

Type RA

Pneumatic Valve Actuator - Rack and Pinion

Designed for economical operation of ball, butterfly & plug valves and dampers



High Integrity Actuators & Controls

Industries Served

MATIC products are used for on/off and modulating control of valves and dampers across virtually every process industry worldwide.

- | | | |
|-------------|------------------|---------|
| • Oil & Gas | • Pharmaceutical | • Water |
| • Offshore | • Power | • Paper |
| • Marine | • Food | • Steel |
| • Chemical | • Brewing | • Sugar |



Controls and Accessories for Enhanced Performance

To complement our high-performance rack and pinion actuators, MATIC offers a full range of precision-engineered controls and accessories designed to ensure optimal functionality, safety, and seamless system integration.

Controls and Accessories Include:

Solenoid Valves – Compact and reliable solutions for fast, responsive actuator control. Available in standard, intrinsically safe, and explosion-proof versions.

Limit Switch Boxes – Designed and manufactured in-house, our Imtex Valve Communication range of valve position monitors provides accurate and durable valve position feedback. Available with mechanical or proximity sensors, in weatherproof and hazardous area enclosures, with SIL-rated options.

Position Transmitters – Imtex Valve Communication position transmitters deliver continuous and precise valve position signals, with models supporting analogue (4–20 mA), HART, or digital outputs for integration into modern control systems.

Electro-Pneumatic Positioners – For modulating control applications, MATIC offers a selection of high-accuracy positioners, including smart and fieldbus-compatible units tailored to the demands of the process industries.

Filter Regulators & Air Preparation Units – Ensure a clean, stable air supply to protect system components and maintain consistent actuator performance.

Quick Exhaust Valves & Flow Controls – Enhance actuator speed and allow fine-tuned control of open/close cycles to meet system timing requirements.

Manual Override Gearboxes – Enable safe and easy manual operation in the event of air or power failure, with various configurations available to suit your application.

All controls and accessories are carefully selected or engineered to integrate seamlessly with our actuators, ensuring long-term reliability in even the most demanding applications. Whether for standard on/off duties or complex modulating control, **MATIC Actuators** provides a complete automation package tailored to your project requirements.



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Pneumatic Valve Actuator - Rack and Pinion

The Matic Type RA Rack & Pinion Actuator combine the benefits of high cycle life, a rugged construction, extremely compact and symmetrical design with a unique range of features well suited for the actuation of quarter-turn valves (ball, butterfly and plug) and dampers. The actuator relies on proven rack & pinion technology and is supplied in a number of sizes to best suit specific requirements. Double acting and spring return options are available. Accessories such as valve position monitors, solenoids and digital controllers to satisfy all the user's operational requirements can also be provided.

Features

- Double acting and spring return version
- Modular design with same body and end caps for double-acting and spring-return
- Rugged wear and corrosion resistant design
- Safe and easy maintenance
- Suitable for various services
- Number of optional features
- Wide torque range
- Long cycle life
- Fast and sensitive response
- Proven reliable design

Technical data

Operating parameters

Standard operating pressure range:
2 Barg to 8 Barg

Standard temperature range:
-20 °C to 80 °C (NBR Seals)

Low temperature
-50 °C to 80 °C (Silicone) and
high temperature -15 °C to 150 °C (Viton)
available on request.

Torque range

Double Acting 10 Nm to 10000 Nm
Spring Return 5 Nm to 3500 Nm
(end of spring)



Output Torque - Double Acting Unit: Nm

Air Supply Pressure (Unit bar)										
Model	2	3	3.5	4	4.5	5	5.5	6	7	8
RA040DA	5	6	9	10	11	13	14	15	18	20
RA052DA	8	10	14	16	18	20	22	24	28	32
RA063DA	15	19	26	30	34	38	41	45	53	60
RA075DA	20	25	35	40	45	50	55	60	70	80
RA083DA	31	39	54	62	70	78	85	93	109	124
RA092DA	45	56	79	90	101	113	124	135	158	180
RA105DA	66	83	116	132	149	165	182	198	231	264
RA125DA	100	125	175	200	225	250	275	300	350	400
RA140DA	171	214	299	342	385	428	470	513	599	684
RA160DA	266	333	466	532	599	665	732	798	931	1064
RA190DA	426	533	746	852	959	1065	1172	1278	1491	1704
RA210DA	532	665	931	1064	1197	1330	1463	1596	1862	2128
RA240DA	769	961	1346	1538	1730	1923	2115	2307	2692	3076
RA270DA	1170	1463	2048	2340	2633	2925	3218	3510	4095	4680
RA300DA	1526	1908	2671	3052	3434	3815	4197	4578	5341	6104
RA350DA	2285	2856	3999	4570	5141	5713	6284	6855	7998	9140



