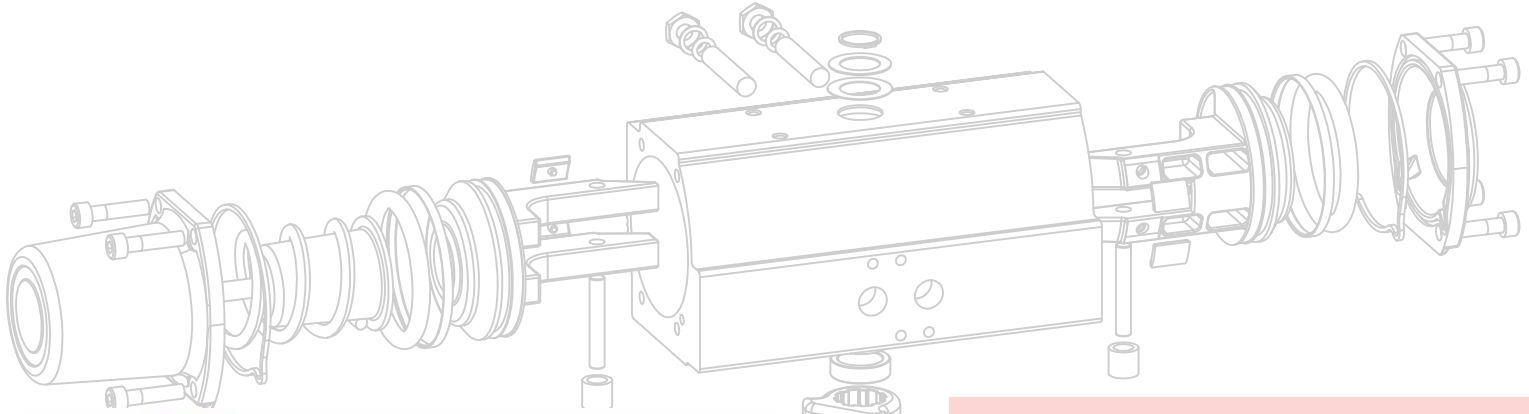


# PNEUMATIC SCOTCH YOKE ACTUATOR



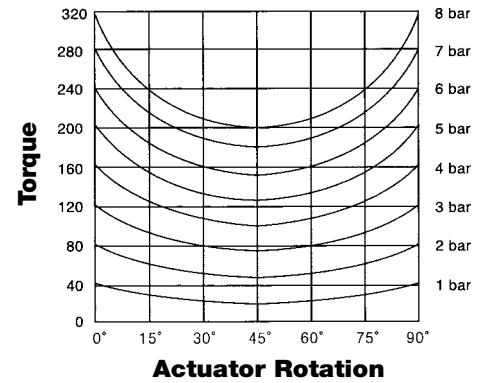
- Low Air Consumption
- High start & end torque
- Torque curve follows valve required torque
- Double Stroke adjustment
- Anodised internally & externally
- No metal to metal contact
- Dual piston seal Polymer, Teflon & Nylon
- Polyester coated springs with spring retainer
- Maintenance free
- Star drive suits ISO & DIN
- Namur top works



# TORQUE CURVE

The Torque Control Actuator design has a high start and end torque that gives much lower air consumption and follows the valve torque curve.

Typical start run and end torque of TC80-DA Actuator



# TORQUE TABLE

Double Acting Actuators Output Torques (N-m)

