SIL3 DNV CE Ex DNV ISO 9001

POFCO

Pneumatic Actuator

RCI Series

VALVE AUTOMATION

POFCO

RCI 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.
- ±5° stroke position adjustable bolt.
- Single and double acting type.
- 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 vavle types.
- Single and double acting both include the option for a manual device.

Application

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

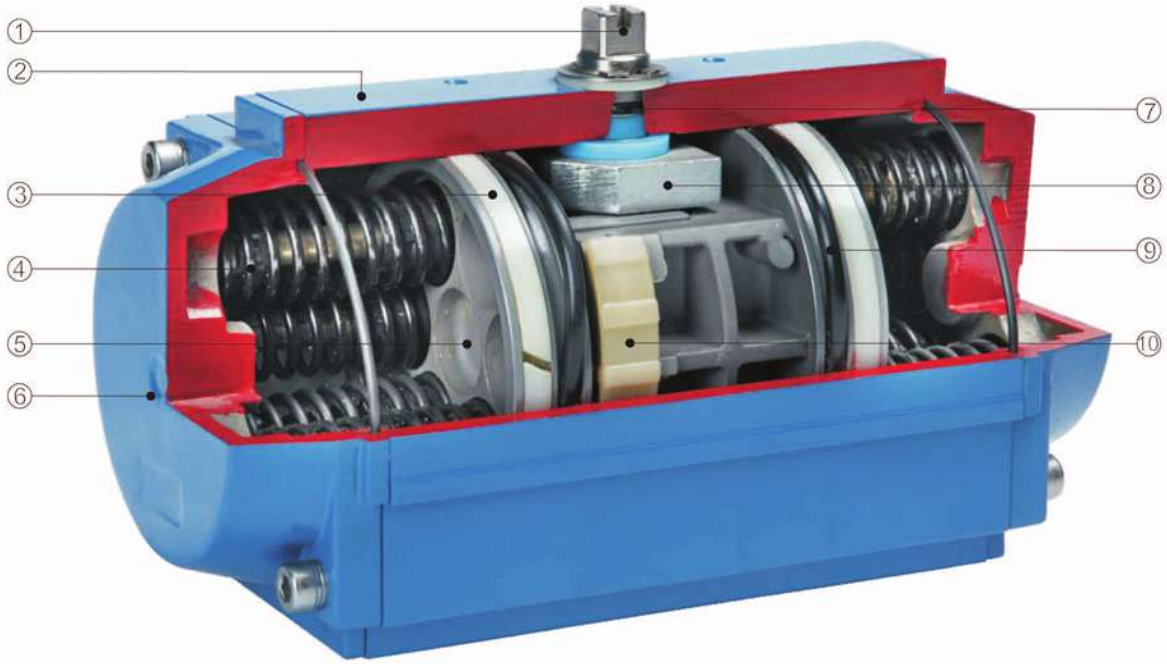
Technical data

Double acting

Supply pressure: 0.3MPa ~0.7MPa
Rotation angle: -5° ~ +95°
Output torque: 12.5N.m ~ 11964N.m
Temperature : -20℃ ~ +80℃
Weight: 1.4Kg ~ 97Kg

Single acting

Supply pressure: 0.3MPa ~ 0.7MPa
Rotation angle: -5° ~ + 95°
Output torque: 4N.m ~ 4101N.m
Temperature : -20℃ ~ +80℃
Weight: 1.45Kg ~ 118Kg



