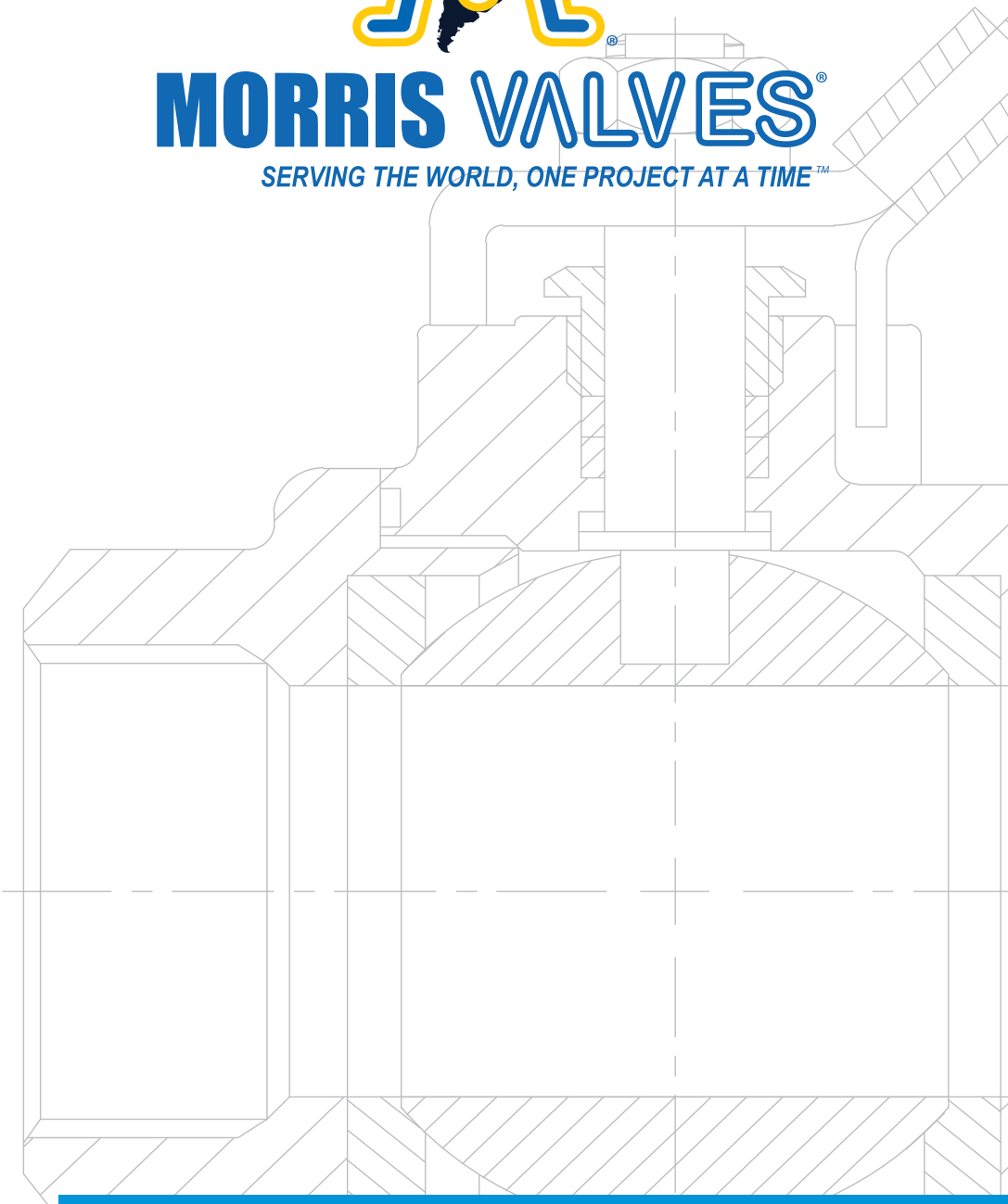
MORRIS VALVES®

SERVING THE WORLD, ONE PROJECT AT A TIME™



SCOTCH YOKE PNEUMATIC ACTUATOR

www.morrisvalve.com

MORRIS VALVES®

SERVING THE WORLD, ONE PROJECT AT A TIME™

In 1984, our journey into the business of repairing valves and industrial instrumentation began. That journey has led us to represent and service well known American brands and companies. In early 2000, our experience and growing passion for the valve industry encouraged our decision to launch our own brand, Morris Valves. Starting with the highly requested Ball Valves, the brand has been based on the principal of quality and performance to match our customers' needs. Our high standards of production later lead us to incorporate other models such as Gate Valve and Check Valves to our production. These additions were carefully selected to match our Standard of Quality. Our success has been driven by our belief of "Tradition with Quality" in everything we do. Our products are developed with that belief which drives our growth and guides the service we provide to our customers.

