

M-torQ Controls India



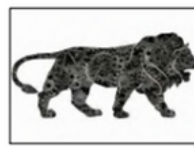
PNEUMATIC ACTUATORS RACK & PINION HEAVY DUTY SCOTCH YOKE

Ball Valve, Butterfly Valve, Plug Valve



www.mtorqindia.com





RACK & PINION PNEUMATIC ACTUATOR

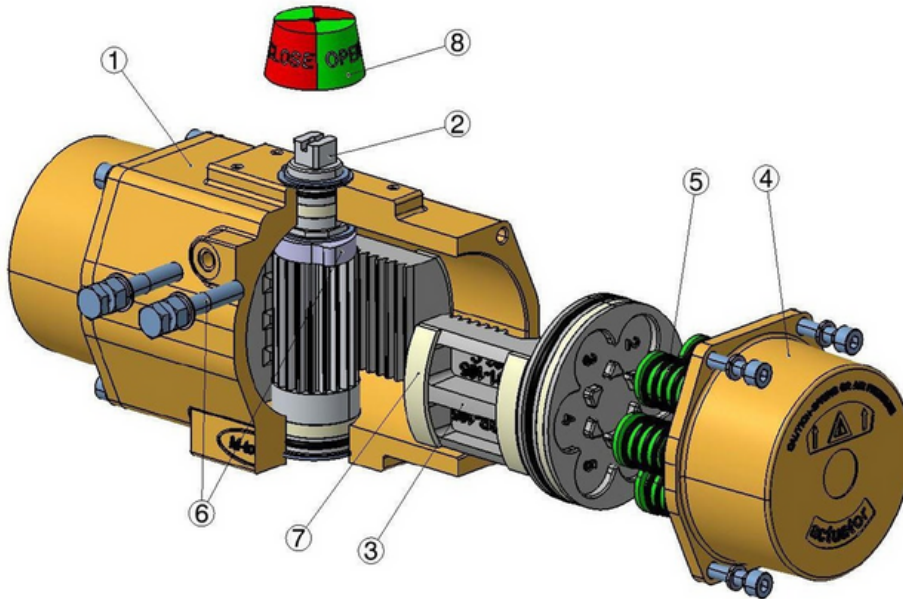
General features

- High performance
- Long lasting
- High torque output
- Position indicator
- Single acting actuator's spring preloaded and durable
- Sensitive & high quality working of bearing system & O ring
- Travel stop adjustment to $\pm 5^\circ$
- Mounting standards conforming to ISO5211 NAMUR & VDE/VDI 3845
- Stroke 0° to 90° adjustable up to $\pm 5^\circ$
- Enclosure IP68
- Standard Bi-square/star actuator bottom mounting or as per customer requirements
- Standard powder coating colour Luminous Yellow



RACK & PINION PNEUMATIC ACTUATOR

Design features of MTSR & MTDA series



1. Actuator Housing : The Powder coated aluminium actuator body is protected from corrosive environment. According to different requirements body can be treated with powder polyester painted (different colours are available such as yellow, green, grey, blue etc.)

2. Pinion : The pinion is with high precision and strength, made from heavy duty High carbon steel, conform to latest standards of ISO 5211, DIN 3337, NAMUR

3. Piston Rack : The twin piston rack made of high strength die cast aluminium treated with blackodization for optimal performance. Symmetric mounting position, long cycle life, fast operation and reversing rotation by simply inverting the piston rack

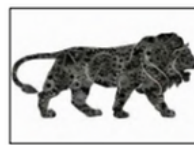
4. EndCap : The end caps made of high strength die cast aluminium, powder coating for corrosive environment protection. Flat design for double-acting models reduces overall length, and a visible indication of double acting versus spring return.

5. Spring Cartridge : Preloaded coiled springs are made from high quality material for resistance to corrosion and longer service life, which can be added or removed safely and conveniently to satisfy different requirements of torque by changing number of springs

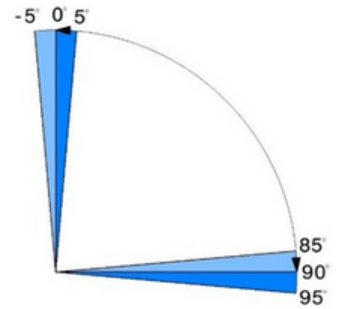
6. Travel Stop Adjustment : Two independent external travel stop adjustment. Bolts can adjust $\pm 5^\circ$ at both open and close directions easily and precisely.

7. Piston Rack Support : Made from low friction, long life compound material (PTFE), to avoid direct contact between metals. Self-lubricating piston guide are positioned to reduce side thrust while providing minimal sliding friction and higher actuator efficiency.

8. Position Indicator : Position indicator with VDI/VDE 3845 is convenient for mounting accessories such as limit switch boxes, positioners etc

