986	2693	5129	3836	6271	4978	3745	2581
12								2584	1172	3726	2314	4869	3457	6011	4599	4096	2816	

■ Dimension

MAP32D

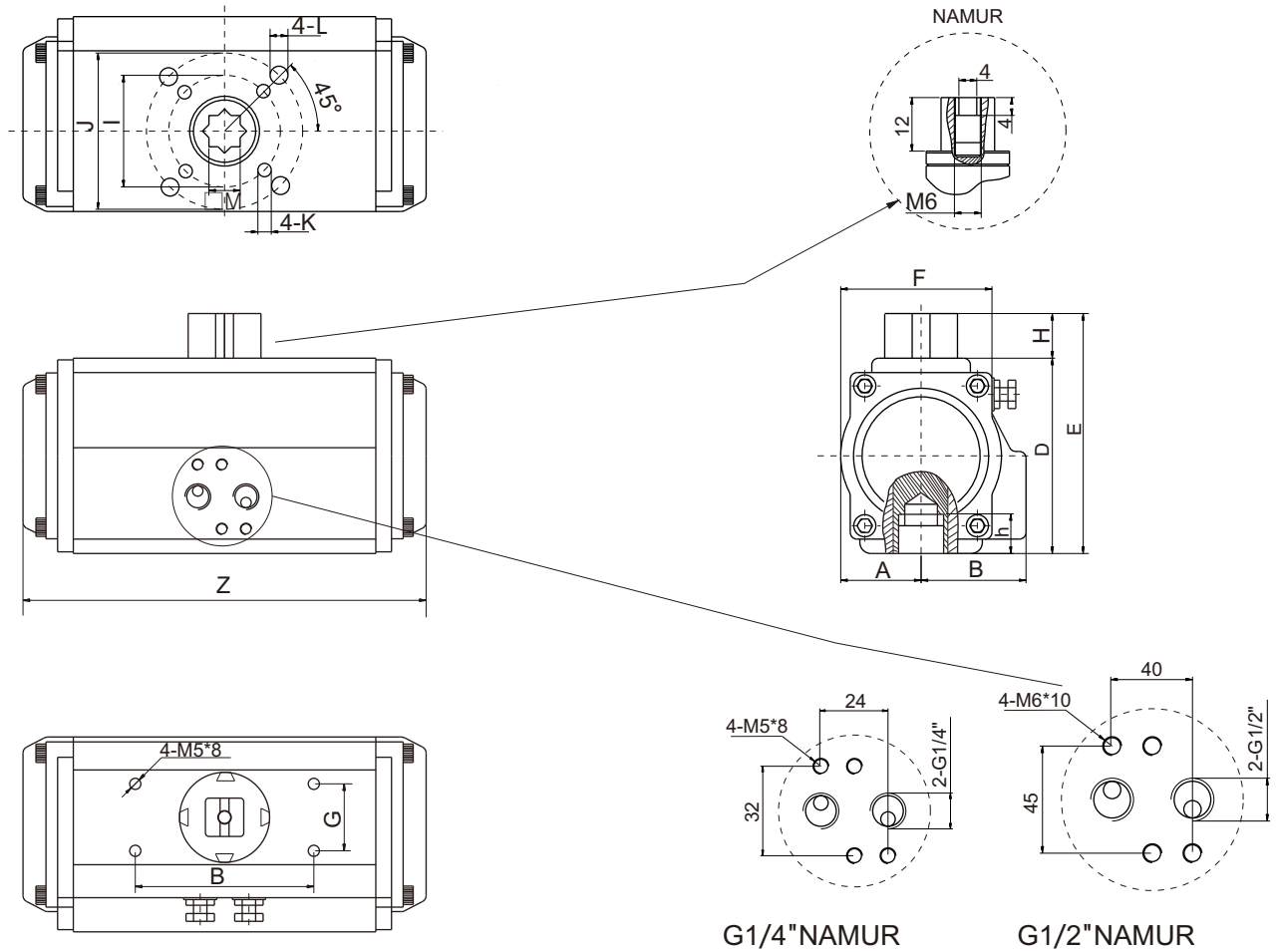


MAP40D



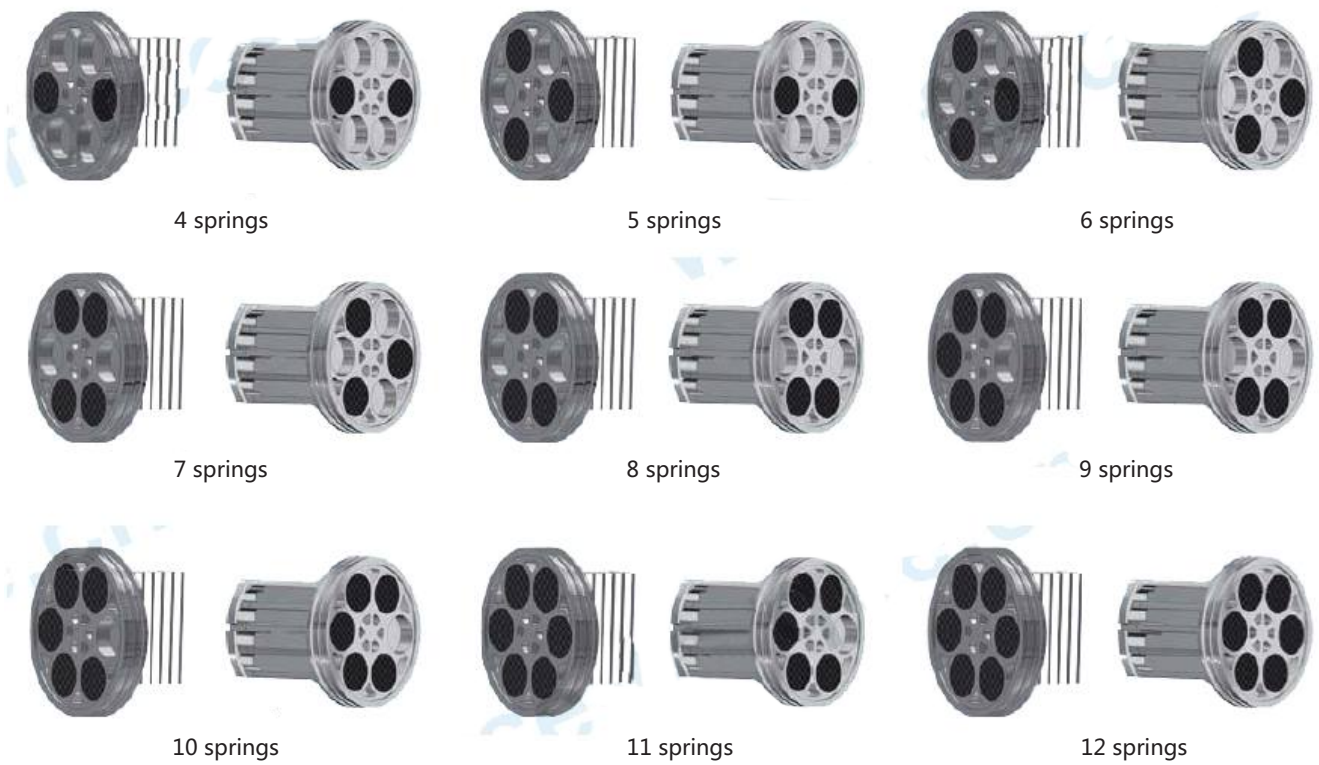
MAP series Pneumatic Actuator

MAP52~400



Model	A	B	C	D	E	G	H	I	J	K	L	M	N	Z	Air Connection
MAP32	25	50	23	23	46	46	20	-	Φ36	-	M5×8	9	11	110	G1/4
MAP40	30	80	28.5	36.5	60	52	20	Φ36	Φ50	M5×8	M6×10	11	14	122	G1/4
MAP52	30	80	30	41.5	72	65	20	Φ36	Φ50	M5×8	M6×10	11	14	147	G1/4
MAP63	30	80	36	47	87.5	72	20	Φ50	Φ70	M6×10	M8×13	14	18	168	G1/4
MAP75	30	80	42	53	99.5	81	20	Φ50	Φ70	M6×10	M8×13	14	18	184	G1/4
MAP83	30	80	46	57	108.8	92	20	Φ50	Φ70	M6×10	M8×13	17	21	204	G1/4
MAP92	30	80	50	61	116.5	98	20	Φ50	Φ70	M6×10	M8×13	17	21	262	G1/4
MAP105	30	80	57.5	64	133	109.5	20	Φ70	Φ102	M8×13	M10×16	22	26	268	G1/4
MAP125	30	130	67.5	74.5	155	127.5	30	Φ70	Φ102	M8×13	M10×16	22	26	296	G1/4
MAP140	30	130	75	77	172	137.3	30	Φ102	Φ125	M10×16	M12×20	27	31	390	G1/4
MAP160	30	130	87	87	197	158	30	Φ102	Φ125	M10×16	M12×20	27	31	454	G1/4
MAP190	30	130	103	103	230	189	30	-	Φ140	-	M16×20	36	40	525	G1/4
MAP210	30	130	114	114	255	211	30	-	Φ140	-	M16×20	36	40	532	G1/4
MAP240	30	130	130	130	289	245	30	-	Φ165	-	M20×25	46	50	602	G1/4
MAP270	30	130	147	147	326	273	30	-	Φ165	-	M20×25	46	50	718	G1/2
MAP300	30	130	162	174	350	312	30	-	Φ165	-	M20×25	46	50	760	G1/2
MAP350	30	130	190	195	410	265	30	Φ165	Φ254	M20×25	8-M16×25	46	50	920	G1/2
MAP400	30	130	260	260	466	298	30	Φ165	Φ254	M20×25	8-M16×25	46	50	940	G1/2

■ Spring Installation Form of Single Acting Actuator



■ Operating Conditions

1. Operating media

Dry or lubricated air, or the non-corrosive gases.

The maximum particle diameter must less than 30 um.

2. Air supply pressure

The minimum supply pressure is 2.5 Bar.

The maximum supply pressure is 8 Bar.

3. Operating temperature Standard: -20°C~+80°C

Low temperature: -40°C~+80°C

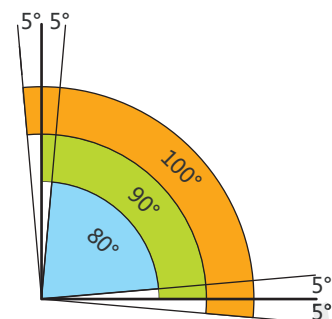
High temperature: -15°C~+150°C

4. Travel adjustment

Have adjustment range of $\pm 5^\circ$ for the rotation at 0° and 90° .

5. Application

Either indoor or outdoor.



Sizing: Spring Return Actuators

The suggested safety factor for spring return actuator under normal working conditions is 30-50%

Example
The torque needed by valve=80N.m

The torque consider safety factor (1+30%)=104N

Air Supply=5Bar

According to the table of spring return actuators' output, we find output torque of MAP140SK7 is:

- Air stroke 0°=308Nm
- Air stroke 90°=247N.m
- Spring stroke 90°=181Nm
- Spring stroke 0°=120Nm

All the output torque is larger than we needed.

Attention

During the restoration, the spring return actuators' output torque will not be affected by the inputing air from the port B. On the contrary, it will help the restoration of springs.

During selecting the spring return actuators, we can choose the more reasonable and more economical actuators, if we kown the different torque needed by the valve working at opening, operating and closing.

Example:

The max torque needed by the butterfly valve=104N.m

The torque after opened (operating)104×30%=32N.m

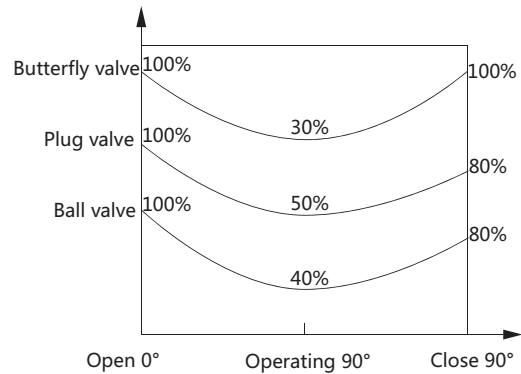
Air Supply=5Bar

We can select the MAP125SK11

output torque is:

- Air stroke 0°136N.m >104N.m
- Air stroke 90°=78N.m >32N.m
- Spring stroke 90°=173N.m >32N.m
- Spring stroke 0°=115N.m >104N.m

The above datas show the actuator's torque can satisfy the requirement of the butterfly valve.



Note

Make sure that the torque necessary to operate the valve is compatible with the actuator torque (it depends on both actuator type and 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.

MAP series Pneumatic Actuator

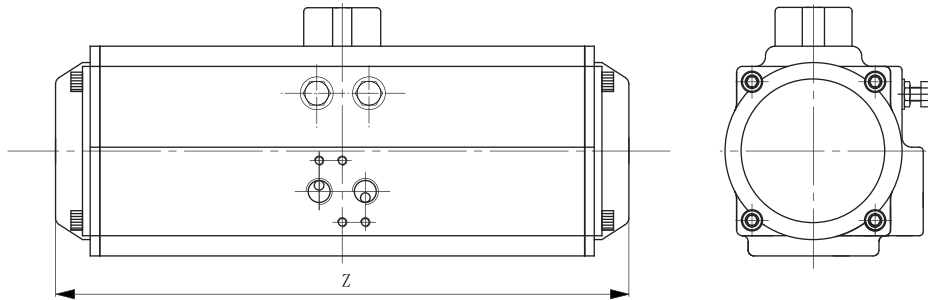
■ **120°, 135°, 180° Double Acting and Spring Return**

actuators. In order to meet the special requirements of control valve we produced special strokes actuators on customer request (e.g. 120°, 135°, 180° etc..).

Output torque

Output torque of double acting actuators please refer to the torque of 90° actuators.

180° Double Acting Length of Dx180°



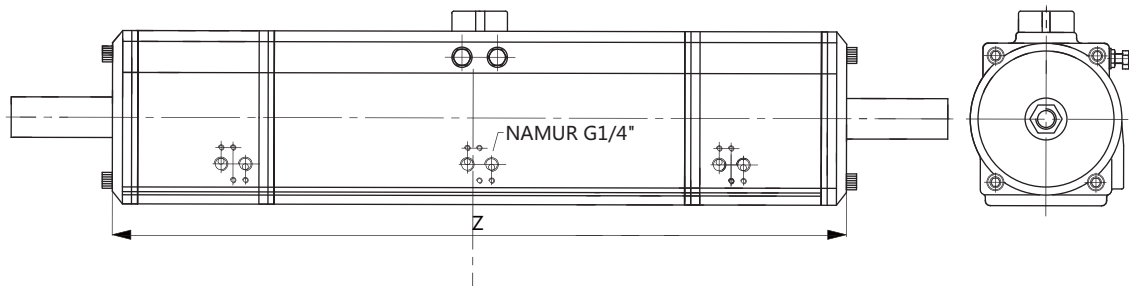
Size	MAP52	MAP63	MAP75	MAP83	MAP92	MAP105	MAP125	MAP140	MAP160	MAP190	MAP210
Z(mm)	213	243	258	298	362	386	429	569	652	756	760

■ **Three Position Pneumatic (3P) Actuator**

Three position actuator provide an operation of 0°, 45°, 90° or 0°, 90°, 180°, The midway position is achieved by a mechanical stop of movement on the 2 auxiliary pistons. This midway stop positions adjustable. Example: 90° actuator can provide 20°, 30°, 40°, 50°, 70° etc.

Output Torque

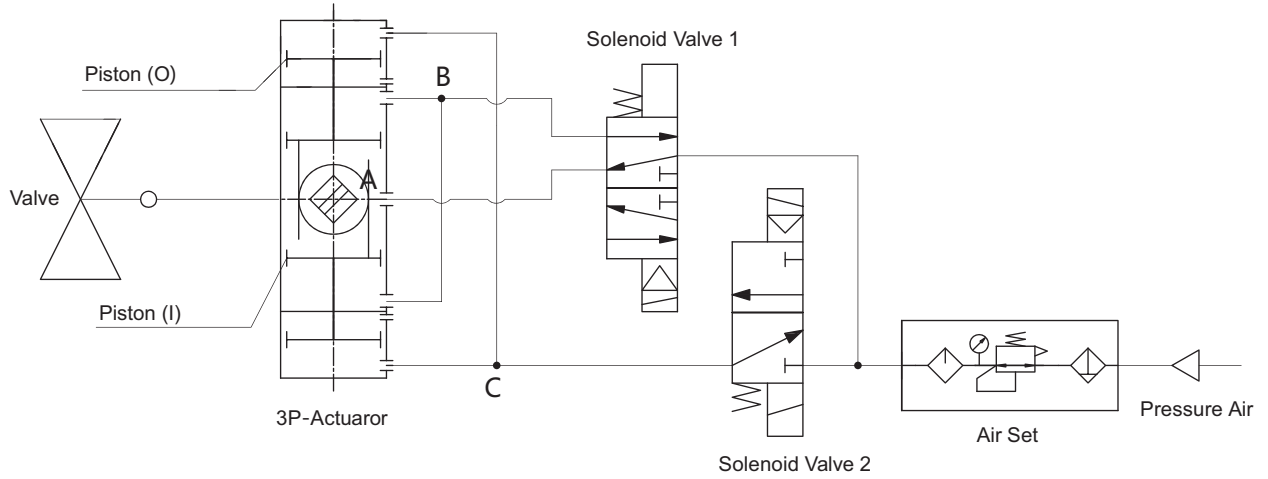
Output torque of double acting actuators please refer to the torque of 90° actuators.



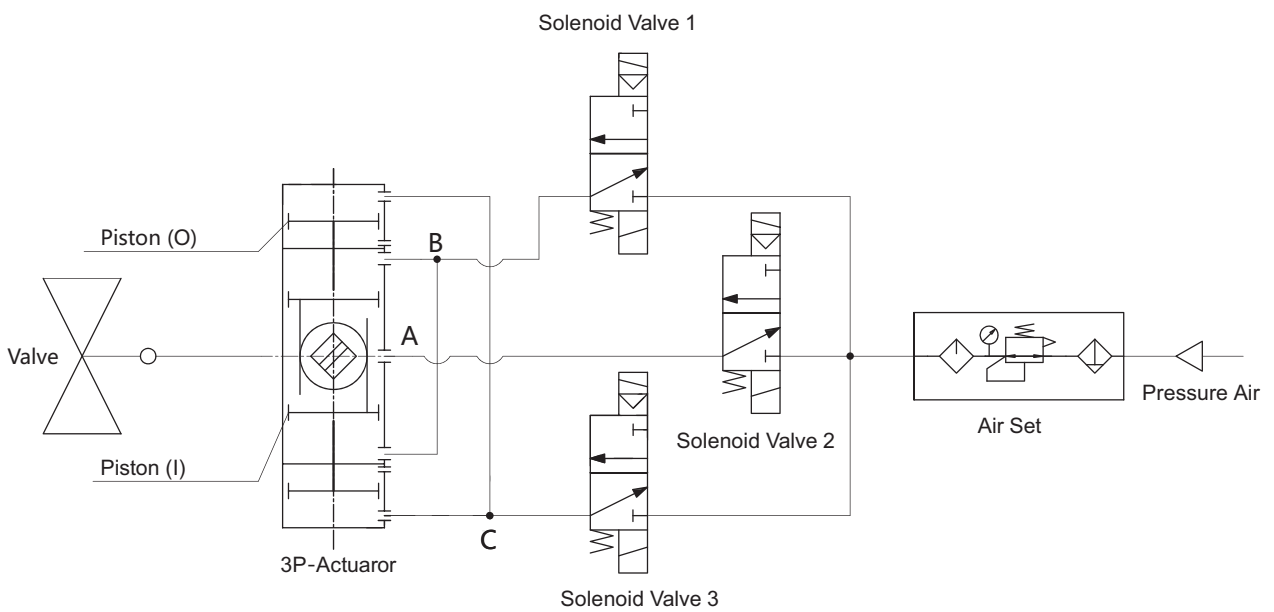
90° 3P Double Actuator Length of D-3P(90°)

Size	MAP52-3P	MAP63-3P	MAP75-3P	MAP83-3P	MAP92-3P	MAP105-3P	MAP125-3P	MAP140-3P	MAP160-3P	MAP190-3P	MAP210-3P
Z(mm)	266	303	306	336	394	410	456	570	646	788	788

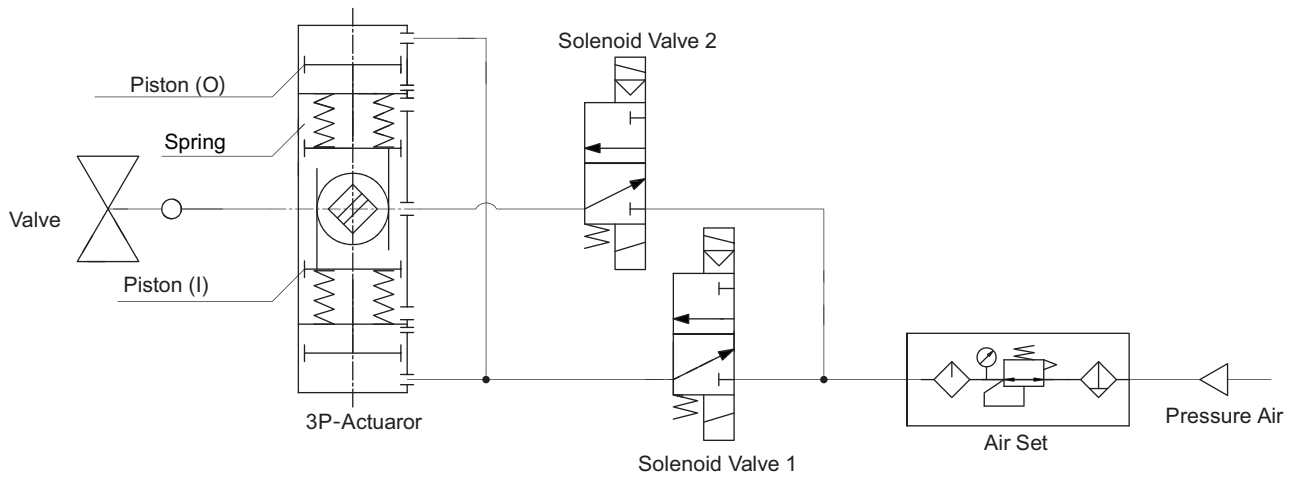
3P Actuator Schematic Diagram



	0°	90°	30°	0°
Solenoid Valve 1	OFF	ON	OFF	OFF
Solenoid Valve 2	OFF	OFF	ON	OFF



	0°	30°	90°	30°	0°
Solenoid Valve 1	OFF	OFF	ON	OFF	OFF
Solenoid Valve 2	ON	OFF	OFF	ON	ON
Solenoid Valve 3	OFF	ON	ON	ON	OFF



	0°	30°	90°	30°	0°
Solenoid Valve 1	OFF	ON	OFF	ON	OFF
Solenoid Valve 2	OFF	ON	ON	ON	OFF

■ **Air Consumption**

Air Volume Opening & Closing

Model	Air volume opening	Air volume closing	Model	Air volume opening	Air volume closing
MAP32	0.04	0.05	MAP140	2.5	2.2
MAP40	0.08	0.11	MAP160	3.7	3.2
MAP52	0.12	0.16	MAP190	5.9	5.4
MAP63	0.21	0.23	MAP210	7.5	7.5
MAP75	0.3	0.34	MAP240	11	9
MAP83	0.43	0.47	MAP270	17	14
MAP92	0.64	0.73	MAP300	23.8	29.7
MAP105	0.95	0.88	MAP350	35.1	46.3
MAP125	1.6	1.4	MAP400	52.6	56

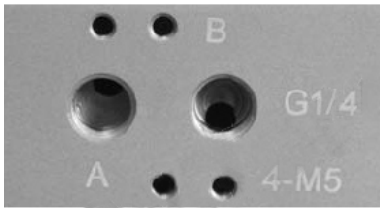
Unit:L

Air consumption rest with Air Supply. Air volume and Action cycle times, expressions:

$$L/Min = \text{Air volume}(\text{Air volume Opening} + \text{Air volume closing}) \times \left[\frac{\text{Air Supply (Kpa)} + 101.3}{101.3} \right] \times \text{Action cycle times (/min)}$$

MAP series Pneumatic Actuator

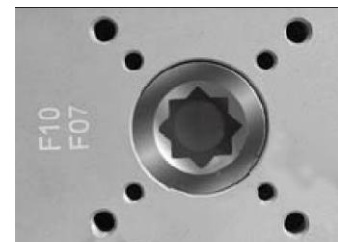
■ **Mounting Standard**



Air supply connection is designed in accordance with NAMUR Standard to install solenoid valves.



The Namur drive pinion and the Namur top mounting connection permit direct installation of accessories such as limit switch box and positioner.



Bottom mounting connection is designed in accordance with ISO5211 and DIN3337 standards for direct mounting with valve gear boxes or mounting brackets.

■ **Model Comparison**

Unit: mm

Model	MAP32	MAP40	MAP52	MAP63	MAP75	MAP83	MAP92	MAP105	MAP125
Cylinder	Ø32	Ø40	Ø52	Ø63	Ø75	Ø83	Ø92	Ø105	Ø125

Model	MAP140	MAP160	MAP190	MAP210	MAP240	MAP270	MAP300	MAP350	MAP400
Cylinder	Ø140	Ø160	Ø190	Ø210	Ø240	Ø270	Ø300	Ø350	Ø400

■ **Weight Table**

Model	MAP32	MAP40	MAP52	MAP63	MAP75	MAP83	MAP92	MAP105	MAP125
Weight(D)	0.7kg	1.0kg	1.4kg	2.0kg	2.7kg	3.5kg	4.7kg	5.7kg	8.1kg
Weight(S)	-	1.1kg	1.5kg	2.1kg	2.9kg	4kg	5.4kg	7.0kg	10.5kg

Model	MAP140	MAP160	MAP190	MAP210	MAP240	MAP270	MAP300	MAP350	MAP400
Weight(D)	12.3kg	20kg	33kg	37.8kg	56kg	80kg	100.6kg	160kg	197.3kg
Weight(S)	16kg	25.4kg	39kg	47.4kg	69.2kg	102.2kg	128.2kg	209.2kg	243kg

Note: 1, D is double-acting, S is 1 single-acting 2 springs; 2, weight is net weight.