Contacts

Address: 6803 Theall Rd Building B, Houston, Tx 77066
Telefhone: +1 (832) 666-5576
Cel: +1 (832) 983-0744
Email: sales@morrisvalve.com

Vision

Our vision is to be amongst the leading corporations in the supply of goods and services related to valves, their components and industrial equipment in general. We want to conquer new markets in conformity with international standards and remain committed to customer satisfaction, the welfare of our company and the sustainability our planet.

Mision

Our mission is to use our highly trained, highly focused, and extremely motivated staff to work with manufacturers who value quality and have the vision for new development and product applications to ensure the timely provision of goods and services related to valves, their components and industrial equipment in general. We maintain a rigorous standard of customer satisfaction, which will provide for the welfare of the company, the welfare of the countries we serve, and most importantly the sustainability of the planet.

"Serving the world, one project at a time"

United States of America

United States Patent and Trademark Office

Reg. No. 4,840,307

Registered Oct. 27, 2015

Int. Cl.: 6

TRADEMARK

PRINCIPAL REGISTER

MORRIS VALVES, INC. (FLORIDA CORPORATION)
5590 N.W. 84TH AVE.
MIAMI, FL 33166

FOR: METAL PIPES AND METAL FITTINGS THEREFOR; METAL TUBES AND METAL FITTINGS THEREFOR, IN CLASS 6 (U.S. CLS. 2, 12, 13, 14, 23, 25 AND 50).

FIRST USE 2-11-2015; IN COMMERCE 2-11-2015.

OWNER OF U.S. REG. NO. 4,241,186.

THE COLOR(S) YELLOW, WHITE, AND BLUE IS/ARE CLAIMED AS A FEATURE OF THE MARK.

THE MARK CONSISTS OF A STYLIZED WHITE LETTER "V" WITH A BLUE OUTLINE INSIDE OF A STYLIZED LETTER "M" IN BLUE OUTLINED WITH YELLOW. THE BACKGROUND OF THE MARK IS WHITE.

SER. NO. 86-543,795, FILED 2-24-2015.

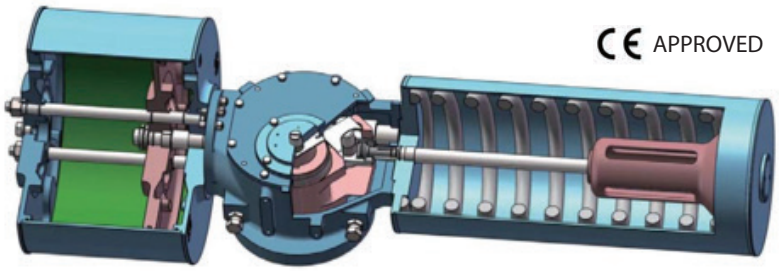
MARCIE MILONE, EXAMINING ATTORNEY

Michelle K. Lee

Director of the United States
Patent and Trademark Office

PNEUMATIC ACTUATORS
SCOTCH YOKE

MRP-SY TYPE



CE APPROVED

SIZE: (200 - 1000)MM CYLINDER BORE.

