

TOP-QUALITY
PNEUMATIC ACTUATOR

MPYA & MPHA



MTS VALVES

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2018.10. / NO.2

MTS **MTS CO., LTD**

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CONTROL VALVE, MANUAL VALVE, DAMPER, SPECIAL VALVE



ISO 9001:2008



ISO 14001:2004



CONTENTS

1. MPYA SERIES

- INTRODUCTION	2
- CONSTRUCTION	3
- FEATURES AND ADVANTAGE	4
- TECHNICAL INFORMATION	5
- DIMENSIONS	8
- EXPLODED VIEW	9

2. MPHA SERIES

- MPHA ACTUATOR DA1	10
- DIMENSIONS	
- TECHNICAL INFORMATION	
- MPHA ACTUATOR DA2	12
- DIMENSIONS	
- TECHNICAL INFORMATION	
- EXPLODED VIEW	14
- MPHA ACTUATOR SR	16
- DIMENSIONS	
- TECHNICAL INFORMATION	
- EXPLODED VIEW	18

MPYA series Pneumatic Actuators are designed using Scotch-Yoke technology from MPYA 50 to the largest of MPYA 200.

Scotch-Yoke technology is well known to all users as the most suitable actuator mechanism for valve and damper operation as it produces higher torque at both end positions.

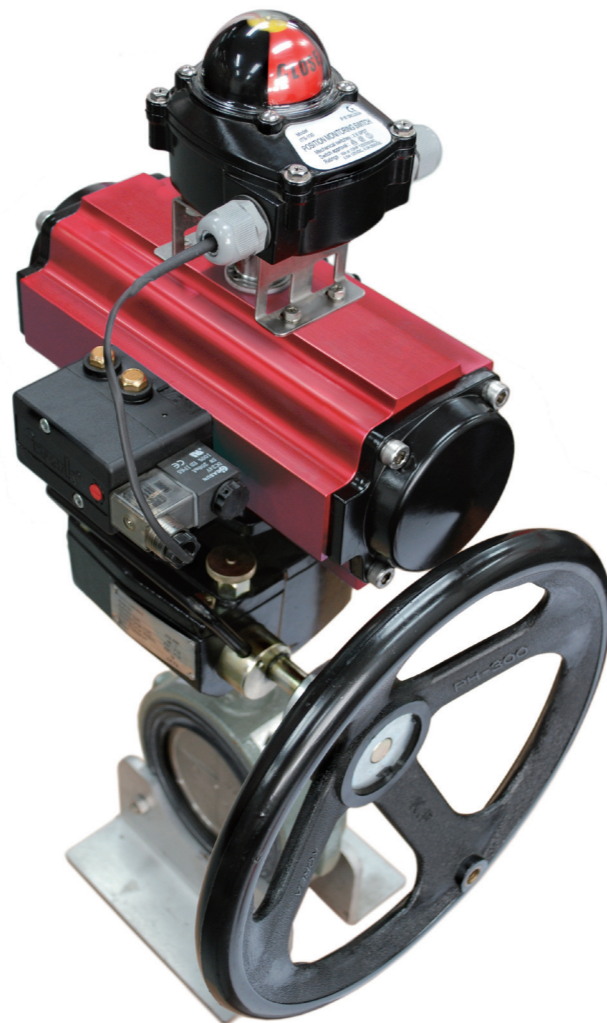
Specification of MPYA actuators follow international standards for faster and easier mounting of accessories like Solenoid valves, limit switches, positioners etc.

Ranges available are 10Nm through 4000Nm double acting, and 5N.m through 1900N.m spring return.

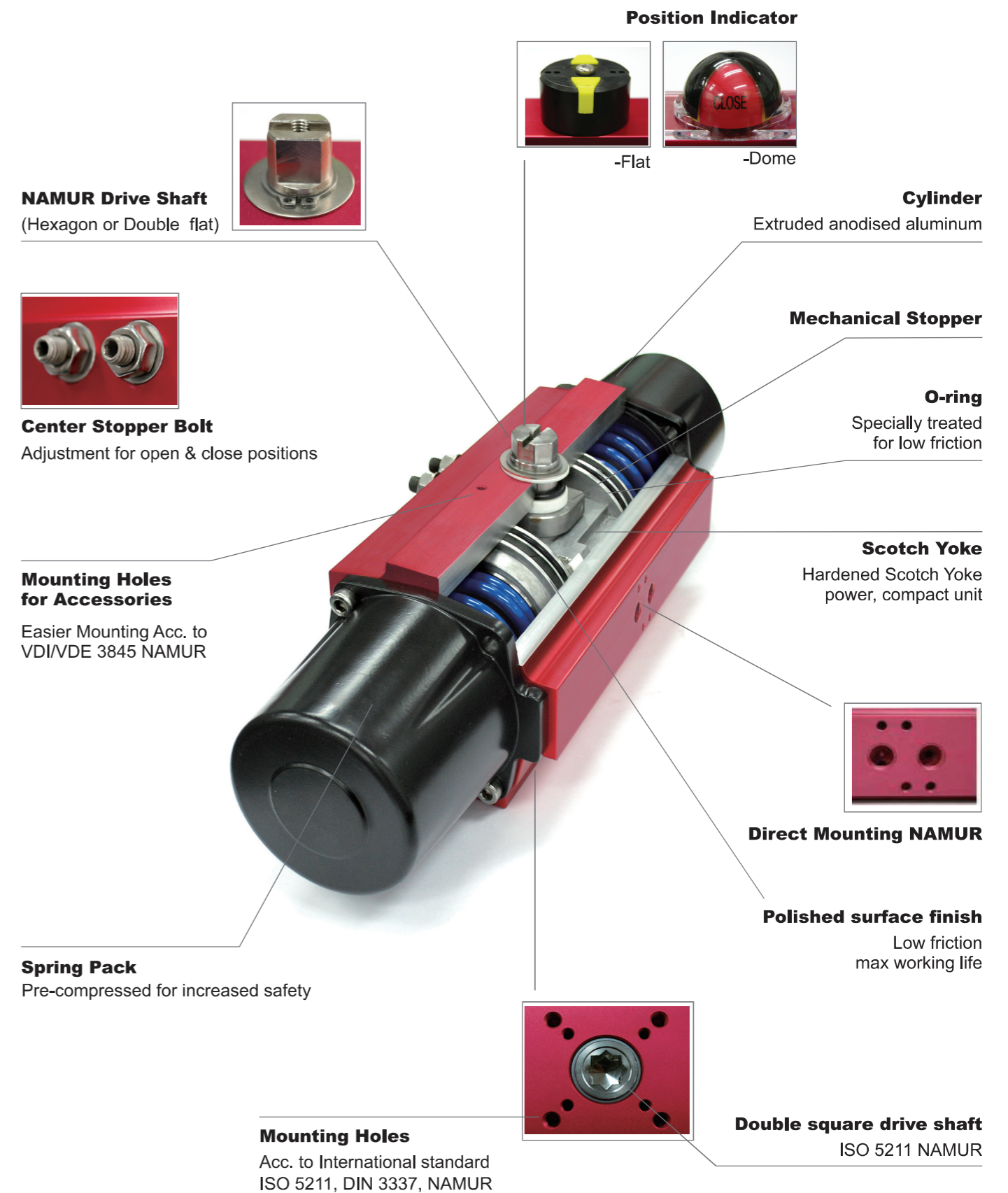
The range of ambient temperature for standard operation is -20°C ~ 80°C as standard (For higher and lower temperature applications please consult manufacturer before placing order).

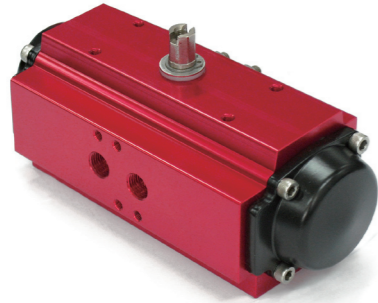
Mounting dimensions follow ISO5211, DIN3337, NAMUR, VDI/VDE3845 standards,

The drive shafts come in various sizes with double square shaped female bore for accommodating valve shaft, Spring package is pre-compressed for increased safety, Extremely long service life and reliable performance.



MTS Co.,Ltd. also provides limit switch boxes (weather proof, explosion proof), solenoid valves, positioners for modulating services and other pneumatic accessories. De-clutchable gear box for manual operation are also options available in the MTS product range.

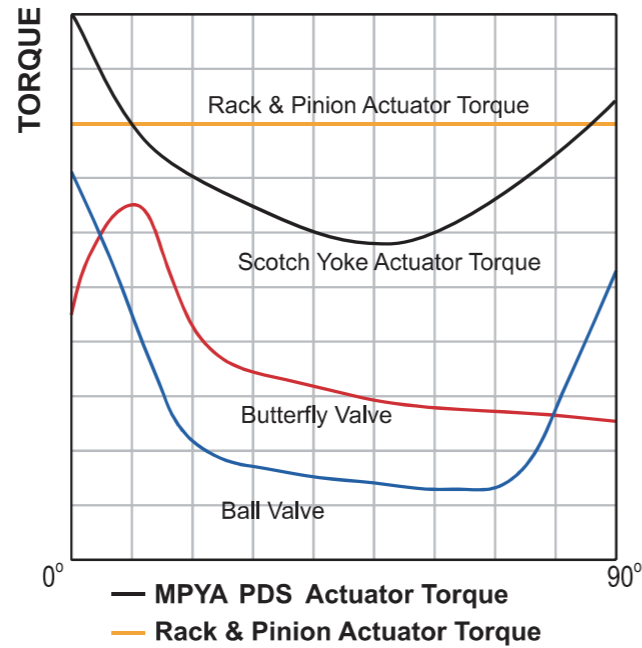




Advantage (Scotch Yoke)

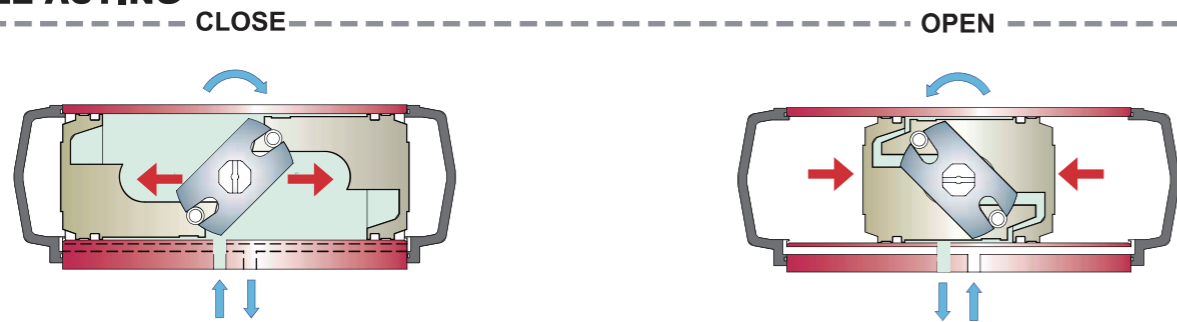
The MPYA actuators provide increased torque at open and close position, this accurately matches the required torque for practical valve operation.