■ **Model Code**

MAP [1] [2] [3] [4] [5] [6]

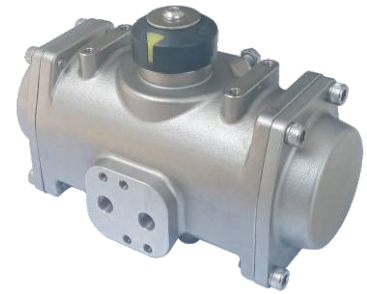
[1] Cylinder	[2] Acting Type	[3] Spring Qty.	[4] Travel ^[1]	[5] Ambient temperature	[6] Fail position (Single acting only)
32 : 32mm	S:Spring Acting	K5: 5pcs	0: 90°	S: -20~70°C	FC : Failure Close
40 : 40mm	D:Double Acting	K6: 6pcs	T:Other Travel	L: -40~80°C	FO : Failure Open
52 : 52mm		...	3P: Tree-Way	H:-20~120°C	
63 : 63mm		K16:16pcs			
75 : 75mm		(For single			
83 : 83mm		Acting only)			
92 : 92mm					
105 : 105mm					
125 : 125mm					
140 : 140mm					
160 : 160mm					
190 : 190mm					
210 : 210mm					
240 : 240mm					
270 : 270mm					
300 : 300mm					
350 : 350mm					
400 : 400mm					

[1]Select the Other Travel and Three-way,please parentheses indicate the angle. Example: MAP92DT (140°) SFC

MAPS series Stainless Steel Pneumatic Actuator

■ Summary

MAPS series is a gear rack type stainless steel pneumatic actuator, with compact structure, reliable design, characteristics, suitable for the on-off control of butterfly valve, ball valve and rotary valve which in harsh, corrosive working conditions.



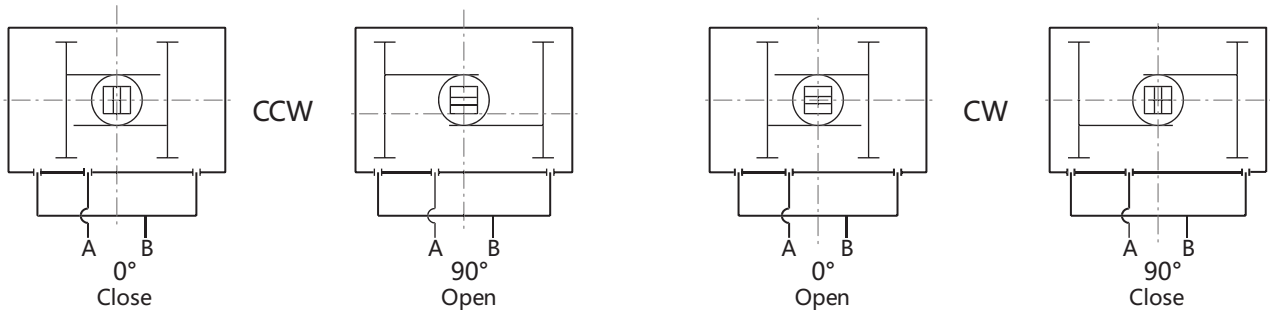
■ Performance Characteristics

- MAPS Series Stainless Steel Actuator are constructed with a compact and reliable design to offer innovative, efficient and high performance. All models are suitable for both on/off and control applications.
- MAPS Series Stainless Steel Actuator is well suited for automating butterfly, ball, and plug valves in harsh, corrosive environments. The CF8/CF8M Stainless Steel construction provide perfect internal and external corrosion resistance, ensuring the actuators ideal for marine, chemical, mining, sanitary, food and beverage and pharmaceutical applications.
- NAMUR Mounting:**
MAPS Series Stainless Steel Actuator meet NAMUR standards VDI/VDE 3845 for accessory mounting. The NAMUR mounting patterns allows for the direct mounting with both accessories such as limit switches and positioners ect. and controls without additional tubing or fittings.
- Corrosion Resistant Materials:**
All external components are 300 series stainless steel. The wire of springs is coated by teflon painting for internal corrosion resistance.
- Bi-directional Travel Stops:**
The two independent external travel stops allow for adjustment counterclockwise positions at $\pm 5^\circ$ overtravel in each direction of both clockwise and counterclockwise positions at $\pm 5^\circ$ overtravel in each direction.
- Field Reversible Action:**
Direct and reverse actions accomplished by simply rotating the pistons 180°.
- Interchangeability:**
One design for spring return and double acting actuators allows for maximum interchangeability
- Concentric Nested Spring Design:**
Significantly reduces the number of parts and allows for maximum spring gage and cycle life.
- Wide Size Range:**
Wide size range offers optimum actuator sizing.
- ISO Valve Mounting Pattern:**
Actuators conformed with ISO5211 standards for mounting directly to valves without additional brackets or adapters. The double square shaft is standard.
- Position indicator:**
The position indicator provides clearly visible indication



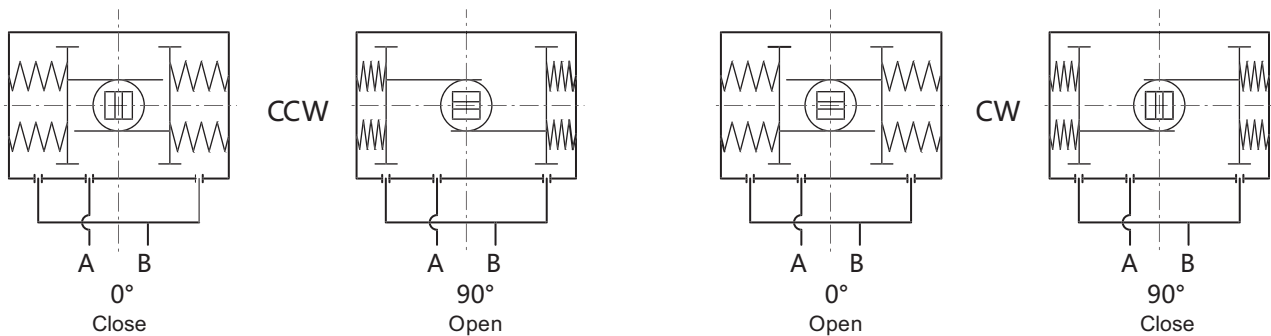
■ **Operating Principle**

Double Acting Actuator



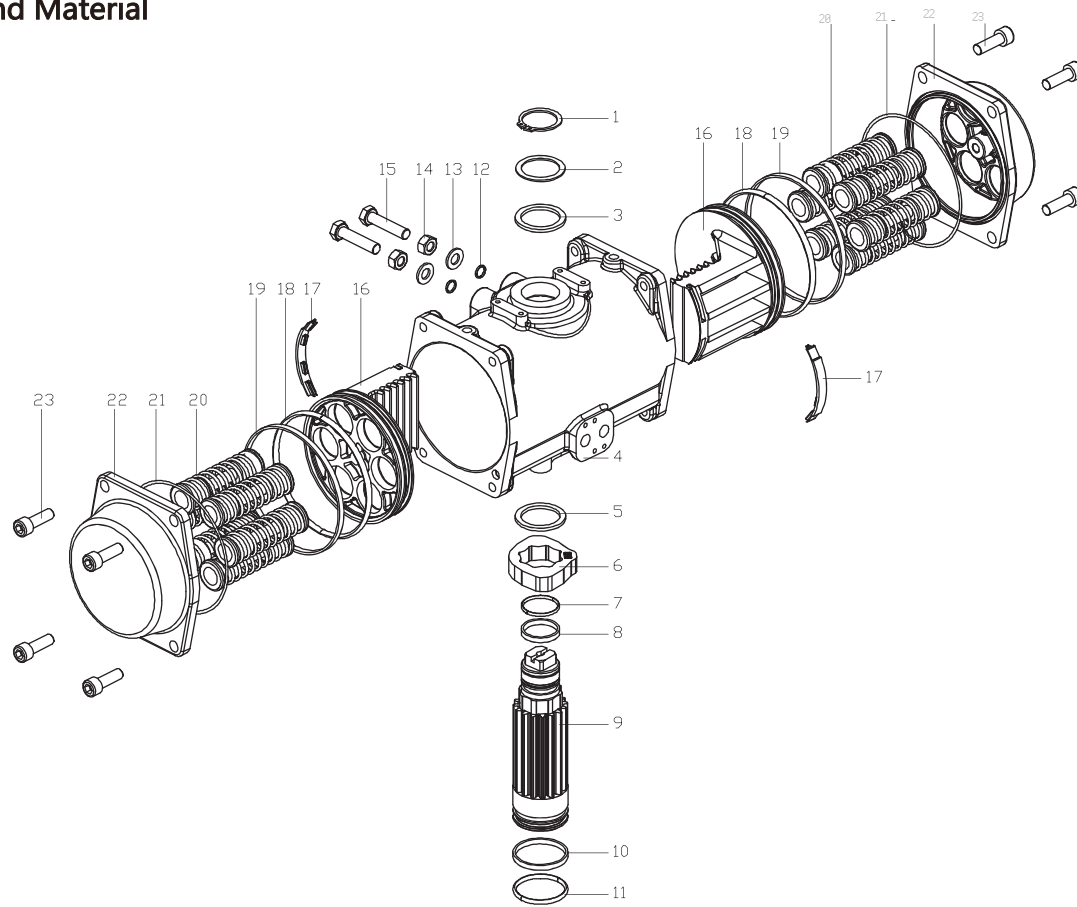
<p>Air to Port A forces the pistons outwards, causing the pinion to turn counter clockwise while the air is being exhausted from Port B Air to port B forces the pistons inwards, causing the pinion to turn clockwise while the air is being exhausted from Port A</p>	<p>Air to Port A forces the pistons outwards, causing the pinion to turn counter clockwise while the air is being exhausted from Port B. Air to port B forces the pistons inwards, causing the pinion to turn counter-clockwise while the air is being exhausted from Port A</p>
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Spring Return Actuators



<p>Air to Port A forces the pistons outwards, causing the springs to compress, the pinion to turn counter-clockwise while the 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 turn clockwise while the air is being exhausted from Port A</p>	<p>Air to Port A forces the pistons outwards, causing the springs to compress, the pinion turn clockwise while the 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 turn counter clockwise while the air is being exhausted from Port A</p>
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■ Part and Material



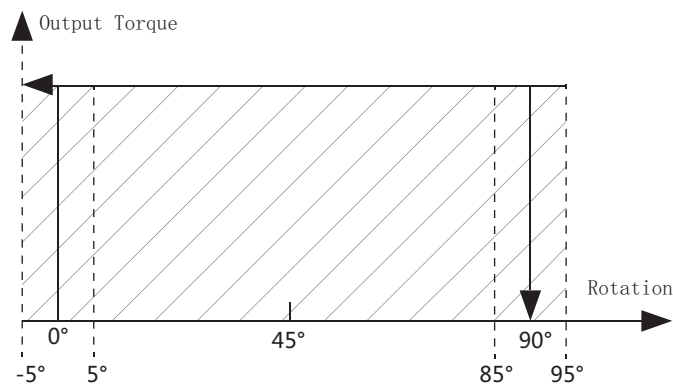
No.	Description	Qty.	Standards Material	Optional
1	Spring Clip	1	SUS304	SUS316
2	Thrust Washer	1	SUS304	SUS316
3	Outside Washer	1	Engineering Plastics	
4	Body	1	CF8	CF8M/CF3M
5	Inside Washer	1	Engineering Plastics	
6	Cam	1	Forged Steel With Nickel Plated	
7	Bearing Pinion Top	1	Engineering Plastics	
8	O - ring Pinion Top	1	NBR	Viton/Silicone
9	Pinion	1	SUS304	SUS316
10	Bearing Pinion bottom	1	Engineering Plastics	
11	O - ring Pinion Bottom	1	NBR	Viton/Silicone
12	O - ring Adjust Screw	2	NBR	Viton/Silicone
13	Adjustment Screw Washer	2	SUS304	SUS316
14	Nut Adjust Screw	2	SUS304	SUS316
15	Adjust Screw	2	SUS304	SUS316
16	Piston	2	ADC12	
17	Guide Piston	2	Engineering Plastics	
18	Bearing Piston	2	Engineering Plastics	
19	O - ring Piston	2	NBR	Viton/Silicone
20	Spring	0 - 12	Sprign Steel	
21	O - ring End Cap	2	NBR	Viton/Silicone
22	End - Cap	2	CF8	CF8M/CF3M
23	Cap Screw	8		SUS316

■ Operating conditions

1. Operating media
Dry or lubricated air; the non - corrosive gases or oil.
2. Air supply pressure
Double acting: 2~8 Bar; Spring return: 2~8 Bar
3. Operating temperature
Standard: - 20℃~+80℃
Low temperature: - 40℃~+80℃
High temperature: - 15℃~+150℃
4. Travel adjustment
Adjustment range of ±5°when the pistons at the sides.
5. Lubrication
Under normal operating condition, need not accrete lubricant
6. Application
Either indoor or outdoor
7. Highest pressure
The maximum input pressure is 10 Bar

■ Output Torque

Output Torque with Double Acting



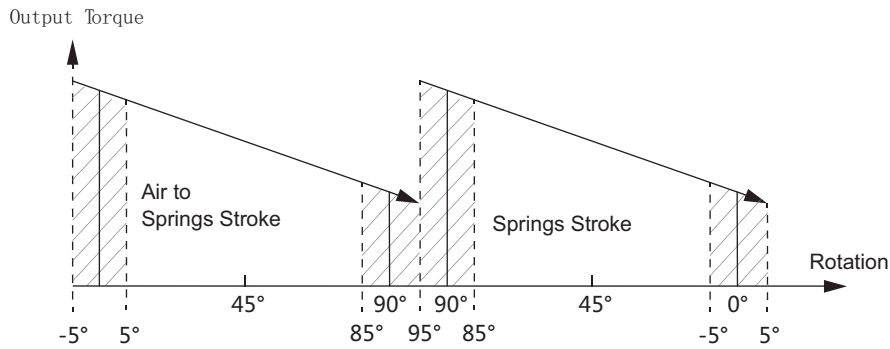
unit: Nm

Model	Air supply pressure (Unit: bar)									
	2	2.5	3	4	4.5	5	5.5	6	7	8
MAPS052D	8	10	12	16	18	20	22	24	28	32
MAPS063D	15	18	22	29	33	36	40	44	51	58
MAPS075D	20	25	30	40	45	50	55	60	70	80
MAPS083D	31	39	47	63	70	78	86	94	110	125
MAPS092D	45	56	68	90	102	113	124	135	158	181
MAPS105D	66	83	99	132	149	165	182	198	231	264
MAPS125D	100	125	150	200	226	251	276	301	351	401
MAPS140D	171	214	256	342	385	427	470	513	598	684
MAPS160D	266	332	399	532	598	665	731	798	931	1064
MAPS190D	426	532	638	851	958	1064	1170	1277	1490	1702
MAPS210D	532	665	798	1064	1197	1330	1463	1596	1862	2128
MAPS240D	769	962	1154	1539	1731	1924	2116	2308	2693	3078
MAPS270D	1170	1462	1754	2339	2632	2924	3216	3509	4094	4679



MAPS series Stainless Steel Pneumatic Actuator

Output Torque with Spring Return



Unit: Nm

Output torque of air to springs																	
Air pressure		2.5bar		3bar		4bar		5bar		6bar		7bar		8bar		Springs' 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	9° Start	0° End
MAPS052S	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	5.0
	K7	4.0	1.3	6.0	3.3	9.8	7.3	14.0	10.4							8.6	5.9
	K8			5.2	2.0	9.2	6.0	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
K12							9.7	4.2	13.8	9.1	17.8	12.2	21.8	17.8	14.8	10.2	
MAPS063S	K5	11.4	7.7	15.0	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	15.4	26.8	21.9							14.6	9.6
	K8			10.9	5.1	18.2	12.4	25.5	19.8	32.8	27.0	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					14.0	8.2	22.8	15.6	30.0	22.8	37.3	30.1	44.7	37.4	20.9	13.7
	K11							21.5	13.5	28.7	20.7	36.0	28.0	43.3	35.3	22.9	15.0
K12							20.0	11.4	27.3	18.6	34.6	25.9	41.9	33.3	25.0	16.4	
MAPS075S	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	2.7
	K7	10.4	4.8	15.2	9.7	25.3	19.9	35.4	29.9							20.3	14.8
	K8			13.1	6.8	23.1	16.9	33.3	27.0	43.2	37.0	53.3	47.0			23.2	16.9
	K9					21.0	14.1	31.2	24.1	41.1	34.1	51.2	44.2			26.1	19.0
	K10					19.0	11.1	28.8	21.2	39.0	31.2	49.1	41.2	59.1	51.2	29.0	21.1
	K11							27.0	18.3	37.0	28.3	47.0	38.4	57.0	48.4	31.9	23.2
K12							24.9	15.4	34.9	25.4	44.9	35.4	54.9	45.4	34.7	25.3	
MAPS083S	K5	23.3	16.1	31.1	24.0	46.8	39.7									23.0	15.8
	K6	20.1	11.5	28.0	19.3	43.7	35.1	59.4	50.7							27.6	19.0
	K7	17.0	6.9	24.8	14.8	40.5	30.5	56.2	46.2							32.2	22.1
	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					34.2	21.3	49.9	37.0	65.6	52.6	81.2	68.3			41.4	28.5
	K10					31.0	16.6	46.7	32.3	62.4	48.0	78.1	63.7	93.8	79.3	46.0	31.6
	K11							43.6	27.7	59.3	43.4	75.0	59.1	90.6	74.8	50.6	34.8
K12							40.4	23.2	56.1	38.9	71.7	54.5	87.4	70.2	55.2	38.0	
MAPS092S	K5	33.1	22.0	44.2	33.2	66.8	55.9									34.4	23.3
	K6	28.4	15.2	39.6	26.4	62.2	49.0	84.8	71.6							41.2	28.0
	K7	23.8	8.2	34.9	19.4	57.5	42.1	80.2	64.7							48.1	32.7
	K8			31.3	12.6	52.9	35.2	75.5	57.9	98.1	80.5	120.7	103.0			55.0	37.3
	K9					48.2	28.4	70.9	51.0	93.5	73.6	116.0	96.1			61.9	42.0
	K10					43.6	21.5	66.2	44.1	88.8	66.7	111.3	89.2	134.0	110.8	68.7	46.7
	K11							61.5	37.2	84.1	59.9	106.6	82.4	129.2	105.0	75.6	51.4
K12							56.8	30.4	79.4	53.0	101.9	75.5	124.5	98.1	82.5	56.0	
MAPS105S	K5	51.0	33.4	67.5	49.9	100.6	83.0									49.2	31.6
	K6	44.7	23.5	61.1	40.0	94.2	73.2	127.3	106.2							59.1	38.0
	K7	38.4	13.7	54.9	30.3	87.9	63.4	121.0	96.4							68.9	44.3
	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	102.0	66.5	135.1	99.6	168.2	132.6	201.2	165.7	98.4	63.3
	K11							95.7	57.0	128.7	90.1	161.8	123.1	194.8	156.2	108.3	69.6
K12							89.4	47.5	122.5	80.6	155.5	113.6	188.6	146.7	118.1	75.9	

MAPS series Stainless Steel Pneumatic Actuator

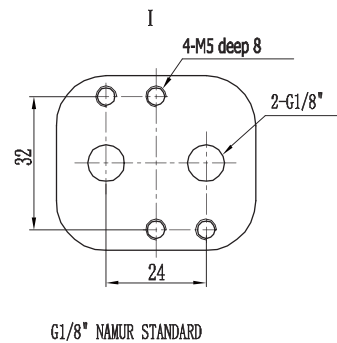
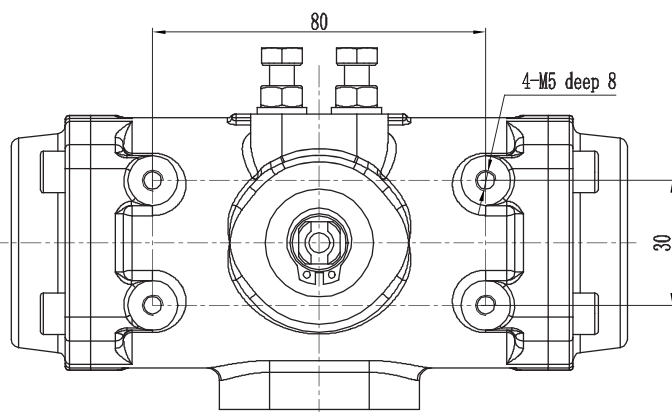
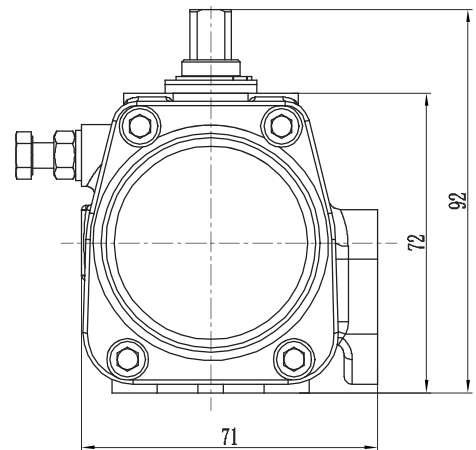
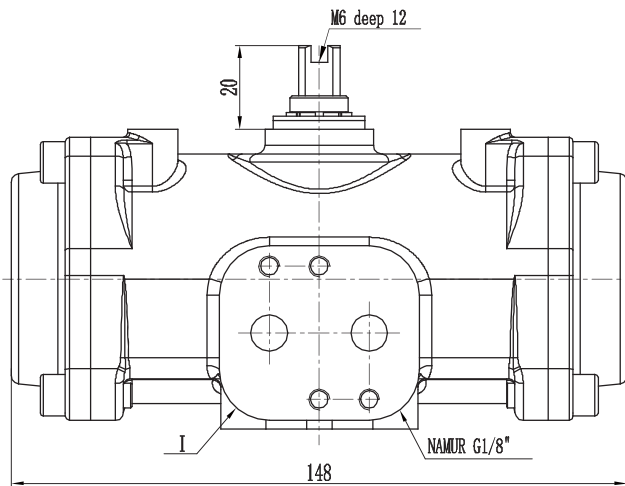
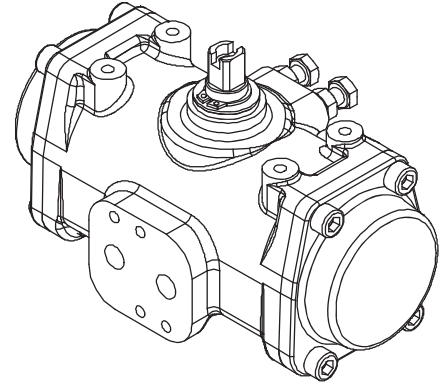
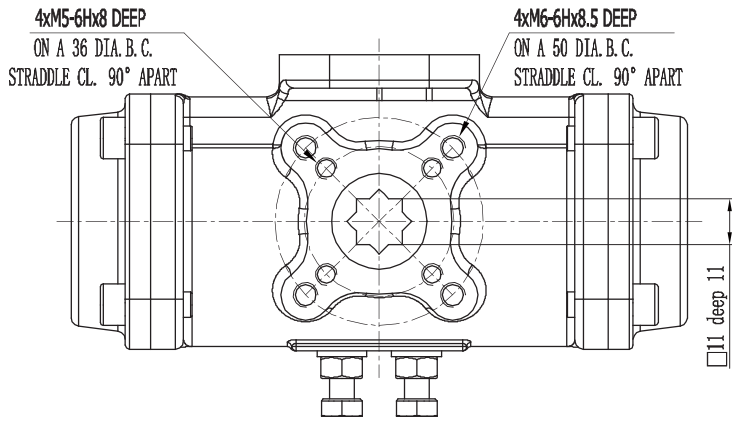
unit: Nm

		Output torque of air to springs														Springs' output	
Air pressure		2.5Bar		3Bar		4Bar		5Bar		6Bar		7Bar		8Bar			
Model	Spring Qty.	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
		Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
MAPS125S	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
	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
	K12							125	63	176	113	226	163	276	213	188	125
MAPS140S	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
MAPS160S	K5	193	124	259	191	392	324									208	140
	K6	165	83	232	149	365	282	498	416							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	624	473	757	606	458	307
	K12							330	165	463	298	596	431	729	564	500	335
MAPS190S	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
MAPS210S	K5	390	289	523	418	789	684									380	275
	K6	335	209	468	342	734	608	1000	874							456	330
	K7	280	133	413	266	679	632	945	798							532	385
	K8			258	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	1016	912	660
MAPS240S	K5	552	409	744	600	1129	985									554	410
	K6	470	247	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	1569	1311	1954	1696			998	739
	K10					718	431	1103	816	1488	1021	1872	1586	2257	1970	1108	821
	K11							1021	705	1406	1090	1791	1474	2176	1859	1219	903
	K12							939	594	1323	9794	1708	1363	2093	1748	1330	985
MAPS270S	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	2793	1887	1342

