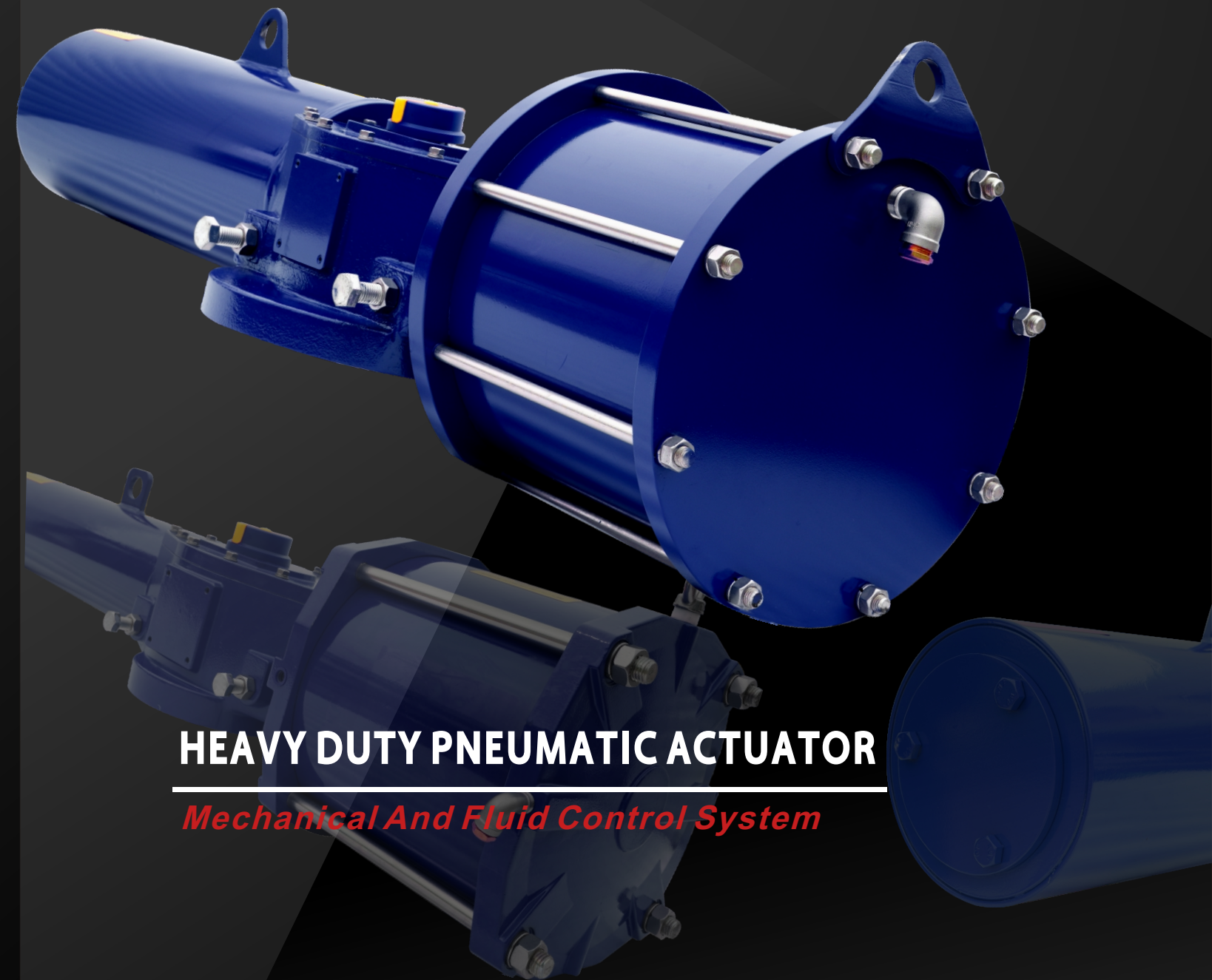




HEAVY DUTY PNEUMATIC ACTUATOR

Mechanical And Fluid Control System

McSYS[®] Co.,LTD

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COMPANY PROFILE

With more than twenty years of experience in the power plant and semiconductor sectors, McSYS provides exceptional engineering and design solutions for mechanical and fluid control systems. Throughout the years, McSYS has built up extensive industry knowledge and honed our technical capacities. We proudly specialize in high pressure and temperature systems; waste water treatment systems; toxic gas and hazardous chemical treatment systems; vacuum systems; nitrogen generator systems; and various turn-key mechanical systems. Thanks to our considerable experience and acclaimed line of products, McSYS has cultivated and maintained a sterling reputation from clients. Additionally, we have partnered with other leading firms to develop and manufacture ground-breaking and innovative products that offer superior performance and reliability. At McSYS, we understand the importance of striving for perfection and are fully committed to bringing to the market products and solutions that are without peer by any and every metric.

Our Motto: "Be the Highest of Standards"

Our motto reflects our desire to create world-class products that speak for themselves. The McSYS approach always stresses three major points: market-leading innovation, first-rate performance and unfailing reliability. In short, our goal is to offer to our clients and partners work that is nothing but the highest standards in engineering and design.



MHV SERIES HEAVY-DUTY PNEUMATIC ACTUATOR

STRUCTURAL FEATURES

MHV Series heavy duty pneumatic Actuators are designed to perform in the most demanding applications. They are engineered to automate all types of quarter turn valves (ball, butterfly, plug and damper) with multiple torque profiles available for every situation.

MHV1 series is equipped with a SYMMETRIC design yoke that produces maximum torques at both ends of the stroke (0° and 90°) and minimal in the middle, therefore this series is the optimal solution for metal seated ball valves, plug valves and for modulating service.

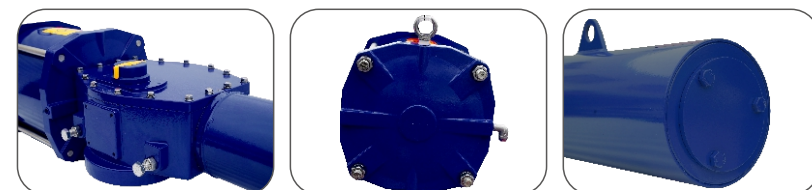
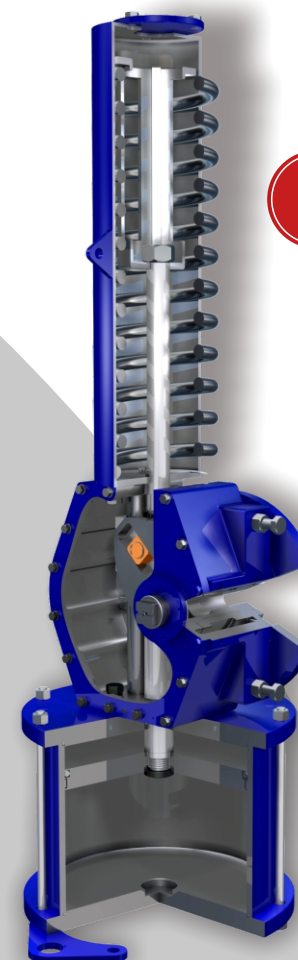
Modular design and construction resulting in flexibility and interchangeability.

Using technology of plating hard chroming, which can ensure longer service life.

MHV2 series is equipped with a CANTED design yoke that produces a higher maximum torque at the beginning of stroke (i.e. valve unseating/reseating at 0°) and less torque at the end of stroke (90°), therefore this series is optimal solution for high performance butterfly valves.

Pathway high-frequency quenching grinding treatment, sliding block using self-lubricating technology, which can ensure permanent usability.

MHV series actuators come along with a complete line of controls and monitoring accessories including Manual Handwheel (jacks-rev. hydraulic overrides, limit switches, solenoid valves, positioners and other controls accessories