Parts list

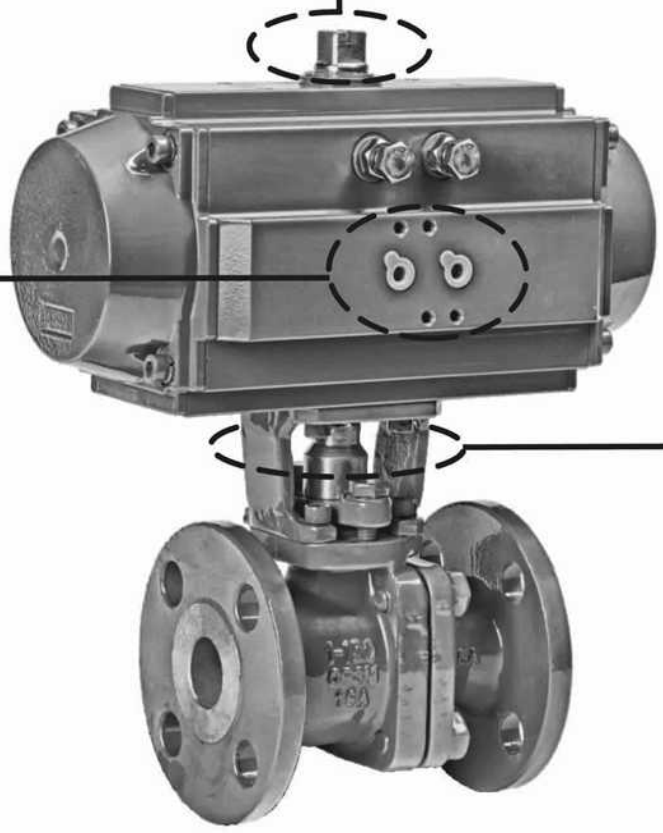
NO.	Name	Materials	Features
1	Stem	45HCr	Hard chrome plating,Resistant to tear and wear
2	Body	Aluminum alloy	Compact design and excellent strengh
3	Guide ring	PTFE	Excellent performance,Resistant to tear and wear
4	Spring	60Si2Mn	high fatigue resistance, demands small installation space
5	Piston	Aluminum alloy	Light weight and pressure resistant, Low thrust loss
6	End cover	Aluminum alloy	One-piece design ,Excellent strength
7	O-spring	NBR	Excellent water resistance
8	Stopper	45	Excellent strength and effectively assure rotating in 90°
9	O-spring	NBR	Excellent water resistance
10	Guide bearing	Polymer	Resistant to tear and wear, guides the piston movement

Limit switch

Positioner

Manual device

Filter Regulator



Solenoid valve

Complete set

Configuration of the model No.for the RCI series

RCI	125	SR	K10	- L
①	②	③	④	⑤

1 - Actuator series: RCI

2 - Actuator model

Double acting: 052,063,075,083,092,105,125,140,160,190,210,240,270,300,350,400

Single acting: 052S,063S,075S,083S,092S,105S,125S,140S,160S,190S,210S,240S, 270S,300S,350S,400S

3 - Actuator type

DA : Double acting, supply pressure: 0. 3 – 0. 7MPa

SR : Single acting, supply pressure: 0. 3 – 0. 7MPa

4 - Qty. of Springs

K1,K2,K3,K4,K5,K6,K7,K8,K9,K10,K11,K12

5 – Special specification (option)