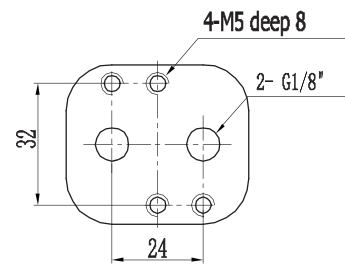
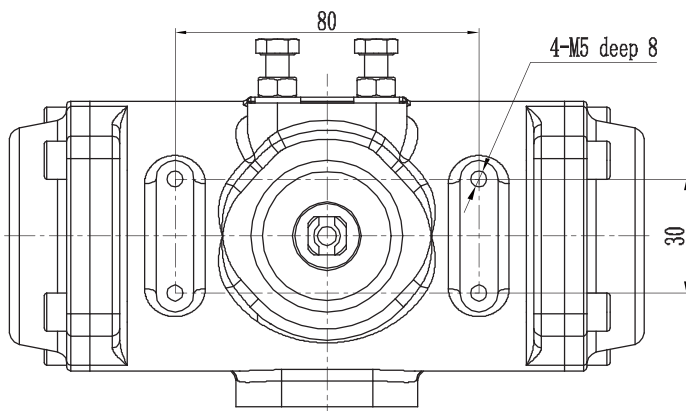
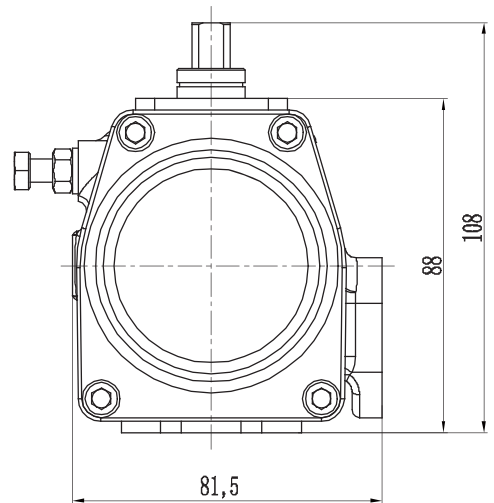
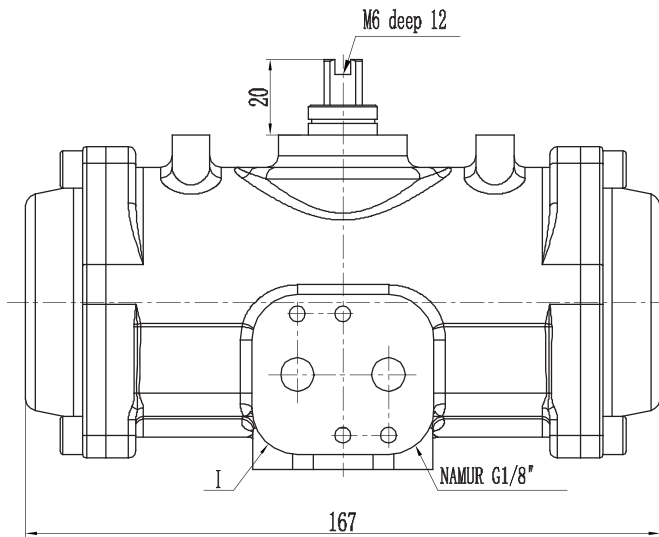
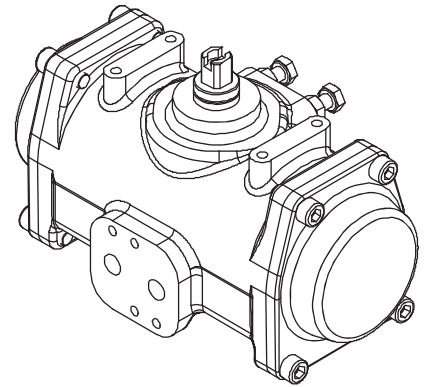
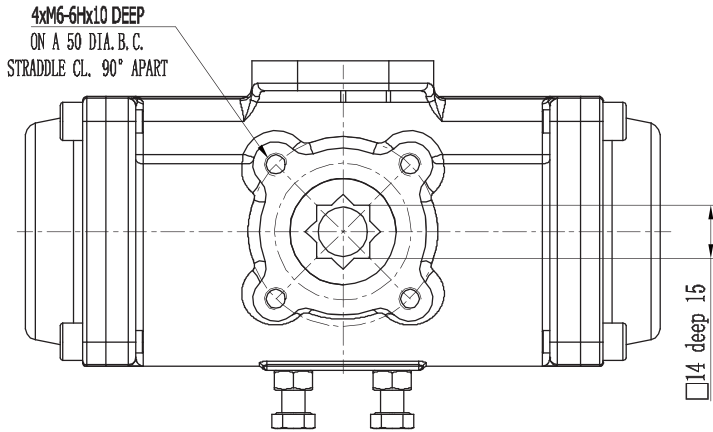
MAPS series Stainless Steel Pneumatic Actuator

■ **Dimension**

MAPS52



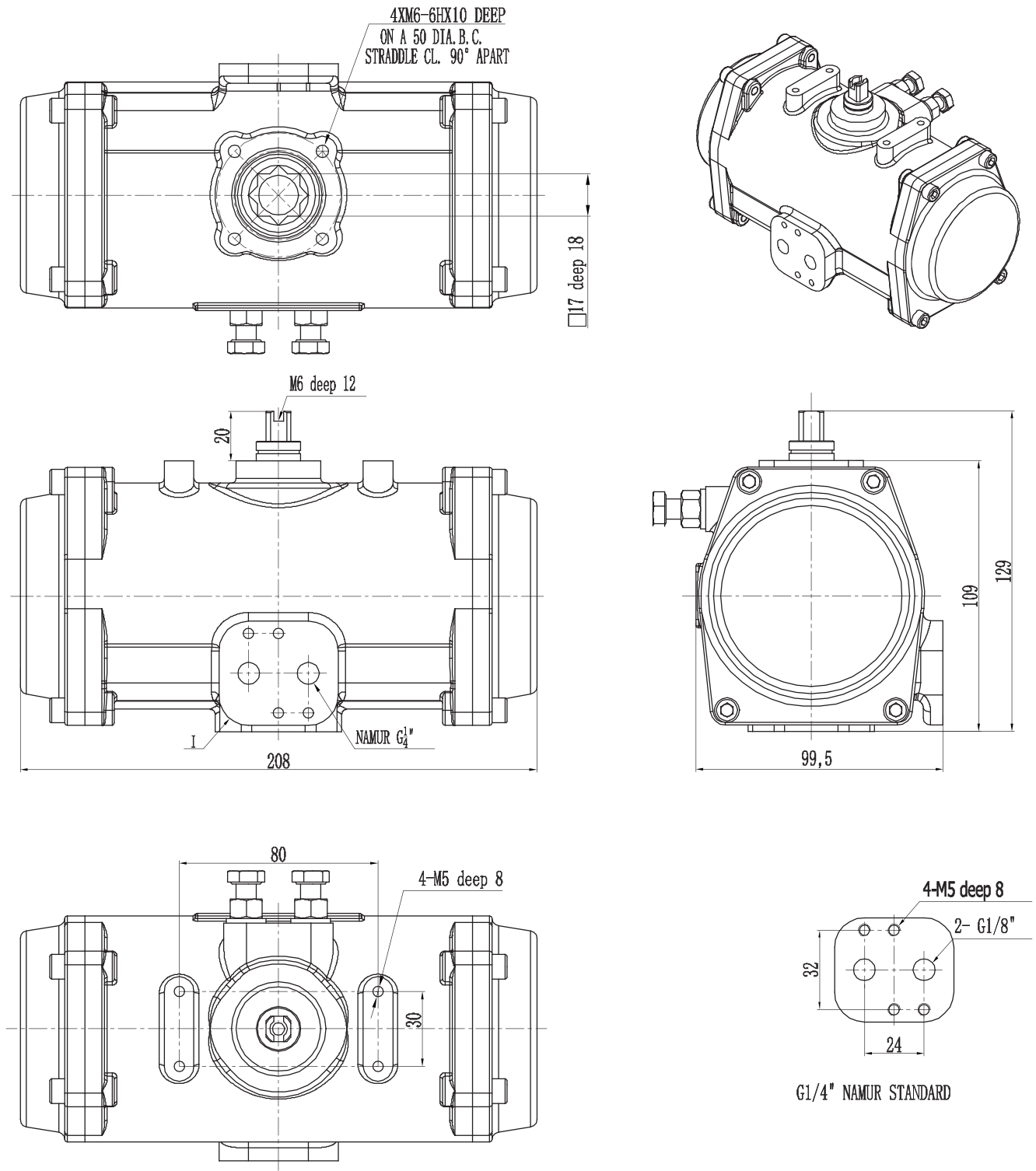
MAPS63



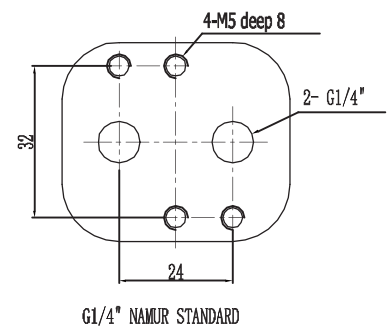
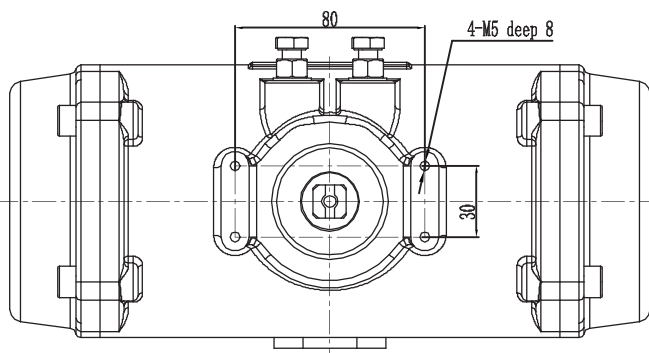
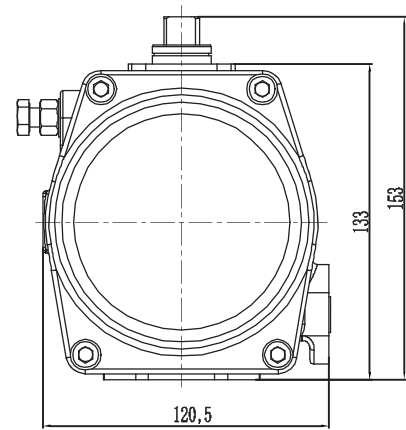
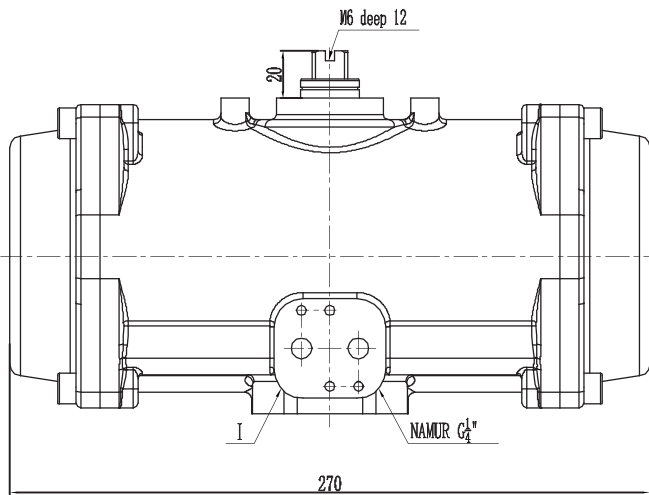
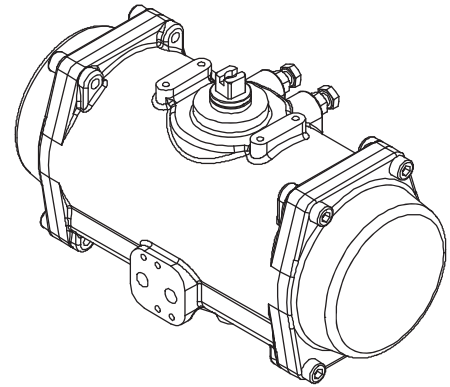
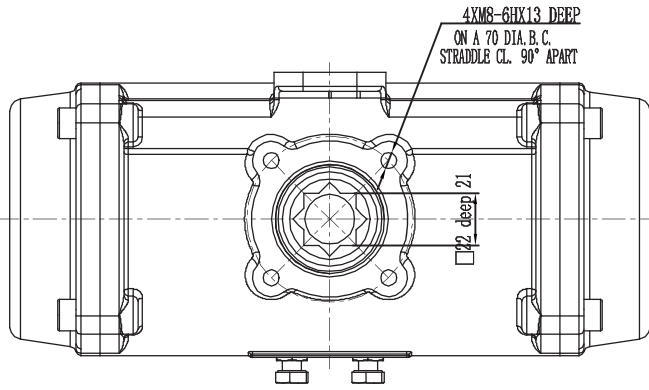
G1/8" NAMUR STANDARD

MAPS series Stainless Steel Pneumatic Actuator

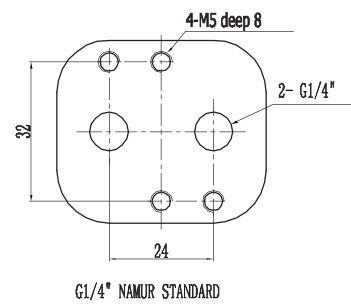
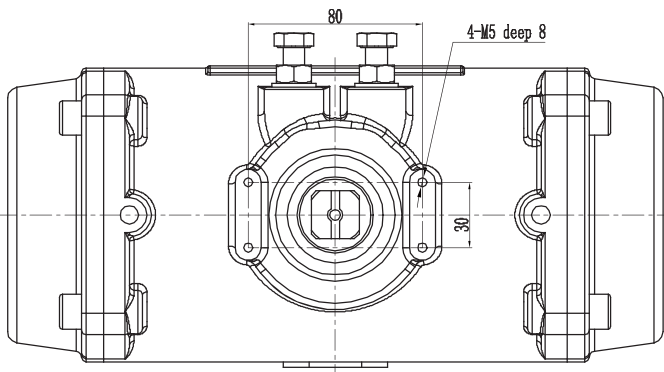
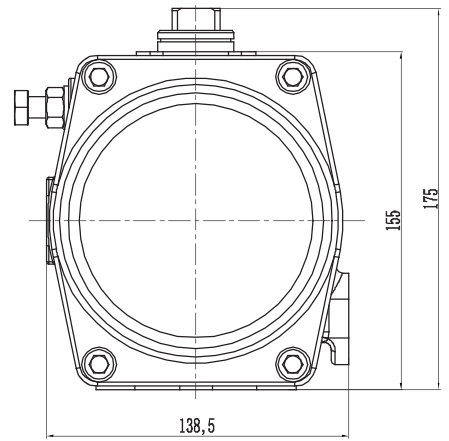
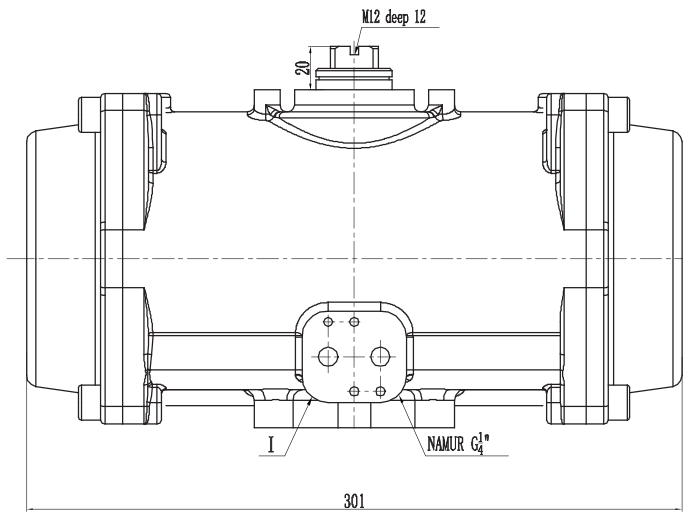
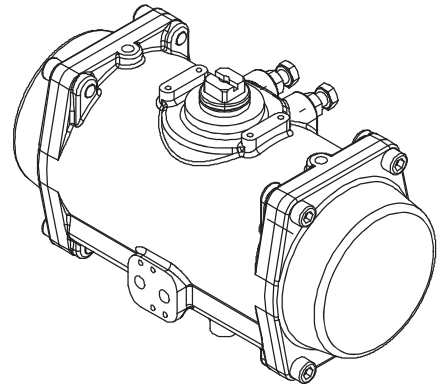
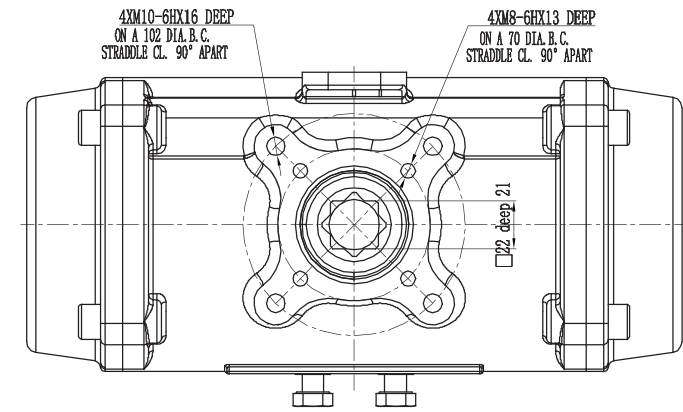
MAPS83



MAPS105

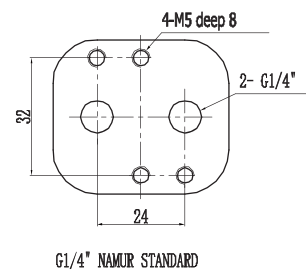
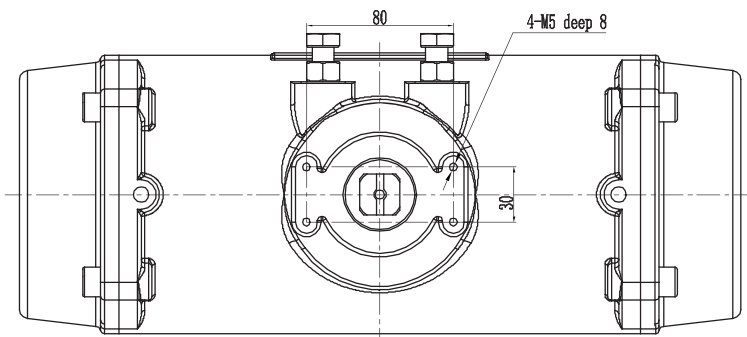
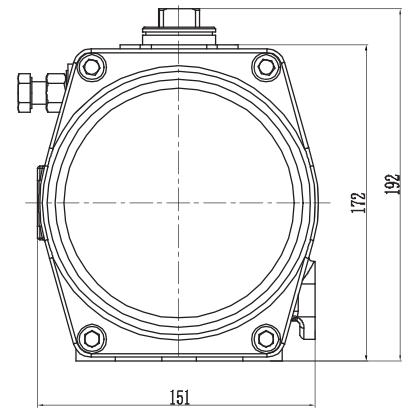
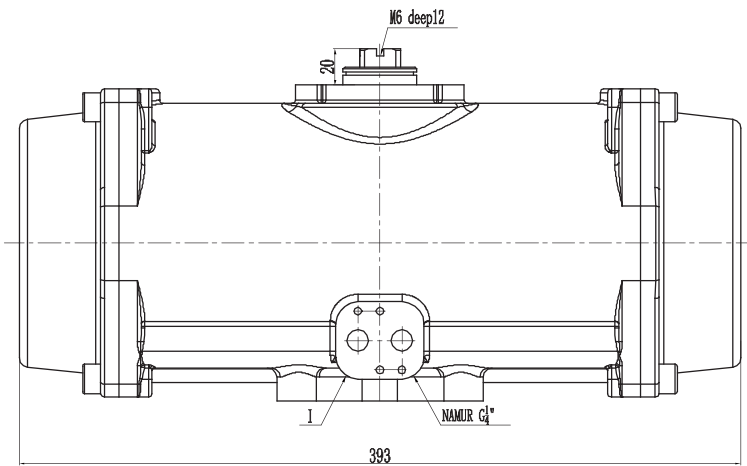
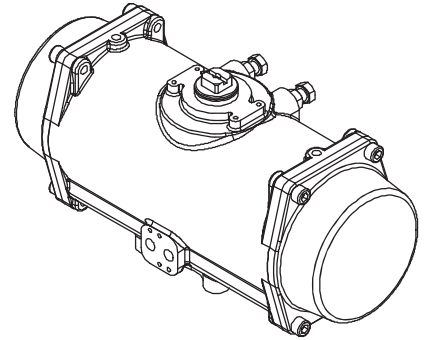
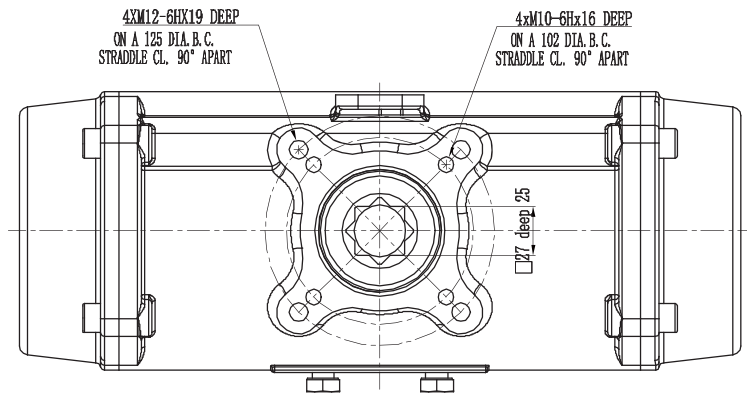


MAPS125



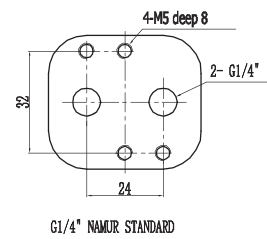
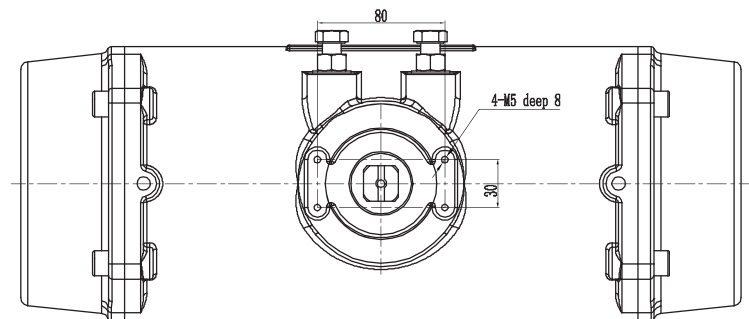
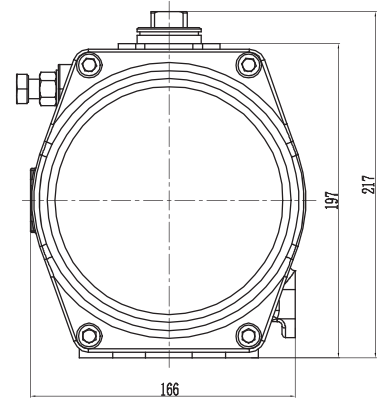
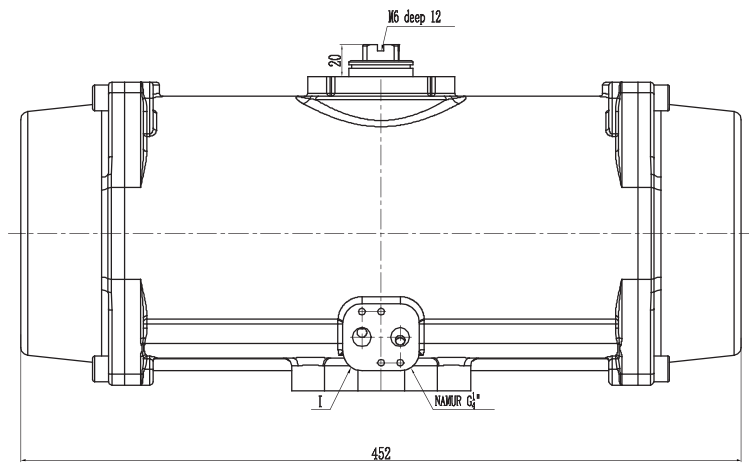
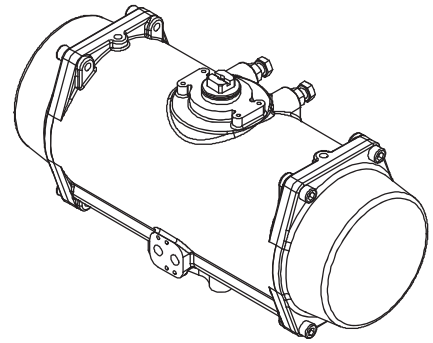
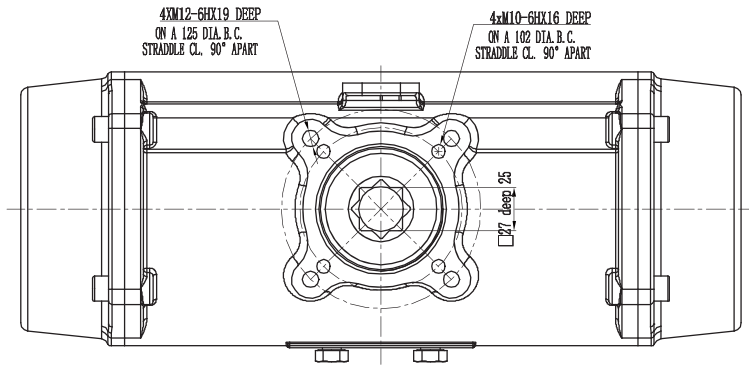
MAPS series Stainless Steel Pneumatic Actuator