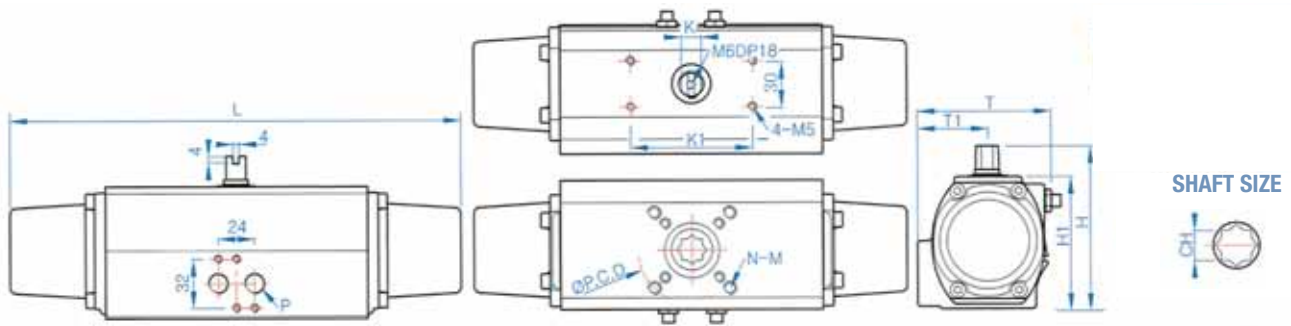
MODEL	ANGLE	SUPPLY AIR									
		3Bar		4Bar		4.5Bar		5Bar		6Bar	
		Air to Close	Air to Open	Air to Close	Air to Open	Air to Close	Air to Open	Air to Close	Air to Open	Air to Close	Air to Open
TCA50-DA	0°	29.0	21.0	37.0	28.0	37.5	32.5	38.0	37.0	42.0	41.0
	45°	15.0	16.0	20.0	21.0	22.5	23.5	25.0	26.0	30.0	31.0
	90°	25.0	25.0	33.0	38.0	36.0	39.0	39.0	40.0	50.0	52.0
TCA65-DA	0°	63.0	59.0	85.0	78.0	95.0	86.5	105.0	95.0	131.0	116.0
	45°	33.0	38.0	45.0	49.0	51.0	56.0	57.0	63.0	68.0	73.0
	90°	54.0	52.0	72.0	71.0	80.0	82.0	88.0	93.0	107.0	107.0
TCA80-DA	0°	121.0	105.0	164.0	143.0	160.0	163.0	156.0	183.0	261.0	210.0
	45°	65.0	69.0	84.0	92.0	98.0	106.5	112.0	121.0	130.0	144.0
	90°	97.0	101.0	130.0	133.0	150.5	144.5	171.0	156.0	198.0	209.0
TCA100-DA	0°	194.0	186.0	265.0	247.0	298.5	269.5	332.0	292.0	393.0	368.0
	45°	110.0	127.0	147.0	165.0	166.0	180.5	185.0	196.0	237.0	250.0
	90°	173.0	179.0	231.0	237.0	264.0	269.0	297.0	301.0	348.0	363.0
TCA125-DA	0°	428.0	432.0	576.0	551.0	650.5	614.5	725.0	678.0	886.9	793.9
	45°	255.0	273.0	339.0	360.0	382.0	401.5	425.0	443.0	513.0	531.0
	90°	385.0	375.0	510.0	491.0	572.5	552.0	635.0	613.0	750.0	732.0
TCA140-DA	0°	623.0	576.0	829.9	753.9	967.4	838.4	1104.9	922.9	1310.9	1096.9
	45°	333.0	331.0	450.0	455.0	514.5	518.5	579.0	582.0	691.0	668.0
	90°	520.0	523.0	689.0	720.0	775.9	799.9	862.9	879.9	1054.9	969.9
TCA160-DA	0°	952.9	812.9	1146.9	1061.9	1315.9	1186.9	1484.9	1311.9	1799.9	1599.9
	45°	540.0	569.0	730.0	757.9	824.9	853.4	919.9	948.9	1109.9	1132.9
	90°	879.9	978.9	1169.9	1319.9	1308.9	1477.4	1447.9	1634.9	1749.9	2026.9
TCA210-DA	0°	1979.9	1909.9	2799.8	2599.8	2939.8	2859.8	3299.8	3199.8	3919.7	3819.7
	45°	1099.9	1149.9	1459.9	1499.9	1709.9	1749.9	1919.9	1949.9	2299.8	2399.8
	90°	1669.9	1719.9	2149.9	2299.8	2599.8	2709.8	2799.8	2899.8	3349.8	3449.8
TCA250-DA	0°	4100.0	3000.0	5500.0	3950.0	6300.0	4400.0	7100.0	4850.0	8480.0	5750.0
	45°	1880.0	1850.0	2550.0	2500.0	2870.0	2830.0	3200.0	3150.0	3800.0	3760.0
	90°	3100.0	3400.0	4180.0	4580.0	4680.0	5250.0	5240.0	5850.0	6180.0	7050.0