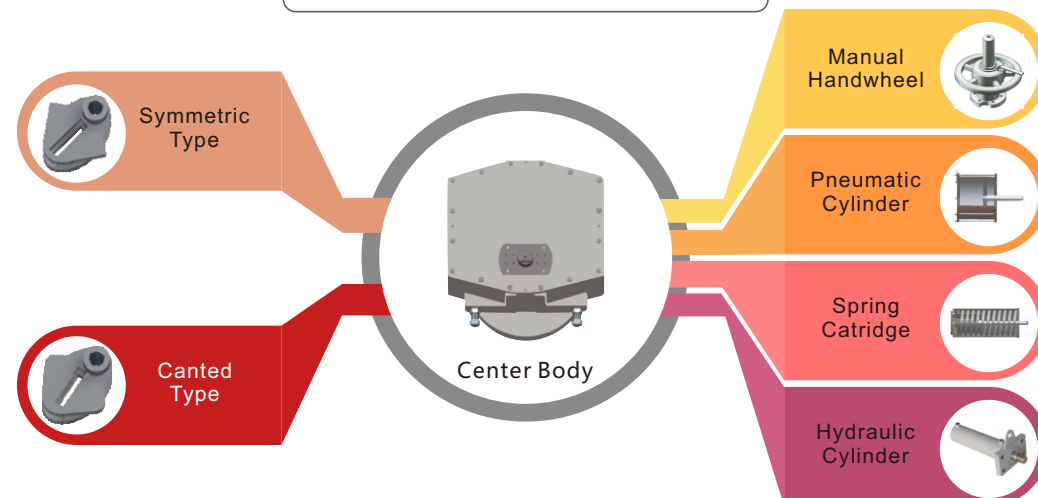


PERFORMANCE FEATURES

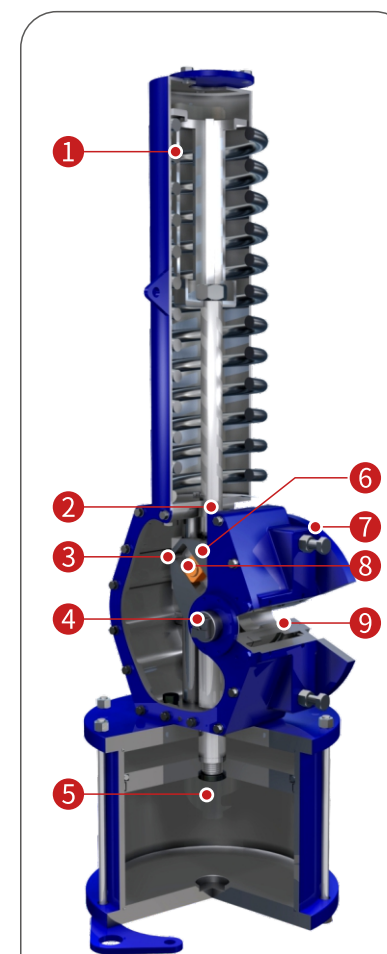
- 01 MHV spring return actuator can provide 120000 n. m torque output, DNG double acting actuator can provide 240000 n.m torque output. The maximum working pressure is 8 bar.
- 02 Two independent travel adjustment bolts, can be in the range of $\pm 6^\circ\text{C}$ to regulate valve switch position.
- 03 Working temperature: Standard ($-20^\circ\text{C} \sim 80^\circ\text{C}$)
Low temperature (Down to -40°C)
High temperature (Up to 150°C)
- 04 Comply with IP65 protection class.

MODULAR DESIGN

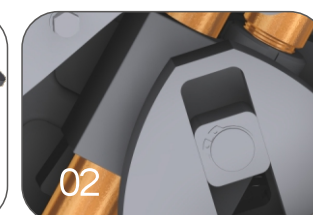
Provides maximized operational flexibility in selection and combination of power cylinder, body and spring pack depending on project requirement. Additional benefit would be less cost for maintenance and stocking of parts.



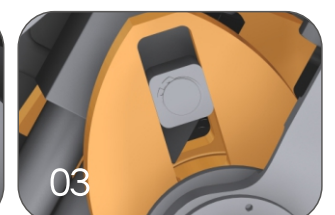
STRUCTURE INTRODUCTION



01 Whole shot blast, three bottom three sides with paint treatment, which dramatically improves firmness of the painted surface and overall corrosion resistant performance.



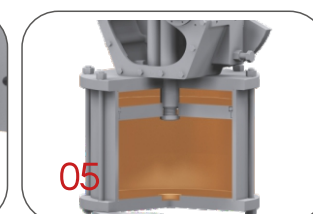
02 Unique new dual rod guide structure, torque distribution is more reasonable.



03 Orbit is treated by high frequency quenching and grinding, with knock-down design, low maintenance cost.



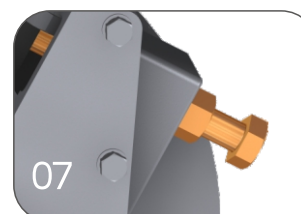
04 The top-works dimensions, both for shaft height and mounting pattern are according to NAMUR standards allowing for easy and standard limit switch positioner attachment.



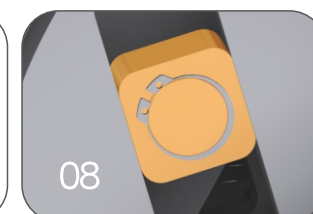
05 The internal wall of the cylinder is hard chrome plated in order to maximize wear and corrosion resistance.



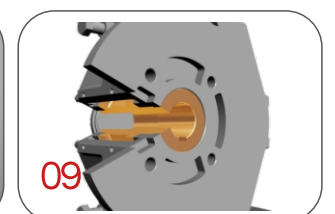
06 The slide block has a wide surface contact area, thereby increased service life of pneumatic actuator.



07 The MHV pneumatic actuators are all provided with bi directional travel stops to allow for open and closed position location adjustments of ± 6 degrees.

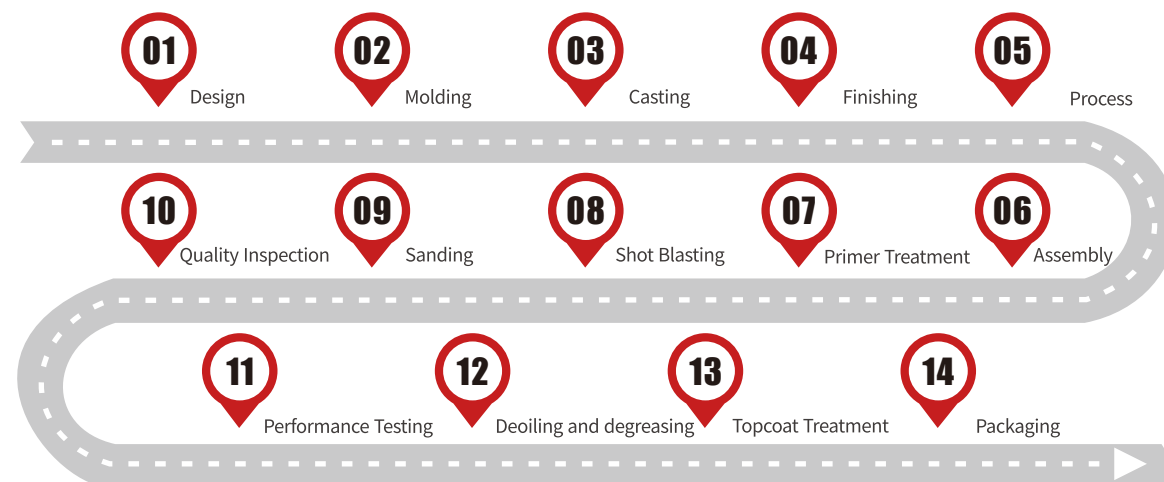
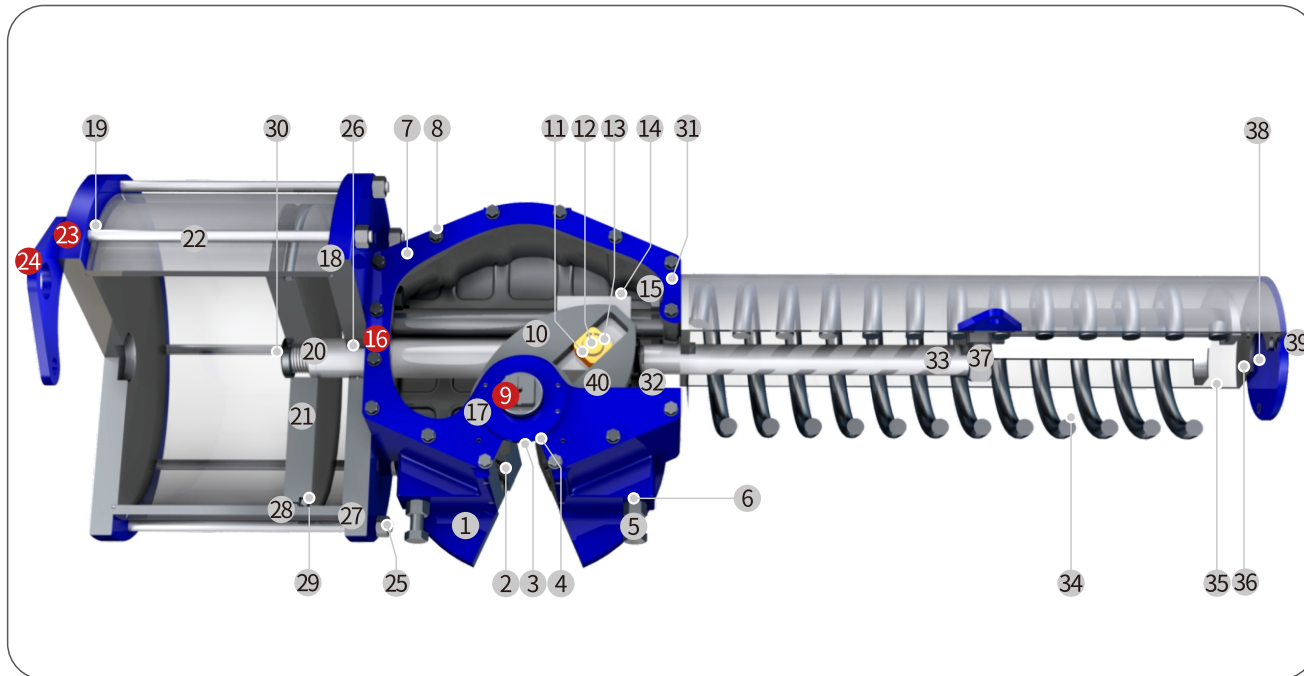


08 High strength copper alloy, sliding block with graphite self lubricating function, square anti jamming design. Spring fixed way, to protect the integrity, safety and service life of components.