MAPS140

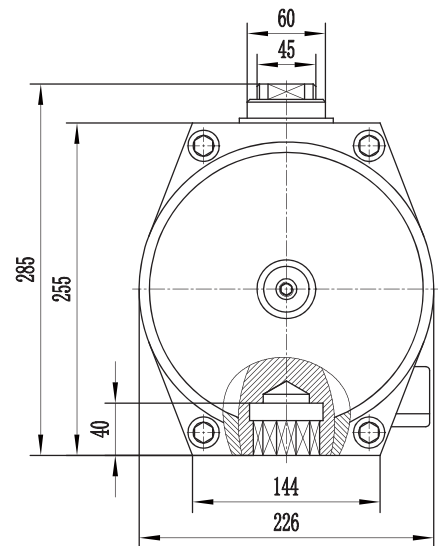
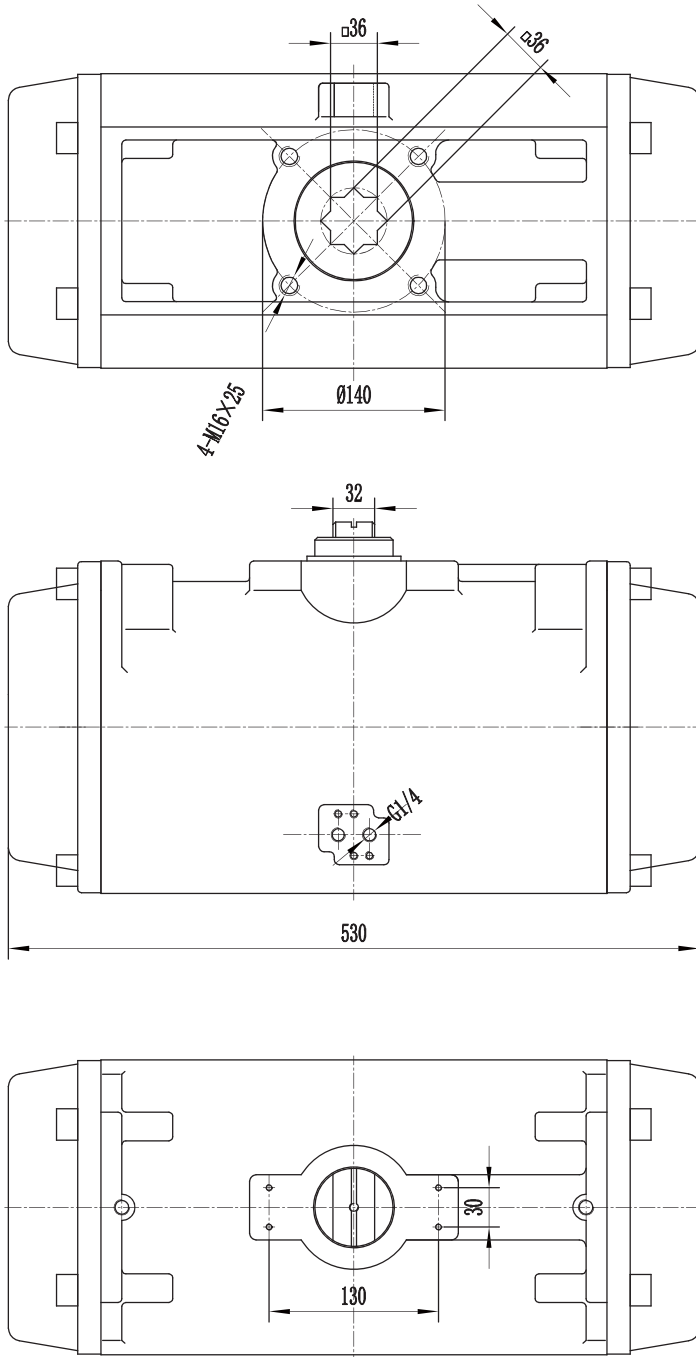


MAPS series Stainless Steel Pneumatic Actuator

MAPS160



MAPS210



■ Model Code

MAP [1] [2] [3] [4] [5] [6]

[1] Cylinder	[2] Acting Type	[3] Spring Qty.	[4] Travel ^[1]	[5] Ambient temperature	[6] Fail position (Single acting only)
32 : 32mm	S:Spring Acting	K5 : 5pcs	0 : 90°	S: -20~70°C	FC : Failure Close
40 : 40mm	D:Double Acting	K6 : 6pcs		L: -40~80°C	FO : Failure Open
52 : 52mm		...		H:-20~120°C	
63 : 63mm		K16:16pcs			
75 : 75mm		(For single			
83 : 83mm		Acting only)			
92 : 92mm					
105 : 105mm					
125 : 125mm					
140 : 140mm					
160 : 160mm					
190 : 190mm					
210 : 210mm					
240 : 240mm					
270 : 270mm					

■ Structural Features

Design and Construction

MPY series pneumatic and hydraulic actuators provide global customers the latest valve actuation design. It is a highly unique and reliable means of operating ball, butterfly or plug valves with 90 degree rotating mechanisms.

Robust yet Lightweight Design

Totally enclosed weatherproof center-body fabricated in carbon steel or ductile iron provides an excellent strength to weight ratio. The mechanism of piston and yoke has an advantageous torque output.



Modular Design

MPY series actuators share a modular construction design. The centre body is available in ten sizes. A pneumatic or hydraulic cylinder can be attached to either or both sides. A spring cartridge can also be fitted to either side for ESD (emergency shut down)applications. Modular construction and stocking of components facilitates quick delivery times.

Manual Override Options

A dependable manual override facility is an important part in many valve/actuator applications. MORC has a variety of override options available to meet any requirement. Available options include open or enclosed screws in both gear reducer and declutch override gear box, as well as a number of hydraulic override solutions.

Extensive Product Range

MORC offers the most extensive line of fluid power valve actuators. Products include low and high pressure pneumatic, hydraulic and pneumatic hydraulic actuators.

Minimum Maintenance

Every MPY actuator is built to provide long and efficient service with minimum maintenance. The design, engineering and materials used in their construction ensure optimum performance even in the harshest environments.

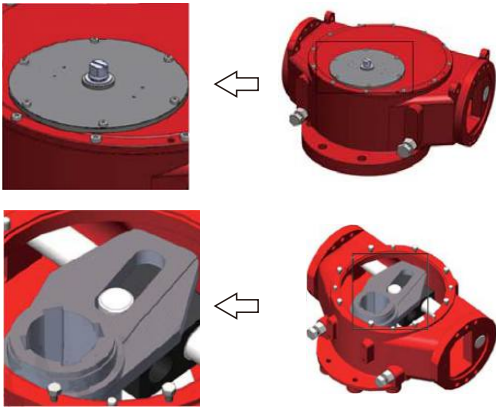
Complete Control Solutions

Air Control component packages are a part of any actuator/valve installation. MORC has extensive experience in the design and assembly of all types of air control systems to satisfy any customer requirement for on/off, control or ESD service. Control units can be mounted on a panel or in a cabinet and mounted either on the actuator or at a remote location.

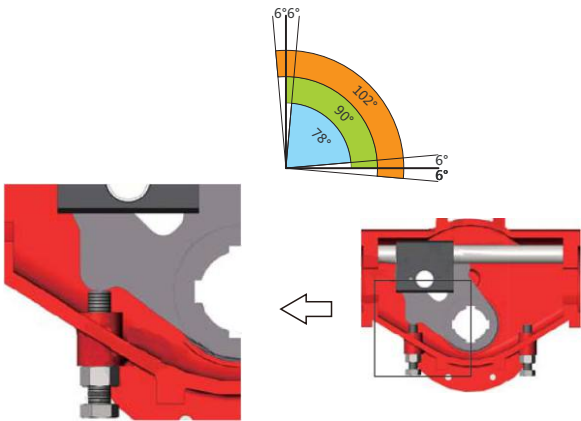
■ **Performance Characteristics**

The pinion shape conforms to the latest standards of ISO5211, NAMUR. The dimensions can be customized and the stainless steel is optionally available.

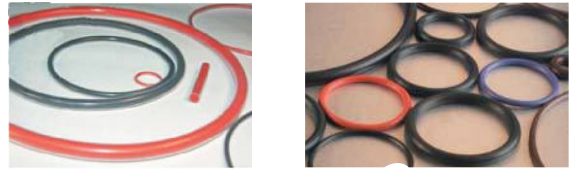
A Position indicator acc. to NAMUR is convenient for the assembly of accessories such as Limit Switch box, Positioner etc..



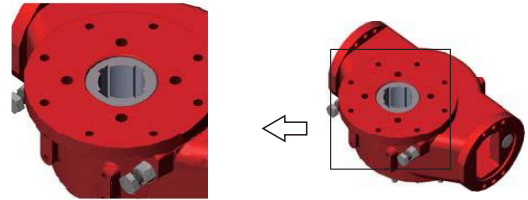
Integral bi-directional travel stops, adjustable from -6° to 96° of total valve travel, assist the HPY Series in prolonging valve seat integrity.



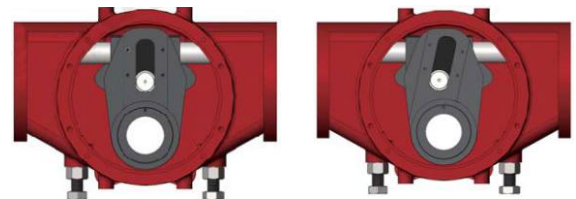
The dual-material rubber and PFA encapsulated O-rings can be applied to a wide range of temperature and conditions. A double O-ring and bearing design ensures the stability and dependability of the modular cylinder.



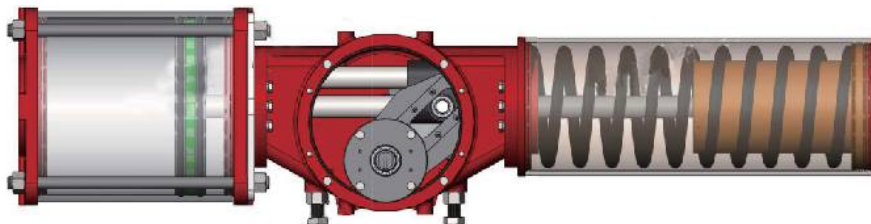
Made from low friction, long life compound material, to avoid any direct contact between metals. The maintenance is easy and convenient.



MPY actuators are available with either B or C body modules. B body modules provide a balanced torque ratio at both the break and end position. C body modules have a torque advantage in applications where higher break torque is needed to unseat the valve and less critical needs at the run or full open positions.



MPY actuators have torque outputs for spring return models up to 110,000Nm and double acting models up to 240,000Nm at operating pressures of 3~10 bar.



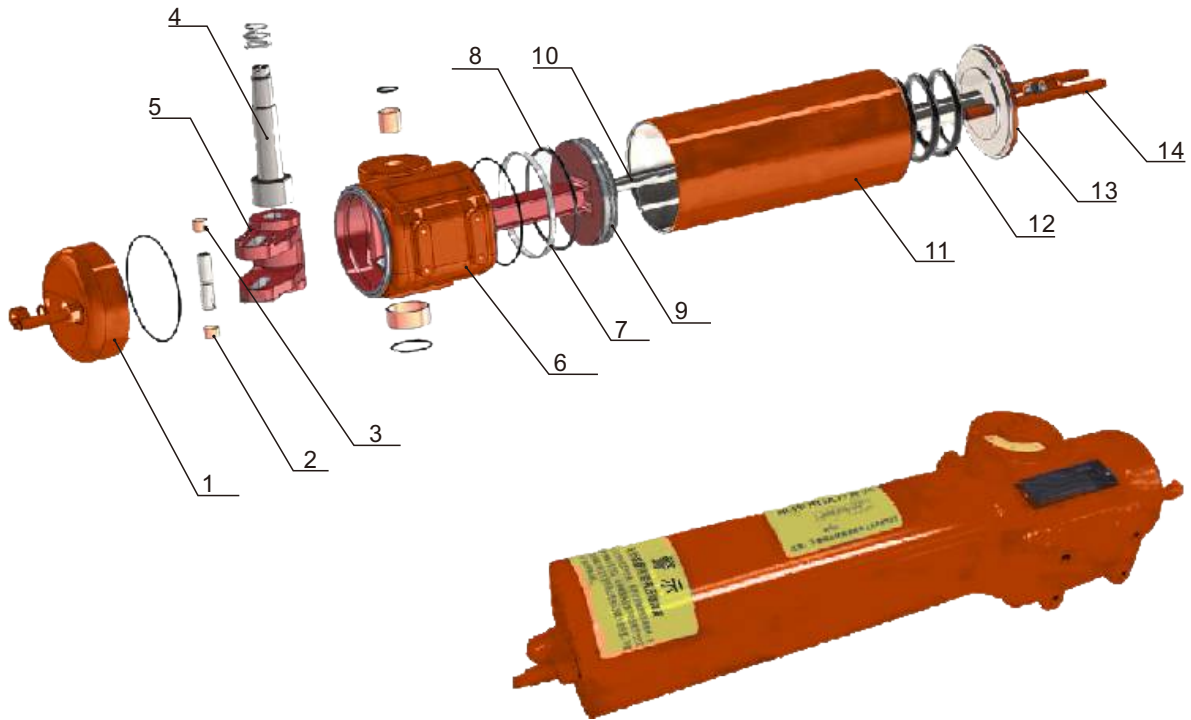
Operating temperatures:

Standard : 20°C to $+80^{\circ}\text{C}$

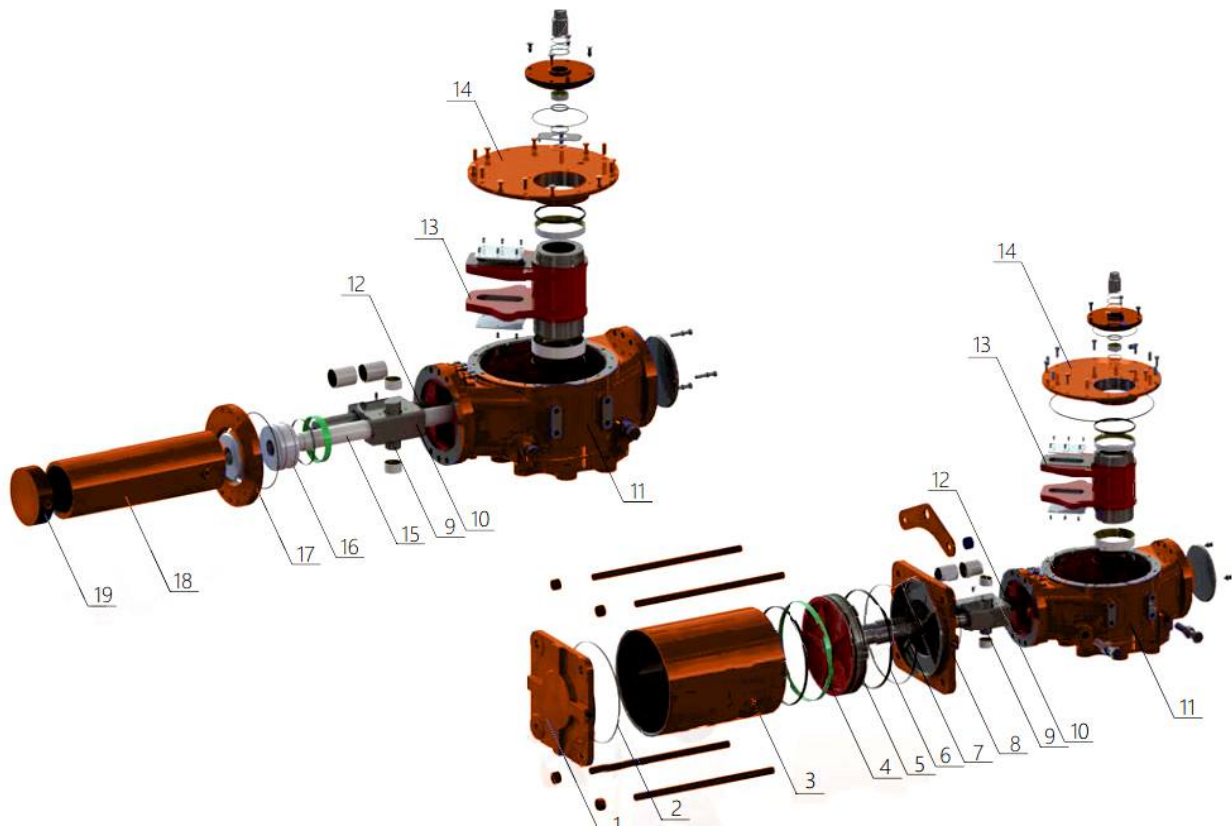
High Temperature: -15°C to $+150^{\circ}\text{C}$

Low Temperature: -40°C to $+80^{\circ}\text{C}$

■ Part and Material

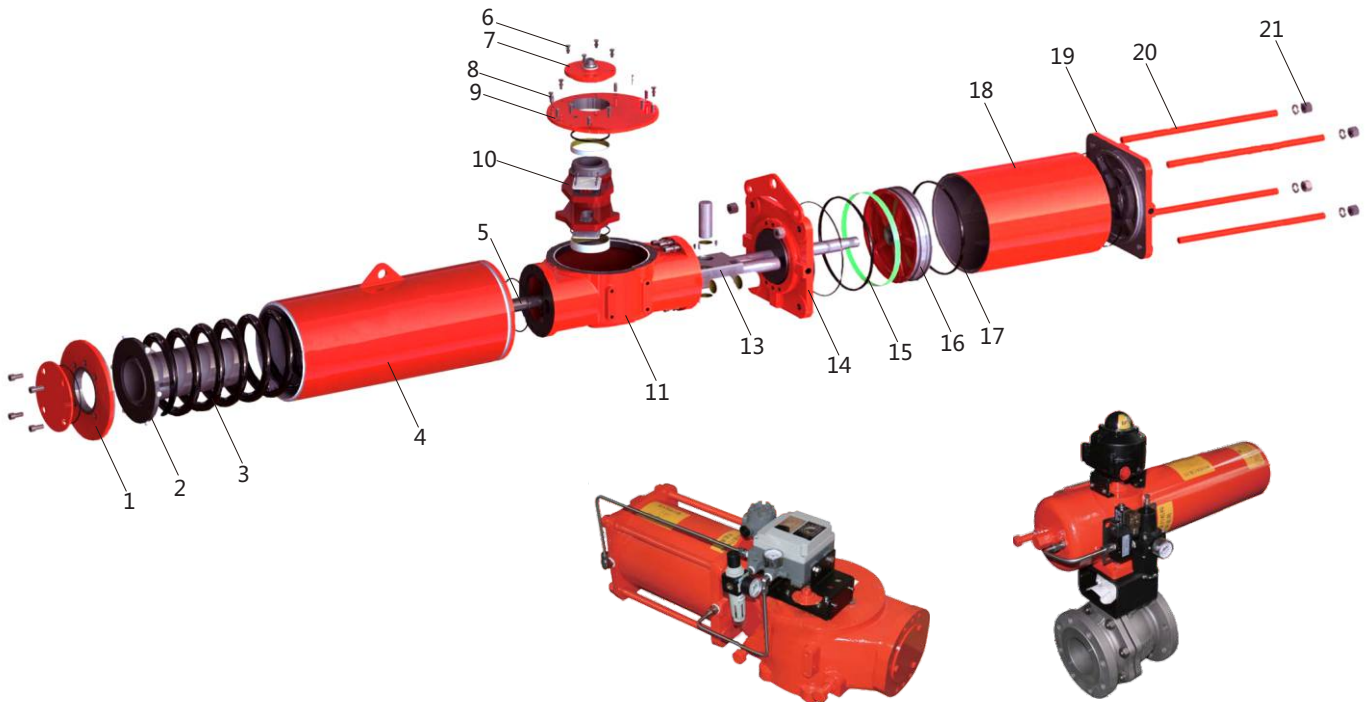


No.	Name	Qty.	Material	Optional
1	End Cap	1	Ductile Iron	Carbon Steel
2	Yoke Pin	1	Alloy Steel	
3	Bearing	2	Steel & PTFE	
4	Shaft	1	Carbon Steel	
5	Yoke	1	Ductile Iron	Carbon Steel
6	Center Body	1	Ductile Iron	Carbon Steel
7	Guide Ring	1	Resin	
8	O Ring	2	NBR	HNBR, VMQ, FVMQ
9	Piston	1	Ductile Iron	
10	Guide Rod	1	Alloy Steel	Carbon Steel
11	Cylinder	1	Carbon Steel	
12	Spring	1	Spring Steel	
13	Cylinder Cap	1	Ductile Iron	Carbon Steel
14	Stop Adjustment Screw	2	Carbon Steel	



No.	Name	Qty.	Material	Optional
1	Cylinder Cap	1	Ductile Iron	Carbon Steel
2	O ring	2	NBR	HNBR, VMQ, FVMQ
3	Cylinder	1	Carbon Steel	
4	Guide Ring	1	Resin	
5	Piston	1	Ductile Iron	Carbon Steel
6	O ring	2	NBR	HNBR, VMQ, FVMQ
7	Piston Rod	1	Alloy Steel	
8	Cylinder Seat	1	Ductile Iron	Carbon Steel
9	Yoke Pin	1	Alloy Steel	
10	Guide Block	1	Alloy Steel	
11	Center Body	1	Ductile Iron	Carbon Steel
12	Guide Rod	1	Alloy Steel	
13	Yoke	1	Ductile Iron	Carbon Steel
14	Center Body Cap	1	Ductile Iron	Carbon Steel
15	Piston Rod (Hydraulic)	1	Carbon Steel	
16	Piston (Hydraulic)	1	Carbon Steel	
17	Cylinder Seat (Hydraulic)	1	Carbon Steel	
18	Cylinder (Hydraulic)	1	Carbon Steel	
19	Cylinder Cap (Hydraulic)	1	Carbon Steel	

MPY Series Fork Type Actuator



Spring Tank Module

No.	Part Name	Qty.	Material
1	Tank Cap	1	Carbon Steel
2	Spring Seat	1	Carbon Steel
3	Spring	1	Spring Steel
4	Spring Tank	1	

Centre Body Module

No.	Part Name	Qty.	Material
5	Spring Stem	1	Carbon Steel
6	Screw	n	Carbon Steel
7	Indicator	1	Carbon Steel
8	Screw	n	Carbon Steel
9	Centre Body Cap	1	Ductile Iron
10	Yoke	1	Ductile Iron
11	Centre Body	1	Ductile Iron
12	Cap O ring	1	Rubber
13	Guide Block	1	Alloy Steel

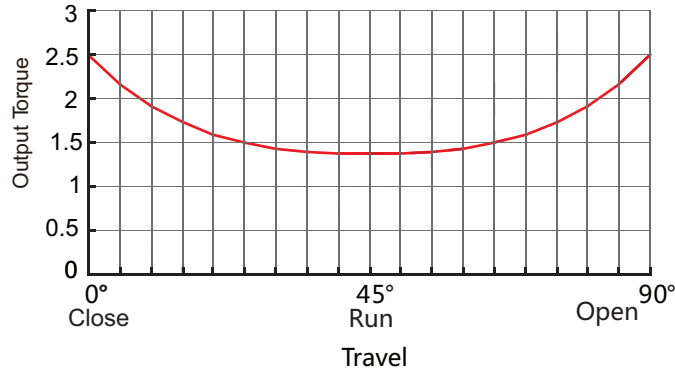
Cylinder Module

No.	Part Name	Qty.	Material
14	Cylinder Seat	1	Ductile Iron
15	O Ring	1	Rubber
16	Piston	1	Carbon Steel
17	Guide Ring	1	Resin
18	Cylinder	1	Carbon Steel
19	Cylinder Cap	1	Ductile Iron
20	Screw	n	Carbon Steel
21	Screw Nut	n	Carbon Steel

MPY Series Fork Type Actuator

■ **Output Torque**

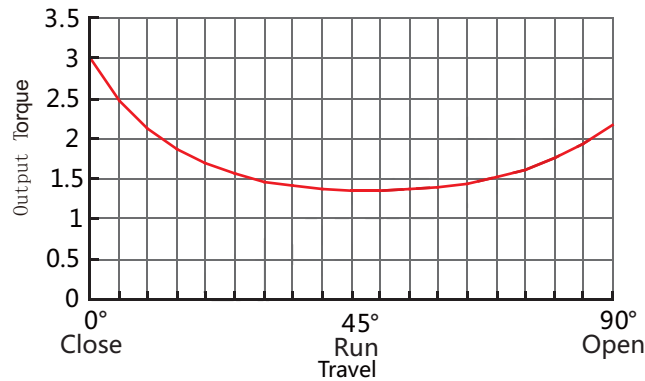
MPY-B Series Double Acting Actuator



Model	Output Torque (Nm) (Air Pressure (Mpa))											
	0.35			0.4			0.5			0.6		
	0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°
MPY-B04-125-DA	384	222	384	439	253	439	549	317	549	659	380	659
MPY-B05-160-DA	728	417	728	832	477	832	1041	596	1041	1249	715	1249
MPY-B06-201-DA	1269	670	1269	1451	766	1451	1814	958	1814	2154	1138	2154
MPY-B08-221-DA	2000	1056	2000	2286	1207	2286	2857	1509	2857	3428	1810	3428
MPY-B08-251-DA	2599	1372	2599	2970	1568	2970	3712	1960	3712	4455	2352	4455
MPY-B1-281-DA	3836	2026	3836	4384	2315	4384	5480	2894	5480	6576	3473	6576
MPY-B1-321-DA	5035	2659	5035	5754	3039	5754	7193	3798	7193	8631	4558	8631
MPY-B1-351-DA	6039	3189	6039	6902	3644	6902	8627	4556	8627			
MPY-B2-351-DA	7193	3798	7193	8220	4341	8220	10275	5426	10275	12330	6511	12330
HPY-B2-401-DA	9440	4985	9440	10789	5697	10789	13486	7122	13486	16184	8546	16184
HPY-B2-451-DA	11988	6330	11988	13700	7235	13700	17126	9043	17126			
MPY-B3-451-DA	14306	7555	14306	16350	8634	16350	20438	10792	20438	24525	12951	24525
MPY-B3-501-DA	17723	9359	17723	20255	10696	20255	25318	13369	25318	30382	16043	30382
MPY-B3-561-DA	22297	11774	22297	25483	13456	25483	31854	16820	31854	38224	20184	38224
MPY-B3-601-DA	25635	13537	25635	29297	15470	29297	36621	19338	36621			
MPY-B4-601-DA	30797	16263	30797	35197	18586	35197	43996	23232	43996	52796	27879	52796
MPY-B4-631-DA	33986	17946	33986	38841	20510	38841	48552	25638	48552	58262	30765	58262
MPY-B4-502-DA	42584	22487	42584	48668	25699	48668	60835	32124	60835			
MPY-B4-701-DA	42031	22195	42031	48036	25365	48036	60044	31707	60044			
MPY-B4-562-DA	53576	28291	53576	61230	32332	61230						
MPY-B4-801-DA	54993	29039	54993	62849	33188	62849						
MPY-B5-701-DA	50399	26614	50399	57599	30416	57599	71999	38019	71999	86399	45623	86399
MPY-B5-562-DA	64145	33872	64145	73308	38711	73308	91635	48388	91635	109963	58066	109963
MPY-B5-801-DA	65984	34843	65984	75410	39820	75410	94263	49776	94263	113115	59731	113115
MPY-B5-602-DA	73786	38963	73786	84327	44529	84327	105409	55661	105409	126491	66794	126491
MPY-B5-632-DA	81454	43012	81454	93090	49156	93090	116362	61446	116362			
MPY-B5-901-DA	83646	44169	83646	95595	50479	95595	119494	63099	119494			
MPY-B5-702-DA	100799	53227	100799	115199	60831	115199						
MPY-B5-1001-DA	103386	54593	103386	118155	62392	118155						
MPY-B6-901-DA	112390	59348	112390	128446	67826	128446	160558	84783	160558	192669	101740	192669
MPY-B6-702-DA	135271	71430	135271	154596	81635	154596	193245	102043	193245	231894	122452	231894
MPY-B6-1001-DA	138964	73380	138964	158816	83863	158816	198519	104829	198519	238223	125795	238223
MPY-B6-802-DA	177229	93586	177229	202547	106956	202547	253184	133695	253184			
MPY-B6-902-DA	224781	118696	224781	256893		256893						