- Increased torque at the open and close position.
- Compact design and size
- Extremely long cyclic life
- Adjustable center stopper for both open & close positions

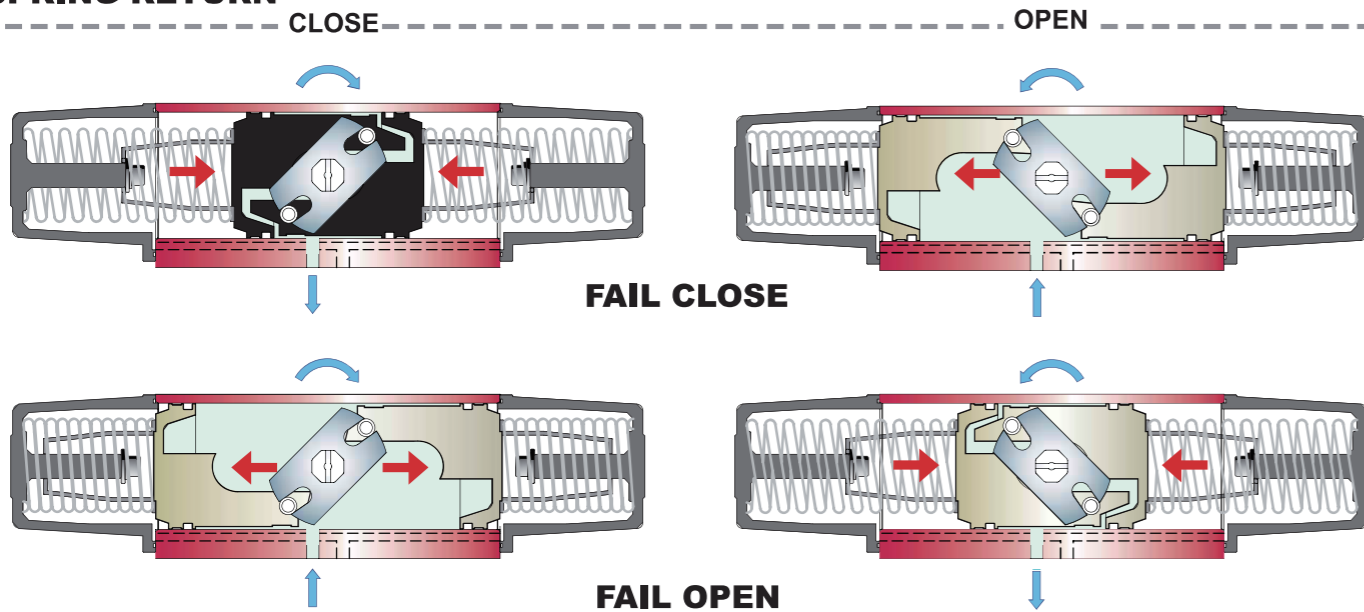


MECHANICAL MOVEMENT & POSITION INSIDE

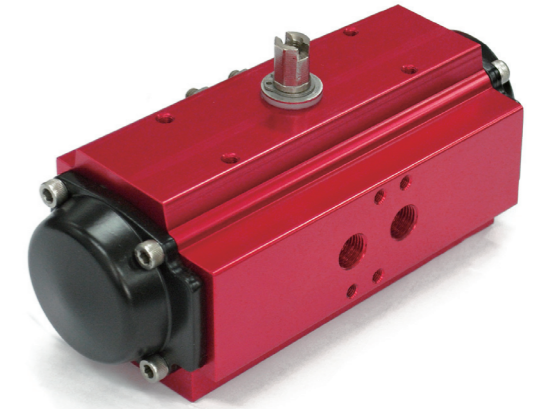
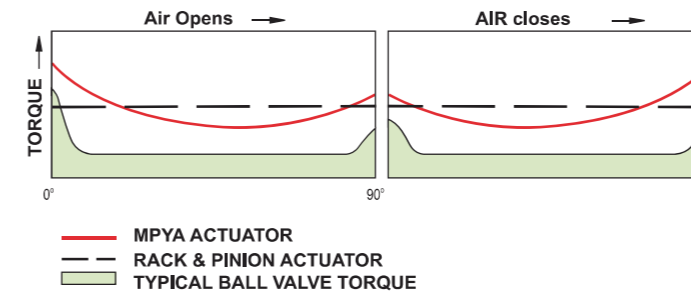
DOUBLE ACTING



SPRING RETURN



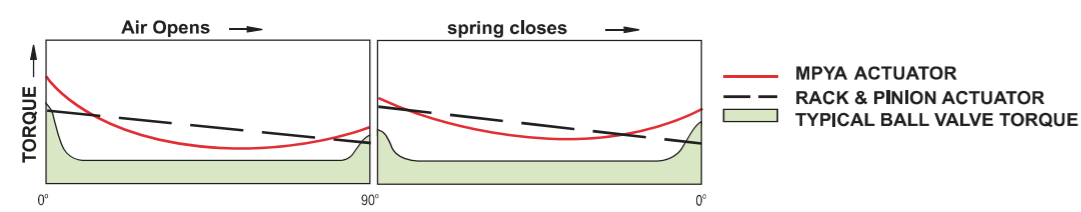
DOUBLE ACTING OUTPUT TORQUE (N.m)



MODEL	Angle	2.8 bar 40 psi	3.5 bar 50 psi	4.2 bar 61 psi	5.5 bar 80 psi	6 bar 87 psi	7 bar 100 psi	8 bar 116 psi	Air Consumption (L, at 5.5 bar)		Operating Time (Sec., at 5.5bar)
									OPEN	CLOSE	
MPYA50DA	0°	27	34	41	54	59	69	79	0.16	0.16	< 0.3
	45°	12	15	17	23	25	29	33			
	90°	19	24	29	38	42	48	55			
MPYA70DA	0°	76	95	114	149	163	190	217	0.46	0.46	< 0.6
	45°	32	40	48	62	68	79	90			
	90°	53	66	78	104	114	133	152			
MPYA85DA	0°	141	176	212	277	302	353	403	0.8	0.8	< 1.0
	45°	59	74	89	116	127	148	169			
	90°	99	123	148	194	212	247	282			
MPYA100DA	0°	229	286	343	449	490	571	653	1.32	1.28	< 2.0
	45°	96	120	144	188	205	239	273			
	90°	160	200	240	314	343	400	457			
MPYA125DA	0°	438	547	657	860	938	1,095	1,250	2.49	2.42	< 3.0
	45°	182	228	273	358	390	456	521			
	90°	306	383	460	602	657	766	876			
MPYA160DA	0°	850	1,062	1,274	1,668	1,820	2,124	2,427	4.52	4.61	< 5.0
	45°	355	444	533	698	761	888	1,015			
	90°	595	744	892	1,168	1,275	1,487	1,700			
MPYA200DA	0°	1,622	2,028	2,433	3,187	3,476	4,056	4,635	9.07	9.21	< 6.0
	45°	679	848	1,018	1,333	1,454	1,697	1,939			
	90°	1,136	1,420	1,704	2,231	2,434	2,840	3,245			

*Please be sure to include appropriate torque safety factors and consider various service conditions when sizing.

SPRING RETURN OUTPUT TORQUE (N·m)

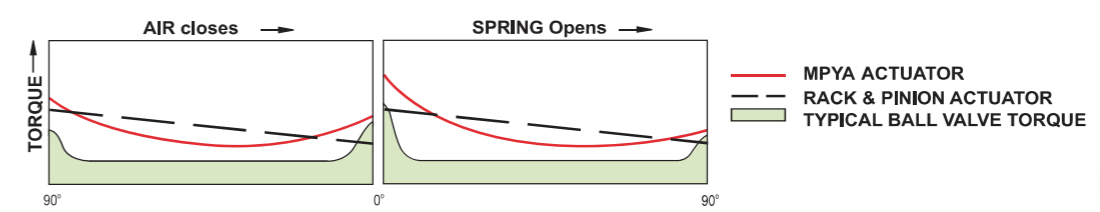


Spring Close

MODEL	Function	Angle	4.2 bar 60 psi	5.5 bar 80 psi	6 bar 87 psi	7 bar 100 psi	Air Consumption (L, at 5.5 bar)	Operating Time (Sec., at 5.5bar)
MPYA50SR	Air to open	0°	25.6	34.6	37.6	42.5	0.16	< 0.3
		55°	8.3	11.1	12.0	13.4		
		90°	10.0	13.1	14.2	15.4		
	Spring to close	90°	18.6	25.0	27.3	32.2		
		35°	9.0	12.0	13.1	15.5		
		0°	15.2	19.9	21.7	25.6		
MPYA70SR	Air to open	0°	68.3	92.3	98.9	112.3	0.46	< 0.6
		55°	21.9	29.0	31.6	35.4		
		90°	29.0	38.0	41.7	46.2		
	Spring to close	90°	49.5	66.7	72.1	84.6		
		35°	25.7	34.3	37.4	43.8		
		0°	43.8	57.2	63.6	74.6		
MPYA85SR	Air to open	0°	131.9	176.2	187.9	216.7	0.79	< 1.0
		55°	40.1	53.4	57.9	66.9		
		90°	50.4	67.0	72.5	83.9		
	Spring to close	90°	95.7	127.8	139.3	159.5		
		35°	48.4	64.5	70.4	80.6		
		0°	76.7	101.9	114.6	131.0		
MPYA100SR	Air to open	0°	214.6	286.8	311.2	359.6	1.28	< 2.0
		55°	64.7	86.1	93.4	108.4		
		90°	80.5	106.7	115.7	134.9		
	Spring to close	90°	156.0	208.7	227.2	259.2		
		35°	78.6	104.9	114.3	130.3		
		0°	123.2	163.5	178.5	203.3		
MPYA125SR	Air to open	0°	412.5	552.4	601.3	689.3	2.42	< 3.0
		55°	115.9	164.9	189.4	217.2		
		90°	132.3	202.8	247.1	283.4		
	Spring to close	90°	320.7	401.1	409.7	471.5		
		35°	158.4	200.9	208.4	240.0		
		0°	234.2	309.8	336.4	388.5		
MPYA160SR	Air to open	0°	802.5	1,075.6	1,189.6	1,373.0	4.61	< 5.0
		55°	239.6	319.5	341.8	395.8		
		90°	294.8	390.9	401.8	467.1		
	Spring to close	90°	584.0	780.8	872.5	997.6		
		35°	292.7	390.2	429.9	491.3		
		0°	452.6	579.9	630.3	718.8		
MPYA200SR	Air to open	0°	1,561.3	2,079.9	2,272.7	2,603.4	9.21	< 6.0
		55°	452.2	607.9	660.3	747.3		
		90°	536.6	729.5	786.7	877.1		
	Spring to close	90°	1,141.7	1,508.2	1,646.9	1,920.1		
		35°	564.3	747.4	813.6	946.8		
		0°	835.6	1,115.9	1,202.8	1,391.4		

*Please be sure to include appropriate torque safety factors and consider variable service conditions when sizing.