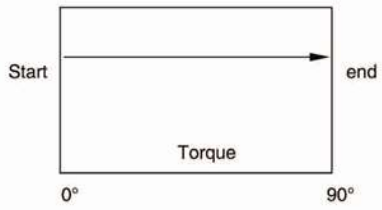
Signless: Normal temperature -20℃-+80℃

H: High temperature0℃ -+120℃

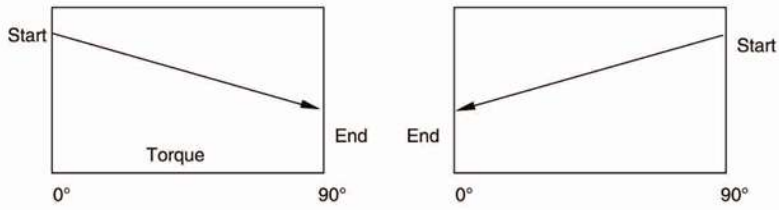
L : Low temperature -45℃- +60℃

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

Output Torque of Single Acting

unit: Nm

Output Torque of Spring Return Actuators

Model	Qty.of Spring	Output torque of air to springs														Torque of Spring	
Air Pressure		2.5Bar		3Bar		4Bar		5Bar		6Bar		7Bar		8Bar			
		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	90° Start	0° End
RCI052	K5	5.7	3.8	7.6	5.7											6.2	4.3
	K6	4.9	2.5	6.9	4.5	10.9	8.5									7.4	5.0
	K7	4.0	1.3	6.0	3.3	9.8	7.3	14.0	10.4							8.6	5.9
	K8			5.2	2.0	9.2	6.0	13.2	9.1	17.2	14.1					9.9	6.7
	K9			4.3	0.8	8.3	4.8	12.3	7.9	16.3	12.8	20.3	16.8			11.1	7.6
	K10					7.4	3.6	11.5	6.7	15.5	11.6	19.5	15.6			12.4	8.5
	K11					6.6	2.3	10.6	5.4	14.6	10.4	18.6	14.3	22.6	18.3	13.6	9.3
	K12							9.7	4.2	13.8	9.1	17.8	12.2	21.8	17.1	14.8	10.2
RCI063	K5	11.4	7.7	15.0	11.4	22.3	14.9									10.4	6.8
	K6	10.1	5.7	13.6	9.3	20.9	16.6	28.3	23.9							12.5	8.2
	K7	8.6	3.6	12.5	7.2	19.5	14.5	26.8	21.9							14.6	9.6
	K8			10.9	5.1	18.2	12.4	25.5	19.8	32.8	27.0	40.1	34.3			16.7	10.9
	K9					16.8	10.4	24.1	17.7	31.4	24.9	38.7	32.2			18.8	12.3
	K10					1.4	8.2	22.8	15.6	30.0	22.8	37.3	30.1	44.7	37.4	20.9	13.7
	K11							21.5	13.5	28.7	20.7	36.0	28.0	43.3	35.3	22.9	15.0
	K12							20.0	11.4	27.3	18.6	34.6	25.9	41.9	33.3	25.0	16.4
RCI075	K5	14.5	10.6	19.4	15.5	29.5	25.7									14.5	10.5
	K6	12.4	7.6	17.3	12.6	27.4	22.7	37.5	32.8							17.4	12.7
	K7	10.4	4.8	15.2	9.7	25.3	19.9	35.4	29.9							20.3	14.8
	K8			13.1	6.8	23.1	16.9	33.3	27.0	43.2	37.0	53.3	47.0			23.2	16.9
	K9					21.0	14.1	31.2	24.1	41.1	34.1	51.2	44.2			26.1	19.0
	K10					19.0	11.1	28.8	21.2	39.0	31.2	49.1	41.2	59.1	51.2	29.0	21.1
	K11							27.0	18.3	37.0	28.3	47.0	38.4	57.0	48.4	31.9	23.2
	K12							24.9	15.4	34.9	25.4	44.9	35.4	54.9	45.4	34.7	25.3
RCI083	K5	23.3	16.1	31.1	24.0	46.8	39.7									23.0	15.8
	K6	20.1	11.5	28.0	19.3	43.7	35.1	59.4	50.7							27.6	19.0
	K7	17.0	6.9	24.8	14.8	40.5	30.5	56.2	46.2							32.2	22.1
