

PHOENIX

Pneumatic Actuator



VALVE AUTOMATION

PHOENIX series pneumatic actuator For small / medium size valves

Features

- Gear and symmetrical dual piston-rack design that converts linear motion into rotary. Suitable for automation and remote control over small/medium size valves rotating in 90 degrees.
- Compact design.
- Strong gear and rack, smooth and swift movement, long service life, Rotary direction reversible with piston reversed.
- $\pm 5^\circ$ stroke position adjustable bolt.
- Namur interface for straightforward mounting of accessories that include solenoid valves, limit switches, positioner etc.
- ISO5211/DIN3337 uses a standard bottom flange connecting to many various valve types.
- Single and double acting both include the option for a manual device.



Technical Data

Double Acting

Supply Pressure: 0.3MPa~0.7MPa
Rotation angle: $-5^\circ \sim +95^\circ$
Output Torque: 12.5N.m~11964N.m
Temperature : $-20^\circ\text{C} \sim 80^\circ\text{C}$
Weight: 1.4 Kg ~97Kg

Single Acting

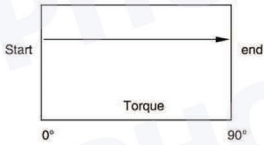
Supply Pressure : 0.3 MPa ~0.7MPa
Rotation angle : $-5^\circ \sim 95^\circ$
Output Torque : 4N.m~4101N.m
Temperature : $-20^\circ\text{C} \sim 80^\circ\text{C}$
Weight : 1.45 Kg ~118 Kg

Application

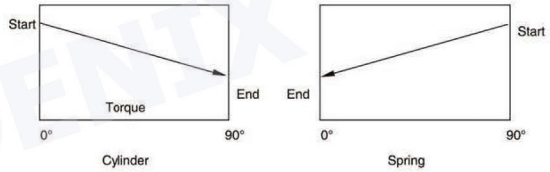
PHOENIX series pneumatic actuators, Suitable for automation and remote control over small to medium size valves

Output torque

Torque diagram double acting actuators



Torque diagram single acting actuators



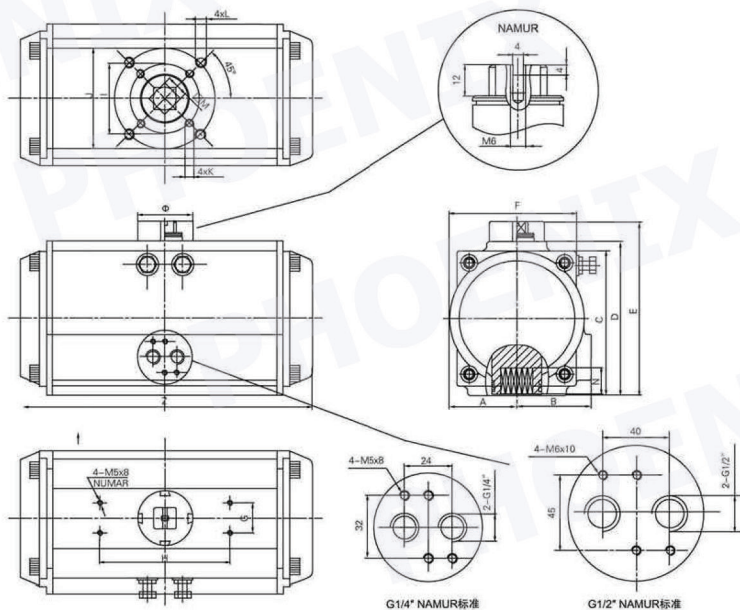
Output Torque of Double Acting

unit: Nm

Model	Air pressure (unit: bar)							
	2	3	4	5	6	7	8	
RCI032	2.7	4.2	6.0	7.5	9.0	10.0	11.5	
RCI052	8.3	12.4	16.6	20.8	24.9	29.1	33.2	
RCI063	14.6	21.9	29.2	36.6	43.9	51.2	58.5	
RCI075	23.5	35.3	47.0	58.8	70.5	82.3	94.0	
RCI083	29.7	44.5	59.4	74.2	89.1	103	118	
RCI092	45.5	68.2	91.1	119	136	159	181	
RCI105	67.8	101	136	179	203	237	271	
RCI125	116	154	233	291	349	408	466	
RCI140	175	263	350	438	526	614	701	
RCI160	267	401	534	668	802	935	1069	
RCI190	430	646	861	1185	1292	1508	1723	
RCI210	526	888	1184	1480	1776	2072	2369	
RCI240	773	1160	1546	2126	2785	3249	3713	
RCI270	1174	1761	2349	3263	3916	4569	5221	
RCI300	1526	2289	3052	4197	4578	5608	6409	
RCI350	2285	3427	4570	6283	6854	8397	9596	
RCI400	3256	4883	6511	8953	9767	11964	13673	