09 Special increased valve shaft bore diameter design, can install thicker diameter shaft directly without coupler and bracket.

MATERIAL INTRODUCTION



No.	Description	Material
1	Body	Nodular Cast Iron/Aluminium Alloy
2	Lower Bushing	Low Carbon Steel+Copper Alloy
3	Bushing O-ring	NBR
4	Upper Bushing	Low Carbon Steel+Copper Alloy
5	Adjusting Bolt	Alloy Steel
6	Adjusting Nut	Alloy Steel
7	Body Cover	Nodular Cast Iron/Aluminium Alloy
8	Body Cover Bolt	Stainless Steel
9	Indicator	Alloy Steel
10	Symmetric	Nodular Cast Iron
11	Axle Bumper	Alloy Steel
12	Axle Pin	Alloy Steel
13	Sliding Block	Alloy+Graphite
14	High Strength Copper	Alloy Steel
15	Connecting Bolts	Alloy Steel
16	Pin	Alloy Steel
17	Mounting Plate	Alloy Steel
18	Front Cylinder Cover	Alloy Steel/Aluminium Alloy
19	O-ring	NBR
20	Piston Rod	Alloy Steel
21	Piston	Alloy Steel/Aluminium Alloy
22	Cylinder Rod	Alloy Steel/Stainless Steel
23	Back Cylinder Cover	Alloy Steel/Aluminium Alloy
24	Lifting Plate	Alloy Steel
25	Rod Nut	Alloy Steel/Stainless Steel
26	Piston Rod Bushing	Low Carbon Steel+Copper Alloy
27	Front Cylinder Cover O-rings	NBR
28	Support Ring	Bronze Synthetic Material
29	Piston O-ring	NBR
30	Piston Tight Bolt	Alloy Steel
31	Spring Case Front Cover	Alloy Steel
32	Spring Rod Guide Bushing	Alloy Steel
33	Spring Rod	Alloy Steel
34	Spring	Spring Steel
35	Spring Guide Bush	Alloy Steel
36	Spring Case End Cover	Alloy Steel
37	Spring Rod Tight Nut	Alloy Steel
38	Hydraulic Oil Cylinder	Alloy Steel
39	Cover Bolt	Alloy Steel/Stainless Steel
40	Guide Block	Nodular Cast Iron

MHV Series Air consumption

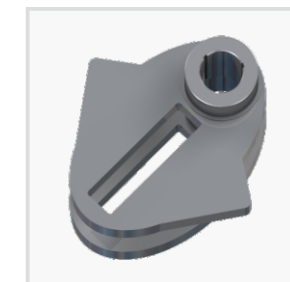
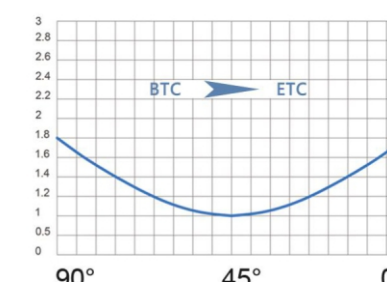
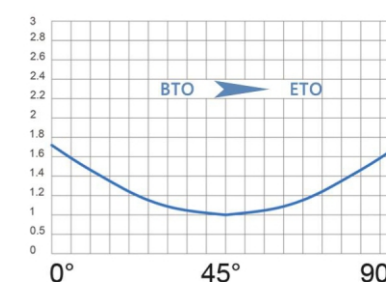
Size	Volume opening(L)	Volume closing(L)	Size	Volume opening(L)	Volume closing(L)
MHV1/MHV2A90SR	3.12	3.25	MHV1/MHV2A90D	3.3	3.1
MHV1/MHV2A100SR	3.88	4.01	MHV1/MHV2A100D	4.1	3.7
MHV1/MHV2A125SR	6.15	6.26	MHV1/MHV2A125D	6.35	6.1
MHV1/MHV2B125SR	8.4	8.7	MHV1/MHV2B125D	8.8	8.4
MHV1/MHV2B150SR	12.2	12.5	MHV1/MHV2B150D	12.9	12.1
MHV1/MHV2B175SR	16.7	17	MHV1/MHV2B175D	17.6	16.5
MHV1/MHV2C175SR	20	20.6	MHV1/MHV2C175D	21.4	20.3
MHV1/MHV2C190SR	23.7	24.3	MHV1/MHV2C190D	25.3	23.9
MHV1/MHV2C215SR	30.5	31.2	MHV1/MHV2C215D	32.6	30.6
MHV1/MHV2D215SR	38.8	40	MHV1/MHV2D215D	42.4	38.8
MHV1/MHV2D240SR	48.6	49.7	MHV1/MHV2D240D	53.1	48.4
MHV1/MHV2D265SR	59.5	60.6	MHV1/MHV2D265D	65	59.1
MHV1/MHV2E265SR	72.6	74.3	MHV1/MHV2E265D	79.7	71.9
MHV1/MHV2E290SR	87.3	89	MHV1/MHV2E290D	95.8	86.2
MHV1/MHV2E315SR	103.3	105	MHV1/MHV2E315D	113.4	101.6
MHV1/MHV2E340SR	115	115.8	MHV1/MHV2E340D	120	113
MHV1/MHV2F340SR	149	151	MHV1/MHV2F340D	164	145
MHV1/MHV2F365SR	172	175	MHV1/MHV2F365D	189	167
MHV1/MHV2G340SR	198	202	MHV1/MHV2G340D	216	194
MHV1/MHV2F400SR	199	201	MHV1/MHV2F400D	216	195
MHV1/MHV2F425SR	225	227	MHV1/MHV2F425D	242	220
MHV1/MHV2G400SR	276	280	MHV1/MHV2G400D	301	268
MHV1/MHV2G450SR	332	335	MHV1/MHV2G450D	355	327
MHV1/MHV2G500SR	410	445	MHV1/MHV2G500D	466	405
MHV1/MHV2H500SR	577	584	MHV1/MHV2H500D	624	557
MHV1/MHV2H600SR	790	796	MHV1/MHV2H600D	818	783

MHV Series Weight Table

MODEL(Single action)	Weight(Kg)	MODEL(Single action)	Weight(Kg)
MHV1/MHV2A90SR	68	MHV1/MHV2A90D	38
MHV1/MHV2A100SR	76	MHV1/MHV2A100D	42
MHV1/MHV2A125SR	85	MHV1/MHV2A125D	45
MHV1/MHV2B125SR	102	MHV1/MHV2B125D	53
MHV1/MHV2B150SR	140	MHV1/MHV2B150D	61
MHV1/MHV2B175SR	190	MHV1/MHV2B175D	205
MHV1/MHV2C175SR	281	MHV1/MHV2C175D	210
MHV1/MHV2C190SR	340	MHV1/MHV2C190D	235
MHV1/MHV2C215SR	380	MHV1/MHV2C215D	260
MHV1/MHV2D215SR	490	MHV1/MHV2D215D	355
MHV1/MHV2D240SR	550	MHV1/MHV2D240D	389
MHV1/MHV2D265SR	640	MHV1/MHV2D265D	375
MHV1/MHV2E265SR	950	MHV1/MHV2E265D	600
MHV1/MHV2E290SR	1100	MHV1/MHV2E290D	640
MHV1/MHV2E315SR	1304	MHV1/MHV2E315D	680
MHV1/MHV2E340SR	1550	MHV1/MHV2E340D	850
MHV1/MHV2F340SR	1900	MHV1/MHV2F340D	1030
MHV1/MHV2F365SR	1850	MHV1/MHV2F365D	1090
MHV1/MHV2F400SR	2000	MHV1/MHV2F400D	1200
MHV1/MHV2F425SR	2300	MHV1/MHV2F425D	1360
MHV1/MHV2G400SR	2700	MHV1/MHV2G400D	1650
MHV1/MHV2G450SR	3100	MHV1/MHV2G450D	1800
MHV1/MHV2G500SR	3500	MHV1/MHV2G500D	2100
MHV1/MHV2H500SR	4200	MHV1/MHV2H500D	2450
MHV1/MHV2H600SR	6800	MHV1/MHV2H600D	5200

This data is for reference only, subject to change without notice!