Output Torque - Spring Return Unit: Nm

Output Torque - Air Direction

Air pressure (Barg)		2.5		3		4		5		6		7		8		Output Torque Spring Direction	
Model	Spring Qty.	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
RA052SR	5	5.7	3.8	7.7	5.8	-	-	-	-	-	-	-	-	-	-	6.2	4.3
	6	4.9	2.5	6.9	4.5	11	8.4	-	-	-	-	-	-	-	-	7.4	5.0
	7	4.0	1.3	6.0	3.3	9.9	7.2	14	11	-	-	-	-	-	-	8.6	5.9
	8	-	-	5.2	2.0	9.2	6.0	13	9.9	17	14	-	-	-	-	9.9	6.7
	9	-	-	4.3	0.8	8.3	4.8	12	8.7	16	13	20	17	-	-	11	7.6
	10	-	-	-	-	7.4	3.6	11	7.6	15	12	19	16	-	-	12	8.5
	11	-	-	-	-	6.6	2.3	11	6.3	15	10	19	14	23	18	14	9.3
	12	-	-	-	-	-	-	9.7	4.2	14	8.0	18	12	22	16	15	10.2
RA063SR	5	11	7.7	15	11	22	19	-	-	-	-	-	-	-	-	10	6.8
	6	10	5.7	14	9.3	21	17	28	24	-	-	-	-	-	-	13	8.2
	7	8.6	3.6	12	7.2	20	15	27	22	-	-	-	-	-	-	15	9.6
	8	-	-	11	5	18	12	25	20	33	27	40	34	-	-	17	11
	9	-	-	-	-	17	10	24	18	31	25	39	32	-	-	19	12
	10	-	-	-	-	14	8	21	15	28	23	35	30	42	37	21	14
	11	-	-	-	-	-	-	22	14	29	21	36	28	43	35	23	15
	12	-	-	-	-	-	-	20	11	27	19	35	26	42	33	25	16
RA075SR	5	15	11	20	16	30	26	-	-	-	-	-	-	-	-	15	11
	6	12	8	17	13	27	23	38	33	-	-	-	-	-	-	17	13
	7	10	5	15	10	26	20	36	30	-	-	-	-	-	-	20	15
	8	-	-	13	7	23	17	33	27	43	37	53	47	-	-	23	17
	9	-	-	-	-	21	14	31	24	41	34	51	44	-	-	26	19
	10	-	-	-	-	19	11	29	21	39	31	49	41	59	51	29	21
	11	-	-	-	-	-	-	27	18	37	28	47	38	57	48	32	23
	12	-	-	-	-	-	-	25	15	35	25	45	35	55	45	35	25
RA083SR	5	23	16	31	24	47	40	-	-	-	-	-	-	-	-	23	16
	6	20	12	28	19	44	35	59	51	-	-	-	-	-	-	28	19
	7	17	7	25	15	40	30	56	46	-	-	-	-	-	-	32	22
	8	-	-	22	10	37	26	53	41	69	57	84	73	-	-	37	25
	9	-	-	-	-	34	21	50	37	66	53	81	68	-	-	41	29
	10	-	-	-	-	31	17	47	32	62	48	78	64	94	79	46	32
	11	-	-	-	-	-	-	44	28	59	43	75	59	91	75	51	35
	12	-	-	-	-	-	-	40	23	56	39	72	55	87	70	55	38
RA092SR	5	33	22	44	33	67	56	-	-	-	-	-	-	-	-	34	23
	6	28	15	40	26	62	49	85	72	-	-	-	-	-	-	41	28
	7	24	8	35	19	58	42	80	65	-	-	-	-	-	-	48	33
	8	-	-	31	13	54	35	77	58	100	80	123	103	-	-	55	37
	9	-	-	-	-	48	28	71	51	93	74	116	96	-	-	62	42
	10	-	-	-	-	44	22	66	44	89	67	111	89	134	112	69	47
	11	-	-	-	-	-	-	62	37	84	60	107	82	129	105	76	51
	12	-	-	-	-	-	-	57	30	79	53	102	76	124	98	83	56
RA105SR	5	51	33	68	50	101	83	-	-	-	-	-	-	-	-	49	32
	6	45	24	61	40	94	73	127	106	-	-	-	-	-	-	59	38
	7	38	14	55	30	88	63	121	96	-	-	-	-	-	-	69	44
	8	-	-	49	20	82	53	115	86	148	120	181	153	-	-	79	51
	9	-	-	-	-	75	44	108	77	141	110	174	143	-	-	89	57
	10	-	-	-	-	69	33	102	66	135	99	168	132	201	165	98	64
	11	-	-	-	-	-	-	96	57	129	90	162	123	195	156	108	70
	12	-	-	-	-	-	-	89	48	122	81	156	114	189	147	118	76
RA125SR	5	73	47	98	72	148	123	-	-	-	-	-	-	-	-	79	52
	6	63	31	88	56	139	106	189	156	-	-	-	-	-	-	94	63
	7	52	15	77	40	127	90	177	140	-	-	-	-	-	-	110	73
	8	-	-	67	25	117	75	168	125	218	175	268	225	-	-	125	84
	9	-	-	-	-	107	59	157	109	208	159	258	209	-	-	141	94
	10	-	-	-	-	96	44	146	94	197	145	247	195	297	245	157	105
	11	-	-	-	-	-	-	136	78	186	128	236	178	287	229	173	115
	12	-	-	-	-	-	-	125	63	175	113	225	163	275	214	188	125
RA140SR	5	128	85	171	128	256	213	-	-	-	-	-	-	-	-	129	86
	6	111	59	154	102	239	187	325	273	-	-	-	-	-	-	155	103
	7	94	33	137	76	222	161	308	247	-	-	-	-	-	-	181	120
	8	-	-	120	50	206	135	291	221	377	306	463	391	-	-	206	137
	9	-	-	-	-	187	110	273	196	358	281	444	367	-	-	232	155
	10	-	-	-	-	170	84	256	170	341	255	427	341	512	426	258	172
	11	-	-	-	-	-	-	238	143	323	228	409	314	494	399	284	189
	12	-	-	-	-	-	-	221	118	306	204	392	289	477	375	310	206