MPY Series Fork Type Actuator

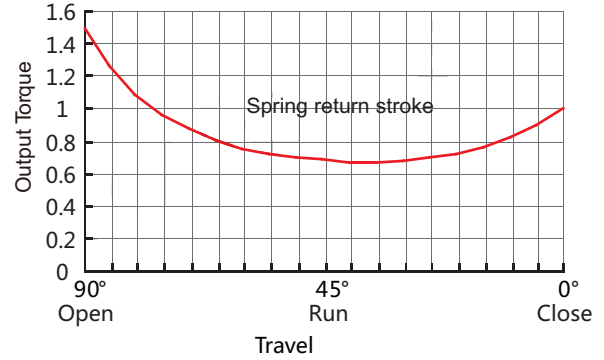
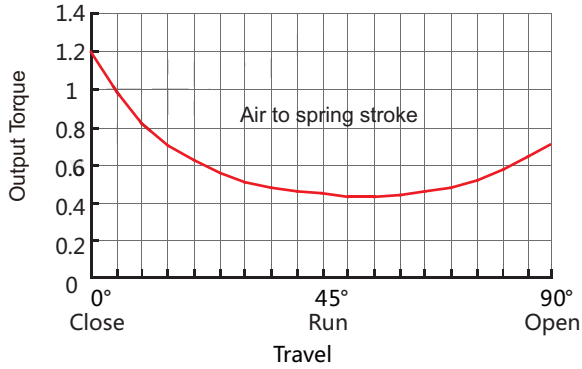
MPY-C Series Double Acting Actuator



Model	Output Torque (Nm) (Air Pressure (Mpa))											
	3.5br			4bar			5bar			6bar		
	0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°
MPY-C06-201-DA	1523	663	1068	1741	758	1220	2176	948	1525			
MPY-C08-221-DA	2400	1045	1682	2743	1194	1922	3428	1493	2403	4114	1792	2883
MPY-C08-251-DA	3118	1358	2185	3564	1552	2498	4455	1940	3122			
MPY-C1-281-DA	4603	2005	3226	5261	2291	3687	6576	2864	4609	7891	3436	5531
MPY-C1-321-DA	6042	2631	4234	6905	3007	4839	8631	3759	6049			
MPY-C2-351-DA	8631	3759	6049	9864	4296	6913	12330	5369	8642	14796	6443	10370
MPY-C2-401-DA	11329	4933	7939	12947	5638	9074	16184	7047	11342	19420	8457	13610
MPY-C2-451-DA	14385	6264	10082	16441	7159	11522						
MPY-C3-451-DA	17168	7476	12032	19620	8544	13750	24525	10680	17188	29430	12816	20626
MPY-C3-501-DA	21267	9261	14905	24306	10584	17034	30382	13230	21293			
MPY-C3-561-DA	26757	11652	18752	30579	13316	21431						
MPY-C4-561-DA	32146	13998	22529	36738	15998	25747	45922	19997	32184	55107	23997	38621
MPY-C4-601-DA	36957	16093	25901	42237	18392	29601	52796	22990	37001	63355	27589	44401
MPY-C4-631-DA	40783	17760	28582	46610	20297	32666	58262	25371	40832			
MPY-C4-701-DA	50437	21963	35348	57643	25101	40398						
MPY-C5-701-DA	60479	26336	42386	69119	30099	48441	86399	37623	60551	103679	45148	72662
MPY-C5-562-DA	76974	33519	53946	87970	38307	61652	109963	47884	77065	131955	57461	92478
MPY-C5-801-DA	79181	34480	55492	90492	39406	63420	113115	49257	79275	135738	59109	95130
MPY-C5-602-DA	88544	38557	62054	101193	44065	70919	126491	55082	88649			
MPY-C5-632-DA	97744	42564	68503	111708	48644	78289						
MPY-C5-901-DA	100375	43709	70346	114714	49954	80396						
MPY-C6-801-DA	106337	46306	74525	121528	52921	85171	151911	66151	106464	182293	79381	127757
MPY-C6-901-DA	134869	58730	94520	154136	67120	108023	192669	83900	135029	231203	100680	162035
MPY-C6-702-DA	162326	70686	113763	185515	80784	130015	231894	100981	162519			
MPY-C6-1001-DA	166756	72616	116868	190579	82989	133564	238223	103737	166955			
MPY-C6-802-DA	212675	92611	149050	243057		170342						

MPY Series Fork Type Actuator

MPY-B Series Single Acting Actuator (FC)



Model	Air to Spring (4Bar)			Spring			Air to Spring(5Bar)			Spring			Air to Spring(6bar)			Spring		
	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°
MPY-B04-125-SRC4	269	105	125	292	110	148	373	160	230	292	110	148	478	213	334	292	110	148
MPY-B04-125-SRC5							336	132	160	362	137	186	441	186	264	362	137	186
MPY-B04-125-SRC6													404	158	188	438	165	222
MPY-B05-160-SRC4	511	199	241	549	207	279	710	300	440	549	207	279	907	401	638	549	207	279
MPY-B05-160-SRC5							640	248	306	683	258	349	838	349	504	683	258	349
MPY-B05-160-SRC6													769	298	365	822	310	418
MPY-B06-201-SRC4	934	383	549	902	383	517	1296	575	911	902	383	517	1659	766	1274	902	383	517
MPY-B06-201-SRC5							1167	479	686	1128	479	646	1530	670	1049	1128	479	646
MPY-B06-201-SRC6													1391	567	806	1370	582	785
MPY-B06-221-SRC4	1116	452	635	1128	479	646	1557	685	1076	1128	479	646	1997	917	1516	1128	479	646
MPY-B06-221-SRC5							1418	582	833	1370	582	785	1858	814	1274	1370	582	785
MPY-B06-221-SRC6													1701	698	1000	1644	698	942
MPY-B08-221-SRC4	1449	587	834	1452	620	837	2020	889	1405	1452	620	837	2591	1190	1976	1452	620	837
MPY-B08-221-SRC5							1830	748	1075	1782	761	1027	2401	1049	1646	1782	761	1027
MPY-B08-221-SRC6													2132	850	1180	2248	960	1296
MPY-B08-251-SRC4	1943	807	1188	1782	761	1027	2685	1199	1930	1782	761	1027	3428	1591	2673	1782	761	1027
MPY-B08-251-SRC5							2416	1000	1464	2248	960	1296	3159	1392	2207	2248	960	1296
MPY-B08-251-SRC6													2828	1147	1633	2822	1205	1627
MPY-B08-281-SRC4	2445	1016	1493	2248	960	1296	3381	1509	2429	2248	960	1296	4316	2003	3364	2248	960	1296
MPY-B08-281-SRC5							3050	1264	1855	2822	1205	1627	3985	1758	2790	2822	1205	1627
MPY-B08-281-SRC6													3612	1481	2142	3470	1482	2000
MPY-B1-281-SRC4	2821	1157	1670	2714	1158	1563	3917	1736	2766	2714	1158	1563	5013	2315	3860	2714	1158	1563
MPY-B1-281-SRC5							3478	1411	2004	3476	1483	2002	4574	1990	3100	3476	1483	2002
MPY-B1-281-SRC6													4116	1651	2305	4271	1822	2460
MPY-B1-321-SRC4	3752	1556	2278	3476	1483	2002	5191	2315	3717	3476	1483	2002	6629	3075	5155	3476	1483	2002
MPY-B1-321-SRC5							4733	1976	2922	4271	1822	2460	6171	2736	4360	4271	1822	2460
MPY-B1-321-SRC6													5408	2171	3034	5597	2387	3223
MPY-B1-351-SRC4	4442	1822	2631	4271	1822	2460	6167	2734	4356	4271	1822	2460	7892	3645	6081	4271	1822	2460
MPY-B1-351-SRC5							5404	2169	3030	5597	2387	3223	7129	3080	4755	5597	2387	3223
MPY-B1-351-SRC6													6323	2483	3356	6996	2984	4029

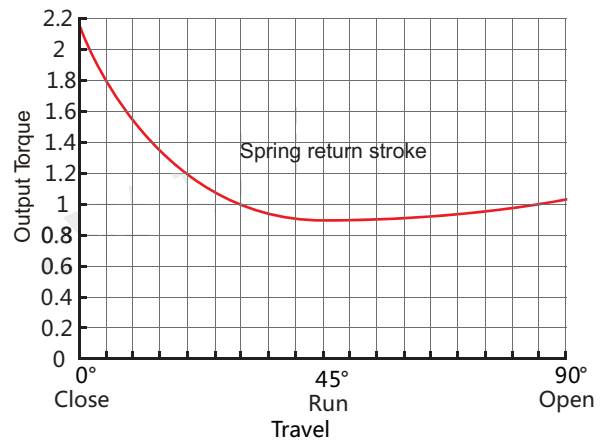
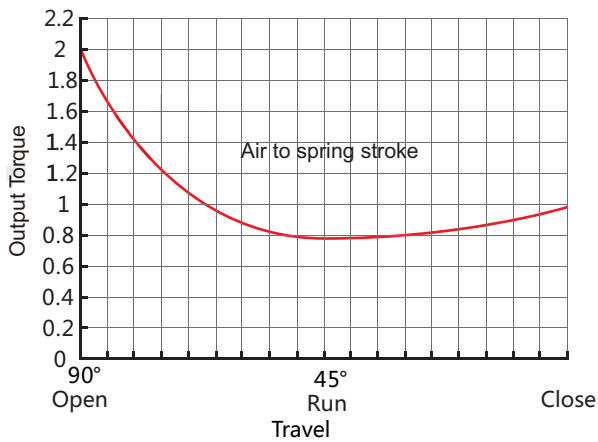
MPY Series Fork Type Actuator

Model	Air to Spring (4Bar)			Spring			Air to Spring(5Bar)			Spring			Air to Spring (6Bar)			Spring		
	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°
MPY-B1-401-SRC4	5819	2388	3445	5597	2387	3223	8080	3582	5706	5597	2387	3223	10340	4775	7966	5597	2387	3223
MPY-B1-401-SRC5							7274	2985	4307	6996	2984	4029	9534	4178	6567	6996	2984	4029
MPY-B1-401-SRC6													8729	3581	5168	8395	3581	4834
MPY-B2-401-SRC4	6943	2848	4110	6679	2849	3846	9640	4273	6807	6679	2849	3846	12338	5697	9505	6679	2849	3846
MPY-B2-401-SRC5							8603	3505	5005	8481	3617	4883	11301	4929	7703	8481	3617	4883
MPY-B2-401-SRC6													10080	4024	5582	10602	4522	6104
MPY-B2-451-SRC4	8817	3618	5219	8481	3617	4883	12243	5426	8645	8481	3617	4883	15668	7235	12070	8481	3617	4883
MPY-B2-451-SRC5							11022	4521	6524	10602	4522	6104	14447	6330	9949	10602	4522	6104
MPY-B2-451-SRC6													13226	5426	7829	12722	5426	7325
MPY-B3-451-SRC4	10522	4317	6232	10118	4317	5828	14610	6475	10320	10118	4317	5828	18697	8634	14407	10118	4317	5828
MPY-B3-451-SRC5							13186	5420	7847	12591	5372	7252	17273	7579	11934	12591	5372	7252
MPY-B3-451-SRC6													15500	6266	8857	15668	6685	9025
MPY-B3-501-SRC4	13003	5324	7664	12591	5372	7252	18066	7997	12727	12591	5372	7252	23130	10671	17791	12591	5372	7252
MPY-B3-501-SRC5							16293	6684	9650	15668	6685	9025	21357	9358	14714	15668	6685	9025
MPY-B3-501-SRC6													19028	7633	10671	19711	8410	11354
MPY-B3-561-SRC4	16458	6771	9815	15668	6685	9025	22829	10135	16186	15668	6685	9025	29199	13499	22556	15668	6685	9025
MPY-B3-561-SRC5							20500	8410	12143	19711	8410	11354	26870	11774	18513	19711	8410	11354
MPY-B3-561-SRC6													24600	10092	14570	23654	10092	13624
MPY-B3-631-SRC4	20977	8662	12619	19711	8410	11354	29059	12930	20702	19711	8410	11354	37142	17198	28784	19711	8410	11354
MPY-B3-631-SRC5							26788	11248	16759	23654	10092	13624	34871	15516	24842	23654	10092	13624
MPY-B3-631-SRC6													31210	12804	18486	30010	12804	17286
MPY-B4-631-SRC4	24997	10255	14784	24057	10255	13844	34708	15383	24495	24057	10255	13844	44418	20510	34205	24057	10255	13844
MPY-B4-631-SRC5							31246	12819	18481	30071	12819	17306	40956	17946	28191	30071	12819	17306
MPY-B4-631-SRC6													35860	14171	19335	38927	16594	22402
MPY-B4-701-SRC4	30730	12546	17964	30071	12819	17306	42739	18888	29973	30071	12819	17306	54748	25229	41982	30071	12819	17306
MPY-B4-701-SRC5							37643	15113	21118	38927	16594	22402	49651	21454	33126	38927	16594	22402
MPY-B4-701-SRC6													44052	17306	23396	48657	20742	28002
MPY-B4-801-SRC4	40447	16594	23922	38927	16594	22402	56160	24891	39635	38927	16594	22402	71872	33188	55347	38927	16594	22402
MPY-B4-801-SRC5							50560	20743	29904	48657	20742	28002	66272	29040	45616	48657	20742	28002
MPY-B4-801-SRC6													60671	24891	35884	58390	24891	33603
MPY-B5-801-SRC4	48531	19910	28703	46707	19910	26879	67384	29865	47556	46707	19910	26879	86236	39820	66408	46707	19910	26879
MPY-B5-801-SRC5							60189	24536	35054	59209	25240	34074	79041	34491	53906	59209	25240	34074
MPY-B5-801-SRC6													70523	28181	39104	74011	31550	42592
MPY-B5-901-SRC4	61522	25240	36387	59209	25240	34074	85421	37860	60285	59209	25240	34074	109319	50479	84184	59209	25240	34074
MPY-B5-901-SRC5							76902	31550	45483	74011	31550	42592	100801	44169	69382	74011	31550	42592
MPY-B5-901-SRC6													92283	37860	54580	88813	37860	51110
MPY-B6-801-SRC4	65176	26739	38729	62545	26739	36098	90495	40108	64047	62545	26739	36098	115813	53478	89365	62545	26739	36098
MPY-B6-801-SRC5							80809	32934	47266	79327	33913	45783	106128	46304	72584	79327	33913	45783
MPY-B6-801-SRC6													94682	37825	52752	99158	42392	57229
MPY-B6-901-SRC4	82663	33913	49120	79327	33913	45783	114775	50870	81231	79327	33913	45783	146887	67826	113343	79327	33913	45783
MPY-B6-901-SRC5							103329	42392	61400	99158	42392	57229	135441	59348	93511	99158	42392	57229
MPY-B6-901-SRC6													121910	49325	70067	122603	52414	70759
MPY-B6-1001-SRC4	101587	41472	59657	99158	42392	57229	141291	62437	99361	99158	42392	57229	180995	83403	139065	99158	42392	57229
MPY-B6-1001-SRC5							127760	52414	75917	122603	52414	70759	167464	73380	115621	122603	52414	70759
MPY-B6-1001-SRC6													153312	62897	91100	147123	62897	84911

The torque of the springs can be customized to your needs.

MPY Series Fork Type Actuator

MPY-B Series Single Acting Actuator (FO)



Model	Air to Spring(4Bar)			Spring			Air toSpring(5bar)			Spring			Air toSpring(6bar)			Spring		
	90°	45°	0°	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°	0°	45°	90°
MPY-B04-125-SRO4	269	105	125	292	110	148	373	160	230	292	110	148	478	213	334	292	110	148
MPY-B04-125-SRO5							336	132	160	362	137	186	440	186	264	362	137	186
MPY-B04-125-SRO6													404	158	188	438	165	222
MPY-B05-160-SRO4	511	199	241	549	207	279	710	300	440	549	207	279	907	401	638	549	207	279
MPY-B05-160-SRO5							640	248	306	683	258	349	838	349	504	683	258	349
MPY-B05-160-SRO6													769	298	365	822	310	418
MPY-B06-201-SRO4	934	383	549	902	383	517	1296	575	911	902	383	517	1659	766	1274	902	383	517
MPY-B06-201-SRO5							1167	479	686	1128	479	646	1530	670	1049	1128	479	646
MPY-B06-201-SRO6													1391	567	806	1370	582	785
MPY-B06-221-SRO4	1116	452	635	1128	479	646	1557	685	1076	1128	479	646	1997	917	1516	1128	479	646
MPY-B06-221-SRO5							1418	582	833	1370	582	785	1858	814	274	1370	582	785
MPY-B06-221-SRO6													1701	698	1000	1644	698	942
MPY-B08-221-SRO4	1449	587	834	1452	620	837	2020	889	1405	1452	620	837	2591	1190	1976	1452	620	837
MPY-B08-221-SRO5							1830	748	1075	1782	761	1027	2401	1049	1646	1782	761	1027
MPY-B08-221-SRO6													2132	850	1180	2248	960	1296
MPY-B08-251-SRO4	1943	807	1188	1782	761	1027	2685	1199	1930	1782	761	1027	3428	1591	2673	1782	761	1027
MPY-B08-251-SRO5							2416	1000	1464	2248	960	1296	3159	1392	2207	2248	960	1296
MPY-B08-251-SRO6													2828	1147	1633	2822	1205	1627
MPY-B08-281-SRO4	2445	1016	1493	2248	960	1296	3381	1509	2429	2248	960	1296	4316	2003	3364	2248	960	1296
MPY-B08-281-SRO5							3050	1264	1855	2822	1205	1627	3985	1758	2790	2822	1205	1627
MPY-B08-281-SRO6													3612	1481	2142	3470	1482	2000
MPY-B1-281-SRO4	2821	1157	1670	2714	1158	1563	3917	1736	2766	2714	1158	1563	5013	2315	3862	2714	1158	1563
MPY-B1-281-SRO5							3478	1411	2004	3476	1483	2002	4574	1990	3100	3476	1483	2002
MPY-B1-281-SRO6													4116	1651	2305	4271	1822	2460
MPY-B1-321-SRO4	3752	1556	2278	3476	1483	2002	5191	2315	3717	3476	1483	2002	6629	3075	5155	3476	1483	2002
MPY-B1-321-SRO5							4733	1976	2922	4271	1822	2460	6171	2736	4360	4271	1822	2460
MPY-B1-321-SRO6													5408	2171	3034	5597	2387	3223
MPY-B1-351-SRO4	4442	1822	2631	4271	1822	2460	6167	2734	4356	4271	1822	2460	7892	3645	6081	4271	1822	2460
MPY-B1-351-SRO5							5404	2169	3030	5597	2387	3223	7129	3080	4755	5597	2387	3223
MPY-B1-351-SRO6													6323	2483	3356	6996	2984	4029

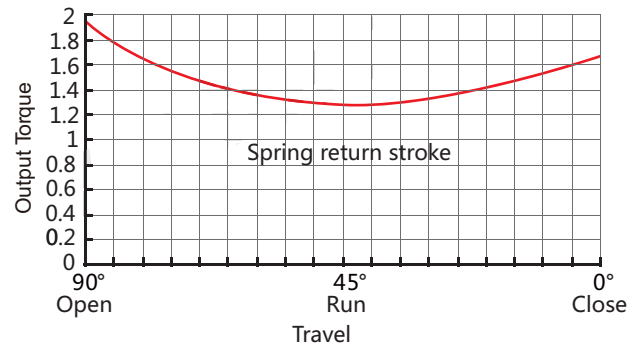
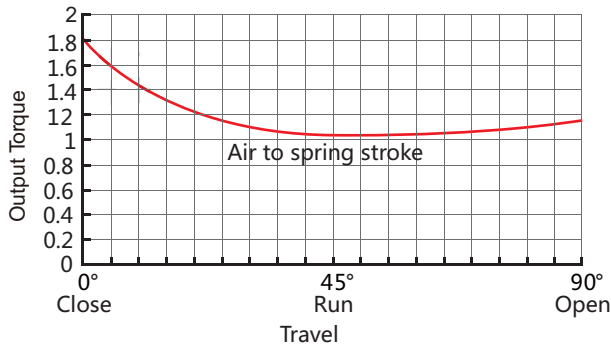
MPY Series Fork Type Actuator

Model	Air to Spring (4Bar)			Spring			Air to Spring (5Bar)			Spring			Air to Spring(6Bar)			Spring		
	90°	45°	0°	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°	0°	45°	90°
MPY-B1-401-SRO4	5819	2388	3445	5597	2387	3223	8080	3582	5706	5597	2387	3223	10340	4775	7966	5597	2387	3223
MPY-B1-401-SRO5							7274	2985	4307	6996	2984	4029	9534	4178	6567	6996	2984	4029
MPY-B1-401-SRO6													8729	3581	5168	8395	3581	4834
MPY-B2-401-SRO4	6943	2848	4110	6679	2849	3846	9640	4273	6807	6679	2849	3846	12338	5697	9505	6679	2849	3846
MPY-B2-401-SRO5							8603	3505	5005	8481	3617	4883	11301	4929	7703	8481	3617	4883
MPY-B2-401-SRO6													10080	4024	5582	10602	4522	6104
MPY-B2-451-SRO4	8817	3618	5219	8481	3617	4883	12243	5426	8645	8481	3617	4883	15668	7235	12070	8481	3617	4883
MPY-B2-451-SRO5							11022	4521	6524	10602	4522	6104	14447	6330	9949	10602	4522	6104
MPY-B2-451-SRO6													13226	5426	7829	12722	5426	7325
MPY-B3-451-SRO4	10522	4317	6232	10118	4317	5828	14610	6475	10320	10118	4317	5828	18697	8634	14407	10118	4317	5828
MPY-B3-451-SRO5							13186	5420	7847	12591	5372	7252	17273	7579	11934	12591	5372	7252
MPY-B3-451-SRO6													15500	6266	8857	15668	6685	9025
MPY-B3-501-SRO4	13003	5324	7664	12591	5372	7252	18066	7997	12727	12591	5372	7252	23130	10671	17791	12591	5372	7252
MPY-B3-501-SRO5							16293	6684	9650	15668	6685	9025	21357	9358	14714	15668	6685	9025
MPY-B3-501-SRO6													19028	7633	10671	19711	8410	11354
MPY-B3-561-SRO4	16458	6771	9815	15668	6685	9025	22829	10135	16186	15668	6685	9025	29199	13499	22556	15668	6685	9025
MPY-B3-561-SRO5							20500	8410	12143	19711	8410	11354	26870	11774	18513	19711	8410	11354
MPY-B3-561-SRO6													24600	10092	14570	23654	10092	13624
MPY-B3-631-SRO4	20977	8662	12619	19711	8410	11354	29059	12930	20702	19711	8410	11354	37142	17198	28784	19711	8410	11354
MPY-B3-631-SRO5							26788	11248	16759	23654	10092	13264	34871	15516	24842	23654	10092	13624
MPY-B3-631-SRO6													31210	12804	18486	30010	12804	17286
MPY-B4-631-SRO4	24997	10255	14784	24057	10255	13844	34708	15383	24495	24057	10255	13844	44418	20510	34205	24057	10255	13844
MPY-B4-631-SRO5							31246	12819	18481	30071	12819	17306	40956	17946	28191	30071	12819	17306
MPY-B4-631-SRO6													35860	14171	19335	38927	16594	22402
MPY-B4-701-SRO4	30730	12546	17964	30071	12819	17306	42739	18888	29973	30071	12819	17306	54748	25229	41982	30071	12819	17306
MPY-B4-701-SRO5							37643	15113	21118	38927	16594	22402	49651	21454	33126	38927	16594	22402
MPY-B4-701-SRO6													44052	17306	23396	48657	20742	28002
MPY-B4-801-SRO4	40447	16594	23922	38927	16594	22402	56160	24891	39635	38927	16594	22402	71872	33188	55347	38927	16594	22402
MPY-B4-801-SRO5							50560	20743	29904	48657	20742	28002	66272	29040	45616	48657	20742	28002
MPY-B4-801-SRO6													60671	24891	35884	58390	24891	33603
MPY-B5-801-SRO4	48531	19910	28703	46707	19910	26879	67384	29865	47556	46707	19910	26879	86236	39820	66408	46707	19910	26879
MPY-B5-801-SRO5							60189	24536	35054	59209	25240	34074	79041	34491	53906	59209	25240	34074
MPY-B5-801-SRO6													70523	28181	39104	74011	31550	42592
MPY-B5-901-SRO4	61522	25240	36387	59209	25240	34074	85421	37860	60285	59209	25240	34074	109319	50479	84184	59209	25240	34074
MPY-B5-901-SRO5							76902	31550	45483	74011	31550	42592	100801	44169	69382	74011	31550	42592
MPY-B5-901-SRO6													92283	37860	54580	88813	37860	51110
MPY-B6-801-SRO4	65176	26739	38729	72545	26739	36098	90495	40108	64047	62545	26739	36098	115813	53478	89365	62545	26739	36098
MPY-B6-801-SRO5							80809	32934	47266	79327	33913	45783	106128	46304	72584	79327	33913	45783
MPY-B6-801-SRO6													94682	37825	52752	99158	42392	57229
MPY-B6-901-SRO4	82663	33913	49120	79327	33913	45783	114775	50870	81231	79327	33913	45783	146887	67826	113343	79327	33913	45783
MPY-B6-901-SRO5							103329	42392	61400	99158	42392	57229	135441	59348	93511	99158	42392	57229
MPY-B6-901-SRO6													121910	49325	70067	122603	52414	70759
MPY-B6-1001-SRO4	101587	41472	59657	99158	42392	57229	141291	62437	99361	99158	42392	57229	180995	83403	139065	99158	42392	57229
MPY-B6-1001-SRO5							127760	52414	75917	122603	52414	70759	167464	73380	115621	122603	52414	70759
MPY-B6-1001-SRO6													153312	62897	91100	147123	62897	84911

The torque of the springs can be customized to your needs.