SYMMETRIC TORQUE DATA



Symmetric Double Action Output Torque(unit:n.m)

MODEL	4.0BAR			5.0BAR			6.0BAR			7.0BAR		
	0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°
MHV1A90D	1041	578	1002	1301	723	1252	1561	867	1502	1822	1012	1753
MHV1A100D	1285	714	1246	1606	892	1557	1928	1071	1869	2249	1249	2180
MHV1A125D	2008	1115	1969	2510	1394	2461	3012	1673	2953	3514	1952	3445
MHV1B125D	2631	1462	2546	3289	1827	3182	3947	2193	3819	4604	2558	4455
MHV1B150D	3789	2105	3703	4736	2631	4629	5683	3157	5555	6630	3683	6481
MHV1B175D	5157	2865	5072	6446	3581	6339	7735	4J297	7607	9024	5014	8875
MHV1C175D	6446	3581	6257	8057	4476	7821	9669	5372	9385	11280	6267	10949
MHV1C190D	7598	4221	7409	9498	5277	9261	11398	6332	11113	13297	7387	12966
MHV1C215D	9729	5405	9540	12162	6757	11925	14594	8108	14310	17027	9459	16695
MHV1D215D	12085	6714	11765	15106	8392	14706	18128	10071	17647	21149	11749	20588
MHV1D240D	15059	8366	14739	18824	10458	18423	22588	12549	22108	26353	14641	25793
MHV1D265D	18360	10200	18039	22949	12750	22549	27539	15300	27059	32129	17850	31569
MHV1E265D	22560	12534	22167	28201	15667	27709	33841	18800	33250	39481	21934	38792
MHV1E290D	27018	15010	26624	33772	18762	33280	40527	22515	39937	47281	26267	46593
MHV1E315D	31877	17709	31483	39846	22137	39354	47815	26564	47225	55785	30992	55096
MHV1E340D	37138	20632	36744	46422	25790	45930	55706	30948	55116	64991	36106	64302
MHV1F340D	46614	25897	45798	58268	32371	57247	69921	38845	68696	81575	45319	80146
MHV1F365D	53721	29845	52905	67151	37306	66131	80582	44768	79357	94012	52229	92583
MHV1F400D	64518	35843	63701	80647	44804	79627	96777	53765	95552	112906	62726	111477
MHV1F425D	72835	40464	72018	91043	50580	90023	109252	60695	108027	127460	70811	126032
MHV1G400D	85078	47266	83749	106348	59082	104686	127618	70899	125624	148887	82715	146561
MHV1G450D	107677	59821	106348	134597	74776	132935	161516	89731	159522	188435	104686	186109
MHV1G500D	132935	73853	131606	166169	92316	164507	199403	110779	197409	232636	129242	230310
MHV1H500D	177247	98470	175102	221558	123088	218878	265870	147706	262653	310182	172323	306429
MHV1H600D	255235	141797	253091	319044	177247	316363	382853	212696	379636	446662	248145	442909

This data is for reference only, subject to change without notice!

Symmetric Single Action Outputtorque (fc)(unit: N.m)

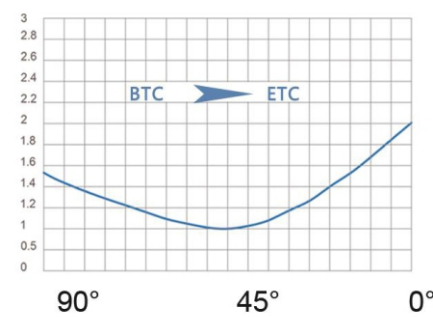
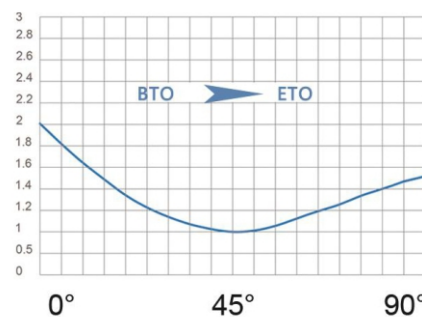
MODEL		Spring Torque			Air Torque: Air Supply Pressure											
					4.0BAR			5.0BAR			6.0BAR			7.0BAR		
		0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°
MHV1A90SR	A	390	289	651	611	267	351	862	406	601	1112	545	852	1362	685	1102
	B	488	361	813				764	334	439	1014	473	689	1265	612	939
MHV1A100SR	A	482	357	803	764	335	443	1075	508	754	1387	681	1065	1698	854	1377
	B	602	446	1004				955	419	553	1266	592	865	1578	765	1176
MHV1A125SR	A	753	558	1255	1216	536	714	1708	809	1206	2200	1083	1698	2692	1356	2190
	B	941	697	1569				1519	670	892	2012	943	1384	2504	1217	1876
MHV1B125SR	A	987	731	1644	1559	683	901	2196	1037	1538	2832	1391	2174	3468	1744	2811
	B	1233	914	2055				1949	854	1127	2585	1208	1763	3222	1562	2400
MHV1B150SR	A	1421	1052	2368	2283	1005	1335	3209	1519	2261	4134	2034	3187	5060	2548	4113
	B	1776	1316	2960				2853	1256	1669	3779	1771	2595	4705	2285	3521
MHV1B175SR	A	1934	1432	3223	3138	1385	1849	4406	2089	3116	5674	2794	4384	6941	3498	5652
	B	2417	1791	4029				3922	1731	2311	5190	2436	3579	6458	3140	4846
MHV1C175SR	A	2417	1791	4029	3839	1685	2228	5403	2554	3792	6968	3423	5356	8532	4292	6920
	B	3022	2238	5036				4799	2107	2785	6363	2976	4349	7927	3845	5913
MHV1C190SR	A	2849	2111	4749	4560	2005	2660	6412	3034	4512	8264	4063	6364	10116	5092	8217
	B	3562	2638	5936				5699	2507	3325	7552	3536	5177	9404	4565	7029
MHV1C215SR	A	3649	2703	6081	5891	2597	3459	8276	3922	5844	10661	5247	8229	13047	6572	10614
	B	4561	3378	7601				7364	3247	4324	9749	4572	6709	12134	5897	9094
MHV1D215SR	A	4532	3357	7553	7233	3179	4212	10174	4813	7153	13115	6447	10094	16056	8081	13035
	B	5665	4196	9441				9041	3974	5265	11982	5608	8206	14923	7242	11147
MHV1D240SR	A	5647	4183	9412	9092	4005	5327	12776	6052	9011	16461	8099	12696	20146	10146	16381
	B	7059	5229	11765				11364	5006	6659	15049	7053	10343	18734	9100	14028
MHV1D265SR	A	6885	5100	11475	11154	4922	6565	15664	7427	11074	20174	9933	15584	24684	12438	20094
	B	8606	6375	14343				13943	6152	8206	18453	8658	12716	22963	11163	17225
MHV1E265SR	A	8460	6267	14100	13707	6048	8067	19248	9127	13608	24790	12206	19150	30332	15284	24692
	B	10575	7833	17625				17133	7560	10083	22675	10639	15625	28217	13718	21167
MHV1E290SR	A	10132	7505	16886	16493	7286	9738	23149	10984	16394	29805	14682	23050	36461	18380	29706
	B	12665	9381	21108				20616	9108	12173	27272	12806	18829	33928	16504	25485
MHV1E315SR	A	11954	8855	19923	19530	8636	11560	27400	13009	19431	35271	17381	27302	43142	21754	35173
	B	14942	11068	24904				24412	10795	14450	32283	15168	22321	40154	19541	30192
MHV1E340SR	A	13927	10316	23211	22817	10097	13533	32003	15201	22719	41190	20304	31905	50376	25407	41091
	B	17408	12895	29014				28522	12622	16916	37708	17725	26102	46894	22828	35288
MHV1F340SR	A	17480	12948	29134	28317	12495	16664	39767	18855	28113	51216	25216	39563	62665	31577	51012
	B	21850	16185	36417				35397	15618	20830	46846	21979	32279	58295	28340	43728
MHV1F365SR	A	20145	14923	33576	32759	14469	19329	45985	21817	32555	59211	29165	45781	72438	36512	59007
	B	25182	18653	41970				40949	18086	24161	54175	25434	37387	67401	32782	50613
MHV1F400SR	A	24194	17922	40324	39507	17468	23378	55432	26315	39303	71358	35163	55228	87283	44010	71154
	B	30243	22402	50405				49384	21835	29222	65309	30682	45147	81234	39530	61073
MHV1F425SR	A	27313	20232	45522	44705	19778	26496	62710	29781	44501	80714	39783	62505	98719	49786	80510
	B	34141	25290	56902				55881	24723	33121	73886	34725	51125	91890	44728	69130
MHV1G400SR	A	31904	23633	53174	51845	22894	30575	72782	34526	51512	93719	46158	72450	114656	57790	93387
	B	39881	29541	66468				64806	28618	38219	85743	40250	59156	106680	51882	80093
MHV1G450SR	A	40379	29910	67298	65969	29172	39050	92556	43942	65637	119143	58713	92224	145730	73484	118811
	B	50474	37388	84123				82461	36465	48812	109048	51235	75399	135635	66006	101986
MHV1G500SR	A	49851	36926	83084	81755	36188	48521	114656	54466	81423	147558	72745	114324	180459	91024	147226
	B	62313	46158	103856				102194	45235	60652	135095	63513	93553	167997	81792	126454
MHV1H500SR	A	66468	49235	110779	108635	48044	64323	152410	72363	108098	196186	96683	151874	239961	121003	195649
	B	83084	61544	138474				135793	60055	80404	179569	84374	124179	223344	108694	167955
MHV1H600SR	A	95713	70899	159522	157377	69707	93569	220650	104859	156841	283923	140010	220114	347195	175162	283386
	B	119642	88623	199403				196722	87134	116961	259994	122285	180233	323267	157437	243506

This data is for reference only, subject to change without notice!