Output Torque - Spring Return Unit: Nm

Output Torque - Air Direction

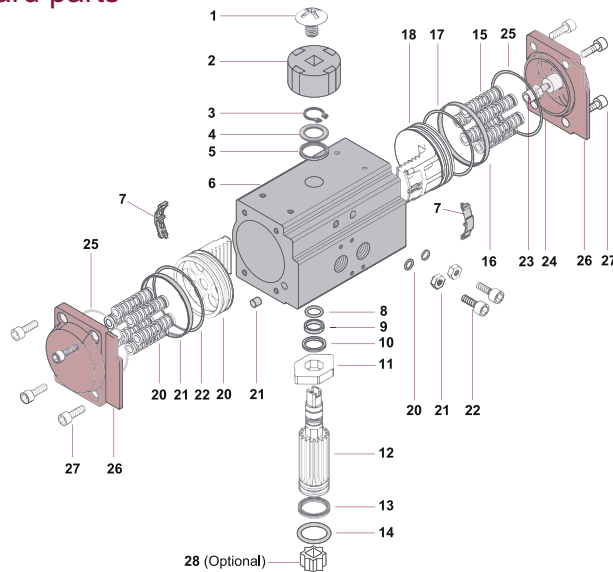
Air pressure (Barg)		2.5		3		4		5		6		7		8		Output Torque Spring Direction	
Model	Spring Qty.	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
		Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
RA160SR	5	193	124	260	190	393	323	-	-	-	-	-	-	-	-	208	140
	6	165	83	232	150	365	283	498	416	-	-	-	-	-	-	250	168
	7	137	41	204	108	337	241	470	374	-	-	-	-	-	-	292	196
	8	-	-	176	66	309	199	442	332	575	465	708	598	-	-	333	223
	9	-	-	-	-	280	157	413	290	546	423	678	556	-	-	375	251
	10	-	-	-	-	253	115	386	248	519	381	651	514	784	647	417	278
	11	-	-	-	-	-	-	358	207	491	340	624	473	757	606	458	307
	12	-	-	-	-	-	-	330	165	463	298	596	431	729	564	500	335
RA190SR	5	332	222	438	328	651	541	-	-	-	-	-	-	-	-	309	200
	6	282	161	386	267	595	480	804	693	-	-	-	-	-	-	371	240
	7	252	99	358	205	571	418	784	631	-	-	-	-	-	-	433	280
	8	-	-	318	143	531	356	743	568	956	781	1169	994	-	-	495	320
	9	-	-	-	-	491	295	704	508	917	721	1129	934	-	-	557	360
	10	-	-	-	-	451	233	664	446	877	659	1089	871	1302	1084	618	400
	11	-	-	-	-	-	-	624	384	837	597	1050	810	1262	1022	680	440
	12	-	-	-	-	-	-	584	322	797	535	1010	748	1222	960	742	480
RA210SR	5	390	285	523	418	789	684	-	-	-	-	-	-	-	-	380	275
	6	335	209	468	342	734	608	1000	874	-	-	-	-	-	-	456	330
	7	280	133	413	266	679	532	945	798	-	-	-	-	-	-	532	385
	8	-	-	358	190	624	456	890	722	1156	988	1422	1254	-	-	608	440
	9	-	-	-	-	569	380	835	646	1101	912	1367	1178	-	-	684	495
	10	-	-	-	-	514	304	780	570	1046	836	1312	1102	1578	1368	760	550
	11	-	-	-	-	-	-	725	494	991	760	1257	1026	1523	1292	836	605
	12	-	-	-	-	-	-	670	418	936	684	1202	950	1468	1216	912	660
RA240SR	5	552	409	744	602	1129	987	-	-	-	-	-	-	-	-	554	410
	6	470	297	662	489	1047	874	1432	1259	-	-	-	-	-	-	665	492
	7	388	187	581	379	966	764	1351	1149	-	-	-	-	-	-	775	575