FEATURES:

- Double acting actuators available in output torques up 175000 N.m
- Spring return actuators available with spring break torque up to 113000 N.m
- A wider product range permitting a more economical sizing selection.
- Design suitable for both indoor & outdoor installation. Supplied with corrosion protections for normal environments. For severe duties a wide selection of highest levels of corrosion protection are available.
- Operating media: Dry or lubricated Air, inert / non-corrosive gases on condition that they are compatible with internal actuator parts and lubricants.
- Lubricated for the life under normal operation conditions from -20 º C to +80 º C. Special lubricants for Low (LT) and High (HT) temperature service are available.
  * Standard product from - 20ºC(-4 ºF) to +80 ºC(+176ºF)
  * (LT) actuator with VMQ O-rings from -40ºC(-40ºC) to +80ºC(+176ºF)
  * (HT) actuator with FPM O-rings from -15ºC(+5ºF) to +150ºC(+302ºF)
    - •Caution.
    - •For LT & HT services, special lubricant is required.
- H & L Temperature will vary change the output torque of the actuator

- Modular design: Each Body module can choose different cylinders modules & Spring Modules to meets the Torque.
- Internal tension Rod. Reduce the size of the Cylinder and support & guide the Piston avoiding eccentric wear of the cylinder.
- Maximum working pressure up to 87 Psi (6 Bar)

ADITIONALS:

* Spring Return
- FC = Fail to Close
- FO= Fail to Open
* Manual Mode
- Jack Screw Manual Override
- Gear Box Manual Override
- Worm Gear Manual Override
- Hidraulic Manual Override
- Without Manual Override.

HOW TO ORDER

	ACTION (DA/SR)		CYL. BORE		ISO521 CONN.FLG		OP. TEMP.(NT,LT,HT
MRP-SY -		-		-		-	

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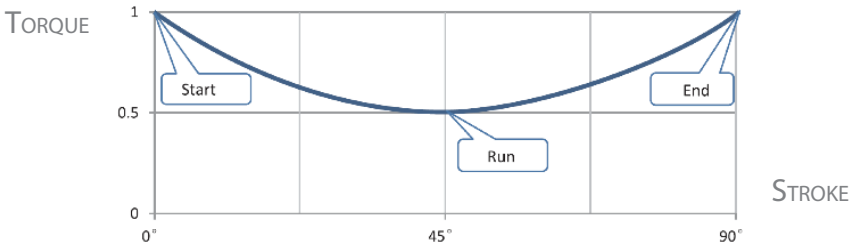
1. Actuator selection

I. Double Acting

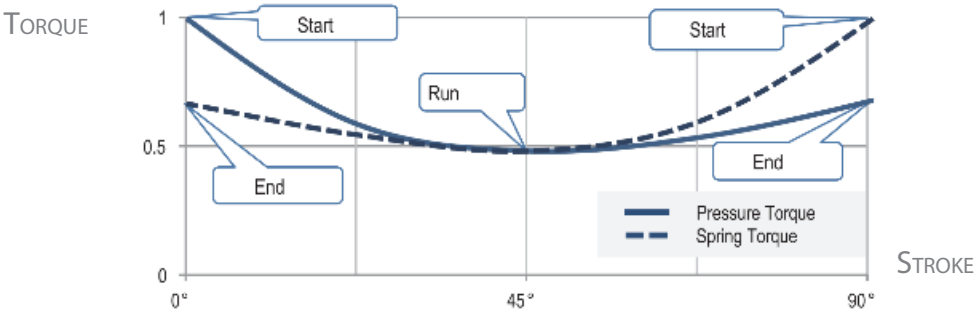
Refer to the DA Output Torque Ratings (N.m). Read down the applicable Air Column to the first Torque that exceeds the required Torque, then left the actuator size.



Type MRP-SY SR (bore)	Air Supply Pressure (Bar)								ISO 5211 FLANGE
	3		4		5		6		
	Output Torque Ratings (N.m)								
	START/END	RUN	START/END	RUN	START/END	RUN	START/END	RUN	
200	1066	563	1421	750	1777	938	2132	1125	F14
250	1701	898	2269	1197	2836	1497	3403	1796	
300	2459	1298	3278	1730					
350	2948	1556							
300	3033	1600	4043	2134	5054	2667	6065	3201	F16
350	3636	1919	4848	2559	6060	3198			
400	4799	2533	6398	3377					
350	4373	2308	5831	3077	7289	3847	8746	4616	F25
400	5771	3046	7695	4061	9619	5077	11543	6092	
500	9128	4818	12171	6424					
400	7003	3696	9338	4928	11672	6160	14007	7392	F30
500	11077	5846	14769	7795	18462	9744	22154	11692	
600	16031	8461	21375	11281					
500	14359	7578	19146	10105	23932	12631	28718	15157	F35
600	20781	10968	27708	14624	34635	18280	41563	21936	
700	29889	15775	39852	21033					
700	36507	19267	48676	25690	60845	32112	73014	38535	F40
800	47330	24980	63107	33306	78884	41633	94660	49960	
900	60792	32085	81057	42780	101321	53475			
800	56187	29654	74916	39539	93645	49424	112374	59309	F48
900	72169	38089	96225	50785	120281	63481	144338	76178	
1000	87581	46224	116775	61631	145969	77039	175163	92447	