Symmetric Single Action Outputtorque (fo)(unit: N.m)

MODEL		Spring Torque			Air Torque: Air Supply Pressure											
					4.0BAR			5.0BAR			6.0BAR			7.0BAR		
		0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°
MHV1A90SR	A	651	289	390	351	267	611	601	406	862	852	545	1112	1102	685	1362
	B	813	361	488				439	334	764	689	473	1014	939	612	1265
MHV1A100SR	A	803	357	482	443	335	764	754	508	1075	1065	681	1387	1377	854	1698
	B	1004	446	602				553	419	955	865	592	1266	1176	765	1578
MHV1A125SR	A	1255	558	753	714	536	1216	1206	809	1708	1698	1083	2200	2190	1356	2692
	B	1569	697	941				892	670	1519	1384	943	2012	1876	1217	2504
MHV1B125SR	A	1644	731	987	901	683	1559	1538	1037	2196	2174	1391	2832	2811	1744	3468
	B	2055	914	1233				1127	854	1949	1763	1208	2585	2400	1562	3222
MHV1B150SR	A	2368	1052	1421	1335	1005	2283	2261	1519	3209	3187	2034	4134	4113	2548	5060
	B	2960	1316	1776				1669	1256	2853	2595	1771	3779	3521	2285	4705
MHV1B175SR	A	3223	1432	1934	1849	1385	3138	3116	2089	4406	4384	2794	5674	5652	3498	6941
	B	4029	1791	2417				2311	1731	3922	3579	2436	5190	4846	3140	6458
MHV1C175SR	A	4029	1791	2417	2228	1685	3839	3792	2554	5403	5356	3423	6968	6920	4292	8532
	B	5036	2238	3022				2785	2107	4799	4349	2976	6363	5913	3845	7927
MHV1C190SR	A	4749	2111	2849	2660	2005	4560	4512	3034	6412	6364	4063	8264	8217	5092	10116
	B	5936	2638	3562				3325	2507	5699	5177	3536	7552	7029	4565	9404
MHV1C215SR	A	6081	2703	3649	3459	2597	5891	5844	3922	8276	8229	5247	10661	10614	6572	13047
	B	7601	3378	4561				4324	3247	7364	6709	4572	9749	9094	5897	12134
MHV1D215SR	A	7553	3357	4532	4212	3179	7233	7153	4813	10174	10094	6447	13115	13035	8081	16056
	B	9441	4196	5665				5265	3974	9041	8206	5608	11982	11147	7242	14923
MHV1D240SR	A	9412	4183	5647	5327	4005	9092	9011	6052	12776	12696	8099	16461	16381	10146	20146
	B	11765	5229	7059				6659	5006	11364	10343	7053	15049	14028	9100	18734
MHV1D265SR	A	11475	5100	6885	6565	4922	11154	11074	7427	15664	15584	9933	20174	20094	12438	24684
	B	14343	6375	8606				8206	6152	13943	12716	8658	18453	17225	11163	22963
MHV1E265SR	A	14100	6267	8460	8067	6048	13707	13608	9127	19248	19150	12206	24790	24692	15284	30332
	B	17625	7833	10575				10083	7560	17133	15625	10639	22675	21167	13718	28217
MHV1E290SR	A	16886	7505	10132	9738	7286	16493	16394	10984	23149	23050	14682	29805	29706	18380	36461
	B	21108	9381	12665				12173	9108	20616	18829	12806	27272	25485	16504	33928
MHV1E315SR	A	19923	8855	11954	11560	8636	19530	19431	13009	27400	27302	17381	35271	35173	21754	43142
	B	24904	11068	14942				14450	10795	24412	22321	15168	32283	30192	19541	40154
MHV1E340SR	A	23211	10316	13927	13533	10097	22817	22719	15201	32003	31905	20304	41190	41091	25407	50376
	B	29014	12895	17408				16916	12622	28522	26102	17725	37708	35288	22828	46894
MHV1F340SR	A	29134	12948	17480	16664	12495	28317	28113	18855	39767	39563	25216	51216	51012	31577	62665
	B	36417	16185	21850				20830	15618	35397	32279	21979	46846	43728	28340	58295
MHV1F365SR	A	33576	14923	20145	19329	14469	32759	32555	21817	45985	45781	29165	59211	59007	36512	72438
	B	41970	18653	25182				24161	18086	40949	37387	25434	54175	50613	32782	67401
MHV1F400SR	A	40324	17922	24194	23378	17468	39507	39303	26315	55432	55228	35163	71358	71154	44010	87283
	B	50405	22402	30243				29222	21835	49384	45147	30682	65309	61073	39530	81234
MHV1F425SR	A	45522	20232	27313	26496	19778	44705	44501	29781	62710	62505	39783	80714	80510	49786	98719
	B	56902	25290	34141				33121	24723	55881	51125	34725	73886	69130	44728	91890
MHV1G400SR	A	53174	23633	31904	30575	22894	51845	51512	34526	72782	72450	46158	93719	93387	57790	114656
	B	66468	29541	39881				38219	28618	64806	59156	40250	85743	80093	51882	106680
MHV1G450SR	A	67298	29910	40379	39050	29172	65969	65637	43942	92556	92224	58713	119143	118811	73484	145730
	B	84123	37388	50474				48812	36465	82461	75399	51235	109048	101986	66006	135635
MHV1G500SR	A	83084	36926	49851	48521	36188	81755	81423	54466	114656	114324	72745	147558	147226	91024	180459
	B	103856	46158	62313				60652	45235	102194	93553	63513	135095	126454	81792	167997
MHV1H500SR	A	110779	49235	66468	64323	48044	108635	108098	72363	152410	151874	96683	196186	195649	121003	239961
	B	138474	61544	83084				80404	60055	135793	124179	84374	179569	167955	108694	223344
MHV1H600SR	A	159522	70899	95713	93569	69707	157377	156841	104859	220650	220114	140010	283923	283386	175162	347195
	B	199403	88623	119642				116961	87134	196722	180233	122285	259994	243506	157437	323267

CANTED TORQUE DATA



Canted Double Action Output Torque(Unit: N.m)

MODEL	4.0BAR			5.0BAR			6.0BAR			7.0BAR		
	0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°
MHV2A90D	1041	578	1002	1301	723	1252	1561	867	1502	1822	1012	1753
MHV2A100D	1285	714	1246	1606	892	1557	1928	1071	1869	2249	1249	2180
MHV2A125D	2008	1115	1969	2510	1394	2461	3012	1673	2953	3514	1952	3445
MHV2B125D	3157	1462	2253	3947	1827	2816	4736	2193	3379	5525	2558	3943
MHV2B150D	4546	2105	3277	5683	2631	4097	6820	3157	4916	7956	3683	5735
MHV2B175D	6188	2865	4488	7735	3581	5610	9282	4297	6732	10829	5014	7854
MHV2C175D	7735	3581	5537	9669	4476	6921	11603	5372	8305	13537	6267	9689
MHV2C190D	9118	4221	6557	11398	5277	8196	13677	6332	9835	15957	7387	11474
MHV2C215D	11675	5405	8443	14594	6757	10553	17513	8108	12664	20432	9459	14774
MHV2D215D	14502	6714	10411	18128	8392	13014	21753	10071	15617	25379	11749	18220
MHV2D240D	18071	8366	13043	22588	10458	16304	27106	12549	19565	31624	14641	22825
MHV2D265D	22031	10200	15964	27539	12750	19955	33047	15300	23946	38555	17850	27937
MHV2E265D	27073	12534	19617	33841	15667	24521	40609	18800	29425	47377	21934	34329
MHV2E290D	32422	15010	23561	40527	18762	29452	48632	22515	35342	56738	26267	41232
MHV2E315D	38252	17709	27861	47815	22137	34827	57379	26564	41792	66942	30992	48758
MHV2E340D	44565	20632	32517	55706	25790	40646	66848	30948	48775	77989	36106	56905
MHV2F340D	55937	25897	40529	69921	32371	50661	83905	38845	60793	97890	45319	70925
MHV2F365D	64465	29845	46818	80582	37306	58523	96698	44768	70227	112814	52229	81932
MHV2F400D	77421	35843	56373	96777	44804	70466	116132	53765	84559	135487	62726	98652
MHV2F425D	87401	40464	63733	109252	50580	79666	131102	60695	95599	152953	70811	111532
MHV2G400D	102094	47266	74114	127618	59082	92643	153141	70899	111171	178665	82715	129700
MHV2G450D	129213	59821	94113	161516	74776	117642	193819	89731	141170	226123	104686	164698
MHV2G500D	159522	73853	116465	199403	92316	145582	239283	110779	174698	279164	129242	203814
MHV2H500D	212696	98470	154958	265870	123088	193697	319044	147706	232436	372218	172323	271176
MHV2H600D	306282	141797	223974	382853	177247	279967	459423	212696	335961	535994	248145	391954

This data is for reference only, subject to change without notice!