	8	-	-	498	268	883	653	1267	1037	1652	1422	2037	1807	-	-	886	656
	9	-	-	-	-	800	542	1185	927	1570	1312	1954	1697	-	-	998	739
	10	-	-	-	-	718	431	1103	816	1488	1201	1872	1585	2257	1970	1108	821
	11	-	-	-	-	-	-	1021	705	1406	1090	1791	1475	2175	1859	1219	903
	12	-	-	-	-	-	-	939	594	1324	979	1709	1364	2093	1748	1330	985
RA270SR	5	903	675	1196	967	1781	1552	-	-	-	-	-	-	-	-	787	560
	6	790	519	1082	811	1667	1396	2252	1981	-	-	-	-	-	-	943	672
	7	679	361	971	653	1556	1238	2141	1823	-	-	-	-	-	-	1101	783
	8	-	-	860	479	1445	1058	2030	1637	2615	2216	3200	2795	-	-	1258	895
	9	-	-	-	-	1332	923	1917	1508	2502	2093	3086	2677	-	-	1416	1007
	10	-	-	-	-	1220	767	1805	1352	2390	1937	2974	2521	3559	3106	1572	1119
	11	-	-	-	-	-	-	1693	1197	2278	1782	2863	2368	3447	2953	1730	1231
	12	-	-	-	-	-	-	1582	1037	2167	1622	2752	2207	3336	2791	1887	1342
RA300SR	5	1097	729	1462	1087	2193	1803	-	-	-	-	-	-	-	-	1061	730
	6	935	494	1297	847	2022	1554	2746	2261	-	-	-	-	-	-	1273	876
	7	772	258	1131	607	1848	1304	2566	2001	-	-	-	-	-	-	1485	1022
	8	-	-	991	403	1711	1103	2430	1803	3150	2503	3870	3203	-	-	1697	1168
	9	-	-	-	-	1592	930	2319	1640	3045	2350	3772	3059	-	-	1909	1314
	10	-	-	-	-	1430	695	2153	1399	2875	2104	3598	2808	4320	3512	2122	1460
	11	-	-	-	-	-	-	2030	1222	2757	1933	3484	2644	4212	3356	2334	1606
	12	-	-	-	-	-	-	1868	986	2592	1692	3316	2399	4040	3105	2546	1752
RA350SR	5	1553	964	2098	1497	3189	2564	-	-	-	-	-	-	-	-	1702	1173
	6	1292	586	1832	1112	2912	2163	3992	3215	-	-	-	-	-	-	2043	1408
	7	1031	208	1566	726	2635	1763	3704	2799	-	-	-	-	-	-	2383	1642
	8	-	-	1341	401	2414	1443	3486	2484	4559	3526	5632	4568	-	-	2724	1877
	9	-	-	-	-	2224	1165	3308	2222	4392	3280	5476	4337	-	-	3064	2112
	10	-	-	-	-	1963	787	3040	1835	4118	2883	5195	3931	6272	4979	3405	2346
	11	-	-	-	-	-	-	2844	1551	3929	2610	5014	3669	6099	4729	3745	2581
	12	-	-	-	-	-	-	2584	1172	3664	2224	4744	3275	5824	4327	4086	2816



