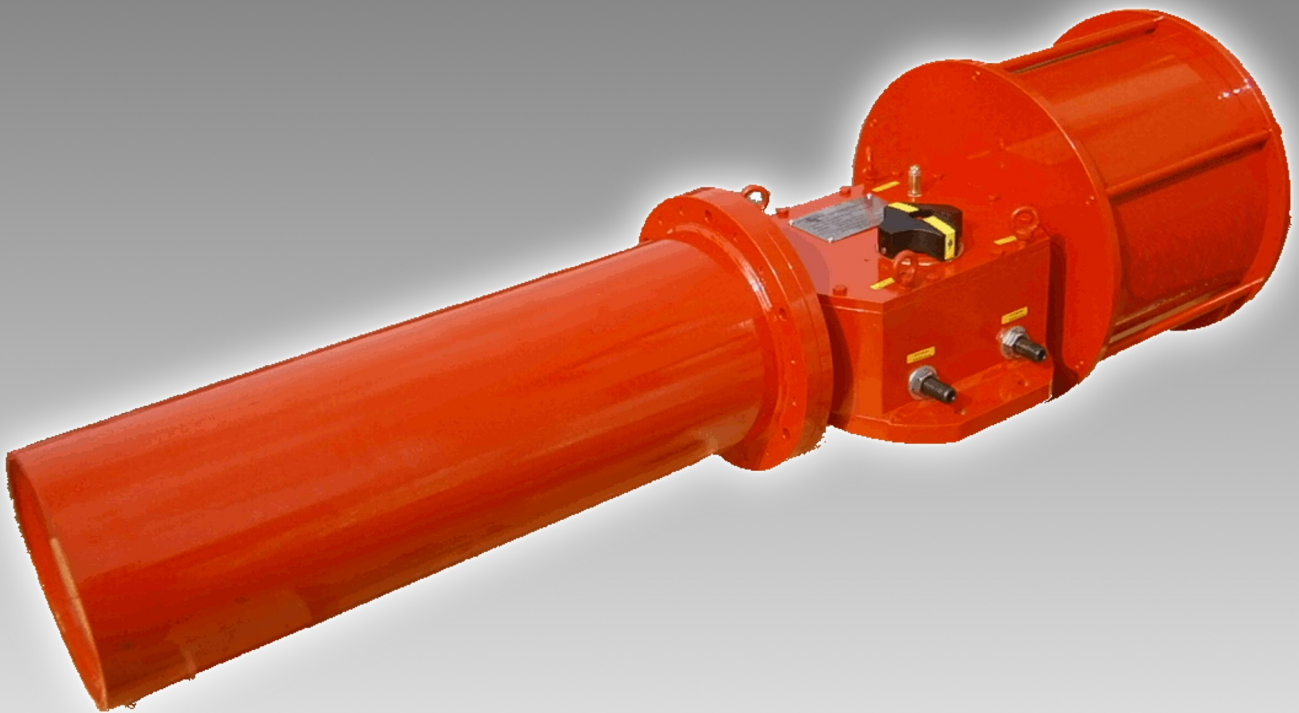




*TruTorq® High Performance
Heavy Duty Actuators*



INDEX

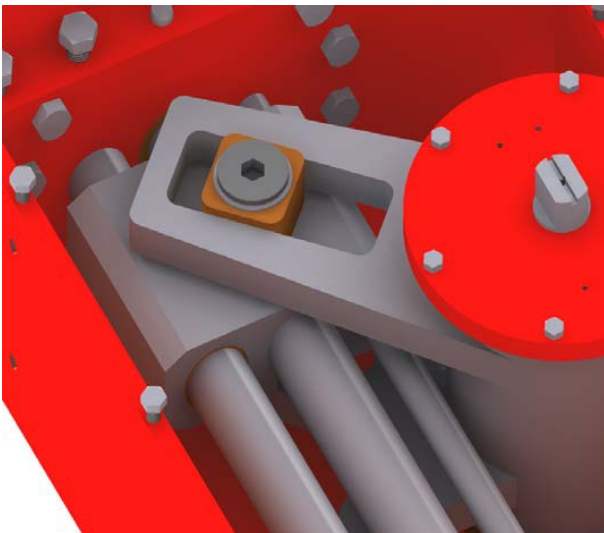
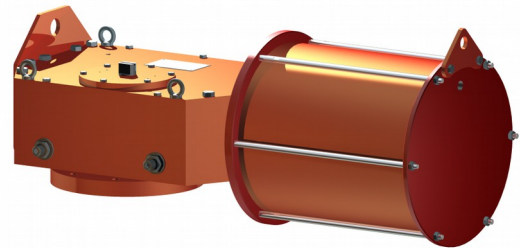
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PRODUCT DESCRIPTION

TruTorq® Heavy Duty (HD) Actuators range have a strong design that makes it to be the correct choice for heavy applications in several fields (oil and gas, on and off-shore, petrochemical plants, etc.) and suitable to automate any quarter turn valve (butterfly, ball, and plug).

The reliability of the design is ensured by analysis made by the Mechanical Engineering Department Of the University of Brescia (Italy).



The Scotch Yoke system allows the HD actuators to be suitable for High Torque valves since this system develops during the break a higher torque than in the run.

Production facility in North of Italy, this provides us with fast and efficient access to some of the best technology and know-how in the world.

The factory operates a quality assurance plan to ISO 9000:2008 which is certified by Tuv Sud, Italy.

Leakage test of 100% actuators before shipping.

Constant monitoring of all components through 3D measuring systems.

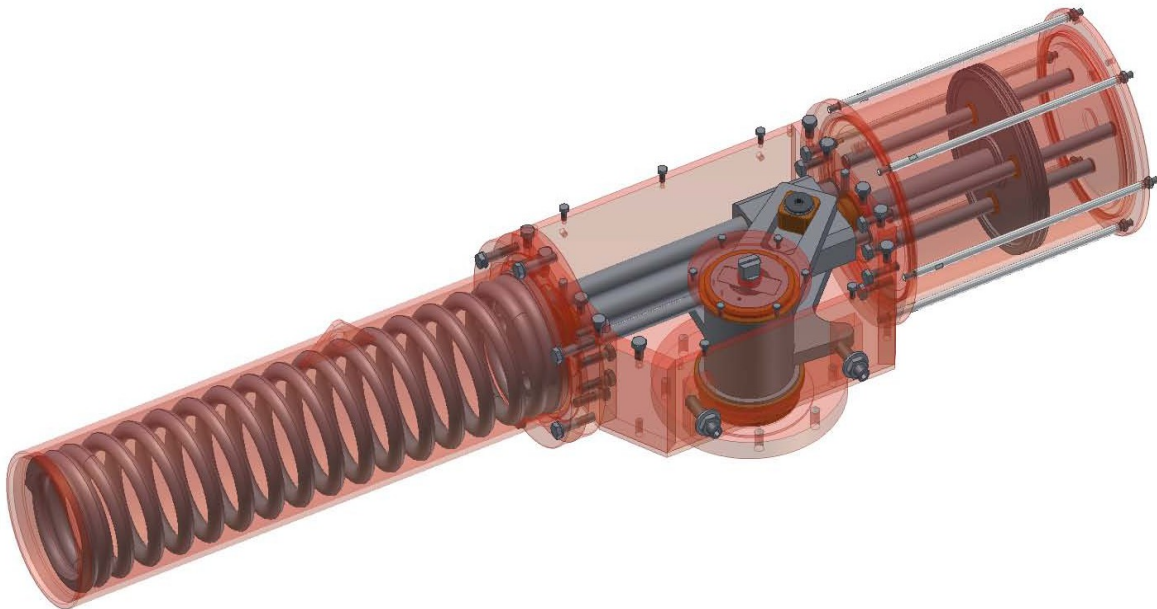
Experienced and dedicated engineering team continually look for improvement of the products, new technologies, techniques and manufacturing processes.