SPRING RETURN OUTPUT TORQUE (N·m)

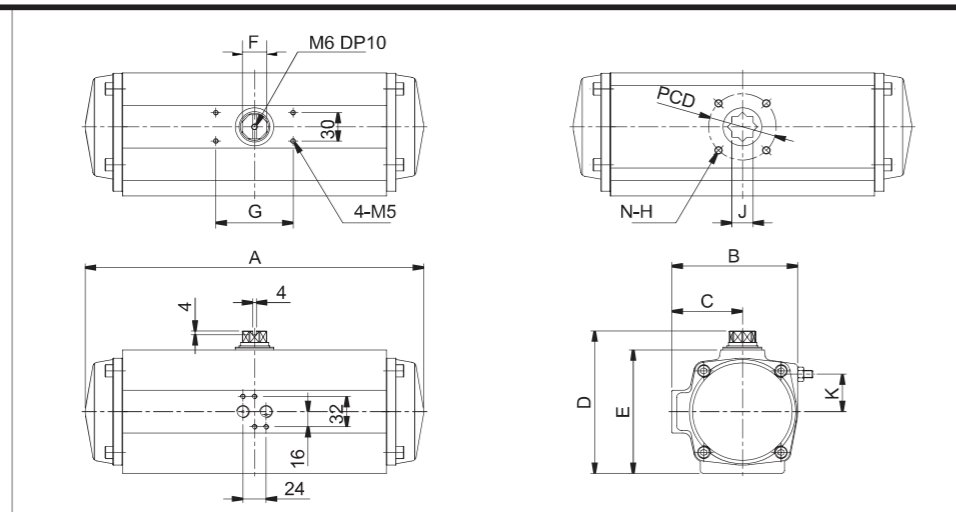


Spring Open

MODEL	Function	Angle	4.2 bar 60 psi	5.5 bar 80 psi	6 bar 87 psi	7 bar 100 psi	Air Consumption (L, at 5.5 bar)	Operating Time (Sec., at 5.5bar)
MPYA50SR	Air to close	90°	17.9	24.2	26.3	29.8	0.16	< 0.3
		55°	8.3	11.1	12.0	13.4		
		0°	14.3	18.7	20.3	22.0		
	Spring to open	0°	26.5	35.7	39.0	46.1		
		35°	8.3	11.0	12.0	14.1		
		90°	10.7	13.9	15.2	17.9		
MPYA70SR	Air to close	90°	47.8	64.6	69.3	78.6	0.46	< 0.6
		55°	22.7	30.4	32.8	36.9		
		0°	41.4	54.2	59.6	66.0		
	Spring to open	0°	70.7	95.3	103.0	120.8		
		35°	22.9	30.3	33.3	39.0		
		90°	30.7	40.1	44.6	52.2		
MPYA85SR	Air to close	90°	92.4	123.4	131.6	151.7	0.8	< 1.0
		55°	42.3	56.4	61.2	70.6		
		0°	72.0	95.6	103.5	119.8		
	Spring to open	0°	136.6	182.5	199.0	227.8		
		35°	42.1	56.1	61.2	70.0		
		90°	53.7	71.4	80.2	91.7		
MPYA100SR	Air to close	90°	150.3	200.8	217.9	251.8	1.32	< 2.0
		55°	68.5	91.3	99.1	114.8		
		0°	114.9	152.3	165.3	192.7		
	Spring to open	0°	222.8	298.0	324.4	370.2		
		35°	68.2	90.9	99.0	112.9		
		90°	86.2	114.5	125.0	142.4		
MPYA125SR	Air to close	90°	288.8	386.8	421.0	482.6	2.49	< 3.0
		55°	125.6	175.2	191.1	219.1		
		0°	188.9	289.7	352.9	404.8		
	Spring to open	0°	458.0	572.9	585.1	673.4		
		35°	135.1	173.5	189.4	218.3		
		90°	164.0	217.0	235.6	272.1		
MPYA160SR	Air to close	90°	561.9	753.1	832.9	961.4	4.52	< 5.0
		55°	254.5	339.9	367.7	425.3		
		0°	421.0	558.3	573.8	667.0		
	Spring to open	0°	834.1	1115.1	1246.1	1424.8		
		35°	255.9	340.6	372.4	425.4		
		90°	316.9	418.6	441.4	503.3		
MPYA200SR	Air to close	90°	1093.2	1456.4	1591.3	1822.9	9.07	< 6.0
		55°	485.1	650.2	707.6	804.1		
		0°	766.4	1041.9	1123.5	1252.7		
	Spring to open	0°	1630.5	2154.0	2352.0	2742.2		
		35°	481.5	639.3	693.9	806.1		
		90°	585.1	781.4	842.2	974.3		

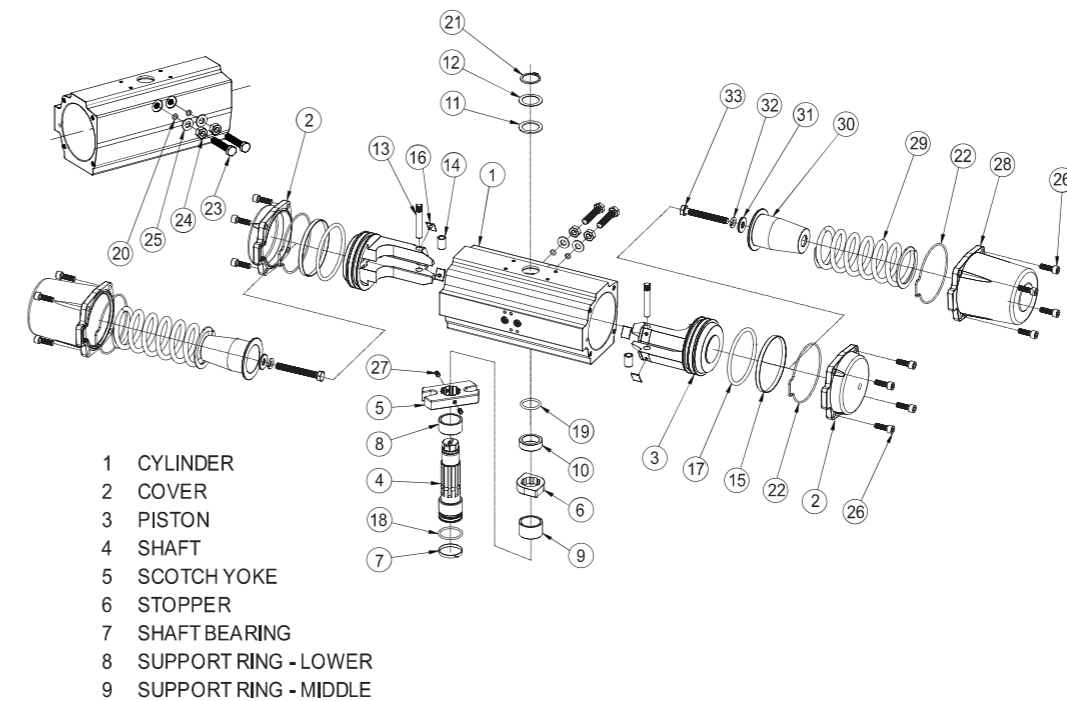
*Please be sure to include appropriate safety factors and consider various service conditions when sizing.

MAYA : DOUBLE ACTING TYPE



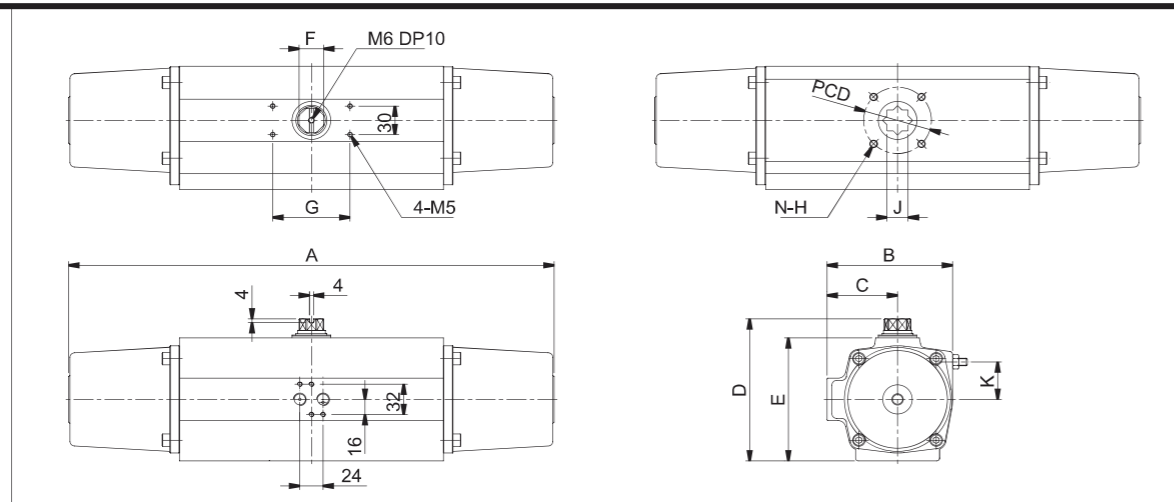
UNIT : mm

MODEL	A	B	C	D	E	F	G	ISO5211	PCD	N-H	J	DP	K	WEIGHT(kg)
MAYA50A	186	73	42	91	71	11.4	80	F03/F05/F07	35/50/70	4-M5/M8	11x11	15	19.5	1.6
MAYA70A	255	96	55	112	92	17	80	F05/F07	50/70	4-M6/M8	17x17	20	26	3
MAYA85A	300	110	62	130	110	22	80	F05/F07	50/70	4-M6/M8	17x17	25	33	5
MAYA100A	350	130	73	150	130	25.4	80	F07/F10	70/102	4-M8/M10	22x22	30	39.5	7.5
MAYA125A	422	159	88	182	162	28.6	80/130	F10/F12	102/125	4-M10/M12	27x27	35	47.5	11
MAYA160A	510	195	105	240	210	34	80/130	F10/F14	102/140	4-M10/M16	36x36	60	62	29
MAYA200A	615	243	130	292	262	42.5	80/130	F12/F16	125/165	4-M12/M20	46x46	60	77.5	56



- 10 SUPPORT RING - UPPER
- 11 THRUST WASHER
- 12 WASHER - SHAFT
- 13 ROLLER PIN
- 14 ROLLER
- 15 PISTON GUIDE PAD
- 16 SUPPORT BAND
- 17 O-RING - PISTON
- 18 O-RING - SHAFT, LOWER
- 19 O-RING - SHAFT, UPPER
- 20 O-RING - STOPPER
- 21 SNAP RING
- 22 O-RING - COVER
- 23 ADJUST BOLT
- 24 ADJUST NUT
- 25 WASHER-STOPPER
- 26 HEX.HEAD SOCKET BOLT
- 27 SET SCREW
- 28 SPRING RETURN COVER
- 29 SPRING
- 30 SPRING RETAINER
- 31 PLANE WASHER
- 32 SPRING WASHER
- 33 PRE TENSION BOLT