Canted Single Action Output Torque(FC)(Unit: N.m)

MODEL		Spring Torque			Air Torque: Air Supply Pressure											
					4.0BAR			5.0BAR			6.0BAR			7.0BAR		
		0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°
MHV2A90SR	A	390	289	651	611	267	351	862	406	601	1112	545	852	1362	685	1102
	B	488	361	813				764	334	439	1014	473	689	1265	612	939
MHV2A100SR	A	482	357	803	764	335	443	1075	508	754	1387	681	1065	1698	854	1377
	B	602	446	1004				955	419	553	1266	592	865	1578	765	1176
MHV2A125SR	A	753	558	1255	1216	536	714	1708	809	1206	2200	1083	1698	2692	1356	2190
	B	941	697	1569				1519	670	892	2012	943	1384	2504	1217	1876
MHV2B125SR	A	1421	1013	1746	1736	449	507	2526	814	1070	3315	1180	1633	4104	1545	2196
	B	1776	1266	2183				2171	561	633	2960	926	1197	3749	1292	1760
MHV2B150SR	A	2046	1459	2515	2501	646	763	3637	1172	1582	4774	1699	2401	5910	2225	3221
	B	2557	1823	3143				3126	808	953	4262	1334	1773	5399	1860	2592
MHV2B175SR	A	2785	1985	3423	3403	880	1065	4951	1596	2187	6498	2312	3309	8045	3028	4431
	B	3481	2482	4278				4254	1099	1332	5801	1816	2454	7348	2532	3576
MHV2C175SR	A	3481	2482	4278	4254	1099	1258	6188	1995	2643	8122	2890	4027	10056	3785	5411
	B	4351	3102	5348				5318	1374	1573	7252	2270	2957	9185	3165	4341
MHV2C190SR	A	4103	2925	5043	5015	1296	1513	7294	2351	3153	9574	3407	4792	11853	4462	6431
	B	5129	3657	6304				6269	1620	1892	8548	2675	3531	10828	3731	5170
MHV2C215SR	A	5254	3746	6458	6421	1659	1985	9340	3011	4096	12259	4362	6206	15178	5713	8317
	B	6567	4682	8072				8027	2074	2481	10946	3426	4592	13864	4777	6702
MHV2D215SR	A	6526	4653	8021	7976	2061	2390	11602	3740	4993	15227	5418	7596	18853	7097	10199
	B	8157	5816	10026				9970	2576	2988	13596	4255	5591	17221	5933	8193
MHV2D240SR	A	8132	5798	9995	9939	2568	3048	14457	4660	6309	18974	6751	9570	23492	8843	12830
	B	10165	7247	12494				12424	3210	3810	16941	5302	7071	21459	7393	10332
MHV2D265SR	A	9914	7068	12186	12117	3131	3778	17625	5681	7769	23133	8231	11760	28641	10781	15751
	B	12393	8836	15232				15147	3914	4723	20654	6464	8714	26162	9014	12705
MHV2E265SR	A	12183	8686	14974	14890	3848	4643	21658	6981	9547	28426	10115	14451	35194	13248	19356
	B	15228	10857	18717				18612	4810	5804	25381	7943	10708	32149	11077	15612
MHV2E290SR	A	14590	10402	17932	17832	4608	5629	25937	8361	11520	34043	12113	17410	42148	15866	23300
	B	18237	13002	22415				22290	5760	7036	30395	9513	12927	38501	13265	18817
MHV2E315SR	A	17214	12273	21157	21039	5437	6704	30602	9864	13670	40165	14292	20635	49728	18719	27600
	B	21517	15341	26447				26299	6796	8380	35862	11223	15346	45425	15651	22311
MHV2E340SR	A	20054	14298	24649	24511	6334	7868	35652	11492	15997	46793	16650	24126	57935	21808	32256
	B	25068	17872	30811				30639	7918	9835	41780	13076	17964	52921	18234	26093
MHV2F340SR	A	25172	17946	30939	30765	7950	9590	44750	14424	19722	58734	20899	29855	72718	27373	39987
	B	31465	22433	38673				38457	9938	11988	52441	16412	22120	66425	22886	32252
MHV2F365SR	A	29009	20683	35656	35456	9162	11163	51572	16624	22867	67689	24085	34572	83805	31546	46276
	B	36262	25853	44570				44320	11453	13953	60436	18914	25658	76553	26376	37362
MHV2F400SR	A	34840	24839	42822	42582	11004	13551	61937	19965	27644	81292	28925	41738	100648	37886	55831
	B	43550	31049	53527				53227	13755	16939	72583	22716	31032	91938	31676	45125
MHV2F425SR	A	39331	28041	48342	48071	12422	15391	69921	22538	31324	91772	32654	47258	113622	42770	63191
	B	49163	35052	60427				60089	15528	19239	81939	25644	35172	103789	35760	51105
MHV2G400SR	A	45942	32755	56468	56152	14511	17646	81675	26327	36175	107199	38143	54703	132722	49960	73232
	B	57428	40944	70585				70190	18138	22058	95713	29955	40586	121237	41771	59115
MHV2G450SR	A	58146	41456	71467	71067	18365	22646	103370	33320	46174	135674	48275	69703	167977	63231	93231
	B	72682	51820	89334				88834	22956	28308	121137	37911	51836	153440	52867	75364
MHV2G500SR	A	71785	51180	88231	87737	22673	28234	127618	41136	57350	167498	59599	86467	207379	78062	115583
	B	89731	63975	110289				109671	28341	35292	149552	46804	64409	189432	65267	93525
MHV2H500SR	A	95713	68240	117642	116983	30230	37316	170157	54848	76055	223331	79466	114795	276505	104083	153534
	B	119642	85300	147052				146229	37788	46645	199403	62406	85384	252577	87023	124124
MHV2H600SR	A	137827	98266	169404	168455	43532	54570	245026	78981	110564	321596	114430	166557	398167	149880	222551
	B	172284	122832	211755				210569	54415	68213	287140	89864	124206	363710	125313	180200

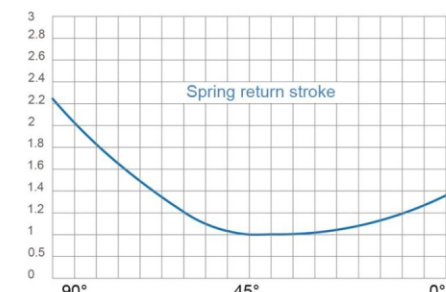
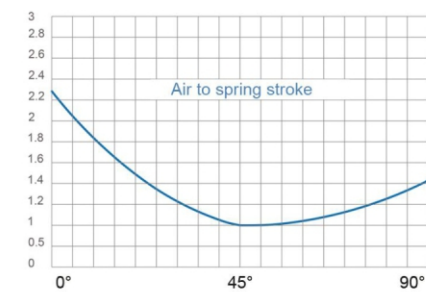
Canted Single Action Output Torque(FO)(Unit: N.m)