PRODUCT FEATURES

HD Actuators are designed to and in compliance with the following standards:

- ISO 5211 - Actuator to Valve Interface Standard
- DIN 3337 - 45° Orientation of the Square Drive Shaft (on request)
- VDI/VDE 3845 - Standard for Namur mounting of accessories (switchboxes, solenoid valves, positioners)
- ATEX - Explosive Atmosphere Directive (94/9/CE)
- PED - Pressure Equipment Directive (97/23/CE)



Distinctive Features are:

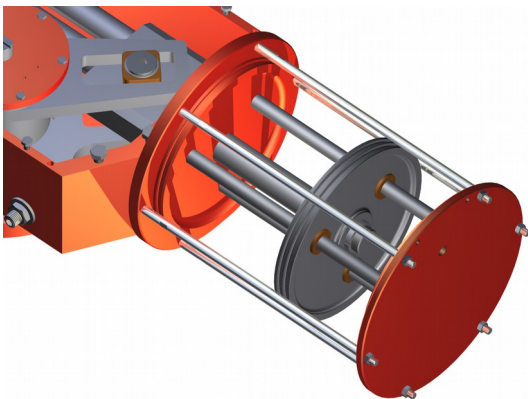
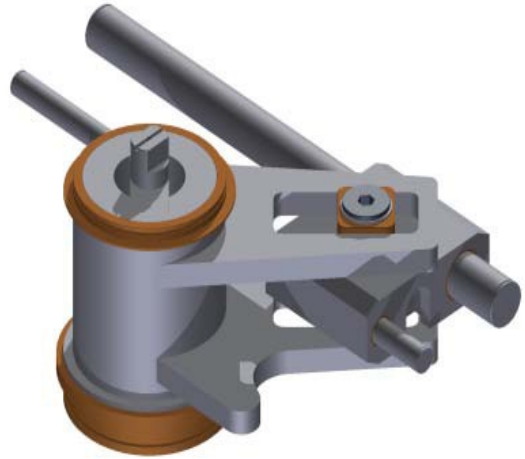
- Central Box completely sealed provided with Vent Valve in order to prevent overpressure
- All the parts transmitting the movement to the valve are treated for corrosion protection
- Double End Stop Adjustment screws in the Central Box to not affect with possible leakage the pneumatic or hydraulic cylinder
- Pneumatic Cylinder with Double O-Ring on the Piston to avoid leakage between the two chambers and ensure longer operation life



PRODUCT FEATURES

The movement of the HD actuators is completely driven, it means that the alignment is ensured by different devices and in different part of the actuator:

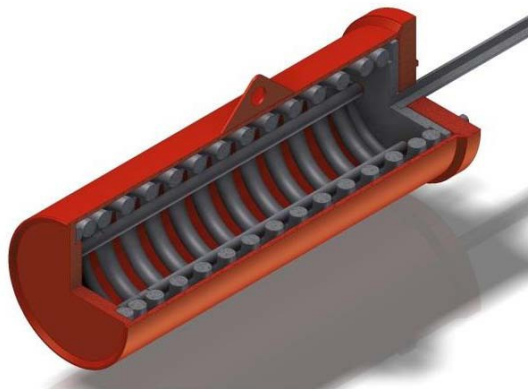
- Trolley Guide Bars that drive the Yoke movement
- Two Bushes (one on the top and one on the bottom of the Yoke) to avoid metal to metal contact and ensure the correct alignment of the Yoke during the rotation
- Two Bushes (over and under the trolley) to avoid metal to metal contact between Pin, Yoke and Trolley



- Three Guide Bars through the piston in the pneumatic cylinder to ensure the correct alignment
- Chromed Steel Guide Bars and Bronze Bushes to ensure smooth movement
- Bronze Bush in the Central Box to align guide the Piston Rod during the movement

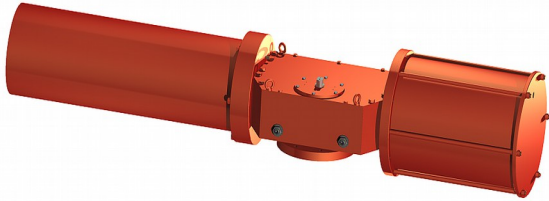
Safety Design Spring

- Spring Cartridge easily removable for maintenance or replacing
- Spring guided by three guide bars to ensure linear compression



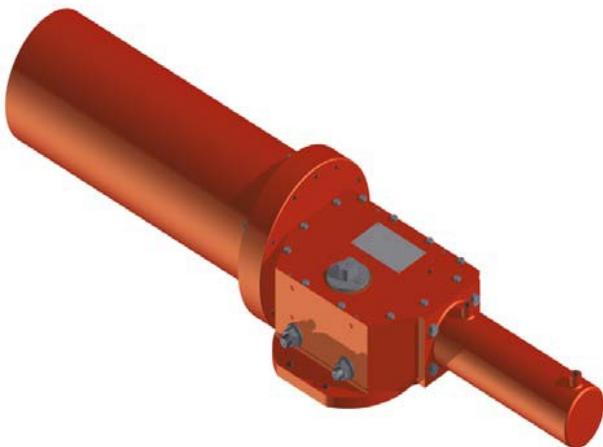
PRODUCT RANGE

PNEUMATIC – SY / CY



- Heavy Duty construction
- Scotch Yoke design
SY - Simmetrical
CY - Canted
- Completely made of Carbon Steel
- Completely according to ISO5211
European Directive
- Pneumatic parts completely treated for
corrosion resistance

HYDRAULIC – HY / HC



- Heavy Duty construction
- Scotch Yoke design
HY – Simmetrical
HC - Canted
- Completely made of Carbon Steel
- Completely according to ISO5211
European Directive
- Hydraulic cylinder maximum operating
pressure of 210 bar



PRODUCT RANGE

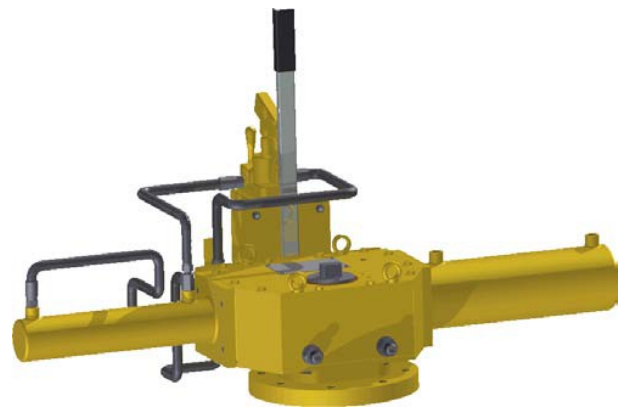
- Heavy Duty construction
- Scotch Yoke design
EY – Simmetrical
EC - Canted
- Completely made of Carbon Steel
- Completely according to ISO5211
European Directive
- Hydraulic cylinder maximum operating pressure of 210 bar
- Personalized cabinet according to the required operations
- ATEX Certified available