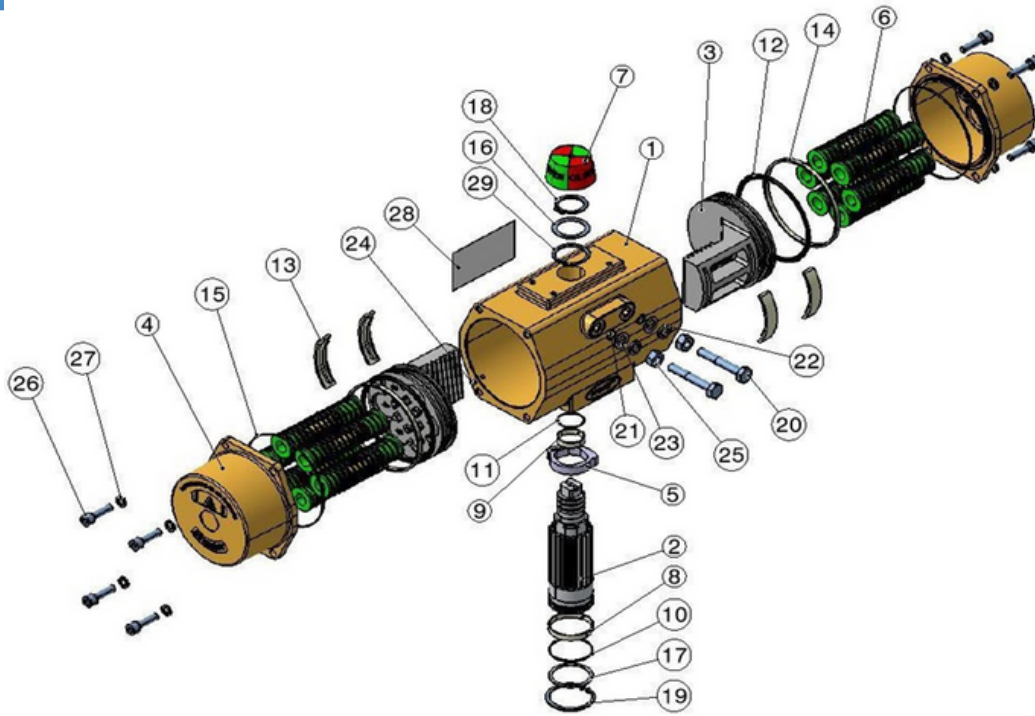


RACK & PINION PNEUMATIC ACTUATOR



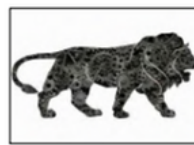
Stroke adjustment

MTSR / MTD A spare part list



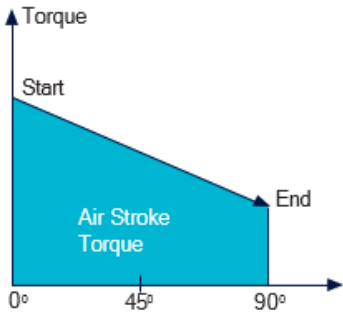
ITEM	DESCRIPTION	MATERIAL	QTY
1	Housing / Body	High Grade Aluminium	1
2	Pinion	EN8-D/SS-304/316*	1
3	Piston Rack	Die Cast Aluminium	2
4	End Cap	Die Cast Aluminium	2
5	Cam	MS / EN8*	1
6	Spring Cartridge	Spring Steel	12
7	Position Indicator	Plastic	1
8	Pinion Guide (Bottom)	PTFE / Nylon*	1
9	Pinion Guide (Top)	PTFE / Nylon*	1
10	Pinion O-Ring (Bottom)	NBR / Silicone*	1
11	Pinion O-Ring (Top)	NBR / Silicone*	1
12	Rack O-Ring	NBR / Silicone*	2
13	Piston Rack Support	PTFE / Nylon*	4
14	Piston Rack Guide	PTFE / Nylon*	2
15	Cap O-Ring	NBR / Silicone*	2
16	Top Washer	SS-316/304	1
17	Bottom Washer	NBR / Silicone*	1
18	Pinion Circlip (Top)	SS-316/304	1
19	Pinion Circlip (Bottom)	SS-316/304	1
20	Stop Bolt	SS-316/304	2
21	Stop Bolt O-Ring	NBR / Silicone*	2
22	Bolt Spring Washer	SS-316/304	2
23	Bolt Plain Washer	SS-316/304	2
24	Air Channel Plug	NBR / Silicone*	2
25	Stop Bolt Nut	SS-316/304	2
26	Cap Screw	SS-316/304	8
27	Spring Washer	SS-316/304	8
28	Name Plate	Sticker	1
29	Cam support	PTFE / Nylon*	1

* Indicates material selection on specific customers requirement and operating conditions.

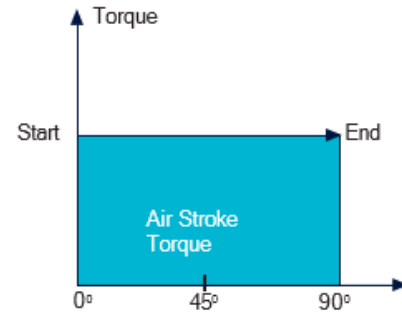
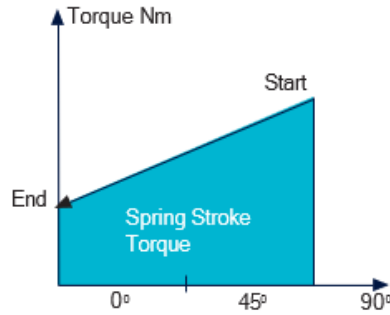


RACK & PINION PNEUMATIC ACTUATOR

MTSR / MTDA Operation

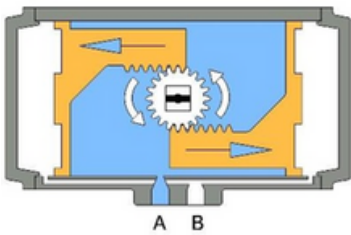


M-TORQ MTSR SINGLE ACTING ACTUATOR OUTPUT

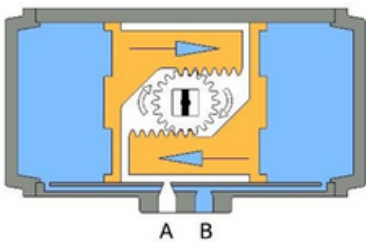


M-TORQ MTDA DOUBLE ACTING ACTUATOR OUTPUT

DOUBLE ACTING ACTUATOR

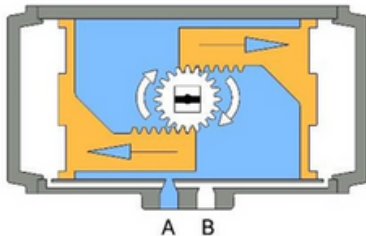


CCW Air to port A apply pressure on rack, generates force on faces of rack. This applied force cause pinion to rotate counter clockwise and rack outward while exhaust air passes through port B.

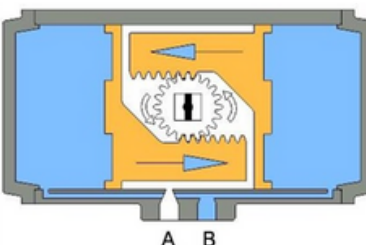


Air to port B apply force on other side and generates clockwise movement of pinion and inward movement of rack. while exhaust air passes through port A.

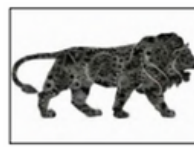
CCW is standard at M-torQ Controls India.



CW Air to port A apply pressure on rack, generates force on face of rack. This applied force cause pinion to rotate clockwise and rack outward while exhaust air pass through port B.



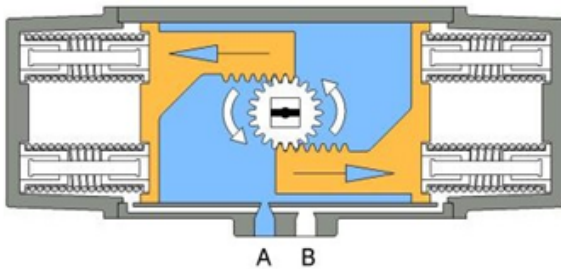
Air to port B apply force on other side and generates counter clockwise movement of pinion and inward movement of rack. while exhaust air passes through port A



RACK & PINION PNEUMATIC ACTUATOR

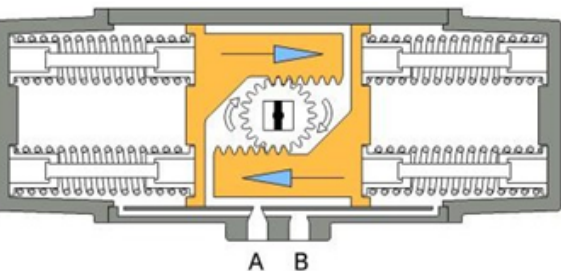
SINGLE ACTING ACTUATOR

CCW Air to port A apply pressure on piston rack, generates force on face of piston rack. This applied force cause pinion to rotate counter clockwise, piston rack outward and springs compression. while exhaust air passes through port B.