MPY Series Fork Type Actuator

MPY-C Series Single Acting Actuator (FC)



Model	Air to Spring (4Bar)			Spring			Air to Spring(5Bar)			Spring			Air to Spring (6Bar)			Spring		
	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°
MPY-C06-201-SRC4	870	279	305	915	479	870	1306	468	610	915	479	870	1741	658	915	915	479	870
MPY-C06-201-SRC5							1088	348	381	1144	599	1088	1523	538	686	1144	599	1088
MPY-C06-201-SRC6													1290	409	440	1390	728	1322
MPY-C06-221-SRC4	1027	322	338	1144	599	1088	1556	552	708	1144	599	1088	2084	782	1079	1144	599	1088
MPY-C06-221-SRC5							1322	423	463	1390	728	1322	1851	653	833	1390	728	1322
MPY-C06-221-SRC6													1586	508	555	1668	874	1586
MPY-C08-221-SRC4	1353	427	460	1462	768	1390	2038	725	941	1462	768	1390	2724	1024	1421	1462	768	1390
MPY-C08-221-SRC5							1680	527	564	1838	966	1748	2366	826	1045	1838	966	1748
MPY-C08-221-SRC6													1887	561	541	2342	1230	2227
MPY-C08-251-SRC4	1816	586	659	1838	966	1748	2707	974	1284	1838	966	1748	3598	1362	1908	1838	966	1748
MPY-C08-251-SRC5							2227	710	780	2342	1230	2227	3118	1098	404	2342	1230	2227
MPY-C08-251-SRC6													2606	814	865	2882	1513	2740
MPY-C08-281-SRC4	2262	725	804	2342	1230	2227	3385	1213	1591	2342	1230	2227	4507	1702	2377	2342	1230	2227
MPY-C08-281-SRC5							2872	930	1051	2882	1513	2740	3994	1419	1838	2882	1513	2740
MPY-C08-281-SRC6													3367	1073	1179	3541	1860	3367
MPY-C1-281-SRC4	2630	839	921	2766	1452	2630	3946	1411	1842	2766	1452	2630	5261	1984	2764	2766	1452	2630
MPY-C1-281-SRC5							3206	1003	1065	3544	1861	3370	4521	1576	1986	3544	1861	3370
MPY-C1-281-SRC6													3750	1150	1176	4355	2286	4141
MPY-C1-321-SRC4	3535	1146	1295	3544	1861	3370	5261	1898	2505	3544	1861	3370	6988	2650	3715	3544	1861	3370
MPY-C1-321-SRC5							4490	1472	1694	4355	2286	4141	6217	2224	2904	4355	2286	4141
MPY-C1-321-SRC6													5098	1606	1727	5532	2904	5260
MPY-C1-351-SRC4	4141	1320	1449	4355	2286	4141	6211	2222	2900	4355	2286	4141	8282	3123	4351	4355	2286	4141
MPY-C1-351-SRC5							5092	1604	1724	5532	2904	5260	7163	2506	3175	5532	2904	5260
MPY-C1-351-SRC6													5927	1823	1875	6832	3586	6496
MPY-C1-401-SRC4	5591	1821	2073	5532	2904	5260	8303	3002	3974	5532	2904	5260	11016	4184	5875	5532	2904	5260
MPY-C1-401-SRC5							7067	2320	2674	6832	3586	6496	9780	3501	4575	6832	3586	6496
MPY-C1-401-SRC6													8138	2595	2848	8559	4493	8138
MPY-C2-401-SRC4	6473	2064	2266	6808	3574	6473	9710	3474	4534	6808	3574	6473	12947	4883	6803	6808	3574	6473
MPY-C2-401-SRC5							7963	2509	2697	8645	4538	8220	11200	3919	4965	8645	4538	8220
MPY-C2-401-SRC6													9428	2941	3102	10508	5516	9992

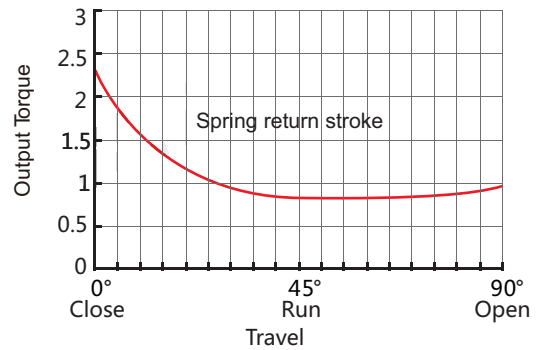
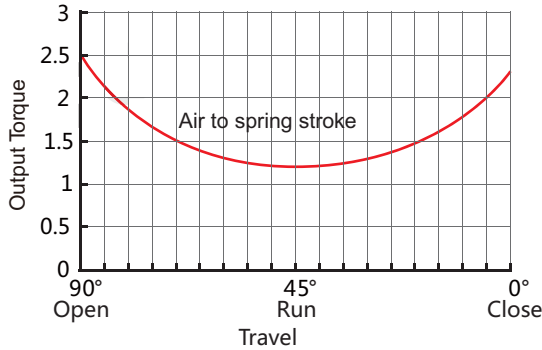
MPY Series Fork Type Actuator

Model	Air to Spring (4Bar)			Spring			Air to Spring(5Bar)			Spring			Air to Spring(6Bar)			Spring		
	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°
MPY-C2-451-SRC4	8220	2621	2877	8645	4538	8220	12330	4411	5758	8645	4538	8220	16441	6201	8638	8645	4538	8220
MPY-C2-451-SRC5							10559	3433	3894	10508	5516	9992	14669	5223	6775	10508	5516	9992
MPY-C2-451-SRC6													12330	3932	4316	12967	6807	12330
MPY-C3-451-SRC4	9810	3127	3434	10317	5417	9810	14715	5263	6871	10317	5417	9810	19620	7399	10309	10317	5417	9810
MPY-C3-451-SRC5							12263	3909	4292	12896	6771	12263	17168	6045	7730	12896	6771	12263
MPY-C3-451-SRC6													14239	4428	4650	15976	8388	15191
MPY-C3-501-SRC4	12043	3813	4138	12896	6771	12263	18120	6459	8397	12896	6771	12263	24196	9105	12655	12896	6771	12263
MPY-C3-501-SRC5							15191	4842	5317	15976	8388	15191	21267	7489	9575	15976	8388	15191
MPY-C3-501-SRC6													17346	5324	5452	20100	10553	19112
MPY-C3-561-SRC4	15388	4928	5455	15976	8388	15191	23033	8257	10813	15976	8388	15191	30678	11586	16171	15976	8388	15191
MPY-C3-561-SRC5							19112	6092	6689	20100	10553	19112	26757	9421	12047	20100	10553	19112
MPY-C3-561-SRC6													23896	7842	9039	23108	12132	21973
MPY-C3-631-SRC4	19809	6396	7177	20100	10553	19112	29539	10633	13997	20100	10553	19112	39269	14870	20816	20100	10553	19112
MPY-C3-631-SRC5							23305	7191	7441	26656	13995	25346	33035	11428	14260	26656	13995	25346
MPY-C3-631-SRC6													29191	9305	10217	30699	16118	29191
MPY-C4-631-SRC4	21759	6584	6531	26135	13712	24851	33411	11658	14697	26135	13712	24851	45063	16732	22863	26135	13712	24851
MPY-C4-631-SRC5							29131	9297	10196	30636	16074	29131	40783	14371	18362	30636	16074	29131
MPY-C4-631-SRC6													33888	10566	11110	37888	19879	36027
MPY-C4-701-SRC4	28512	9027	9762	30636	16074	29131	42922	15302	19861	30636	16074	29131	57333	21578	29961	30636	16074	29131
MPY-C4-701-SRC5							36027	11497	12609	37888	19879	36027	50437	17773	22709	37888	19879	36027
MPY-C4-701-SRC6													41280	12719	13078	47519	24932	45184
MPY-C4-801-SRC4	39392	12963	14968	37888	19879	36027	58247	21173	28182	37888	19879	36027	77102	29384	41396	37888	19879	36027
MPY-C4-801-SRC5							49089	16120	18551	47519	24932	45184	67944	24331	31765	47519	24932	45184
MPY-C4-801-SRC6													56564	18052	19798	59487	31211	56564
MPY-C5-801-SRC4	45246	14438	15836	47584	24968	45246	67869	24289	31691	47584	24968	45246	90492	34141	47546	47584	24968	45246
MPY-C5-801-SRC5							55758	17606	18954	60321	31651	57357	78381	27457	34809	60321	31651	57357
MPY-C5-801-SRC6													65955	20601	21742	73388	38508	69783
MPY-C5-901-SRC4	57357	18302	20075	60321	31651	57357	86036	30791	40174	60321	31651	57357	114714	43279	60273	60321	31651	57357
MPY-C5-901-SRC5							73610	23934	27106	73388	38508	69783	102289	36423	47205	73388	38508	69783
MPY-C5-901-SRC6													86036	27454	30113	90481	47477	86036
MPY-C6-801-SRC4	60764	19336	21267	63904	33585	60764	91146	32566	42560	63904	33585	60764	121528	45796	63853	63904	33585	60764
MPY-C6-801-SRC5							74843	23555	25414	81050	42596	77068	105225	36785	46707	81050	42596	77068
MPY-C6-801-SRC6													88036	27284	28630	99127	52097	94257
MPY-C6-901-SRC4	77068	24524	26974	81050	42596	77068	115602	41304	53980	81050	42596	77068	154136	58084	80985	81050	42596	77068
MPY-C6-901-SRC5							98413	31803	35902	99127	52097	94257	136946	48583	62908	99127	52097	94257
MPY-C6-901-SRC6													113847	35815	38615	123420	64864	117357
MPY-C6-1001-SRC4	96322	30893	34437	99127	52097	94257	143967	51640	67828	99127	52097	94257	191611	72387	101219	99127	52097	94257
MPY-C6-1001-SRC5							120867	38872	43535	123420	64864	117357	168511	59620	76926	123420	64864	117357
MPY-C6-1001-SRC6													142934	45483	50027	150319	79001	142934

The torque of the springs can be customized to your needs.

MPY Series Fork Type Actuator

MPY-C Series Single Acting Actuator (FO)



Model	Air to Spring(4Bar)			Spring			Air to Spring(5Bar)			Spring			Air to Spring(6Bar)			Spring		
	90°	45°	0°	0°	45°	90°	90	45°	0°	0°	45°	90°	90°	45°	0°	0°	45°	90°
MPY-C06-201-SRO4	915	471	870	870	287	305	1221	660	1306	870	287	305	1526	850	1741	870	287	305
MPY-C06-201-SRO5							1144	589	1088	1088	359	381	1449	778	1523	1088	359	381
MPY-C06-201-SRO6													1368	701	1290	1322	436	463
MPY-C06-221-SRO4	1101	562	1027	1088	359	381	1472	792	1556	1088	359	381	1843	1023	2084	1088	359	381
MPY-C06-221-SRO5							1390	715	1322	1322	436	463	1761	945	1851	1322	436	463
MPY-C06-221-SRO6													1668	858	1586	1586	523	555
MPY-C08-221-SRO4	1436	735	1353	1390	459	487	1916	1033	2038	1390	459	487	2397	1332	2724	1390	459	487
MPY-C08-221-SRO5							1798	921	1699	1729	572	605	2278	1220	2385	1729	572	605
MPY-C08-221-SRO6													2104	1055	1887	2227	736	780
MPY-C08-251-SRO4	1892	980	1835	1729	572	605	2517	1368	2726	1729	572	605	3141	1756	3617	1729	572	605
MPY-C08-251-SRO5							2342	1204	2227	2227	736	780	2967	1591	3118	2227	736	780
MPY-C08-251-SRO6													2787	1422	2606	2740	906	959
MPY-C08-281-SRO4	2367	1219	2262	2227	736	780	3153	1707	3385	2227	736	780	3940	2196	4507	2227	736	780
MPY-C08-281-SRO5							2974	1538	2872	2740	906	959	3761	2027	3994	2740	906	959
MPY-C08-281-SRO6													3541	1819	3367	3367	1113	1179
MPY-C1-281-SRO4	2766	1422	2630	2630	869	921	3688	1994	3946	2630	869	921	4610	2567	5261	2630	869	921
MPY-C1-281-SRO5							3429	1750	3205	3371	1114	1180	4351	2322	4520	3371	1114	1180
MPY-C1-281-SRO6													4051	2039	3663	4228	1397	1480
MPY-C1-321-SRO4	3659	1893	3534	3371	1114	1180	4869	2645	5260	3371	1114	1180	6079	3396	6987	3371	1114	1180
MPY-C1-321-SRO5							4569	2361	4403	4228	1397	1480	5779	3113	6130	4228	1397	1480
MPY-C1-321-SRO6													5404	2759	5058	5300	1751	1855
MPY-C1-351-SRO4	4324	2209	4054	4228	1397	1480	5776	3111	6124	4228	1397	1480	7227	4013	8195	4228	1397	1480
MPY-C1-351-SRO5							5400	2757	5052	5300	1751	1855	6851	3658	7123	5300	1751	1855
MPY-C1-351-SRO6													6432	3263	5926	6497	2147	2274
MPY-C1-401-SRO4	5750	2974	5551	5300	1751	1855	7651	4155	8263	5300	1751	1855	9552	5336	10976	5300	1751	1855
MPY-C1-401-SRO5							7232	3759	7066	6497	2147	2274	9133	4941	9779	6497	2147	2274
MPY-C1-401-SRO6													8559	4398	8138	8138	2689	2848
MPY-C2-401-SRO4	6808	3499	6473	6473	2139	2266	9076	4908	9710	6473	2139	2266	11345	6318	12947	6473	2139	2266
MPY-C2-401-SRO5							8487	4352	8028	8156	2695	2855	10756	5762	11264	8156	2695	2855
MPY-C2-401-SRO6													10110	5153	9420	10000	3304	3500

MPY Series Fork Type Actuator

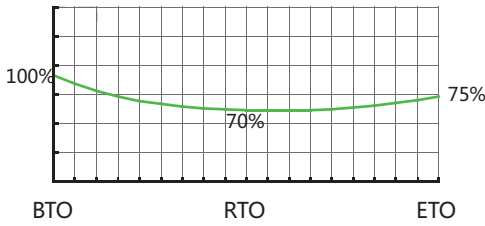
Model	Air to Spring(4Bar)			Spring			Air to Spring(5Bar)			Spring			Air to Spring(6Bar)			Spring		
	90°	45°	0°	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°	0°	45°	90°
MPY-C2-451-SRO4	8667	4464	8285	8156	2695	2855	11548	6254	12395	8156	2695	2855	14429	8044	16505	8156	2695	2855
MPY-C2-451-SRO5							10903	5645	10551	10000	3304	3500	13783	7435	14661	10000	3304	3500
MPY-C2-451-SRO6													12967	6665	12330	12330	4074	4316
MPY-C3-451-SRO4	10317	5302	9810	9810	3242	3434	13755	7438	14715	9810	3242	3434	17192	9574	19620	9810	3242	3434
MPY-C3-451-SRO5							12896	6627	12263	12263	4052	4292	16334	8763	17168	12263	4052	4292
MPY-C3-451-SRO6													15309	7796	14239	15191	5020	5317
MPY-C3-501-SRO4	12742	6532	12043	12263	4052	4292	17001	9178	18120	12263	4052	4292	21259	11824	24196	12263	4052	4292
MPY-C3-501-SRO5							15976	8210	15191	15191	5020	5317	20234	10856	21267	15191	5020	5317
MPY-C3-501-SRO6													19144	9826	18152	18307	6050	6407
MPY-C3-561-SRO4	16114	8296	15388	15191	5020	5317	21472	11625	23033	15191	5020	5317	26830	14954	30678	15191	5020	5317
MPY-C3-561-SRO5							20381	10595	19917	18307	6050	6407	25739	13924	27562	18307	6050	6407
MPY-C3-561-SRO6													24456	12713	23896	21973	7261	7690
MPY-C3-631-SRO4	19587	9687	16948	21973	7261	7690	26406	13924	26678	21973	7261	7690	33225	18161	36408	21973	7261	7690
MPY-C3-631-SRO5							25225	12810	23305	25346	8376	8718	32044	17047	33035	25346	8376	8871
MPY-C3-631-SRO6													30699	15776	29191	29191	9646	10217
MPY-C4-631-SRO4	23968	12090	21759	24851	8206	8698	32134	17164	33411	24851	8206	8698	40300	22239	45063	24851	8206	8698
MPY-C4-631-SRO5							30375	15505	28386	29876	9866	10457	38542	20579	40038	29876	9866	10457
MPY-C4-631-SRO6													36389	18548	33888	36027	11897	12609
MPY-C4-701-SRO4	29941	15235	27767	29876	9866	10457	40041	21511	42177	29876	9866	10457	50140	27786	56588	29876	9866	10457
MPY-C4-701-SRO5							37888	19480	36027	36027	11897	12609	47988	25755	50437	36027	11897	12609
MPY-C4-701-SRO6													44783	22731	41280	45184	14921	15814
MPY-C4-801-SRO4	40247	20945	39392	36027	11897	12609	53461	29156	58247	36027	11897	12609	66675	37366	77102	36027	11897	12609
MPY-C4-801-SRO5							50256	26132	49090	45184	14921	15814	63470	34342	67945	45184	14921	15814
MPY-C4-801-SRO6													59487	30584	56564	56564	18679	19798
MPY-C5-801-SRO4	47584	24463	45246	45246	14943	15836	63439	34314	67869	45246	14943	15836	79294	44165	90492	45246	14943	15836
MPY-C5-801-SRO5							59200	30314	55758	57357	18943	20075	75055	40166	78381	57357	18943	20075
MPY-C5-801-SRO6													70706	36062	65956	69782	23046	24424
MPY-C5-901-SRO4	60321	31011	57357	57357	18943	20075	80420	43499	86036	57357	18943	20075	100518	55987	114714	57357	18943	20075
MPY-C5-901-SRO5							76071	39396	73611	69782	23046	24424	96170	51884	102290	69782	23046	24424
MPY-C5-901-SRO6													90481	46516	86036	86036	28414	30113
MPY-C6-801-SRO4	63904	32823	60764	60764	20097	21267	85197	46054	91146	60764	20097	21267	106489	59284	121528	60764	20097	21267
MPY-C6-801-SRO5							79490	40661	74843	77068	25490	26974	100783	53891	105225	77068	25490	26974
MPY-C6-801-SRO6													94040	47519	85958	96335	31862	33717
MPY-C6-901-SRO4	81050	41630	77068	77068	25490	26974	108055	58410	115602	77068	25490	26974	135061	75190	154136	77068	25490	26974
MPY-C6-901-SRO5							101312	52038	96335	96335	31862	33717	128318	68818	134869	96335	31862	33717
MPY-C6-901-SRO6													120346	61284	112092	119112	39396	41689
MPY-C6-1001-SRO4	99847	51127	94244	96335	31862	33717	133238	71875	141889	96335	31862	33717	166629	92622	189533	96335	31862	33717
MPY-C6-1001-SRO5							125266	64341	119112	119112	39396	41689	158657	85089	166756	119112	39396	41689
MPY-C6-1001-SRO6													150319	77210	142934	142934	47275	50027

The torque of the springs can be customized to your needs.

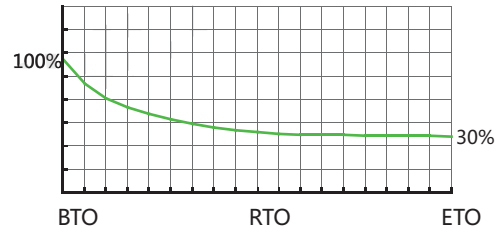
■ **Sizing**

During selecting the actuators, we can choose the more reasonable and more economical actuators, if we know the different torque needed by the valve working at opening and operating.

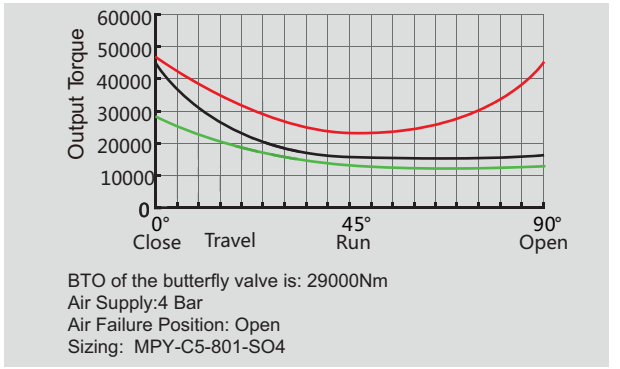
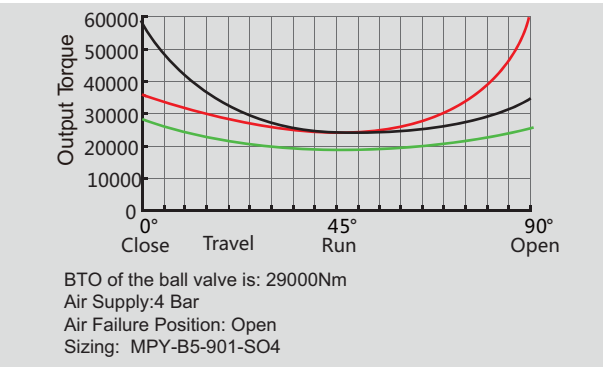
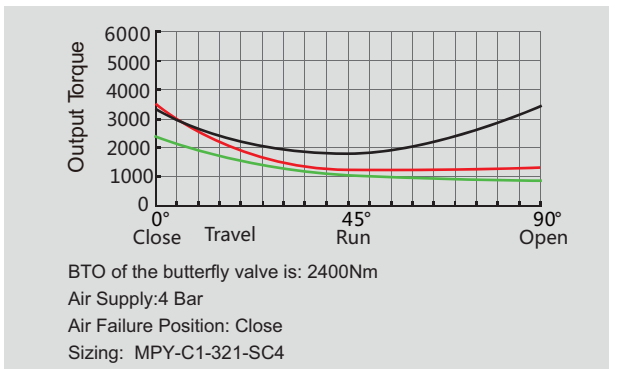
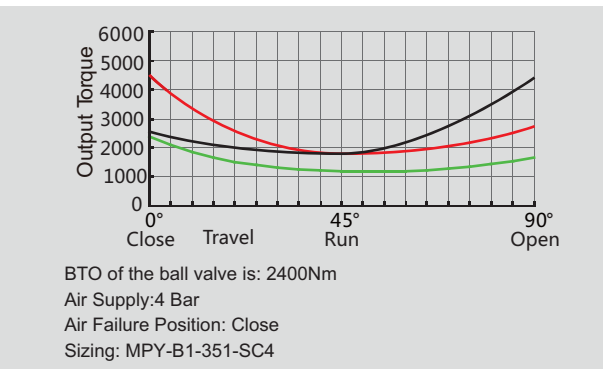
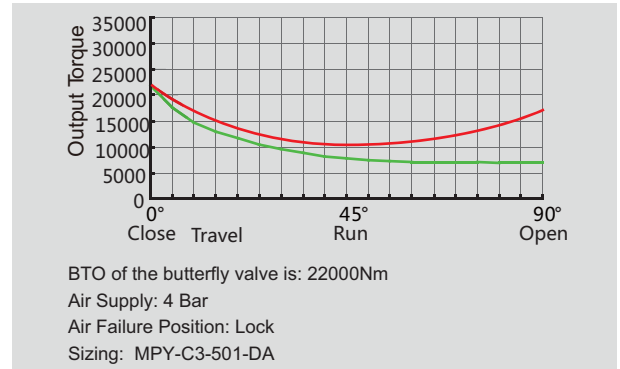
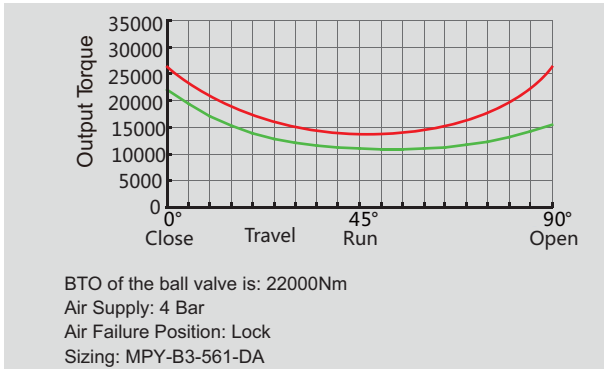
Ball valve operating curve