2. (Single Acting) Spring Return

The Torque of the spring return actuator is not constant, but decreasing. It is divided in two Torques: One (Air Torque) due to the Air Pressure causing the spring compression during the Air Cycle and another (Spring Torque) due to the springs uncoiling during Spring cycle of actuation.



Refer to the SR Torque Chart (bellow), read down the Spring Torque "End column" to the first Torque that exceeds the required Torque, then right to the applicable Air Torque "End Column". If the Air End Torque also exceeds the required Torque, read left to the Actuator Size & Spring Set. If not, move down the chart one actuator size at a time and repeat, until both torqueses exceeds the required Torque.

Type MRP-SY SR (bore)	Spring No	Spring Torque			Air Supply Pressure (Bar)												ISO 5211 FLANGE
					3			4			5			6			
					Air Torque (N.m)												
		0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°	
		Start	Run	End	Start	Run	End	Start	Run	End	Start	Run	End	Start	Run	End	
250	3	1313	645	1132				1030	491	832	1597	790	1399	2164	1090	1966	
300	3	1313	645	1132	1220	592	1022	2039	1024	1842	2859	1457	2661				
350	3	1313	645	1132	1709	850	1511	2692	1369	2494							
250	2	1529	743	1288				859	384	595	1426	683	1163	1993	982	1730	F14
300	2	1529	743	1288	1049	484	786	1869	917	1605	2689	1349	2425				
350	2	1529	743	1288	1539	743	1275	2522	1261	2258							
250	1	1743	847	1465				665	271	361	1232	570	928	1800	870	1496	
300	1	1743	847	1465	856	371	552	1675	804	1371	2495	1236	2191	3314	1669	3010	
350	1	1743	847	1465	1345	630	1041	2328	1148	2024	3310	1667	3006				
300	3	2537	1182	1944				1916	840	1268	2927	1374	2278	3938	1907	3289	
350	3	2537	1182	1944	1509	625	860	2721	1265	2072	3933	1905	3284	5145	2544	4496	
400	3	2537	1182	1944	2671	1239	2023	4271	2083	3622	5871	2927	5222				
300	2	2851	1344	2243				1589	663	924	2600	1197	1935	3611	1730	2946	F16
350	2	2851	1344	2243				2394	1088	1729	3606	1727	2941	4818	2367	4153	
400	2	2851	1344	2243	2344	1062	1679	3944	1906	3279	5543	2750	4878				
300	1	3614	1687	2778							2014	822	1100	3025	1355	2111	
350	1	3614	1687	2778				1808	713	894	3020	1353	2106	4232	1992	3318	
400	1	3614	1687	2778	1759	687	844	3358	1531	2444	4958	2375	4043				
350	3	4194	1955	3215				2313	938	1242	3771	1707	2699	5228	2477	4157	
400	3	4194	1955	3215	2253	907	1182	4177	1922	3106	6101	2937	5030	8025	3953	6953	
500	3	4194	1955	3215	5610	2678	4539	8653	4284	7582	11696	5890	10625				
350	2	4795	2235	3675							3267	1401	2042	4725	2170	3499	F25
400	2	4795	2235	3675				3673	1615	2448	5597	2631	4372	7521	3646	6296	
500	2	4795	2235	3675	5107	2372	3881	8149	3978	6924	11192	5584	9967				
350	1	6219	2899	4767							2072	674	483	3530	1444	1941	
400	1	6219	2899	4767				2479	889	889	4402	1904	2813	6326	2919	4737	
500	1	6219	2899	4767	3912	1645	2323	6955	3251	5365	9997	4857	8408				
400	4	7842	3560	5648							5492	2265	3091	7826	3497	5425	
500	4	7842	3560	5648	4897	1951	2495	8589	3899	6188	12281	5848	9880	15974	7797	13572	
600	4	7842	3560	5648	9851	4565	7450	15195	7386	12793	20539	10206	18137				
400	3	9336	4206	6603							4446	1558	1456	6781	2790	3791	F30
500	3	9336	4206	6603				7543	3192	4554	11236	5141	8246	14928	7090	11938	
600	3	9336	4206	6603	8805	3852	5815	14149	6679	11159	19493	9499	16503				
500	2	11174	5029	7884				6142	2292	2542	9834	4240	6234	13527	6189	9927	
600	2	11174	5029	7884	7404	2958	3804	12748	5778	9148	18091	8598	14492				
500	1	12586	5746	9189							8406	3456	4689	12099	5404	8381	
600	1	12586	5746	9189				11320	4993	7602	16663	7814	12946	22007	10634	18290	