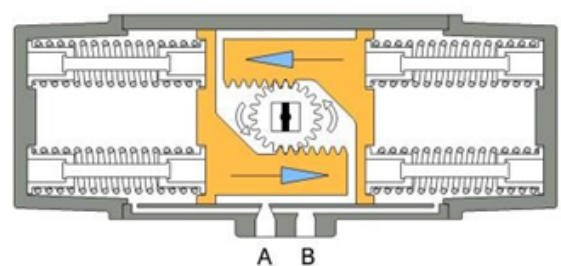
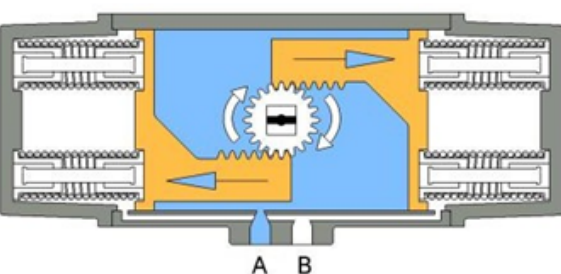
Energy stored in mechanical springs during compression, is used and springs forces piston rack inward, while exhaust air passes through port A.

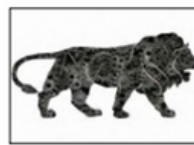
CCW is standard at M-torQ Controls India



CW Air to port A apply pressure on piston rack, generates force on face of piston rack. This applied force cause pinion to rotate clockwise and rack outward while exhaust air pass through port B.

Energy stored in mechanical springs during compression, is used and springs forces piston rack inward, while exhaust air passes through port A.



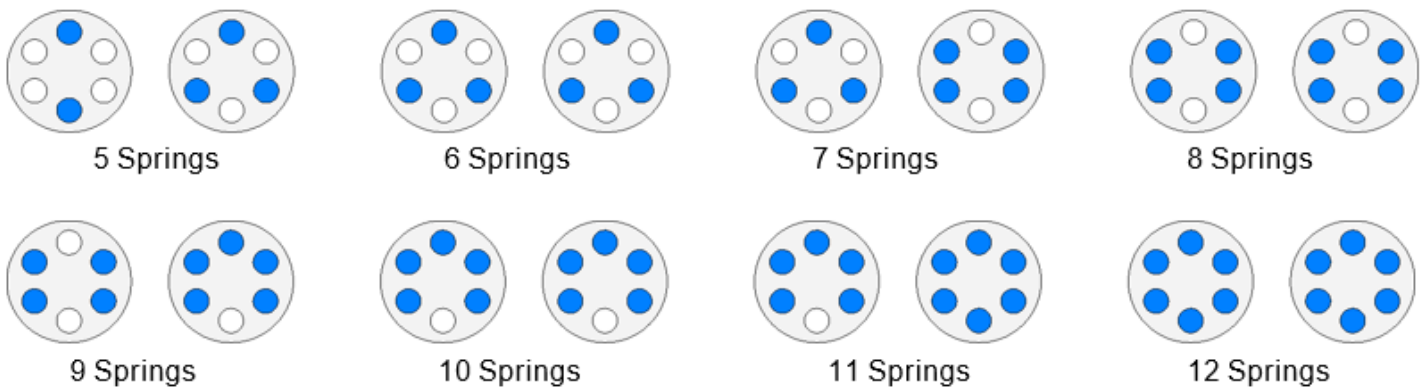


RACK & PINION PNEUMATIC ACTUATOR

- Temperature Specifications :-

Temperature Specifications					
Temperature Description	Temperature Range (°F)	Temperature Range (°C)	Guide Material	O-ring Material	Grease
Standard Temp	-4° To +176°	-20° To +80°	PTFE/Nylon/Delrin	NBR	Standard
High Temp	-5° To +176°	-15° To +80°	PPSU/Bronze Impregnated PTFE	Viton	High Temp
Low Temp	-58° To +158°	-50° To +70°	PTFE/Nylon/Delrin/ Bronze Impregnated PTFE	Low Temp NBR	Low Temp

- Spring Mounting Pattern of Single Acting Spring Return Actuators



Sizing of Single Acting Spring Return Actuators: -

- Sizing of Single Acting Spring Return Actuators

Under normal working conditions, recommended factor of safety is 30% to 50%.

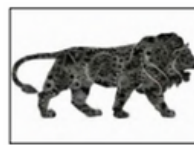
Example:

- Torque required by valve to open/close = 95 Nm.
- Torque considering recommended factor of safety (1+30%) = 124 Nm.
- Air Supply = 6 bar.

Referring output torque table of single acting spring return actuators, we find output torque to be:

- Air Stroke 0° (BTO) = 199 Nm
- Air Stroke 90° (ETO) = 136 Nm
- Spring Stroke 90° (BTC) = 193 Nm
- Spring Stroke 0° (ETC) = 130 Nm

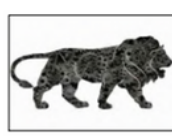
All the output torques are higher than torque values required by valve.



RACK & PINION PNEUMATIC ACTUATOR

MTDA(Double acting) Actuator Torque Table

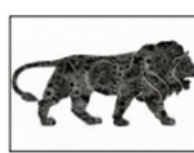
Air Pressure	Air supply pressure (bar)									
	2.5	3	3.5	4	4.5	5	5.5	6	7	8
Model										
MTDA032	3.1	3.7	4.3	4.9	5.6	6.2	6.8	7.4	8.6	9.9
MTDA040	4.8	5.8	6.8	7.7	8.7	9.7	10.6	11.6	13.5	15.4
MTDA050	13	15	15	17	19	21	23	25	30	34
MTDA060	17	20	24	27	31	34	37	41	48	54
MTDA075	32	38	45	51	57	64	70	76	89	102
MTDA085	49	59	69	78	88	98	108	118	137	157
MTDA095	79	92	92	105	118	131	144	157	183	210
MTDA105	83	100	116	133	150	166	183	200	233	266
MTDA125	146	175	204	233	262	292	321	350	408	467
MTDA140	216	259	303	346	389	432	475	519	605	692
MTDA160	338	405	473	540	608	676	743	811	946	1081
MTDA190	524	629	734	838	943	1048	1153	1258	1467	1677
MTDA210	707	848	989	1131	1272	1413	1554	1696	1978	2261
MTDA240	1086	1303	1520	1737	1954	2171	2389	2606	3040	3474
MTDA270	1512	1814	2116	2418	2721	3023	3325	3628	4232	4837
MTDA300	2036	2443	2850	3257	3664	4072	4479	4886	5700	6514
MTDA350	3348	4018	4687	5357	6027	6696	7366	8036	9375	10714



MTSR(Single acting) Actuator Torque Table

OUTPUT TORQUE OF SPRING RETURN ACTUATORS IN (UNIT: Nm)

