

Rack & Pinion Pneumatic Actuator 3 Position 90° Turn / Sizes

90° Turn Actuator



Standard rotary pneumatic actuators are operated from "0" up to certain angle. These angles are called starting and ending angles. Standard rotary actuators are available as 0-90°, 0-120° and 0-180°. 3 position actuators are like standard actuators but they have a middle position except the starting and ending angles.

TORK 3 position actuators are produced as 90° in 40, 60, 80, 100 and 120 sizes. The middle position can be regulated between 30-60° but on request; it can be designed as desired. As special designed, the production of 120° and 180°, 3 position rotary actuator is possible.

TORK 3 position actuators are used in filling facilities in order to fill a tank or depot without overflow and safely. Firstly valve is switched to fully open position for filling application. At the end of the filling, for prevent overflow, valve is switched to half open (valve is switched to half open position, 30-60°) and if close command issued,

valve is switched to fully closed position.

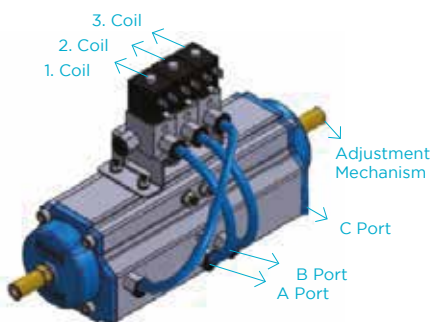
Operating of 3 Position Actuator:

In order to operate 3 position actuator, can be benefited from 3/2 direction valve.

For triple 3/2 direction valve; the valve with number 1 should be connected to A port, the valve with number 2 to B port and the valve with number 3 to C port.

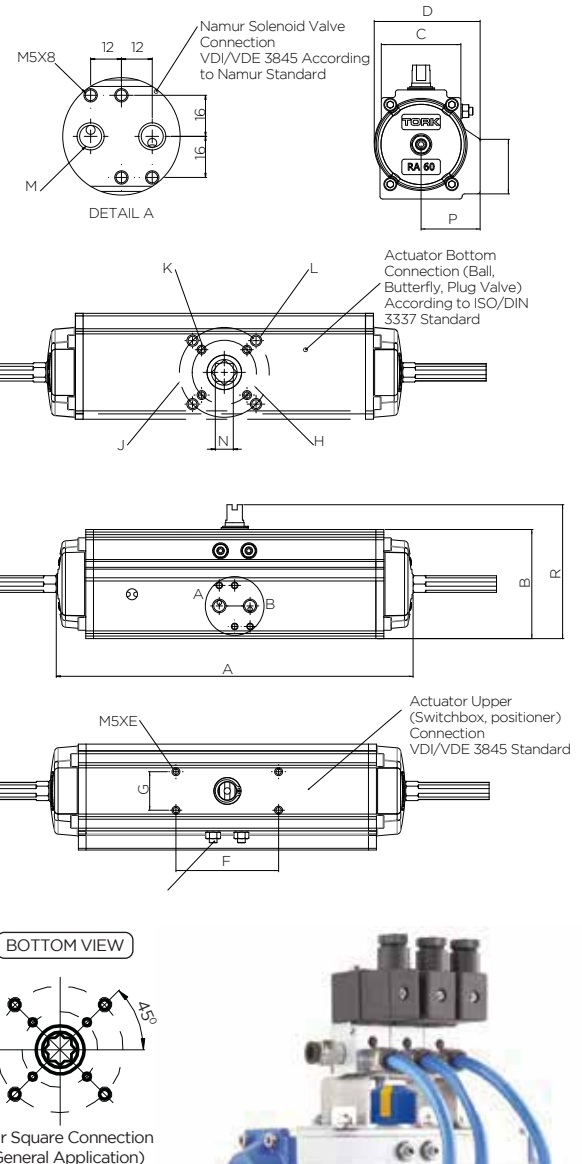
Operating:

1. Pressure air is given to air input port.
2. The coil number 1 is powered. In this way, the actuator turns 90° and switches to fully open position.
3. The coil with number 3 is powered and the power of coil with number 1 is shut off. In this way, actuator is half closed. Half closed position can be regulated between 30-60°.
4. The coil with number 2 is powered and the power of coil with number 3 is shut off. In this way actuator is fully closed.



APPLICATION

- Generally used in filling systems.
- With ball valves
- With butterfly valves



TYPE ORDER NO	P: 6 bar Torque	DIMENSIONS (mm)																
RA	NM	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	ISO 5211 Flange
RA/RX/RAM/RXM 40.3P	15	143.7	70	52	70.6	8	80	30	36/42/50	-	M5	M6	1/8"	9/11	45	40	90	F03/F04/F05
RA/RX/RAM/RXM 60.3P	39	197.6	85.2	62	82.7	8	80	30	42/50	70	M5/M6	M8	1/8"	9/11/14	47	47	105	F04/F05/F07
RA/RX/RAM/RXM 80.3P	103	275	117	91.8	109	8	80	30	50	70	M6	M8	1/8"	14	55	58	137	F05/F07
RA/RX/RAM/RXM 100.3P	168	329	130	95	121	8	80	30	70	102	M8	M10	1/4"	17	61	65	160	F07
RA/RX/RAM/RXM 120.3P	318	400	160	116.2	150	8	80	30	70	102	M8	M10	1/4"	17/22	82	87.2	190	F07

Rack & Pinion Pneumatic Actuator 3 Position 180° Turn / Sizes



3 position actuators such as normal actuators take a middle positions is not only the starting and ending points. As they are manufactured as a standard intermediate position 90°. On request adjustable of different degrees.