ELECTRO HYDRAULIC - EY



- Heavy Duty construction
- Scotch Yoke design
PY – Simmetrical
PC - Canted
- Completely made of Carbon Steel
- Completely according to ISO5211
European Directive
- Pneumatic cylinder maximum operating pressure of 200 bar
- Suitable with natural gas supply
- Hydraulic cylinder maximum operating pressure of 210 bar
- Self contained hydraulic system for manual emergency operation

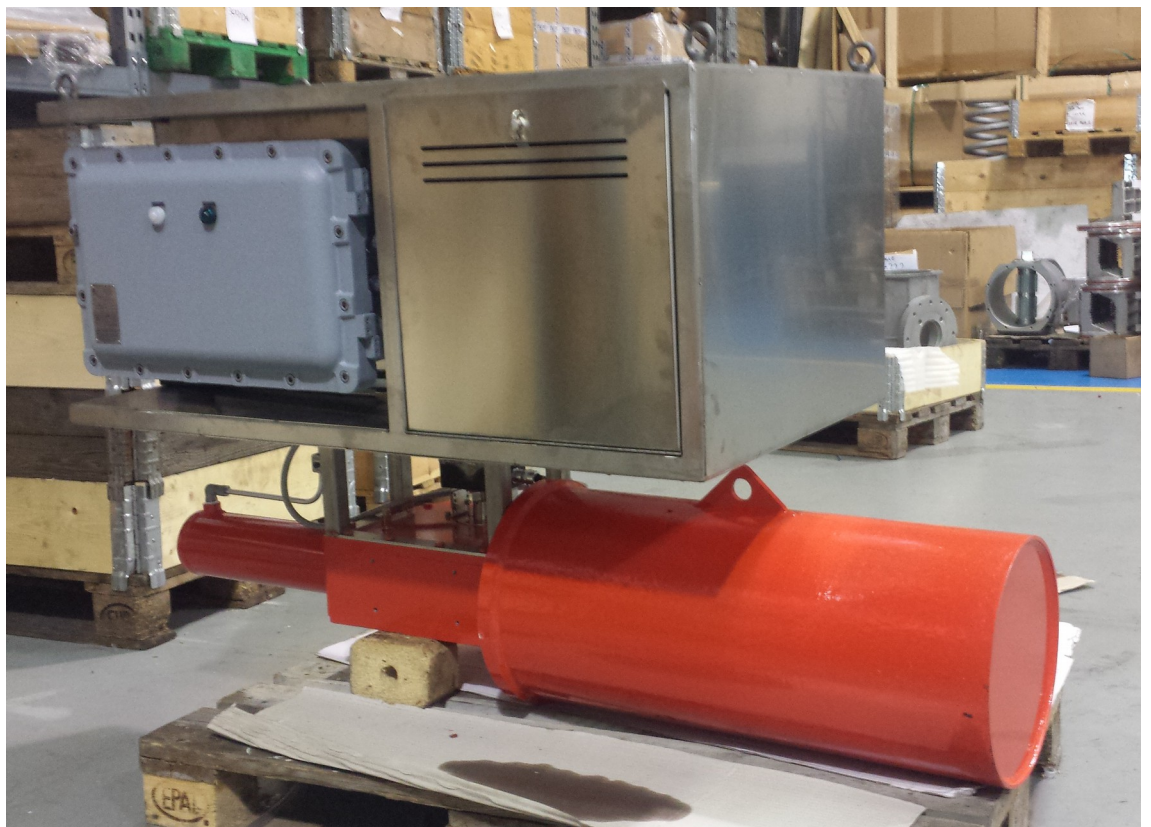
PNEUMOHYDRAULIC - PY



PICTURES

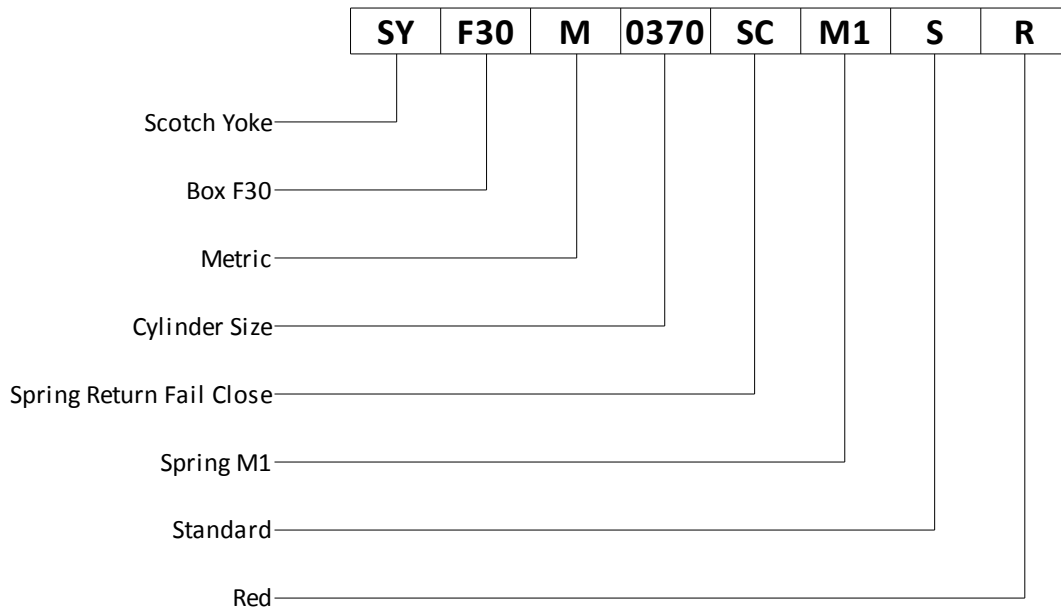


Electro-hydraulic ATEX actuator (front)



Electro-hydraulic ATEX actuator (back)

PART NUMBER BREAKDOWN



Model	Box Size (ISO)	Threading	Cylinder Size	Action	Spring	Version	Color	Optional Codes
SY = Symmetric Yoke	F16	M = C-Type	0300	D1 = DA-1 Piston	M1	S = Standard	R = Red	PXXX =
CY = Canted Yoke	F25	U = E-Type	0320	D2 = DA-2 Pistons	M2	L = Low Temperature	Y = Yellow	Hydraulic Manual
HY = Hydraulic Symmetric	F30		0370	SC = SR-Fail Close	M3		A = Black	Override
HC = Hydraulic Canted	F35		0400	SO = SR-Fail Open	M4		B = Blue	
EY = Electro-Hydraulic	F40		0420		M5		W = White	
PY = Pneumo-Hydraulic			0460					
			0490					
			0550					
			0600					
			0625					
			0650					
			0700					
			0725					
			0750					
			0800					
			0850					
			0900					
			0950					
			1000					
			1175					

* Other codes are possible if actuator is sized according to special requirement *