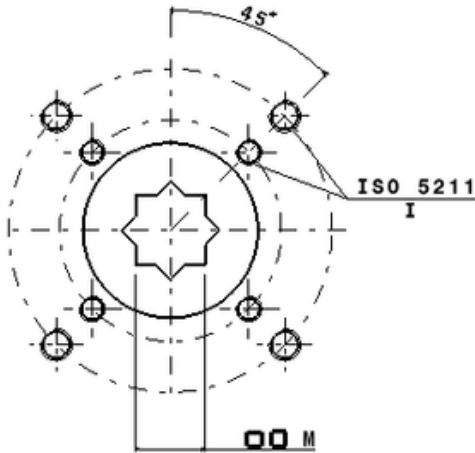
MODEL NO	NO OF SPRINGS	OUTPUT TORQUE OF SPRING RETURN ACTUATORS IN (UNIT: Nm)																		SPRING OUTPUT									
		3 BAR		3.5 BAR		4 BAR		4.5 BAR		5 BAR		5.5 BAR		6 BAR		7 BAR		8 BAR		90° STAR	90° END								
		0° STAR	90° END	0° STAR	90° END	0° STAR	90° END	0° STAR	90° END	0° STAR	90° END	0° STAR	90° END	0° STAR	90° END	0° STAR	90° END	0° STAR	90° END										
		PB	PE	PB	PE	PB	PE	PB	PE	PB	PE	PB	PE	PB	PE	PB	PE	PB	PE	PB	PE	PB	PE	PB	PE	SB	SE		
MTSR-040	2.0	4.5	1.8			6.6	3.9			8.7	6.0			10	8	13	10	15	12							13	8		
MTSR-050	2.0	6.9	3.3	9.0	5.4	11.1	7.5	13.2	9.7	15.4	11.8	17.5	13.9													9.0	5.6		
MTSR-060	2.0	10.9	6.8	14.3	10.2	17.7	13.6	21.1	17.0	24.5	20.4	27.9	23.8	31.3	27.2											13.0	9.0		
MTSR-075	5.0	25.3	17.7	31.6	24.1	38.0	30.4	44.3	36.8																		19.7	12.4	
	6.0	22.7	13.6	29.0	20.0	35.4	26.3	41.8	32.7	48.1	39.0																23.6	14.9	
	7.0	20.1	9.5	26.5	15.9	32.8	22.2	39.2	28.6	45.5	34.9	51.9	41.3														27.5	17.4	
	8.0			23.9	11.8	30.2	18.1	36.6	24.5	43.0	30.9	49.3	37.2	55.7	43.6													31.5	19.8
	9.0					27.6	14.0	34.0	20.4	40.4	26.8	46.7	32.6	53.1	39.5	65.8	52.2											35.4	22.3
	10.0								31.4	16.3	37.8	22.7	44.2	29.0	50.5	35.4	63.2	48.1										39.3	24.8
	12.0								28.8	12.2	35.2	18.6	41.6	24.9	47.9	31.3	60.7	44.0	73.4	56.7	70.8	52.6					43.2	27.3	
MTSR-085	5.0	41.4	27.9	51.2	37.8	61.0	47.6	70.8	57.4																		29.7	16.8	
	6.0	37.9	21.8	47.7	31.6	57.5	41.4	67.3	51.2	77.1	61.0																35.6	20.1	
	7.0	34.4	15.6	44.2	25.4	54.0	35.2	63.8	45.0	73.6	54.8	83.4	64.6														41.5	23.5	
	8.0			40.7	19.2	50.5	29.0	60.3	38.8	70.1	48.6	79.9	58.4	89.7	68.2													47.4	26.8
	9.0			37.2	13.0	47.0	22.8	56.8	32.7	66.6	42.5	76.4	53.7	86.3	62.1	105.9	81.7										53.4	30.2	
	10.0					43.5	16.7	53.3	26.5	63.2	36.3	73.0	46.1	82.8	55.9	102.4	75.5	122.0	95.1	59.3	33.5						59.3	33.5	
	12.0							49.9	20.3	59.7	30.1	69.5	39.9	79.3	49.7	98.9	69.3	118.5	88.9	65.2	36.9						65.2	36.9	
MTSR-095	5.0	56.8	40.3	69.9	53.4	83.0	66.5																				36.7	20.9	
	6.0	52.5	32.7	65.6	45.8	78.7	58.9	91.8	72.0																		44.1	25.1	
	7.0	48.1	25.0	61.2	38.1	74.3	51.2	87.4	64.3	100.5	77.4																51.4	29.3	
	8.0	43.7	17.4	56.8	30.5	69.9	43.6	83.0	56.7	96.1	69.8	109.2	82.9														58.8	33.5	
	9.0	39.4	9.7	52.5	22.8	65.6	35.9	78.7	49.0	91.8	62.1	104.9	74.4	118.0	88.3												66.1	37.6	
	10.0			48.1	15.2	61.2	28.3	74.3	41.4	87.4	54.5	100.5	67.6	113.6	80.7	139.8	106.9										73.4	41.8	
	12.0					56.9	20.6	70.0	33.7	83.1	46.8	96.2	59.9	109.3	73.0	135.5	99.2	161.7	125.4	80.8	46.0						80.8	46.0	
MTSR-105	5.0	73.4	54.1	90.0	70.8	106.6	87.4	123.3	104.0																		43.8	25.3	
	6.0	68.1	45.0	84.7	61.6	101.4	78.3	118.0	94.9	134.6	111.5																52.5	30.4	
	7.0	62.9	35.9	79.5	52.5	96.1	69.1	112.7	85.8	129.4	102.4	146.0	119.0														61.3	35.4	
	8.0			74.2	43.4	90.6	60.0	107.5	76.6	124.1	93.3	140.7	109.9	157.3	126.5												70.1	40.5	
	9.0					85.6	50.9	102.2	67.5	118.8	84.1	135.4	100.8	152.1	117.4	185.3	150.6										78.8	45.5	
	10.0							96.9	58.4	113.5	75.0	130.2	91.6	146.8	108.3	180.0	141.5										87.6	50.6	
	12.0									108.3	65.9	124.9	82.5	141.5	99.2	174.8	132.4										96.3	55.7	
MTSR-125	5.0	130.9	97.4	160.1	126.6	189.2	155.7																				74.4	42.3	
	6.0	122.1	81.9	151.3	111.1	180.4	140.2	209.6	169.4																		89.3	50.7	
	7.0	113.3	66.4	142.4	95.6	171.6	124.7	200.8	153.9	229.9	183.0																104.2	59.2	
	8.0	104.5	50.9	133.6	80.1	162.8	109.2	191.9	138.4	221.1	167.5	250.3	196.7														119.1	67.7	
	9.0			124.8	64.6	154.0	93.7	183.1	122.9	212.3	152.0	241.5	260.5	270.6	210.3												134.0	76.1	
	10.0			116.0	49.0	145.2	78.2	174.3	107.4	203.5	136.5	232.6	165.7	261.8	194.8	320.1	253.2										148.9	84.6	
	12.0					136.4	62.7	165.5	91.9	194.7	121.0	223.8	150.2	253.0	179.3	311.3	237.6	369.6	296.0	163.7	93.0						178.6	101.5	
MTSR-140	5.0	193.7	139.9	236.9	183.1	280.2	226.3	323.4	269.6																		114.7	63.0	
	6.0	180.6	116.0	223.8	159.2	267.0	202.4	310.2	245.7	353.5	288.9																137.6	75.6	
	7.0			210.7	135.3	253.9	178.5	297.1	221.8	340.3	265.0	383.6	308.2														160.6	88.2	
	8.0					240.8	154.6	284.0	197.9	327.2	241.1	370.4	284.3	413.7	327.5												183.5	100.8	
	9.0							270.9	174.0	314.1	217.2	357.3	278.6	400.5	303.6	487.0	390.1										206.5	113.5	
	10.0									300.9	193.3	344.2	236.5	387.4	279.8	473.9	366.2	560.3	452.7	229.4	126.1						229.4	126.1	
	12.0											331.0	212.6	374.3	255.9	460.7	342.3	547.2	428.8	252.3	138.7						252.3	138.7	
MTSR-160	5.0	304.0	209.9	371.6	277.5	439.1	345.0	506.7	412.6																		187.6	97.3	
	6.0	283.8	170.8	351.3	238.4	418.9	306.0	486.4	373.5	554.0	441.1																225.1	116.7	
	7.0			331.0	199.3	398.6	266.9	466.2	334.4	533.7	402.0	601.3	469.5														262.6	136.2	
	8.0					378.3	227.8	445.9	295.3	513.5	362.9	581.0	430.5	648.6	498.0												300.2	155.6	
	9.0							425.6	256.3	493.2	323.8	560.7	413.8	628.3	458.9	763.4	594.0										337.7	175.1	
	10.0									472.9	284.7	540.5	352.3	608.0	419.8	743.1	555.0	878.3	690.1	375.2	194.5						375.2	194.5	
	12.0											520.2	313.2	587.8	380.8	722.9	515.9	858.0											