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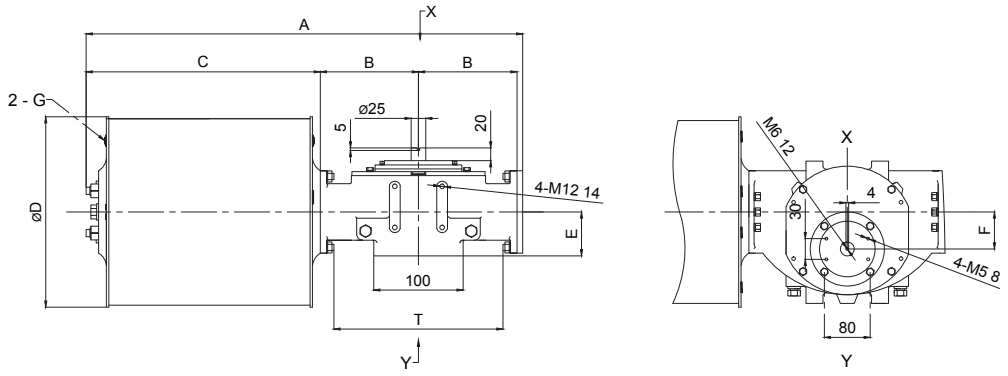
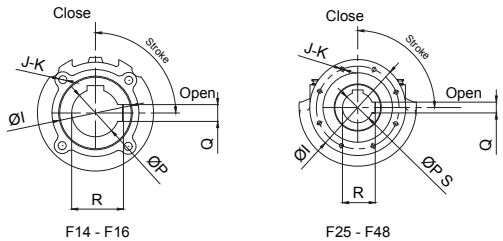
Type MRP-SY SR (bore)	Spring No	Spring Torque			Air Supply Pressure (Bar)												ISO 5211 FLANGE
					3			4			5			6			
					Air Torque (N.m)												
		0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°	0°	45°	90°	
		Start	Run	End	Start	Run	End	Start	Run	End	Start	Run	End	Start	Run	End	
500	4	17538	7557	11100										16572	6887	9527	
600	4	17538	7557	11100				15562	6354	8517	22489	10010	15444	29416	13666	22371	
700	4	17538	7557	11100	17742	7505	10697	27705	12763	20660	37668	18021	30623				
500	3	21048	9017	13124										14357	5289	5686	
600	3	21048	9017	13124				13347	4756	4676	20274	8412	11603	27202	12068	18530	F35
700	3	21048	9017	13124	15528	5907	6857	25491	11165	16819	35453	16423	26782				
600	2	25892	10899	15411										24699	10009	13230	
700	2	25892	10899	15411				22988	9106	11519	32951	14364	21482	42913	19622	31445	
600	1	28823	12400	18168										21681	8366	10022	
700	1	28823	12400	18168				19970	7463	8311	29933	12721	18274	39896	17980	28237	
700	4	34600	14762	21341				25323	9536	10814	37492	15959	22983	49661	22381	35152	
800	4	34600	14762	21341	23978	8826	9468	39754	17153	25245	55531	25479	41021	71308	33806	56798	
900	4	34600	14762	21341	37440	15931	22930	57704	26626	43194	77968	37321	63459	98232	48016	83723	
700	3	41067	17451	25062							33420	13016	15906	45589	19439	28075	
800	3	41067	17451	25062				35682	14210	18168	51459	22537	33945	67236	30864	49721	F40
900	3	41067	17451	25062	33368	12989	15853	53632	23684	36118	73896	34379	56382	94160	45074	76646	
700	2	49840	21098	30110										40065	15448	18475	
800	2	49840	21098	30110				30158	10220	8568	45935	18546	24345	61712	26873	40122	
900	2	49840	21098	30110				48108	19693	26518	68372	30388	46782	88636	41083	67046	
700	1	56307	23787	33832										35993	12506	11398	
800	1	56307	23787	33832							41863	15604	17268	57639	23931	33045	
900	1	56307	23787	33832				44036	16751	19441	64300	27446	39705	84564	38141	59970	
800	3	57016	25792	40721				30356	11316	12525	49085	21201	31254	67814	31086	49984	
900	3	57016	25792	40721				51665	22562	33834	75721	53259	57890	99777	47955	81947	
1000	3	57016	25792	40721	43021	18000	25121	72215	33408	54384		48816	83578	130603	64224	112772	
800	2	67109	30339	47859							101409	16225	20210	60003	26110	38939	
900	2	67109	30339	47859				43854	17587	22790	41274	30283	46846	91966	42979	70902	
1000	2	67109	30339	47859	35210	13025	14146	64404	28433	43340	67910	43840	72534	122792	59248	101728	F48
800	1	83319	36871	56401							93598			50656	18962	21200	
900	1	83319	36871	56401													
10000	1	83319	36871	56401				55057	21285	25601		36693	54795	113445	52101	83989	