PICTURES



Double Acting Pneumatic Actuators in a solvent recovery plant

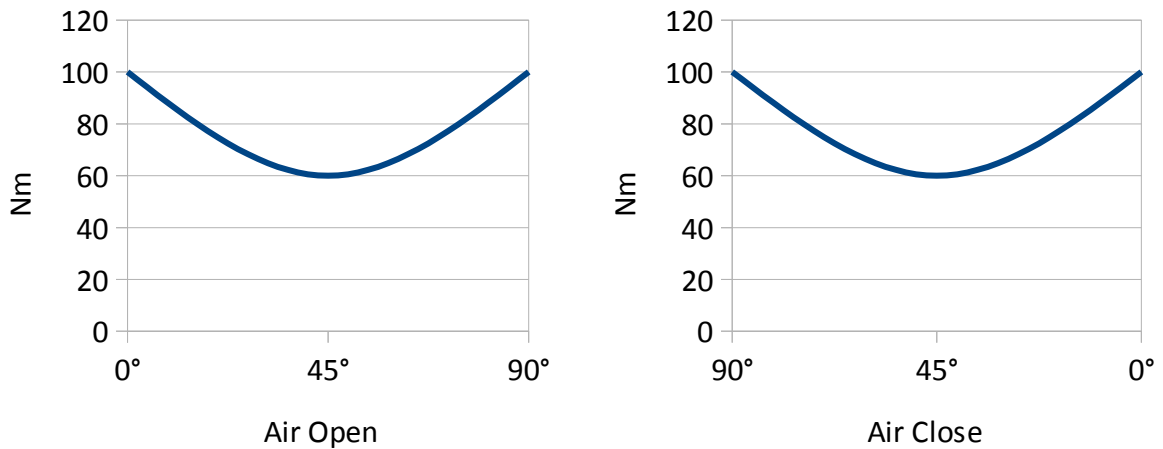


Spring Return Actuators with Hydraulic Manual Override



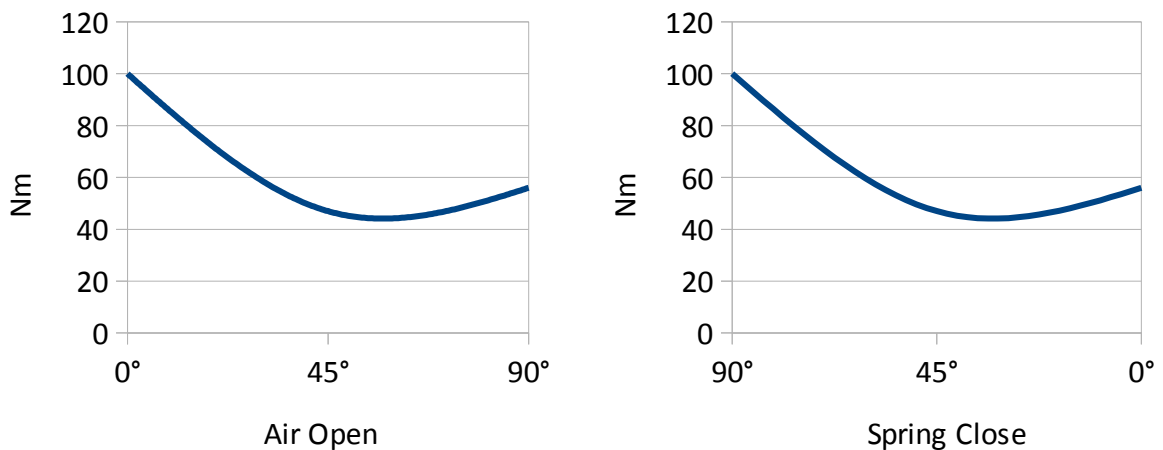
TORQUE DIAGRAM

Double Acting Torque Diagram



With Reference to the above diagram, it can be noted that the torque of a Scotch Yoke Symmetrical Double Acting “DA” Actuator decrease till the middle of the run (45°) and increase to the 100% of the Start Force at the End of the Run. This is the same for Air Open and Air Close.

Spring Return Torque Diagram

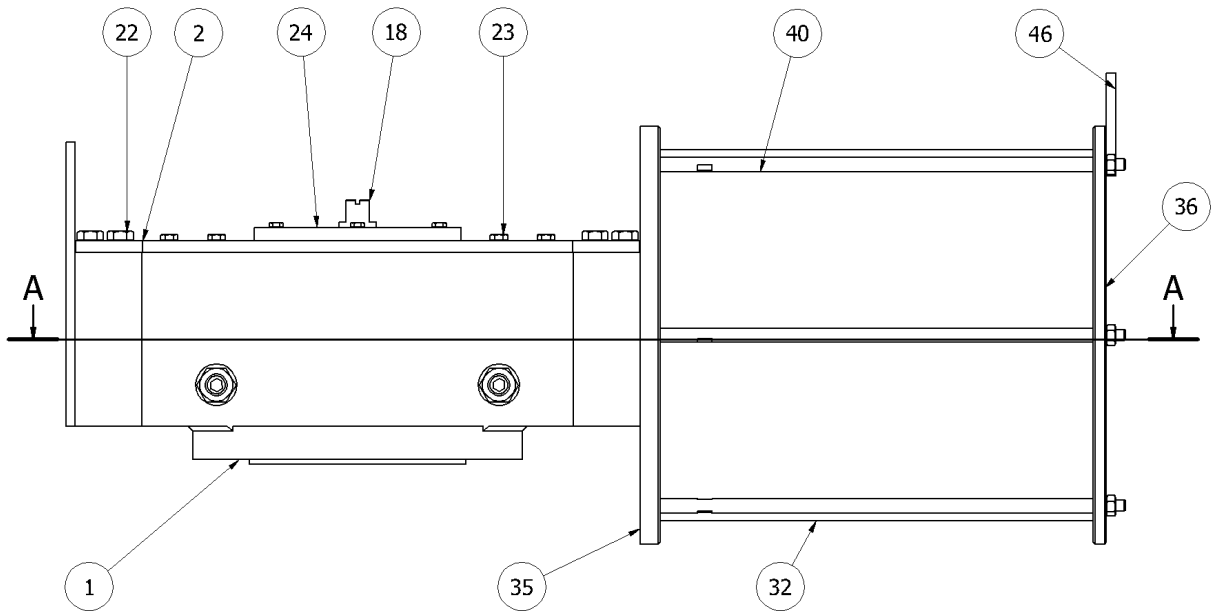
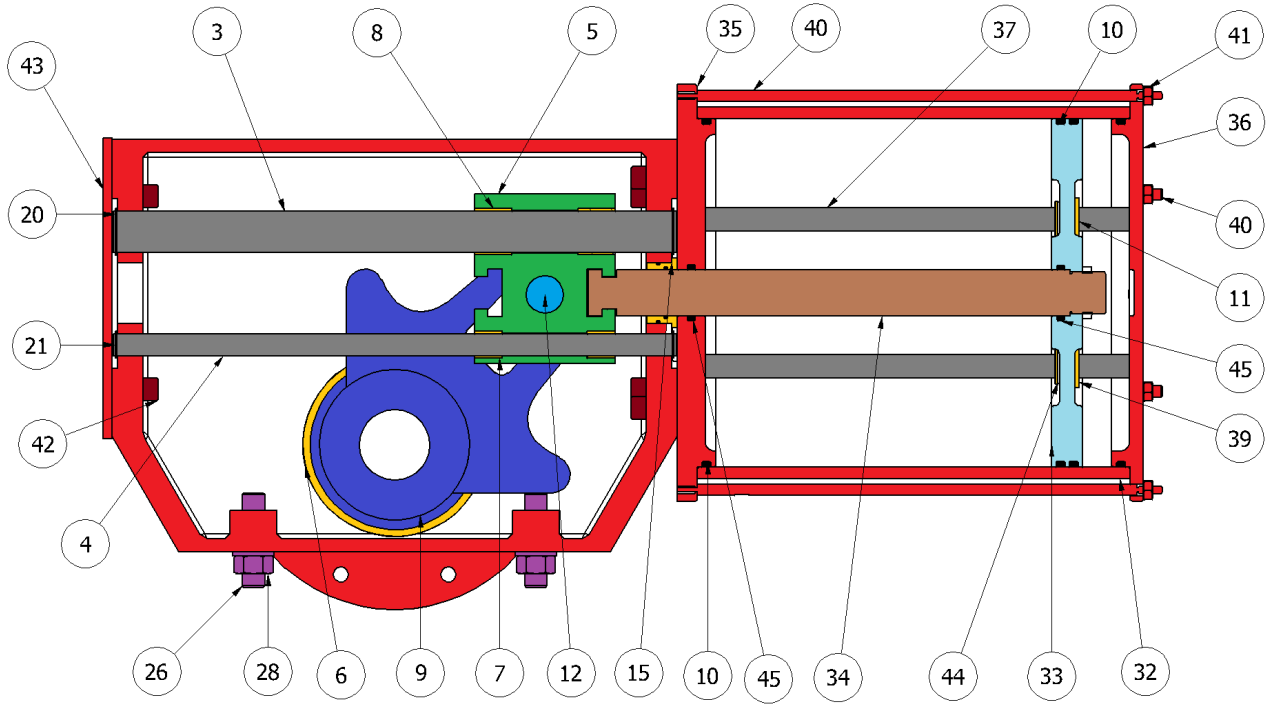