MODEL	Spring Torque			Air Torque: Air Supply Pressure											
				4.0BAR			5.0BAR			6.0BAR			7.0BAR		
	0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°
MHV2A90SR	A 651	289	390	351	267	611	601	406	862	852	545	1112	1102	685	1362
	B 813	361	488				439	334	764	689	473	1014	939	612	1265
MHV2A100SR	A 803	357	482	443	335	764	754	508	1075	1065	681	1387	1377	854	1698
	B 1004	446	602				553	419	955	865	592	1266	1176	765	1578
MHV2A125SR	A 1255	558	753	714	536	1216	1206	809	1708	1698	1083	2200	2190	1356	2692
	B 1569	697	941				892	670	1519	1384	943	2012	1876	1217	2504
MHV2B125SR	A 1430	459	633	1727	1003	1620	2517	1369	2183	3306	1734	2747	4095	2099	3310
	B 1787	573	791				2159	1254	2025	2948	1619	2588	3738	1985	3152
MHV2B150SR	A 2059	660	911	2487	1445	2366	3624	1971	3186	4761	2497	4005	5897	3023	4824
	B 2574	825	1139				3109	1806	2958	4246	2332	3777	5382	2858	4597
MHV2B175SR	A 2803	899	1240	3386	1966	3248	4933	2682	4370	6480	3399	5492	8027	4115	6614
	B 3503	1123	1550				4232	2458	4060	5779	3174	5182	7326	3890	6304
MHV2C175SR	A 3503	1123	1550	4232	2458	3987	6166	3353	5371	8099	4248	6755	10033	5144	8139
	B 4379	1404	1938				5290	3072	4983	7224	3967	6367	9157	4863	7752
MHV2C190SR	A 4130	1324	1827	4988	2897	4729	7268	3952	6368	9547	5008	8008	11827	6063	9647
	B 5162	1655	2284				6236	3621	5912	8515	4677	7551	10795	5732	9190
MHV2C215SR	A 5288	1696	2340	6388	3710	6103	9306	5061	8213	12225	6412	10324	15144	7764	12435
	B 6610	2120	2925				7985	4637	7628	10903	5988	9739	13822	7340	11850
MHV2D215SR	A 6568	2106	2906	7934	4608	7505	11560	6286	10108	15185	7965	12711	18811	9643	15314
	B 8210	2633	3633				9918	5760	9381	13543	7438	11984	17169	9117	14587
MHV2D240SR	A 8184	2624	3621	9886	5742	9422	14404	7833	12682	18922	9925	15943	23439	12016	19204
	B 10230	3280	4527				12358	7177	11777	16876	9269	15038	21393	11360	18299
MHV2D265SR	A 9978	3200	4415	12053	7000	11549	17561	9550	15540	23069	12100	19531	28577	14650	23522
	B 12473	4000	5519				15067	8750	14436	20575	11300	18427	26083	13850	22418
MHV2E265SR	A 12261	3932	5425	14811	8602	14191	21580	11735	19096	28348	14869	24000	35116	18002	28904
	B 15326	4915	6782				18514	10752	17739	25282	13886	22644	32051	17019	27548
MHV2E290SR	A 14684	4709	6497	17738	10301	17064	25843	14054	22955	33949	17806	28845	42054	21559	34735
	B 18355	5886	8121				22172	12877	21330	30278	16629	27221	38383	20382	33111
MHV2E315SR	A 17324	5555	7666	20928	12154	20196	30491	16581	27161	40054	21009	34127	49617	25436	41092
	B 21656	6944	9582				26160	15193	25245	35723	19620	32210	45286	24047	39175
MHV2E340SR	A 20183	6472	8931	24382	14160	23586	35523	19318	31715	46664	24476	39845	57806	29634	47974
	B 25229	8090	11163				30477	17700	29483	41618	22858	37612	52760	28016	45741
MHV2F340SR	A 25334	8124	11210	30603	17773	29319	44587	24247	39451	58572	30721	49584	72556	37196	59716
	B 31667	10155	14012				38254	22216	36649	52238	28690	46781	66222	35165	56913
MHV2F365SR	A 29196	9362	12919	35269	20483	33900	51385	27944	45604	67502	35405	57309	83618	42867	69013
	B 36495	11703	16148				44086	25604	42374	60203	33065	54079	76319	40526	65784
MHV2F400SR	A 35064	11244	15515	42357	24599	40858	61713	33560	54951	81068	42521	69044	100423	51482	83137
	B 43830	14055	19394				52947	30749	51072	72302	39710	65165	91657	48671	79259
MHV2F425SR	A 39584	12693	17515	47817	27770	46218	69668	37886	62151	91518	48002	78084	113369	58118	94017
	B 49480	15867	21894				59772	34713	57772	81622	44829	73705	103473	54945	89638
MHV2G400SR	A 46238	14827	20459	55856	32439	53655	81379	44255	72183	106903	56072	90712	132426	67888	109240
	B 57798	18534	25574				69820	40548	67069	95343	52365	85597	120867	64181	104126
MHV2G450SR	A 58520	18766	25894	70693	41055	68219	102996	56010	91748	135299	70966	115276	167602	85921	138804
	B 73150	23457	32367				88366	51319	85274	120669	66274	108803	152972	81229	132331
MHV2G500SR	A 72247	23167	31968	87275	50685	84497	127155	69149	113614	167036	87612	142730	206916	106075	171846
	B 90309	28959	39960				109093	63357	105622	148974	81820	134738	188854	100283	163854
MHV2H500SR	A 96330	30890	42624	116366	67581	112334	169540	92198	151073	222714	116816	189813	275888	141433	228552
	B 120412	38612	53280				145458	84476	140417	198632	109093	179157	251806	133711	217896
MHV2H600SR	A 138715	44481	61378	167568	97316	162596	244138	132765	218589	320709	168215	274583	397279	203664	330576
	B 173394	55602	76723				209459	121645	203245	286030	157094	259238	362601	192544	315232

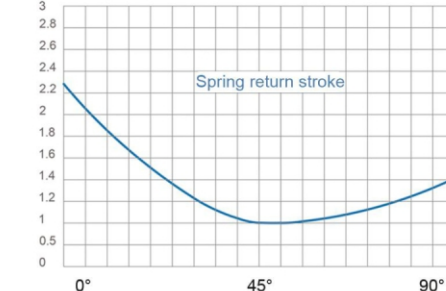
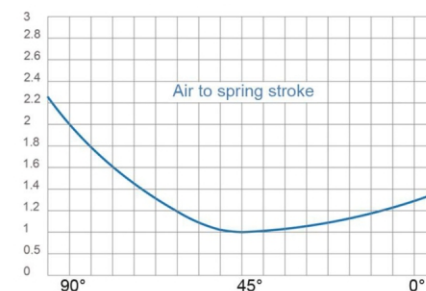
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CURVE CHART

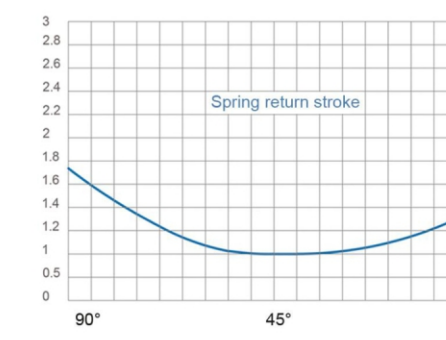
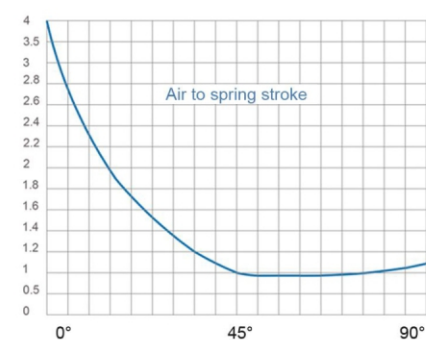
Symmetric Single Action Output Torque (fc)



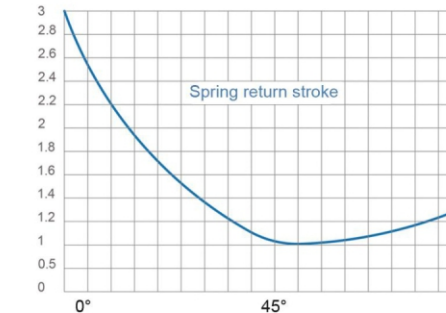
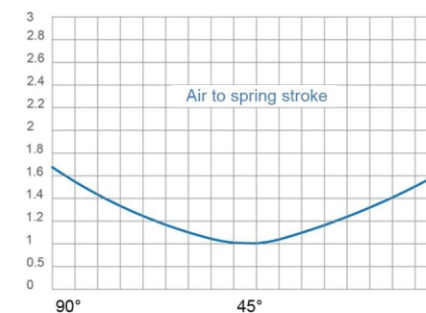
Symmetric Single Action Output Torque (fo)



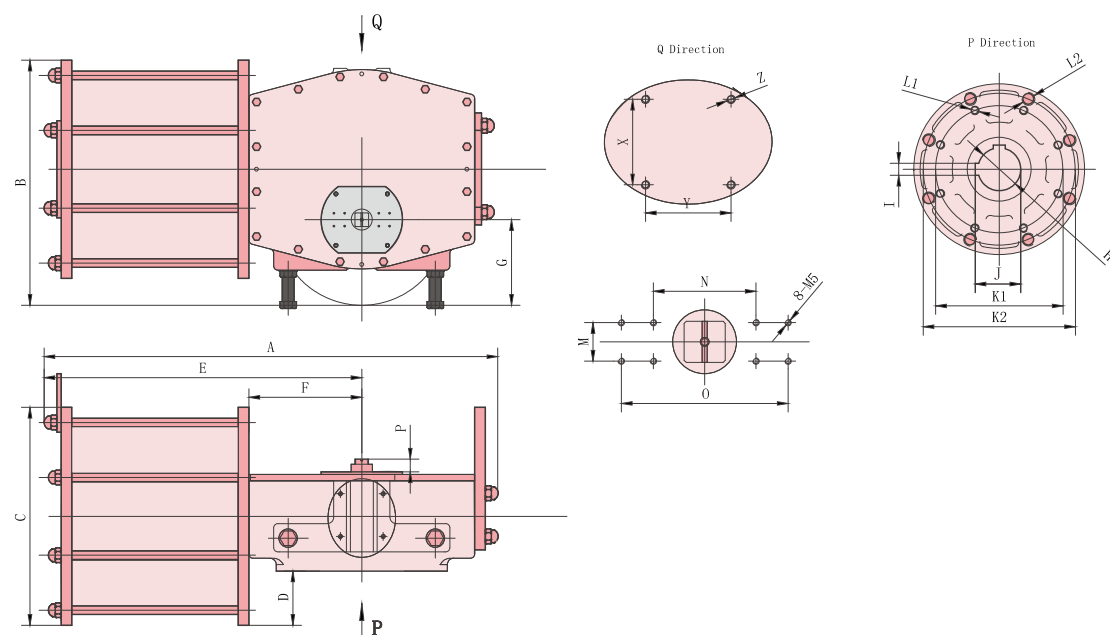
Canted Single Action Output Torque(FC)