MTSR(Single acting) Actuator Torque Table

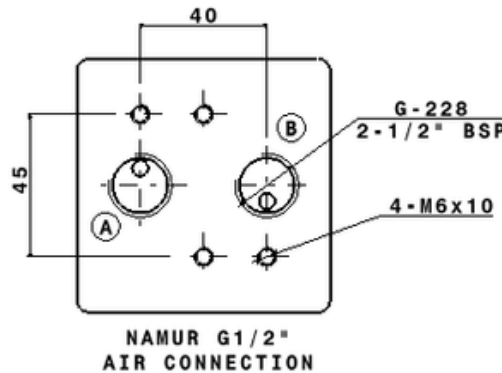
		OUTPUT TORQUE OF SPRING RETURN ACTUATORS IN (UNIT: Nm)																		SPRING OUTPUT		
MODEL NO	NO OF SPRINGS	3 BAR		3.5 BAR		4 BAR		4.5 BAR		5 BAR		5.5 BAR		6 BAR		7 BAR		8 BAR		90° START SB	0° END SE	
		0° START	90° END	0° START	90° END	0° START	90° END	0° START	90° END	0° START	90° END	0° START	90° END	0° START	90° END	0° START	90° END	0° START	90° END			
		PB	PE	PB	PE	PB	PE	PB	PE	PB	PE	PB	PE	PB	PE	PB	PE	PB	PE			
MTSR-240	5.0	827.1	503.1	1044.2	720.2	1261.4	937.4	1478.5	1154.5	1695.6	1371.7									767.8	456.8	
	6.0	731.9	343.1	949.0	560.3	1166.2	777.4	1383.3	994.6	1600.5	1211.7	1817.6	1428.9							921.4	548.2	
	7.0	636.7	183.2	853.9	400.3	1071.0	617.5	1288.2	834.6	1505.3	1051.7	1722.5	1268.9	1939.6	1486.0					1074.9	639.5	
	8.0			758.7	240.3	975.9	457.5	1193.0	674.6	1410.1	891.8	1627.3	1108.9	1844.4	1326.1	2278.7	1760.4			1228.5	730.9	
	9.0					880.7	297.5	1097.8	514.7	1315.0	731.8	1532.1	1805.5	1749.3	1166.1	2183.6	1600.4	2617.9	2034.7	1382.1	822.2	
	10.0							1002.7	354.7	1219.8	571.9	1437.0	789.0	1654.1	1006.2	2088.4	1440.5	2522.7	1874.7	1535.6	913.6	
	11.0									1124.7	411.9	1341.8	629.1	1558.9	846.2	1993.2	1280.5	2427.5	1714.8	1689.2	1004.9	
	12.0											1246.6	469.1	1463.8	686.2	1898.1	1120.5	2332.4	1554.8	1842.7	1096.3	
MTSR-270	5.0	1121.3	681.8	1423.6	984.1	1725.9	1286.4	2028.2	1588.7	2330.5	1891.0									1086.8	664.9	
	6.0	982.8	455.3	1285.1	757.7	1587.4	1060.0	1889.7	1362.3	2192.0	1664.6	2494.3	1966.9							1304.2	797.8	
	7.0	844.3	228.9	1146.6	531.2	1448.9	833.5	1751.2	1135.9	2053.5	1438.2	2355.8	1740.5	2658.1	2042.8					1521.5	930.8	
	8.0			1008.1	304.8	1310.4	607.1	1612.7	909.4	1915.0	1211.8	2217.3	1514.1	2519.6	1816.4	3124.2	2421.0			1738.9	1063.8	
	9.0					1171.9	380.7	1474.2	683.0	1776.5	985.3	2078.8	2534.2	2381.1	1590.0	2985.7	2194.6	3590.3	2799.2	1956.2	1196.7	
	10.0							1335.7	456.6	1638.0	758.9	1940.3	1061.2	2242.6	1363.5	2847.2	1968.2	3451.8	2572.8	2173.6	1329.7	
	11.0									1499.5	532.5	1801.8	834.8	2104.1	1137.1	2708.7	1741.7	3313.3	2346.4	2391.0	1462.7	
	12.0											1663.3	608.4	1965.6	910.7	2570.2	1515.3	3174.8	2119.9	2608.3	1595.7	
MTSR-300	4.0	1263.8	748.8	1671.0	1155.9	2078.1	1563	2485	1970.0	2892.0	2377.0	3299.0	2784.0	3706.7	3191.7	4521.0	4006.0	5335.3	4820.0	1626.0	1131.9	
	5.0	969.0	325.2	1376.0	733.0	1783.0	1139.0	2190.0	1546.0	2597.0	1953.0	3004.0	2361.0	3411.0	2768.0	4226.0	3582.0	5040.0	4396.0	2033.0	1414.0	
	6.0			1081.0	308.0	1488.0	716.0	1895.0	1123.0	2302.0	1530.0	2710.0	1937.0	3117.0	2344.0	3931.0	3158.0	4745.0	3973.0	2439.0	1697.0	
	7.0																					
	8.0																					
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	10.0																					
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Mounting & Connections of Rack & Pinion SR & DA Actuators