With Reference to the above diagram, the torque of a Scotch Yoke Symmetrical Spring Return “SR” Actuator decrease till about the middle of the run (50°) and increase to about 55% of the Start Force at the End of the Run. **TruTorq®** actuators have been designed to have balanced torques in Air Open and Spring Return. Customized actuators based on valves torques can have different Torque Diagram to suit the requirements.



DOUBLE ACTING ACTUATOR PART LIST

A-A



DOUBLE ACTING ACTUATOR PART LIST

Ref. No	Description	Quantity	Material
1	Box	1	Carbon Steel, Epoxy Painted
2	Lid	1	Carbon Steel, Epoxy Painted
3	Trolley Guide Bar 1	1	Chromed Steel
4	Trolley Guide Bar 2	1	Chromed Steel
5	Trolley	1	Carbon Steel, Phosphated
6	Yoke Bush	2	Bronze
7	Trolley Bush 1	2	Bronze
8	Trolley Bush 2	2	Bronze
9	Yoke	1	Carbon Steel, Phosphated
10	Piston and Cover O-Ring	4	NBR
11	Piston Bush O-Ring	9	NBR
12	Pin	1	Steel
15	Piston Rod Bush	1	Bronze
18	Namur Adaptor	1	Steel, Epoxy Painted
20	Seeger for Trolley Guide Bar 1	2	Steel
21	Seeger for Trolley Guide Bar 2	2	Steel
22	Lid Screws 1	10	Steel
23	Lid Screws 2	5	Steel
24	Upper Closing Flange	1	Carbon Steel, Epoxy Painted
26	Adjusting Screw	2	Steel
28	Adjusting Nut	2	Steel
32	Cylinder Housing	1	Steel, Nickelplated
33	Piston	1	Carbon Steel, Phosphated
34	Piston Rod	1	Chromed Steel
35	Cylinder Flange	1	Carbon Steel, Epoxy Painted
36	Cylinder Closing Flange	1	Carbon Steel, Epoxy Painted
37	Piston Guide Bar	3	Chromed Steel
39	Piston Guide Bar Bush	3	Bronze
40	Tie Bar	6	Carbon Steel, Epoxy Painted
41	Tie Bar Fixing Nut	6	Steel, Epoxy Painted
42	Flanges Fixing Screws	4	Steel
43	Double Acting Closing Flange	1	Carbon Steel, Epoxy Painted
44	Circlip for Piston Guide Bar Bush	3	Steel, Nickelplated
45	Piston Rod O-Ring	2	NBR
46	Lifting point	1	Carbon Steel, Epoxy Painted

Note! Part list can be different on different models



DOUBLE ACTING TORQUE TABLE

SIZE	STROKE POSITION	AIR SUPPLY (Bar)						
		3	4	5	5,5	6	7	8
		TORQUE OUTPUT (Nm)						
SYF25M0300D1SR	BTO	3173	4231	5289	5818	6347	7404	8462
	RUN	1919	2559	3199	3519	3839	4478	5118
	ETC	3173	4231	5289	5818	6347	7404	8462
SYF25M0320D1SR	BTO	3611	4814	6018	6619	7221	8425	
	RUN	2184	2912	3640	4004	4368	5096	
	ETC	3611	4814	6018	6619	7221	8425	
SYF25M0370D1SR	BTO	4827	6436	8045	8850	9654		
	RUN	2920	3893	4866	5353	5840		
	ETC	4827	6436	8045	8850	9654		
SYF25M0390D1SR	BTO	5363	7151	8939	9833	10727		
	RUN	3244	4325	5406	5947	6488		
	ETC	5363	7151	8939	9833	10727		
SYF25M0420D1SR	BTO	6220	8293					
	RUN	3762	5016					
	ETC	6220	8293					
SYF30M0320D1SR	BTO	6109	8145	10181	11199	12218	14254	16290
	RUN	3695	4926	6158	6773	7389	8621	9852
	ETC	6109	8145	10181	11199	12218	14254	16290
SYF30M0370D1SR	BTO	8167	10889	13611	14972	16334		
	RUN	4940	6586	8233	9056	9879		
	ETC	8167	10889	13611	14972	16334		
SYF30M0390D1SR	BTO	9074	12098	15123	16635			
	RUN	5488	7317	9146	10061			
	ETC	9074	12098	15123	16635			
SYF30M0420D1SR	BTO	10523	14031	17539				
	RUN	6365	8486	10608				
	ETC	10523	14031	17539				
SYF35M0370D1SR	BTO	9905	13206	16508	18158	19809	23111	26412
	RUN	5990	7987	9984	10982	11981	13977	15974
	ETC	9905	13206	16508	18158	19809	23111	26412
SYF35M0420D1SR	BTO	12763	17017	21271	23398	25526	29780	34034
	RUN	7719	10292	12865	14152	15438	18011	20584
	ETC	12763	17017	21271	23398	25526	29780	34034
SYF35M0460D1SR	BTO	15309	20412	25515	28067	30618	35721	
	RUN	9259	12345	15431	16974	18518	21604	
	ETC	15309	20412	25515	28067	30618	35721	
SYF35M0490D1SR	BTO	17372	23162	28953	31848	34743		
	RUN	10506	14008	17510	19261	21012		
	ETC	17372	23162	28953	31848	34743		
SYF40M0550D1SR	BTO	31427	41903	52379	57617	62855		
	RUN	19010	25346	31683	34851	38019		
	ETC	31427	41903	52379	57617	62855		
SYF40M0600D1SR	BTO	37401	49868	62335	68569			
	RUN	22621	30161	37701	41471			
	ETC	37401	49868	62335	68569			
SYF40M0650D1SR	BTO	43895	58526					
	RUN	26548	35397					
	ETC	43895	58526					