Spring Return Actuators Output Torques (N-m)

MODEL	ANGLE	SPRING TORQUE					
		3 Bar (40PSI)		4.5 Bar (60PSI)		6 Bar (80PSI)	
		Spring to Close	Air to Open: 3 Bar	Spring to Close	Air to Open: 4.5 Bar	Spring to Close	Air to Open: 6 Bar
TCA50-SR	0°	10.0	20.0	14.0	26.0	17.0	34.0
	45°	9.0	9.0	12.0	12.0	15.0	15.0
	90°	20.0	10.0	26.0	14.0	34.0	17.0
TCA65-SR	0°	22.0	39.0	35.0	54.0	48.0	70.0
	45°	18.0	18.0	23.0	28.0	37.0	32.0
	90°	39.0	22.0	54.0	35.0	70.0	48.0
TCA80-SR	0°	40.0	70.0	60.0	100.0	80.0	130.0
	45°	30.0	30.0	50.0	50.0	70.0	70.0
	90°	70.0	40.0	100.0	60.0	130.0	80.0
TCA100-SR	0°	70.0	140.0	100.0	190.0	130.0	240.0
	45°	50.0	50.0	80.0	80.0	110.0	110.0
	90°	140.0	70.0	190.0	100.0	240.0	130.0
TCA125-SR	0°	175.0	251.0	243.0	403.0	358.0	520.0
	45°	105.0	125.0	177.0	182.0	215.0	254.0
	90°	215.0	168.0	395.0	210.0	441.0	341.0
TCA140-SR	0°	200.0	370.0	371.0	576.0	480.0	726.0
	45°	170.0	170.0	236.0	265.0	330.0	360.0
	90°	370.0	200.0	447.0	366.0	680.0	430.0
TCA160-SR	0°	400.0	540.0	550.0	750.0	769.9	1149.9
	45°	290.0	290.0	420.0	420.0	560.0	560.0
	90°	540.0	400.0	750.0	550.0	1149.9	769.9
TCA210-SR	0°	840.0	910.0	1250.0	1510.0	1750.0	2160.0
	45°	500.0	430.0	740.0	780.0	1040.0	1130.0
	90°	1000.0	500.0	1500.0	920.0	2140.0	1370.0
TCA250-SR	0°	1540.0	1900.0	2120.0	2760.0	3060.0	3660.0
	45°	920.0	950.0	1320.0	1370.0	1830.0	1900.0
	90°	1800.0	1400.0	2470.0	2200.0	3550.0	2760.0

The Standard type (as shown in the blue box) is normal stock.

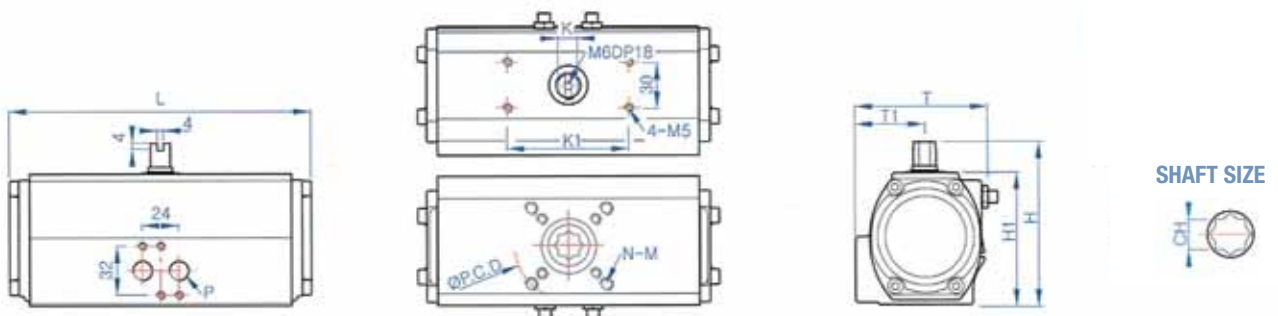
# DOUBLE ACTING TYPE: MODEL TCA50-DA ~ TCA250-DA