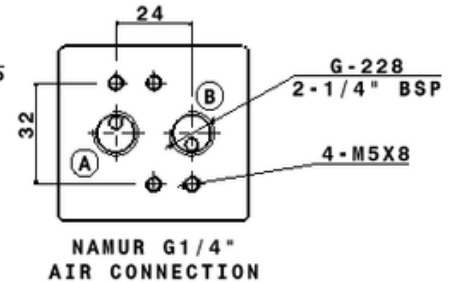


ISO-5211 DIN 3337
BOTTOM MOUNTING

ISO 5211 I



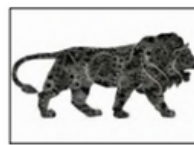
NAMUR G1/2"
AIR CONNECTION



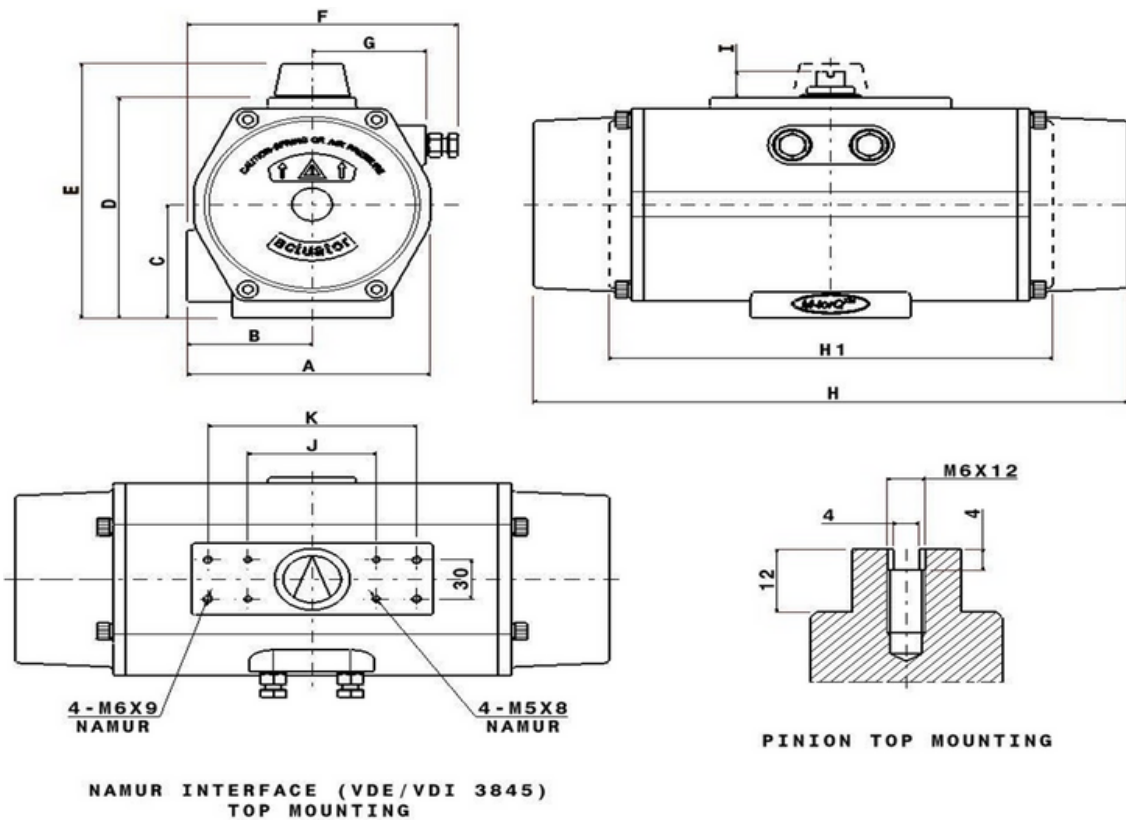
NAMUR G1/4"
AIR CONNECTION

ISO 5211 I

Model	I (ISO-5211)	M	Air Connection
MTSR-032	F03/F04	9	G1/4"
MTSR-040	F03/F04	9	G1/4"
MTSR-050	F03/F05	11	G1/4"
MTSR-060	F03/F05	11	G1/4"
MTSR-075	F05/F07	14	G1/4"
MTSR-085	F05/F07	14	G1/4"
MTSR-095	F07/F10	17	G1/4"
MTSR-105	F07/F10	17	G1/4"
MTSR-125	F07/F10	22	G1/4"
MTSR-140	F10/F12	27	G1/4"
MTSR-160	F10/F12	27	G1/4"
MTSR-190	F12/F16	36	G1/4"
MTSR-210	F12/F16	36	G1/4"
MTSR-240	F14 or F16	46	G1/4"
MTSR-270	F14 or F16	46	G1/2"
MTSR-300	F16	46	G1/2"
MTSR-350	F25	55	G1/2"



Dimensions of Rack & Pinion SR & DA Actuators

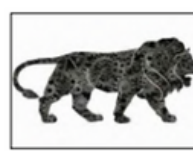


Dimension table: -

Unit: -mm

Model	A	B	C	D	E	F	G	H	H1	I	J	K
MTDA-032	59	35	32	60	80	72	27	108	-	20	80X30	-
MTSR-040	56	33	32	62	81	70	23	120	120	15	80X30	-
MTSR-050	61	37	34	68	87	78	26	165	125	20	80X30	-
MTSR-060	71	42	39	78	97	88	31	200	170	20	80X30	-
MTSR-075	89	52	50	100	126	108	37	240	180	20	80X30	-
MTSR-085	107	58	60	120	146	125	50	90	210	20	80X30	-
MTSR-095	122	65	69	134	160	137	54	310	232	20	80X30	-
MTSR-105	134	72	72	144	170	154	60	325	235	20	80X30	-
MTSR-125	151	78	87	169	195	169	70	372	278	20	80X30	130X30
MTSR-140	170	89	97	188	225	201	81	446	368	30	80X30	130X30
MTSR-160	189	97	106	208	245	222	92	490	404	30	80X30	130X30
MTSR-190	222	112	127	250	287	255	105	570	460	30	80X30	130X30
MTSR-210	232	122	136	275	310	272	112	650	500	30	80X30	130X30
MTSR-240	280	140	155	310	375	296	127	795	580	50	-	130X30
MTSR-270	295	160	175	350	410	325	136	860	620	50	-	130X30
MTSR-300	320	175	195	390	452	357	150	950	700	50	-	130X30
MTSR-350	370	305	225	450	520	420	175	1150	800	50	-	130X30

Note- All Dimensions are approximate and subject to change.
Dimensions for MTDA-032 are corresponds to only double acting model.