Note! These are example of available actuators.
Correct Part Number and Torques according to Request of Quotation and Valve Torque Data



DOUBLE ACTING TORQUE TABLE

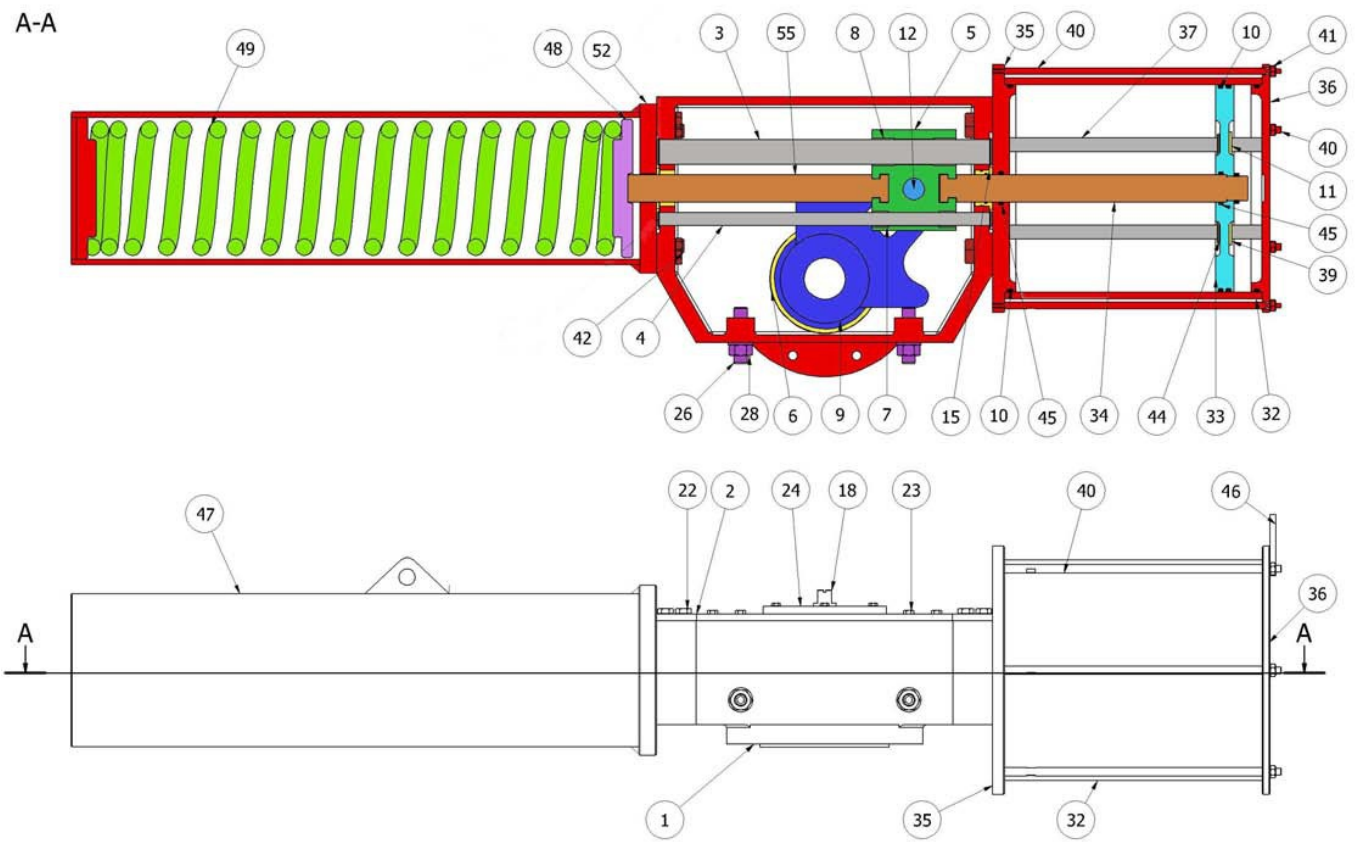
SIZE	STROKE POSITION	AIR SUPPLY (psi)						
		40	50	60	70	80	90	100
		TORQUE OUTPUT (in.lbs)						
SYF25M0300D1SR	BTO	25819	32274	38729	45183	51638	58093	64548
	RUN	15616	19520	23424	27328	31232	35136	39040
	ETC	25819	32274	38729	45183	51638	58093	64548
SYF25M0320D1SR	BTO	29377	36721	44065	51409	58754	66098	73442
	RUN	17770	22213	26655	31098	35540	39983	44425
	ETC	29377	36721	44065	51409	58754	66098	73442
SYF25M0370D1SR	BTO	39275	49094	58912	68731			
	RUN	23757	29696	35635	41574			
	ETC	39275	49094	58912	68731			
SYF25M0390D1SR	BTO	43638	54548	65457				
	RUN	26393	32991	39589				
	ETC	43638	54548	65457				
SYF25M0420D1SR	BTO	50607	63259	75910	88562	101214	113866	126517
	RUN	30609	38262	45914	53567	61219	68871	76524
	ETC	50607	63259	75910	88562	101214	113866	126517
SYF30M0320D1SR	BTO	49704	62130	74556	86982	99408	111834	124259
	RUN	30060	37575	45090	52605	60121	67636	75151
	ETC	49704	62130	74556	86982	99408	111834	124259
SYF30M0370D1SR	BTO	66449	83061	99673	116285	132897	149510	
	RUN	40190	50238	60285	70333	80380	90428	
	ETC	66449	83061	99673	116285	132897	149510	
SYF30M0390D1SR	BTO	73826	92283	110740	129196	147653		
	RUN	44651	55814	66977	78139	89302		
	ETC	73826	92283	110740	129196	147653		
SYF30M0420D1SR	BTO	85622	107028	128433	149839			
	RUN	51785	64731	77677	90623			
	ETC	85622	107028	128433	149839			
SYF35M0370D1SR	BTO	80588	100735	120882	141029	161176	181323	201470
	RUN	48740	60925	73109	85294	97479	109664	121849
	ETC	80588	100735	120882	141029	161176	181323	201470
SYF35M0420D1SR	BTO	103844	129805	155766	181727	207688	233649	259610
	RUN	62806	78507	94208	109910	125611	141313	157014
	ETC	103844	129805	155766	181727	207688	233649	259610
SYF35M0460D1SR	BTO	124562	155702	186842	217983	249123	280263	
	RUN	75334	94167	113001	131834	150667	169501	
	ETC	124562	155702	186842	217983	249123	280263	
SYF35M0490D1SR	BTO	141343	176679	212015	247350	282686		
	RUN	85482	106852	128223	149593	170964		
	ETC	141343	176679	212015	247350	282686		
SYF40M0550D1SR	BTO	255708	319634	383561	447488	511415	575342	
	RUN	154671	193338	232006	270674	309341	348009	
	ETC	255708	319634	383561	447488	511415	575342	
SYF40M0600D1SR	BTO	304313	380391	456469	532548			
	RUN	184054	230067	276080	322094			
	ETC	304313	380391	456469	532548			
SYF40M0650D1SR	BTO	357147	446434	535721				
	RUN	216006	270007	324008				
	ETC	357147	446434	535721				

Note! These are example of available actuators.
Correct Part Number and Torques according to Request of Quotation and Valve Torque Data