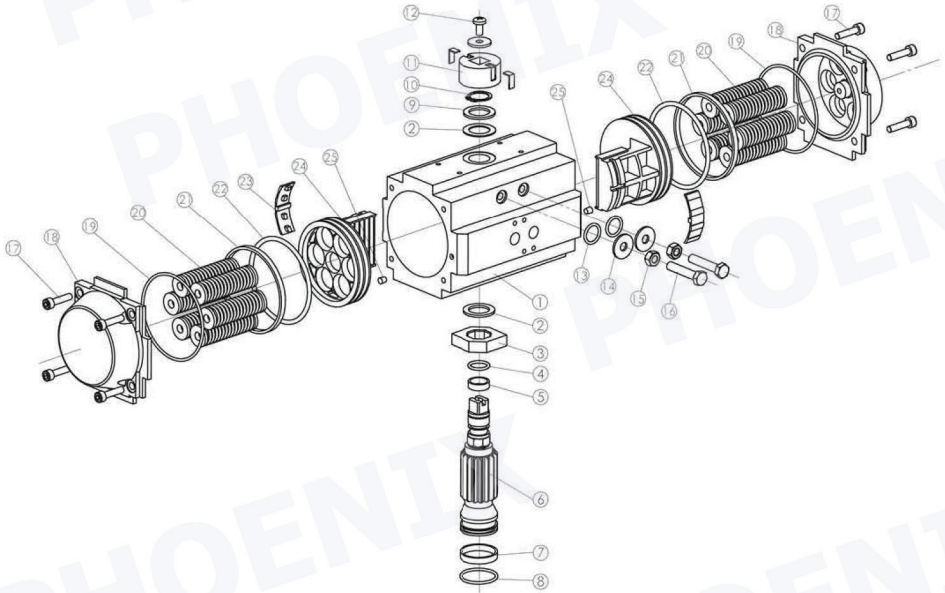


Dimensions



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Z	Φ	气源接口 Air connection
RCI052	30	41.5	65.5	72	92	65	30	80	Φ36	Φ50	M5x8	M6x10	11	14	147	Φ40	NAMUR G1/4"
RCI063	36	47	81	87.5	107.5	72	30	80	Φ50	Φ70	M6x10	M8x13	14	18	168	Φ40	NAMUR G1/4"
RCI075	42	53	94	99.5	119.5	81	30	80	Φ50	Φ70	M6x10	M8x13	14	18	184	Φ40	NAMUR G1/4"
RCI083	46	57	98.5	108.7	128.7	92	30	80	Φ50	Φ70	M6x10	M8x13	17	21	204	Φ40	NAMUR G1/4"
RCI092	50	58.5	111	116.5	136.5	98	30	80	Φ50	Φ70	M6x10	M8x13	17	21	262	Φ40	NAMUR G1/4"
RCI105	57.5	64	122.5	133	153	109.5	30	80	Φ70	Φ102	M8x13	M10x16	22	26	268	Φ40	NAMUR G1/4"
RCI125	67.5	74.5	145.5	155	175	127.5	30	80	Φ70	Φ102	M8x13	M10x16	22	26	301	Φ55	NAMUR G1/4"
RCI140	75	77	161	172	192	137.5	30	80	Φ102	Φ125	M10x16	M12x20	27	31	390	Φ55	NAMUR G1/4"
RCI160	87	87	184	197	217	158	30	80	Φ102	Φ125	M10x16	M12x20	27	31	458	Φ55	NAMUR G1/4"
RCI190	103	103	213	230	260	189	30	130		Φ140		M16x25	36	40	525	Φ80	NAMUR G1/4"
RCI210	113	113	235.5	255	285	210	30	130		Φ140		M16x25	36	40	532	Φ80	NAMUR G1/4"
RCI240	130	130	264.5	289	319	245	30	130		Φ165		M20x25	46	50	602	Φ80	NAMUR G1/4"
RCI270	147	147	299	326	356	273	30	130		Φ165		M20x25	46	50	722	Φ80	NAMUR G1/2"
RCI300	162	162	348	348	378	324	30	130	Φ165	Φ254	M20x25	8-M16x25	46	55	742	Φ80	NAMUR G1/2"
RCI350	190	190	402	402	432	380	30	130	Φ165	Φ254	M20x25	8-M16x25	46	55	860	Φ80	NAMUR G1/2"
RCI400	260	260	440	464	494	470	30	130	Φ165	Φ254	M20x25	8-M16x25	46	55	945	Φ80	NAMUR G1/2"