RACK & PINION PNEUMATIC ACTUATOR

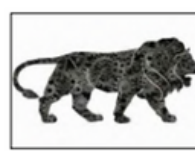
TECHNICAL INFORMATION

Cylinder Volume, Time and Weight-Double Acting (DA)

Actuator Model	Cylinder Volume (Litres)		Time (sec)		Weight
	Open	Close	Open	Close	Kg
MTDA032	0.1	0.1	1	0.1	0.75
MTDA040	0.15	0.2	0.4	0.2	0.9
MTDA050	0.15	0.25	0.2	0.3	1.1
MTDA060	0.2	0.3	0.3	0.3	1.6
MTDA075	0.3	0.5	0.3	0.4	2.8
MTDA085	0.4	0.7	0.35	0.45	3.4
MTDA095	0.6	0.8	0.4	0.5	4
MTDA105	0.7	1.1	0.5	0.7	5.4
MTDA125	1.5	2.3	1.9	2	11
MTDA140	2.4	3.8	1.2	1.5	15.5
MTDA160	3.1	4.9	1.5	1.8	20.5
MTDA190	3.8	5.9	1.8	2	26
MTDA210	4.3	6.9	2	2.4	33
MTDA240	10	15.2	3.5	4.1	61.5
MTDA270	14.5	21.4	4	4.5	86
MTDA300	18	27.5	4.8	5	110
MTDA350	23	35	5.5	6	125

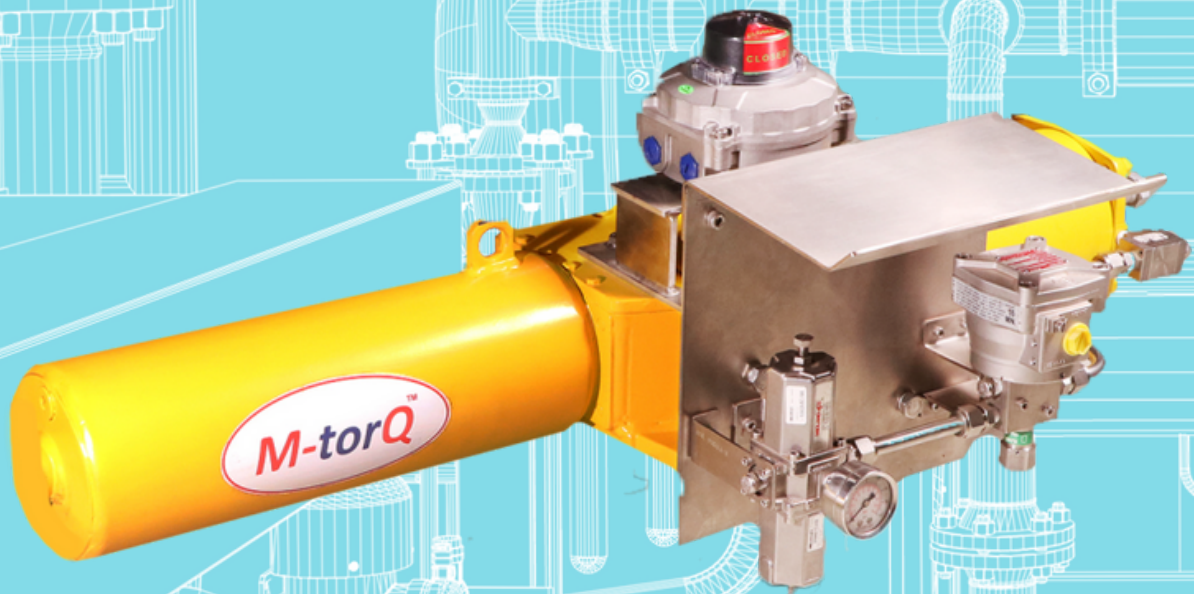
Cylinder Volume, Time and Weight-Spring Return (SR)

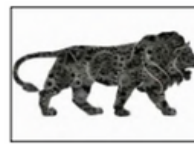
Actuator Model	Cylinder Volume (Litres)		Time (sec)		Weight
	Open	Close	Open	Close	Kg
MTSR050	0.15	N/A	0.3	0.3	1.2
MTSR060	0.2	N/A	0.3	0.4	1.8
MTSR075	0.3	N/A	0.35	0.5	3.3
MTSR085	0.4	N/A	0.4	0.55	4
MTSR095	0.6	N/A	0.5	0.6	4.7
MTSR105	0.7	N/A	0.6	0.9	6.5
MTSR125	1.5	N/A	1.1	1.4	13.4
MTSR140	2.4	N/A	1.4	1.8	19.1
MTSR160	3.1	N/A	1.7	2.1	24.4
MTSR190	3.8	N/A	2.5	2.5	32
MTSR210	4.3	N/A	2.2	2.8	39.6
MTSR240	10	N/A	4	4.6	72.5
MTSR270	14.5	N/A	4.5	5	104
MTSR300	18	N/A	5.1	5.6	160
MTSR350	23	N/A	7	6	190



HEAVY DUTY SCOTCH YOKE PNEUMATIC ACTUATOR

PNEUMATIC HEAVY DUTY SCOTCH YOKE ACTUATOR



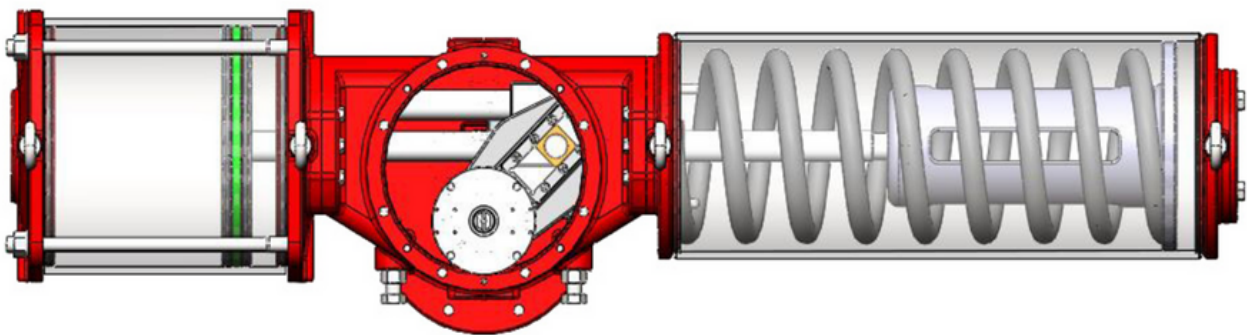


HEAVY DUTY SCOTCH YOKE PNEUMATIC ACTUATOR



M-torQ Symmetric (MTSY) & Canted (MTCY) Series Actuator

General Technical Specification



CONFIGURATIONS

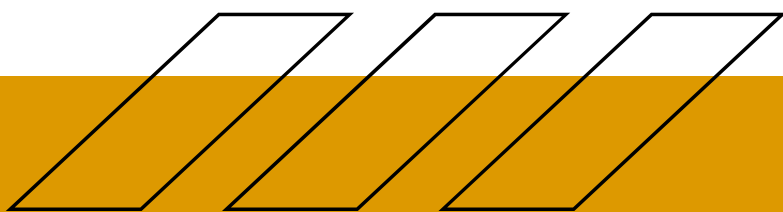
DA	Double Acting - Spring Cylinder
DD	Double Acting - Double Cylinder
SA-CW	Single Acting - Fail CW
SA-CCW	Single Acting - Fail CCW