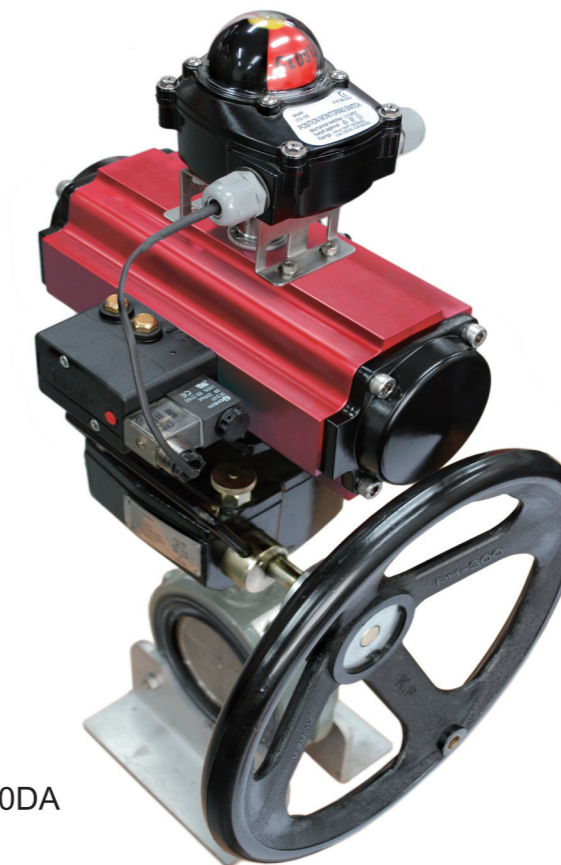
MAYA : SPRING RETURN TYPE



UNIT : mm

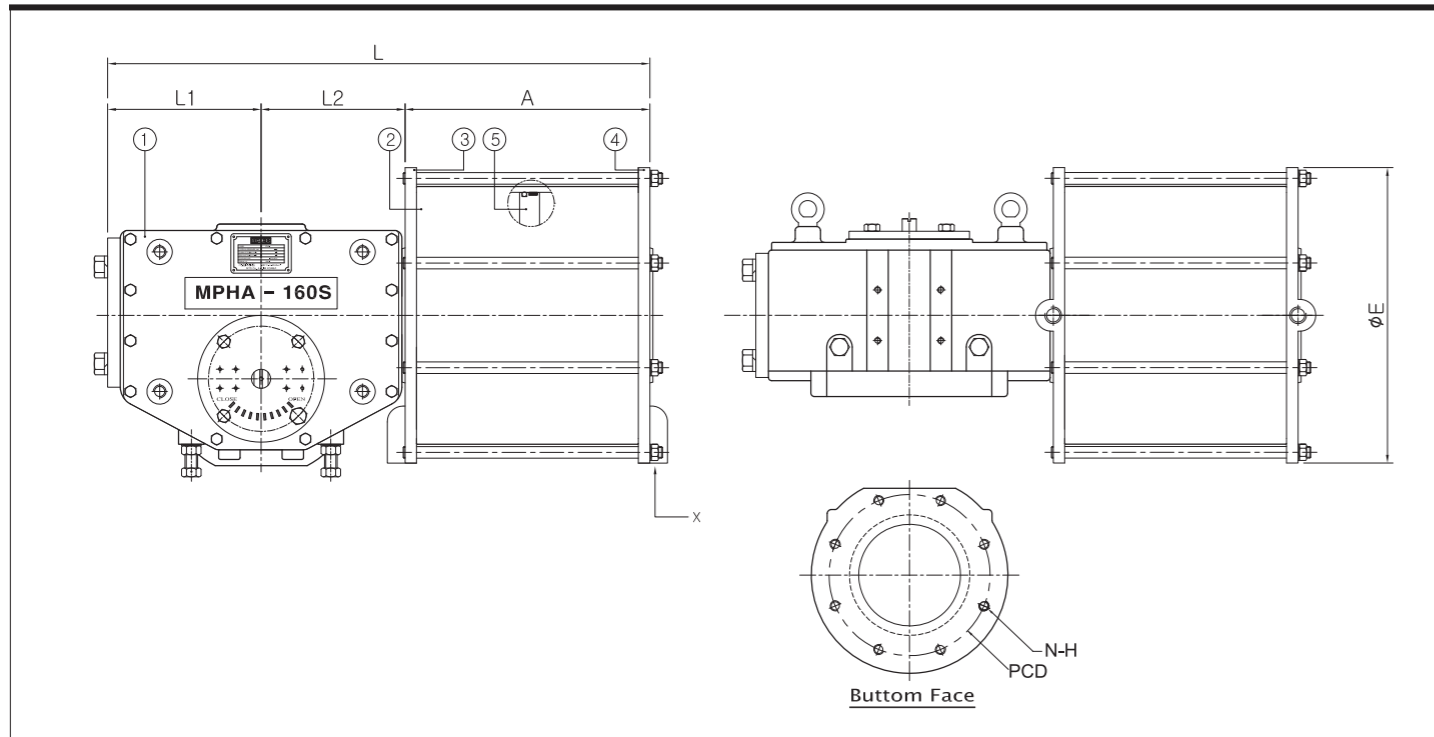
MODEL	A	B	C	D	E	F	G	ISO5211	PCD	N-H	J	DP	K	WEIGHT(kg)
MAYA50SR	255	73	42	91	71	11.4	80	F03/F05/F07	35/50/70	4-M5/M6	11x11	15	19.5	1.7
MAYA70SR	330	96	55	112	92	17	80	F05/F07	50/70	4-M6/M8	17x17	20	26	3.5
MAYA85SR	423	110	62	130	110	22	80	F05/F07	50/70	4-M6/M8	17x17	25	33	5.5
MAYA100SR	499	130	73	150	130	25.4	80	F07/F10	70/102	4-M8/M10	22x22	30	39.5	10
MAYA125SR	629	159	88	182	162	28.6	80/130	F10/F12	102/125	4-M10/M12	27x27	35	47.5	18
MAYA160SR	744	195	105	240	210	34	80/130	F10/F14	102/140	4-M10/M16	36x36	60	62	44
MAYA200SR	869	243	130	292	262	42.5	80/130	F12/F16	125/165	4-M12/M20	46x46	60	77.5	81

REFERENCE



MPYA 120DA

MPHA SERIES DA1 TYPE



MATERIAL

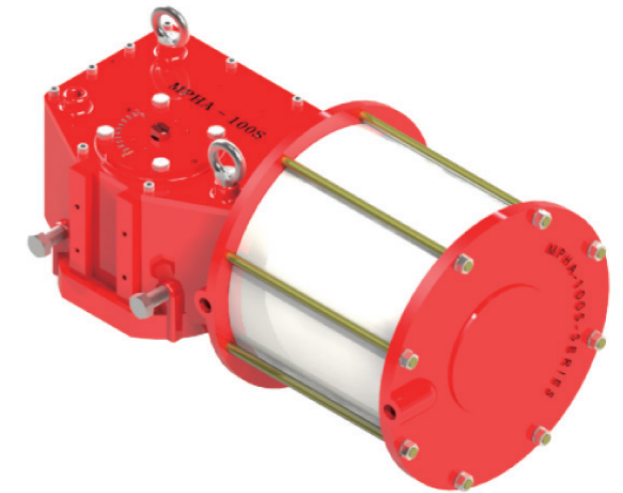
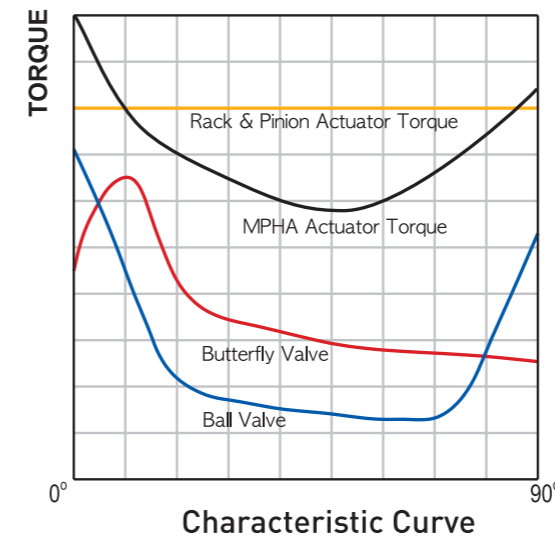
- ① CASING : FCD450 or SS400
- ② TUBE : STEEL + INSIDE CR COATED
- ③ FRONT FLANG : FCD450 or SS400
- ④ END FLANG : FCD450 or SS400
- ⑤ PISTON : SS400 + CR COATED