	K8			21.7	10.1	37.4	25.8	53.1	41.5	68.8	57.2	84.5	72.9			36.8	25.3
	K9					34.2	21.3	49.9	37.0	65.6	52.6	81.2	68.3			41.4	28.5
	K10					31.0	16.6	46.7	32.3	62.4	48.0	78.1	63.7	93.8	79.3	46.0	31.6
	K11							43.6	27.7	59.3	43.4	75.0	59.1	90.6	74.8	50.6	34.8
	K12							40.4	23.2	56.1	38.9	71.7	54.5	87.4	70.2	55.2	38.0
RCI092	K5	33.1	22.0	44.2	33.2	66.8	55.9									34.4	23.3
	K6	28.4	15.2	39.6	26.4	62.2	49.0	84.8	71.6							41.2	28.0
	K7	23.8	8.2	34.9	19.4	57.5	42.1	80.2	64.7							48.1	32.7
	K8			31.3	12.6	52.9	35.2	75.5	57.9	98.1	80.5	120.7	103.0			55.0	37.3
	K9					48.2	28.4	70.9	51.0	93.5	73.6	116.0	96.1			61.9	42.0
	K10					43.6	21.5	66.2	44.1	88.8	66.7	111.3	89.2	134.0	111.8	68.7	46.7
	K11							61.5	37.2	84.1	59.9	106.6	82.4	129.2	105.0	75.6	51.4
	K12							56.8	30.4	79.4	53.0	101.9	75.5	124.5	98.0	82.5	56.0
RCI105	K5	51.0	33.4	67.5	49.9	100.6	83.0									49.2	31.6
	K6	44.7	23.5	61.1	40.0	94.2	73.2	127.3	106.2							59.1	38.0
	K7	38.4	13.7	54.9	30.3	87.9	63.4	121.0	96.4							68.9	44.3
	K8			48.5	20.4	81.6	53.5	114.7	86.5	147.7	119.6	180.8	152.7			78.7	50.6
	K9					75.3	43.7	108.4	76.8	141.5	109.8	174.5	142.9			88.6	56.9
	K10					68.9	33.4	102.0	66.5	135.1	99.6	168.2	132.6	201.2	165.7	98.4	63.3
	K11							95.7	57.0	128.7	90.1	161.8	123.1	194.8	156.2	108.3	69.6
	K12							89.4	47.5	122.5	80.6	155.5	113.6	188.6	146.7	118.1	75.9
RCI125	K5	73	47	98	72	148	122									79	52
	K6	63	31	88	56	138	107	188	157							94	63
	K7	52	15	77	40	127	90	178	141							110	73
	K8			67	25	117	75	167	125	217	176	268	226			125	84
	K9					107	59	157	109	207	159	257	210			141	94
	K10					96	44	146	94	196	144	247	194	297	245	157	105
	K11							136	78	186	128	236	178	286	228	173	115
	K12							125	63	176	113	226	163	276	213	188	125
RCI140	K5	128	85	171	127	256	213									129	86
	K6	111	59	154	102	239	187	325	273							155	103
	K7	94	33	137	76	222	162	308	247							181	120
	K8			120	50	205	136	291	221	376	307	462	392			206	137
	K9					187	110	273	196	358	281	444	367			232	155
	K10					170	84	256	169	341	255	427	340	512	426	258	172
	K11							238	143	324	229	409	314	495	400	284	189
	K12							221	118	307	203	392	289	478	374	310	206