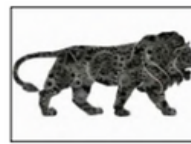
OPERATION CONDITION

Pressure Range	43.5-145 psi (3.0 - 10 Bar.)
Media	Dry Compressed Air/Dry non corrosive gas.
Temperature Range Standard Option	Standard :- -20 °F to 200° (-29°C to 90°C)
	High Temp. :-Up to 300°F (149°C)
	Low Temp. :-down to-50°F (-46°C)

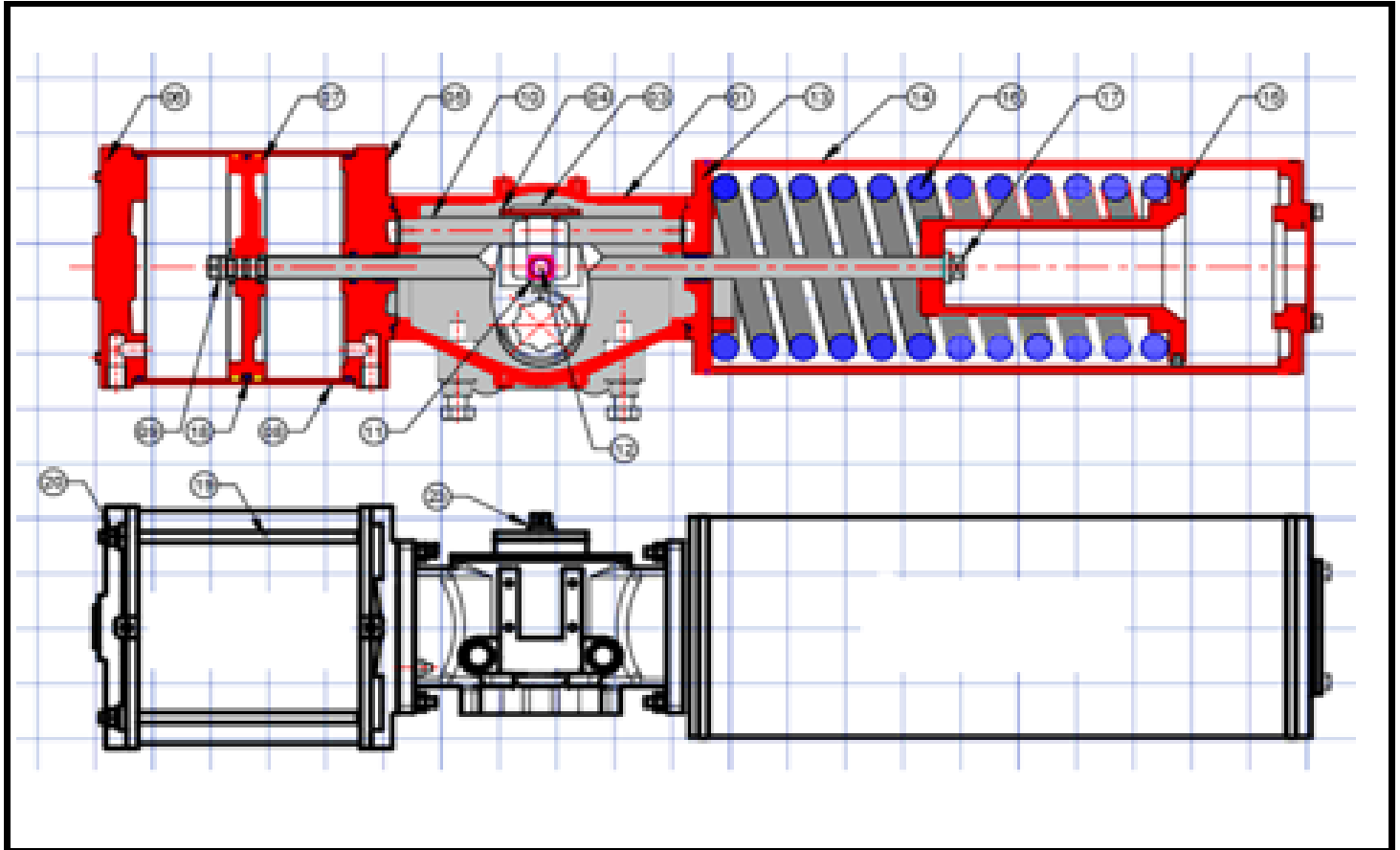
COMPLIANCE

Torque Base	Valve mounting dimension as per ISO 5211:2001
Accessories	Accessories mounting as per NAMUR -VDI/VDE
Design & Testing	In accordance with en 15714-3"2009



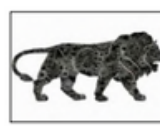


HEAVY DUTY SCOTCH YOKE PNEUMATIC ACTUATOR

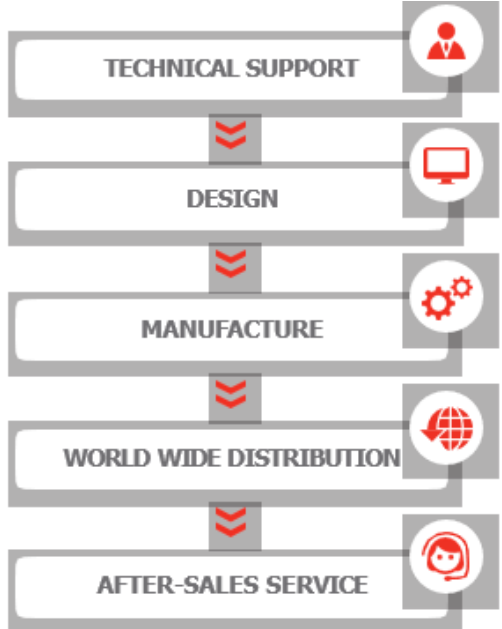


ITEM NO.	DESCRIPTION	MATERIAL
1	HOUSEING	DUCTILE IRON
2	TOP COVER	DUCTILE IRON
3	YOKE	DUCTILE IRON
4	GUIDE BLOCK	CARBON STEEL
5	RIGHT END PLATE	DUCTILE IRON
6	LEFT END PLATE	DUCTILE IRON
7	PISTON	DUCTILE IRON
8	CYLINDER	CARBON STEEL
9	PISTON ROD	ALLOY STEEL
10	GUIDE ROD	ALLOY STEEL
11	SLIDER BLOCK	DUCTILE IRON
12	YOKE PIN	ALLOY STEEL

ITEM NO.	DESCRIPTION	MATERIAL
13	SPRING CARDRIDGE RH AND LH PL.	CARBON STEEL
14	SPRING CYLINDER	CARBON STEEL
15	SPRING CUP	DUCTILE IRON
16	SPRING	EN 47
17	SPRING ROD	ALLOY STEEL
18	SEALING	NITRILE
19	TIE ROD	ASTMA193 GR. B7
20	TIE ROD NUT	ASTMA194 GR. 2H
21	TRAVEL STOP BOLT	ASTMA193 GR. B7
22	TRAVEL STOP NUT	ASTMA194 GR. 2H
23	POSITION INDICATOR	MILD STEEL



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