Canted Single Action Output Torque(FO)



DIMENSIONS

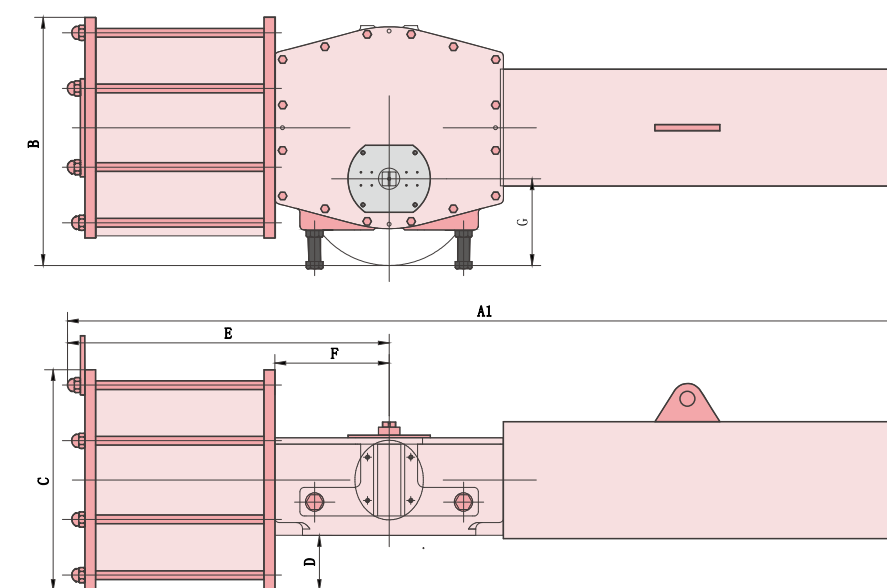


Double Acting/symmetric And Canted Data

MODEL	A	A1		B	C	D	E	F	G	H	Hmin	Hmax	I	J
		4.0Bar	5.0Bar											
MHV1/MHV2A90D/SR	564	884	909	243.5	Φ196	11	407	127	87.5	Φ40			12	43.3
MHV1/MHV2A100D/SR	564	930	945	252.5	Φ214	20	407	127	87.5	Φ40			12	43.3
MHV1/MHV2A125D/SR	564	970	990	278.5	Φ266	46	407	127	87.5	Φ40			12	43.3
MHV1/MHV2B125D/SR	727	1259	1289	314	Φ266	35	517	175	105	Φ50	Φ30	Φ60	14	53.8
MHV1/MHV2B150D/SR	736	1328	1339	341	Φ320	62	526	175	105	Φ50	Φ30	Φ60	14	53.8
MHV1/MHV2B175D/SR	727	1361	1376	391	Φ420	112	517	175	105	Φ50	Φ30	Φ60	14	53.8
MHV1/MHV2C175D/SR	832	1535	1545	480	Φ420	97	588	208	175	Φ80	Φ50	Φ90	20	84.9
MHV1/MHV2C190D/SR	832	1557	1616	495	Φ450	112	588	208	175	Φ80	Φ50	Φ90	20	84.9
MHV1/MHV2C215D/SR	832	1601	1663	520	Φ500	137	588	208	175	Φ80	Φ50	Φ90	20	84.9
MHV1/MHV2D215D/SR	1050	1902	1924	580.5	Φ510	98	740	265	207.5	Φ90	Φ60	Φ110	25	95.4
MHV1/MHV2D240D/SR	1050	1952	2074	605.5	Φ560	123	740	265	207.5	Φ90	Φ60	Φ110	25	95.4
MHV1/MHV2D265D/SR	1050	1999	2004	630.5	Φ610	148	740	265	207.5	Φ90	Φ60	Φ110	25	95.4
MHV1/MHV2E265D/SR	1360	2348	2383	687.5	Φ610	141	985	330	237.5	Φ120	Φ70	Φ135	32	127.4
MHV1/MHV2E290D/SR	1360	2383	2439	722.5	Φ680	176	985	330	237.5	Φ120	Φ70	Φ135	32	127.4
MHV1/MHV2E315D/SR	1360	2597	2691	752.5	Φ740	206	985	330	237.5	Φ120	Φ70	Φ135	32	127.4
MHV1/MHV2E340D/SR	1360	2617	2705	777.5	Φ790	231	985	330	237.5	Φ120	Φ70	Φ135	32	127.4
MHV1/MHV2F340D/SR	1594	3085	3155	814.5	Φ790	185	1127	415	237.5	Φ150	Φ90	Φ180	36	158.4
MHV1/MHV2F365D/SR	1594	3147	3225	839.5	Φ840	210	1127	415	237.5	Φ150	Φ90	Φ180	36	158.4
MHV1/MHV2F400D/SR	1594	3247	3291	884.5	Φ930	255	1127	415	237.5	Φ150	Φ90	Φ180	36	158.4
MHV1/MHV2F425D/SR	1637	3317	3372	864.5	Φ890	235	1170	415	237.5	Φ150	Φ90	Φ180	36	158.4
MHV1/MHV2G400D/SR	1965	3955	4035	948	Φ856	199	1410	500	280	Φ190			45	200.4
MHV1/MHV2G450D/SR	1965	4050	4160	993	Φ946	244	1410	500	280	Φ190			45	200.4
MHV1/MHV2G500D/SR	1965	4180	4306	1043	Φ1046	294	1410	500	280	Φ190			45	200.4
MHV1/MHV2H500D/SR	2310	4880	4990	1186	Φ1046	240	1620	630	343	Φ250			56	262.4
MHV1/MHV2H600D/SR	2310	5090	5210	1288	Φ1250	342	1620	630	343	Φ250			56	262.4

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DIMENSIONS



Spring Return/symmetric And Canted Data

K1	K2	L1	L2	M	N	O	P	X	Y	Z	Air Connection
Φ140		4-M16		30	80		20	40	40	4-M6	Rc 3/8"
Φ140		4-M16		30	80		20	40	40	4-M6	Rc 3/8"
Φ140		4-M16		30	80		20	40	40	4-M6	Rc 3/8"
Φ165		4-M20		30	80	130	30	80	80	4-M8	Rc 3/8"
Φ165		4-M20		30	80	130	30	80	80	4-M8	Rc 3/8"
Φ165		4-M20		30	80	130	30	80	80	4-M8	Rc 1/2"
Φ254	Φ298	8-M16	8-M20	30	80	130	30	80	80	4-M8	Rc 3/4"
Φ254	Φ298	8-M16	8-M20	30	80	130	30	80	80	4-M8	Rc 3/4"
Φ254	Φ298	8-M16	8-M20	30	80	130	30	80	80	4-M8	Rc 3/4"
Φ298	Φ256	8-M20	8-M30	30	80	130	30	100	100	4-M10	Rc 1"
Φ298	Φ256	8-M20	8-M30	30	80	130	30	100	100	4-M10	Rc 1"
Φ298	Φ256	8-M20	8-M30	30	80	130	30	100	100	4-M10	Rc 1"
Φ356	Φ406	8-M30	8-M36	30	80	130	30	100	100	4-M12	Rc 1"
Φ356	Φ406	8-M30	8-M36	30	80	130	30	100	100	4-M12	Rc 1"
Φ356	Φ406	8-M30	8-M36	30	80	130	30	100	100	4-M12	Rc 1"
Φ356	Φ406	8-M30	8-M36	30	80	130	30	100	100	4-M12	Rc 1"
Φ406		8-M36		30	80	130	30	160	160	4-M12	Rc 1"
Φ406		8-M36		30	80	130	30	160	160	4-M12	Rc 1"
Φ406		8-M36		30	80	130	30	160	160	4-M12	Rc 1-1/2"
Φ406		8-M36		30	80	130	30	160	160	4-M12	Rc 1-1/2"
Φ406	Φ483	8-M36	12-M36	30	80	130	30	180	180	4-M16	Rc 1-1/2"
Φ406	Φ483	8-M36	12-M36	30	80	130	30	180	180	4-M16	Rc 1-1/2"
Φ406	Φ483	8-M36	12-M36	30	80	130	30	180	180	4-M16	Rc 1-1/2"
Φ483	Φ603	12-M36	20-M36	30	80	130	30	200	200	4-M16	Rc 1-1/2"
Φ483	Φ603	12-M36	20-M36	30	80	130	30	200	200	4-M16	Rc 1-1/2"

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