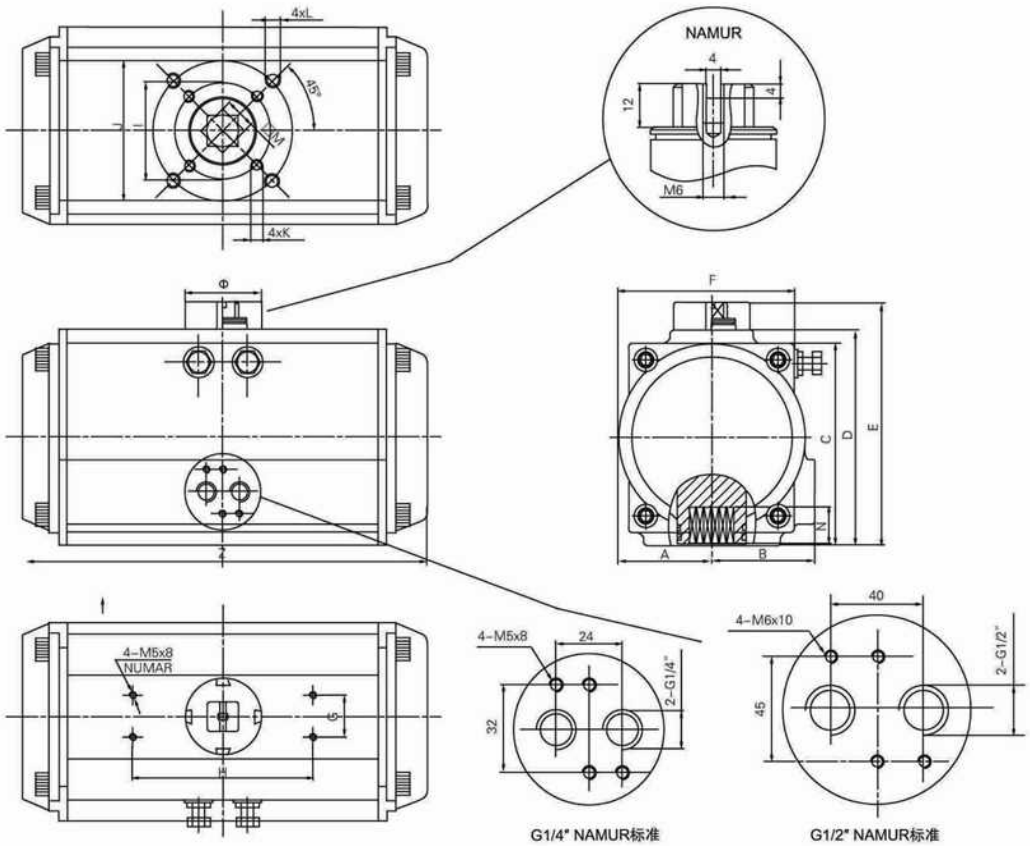
Output Torque of Single Acting

unit: Nm

Output Torque of Spring Return Actuators

Model	Qty.of Spring	Output torque of air to springs														Torque of Spring	
Air Pressure		2.5Bar		3Bar		4Bar		5Bar		6Bar		7Bar		8Bar			
		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	90° Start	0° End
RCI160	K5	193	124	259	191	392	324									208	140
	K6	165	83	232	149	365	282	498	415							250	168
	K7	137	41	203	107	336	240	469	373							292	196
	K8			176	66	309	199	442	237	575	465	708	598			333	223
	K9					280	157	413	290	546	423	679	556			375	251
	K10					253	115	386	248	519	381	652	514	785	647	417	279
	K11							358	207	491	340	624	473	757	606	458	307
	K12							330	165	463	298	596	431	729	564	500	335
RCI190	K5	332	222	438	329	651	542									309	200
	K6	292	161	398	267	611	480	824	693							371	240
	K7	252	99	358	205	571	418	784	631							433	280
	K8			318	143	531	356	744	569	957	782	1169	995			495	320
	K9					491	295	704	507	917	720	1130	933			557	360
	K10					451	233	664	446	877	658	1090	871	1302	1084	618	400
	K11							624	384	837	597	1050	809	1263	1022	680	440
	K12							584	322	797	535	1010	748	1223	960	742	480
RCI210	K5	390	285	523	418	789	684									380	275
	K6	335	209	468	342	734	608	1000	874							456	330
	K7	280	133	413	266	679	532	945	798							532	385
	K8			358	190	624	456	890	722	1156	988	1422	1254			608	440
	K9					569	380	835	646	1101	912	1367	1178			684	495
	K10					514	304	780	570	1046	836	1312	1102	1578	1368	760	550
	K11							725	494	991	760	1257	1026	1523	1292	836	605
	K12							670	418	936	684	1202	950	1468	1216	912	660
RCI240	K5	552	409	744	600	1129	985									554	410
	K6	470	297	662	489	1047	874	1432	1259							665	492
	K7	388	187	580	379	964	764	1349	1149							775	575
	K8			498	268	883	653	1267	1037	1652	1422	2037	1807			886	656
	K9					800	542	1185	926	1569	1311	1954	1696			998	739
	K10					718	431	1103	816	1488	1201	1872	1586	2257	1970	1108	821
