



The **EA actuators** series is designed for quarter turn applications on **RuB** ball valves in a compact and lightweight design. They can be supplied single (spring return) or double acting with a wide range of output torques offering a complete valve automation solution.

EA actuator has a patented guide bar which keeps the rack and pinion gear teeth in perfect engagement in all directions of operations. The contact between the teeth is pure rolling contact – no rubbing or friction which means minimum wear and long cycle life.

Superior appearance and better corrosion resistance. It has a dense jet black anodized finish which makes the EA line suitable for indoor and outdoor applications.

Actuators are designed in compliance with the following standards:

- ISO 5211 - Actuator to Valve Interface Standard
- VDI/VDE 3845 - Standard for Namur mounting of accessories (switchboxes, solenoid valves, positioners)
- ATEX - Explosive Atmosphere Directive (2014/34/EU)
- PED - Pressure Equipment Directive (97/23/CE)

Technical features

- ISO 5211 direct mount on valve
- Indoor or outdoor installation
- Pilot ring for perfect alignment of shaft and stem
- Nickel plated steel shaft
- Stainless steel fasteners
- High tensile long life return springs
- Visual position indicator
- Fast field conversion between double acting and spring return, fail open or fail closed
- Minimum ambient temperature while actuator is at rest: -35°C (-31°F)
- NAMUR pads for direct mount of solenoid and limit switch
- Extruded aluminum body hard anodized cylinder bore rock hard and glass smooth

Ordering Codes:

Code	ISO5211 Flange	Square shaft (mm)
EAx-1	F03	9
EAx-2	F03/05	9
EAx-2A	F03/05	11
EAx-2B	F04	11
EAx-3	F05/07	14
EAx-4	F05/07	14
EAx-5	F05/07	17
EAx-6	F07/10	17
EAx-7	F07/10	22

Note for code:

x=2 for metric threads; 4 for Imperial threads

Accessories

- Limit switch box
- Solenoid valves
- Visual position indicator
- Link kit
- Springs



Limit switch box



Solenoid valve



Springs



Visual position indicator



Link kit

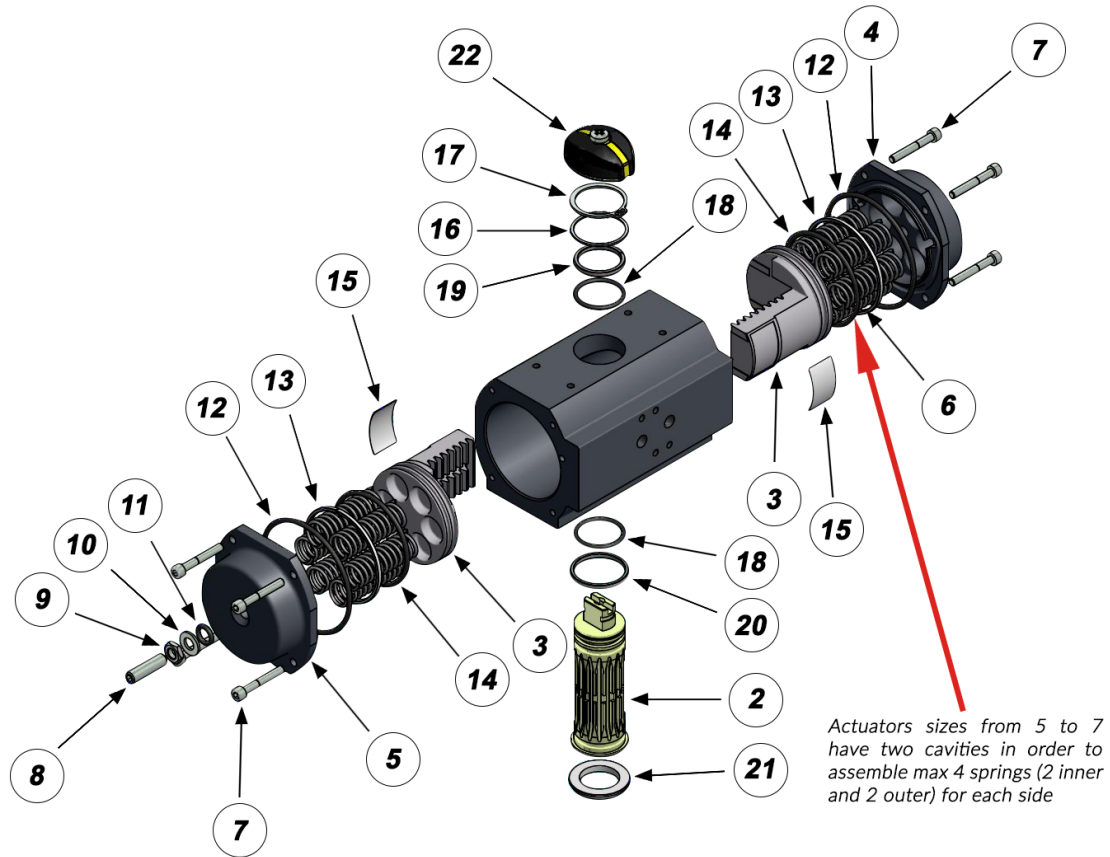
Ask for additional information on the whole range of **BONOMI INDUSTRIES** products and consult with your supplier for special applications.