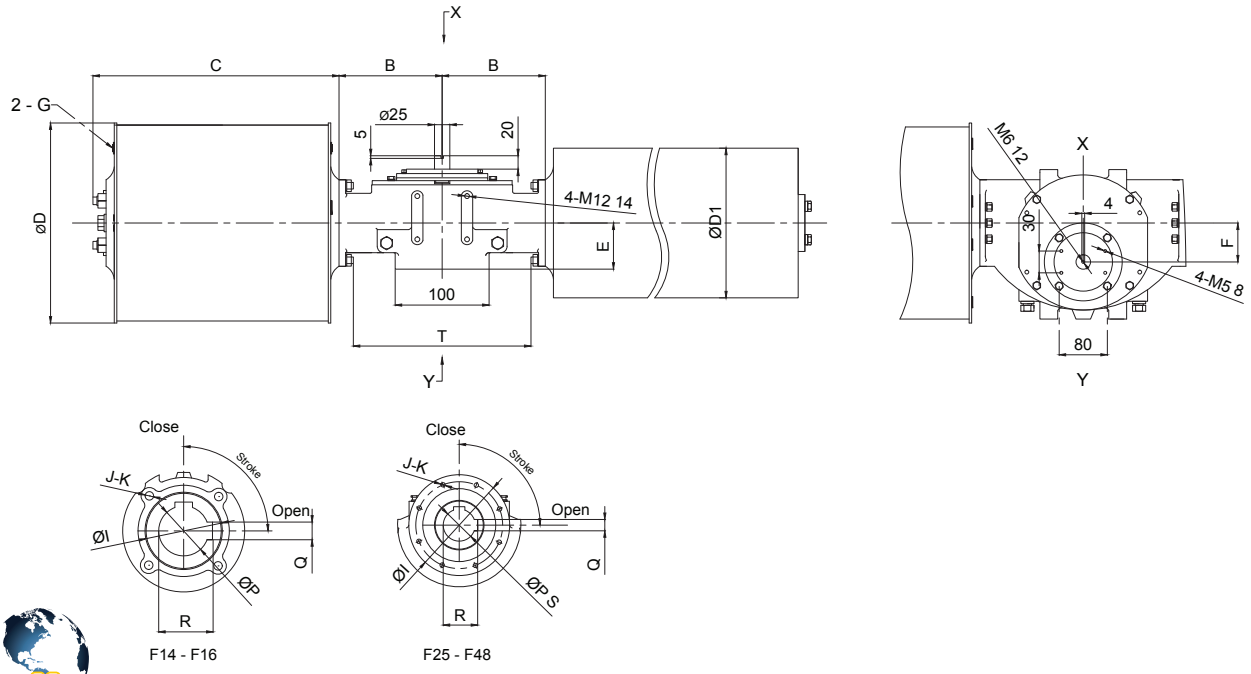


F14 - F16 F25 - F48

3. Double Acting Dimension Drawing

Dimensions (mm) & Technical data MRP-SY- DA –(BORE) -FXX																ISO 5211
BORE	A	B	C	D	E	F	G	H	I	J-K	P	S	Q	R	T	FLANGE
200	658	145	356	362	88	60	RC 1/2	80	140	4-M16	60	145	18	64.4	235	
250	658	145	356	362	88	60	RC 1/2	110	140	4-M16	60	145	18	64.4	235	F14
300	658	145	356	362	88	60	RC 1/2	124	140	4-M16	60	145	18	64.4	235	
350	658	145	356	362	88	60	RC 1/2	132	140	4-M16	60	145	18	64.4	235	
300	709	170	356	332	94	74	RC 1/2	124	165	4-M20	72	155	20	76.9	285	
350	709	170	356	332	94	74	RC 1/2	132	165	4-M20	72	155	20	76.9	285	F16
400	725	170	372	413	94	74	RC 3/4	158	165	4-M20	72	155	20	76.9	285	
350	828	195	423	362	98	89	RC 1/2	132	254	8 – M16	80	175	22	85.4	320	
400	828	195	423	413	98	89	RC 3/4	158	254	8 – M16	80	175	22	85.4	320	F25
500	828	195	423	514	98	89	RC 3/4	202	254	8 – M16	80	175	22	85.4	320	
400	982	238	492	413	115	108	RC 3/4	158	298	8—M20	100	200	28	106.4	396	
500	982	238	492	514	115	108	RC 3/4	202	298	8—M20	100	200	28	106.4	396	F30
600	982	238	492	616	115	108	RC 3/4	244	298	8—M20	100	200	28	106.4	396	
500	1217	298	606	514	163	140	RC 3/4	202	356	8-M30	160	295	40	169.4	505	
600	1217	298	606	616	163	140	RC 3/4	244	356	8-M30	160	295	40	169.4	505	F35
700	1217	298	606	739	163	140	RC 1	305	356	8-M30	160	295	40	169.4	505	
700	1536	370	766	739	203	171	RC 1	305	406	8-M36	180	360	45	190.4	620	
800	1536	370	766	839	203	171	RC 1-1/2	355	406	8-M36	180	360	45	190.4	620	F40
900	1536	370	766	947	203	171	RC 1-1/2	402	406	8-M36	180	360	45	190.4	620	
800	1760	425	880	839	214	203	RC 1-1/2	355	483	12-M36	220	380	50	231.4	690	
900	1760	425	880	947	214	203	RC 1-1/2	402	483	12-M36	220	380	50	231.4	690	F48
1000	1760	425	880	1048	214	203	RC 2	456	483	12-M36	220	380	50	231.4	690	