	K11							1021	705	1406	1090	1791	1474	2176	1859	1219	903
	K12							939	594	1323	979	1708	1363	2093	1748	1330	985
RCI270	K5	903	675	1195	968	1779	1552									787	560
	K6	790	519	1083	811	1667	1396	2252	1981							943	672
	K7	679	361	972	654	1556	1238	2141	1823							1101	783
	K8			860	497	1444	1081	2029	1666	2614	2252	3199	2836			1258	895
	K9					1332	923	1917	1509	2502	2094	3087	2678			1416	1007
	K10					1220	767	1805	1352	2390	1937	2974	2521	3560	3107	1572	1119
	K11							1693	1194	2278	1779	2862	2364	3448	2949	1730	1231
	K12							1582	1037	2167	1623	2751	2207	3336	2792	1887	1342
RCI300	K5	1097	729													1061	730
	K6	935	494	1316	875											1273	876
	K7	772	258	1153	639	1916	1402									1485	1022
	K8			991	403	1754	1166	2517	1929							1697	1168
	K9					1592	930	2355	1693	3118	2456					1909	1314
	K10					1430	695	2193	1458	2956	2221	3719	2984	4482	3747	2122	1460
	K11							2030	122	2793	1985	3556	2748	4319	3511	2334	1606
	K12							1868	986	2631	1749	3394	2512	4157	3275	2546	1752
RCI350	K5	1553	964													1702	1173
	K6	1292	586	1863	1157											2043	1408
	K7	1031	208	1602	779	2745	1922									2383	1642
	K8			1341	401	2484	1544	3626	2686							2724	1877
	K9					2224	1165	3336	2307	4508	3449					3064	2112
	K10					1963	787	3105	1929	4247	3071	5390	4214	6532	5356	3405	2346
	K11							2844	1551	3986	2693	5129	3836	6271	4978	3745	2581
	K12							2584	1172	3726	2314	4869	3457	6011	4599	4086	2816
RCI400	K8	1736	411	2550	1225											3292	2100
	K9			2259	768	3887	2396									3703	2362
	K10			1967	311	3595	1939	5223	3567							4115	2624
	K11					3303	1482	4931	3110	3559	4738					4526	2887
	K12					3012	1025	4640	2653	6268	4281	7895	5908	9523	7536	4938	3149
	K13							4348	2195	5976	3823	7603	5450	9231	7078	5349	3412
	K14							4057	1738	5685	3366	7312	4993	8940	6621	5761	3674
	K15							3765	1281	5393	2909	7020	4536	8648	6164	6172	3937
	K16									5101	2452	6728	4079	8356	5707	6584	4199