UNIT : mm

Size	L	T	T1	H	H1	K	ISO	CH	DEPTH	PCD	N-M	WEIGHT KG
TCA50-DA	162	75	40	90	70	9	F03/F05/F07	14	15	36/50/70	4-M5/M6/M8	1.4
TCA65-DA	202	89	46	107	87	13	F05/F07	14	17	50/70	4-M6/M8	2.3
TCA80-DA	262	101	49.5	126	106	13	F05/F07	17	20	50/70	4-M6/M8	3.9
TCA100-DA	311	129	61.5	148	128	19	F07/F10	22	26	70/102	4-M8/M10	6.7
TCA125-DA	390	151	71.5	174	154	19	F07/F10	22	26	70/102	4-M8/M10	11.3
TCA140-DA	431	164	77	192	172	24	F10/F12	27	30	102/125	4-M10/M12	16.4
TCA160-DA	506	188	89	216	196	24	F10/F12	36	30	102/125	4-M10/M12	23.7
TCA210-DA	605	231	115	284	254	36	F12/F16	46	60	125/165	4-M12/M20	45.5
TCA250-DA	755	301	152	335	305	36	F12/F16	46	60	125/165	4-M12/M20	65.8

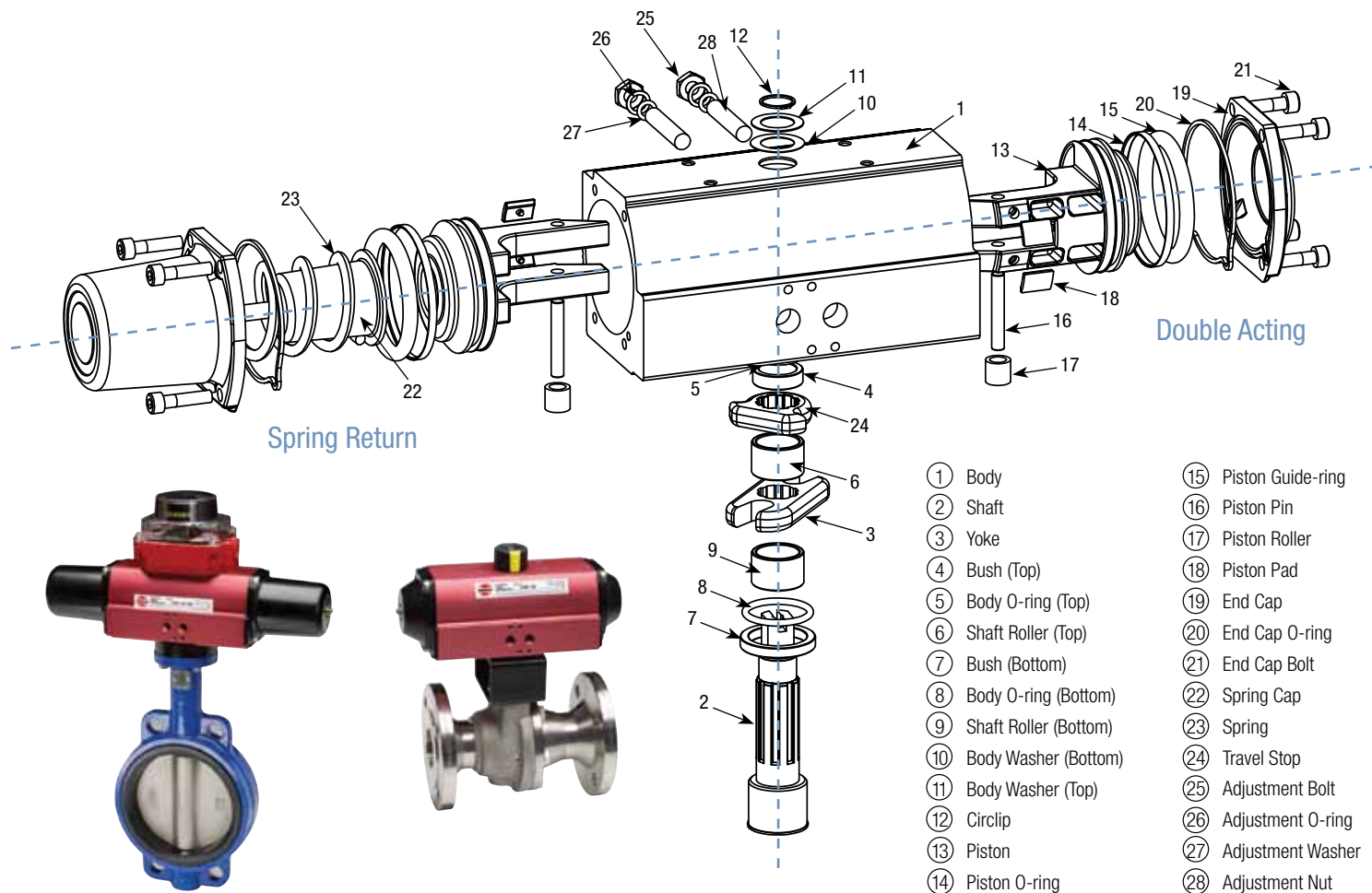
# SPRING RETURN TYPE: MODEL TCA50-SR ~ TCA250-SR