DIMENSION

UNIT : mm

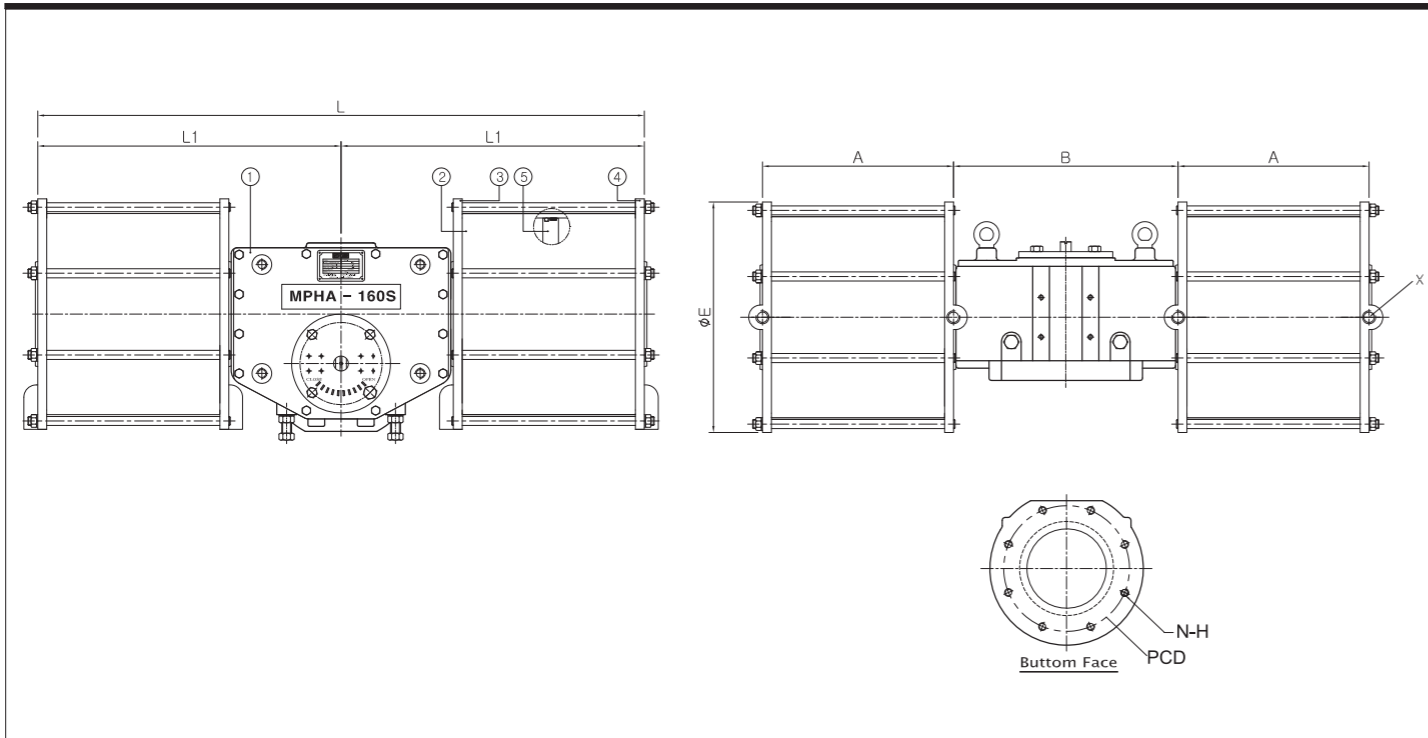
MODEL	L1	L2	A	L	E	x	PCD (ISO 5211)	N-H
MPHA - 100S - 250D1	243	228	386	857	310	PT3/4" TAP	254(F25)	8-M16
MPHA - 100S - 300D1	243	228	386	857	360	PT3/4" TAP	254(F25)	8-M16
MPHA - 100S - 350D1	243	228	386	857	410	PT3/4" TAP	254(F25)	8-M16
MPHA - 100S - 400D1	243	228	386	857	460	PT3/4" TAP	254(F25)	8-M16
MPHA - 100S - 450D1	243	228	386	857	510	PT3/4" TAP	254(F25)	8-M16
MPHA - 130S - 300D1	315	300	560	1175	360	PT3/4" TAP	298(F30)	8-M20
MPHA - 130S - 350D1	315	300	560	1175	410	PT3/4" TAP	298(F30)	8-M20
MPHA - 130S - 400D1	315	300	560	1175	460	PT3/4" TAP	298(F30)	8-M20
MPHA - 130S - 450D1	315	300	560	1175	510	PT3/4" TAP	298(F30)	8-M20
MPHA - 130S - 500D1	315	300	560	1175	560	PT3/4" TAP	298(F30)	8-M20
MPHA - 130S - 550D1	315	300	560	1175	620	PT3/4" TAP	298(F30)	8-M20
MPHA - 160S - 550D1	375	350	680	1405	620	PT3/4" TAP	356(F35)	8-M30
MPHA - 160S - 600D1	375	350	680	1405	690	PT 1" TAP	356(F35)	8-M30
MPHA - 160S - 650D1	375	350	680	1405	730	PT 1" TAP	356(F35)	8-M30
MPHA - 160S - 700D1	375	350	680	1405	790	PT 1" TAP	356(F35)	8-M30
MPHA - 160S - 750D1	375	350	680	1405	830	PT 1" TAP	356(F35)	8-M30
MPHA - 160S - 800D1	375	350	680	1405	890	PT 1" TAP	356(F35)	8-M30

MPHA SERIES DA1 TYPE TORQUE DATA



MODEL	3BAR			4BAR			5BAR			6BAR			7BAR			Air Consumption (L, at 5.5 bar)
	CLOSE	RUN	OPEN	CLOSE	RUN	OPEN	CLOSE	RUN	OPEN	CLOSE	RUN	OPEN	CLOSE	RUN	OPEN	
MPHA100S-250D1	1,448	939	1,416	1,930	1,406	1,887	2,413	1,757	2,359	2,896	2,109	2,831	3,378	2,460	3,303	9.8
MPHA100S-300D1	2,297	1,490	2,246	3,063	2,231	2,994	3,828	2,788	3,743	4,594	3,346	4,492	5,359	3,903	5,240	14.1
MPHA100S-350D1	2,942	1,909	2,877	3,923	2,857	3,836	4,903	3,571	4,794	5,884	4,286	5,753	6,865	5,000	6,712	19.2
MPHA100S-400D1	3,947	2,561	3,859	5,262	3,833	5,145	6,578	4,791	6,432	7,893	5,749	7,718	9,209	6,707	9,004	25.1
MPHA100S-450D1	4,961	3,219	4,850	6,614	4,817	6,467	8,268	6,022	8,084	9,921	7,226	9,701	11,575	8,430	11,318	31.8
MPHA130S-300D1	3,248	2,153	3,169	4,331	2,871	4,226	5,414	3,625	5,282	6,497	4,350	6,339	7,580	5,074	7,395	18.4
MPHA130S-350D1	4,236	2,807	4,132	5,648	3,743	5,510	7,060	4,726	6,887	8,472	5,671	8,265	9,883	6,617	9,642	25.0
MPHA130S-400D1	5,496	3,642	5,362	7,328	4,856	7,149	9,159	6,132	8,936	10,991	7,358	10,723	12,823	8,585	12,510	32.7
MPHA130S-450D1	7,016	4,650	6,845	9,354	6,200	9,126	11,693	7,828	11,408	14,032	9,394	13,689	16,370	10,959	15,971	41.3
MPHA130S-500D1	8,721	5,780	8,509	11,628	7,707	11,345	14,535	9,731	14,181	17,443	11,677	17,017	20,350	13,623	19,853	51.0
MPHA130S-550D1	10,612	7,033	10,353	14,150	9,378	13,804	17,687	11,841	17,256	21,224	14,209	20,707	24,762	16,577	24,158	61.7
MPHA160S-550D1	13,698	8,744	13,340	18,263	11,659	17,787	22,829	14,573	22,234	27,395	17,488	26,680	28,410	20,403	31,127	76.0
MPHA160S-600D1	16,377	10,455	15,950	21,837	13,940	21,267	27,296	17,425	26,584	32,755	20,910	31,901	33,968	24,395	37,217	90.4
MPHA160S-650D1	19,297	12,318	18,793	25,729	16,424	25,058	32,161	20,531	31,322	38,593	24,637	37,587	40,023	28,743	43,851	106.1
MPHA160S-700D1	22,455	14,335	21,869	29,940	19,113	29,159	37,425	23,891	36,449	44,910	28,669	43,739	46,574	33,447	51,029	123.1
MPHA160S-750D1	25,853	16,504	25,179	34,471	22,005	33,571	43,088	27,506	41,964	51,706	33,007	50,357	53,621	38,508	58,750	141.3
MPHA160S-800D1	29,490	18,825	28,721	39,320	25,100	38,294	49,150	31,376	47,868	58,980	37,651	57,441	61,164	43,926	67,015	160.8
MPHA200S-600D1	20,507	13,068	19,938	27,343	17,425	26,584	34,179	21,781	33,230	41,015	26,137	39,876	47,851	30,493	46,522	113.0
MPHA200S-650D1	24,163	15,398	23,492	32,217	20,531	31,322	40,271	25,663	39,153	48,326	30,796	46,983	56,380	35,928	54,814	132.7
MPHA200S-700D1	28,118	17,918	27,337	37,490	23,891	36,449	46,863	29,864	45,561	56,236	35,836	54,674	65,608	41,809	63,786	153.9
MPHA200S-800D1	36,927	23,532	35,901	49,236	31,376	47,868	61,544	39,219	59,835	73,853	47,063	71,802	86,162	54,907	83,769	201.0
MPHA200S-900D1	46,934	29,909	45,630	62,579	39,879	60,840	78,223	49,848	76,050	93,868	59,818	91,260	109,513	69,787	106,471	254.3

MPHA SERIES DA2 TYPE



MATERIAL

- ① CASING : FCD450 or SS400
- ② TUBE : STEEL + INSIDE CR COATED
- ③ FRONT FLANG : FCD450 or SS400
- ④ END FLANG : FCD450 or SS400
- ⑤ PISTON : SS400 + CR COATED

DIMENSION

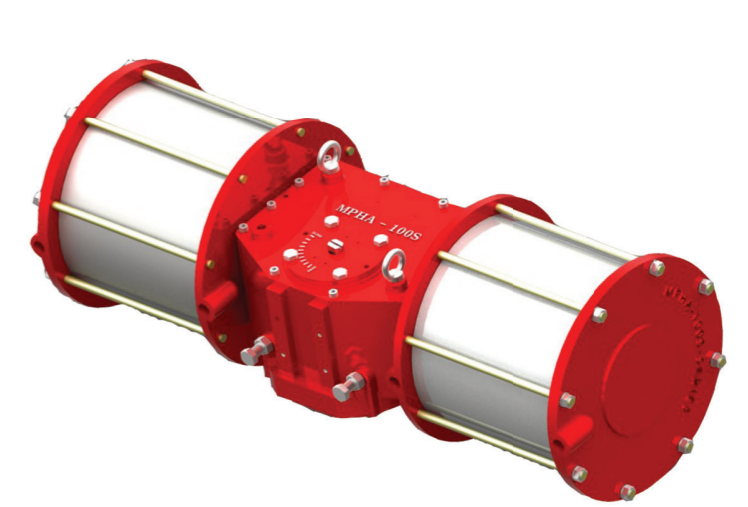
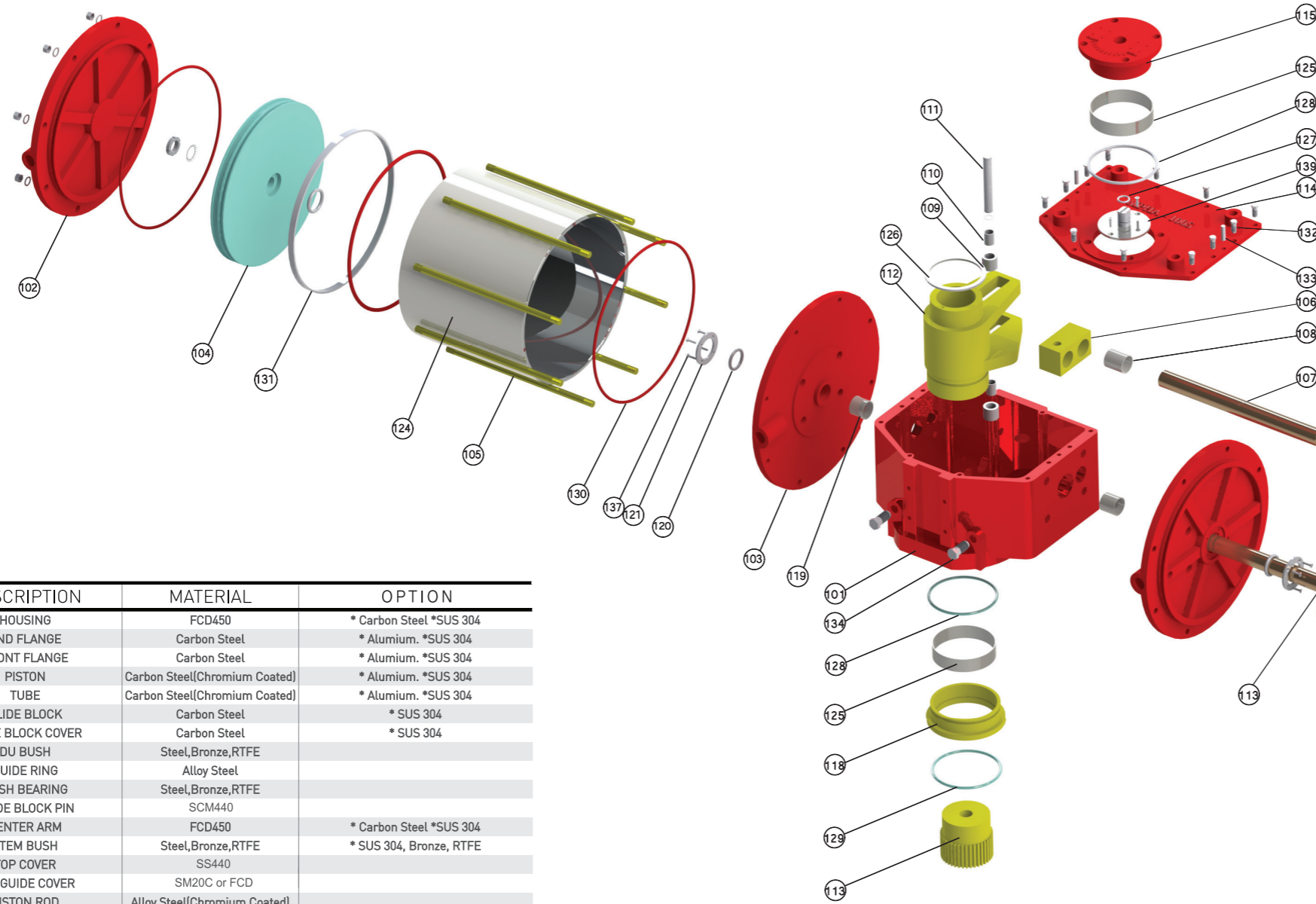
UNIT : mm