Dimensions

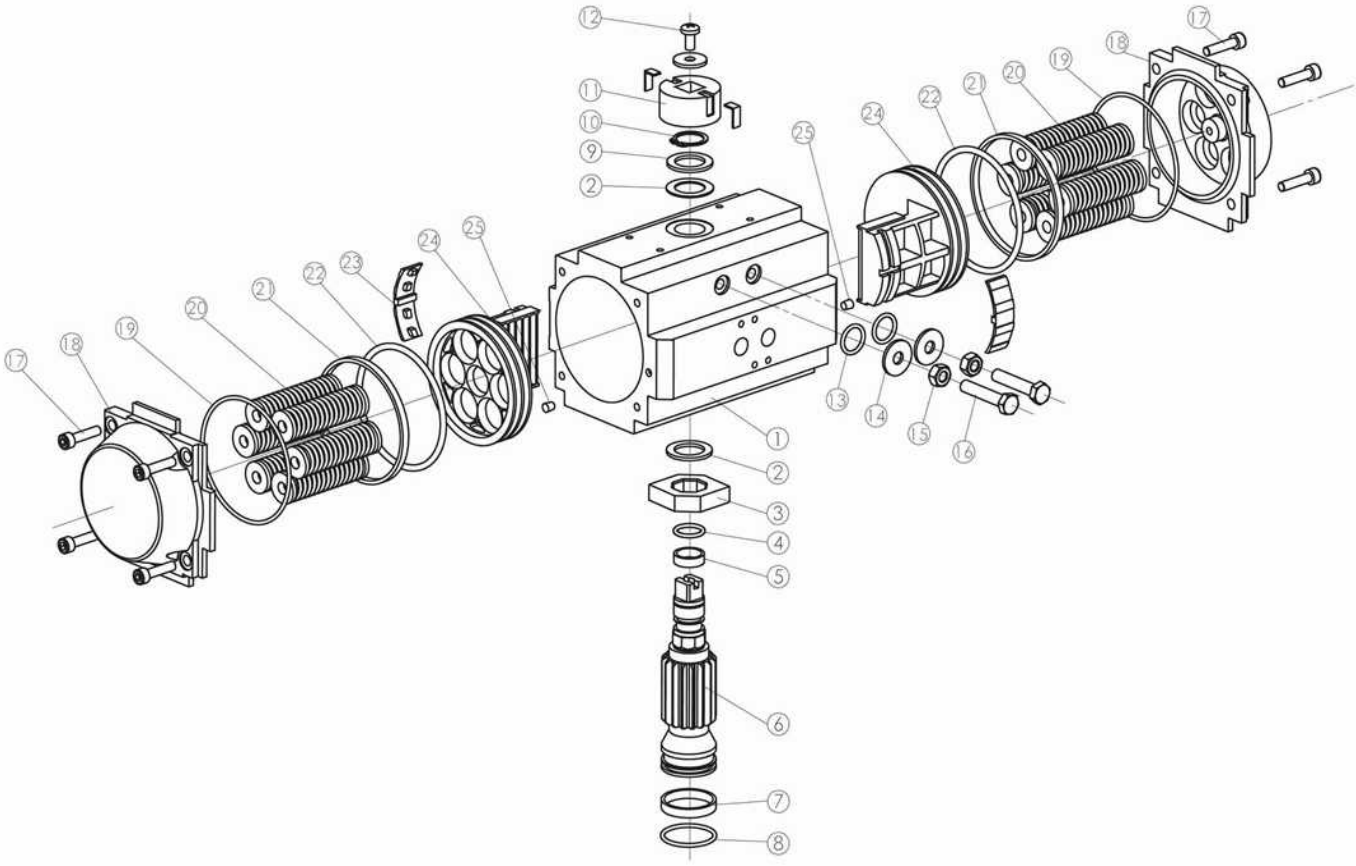


G1/4" NAMUR标准

G1/2" NAMUR标准

	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

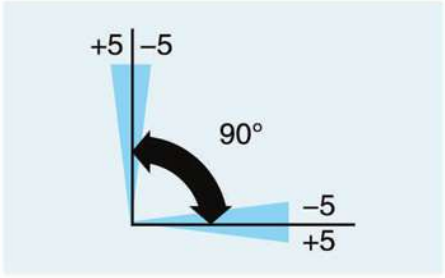
1. Operating media
Dry or lubricated air, or the non-corrosive gases. The maximum particle diameter must less than 30 μ m.

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

3. Operating temperature
Standard: 20℃ ~ +80℃
Low temperature: -35℃ ~ +80℃
High temperature: -15℃ ~ +150℃

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 volumc(Air volumc opening+air volume closing) × （(air supply(Kpa)+101.3) ÷ 101.3 ） × action cycle times(L/min).
Air consumption of single action actuator(L/min)=air volume opening × （(air supply(Kpa)+101.3 ） ÷ 101.3 × 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.