SPRING RETURN ACTUATOR PART LIST

A-A



SPRING RETURN ACTUATOR PART LIST

Ref. No	Description	Quantity	Material
1	Box	1	Carbon Steel, Epoxy Painted
2	Lid	1	Carbon Steel, Epoxy Painted
3	Trolley Guide Bar 1	1	Chromed Steel
4	Trolley Guide Bar 2	1	Chromed Steel
5	Trolley	1	Carbon Steel, Phosphated
6	Yoke Bush	2	Bronze
7	Trolley Bush 1	2	Bronze
8	Trolley Bush 2	2	Bronze
9	Yoke	1	Carbon Steel, Phosphated
10	Piston and Flange O-Ring	4	NBR
11	Piston Bush O-Ring	9	NBR
12	Pin	1	Steel
15	Piston Rod Bush	1	Bronze
18	Namur Adaptor	1	Steel, Epoxy Painted
22	Lid Screws 1	10	Steel
23	Lid Screws 2	5	Steel
24	Upper Closing Flange	1	Carbon Steel, Epoxy Painted
26	Adjusting Screw	2	Steel
28	Adjusting Nut	2	Steel
32	Cylinder Housing	1	Steel, Nickelplated
33	Piston	1	Carbon Steel, Phosphated
34	Piston Rod	1	Chromed Steel
35	Cylinder Flange	1	Carbon Steel, Epoxy Painted
36	Cylinder Closing Flange	1	Carbon Steel, Epoxy Painted
37	Piston Guide Bar	3	Chromed Steel
39	Piston Guide Bar Bush	3	Bronze
40	Tie Bar	6	Carbon Steel, Epoxy Painted
41	Tie Bar Fixing Nut	6	Steel, Epoxy Painted
42	Flanges Fixing Screws	4	Steel
44	Circlip for Piston Guide Bar Bush	3	Steel, Nickelplated
45	Piston Rod O-Ring	2	NBR
46	Lifting point	1	Carbon Steel, Epoxy Painted
47	Spring Cartridge	1	Carbon Steel, Epoxy Painted
48	Spring Plate	1	Carbon Steel
49	Spring	1	SiCr
52	Spring Cartridge Flange	1	Carbon Steel, Epoxy Painted
55	Spring Rod	1	Chromed Steel

Note! Part list can be different on different models



SPRING RETURN TORQUE TABLE

SIZE	STROKE POSITION	Spring	AIR SUPPLY (Bar)				
			4	5	5,5	6	7
		TORQUE OUTPUT (Nm)					
SYF16M0320SCM1SR	START	3074	3074	4275	4875	5476	6676
	RUN	1452	1452	2178	2541	2904	3630
	END	1729	1729	2930	3530	4131	5331
SYF16M0320SCM2SR	START	4110		3693	4293	4894	6094
	RUN	1942		1689	2052	2416	3142
	END	2311		1894	2494	3095	4295
SYF25M0370SCM2SR	START	4110	4110	5715	6518	7321	8926
	RUN	1942	1941	2912	3397	3883	4853
	END	2311	2311	3916	4719	5522	7127
SYF25M0370SCM3SR	START	5551		4904	5707	6510	8115
	RUN	2622		2232	2717	3203	4173
	END	3122		2475	3278	4081	5686
SYF25M0420SCM3SR	START	5551	5550	7718	8802		
	RUN	2622	2622	3933	4589		
	END	3122	3121	5289	6373		
SYF25M0400SCM4SR	START	6849		5528	6466	7404	9280
	RUN	3236		2438	3005	3573	4707
	END	3852		2531	3469	4407	6283
SYF25M0420SCM4SR	START	6849	4422	6491	7525	8559	
	RUN	3236	1768	3019	3645	4270	
	END	3852	1425	3494	4528	5562	
SYF25M0420SCM5SR	START	7942		5876	6910	7944	
	RUN	3752		2502	3127	3753	
	END	4467		2399	3433	4468	
SYF30M0370SCM1SR	START	6915	6915	9616	10966	12317	15017
	RUN	3267	3266	4899	5716	6533	8166
	END	3888	3888	6589	7939	9290	11990
SYF30M0370SCM2SR	START	8490	6030	8731	10081	11431	14132
	RUN	4010	2523	4156	4973	5790	7423
	END	4772	2313	5014	6364	7715	10415
SYF30M0370SCM3SR	START	9771		8003	9353	10704	13404
	RUN	4618		3548	4365	5182	6815
	END	5501		3733	5083	6434	9134
SYF30M0400SCM3SR	START	9771	7125	10282	11860	13438	16595
	RUN	4618	3018	4927	5882	6836	8745
	END	5501	2855	6012	7590	9168	12325
SYF30M0420SCM4SR	START	12303		10580	12320	14060	17540
	RUN	5782		4741	5793	6845	8950
	END	6820		5097	6837	8577	12057
SYF30M0490SCM4SR	START	12303	12127	16864			
	RUN	5782	5676	8541			
	END	6820	6644	11381			
SYF30M0460SCM5SR	START	16030		11858	13945	16032	20207
	RUN	7573		5050	6312	7574	10099
	END	9015		4841	6928	9016	13190
SYF30M0490SCM5SR	START	16030	9932	14669	17037		
	RUN	7573	3885	6750	8182		
	END	9015	2916	7653	10021		

Note! These are example of available actuators.
Correct Part Number and Torques according to Request of Quotation and Valve Torque Data



SPRING RETURN TORQUE TABLE

SIZE	STROKE POSITION	Spring	AIR SUPPLY (Bar)				
			4	5	5,5	6	7
		TORQUE OUTPUT (Nm)					
SYF35M0550SCM1SR	START	18511	18677	25972	29620	33268	40563
	RUN	8774	8875	13287	15493	17700	22112
	END	10504	10670	17965	21613	25261	32556
SYF35M0550SCM2SR	START	27784		20850	24498	28146	35441
	RUN	13127		8934	11140	13347	17759
	END	15626		8692	12340	15988	23283
SYF35M0600SCM2SR	START	27784	19102	27784	32125	36466	45148
	RUN	13127	7876	13127	15752	18378	23628
	END	15626	6944	15626	19967	24308	32990
SYF35M0625SCM3SR	START	34729		27570	32280	36990	46411
	RUN	16409		12079	14927	17776	23474
	END	19533		12374	17084	21794	31215
SYF35M0650SCM3SR	START	34729	21224	31413	36508	41603	
	RUN	16409	8241	14404	17485	20566	
	END	19533	6028	16217	21312	26407	
SYF35M0700SCM4SR	START	44622		33988	39897	45805	
	RUN	21083		14652	18226	21799	
	END	25097		14464	20373	26282	
SYF35M0725SCM4SR	START	44622	25608	38284	44622	50961	
	RUN	21083	9584	17251	21084	24918	
	END	25097	6083	18759	25097	31436	
SYF35M0750SCM5SR	START	52094		38528	45310	52093	
	RUN	24614		16409	20511	24613	
	END	29300		15734	22516	29299	
SYF40M0750SCM1SR	START	49871	49871	69351	79091	88831	
	RUN	23563	25263	37470	43573	49676	
	END	28049	28049	47529	57269	67009	
SYF40M0800SCM1SR	START	49871	60606	82770			
	RUN	23563	30056	43461			
	END	28049	38785	60949			
SYF40M0750SCM2SR	START	70927		57508	67248	76988	96468
	RUN	33512		27521	33624	39727	51934
	END	39892		26473	36213	45953	65433
SYF40M0800SCM2SR	START	70927	48763	70927	82009	93091	
	RUN	33512	20107	33512	40214	46917	
	END	39892	17729	39893	50975	62057	
SYF40M0800SCM3SR	START	88077		61281	72363	83445	105608
	RUN	41615		25409	32111	38814	52218
	END	49538		22742	33824	44906	67069
SYF40M0850SCM3SR	START	88077	50546	75567	88078	100588	
	RUN	41615	21916	37799	45740	53682	
	END	49538	12007	37028	49539	62049	
SYF40M0900SCM4SR	START	107721		79669	93695	107720	
	RUN	50896		33932	42414	50897	
	END	60586		32535	46561	60587	
SYF40M0950SCM4SR	START	107721	64432	95687	111314		
	RUN	50896	24715	43618	53069		
	END	60586	17297	48552	64179		