MODEL	L1	L	A	B	E	x	PCD (ISO 5211)	N-H
MPHA - 100S - 250D2	642	1284	386	445	310	PT 3/4" TAP	254(F25)	8-M16
MPHA - 100S - 300D2	642	1284	386	445	360	PT 3/4" TAP	254(F25)	8-M16
MPHA - 100S - 350D2	642	1284	386	445	410	PT 3/4" TAP	254(F25)	8-M16
MPHA - 100S - 400D2	642	1284	386	445	460	PT 3/4" TAP	254(F25)	8-M16
MPHA - 100S - 450D2	642	1284	386	445	510	PT 3/4" TAP	254(F25)	8-M16
MPHA - 130S - 300D2	855	1710	560	590	360	PT 3/4" TAP	298(F30)	8-M20
MPHA - 130S - 350D2	855	1710	560	590	410	PT 3/4" TAP	298(F30)	8-M20
MPHA - 130S - 400D2	855	1710	560	590	460	PT 3/4" TAP	298(F30)	8-M20
MPHA - 130S - 450D2	855	1710	560	590	510	PT 3/4" TAP	298(F30)	8-M20
MPHA - 130S - 500D2	855	1710	560	590	560	PT 3/4" TAP	298(F30)	8-M20
MPHA - 130S - 550D2	855	1710	560	590	620	PT 3/4" TAP	298(F30)	8-M20
MPHA - 160S - 550D2	1030	2060	680	857	620	PT 3/4" TAP	356(F35)	8-M30
MPHA - 160S - 600D2	1030	2060	680	857	690	PT 1" TAP	356(F35)	8-M30
MPHA - 160S - 650D2	1030	2060	680	857	730	PT 1" TAP	356(F35)	8-M30
MPHA - 160S - 700D2	1030	2060	680	857	790	PT 1" TAP	356(F35)	8-M30
MPHA - 160S - 750D2	1030	2060	680	857	830	PT 1" TAP	356(F35)	8-M30
MPHA - 160S - 800D2	1030	2060	680	857	890	PT 1" TAP	356(F35)	8-M30

MPHA SERIES DA2 TYPE TORQUE DATA

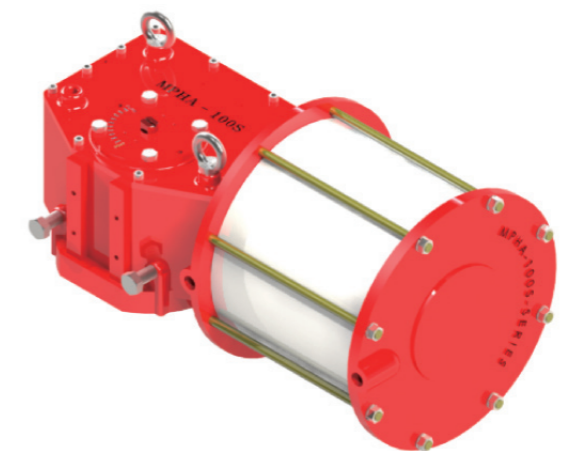
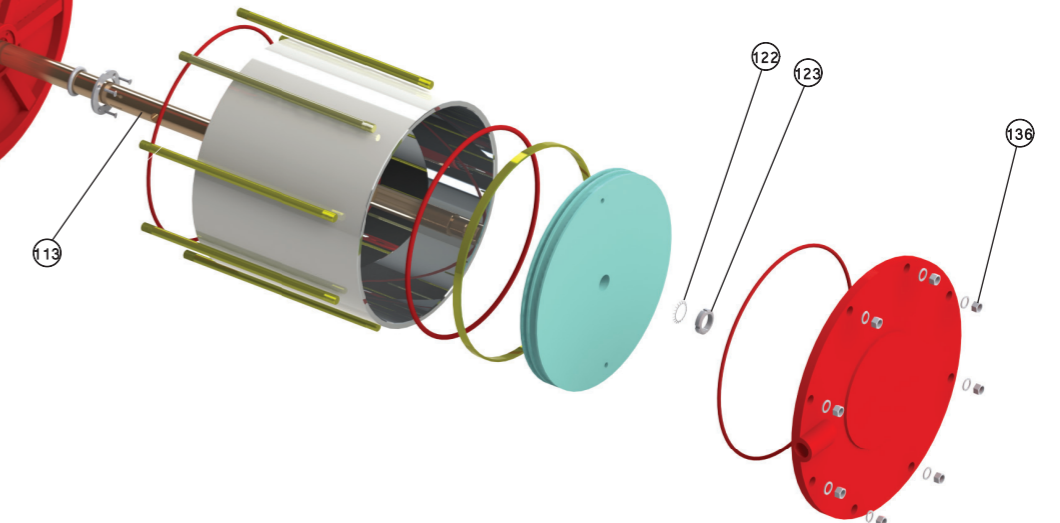


MODEL	3BAR			4BAR			5BAR			6BAR			7BAR			Air Consumption (L, at 5.5 bar)
	CLOSE	RUN	OPEN	CLOSE	RUN	OPEN	CLOSE	RUN	OPEN	CLOSE	RUN	OPEN	CLOSE	RUN	OPEN	
MPHA100S-250D2	2,896	1,879	2,831	3,861	2,812	3,775	4,826	3,515	4,719	5,791	4,218	5,662	6,756	4,921	6,606	19.6
MPHA100S-300D2	4,594	2,981	4,492	6,125	4,461	5,989	7,656	5,576	7,486	9,188	6,692	8,983	10,719	7,807	10,481	28.3
MPHA100S-350D2	5,884	3,818	5,753	7,845	5,714	7,671	9,807	7,143	9,589	11,768	8,571	11,507	13,730	10,000	13,424	38.5
MPHA100S-400D2	7,893	5,122	7,718	10,524	7,665	10,290	13,155	9,581	12,863	15,786	11,498	15,436	18,418	13,414	18,008	50.2
MPHA100S-450D2	9,921	6,438	9,701	13,228	9,635	12,934	16,536	12,043	16,168	19,843	14,452	19,402	23,150	16,860	22,635	63.6
MPHA130S-300D2	6,497	4,306	6,339	8,663	5,741	8,451	10,828	7,249	10,564	12,994	8,699	12,677	15,160	10,149	14,790	36.7
MPHA130S-350D2	8,472	5,614	8,265	11,295	7,486	11,020	14,119	9,452	13,775	16,943	11,343	16,530	19,767	13,233	19,285	50.0
MPHA130S-400D2	0,991	7,284	10,723	14,655	9,713	14,298	18,319	12,264	17,872	21,983	14,717	21,446	25,646	17,169	25,021	65.3
MPHA130S-450D2	14,032	9,299	13,689	18,709	12,399	18,252	23,386	15,656	22,816	28,063	18,787	27,379	32,740	21,919	31,942	82.7
MPHA130S-500D2	7,443	11,560	17,017	23,257	15,413	22,690	29,071	19,462	28,362	34,885	23,354	34,034	40,699	27,247	39,707	102.1
MPHA130S-550D2	21,224	14,066	20,707	28,299	18,755	27,609	35,374	23,682	34,511	42,449	28,418	41,413	49,524	33,154	48,316	123.5
MPHA160S-550D2	7,395	17,488	26,680	36,527	23,317	35,574	45,659	29,147	44,467	54,790	34,976	53,361	66,820	40,805	62,254	152.0
MPHA160S-600D2	32,755	20,910	31,901	43,673	27,879	42,534	54,592	34,849	53,168	65,510	41,819	63,801	77,936	48,789	74,435	180.9
MPHA160S-650D2	8,593	24,637	37,587	51,458	32,849	50,116	64,322	41,061	62,644	77,187	49,273	75,173	90,046	57,485	87,702	212.3
MPHA160S-700D2	44,910	28,669	43,739	59,881	38,226	58,318	74,851	47,782	72,898	89,821	57,338	87,478	107,148	66,895	102,057	246.2
MPHA160S-750D2	1,706	33,007	50,357	68,941	44,010	67,143	86,177	55,012	83,928	103,412	66,014	100,714	124,242	77,017	117,500	282.6
MPHA160S-800D2	58,980	37,651	57,441	78,640	50,201	76,589	98,300	62,751	95,736	117,960	75,301	114,883	142,329	87,852	134,030	321.5
MPHA200S-600D2	1,015	26,137	39,876	67,307	34,849	53,168	68,358	43,562	66,459	82,030	52,274	79,751	95,702	60,986	93,043	226.1
MPHA200S-650D2	48,326	30,796	46,983	79,304	41,061	62,644	80,543	51,326	78,305	96,651	61,592	93,967	112,760	71,857	109,628	265.3
MPHA200S-700D2	6,236	35,836	54,674	92,284	47,782	72,898	93,726	59,727	91,123	112,471	71,673	109,347	131,216	83,618	127,572	307.7
MPHA200S-800D2	73,853	47,063	71,802	121,195	62,751	95,736	123,089	78,439	119,670	147,707	94,127	143,604	172,324	109,815	167,538	401.9
MPHA200S-900D2	3,868	59,818	91,260	154,040	79,757	121,681	156,446	99,696	152,101	187,736	119,636	182,521	219,025	139,575	212,941	508.7