Parts List



No.	Name	Materials	No.	Name	Materials	No.	Name	Materials	No.	Name	Materials
1	Body	Aluminium alloy	8	O-ring	NBR	15	Nut	Stainless steel	22	O-ring	NBR
2	Bearing	Polymer	9	Gasket	Stainless steel	16	Bolt	Stainless steel	23	Guide bearing	Polymer
3	Stopper	45	10	Snap ring	65Mn	17	Bolt	Stainless steel	24	Piston	Aluminium alloy
4	O-ring	NBR	11	Position indicator	Polymer	18	End cap	Aluminium alloy	25	Plug	Rubber
5	Bearing	Polymer	12	Screw	Stainless steel	19	O-ring	NBR			
6	Shaft	45HCr	13	O-ring	NBR	20	Spring	60Si2Mn			
7	Bearing	Polymer	14	Gasket	Stainless steel	21	Bearing	PTFE			

Operating Conditions

1. Operating media

Dry or lubricated air, or the non-corrosive gases. The maximum particle diameter must less than 30 μm.

2. Air supply pressure

The minimum supply pressure is 2.5 Bar. The maximum supply pressure is 8 Bar.

3. Operating temperature

Standard : 20°C ~ 80°C

Low temperature: -35°C ~ 80°C

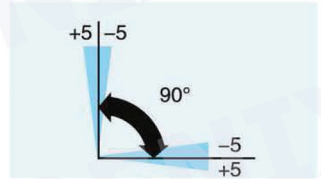
High temperature: -15°C ~ 150°C

4. Travel adjustment

Have adjustment range of ±5° for the rotation at 0° and 90°

5. Application

Either indoor or outdoor



Air Consumption

Air volume opening% closing					
Model	Air volume opening (L)	Air volume closing (L)	Model	Air volume opening(L)	Air volume closing (L)
RCI032	0.04	0.05	RCI160	3.2	3.7
RCI052	0.12	0.16	RCI190	5.4	5.9
RCI063	0.21	0.23	RCI210	7.5	7.5
RCI075	0.3	0.34	RCI240	9	11
RCI083	0.43	0.47	RCI270	14	17
RCI092	0.64	0.73	RCI300	23.8	29.7
RCI105	0.88	0.95	RCI350	35.1	46.3
RCI125	2.5	2.2	RCI400	52.6	56
RCI140	3.2	3.7			

Air consumption of dual action actuator (L/min) = air volume (Air volume opening + air volume closing) x (air supply (Kpa)+101.3)÷101.3 x action cycle times (L/min)

Air consumption of single action actuator (L/min)=air volume opening x ((air supply (Kpa)=101.3) ÷101.3 x action cycle times (L/min)

The Weight of Actuators

Model	RCI032DA/SR	RCI052DA/SR	RCI063DA/SR	RCI075DA/SR	RCI083DA/SR	RCI092DA/SR	RCI105DA/SR	RCI125DA/SR								
Similar weight(kg)	0.7	1.4	1.5	2.0	2.1	2.7	2.9	3.1	3.6	4.6	5.2	6.8	6.9	8.9	10.1	
Model	RCI140DA/SR	RCI160DA/SR	RCI190DA/SR	RCI210DA/SR	RCI240DA/SR	RCI270DA/SR	RCI300DA/SR	RCI350DA/SR								
Similar weight(kg)	13	15	20	24	31	35	47	55	67	80	97	118	186	234	289	360

The ATM Series Declutchable gear operator

Description:

The ATM Series declutchable gear operators offer simple and reliable manual positioning of valves, dampers and other quarter-turn devices when overriding, existing pneumatic rotary actuators. All ATM are suitable for indoor and outdoor use and combine rugged construction, light weight and modular design to provide the most efficient and cost effective solution to a full range of manual override requirements.

The self-locking worm gear design means safe and easy operation, positive manual positioning and extremely long life.