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SPRING RETURN TORQUE TABLE

SIZE	STROKE POSITION	Spring	AIR SUPPLY (psi)				
			60	70	80	90	100
		TORQUE OUTPUT (in.lbs)					
SYF16M0320SCM1SR	START	27207	28138	35378	42618	49859	57099
	RUN	12851	13291	17648	22005	26362	30719
	END	15303	15827	22999	30171	37343	44516
SYF16M0320SCM2SR	START	36377		30021	37232	44443	51654
	RUN	17188		13149	17483	21816	26150
	END	20454		13463	20583	27703	34823
SYF25M0370SCM2SR	START	36377	37621	47300	56980	66659	76338
	RUN	17188	17767	23593	29419	35245	41071
	END	20454	21154	30742	40331	49919	59508
SYF25M0370SCM3SR	START	49130		39836	49474	59112	68751
	RUN	23207		17334	23126	28917	34709
	END	27632		17479	26995	36511	46026
SYF25M0420SCM3SR	START	49130	50802	63875	76947		
	RUN	23207	24001	31869	39736		
	END	27632	28568	41518	54468		
SYF25M0400SCM4SR	START	60619		44682	55936	67190	78443
	RUN	28641		18688	25450	32211	38972
	END	34093		17098	28200	39303	50405
SYF25M0420SCM4SR	START	60619	40477	52905	65334	77762	
	RUN	28641	16184	23654	31125	38596	
	END	34093	13044	25321	37598	49875	
SYF25M0420SCM5SR	START	70293		47245	59642	72040	
	RUN	33208		18894	26337	33781	
	END	39536		15250	27471	39691	
SYF30M0370SCM1SR	START	61203	63297	79582	95866	112151	128436
	RUN	28915	29896	39697	49499	59301	69103
	END	34412	35589	51721	67853	83985	100117
SYF30M0370SCM2SR	START	75143	55196	71435	87673	103912	120150
	RUN	35491	23094	32859	42623	52387	62152
	END	42236	21172	37225	53277	69330	85382
SYF30M0370SCM3SR	START	86481		64736	80939	97142	113346
	RUN	40873		27263	36996	46730	56464
	END	48688		25434	41422	57410	73398
SYF30M0400SCM3SR	START	86481	65219	84204	103188	122173	141157
	RUN	40873	27625	39042	50458	61875	73291
	END	48688	26133	44902	63671	82440	101209
SYF30M0420SCM4SR	START	108891		85882	106774	127666	148559
	RUN	51175		36679	49230	61781	74331
	END	60362		35417	56032	76647	97263
SYF30M0490SCM4SR	START	108891	111005	139566			
	RUN	51175	51956	69144			
	END	60362	60816	89101			
SYF30M0460SCM5SR	START	141877		95346	120366	145385	
	RUN	67027		38136	53159	68182	
	END	79789		30769	55433	80097	
SYF30M0490SCM5SR	START	141877	90913	119364	147814		
	RUN	67027	35562	52660	69758		
	END	79789	26692	54787	82882		

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SPRING RETURN TORQUE TABLE

SIZE	STROKE POSITION	Spring	AIR SUPPLY (psi)				
			60	70	80	90	100
			TORQUE OUTPUT (in.lbs)				
SYF35M0550SCM1SR	START	163836	170961	214949	258938	302926	346914
	RUN	77656	81238	107720	134203	160685	187167
	END	92968	97669	141253	184837	228421	272005
SYF35M0550SCM2SR	START	245909		167806	211536	255266	298995
	RUN	116184		67655	93918	120180	146443
	END	138302		55904	99020	142136	185252
SYF35M0600SCM2SR	START	245909	174851	227044	279236	331428	383620
	RUN	116184	72093	103473	134853	166232	197612
	END	138302	63562	115141	166720	218298	269877
SYF35M0625SCM3SR	START	307378		222630	279131	335633	392134
	RUN	145232		92349	126289	160229	194169
	END	172882		82765	138500	194234	249969
SYF35M0650SCM3SR	START	307378	194275	255468	316661	377854	
	RUN	145232	75435	112212	148990	185768	
	END	172882	55178	115604	176029	236455	
SYF35M0700SCM4SR	START	394938		273789	344634	415479	
	RUN	186600		111247	153797	196346	
	END	222127		94091	163952	233813	
SYF35M0725SCM4SR	START	394938	234404	310493	386582	462670	
	RUN	186600	87728	133449	179170	224892	
	END	222127	55681	130784	205887	280991	
SYF35M0750SCM5SR	START	461071		309794	391097	472400	
	RUN	217852		123921	172745	221570	
	END	259327		99998	180150	260303	
SYF40M0750SCM1SR	START	441396	456497	573956	691415	808873	
	RUN	208550	231246	304546	377845	451145	
	END	248255	256748	373106	489463	605820	
SYF40M0800SCM1SR	START	441396	554761	688597			
	RUN	208550	275120	355731			
	END	248255	355021	487757			
SYF40M0750SCM2SR	START	627757		464953	581814	698675	815536
	RUN	296606		212975	285772	358570	431367
	END	353074		179305	294600	409895	525189
SYF40M0800SCM2SR	START	627757	446355	579593	712832	846070	
	RUN	296606	184051	264160	344270	424379	
	END	353074	162284	293957	425630	557304	
SYF40M0800SCM3SR	START	779547		490811	623563	756314	889065
	RUN	368324		189580	269280	348981	428681
	END	438448		136097	266903	397710	528516
SYF40M0850SCM3SR	START	779547	462676	612863	763051	913238	
	RUN	368324	200610	295432	390254	485076	
	END	438448	109907	258149	406392	554634	
SYF40M0900SCM4SR	START	953411		640609	808729	976849	
	RUN	450468		256261	357222	458183	
	END	536231		206787	372530	538272	
SYF40M0950SCM4SR	START	953411	589782	777451	965120		
	RUN	450468	226230	339013	451796		
	END	536231	158329	343619	528909		

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AFTER SALE SERVICE



TruTorq® can provide after-sale service and assistance all over the world.

Teams of trained technicians can perform installation, maintenance or repairing operations on-site.





V. 0215

TruTorq Italia srl

Via Stelvio, 20 - 25038 - Rovato (BS) - Italy

Tel. +39 0307704201

Fax. +39 0307705105

e-mail: info@trutorqitalia.com

web: www.trutorqitalia.com