UNIT : mm

Size	L	T	T1	H	H1	K	ISO	CH	DEPTH	PCD	N-M	WEIGHT KG
TCA50-SR	257	75	40	90	70	9	F03/F05/F07	14	15	36/50/70	4-M5/M6/M8	1.6
TCA65-SR	314	89	46	107	87	13	F05/F07	14	17	50/70	4-M6/M8	3.0
TCA80-SR	430	101	49.5	126	106	13	F05/F07	17	20	50/70	4-M6/M8	5.3
TCA100-SR	500	129	61.5	148	128	19	F07/F10	22	26	70/102	4-M8/M10	9.5
TCA125-SR	606	151	71.5	174	154	19	F07/F10	22	26	70/102	4-M8/M10	17.6
TCA140-SR	682	164	77	192	172	24	F10/F12	27	30	102/125	4-M10/M12	23.9
TCA160-SR	781	188	89	216	196	24	F10/F12	36	30	102/125	4-M10/M12	36.6
TCA210-SR	982	231	115	284	254	36	F12/F16	46	60	125/165	4-M12/M20	77.2
TCA250-SR	1108	301	152	335	305	36	F12/F16	46	60	125/165	4-M12/M20	119.6

# TCA-DA ~ TCA-SR SERIES



**Torque Control Pneumatic Actuators** are available in both Double & Single Acting Models with an output torque from 30 Nm to 8000 Nm at 6 Bar (600 kPa) operating pressure. They are suitable for a maximum operating pressure of 10 Bar (1000 kPa) operation.

**Scotch Yoke Actuators** are designed to provide higher seating and unseating torques to suit break, run and reseating torques of Ball, Butterfly & Plug Valves.

**The Torque Control Pneumatic Actuator** features a modern scotch yoke mechanism with high starting and ending torques in a compact package. Due to the design this translates to higher break and reseating torques with substantially lower air consumption. Double stroke adjustment is included on all actuators.

Actuators are fitted with low friction wear pads to eliminate contact between the piston and the body which guarantee long life and lubrication free operation throughout the Actuator range. The Actuator housing is hard anodized internally and externally to provide superior protection from most environments.

Single Acting Actuator Springs are powder coated, pre-tensioned and retained in a spring module for long and trouble free operation, ensuring complete safety during assembly or disassembly and general maintenance. The standard Spring module is designed for 5.5 (550 kPa) to 6.0 (600 kPa) Bar operation. Different spring modules are available to suit other operating pressures.

Torque Control Actuators have a universal ISO Mounting Pad that allows easy mounting to most rotary valves. The top works is NAMUR to facilitate easy mounting of switches, positioners and accessories.



THE ACTUATOR SPECIALIST

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