Butterfly valve operating curve



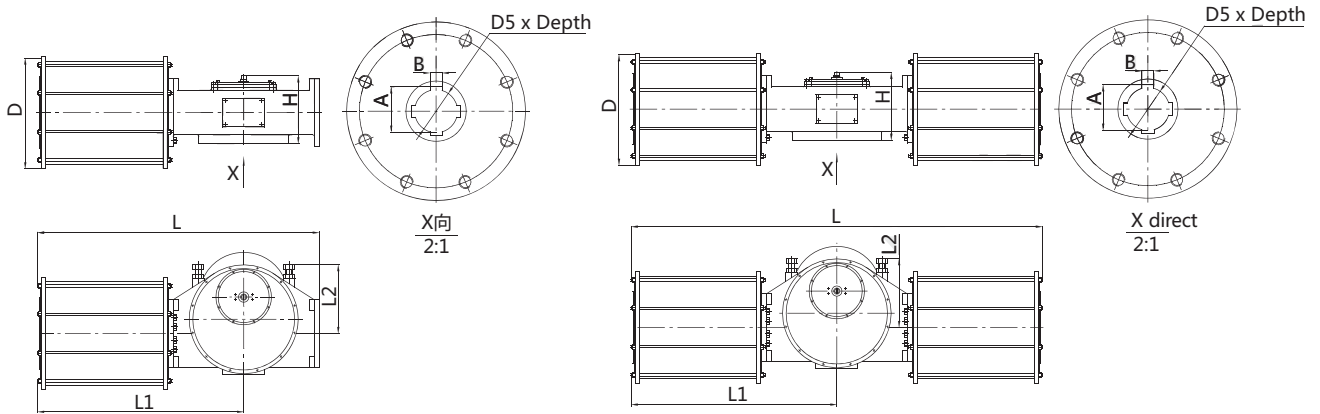
- Spring return operating curve
- Air to spring operating curve
- Ball valve (butterfly valve) operating curve



MPY Series Fork Type Actuator

■ **Dimension**

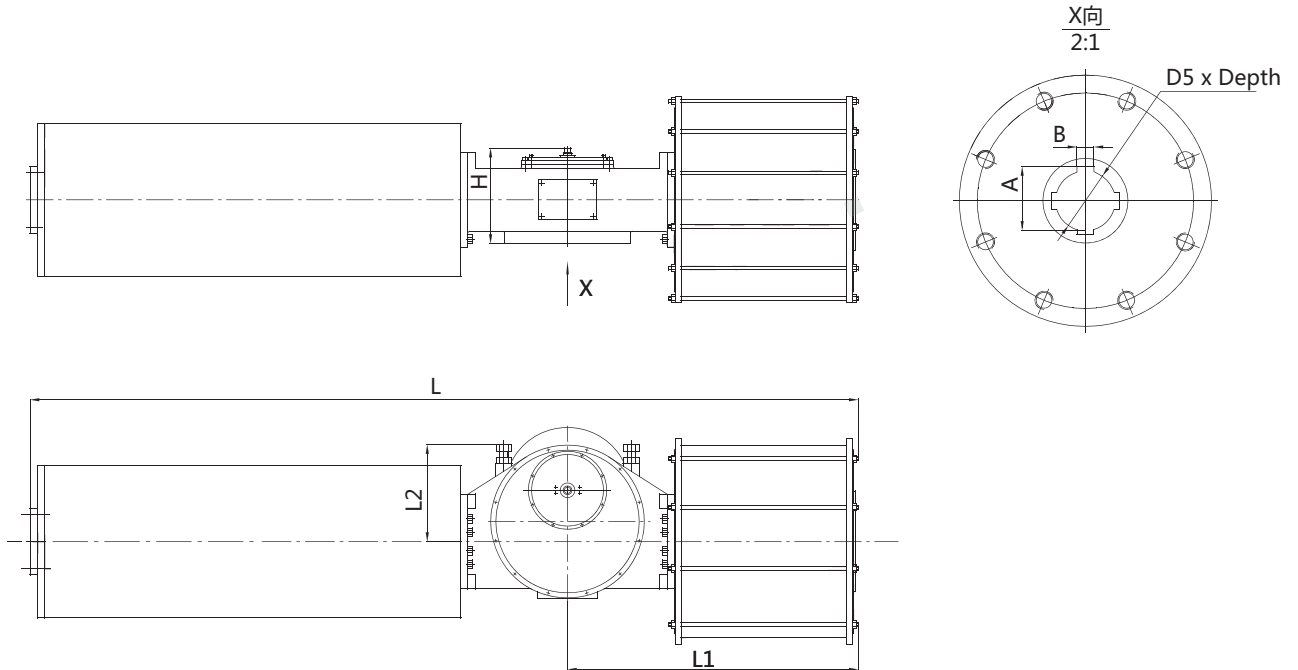
MPY-B(C)Series Double Acting Actuator



Model	L	L1	L2	H	D	D5 x Depth	A	B	Connecting Flange	Air connection
									ISO5211	
MPY-B/C06-201-DA	675	505	180	212	225*225	ø48*65	51.8	14	F14	3/8"G(NPT)
MPY-B/C08-221-DA	815	605	200	237	250*250	ø60*100	64.4	18	F16	1/2"G(NPT)
MPY-B08-251-DA	815	605	200	237	280*280	ø60*100	64.4	18	F16	1/2"G(NPT)
MPY-B/C1-281-DA	925	680	225	246	310*310	ø72*120	76.9	20	F25/F16	1/2"G(NPT)
MPY-B/C1-321-DA	905	660	225	246	ø395	ø72*120	76.9	20	F25/F16	1/2"G(NPT)
MPY-B1-351-DA	905	660	225	246	ø430	ø72*120	76.9	20	F25/F16	3/4"G(NPT)
MPY-B/C2-351-DA	1055	775	285	269	ø430	ø100*150	106.4	28	F30/F25	3/4"G(NPT)
MPY-B/C2-401-DA	1055	775	285	269	ø500	ø100*150	106.4	28	F30/F25	1"G(NPT)
MPY-B/C2-451-DA	1055	775	285	269	ø550	ø100*150	106.4	28	F30/F25	1"G(NPT)
MPY-B/C3-451-DA	1250	915	330	310	ø550	ø160*200	169.4	40	F35/F30	1"G(NPT)
MPY-B/C3-501-DA	1250	915	330	310	ø600	ø160*200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-B/C3-561-DA	1250	915	330	310	ø660	ø160*200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-B3-601-DA	1250	915	330	310	ø700	ø160*200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-C4-561-DA	1450	1050	412	340	ø660	ø180*220	190.4	45	F40	1 1/4"G(NPT)
MPY-B/C4-601-DA	1450	1050	412	340	ø700	ø180*220	190.4	45	F40	1 1/4"G(NPT)
MPY-B/C4-631-DA	1450	1050	412	340	ø730	ø180*220	190.4	45	F40	1 1/2"G(NPT)
MPY-B/C4-701-DA	1450	1050	412	340	ø810	ø180*220	190.4	45	F40	1 1/2"G(NPT)
MPY-B4-801-DA	1450	1050	412	340	ø910	ø180*220	190.4	45	F40	1 1/2"G(NPT)
MPY-B/C4-502-DA	2120	1050	412	340	ø600	ø180*220	190.4	45	F40	1 1/4"G(NPT)
MPY-B4-562-DA	2120	1050	412	340	ø660	ø180*220	190.4	45	F40	1 1/4"G(NPT)
MPY-B/C5-701-DA	1690	1230	486	420	ø810	ø220*250	231.4	50	F48/F40	1 1/2"G(NPT)
MPY-B/C5-801-DA	1690	1230	486	420	ø910	ø220*250	231.4	50	F48/F40	1 1/2"G(NPT)
MPY-B/C5-901-DA	1690	1230	486	420	ø1010	ø220*250	231.4	50	F48/F40	2"G(NPT)
MPY-B5-1001-DA	1690	1230	486	420	ø1110	ø220*250	231.4	50	F48/F40	2"G(NPT)
MPY-B/C5-562-DA	2456	1230	486	420	ø660	ø220*250	231.4	50	F48/F40	1 1/4"G(NPT)
MPY-B/C5-602-DA	2456	1230	486	420	ø700	ø220*250	231.4	50	F48/F40	1 1/4"G(NPT)
MPY-B/C5-632-DA	2456	1230	486	420	ø730	ø220*250	231.4	50	F48/F40	1 1/2"G(NPT)
MPY-B5-702-DA	2456	1230	486	420	ø810	ø220*250	231.4	50	F48/F40	1 1/2"G(NPT)
MPY-C6-801-DA	2145	1555	658	490	ø910	ø280*320	292.4	63	F60/F48	1 1/2"G(NPT)
MPY-B/C6-901-DA	2145	1555	658	490	ø1010	ø280*320	292.4	63	F60/F48	2"G(NPT)
MPY-B/C6-1001-DA	2145	1555	658	490	ø1110	ø280*320	292.4	63	F60/F48	2"G(NPT)
MPY-B/C6-702-DA	3100	1555	658	490	ø810	ø280*320	292.4	63	F60/F48	1 1/2"G(NPT)
MPY-B/C6-802-DA	3100	1555	658	490	ø910	ø280*320	292.4	63	F60/F48	1 1/2"G(NPT)
MPY-B6-902-DA	3100	1555	658	490	ø1010	ø280*320	292.4	63	F60/F48	2"G(NPT)

MPY Series Fork Type Actuator

MPY-B(FC) Series Single Acting Actuator



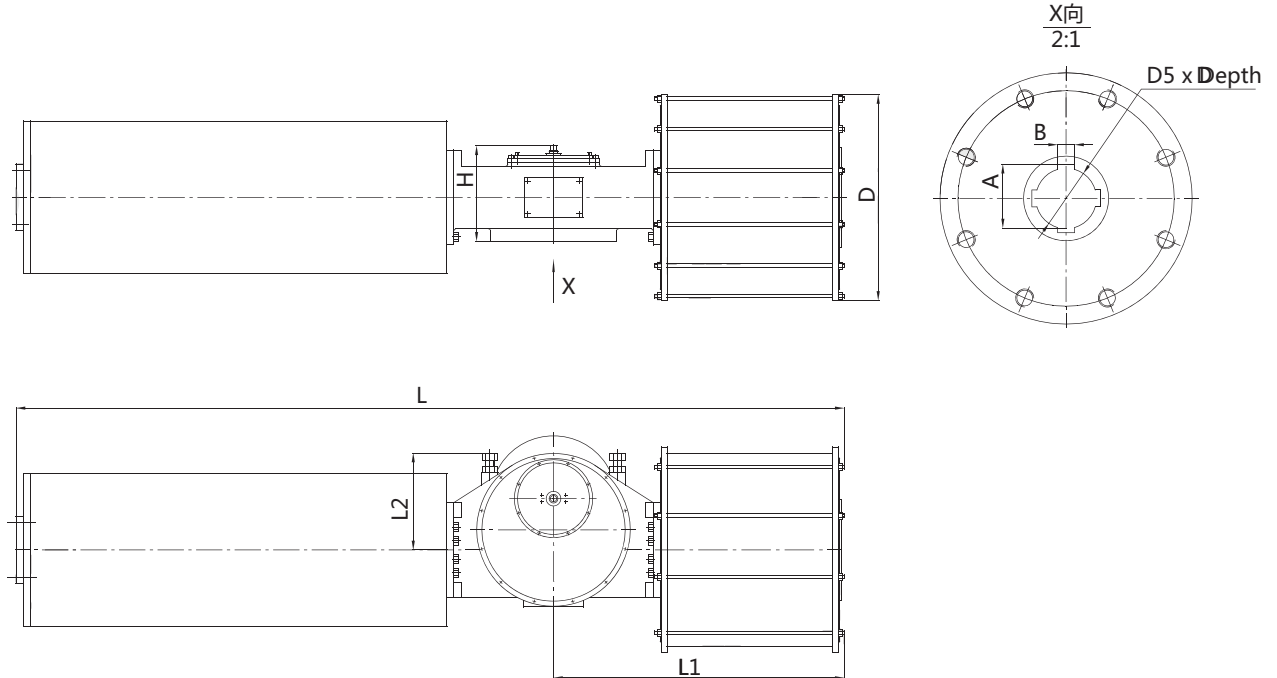
Model	L	L1	L2	H	D	D5×Depth	A	B	Connecting Flange	Air connection
	mm									ISO5211
MPY-B06-201-SRO4	1304	505	180	214	∅225	∅48x65	51.8	14	F14	3/8"G(NPT)
MPY-B06-201-SRO5	1354	505	180	214	∅225	∅48x65	51.8	14	F14	3/8"G(NPT)
MPY-B06-201-SRO6	1374	505	180	214	∅225	∅48x65	51.8	14	F14	3/8"G(NPT)
MPY-B06-221-SRO4	1354	515	180	214	∅250	∅48x65	51.8	14	F14	1/2"G(NPT)
MPY-B06-221-SRO5	1374	515	180	214	∅250	∅48x65	51.8	14	F14	1/2"G(NPT)
MPY-B06-221-SRO6	1324	515	180	214	∅250	∅48x65	51.8	14	F14	1/2"G(NPT)
MPY-B08-221-SRO4	1458	605	200	238	∅250	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-B08-221-SRO5	1488	605	200	238	∅250	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-B08-221-SRO6	1528	605	200	238	∅250	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-B08-251-SRO4	1488	605	200	238	∅280	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-B08-251-SRO5	1528	605	200	238	∅280	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-B08-251-SRO6	1528	605	200	238	∅280	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-B08-281-SRO4	1528	605	200	238	∅310	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-B08-281-SRO5	1528	605	200	238	∅310	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-B08-281-SRO6	1558	605	200	238	∅310	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-B1-281-SRO4	1660	680	225	245	∅310	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-B1-281-SRO5	1690	680	225	245	∅310	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-B1-281-SRO6	1710	680	225	245	∅310	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-B1-321-SRO4	1670	660	225	245	∅395	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-B1-321-SRO5	1690	660	225	245	∅395	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-B1-321-SRO6	1710	660	225	245	∅395	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-B1-351-SRO4	1690	660	225	245	∅430	∅72x120	76.9	20	F25/F16	3/4"G(NPT)
MPY-B1-351-SRO5	1710	660	225	245	∅430	∅72x120	76.9	20	F25/F16	3/4"G(NPT)
MPY-B1-351-SRO6	1730	660	225	245	∅430	∅72x120	76.9	20	F25/F16	3/4"G(NPT)

MPY Series Fork Type Actuator

Model	L	L1	L2	H	D	D5×Depth	A	B	Connecting Flange	Air connection
	mm								ISO5211	
MPY-B1-401-SRO4	1710	660	225	245	∅500	∅72x120	76.9	20	F25/F16	1"G(NPT)
MPY-B1-401-SRO5	1730	660	225	245	∅500	∅72x120	76.9	20	F25/F16	1"G(NPT)
MPY-B1-401-SRO6	1770	660	225	245	∅500	∅72x120	76.9	20	F25/F16	1"G(NPT)
MPY-B2-401-SRO4	1915	775	285	269	∅500	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-B2-401-SRO5	1965	775	285	269	∅500	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-B2-401-SRO6	2025	775	285	269	∅500	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-B2-451-SRO4	1965	775	285	269	∅550	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-B2-451-SRO5	2025	775	285	269	∅550	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-B2-451-SRO6	2045	775	285	269	∅550	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-B3-451-SRO4	2223	915	345	310	∅550	∅160x200	169.4	40	F35/F30	1"G(NPT)
MPY-B3-451-SRO5	2243	915	345	310	∅550	∅160x200	169.4	40	F35/F30	1"G(NPT)
MPY-B3-451-SRO6	2263	915	345	310	∅550	∅160x200	169.4	40	F35/F30	1"G(NPT)
MPY-B3-501-SRO4	2243	915	345	310	∅600	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-B3-501-SRO5	2263	915	345	310	∅600	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-B3-501-SRO6	2323	915	345	310	∅600	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-B3-561-SRO4	2263	915	345	310	∅660	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-B3-561-SRO5	2323	915	345	310	∅660	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-B3-561-SRO6	2383	915	345	310	∅660	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-B3-631-SRO4	2383	915	345	310	∅730	∅160x200	169.4	40	F35/F30	1 1/2"G(NPT)
MPY-B3-631-SRO5	2383	915	345	310	∅730	∅160x200	169.4	40	F35/F30	1 1/2"G(NPT)
MPY-B3-631-SRO6	2423	915	345	310	∅730	∅160x200	169.4	40	F35/F30	1 1/2"G(NPT)
MPY-B4-631-SRO4	2784	1050	412	340	∅730	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-B4-631-SRO5	2784	1050	412	340	∅730	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-B4-631-SRO6	2924	1050	412	340	∅730	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-B4-701-SRO4	2784	1050	412	340	∅810	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-B4-701-SRO5	2924	1050	412	340	∅810	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-B4-701-SRO6	3014	1050	412	340	∅810	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-B4-801-SRO4	2924	1050	412	340	∅910	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-B4-801-SRO5	3014	1050	412	340	∅910	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-B4-801-SRO6	3100	1050	412	340	∅910	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-B5-801-SRO4	3273	1230	486	420	∅910	∅220x250	231.4	50	F48/F40	1 1/2"G(NPT)
MPY-B5-801-SRO5	3333	1230	486	420	∅910	∅220x250	231.4	50	F48/F40	1 1/2"G(NPT)
MPY-B5-801-SRO6	3453	1230	486	420	∅910	∅220x250	231.4	50	F48/F40	1 1/2"G(NPT)
MPY-B5-901-SRO4	3333	1230	486	420	∅1010	∅220x250	231.4	50	F48/F40	2"G(NPT)
MPY-B5-901-SRO5	3453	1230	486	420	∅1010	∅220x250	231.4	50	F48/F40	2"G(NPT)
MPY-B5-901-SRO6	3613	1230	486	420	∅1010	∅220x250	231.4	50	F48/F40	2"G(NPT)
MPY-B6-801-SRO4	4070	1555	658	490	∅910	∅280x320	292.4	63	F60/F48	1 1/2"G(NPT)
MPY-B6-801-SRO5	4200	1555	658	490	∅910	∅280x320	292.4	63	F60/F48	1 1/2"G(NPT)
MPY-B6-801-SRO6	4260	1555	658	490	∅910	∅280x320	292.4	63	F60/F48	1 1/2"G(NPT)
MPY-B6-901-SRO4	4200	1555	658	490	∅1010	∅280x320	292.4	63	F60/F48	2"G(NPT)
MPY-B6-901-SRO5	4260	1555	658	490	∅1010	∅280x320	292.4	63	F60/F48	2"G(NPT)
MPY-B6-901-SRO6	4320	1555	658	490	∅1010	∅280x320	292.4	63	F60/F48	2"G(NPT)
MPY-B6-1001-SRO4	4260	1555	658	490	∅1110	∅280x320	292.4	63	F60/F48	2"G(NPT)
MPY-B6-1001-SRO5	4320	1555	658	490	∅1110	∅280x320	292.4	63	F60/F48	2"G(NPT)
	4380	1555	658	490	∅1110	∅280x320		63	F60/F48	2"G(NPT)

MPY Series Fork Type Actuator

MPY-C(FC) Series Single Acting Actuator



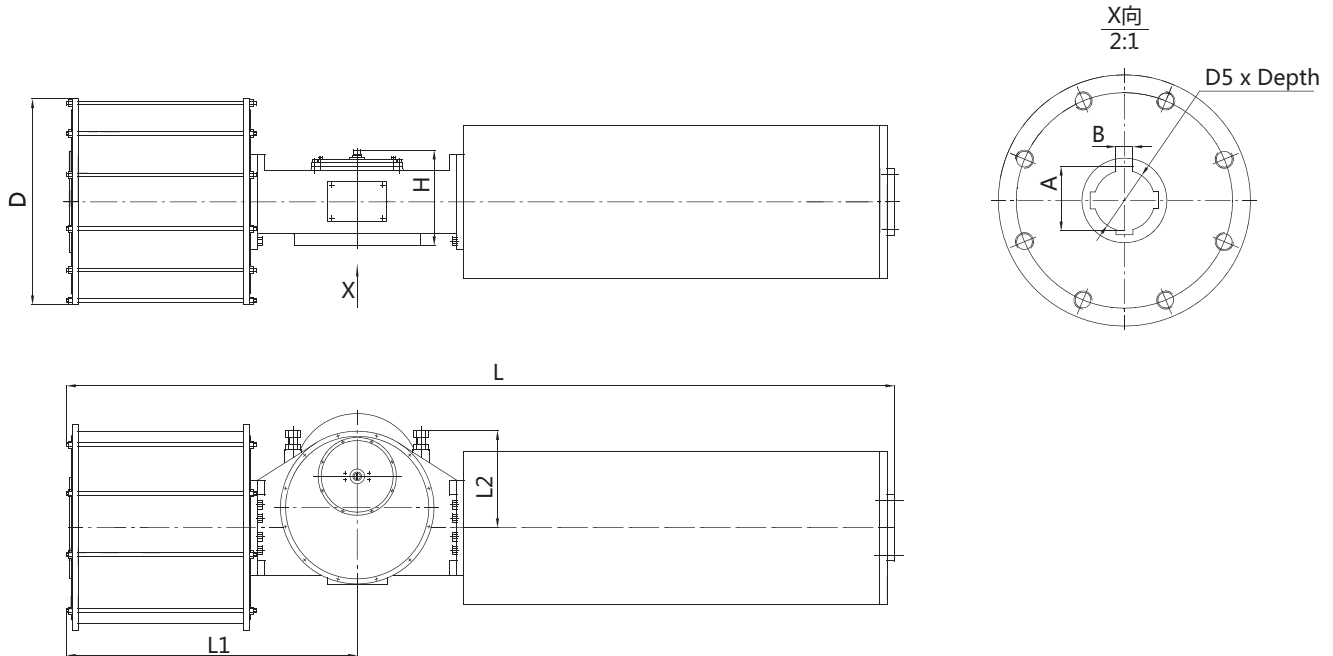
Model	L	L1	L2	H	D	D5×Depth	A	B	Connecting Flange	Air connection
	mm								ISO5211	
MPY-C06-201-SRC4	1323	505	180	214	∅225	∅48x65	51.8	14	F14	3/8"G(NPT)
MPY-C06-201-SRC5	1343	505	180	214	∅225	∅48x65	51.8	14	F14	3/8"G(NPT)
MPY-C06-201-SRC6	1383	505	180	214	∅225	∅48x65	51.8	14	F14	3/8"G(NPT)
MPY-C06-221-SRC4	1343	515	180	214	∅250	∅48x65	51.8	14	F14	1/2"G(NPT)
MPY-C06-221-SRC5	1383	515	180	214	∅250	∅48x65	51.8	14	F14	1/2"G(NPT)
MPY-C06-221-SRC6	1423	515	180	214	∅250	∅48x65	51.8	14	F14	1/2"G(NPT)
MPY-C08-221-SRC4	1487	605	200	238	∅250	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-221-SRC5	1507	605	200	238	∅250	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-221-SRC6	1527	605	200	238	∅250	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-251-SRC4	1507	605	200	238	∅280	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-251-SRC5	1527	605	200	238	∅280	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-251-SRC6	1567	605	200	238	∅280	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-281-SRC4	1527	605	200	238	∅310	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-281-SRC5	1567	605	200	238	∅310	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-281-SRC6	1597	605	200	238	∅310	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C1-281-SRC4	1740	680	225	246	∅310	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-C1-281-SRC5	1720	680	225	246	∅310	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-C1-281-SRC6	1720	680	225	246	∅310	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-C1-321-SRC4	1700	660	225	246	∅395	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-C1-321-SRC5	1700	660	225	246	∅395	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-C1-321-SRC6	1720	660	225	246	∅395	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-C1-351-SRC4	1700	660	225	246	∅430	∅72x120	76.9	20	F25/F16	3/4"G(NPT)
MPY-C1-351-SRC5	1720	660	225	246	∅430	∅72x120	76.9	20	F25/F16	3/4"G(NPT)
MPY-C1-351-SRC6	1800	660	225	246	∅430	∅72x120	76.9	20	F25/F16	3/4"G(NPT)