Operation:

To engage manual operation, first pull out the spring loaded clutch lever, then rotate the clutch lever clockwise until engagement takes place. Anticlockwise lever movement disengages manual operation and returns the system to automatic operation.

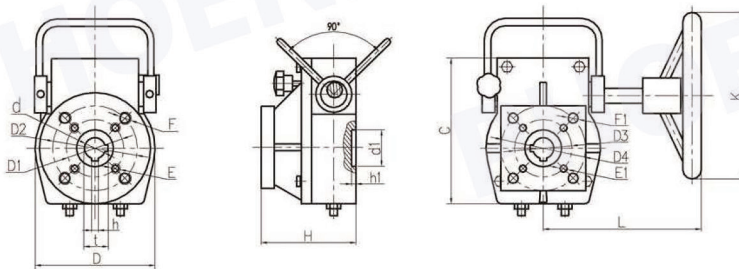
Note : When under manual control, the valve remains locked in the last set position.

Stroke adjustment:

The CTM gearbox is equipped with two stroke adjustment bolts. These must be set for accurate valve positioning and to avoid damage to the actuator or valve spigole during manual operation. The limit stops on actuators are redundant in combination with CTM- gearboxes.

Connection dimension (mm)

Indication of closed position



Model	Connected with valve							Connected with actuator				Dimensions				Weight (Kg)	Output torque (N.m)				
	d _{H10}	t ^{+0.2} ₀	h _{D10}	D1	D2	E	F	d1	h1	D3	D4	E1	F1	C	D			H	K		
ATM 26A	Φ18	20.8	6	Φ70	4-M8		Φ36	2	Φ70	4-Φ9			130	104	72	Φ200	143	3.5	300		
ATM 26B	Φ22	2.25	5.8	Φ70	4-M8		Φ36	2	Φ70	4-Φ9			130	104	72	Φ200	177	3.8	300		
ATM 38A	Φ22	2.25	5.8	Φ70	4-M8		Φ45	3	Φ70	4-Φ9			156	125	80	Φ200	190	6.8	510		
ATM 38B	Φ32	35.3	10	Φ70	Φ102	4-M8	4-M10	Φ45	3	Φ70	Φ102	4-Φ9	4-Φ12	156	125	80	Φ200	325	7.3	500	
ATM 38C	Φ38	41.3	10		Φ102		4-M10	Φ60	3		Φ125	4-Φ14		156	125	83	Φ250	395	8.2	600	
ATM 38D	Φ45	48.8	14		Φ102		4-M10	Φ60	3		Φ140	4-Φ18		156	125	89	Φ300	400	9.1	700	
ATM 54A	Φ36	39.3	10		Φ102	Φ125	4-M10	4-M12	Φ70	2	Φ102	Φ125	4-Φ12	4-Φ14	199	175	87	Φ250	143	13.3	1000
ATM 54B	Φ48	51.8	14		Φ102	Φ140	4-M10	4-M16	Φ70	2	Φ140	4-Φ18		199	175	96	Φ300	177	15.8	1200	
ATM 54C	Φ60	64.4	18			Φ140	4-M16	Φ85	2		Φ165	4-Φ22		199	175	104	Φ300	190	17.6	1200	
ATM 80A	Φ48	51.8	14		Φ140		4-M16	Φ85	1.5	Φ140	4-Φ18			279	234	117	Φ300	325	36.5	1600	
ATM 80B	Φ60	64.4	18		Φ165		4-M20	Φ85	1.5	Φ165	4-Φ22			279	234	117	Φ400	395	40.2	2000	
ATM 80C	Φ31	8.35	8		Φ108		4-M12	Φ70	1.5	Φ108	4-Φ14			279	234	114	Φ400	400	40.8	2000	
ATM 78A	Φ48	51.8	14		Φ140		4-M20	Φ70	1.5	Φ140	4-Φ18			322	276	122	Φ600	190	51.4	3100	
ATM 78B	Φ60	64.4	18		Φ165		4-M20	Φ85	1.5	Φ165	4-Φ22			322	276	122	Φ600	325	54.8	3100	
ATM 78C	Φ76	2.85	7	19.05	Φ165		4-M20	Φ110	1.5	Φ165	4-Φ22			322	276	122	Φ600	395	56.3	3100	
ATM 78D	Φ76	2.81	1	20	Φ165		4-M20	Φ110	1.5	Φ165	4-Φ22			322	276	122	Φ600	400	57.2	3100	