Type RA

Pneumatic Valve Actuator - Rack and Pinion

Standard parts



Item	Description	Material	Optional Material	Qty
1	Indicator Screw	ABS		1
2	Position Indicator	ABS		1
3	Spring Clip	304SS	316SS	1
4	Thrust Washer	304SS	316SS	1
5	Thrust Bearing	Engineered Plastic		1
6	Body	Extruded Aluminium/ Black Anodised	Epoxy Powder Coated	1
7	Thrust Bearing	Engineered Plastic		1
8	Travel Stop	304SS	316SS	1
9	O-Ring - Top Pinion	NBR	Silicone or Viton	1
10	Bearing - Top Pinion	Engineered Plastic		1
11	Pinion	304SS	316SS	1
12	Bearing	Engineered Plastic		1
13	Bearing - Bottom Pinion	Engineered Plastic		1
14	Hole Sealant	NBR	Silicone or Viton	2
15	O-Ring - Adjustment Screw	NBR	Silicone or Viton	2
16	Washer - Adjustment Screw	304SS	316SS	2
17	Nut - Adjustment Screw	304SS	316SS	2
18	Adjustment Screw	304SS	316SS	2
19	Piston	Die Cast Aluminium		2
20	Bearing - Piston	Engineered Plastic		2
21	Bearing - Piston	Engineered Plastic		2
22	O-Ring - Piston	NBR	Silicone or Viton	2
23	Spring	Spring Steel		0-12
24	O-Ring - End Cap	NBR	Silicone or Viton	2
25	End Cap	Die Cast Aluminium/ Polyester Painted		2
26	Cap Screw	304SS	316SS	8
27	Stop Screw	304SS	316SS	2
28	Reducing Sleeve	Zinc Plated	Stainless Steel	1

Approximate Weight (Kgs)

Size	DA	SR
RA040	1.0	-
RA052	1.4	1.5
RA063	2.0	2.1
RA075	2.7	2.9
RA083	3.3	3.6
RA092	5.0	5.5
RA105	5.9	6.7
RA125	9.0	10.4
RA140	12.0	14.4
RA160	19.0	23.3
RA190	39.1	46.1
RA210	44.1	53.1
RA240	59.0	73.3
RA270	93.0	115.9
RA300	110.0	130.0
RA350	186.5	234.4

Air Volume (litres)

Size	Opening	Closing
RA040	0.08	0.11
RA052	0.12	0.16
RA063	0.21	0.23
RA075	0.3	0.34
RA083	0.43	0.47
RA092	0.64	0.47
RA105	0.95	0.88
RA125	1.6	1.4
RA140	2.5	2.2
RA160	3.7	3.2
RA190	5.9	5.4
RA210	7.5	7.5
RA240	11.0	9.0
RA270	17.0	14.0
RA300	23.8	29.7
RA350	35.1	46.3

Typical Operating Speed (Secs)

Size	DA (0° -90°)	DA (90° -0°)	SR8 (0° -90°)	SR8 (90° -0°)
RA040	0.5	0.5	-	-
RA052	0.6	0.5	2.5	0.4
RA063	0.7	0.6	2.6	0.5
RA075	0.7	0.6	2.7	0.6
RA083	0.8	0.7	2.8	0.7
RA092	1.0	0.9	2.9	0.8
RA105	1.4	1.3	3.2	0.9
RA125	2.4	1.8	4.3	1.2
RA140	2.5	2.1	4.6	1.3
RA160	3.9	2.6	4.8	1.7
RA190	4.6	3.5	5.8	3.5
RA210	5.5	4.4	8.4	4.6
RA240	8.4	8.3	16.5	5.1
RA270	10.9	8.5	17.6	6.2
RA300	O.A.	O.A.	O.A.	O.A.
RA350	O.A.	O.A.	O.A.	O.A.



High Integrity Actuators & Controls