The Principle of Operation 180° 3 Position Actuators: In order to operate 3 position actuator, can be benefited from triple 3/2 direction valve.

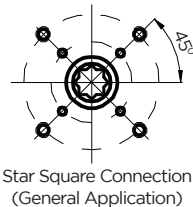
At triple 3/2 direction valve, 1 no valve is connected to A port, 2 no

valve is connected to B port and 3 no valve is connected C port.

Operating:

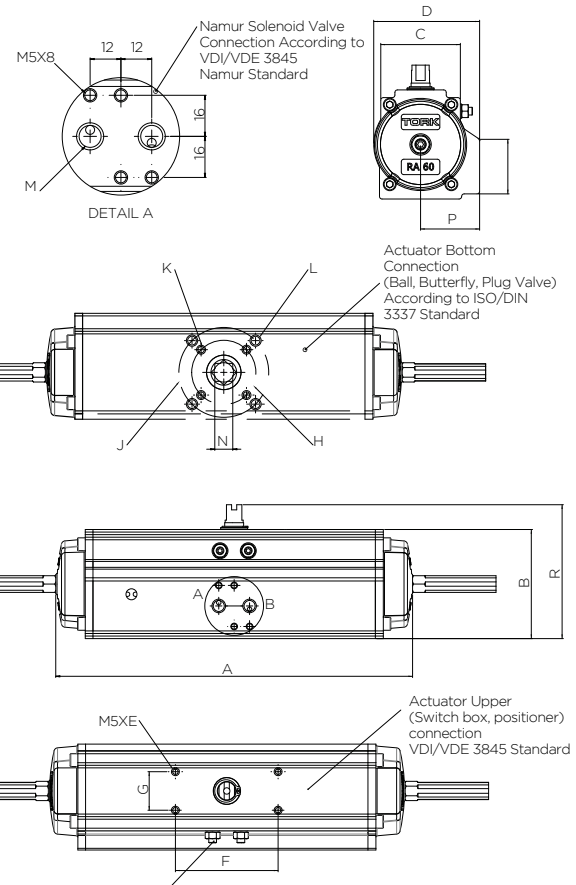
1. Compressed air is given to air inlet port.
2. 1 no coil is energized. In this way actuator is rotated 180°, in other words the valve opens full position.
3. 3 no is energized, 1 no coil is de-energized. So the actuator is semi-closing.
4. 2 no coil is energized, 3 no coil is de-energized. So the actuator is fully closing.

BOTTOM VIEW

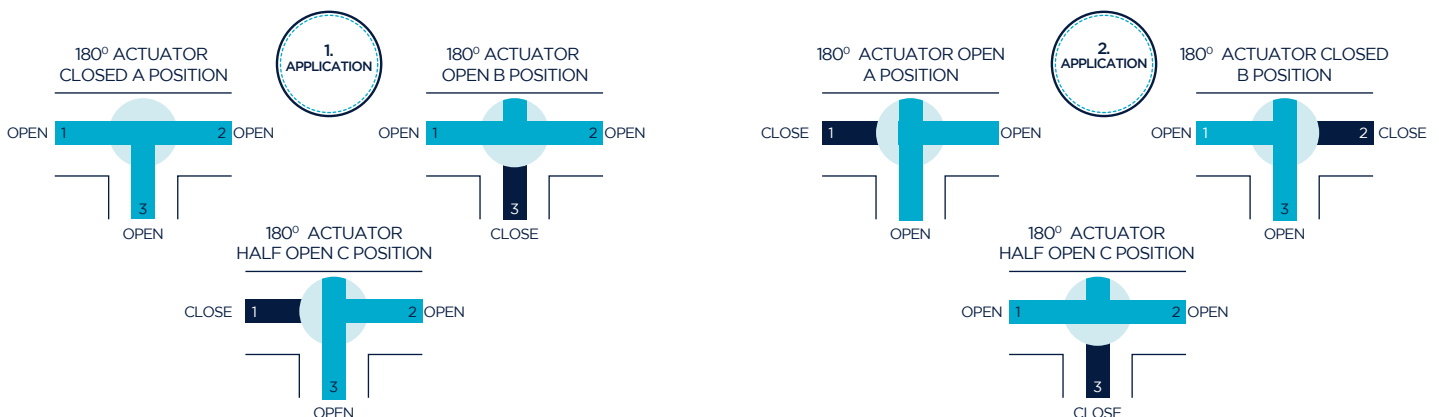


APPLICATION

- Generally used in filling systems.
- With ball valves
- With butterfly valves



Operating in Ball Valves



3 Position Actuator Types, Dimensions and Torque Outputs

TYPE ORDER NO	P: 6 bar Torque	DIMENSION (mm)																	
RA	Nm	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	ISO 5211 Flange	
RA/RX/RAM/RXM 40.8P	15	263	70	52	70.6	8	80	30	36/42/50	-	M5	M6	1/8"	9/11	45	40	90	F03/F04/F05	
RA/RX/RAM/RXM 60.8P	39	347	85.2	62	82.7	8	80	30	42/50	70	M5/M6	M8	1/8"	9/11/14	47	47	105	F04/F05/F07	
RA/RX/RAM/RXM 80.8P	103	458.5	116.9	91.8	109.2	8	80	30	50	70	M6	M8	1/8"	14	54.8	58	136.9	F05/F07	
RA/RX/RAM/RXM 100.8P	168	550	130	95	121	8	80	30	70	102	M8	M10	1/4"	17	61	65	160	F07/F10	
RA/RX/RAM/RXM 120.8P	318	585	160	116.2	150	8	80	30	70	102	M8	M10	1/4"	17/22	82	87.2	190	F07/F10	