4. Spring Return Dimension Drawing



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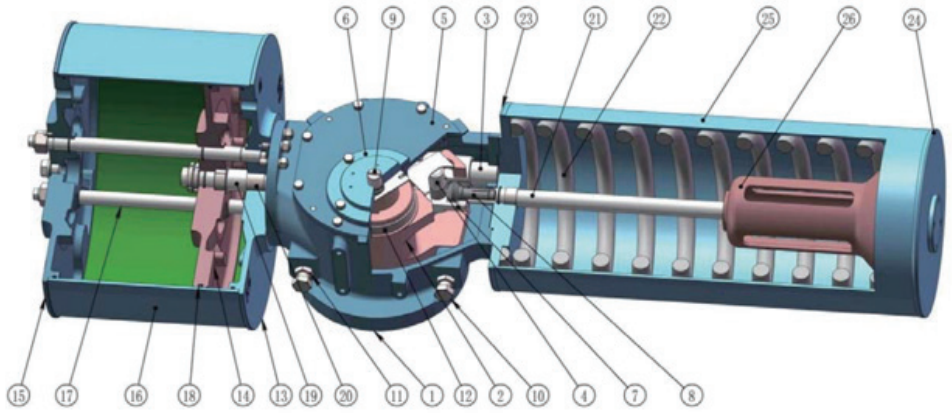
Dimensions (mm) & Technical data MRP-SY- SR –(BORE) -FXX																ISO 5211
BORE	A	B	C	D	E	F	G	H	I	J-K	P	S	Q	R	T	FLANGE
200	658	145	356	362	88	60	RC 1/2	80	140	4-M16	60	145	18	64.4	235	
250	658	145	356	362	88	60	RC 1/2	110	140	4-M16	60	145	18	64.4	235	F14
300	658	145	356	362	88	60	RC 1/2	124	140	4-M16	60	145	18	64.4	235	
350	658	145	356	362	88	60	RC 1/2	132	140	4-M16	60	145	18	64.4	235	
300	709	170	356	332	94	74	RC 1/2	124	165	4-M20	72	155	20	76.9	285	
350	709	170	356	332	94	74	RC 1/2	132	165	4-M20	72	155	20	76.9	285	F16
400	725	170	372	413	94	74	RC 3/4	158	165	4-M20	72	155	20	76.9	285	
350	828	195	423	362	98	89	RC 1/2	132	254	8 – M16	80	175	22	85.4	320	
400	828	195	423	413	98	89	RC 3/4	158	254	8 – M16	80	175	22	85.4	320	F25
500	828	195	423	514	98	89	RC 3/4	202	254	8 – M16	80	175	22	85.4	320	
400	982	238	492	413	115	108	RC 3/4	158	298	8—M20	100	200	28	106.4	396	
500	982	238	492	514	115	108	RC 3/4	202	298	8—M20	100	200	28	106.4	396	F30
600	982	238	492	616	115	108	RC 3/4	244	298	8—M20	100	200	28	106.4	396	
500	1217	298	606	514	163	140	RC 3/4	202	356	8-M30	160	295	40	169.4	505	
600	1217	298	606	616	163	140	RC 3/4	244	356	8-M30	160	295	40	169.4	505	F35
700	1217	298	606	739	163	140	RC 1	305	356	8-M30	160	295	40	169.4	505	
700	1536	370	766	739	203	171	RC 1	305	406	8-M36	180	360	45	190.4	620	
800	1536	370	766	839	203	171	RC 1-1/2	355	406	8-M36	180	360	45	190.4	620	F40