MPY Series Fork Type Actuator

Model	L	L1	L2	H	D	5×Depth	A	B	Connecting Flange	Air connection
	mm								ISO5211	
MPY-C1-401-SRC4	1720	660	225	246	∅500	∅72x120	76.9	20	F25/F16	1"G(NPT)
MPY-C1-401-SRC5	1750	660	225	246	∅500	∅72x120	76.9	20	F25/F16	1"G(NPT)
MPY-C1-401-SRC6	1762	660	225	246	∅500	∅72x120	76.9	20	F25/F16	1"G(NPT)
MPY-C2-401-SRC4	1961	775	285	267	∅500	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-C2-401-SRC5	1961	775	285	267	∅500	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-C2-401-SRC6	1991	775	285	267	∅500	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-C2-451-SRC4	1961	775	285	267	∅550	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-C2-451-SRC5	1991	775	285	267	∅550	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-C2-451-SRC6	2041	775	285	267	∅550	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-C3-451-SRC4	2231	915	345	310	∅550	∅160x200	169.4	40	F35/F30	1"G(NPT)
MPY-C3-451-SRC5	2251	915	345	310	∅550	∅160x200	169.4	40	F35/F30	1"G(NPT)
MPY-C3-451-SRC6	2351	915	345	310	∅550	∅160x200	169.4	40	F35/F30	1"G(NPT)
MPY-C3-501-SRC4	2251	915	345	310	∅600	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-C3-501-SRC5	2351	915	345	310	∅600	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-C3-501-SRC6	2401	915	345	310	∅600	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-C3-561-SRC4	2351	915	345	310	∅660	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-C3-561-SRC5	2401	915	345	310	∅660	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-C3-561-SRC6	2451	915	345	310	∅660	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-C3-631-SRC4	2401	915	345	310	∅730	∅160x200	169.4	40	F35/F30	1 1/2"G(NPT)
MPY-C3-631-SRC5	2511	915	345	310	∅730	∅160x200	169.4	40	F35/F30	1 1/2"G(NPT)
MPY-C3-631-SRC6	2591	915	345	310	∅730	∅160x200	169.4	40	F35/F30	1 1/2"G(NPT)
MPY-C4-631-SRC4	2751	1050	412	340	∅730	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-631-SRC5	2831	1050	412	340	∅730	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-631-SRC6	2911	1050	412	340	∅730	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-701-SRC4	2831	1050	412	340	∅810	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-701-SRC5	2911	1050	412	340	∅810	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-701-SRC6	2951	1050	412	340	∅810	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-801-SRC4	2911	1050	412	340	∅910	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-801-SRC5	2951	1050	412	340	∅910	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-801-SRC6	3121	1050	412	340	∅910	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C5-801-SRC4	3273	1230	486	420	∅910	∅220x250	231.4	50	F48/F40	1 1/2"G(NPT)
MPY-C5-801-SRC5	3493	1230	486	420	∅910	∅220x250	231.4	50	F48/F40	1 1/2"G(NPT)
MPY-C5-801-SRC6	3613	1230	486	420	∅910	∅220x250	231.4	50	F48/F40	1 1/2"G(NPT)
MPY-C5-901-SRC4	3493	1230	486	420	∅1010	∅220x250	231.4	50	F48/F40	2"G(NPT)
MPY-C5-901-SRC5	3613	1230	486	420	∅1010	∅220x250	231.4	50	F48/F40	2"G(NPT)
MPY-C5-901-SRC6	3773	1230	486	420	∅1010	∅220x250	231.4	50	F48/F40	2"G(NPT)
MPY-C6-801-SRC4	4050	1555	658	490	∅910	∅280x320	292.4	63	F60/F48	1 1/2"G(NPT)
MPY-C6-801-SRC5	4310	1555	658	490	∅910	∅280x320	292.4	63	F60/F48	1 1/2"G(NPT)
MPY-C6-801-SRC6	4320	1555	658	490	∅910	∅280x320	292.4	63	F60/F48	1 1/2"G(NPT)
MPY-C6-901-SRC4	4310	1555	658	490	∅1010	∅280x320	292.4	63	F60/F48	2"G(NPT)
MPY-C6-901-SRC5	4320	1555	658	490	∅1010	∅280x320	292.4	63	F60/F48	2"G(NPT)
MPY-C6-901-SRC6	4430	1555	658	490	∅1010	∅280x320	292.4	63	F60/F48	2"G(NPT)
MPY-C6-1001-SRC4	4320	1555	658	490	∅1110	∅280x320	292.4	63	F60/F48	2"G(NPT)
MPY-C6-1001-SRC5	4430	1555	658	490	∅1110	∅280x320	292.4	63	F60/F48	2"G(NPT)
MPY-C6-1001-SRC6	4600	1555	658	490	∅1110	∅280x32		63	F60/F48	2"G(NPT)

MPY Series Fork Type Actuator

MPY-C(FO) Series Single Acting Actuator



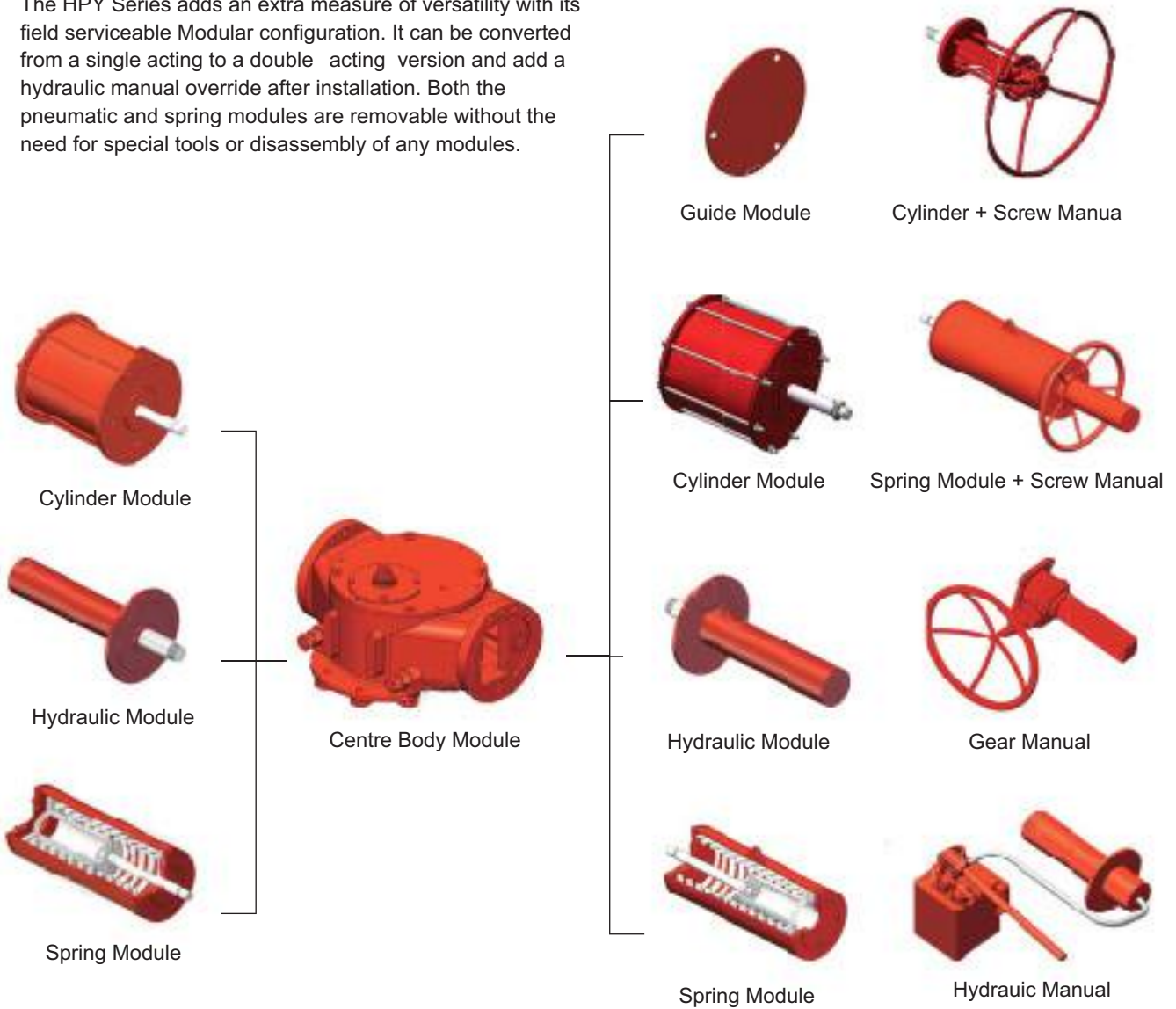
Model	L	L1	L2	H	D	D5×Depth	A	B	Connecting Flange	Air connection
	mm								ISO5211	
MPY-C06-201-SRO4	1348	505	180	214	∅225	∅48x65	51.8	14	F14	3/8"G(NPT)
MPY-C06-201-SRO5	1298	505	180	214	∅225	∅48x65	51.8	14	F14	3/8"G(NPT)
MPY-C06-201-SRO6	1328	505	180	214	∅225	∅48x65	51.8	14	F14	3/8"G(NPT)
MPY-C06-221-SRO4	1298	515	180	214	∅250	∅48x65	51.8	14	F14	1/2"G(NPT)
MPY-C06-221-SRO5	1328	515	180	214	∅250	∅48x65	51.8	14	F14	1/2"G(NPT)
MPY-C06-221-SRO6	1348	515	180	214	∅250	∅48x65	51.8	14	F14	1/2"G(NPT)
MPY-C08-221-SRO4	1487	605	200	238	∅250	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-221-SRO5	1487	605	200	238	∅250	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-221-SRO6	1487	605	200	238	∅250	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-251-SRO4	1487	605	200	238	∅280	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-251-SRO5	1487	605	200	238	∅280	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-251-SRO6	1507	605	200	238	∅280	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-281-SRO4	1487	605	200	238	∅310	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-281-SRO5	1507	605	200	238	∅310	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C08-281-SRO6	1537	605	200	238	∅310	∅60x100	64.4	18	F16	1/2"G(NPT)
MPY-C1-281-SRO4	1680	680	225	246	∅310	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-C1-281-SRO5	1680	680	225	246	∅310	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-C1-281-SRO6	1680	680	225	246	∅310	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-C1-321-SRO4	1660	660	225	246	∅395	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-C1-321-SRO5	1660	660	225	246	∅395	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-C1-321-SRO6	1710	660	225	246	∅395	∅72x120	76.9	20	F25/F16	1/2"G(NPT)
MPY-C1-351-SRO4	1660	660	225	246	∅430	∅72x120	76.9	20	F25/F16	3/4"G(NPT)
MPY-C1-351-SRO5	1710	660	225	246	∅430	∅72x120	76.9	20	F25/F16	3/4"G(NPT)
MPY-C1-351-SRO6	1710	660	225	246	∅430	∅72x120	76.9	20	F25/F16	3/4"G(NPT)

MPY Series Fork Type Actuator

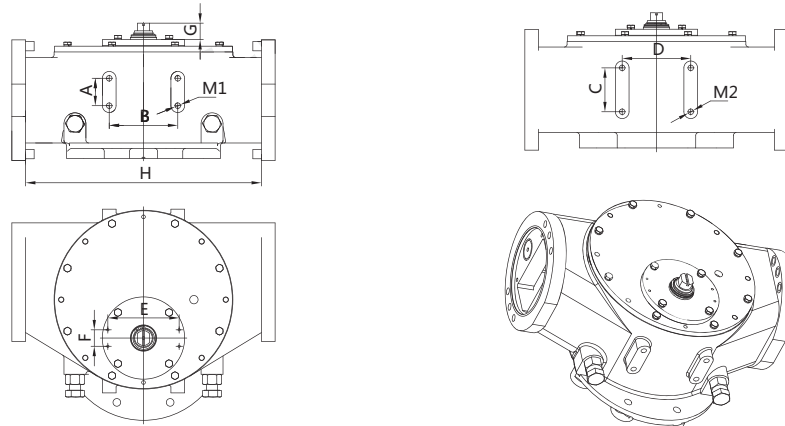
Model	L	L1	L2	H	D	D5×Depth	A	B	Connecting Flange	Air connection
	mm								ISO5211	
MPY-C1-401-SRO4	1710	660	225	246	∅500	∅72x120	76.9	20	F25/F16	1"G(NPT)
MPY-C1-401-SRO5	1710	660	225	246	∅500	∅72x120	76.9	20	F25/F16	1"G(NPT)
MPY-C1-401-SRO6	1730	660	225	246	∅500	∅72x120	76.9	20	F25/F16	1"G(NPT)
MPY-C2-401-SRO4	1898	775	285	269	∅500	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-C2-401-SRO5	1928	775	285	269	∅500	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-C2-401-SRO6	1948	775	285	269	∅500	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-C2-451-SRO4	1928	775	285	269	∅550	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-C2-451-SRO5	1948	775	285	269	∅550	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-C2-451-SRO6	1948	775	285	269	∅550	∅100x150	106.4	28	F30/F25	1"G(NPT)
MPY-C3-451-SRO4	2143	915	345	310	∅550	∅160x200	169.4	40	F35/F30	1"G(NPT)
MPY-C3-451-SRO5	2193	915	345	310	∅550	∅160x200	169.4	40	F35/F30	1"G(NPT)
MPY-C3-451-SRO6	2193	915	345	310	∅550	∅160x200	169.4	40	F35/F30	1"G(NPT)
MPY-C3-501-SRO4	2193	915	345	310	∅600	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-C3-501-SRO5	2193	915	345	310	∅600	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-C3-501-SRO6	2243	915	345	310	∅600	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-C3-561-SRO4	2193	915	345	310	∅660	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-C3-561-SRO5	2243	915	345	310	∅660	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-C3-561-SRO6	2273	915	345	310	∅660	∅160x200	169.4	40	F35/F30	1 1/4"G(NPT)
MPY-C3-631-SRO4	2273	915	345	310	∅730	∅160x200	169.4	40	F35/F30	1 1/2"G(NPT)
MPY-C3-631-SRO5	2323	915	345	310	∅730	∅160x200	169.4	40	F35/F30	1 1/2"G(NPT)
MPY-C3-631-SRO6	2373	915	345	310	∅730	∅160x200	169.4	40	F35/F30	1 1/2"G(NPT)
MPY-C4-631-SRO4	2667	1050	412	340	∅730	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-631-SRO5	2693	1050	412	340	∅730	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-631-SRO6	2763	1050	412	340	∅730	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-701-SRO4	2693	1050	412	340	∅810	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-701-SRO5	2763	1050	412	340	∅810	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-701-SRO6	2843	1050	412	340	∅810	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-801-SRO4	2763	1050	412	340	∅910	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-801-SRO5	2843	1050	412	340	∅910	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C4-801-SRO6	2973	1050	412	340	∅910	∅180x220	190.4	45	F40	1 1/2"G(NPT)
MPY-C5-801-SRO4	3176	1230	486	420	∅910	∅220x250	231.4	50	F48/F40	1 1/2"G(NPT)
MPY-C5-801-SRO5	3236	1230	486	420	∅910	∅220x250	231.4	50	F48/F40	1 1/2"G(NPT)
MPY-C5-801-SRO6	3296	1230	486	420	∅910	∅220x250	231.4	50	F48/F40	1 1/2"G(NPT)
MPY-C5-901-SRO4	3236	1230	486	420	∅1010	∅220x250	231.4	50	F48/F40	2"G(NPT)
MPY-C5-901-SRO5	3296	1230	486	420	∅1010	∅220x250	231.4	50	F48/F40	2"G(NPT)
MPY-C5-901-SRO6	3386	1230	486	420	∅1010	∅220x250	231.4	50	F48/F40	2"G(NPT)
MPY-C6-801-SRO4	4092	1555	658	490	∅910	∅280x320	292.4	63	F60/F48	1 1/2"G(NPT)
MPY-C6-801-SRO5	4167	1555	658	490	∅910	∅280x320	292.4	63	F60/F48	1 1/2"G(NPT)
MPY-C6-801-SRO6	4177	1555	658	490	∅910	∅280x320	292.4	63	F60/F48	1 1/2"G(NPT)
MPY-C6-901-SRO4	4167	1555	658	490	∅1010	∅280x320	292.4	63	F60/F48	2"G(NPT)
MPY-C6-901-SRO5	4177	1555	658	490	∅1010	∅280x320	292.4	63	F60/F48	2"G(NPT)
MPY-C6-901-SRO6	4087	1555	658	490	∅1010	∅280x320	292.4	63	F60/F48	2"G(NPT)
MPY-C6-1001-SRO4	4177	1555	658	490	∅1110	∅280x320	292.4	63	F60/F48	2"G(NPT)
MPY-C6-1001-SRO5	4087	1555	658	490	∅1110	∅280x320	292.4	63	F60/F48	2"G(NPT)
MPY-C6-1001-SRO6	4247	1555	658	490	∅1110	∅280x320	292.4	63	F60/F48	2"G(NPT)

■ Modular Design

The HPY Series adds an extra measure of versatility with its field serviceable Modular configuration. It can be converted from a single acting to a double acting version and add a hydraulic manual override after installation. Both the pneumatic and spring modules are removable without the need for special tools or disassembly of any modules.



■ Body Connecting Dimension



Body No.	AxB	CxD	Screwed Hole M1	Screwed Hole (M2)	E	F	G	H
B04	50X90	50X90	4-M10 depth 15	4-M10 depth 15	80	30	20	- -
B05	50X90	60x90	4-M10 depth 15	4-M10 depth 15	80	30	20	- -
B06/C06	50X90	80X125	4-M12 depth 18	4-M12 depth 18	80	30	30	295
B08/C08	50X125	80X125	4-M12 depth 18	4-M12 depth 18	80	30	30	376
B1/C1	50X125	80X125	4-M12 depth 18	4-M12 depth 18	130	30	30	430
B2/C2	80X125	95X155	4-M12 depth 18	4-M12 depth 18	130	30	30	484
B3/C3	80X180	115X185	4-M12 depth 18	4-M12 depth 18	130	30	30	584
B4/C4	80X220	115X230	4-M12 depth 18	4-M12 depth 18	130	30	30	680
B5/C5	80X220	140X310	4-M12 depth 18	4-M12 depth 18	130	30	30	806
B6/C6	100X220	180X400	4-M12 depth 18	4-M12 depth 18	130	30	30	1060

■ Model Code

MPY- [1] - [2] - [3] [4] [5] - [6] - [7] - [8]

[1] Body Structure	[2] Cylinder No.	[3] Acting Type	[4] Position of Air Failure	[5] Spring No.	[6] Ambient temperature
B04	125	S: Single Acting	O: Failure Open	4 : 4 Number	S: -20~70°C
B05	...	D: Double Acting	C: Failure Close	5 : 5 Number	L: -40~80°C
B06	1001			6 : 6 Number	H: -20~120°C
B08					
B1~6					
C06					
C08					
C1~6					

[7] Manual Type	[8] Specific Requirements
Null : None	Null : None
SM : Screw Manual	HC : High Cycle
GM : Gear Manual	C : Custom
HW : Hydraulic Manual	

◆ **Summary**

SD series manual mechanism is combined with the pneumatic actuator assembly to realize manual or pneumatic drive for butterfly valves, ball valves. etc. which are opened at 90°.

SD are used in petroleum, chemical, pharmaceutical. water treatment. power plants. nuclear power and other places. for 90° open ball valves, butterfly valves, plug valves and other valves supporting the use of the company's supply of valve turbine box can also be used according to customer requirements on the product speed ratio. use temperature, protection level. anti-corrosion level. Adjust customization.

◆ **Characteristic**

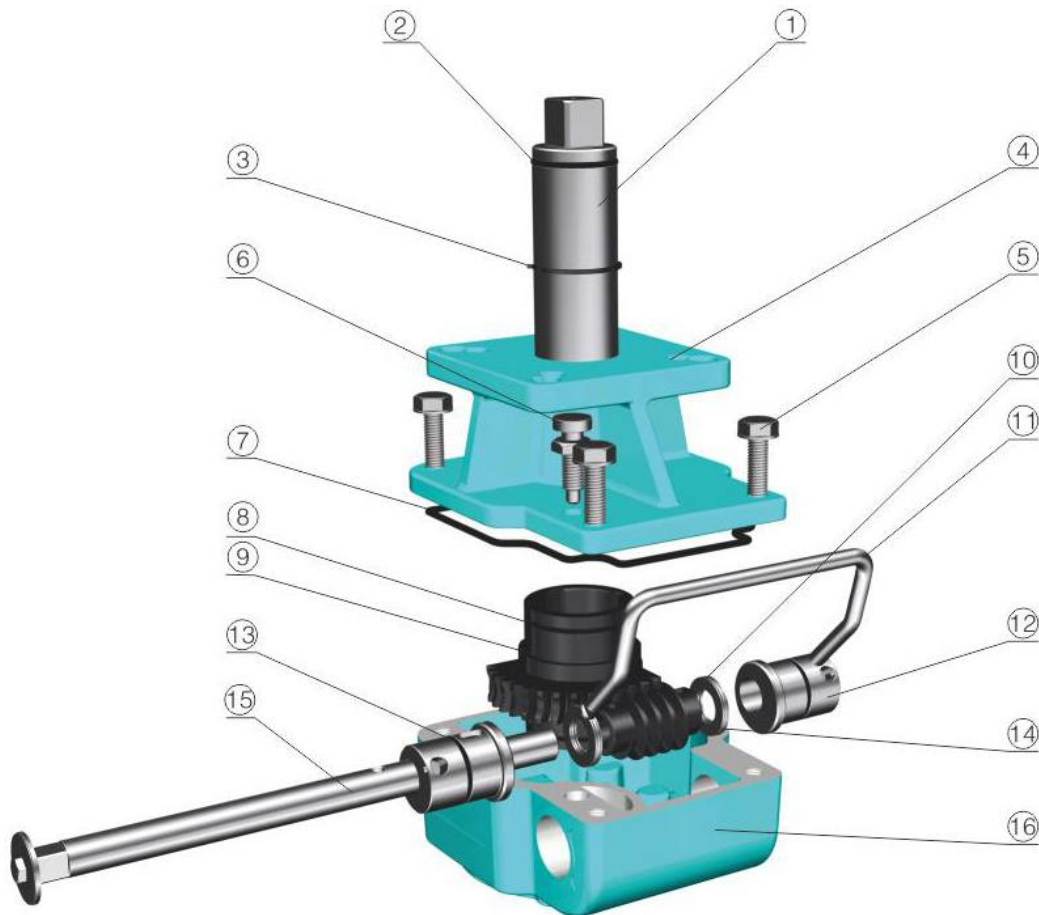
- 1.It is small in size, light in weight and reasonable in design.
- 2. Products are serialized and output torque is matched with pneumatic devices.
- 3.Turbine connection holes have two keyways 90° degrees apart so that users can choose the relative position of the device with the valve according to their needs.
- 4. Lifting the limit pulling ring, rotating the eccentric device 90° degree limit pin automatic limit,to achieve pneumatic, otherwise to achieve manual.
- 5. Product factory. equipped with special grease, and valve assembly, the overall seal, dust-proof. waterproof, protection grade IP65, IP67. IP68 optional.



◆ The chnical parameters of SD series pneumatic valves manual operation mechanism

Model	Double Acting Actuator	Single Acting Actuator	Speed ratio	Output torque(Nm)
SD-1	MAP52-92D	MAP52-83S	26:1	180
SD-2	MAP105- 125D	MAP92-105S	28:1	320
SD-3	MAP125-145D	MAP115-125S	38:1	680
SD-4	MAP160-190D	MAP145-160S	54:1	1200
SD-5	MAP210-240D	MAP190-210S	80:1	2100
SD-6	MAP240-270D	MAP210-240S	78:1	3000
SD-7	MAP270-300D	MAP240-270S	98:1	3800

◆ Structure Feature

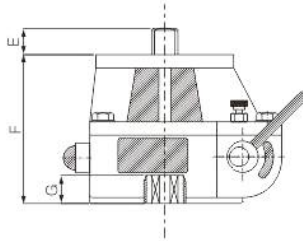
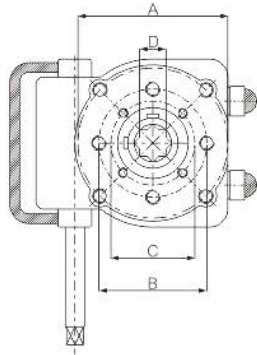


Main components and materials

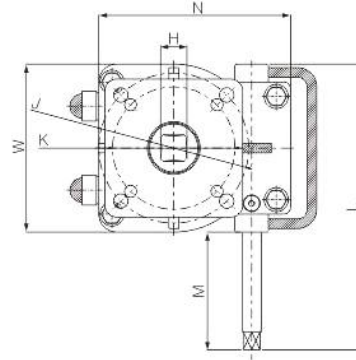
No.	Name	Material	No.	Name	Material
1	Drive spindle	Alloy steel	9	worm gear	Spheroidal graphite cast iron
2	Seal ring	Nitrile rubber	10	plane bearing	Alloy steel
3	Reed spring	Stainless steel(304)	11	Handle	Stainless steel(304)
4	Upper cover	Aluminium alloy	12	Eccentric sleeve	Alloy steel
5	A fastening	Stainless steel(304)	13	Seal ring	Nitrile rubber
6	Positioning pin	Alloy steel	14	Worm	Alloy steel
7	Seal ring	Nitrile rubber	15	Transmission rod	Alloy steel
8	Seal ring	Nitrile rubber	16	Box	Aluminium alloy

◆ Dimension

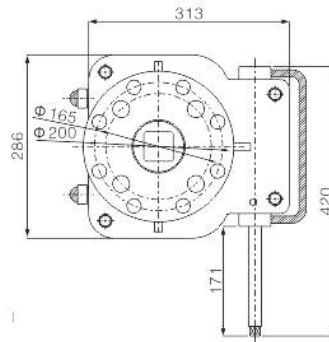
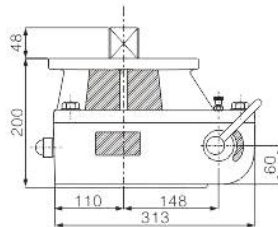
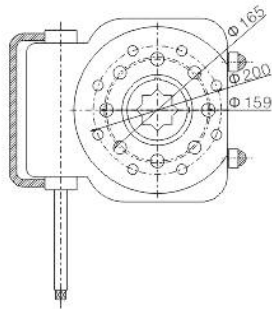
Connecting Dimension of Valves



Connecting Dimension of Cylinder



SD-1~SD-6 Dimension



SD-7 Dimension

SD series pneumatic valve handheld mechanism connection size table

Model	SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-7
A	F07	F10	F12	F14	F16	F16	F16
B	$\phi 57$	$\phi 70$	$\phi 89$	$\phi 108$	$\phi 108$	$\phi 159$	$\phi 159$
C	F05	F07	F07/F10	F10/F12	F14	F14	F200
D	14*14	17*17	22*22	27*27	36*36	46*46	46*46
E	15	19	22	28	38	48	48
F	105	110	130	165	185	200	200
G	20	22	28	32	40	50	50
H	14*14	17*17	22*22	27*27	36*36	46*46	46*46
N	115	135	160	200	244	282	313
W	89.5	125	136	187.5	220	251	286
J	F07	F10	F12	F14	F16	F16	F16
K	F05	F07	F10	F10/F12	F14	/	$\phi 200$
L	180	220	257	330	370	400	420
M	71	92.3	113	147.8	148	158	171
Hand wheel outer diameter	$\phi 180$	$\phi 200$	$\phi 280$	$\phi 320$	$\phi 400$	$\phi 500$	$\phi 600$
Reference weight(kg)	3	4.5	7	13.7	22	30	38

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Our vision

Be the world leading brand and successful valve accessories company.

Our Mission

Deliver superior service to our customer and pursue growth through improved and high-quality product; always strive to exceed our customers' expectations; manage our business with integrity.

General industry

Chemical

Oil & Gas

Pulp & Paper

Food & Pharmaceutical

HVAC & Water system

Petrochemical & Refining

Metals and Mining

MORC can supply not only reliable products to ensure extended service life, but experienced technical support and unmatched after sales service.