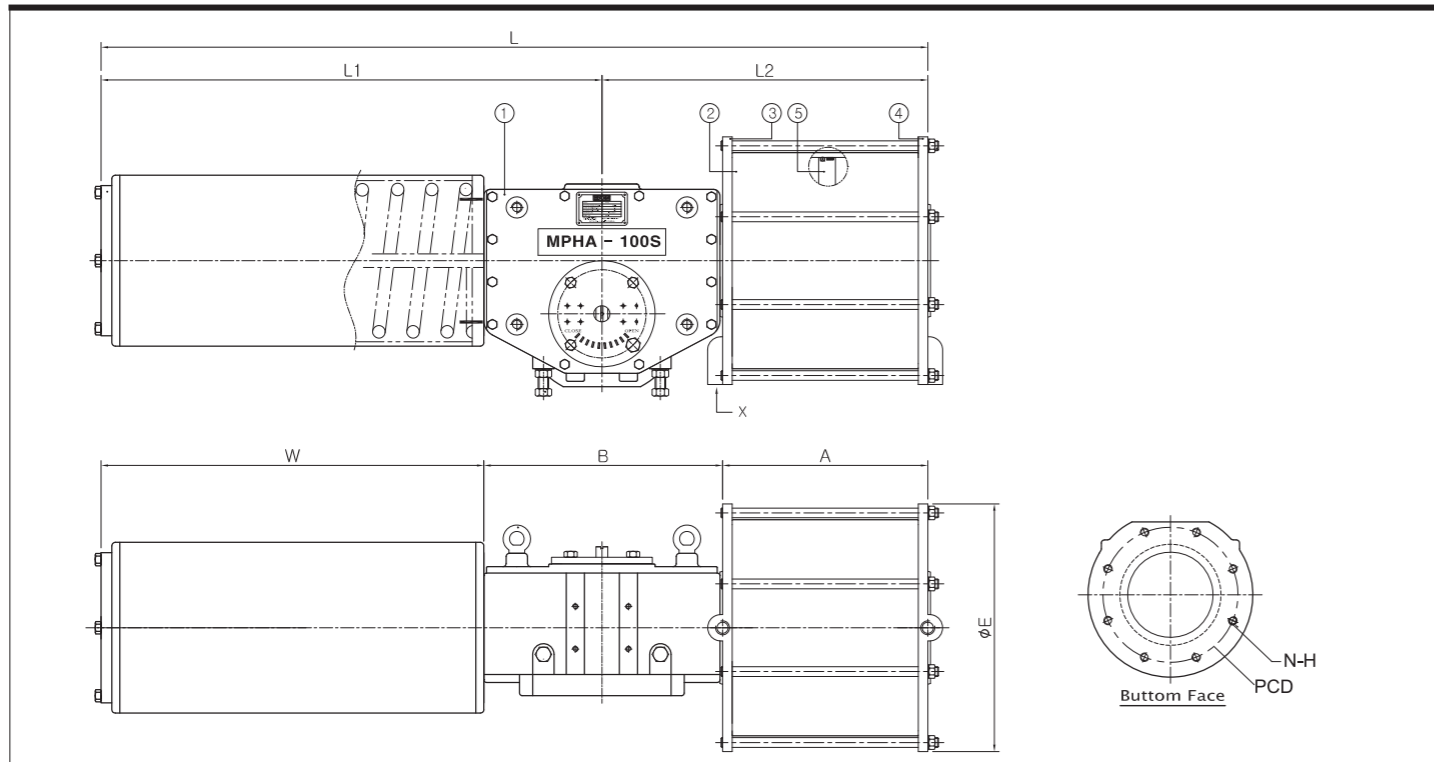
MPHA PNEUMATIC ACTUATOR DA2

ITEM	DESCRIPTION	MATERIAL	OPTION
101	HOUSING	FCD450	* Carbon Steel *SUS 304
102	END FLANGE	Carbon Steel	* Alumium. *SUS 304
103	FRONT FLANGE	Carbon Steel	* Alumium. *SUS 304
104	PISTON	Carbon Steel(Chromium Coated)	* Alumium. *SUS 304
105	TUBE	Carbon Steel(Chromium Coated)	* Alumium. *SUS 304
106	SLIDE BLOCK	Carbon Steel	* SUS 304
107	SLIDE BLOCK COVER	Carbon Steel	* SUS 304
108	DU BUSH	Steel,Bronze,RTFE	
109	GUIDE RING	Alloy Steel	
110	BUSH BEARING	Steel,Bronze,RTFE	
111	GUIDE BLOCK PIN	SCM440	
112	CENTER ARM	FCD450	* Carbon Steel *SUS 304
113	STEM BUSH	Steel,Bronze,RTFE	* SUS 304, Bronze, RTFE
114	TOP COVER	SS440	
115	TOP GUIDE COVER	SM20C or FCD	
116	PISTON ROD	Alloy Steel(Chromium Coated)	
117	GUIDE ROD	Alloy Steel(Chromium Coated)	
118	BOTTOM GUIDE COVER	SM20C or FCD	
119	DU BUSH	purch	
120	ROD PACKING	NBR	* Viton(High-Temp)*Fluorosilicon Rubber(Low-Temp)
121	PACKING COVER	Carbon Steel	* SUS 304
122	WASHER	Carbon Steel	* SUS 304
123	NYLON NUT	Carbon Steel	* SUS 304
124	TIE ROD	Alloy Steel	* SUS 304
125	DU BUSH		
126	SLIDE PAD	Mc Nylon	
127	O-RING	NBR	* Viton(High-Temp)*Fluorosilicon Rubber(Low-Temp)
128	O-RING	NBR	* Viton(High-Temp)*Fluorosilicon Rubber(Low-Temp)
129	O-RING	NBR	* Viton(High-Temp)*Fluorosilicon Rubber(Low-Temp)
130	O-RING	NBR	* Viton(High-Temp)*Fluorosilicon Rubber(Low-Temp)
131	BACK UP RING	Teflon	
132	COVER BOLT/WASHER	Alloy Steel	
133	SET PIN	Alloy Steel	* SUS 304
134	ADJUSTING BOLT	Alloy Steel	
135	ADJUSTING NUT	Alloy Steel	
136	FLANGE NUT	SM45C	
137	FRONT FLANGE BOLT/WASHER	SM45C	
138	TOP GUIDE COVER BOLT/WASHER	SM45C	
139	INDICATOR	SM45C+SS400	



MPHA PNEUMATIC ACTUATOR DA1

MPHA SERIES SR TYPE



MATERIAL

- ① CASING : FCD450 or SS400
- ② TUBE : STEEL + INSIDE CR COATED
- ③ FRONT FLANG : FCD450 or SS400
- ④ END FLANG : FCD450 or SS400
- ⑤ PISTON : SS400 + CR COATED

DIMENSION

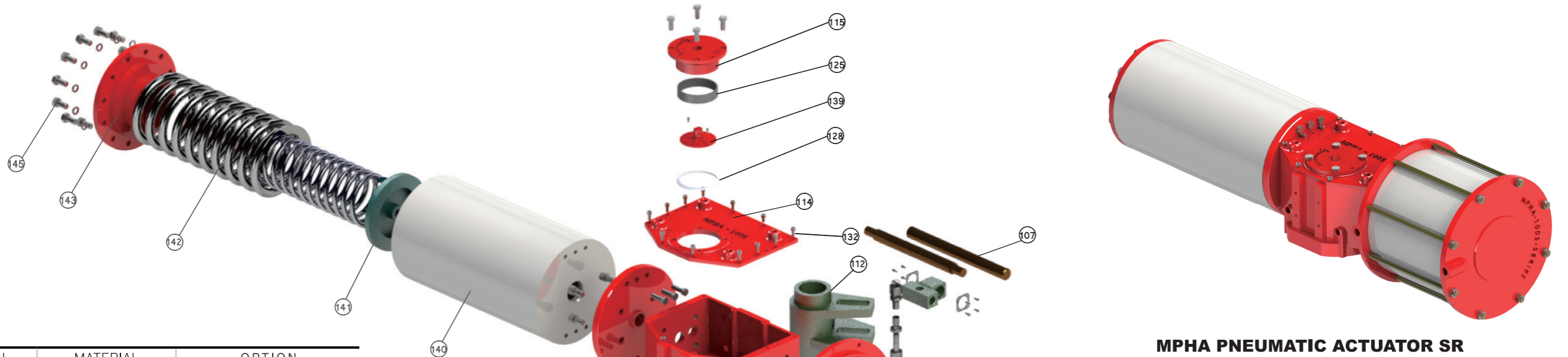
UNIT : mm

MODEL	L1	L2	L	A	B	W	E	x	PCD(10S 5211)	N-H
MPHA - 100S - 250SR	859	642	1502	386	445	670	310	PT 3/4" TAP	254(F25)	8-M16
MPHA - 100S - 300SR	859	642	1502	386	445	670	360	PT 3/4" TAP	254(F25)	8-M16
MPHA - 100S - 350SR	859	642	1502	386	445	670	410	PT 3/4" TAP	254(F25)	8-M16
MPHA - 100S - 400SR	909	642	1552	386	445	720	460	PT 3/4" TAP	254(F25)	8-M16
MPHA - 100S - 450SR	909	642	1552	386	445	720	510	PT 3/4" TAP	254(F25)	8-M16
MPHA - 130S - 300SR	1350	855	2205	560	590	1055	360	PT 3/4" TAP	298(F30)	8-M20
MPHA - 130S - 350SR	1350	855	2205	560	590	1055	410	PT 3/4" TAP	298(F30)	8-M20
MPHA - 130S - 400SR	1350	855	2205	560	590	1055	460	PT 3/4" TAP	298(F30)	8-M20
MPHA - 130S - 450SR	1400	855	2255	560	590	1105	510	PT 3/4" TAP	298(F30)	8-M20
MPHA - 130S - 500SR	1400	855	2255	560	590	1105	560	PT 3/4" TAP	298(F30)	8-M20
MPHA - 130S - 550SR	1400	855	2255	560	590	1105	620	PT 3/4" TAP	298(F30)	8-M20
MPHA - 160S - 550SR	1840	1030	2870	680	700	1490	620	PT 3/4" TAP	356(F35)	8-M30
MPHA - 160S - 600SR	1840	1030	2870	680	700	1490	690	PT 1" TAP	356(F35)	8-M30
MPHA - 160S - 650SR	1840	1030	2870	680	700	1490	730	PT 1" TAP	356(F35)	8-M30
MPHA - 160S - 700SR	1840	1030	2870	680	700	1490	790	PT 1" TAP	356(F35)	8-M30
MPHA - 160S - 750SR	1840	1030	2870	680	700	1490	830	PT 1" TAP	356(F35)	8-M30
MPHA - 160S - 800SR	1840	1030	2870	680	700	1490	890	PT 1" TAP	356(F35)	8-M30