900	1536	370	766	947	203	171	RC 1-1/2	402	406	8-M36	180	360	45	190.4	620	
800	1760	425	880	839	214	203	RC 1-1/2	355	483	12-M36	220	380	50	231.4	690	
900	1760	425	880	947	214	203	RC 1-1/2	402	483	12-M36	220	380	50	231.4	690	F48
1000	1760	425	880	1048	214	203	RC 2	456	483	12-M36	220	380	50	231.4	690	



No.	Name	Material	No.	Name	Material	No.	Name	Material
1	Body	Ductile Iron	10	Adjust Bolt	Stainless Steel	19	Piston Rod	Alloy Steel
2	Yoke	Ductile Iron	11	Nut	Stainless Steel	20	Piston Rod Bearing	DU Bearing
3	Guide Bar	Alloy Steel	12	Yoke Bearing	DU Bearing	21	Tension Rod	Alloy Steel
4	Pin	Alloy Steel	13	Cylinder Cover	Ductile Iron	22	Spring	Alloy Steel
5	Body Cover	Ductile Iron	14	Piston	Ductile Iron	23	Spring Cover	Carbon Steel
6	Cover	Carbon Steel	15	Cylinder Cover	Ductil Iron	24	Spring Cover	Carbon Steel
7	Guide Block	Ductile Iron	16	Cylinder	Carbon Steel	25	Spring Cylinder	Carbon Steel
8	Connectors	Alloy Steel	17	Cylinder Tesion Rod	Alloy Steel	26	Spring Seat	Ductile Iron
9	Drive Shaft	Stainless Steel	18	Sealing Ring	NBR			

Cylinder Volume

ISO 5211 FLANGE	Cylinder Effective Volume Bore										
	200	250	300	350	400	500	600	700	800	900	1000
F14	6.8	10.6	15.4	18.2							
F16			15.4	18.2	21.3						
F25				21.7	27.5	43					
F30					33.7	53	76				
F35						59	100	145			
F40								180	234	296	
F48									275	353	430

A Tradition of Quality

Our passion is to develop solutions for difficult situations in Industrial Applications, no matter how large or small the project.

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