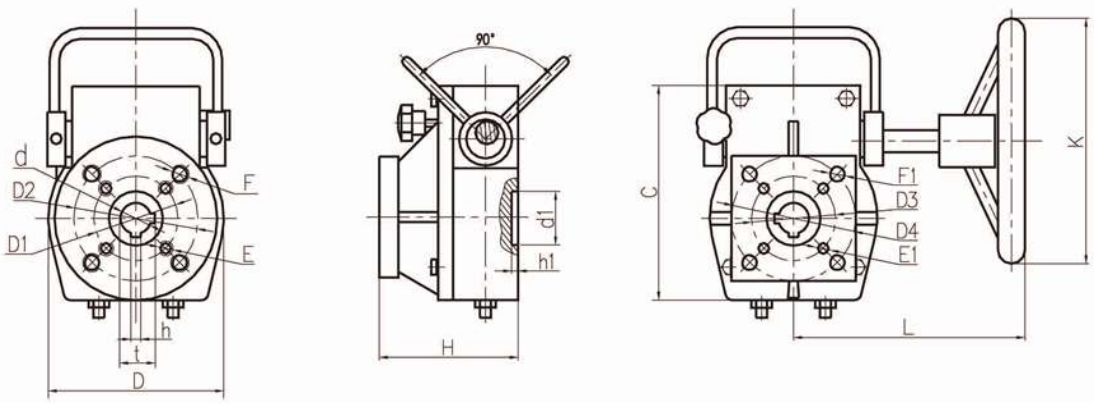
Operation:
To engage manual operation, first pull out the spring loaded clutch lever, then rotate the clutch lever clockwise until engagement takes place. Anticlockwise lever movement disengages manual operation and returns the system to automatic operation.

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 spindle 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	Output torque
	d_{H10}	$t^{+0.2}_{0}$	h_{D10}	D1	D2	E	F	d1	h1	D3	D4	E1	F1	C	D	H	K	L (Kg)	(N.m)
ATM26A	Φ18	20.8	6	Φ70		4-M8		Φ36	2	Φ70		4-Φ9		130	104	72	Φ200	143	3.5	300
ATM26B	Φ22.2	25.5	8	Φ70		4-M8		Φ36	2	Φ70		4-Φ9		130	104	72	Φ200	177	3.8	300
ATM38A	Φ22.2	25.5	8	Φ70		4-M8		Φ45	3	Φ70		4-Φ9		156	125	80	Φ200	190	6.8	510
ATM38B	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
ATM38C	Φ38	41.3	10		Φ102		4-M10	Φ60	3		Φ125		4-Φ14	156	125	83	Φ250	395	8.2	600
ATM38D	Φ45	48.8	14		Φ102		4-M10	Φ60	3		Φ140		4-Φ18	156	125	89	Φ300	400	9.1	700
ATM54A	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
ATM54B	Φ48	51.8	14	Φ102	Φ140	4-M10	4-M16	Φ70	2		Φ140		4-Φ18	199	175	96	Φ300	177	15.8	1200
ATM54C	Φ60	64.4	18		Φ140		4-M16	Φ85	2		Φ165		4-Φ22	199	175	104	Φ300	190	17.6	1200
ATM80A	Φ48	51.8	14	Φ140		4-M16		Φ85	1.5	Φ140		4-Φ18		279	234	117	Φ300	325	36.5	1600
ATM80B	Φ60	64.4	18	Φ165		4-M20		Φ85	1.5	Φ165		4-Φ22		279	234	117	Φ400	395	40.2	2000
ATM80C	Φ31.8	35	8	Φ108		4-M12		Φ70	1.5	Φ108		4-Φ14		279	234	114	Φ400	400	40.8	2000
ATM78A	Φ48	51.8	14	Φ140		4-M20		Φ70	1.5	Φ140		4-Φ18		322	276	122	Φ600	190	51.4	3100
ATM78B	Φ60	64.4	18	Φ165		4-M20		Φ85	1.5	Φ165		4-Φ22		322	276	122	Φ600	325	54.8	3100
ATM78C	Φ76.2	85.7	19.05	Φ165		4-M20		Φ110	1.5	Φ165		4-Φ22		322	276	122	Φ600	395	56.3	3100
ATM78D	Φ76.2	81.1	20	Φ165		4-M20		Φ110	1.5	Φ165		4-Φ22		322	276	122	Φ600	400	57.2	3100