MPHA SERIES SR TYPE TORQUE DATA

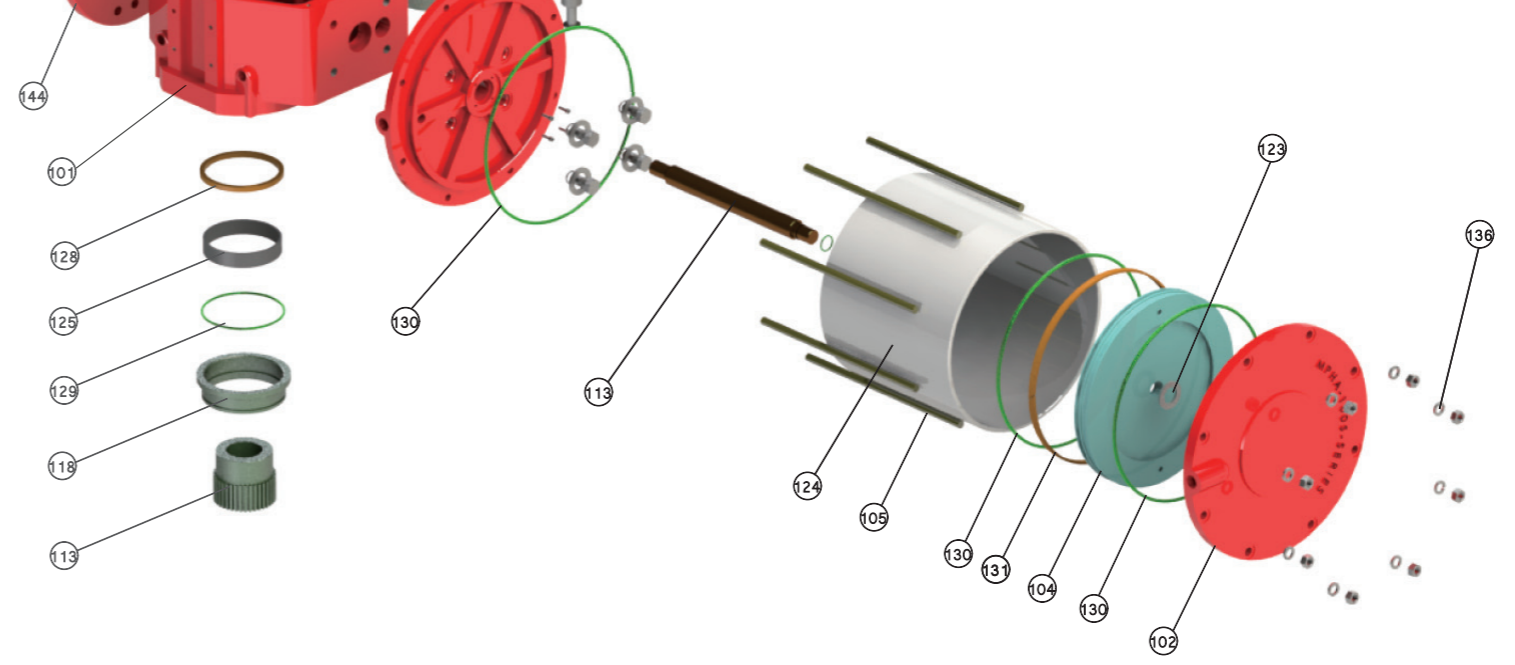
MODEL	Position of stroke (Spring)	Spring Torque (N.m)	Position of stroke (Air)	Pneumatic Stroke Torque (N.m) at Operating Pressure (bar)				Air Consumption (L, at 5.5 bar)
				4.0	5.0	6.0	7.0	
MPHA100S-250SR	END	899	START	988	1,460	1,932	2,404	9.8
	BREAK	1298	BREAK	632	1,115	1,598	2,080	
MPHA100S-300SR	END	1195	START	1,799	2,548	3,297	4,045	14.1
	BREAK	1725	BREAK	1,338	2,018	2,869	3,634	
MPHA100S-350SR	END	2003	START	1,833	2,791	3,750	4,709	19.2
	BREAK	2891	BREAK	1,032	2,012	2,993	3,974	
MPHA100S-400SR	END	2557	START	2,588	3,875	5,161	6,447	25.1
	BREAK	3690	BREAK	1,572	2,888	4,203	5,519	
MPHA100S-450SR	END	3181	START	3,286	4,903	6,520	8,137	31.8
	BREAK	4590	BREAK	2,024	3,678	5,331	6,985	
MPHA130S-300SR	END	2355	START	1,871	2,927	3,984	5,040	18.4
	BREAK	3399	BREAK	932	2,015	3,098	4,181	
MPHA130S-350SR	END	3009	START	2,501	3,878	5,256	6,633	25.0
	BREAK	4342	BREAK	1,306	2,718	4,130	5,541	
MPHA130S-400SR	END	3742	START	3,407	5,194	6,981	8,768	32.7
	BREAK	5400	BREAK	1,928	3,759	5,591	7,423	
MPHA130S-450SR	END	4860	START	4,266	6,548	8,829	11,111	41.3
	BREAK	7013	BREAK	2,341	4,680	7,019	9,357	
MPHA130S-500SR	END	5917	START	5,428	8,264	11,100	13,936	51.0
	BREAK	8538	BREAK	3,090	5,997	8,905	11,812	
MPHA130S-550SR	END	7078	START	6,726	10,178	13,629	17,080	61.7
	BREAK	10213	BREAK	3,937	7,474	11,011	14,549	
MPHA160S-550SR	END	10265	START	7,522	11,969	16,415	20,862	76.0
	BREAK	14813	BREAK	3,450	8,016	12,582	13,597	
MPHA160S-600SR	END	11946	START	9,321	14,638	19,955	25,271	90.4
	BREAK	17238	BREAK	4,599	10,058	15,517	16,730	
MPHA160S-650SR	END	13753	START	11,305	17,569	23,834	30,098	106.1
	BREAK	19850	BREAK	5,879	12,311	18,743	20,173	
MPHA160S-700SR	END	15688	START	13,471	20,761	28,051	35,341	123.1
	BREAK	22625	BREAK	7,315	14,800	22,285	23,949	
MPHA160S-750SR	END	16862	START	16,709	25,102	33,495	41,888	141.3
	BREAK	23566	BREAK	10,905	19,522	28,140	30,055	
MPHA160S-800SR	END	19610	START	18,684	28,258	37,831	47,405	160.8
	BREAK	28297	BREAK	11,023	20,853	30,683	32,867	
MPHA200S-600SR	END	15688	START	10,896	17,542	24,188	30,834	113.0
	BREAK	22625	BREAK	11,028	11,554	18,390	25,226	
MPHA200S-650SR	END	16862	START	14,460	22,291	30,121	37,952	132.7
	BREAK	23566	BREAK	16,086	16,705	24,760	32,814	
MPHA200S-700SR	END	19610	START	16,839	25,951	35,064	44,176	153.9
	BREAK	28297	BREAK	17,845	18,566	27,939	37,311	
MPHA200S-800SR	END	24926	START	22,942	34,859	46,836	58,845	201.0
	BREAK	35966	BREAK	13,270	25,578	37,887	50,196	
MPHA200S-900SR	END	30858	START	29,982	45,192	60,402	75,613	254.3
	BREAK	44528	BREAK	18,051	33,695	49,340	64,985	

MPHA SERIES SINGLE ACTING



MPHA PNEUMATIC ACTUATOR SR

ITEM	DESCRIPTION	MATERIAL	OPTION
101	HOUSING	FCD450	* Carbon Steel *SUS 304
102	END FLANGE	Carbon Steel	* Alumium. *SUS 304
103	FRONT FLANGE	Carbon Steel	* Alumium. *SUS 304
104	PISTON	Carbon Steel(Chromium Coated)	* Alumium. *SUS 304
105	TUBE	Carbon Steel(Chromium Coated)	* Alumium. *SUS 304
106	SLIDE BLOCK	Carbon Steel	* SUS 304
107	SLIDE BLOCK COVER	Carbon Steel	* SUS 304
108	DU BUSH	Steel,Bronze,RTFE	
109	GUIDE RING	Alloy Steel	
110	BUSH BEARING	Steel,Bronze,RTFE	
111	GUIDE BLOCK PIN	SCM440	
112	CENTER ARM	FCD450	* Carbon Steel *SUS 304
113	STEM BUSH	Steel,Bronze,RTFE	* SUS 304, Bronze, RTFE
114	TOP COVER	SS440	
115	TOP GUIDE COVER	SM20C or FCD	
116	PISTON ROD	Alloy Steel(Chromium Coated)	
117	GUIDE ROD	Alloy Steel(Chromium Coated)	
118	BOTTOM GUIDE COVER	SM20C or FCD	
119	DU BUSH	purch	
120	ROD PACKING	NBR	* Viton(High-Temp)*Fluorosilicon Rubber(Low-Temp)
121	PACKING COVER	Carbon Steel	* SUS 304
122	WASHER	Carbon Steel	* SUS 304
123	NYLON NUT	Carbon Steel	* SUS 304
124	TIE ROD	Alloy Steel	* SUS 304
125	DU BUSH		
126	SLIDE PAD	Mc Nylon	
127	O-RING	NBR	
128	O-RING	NBR	
129	O-RING	NBR	* Viton(High-Temp)*Fluorosilicon Rubber(Low-Temp)
130	O-RING	NBR	
131	BACK UP RING	Teflon	
132	COVER BOLT/WASHER	Alloy Steel	
133	SET PIN	Alloy Steel	* SUS 304
134	ADJUSTING BOLT	Alloy Steel	
135	ADJUSTING NUT	Alloy Steel	
136	FLANGE NUT	SM45C	
137	FRONT FLANGE BOLT/WASHER	SM45C	
138	TOP GUIDE COVER BOLT/WASHER	SM45C	
139	INDICATOR	SM45C+SS400	
140	SPRING CASE	SS440	
141	SPRING CARTRIDGE	SS440	
142	SPRING	purch	
143	SPRING CASE END FLANGE	SS440	
144	SPRING CASE FRONT FLANGE	SS440	
145	SPRING E/FLANGE B.SW	Alloy Steel	



*Top Quality
Customer Satisfaction*