Auxiliary switches Code	Description
EA2-LS	Auxiliary switches box



Construction and materials:



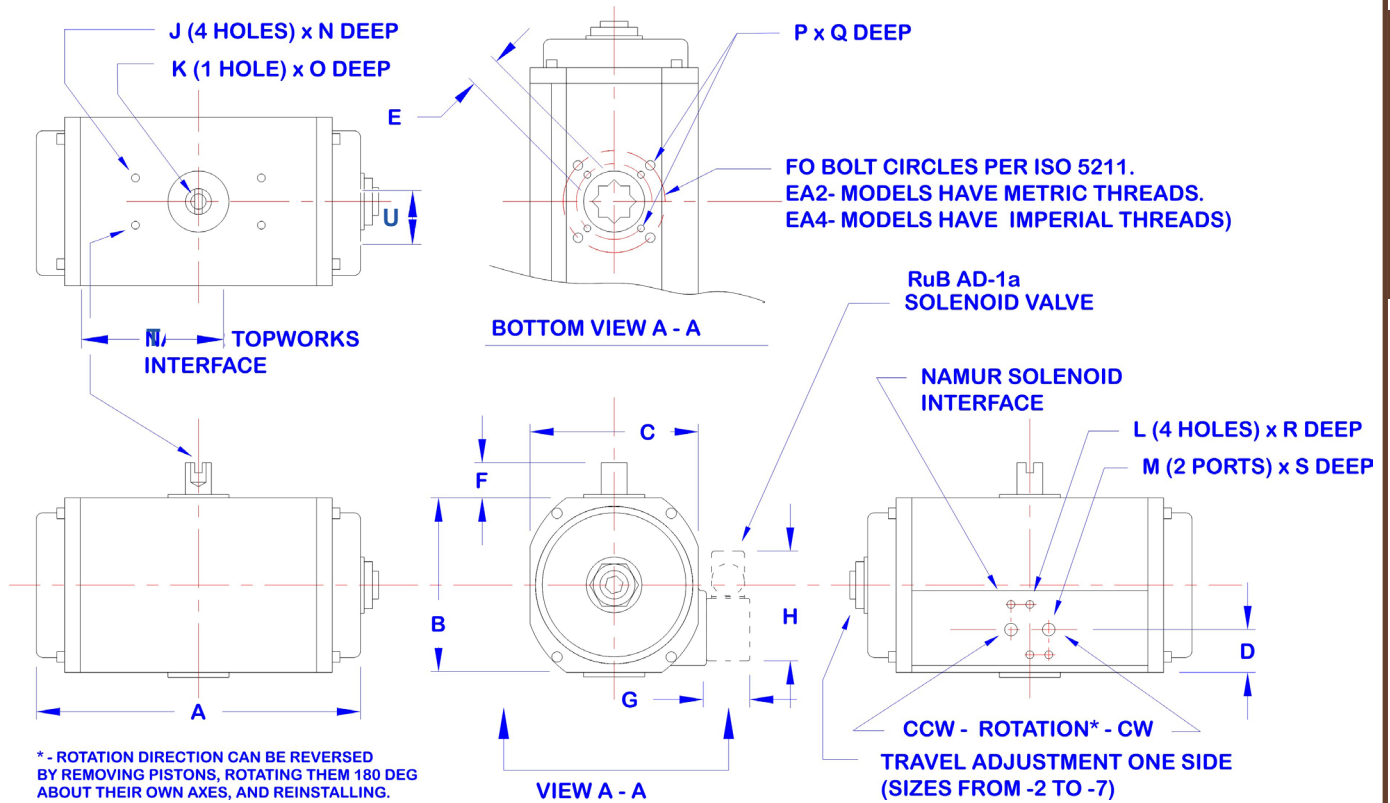
Bill of materials

EA-4 is shown. Smaller sizes have similar construction except EA-1 that has Nylon endcaps and pistons

Item	Description	Qty	Material
1	Body	1	Anod, aluminum
2	Shaft	1	Steel - zinc plated
3	Piston	2	Aluminum
4	End-cap	1	Anod, aluminum
5	End-cap (stop bolt)	1	Anod, aluminum
6	Spring	12 Max	Cr-Si steel
7	Cap bolt	8	St steel
8	Stop bolt	1	Hi tensile steel
9	Stop bolt nut	1	Hi tensile steel
10	Washer	1	Polyethylene
11	O-ring (end stop)	1	NBR
12	O-ring (end cover)	2	NBR
13	Piston ring	2	POM**
14	Piston ring	2	NBR
15	Wear pad	2	POM**
16	Shaft washer	1	Polyethylene
17	Snap ring	1	Steel
18	O-ring (drive shaft)	2	NBR
19	Shaft bearing upper	1	POM**
20	Shaft bearing lower	1	POM**
21	Alignment ring	1	POM**
22	Indicator	1	Nylon

** Polyoxymethylene commonly "Delrin"

Dimensions:



Size	Metric system - mm																				
	F0	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U
1	F03	103	45	51	22,5	9	20	26	67	M5	M6	M5	G1/8	5	12	M5	8	8	7	80	30
2	F03/05	150	70	70	23	9	20	26	67	M5	M6	M5	G1/8	8	12	M5 / M6	8 / 10	8	10	80	30
2A	F03/05	150	70	70	23	11	20	26	67	M5	M6	M5	G1/8	8	12	M5 / M6	8 / 10	8	10	80	30
2B	F04	150	70	70	23	11	20	26	67	M5	M6	M5	G1/8	8	12	M5 / M6	8 / 10	8	10	80	30
3	F05/07	187	87	91	34,5	14	20	26	67	M5	M6	M5	G1/8	8	12	M6 / M8	10 / 13	8	10	80	30
4	F05/07	206	118	113	29,5	14	20	26	67	M5	M6	M5	G1/8	8	12	M6 / M8	10 / 13	8	10	80	30
5	F05/07	194	118,5	121	29,5	17	20	26	67	M5	M6	M5	G1/4	5	12	M6 / M8	10 / 10	8	12	80	30
6	F07/10	218	140,5	136,5	29,5	17	20	26	67	M5	M6	M5	G1/4	5	12	M8 / M10	10 / 16	8	12	80	30
7	F07/10	266	166,5	156	30	22	20	26	67	M5	M6	M5	G1/4	5	12	M8 / M10	13 / 16	8	12	80	30

Torque rating charts for EA4 actuators - IMPERIAL threads

Double acting - torque in lb							
EA4-	Air pressure supply (PSI)						
	40	50	60	70	80	90	100
1	35	44	53	62	71	80	89
2	96	120	144	168	193	217	241
3	206	258	309	361	413	464	516
4	413	516	619	722	825	928	1032
5	498	623	747	872	996	1121	1246
6	821	1027	1232	1437	1642	1848	2053
7	1522	1902	2283	2663	3044	3424	3804
9	3344.5	4180.6	5016.8	5852.9	6689.0	7525.1	8361.3
10	4552.5	5690.6	6828.8	7966.9	9105.0	10243.1	11381.3
12	10740.0	13425.0	16110.0	18795.0	21480.0	24165.0	26850.0

Spring return - Torque in lb																								
EA4-	total	Springs	outer	inner	Spring Torque	air stroke - start										air stroke - end								
						start		Air pressure supply (PSI)										Air pressure supply (PSI)						
						40	50	60	70	80	90	100	110	120	40	50	60	70	80	90	100	110	120	
2	2				23	12	84	108	133	157	181	205	229	253	277	73	97	121	145	169	193	218	242	266
	3				35	18	78	103	127	151	175	199	223	247	271	62	86	110	134	158	182	206	230	254
	4				46	24	73	97	121	145	169	193	217	241	265	50	74	98	122	146	170	194	218	242
	5				58	30	67	91	115	139	163	187	211	235	259	38	62	86	110	134	158	182	206	230
	6				70	36		85	109	133	157	181	205	229	253		51	75	99	123	147	171	195	219
	7				81	41		79	103	127	151	175	199	223	247		39	63	87	111	135	160	184	208
	8				93	47			97	121	145	169	193	217	241			52	76	100	124	148	172	196
	9				104	53				115	139	163	187	211	235				84	88	112	136	160	185
	10				116	59				109	133	157	181	205	230				53	77	101	125	149	173
	11				127	65					127	151	175	200	224					65	89	113	137	161
	12				139	71						145	170	194	218						78	102	126	150
	3	2				48	27	180	231	283	334	386	436	489	541	592	158	210	261	313	364	416	468	519
3					72	40	166	218	270	321	373	424	476	528	579	134	186	237	289	340	392	444	495	547
4					96	53	153	205	256	308	360	411	463	514	566	110	162	213	265	316	368	419	471	523
5					120	66	140	192	243	295	346	398	449	501	553	86	138	189	241	292	344	395	447	499
6					144	80		178	230	281	333	385	436	488	539		113	165	217	268	320	371	423	475
7					188	93		165	217	268	320	371	423	474	526		89	141	193	244	296	347	399	450
8					193	106			203	255	306	358	410	461	513			117	169	220	272	323	375	426
9					217	119				242	293	345	396	448	499				144	196	248	299	351	402
10					241	133				228	280	331	383	435	486				120	172	224	275	327	378
11					265	146					267	318	370	421	473					148	199	251	303	354
12					289	159						305	356	408	460						175	227	279	330
4		2				91	59	354	457	560	663	766	869	972	1076	1179	322	425	528	631	735	838	941	1044
	3				136	89	324	427	530	633	737	840	943	1046	1149	277	380	483	586	689	792	896	999	1102
	4				181	118	294	398	501	604	707	810	913	1016	1120	231	335	438	541	644	747	850	953	1057
	5				227	148	265	368	471	574	677	781	884	987	1090	186	289	392	496	599	702	805	908	1011
	6				272	177		338	442	545	648	751	854	957	1061		244	347	450	553	657	760	863	966
	7				317	207		309	412	515	618	722	825	928	1031		199	302	405	508	611	714	818	921
	8				362	236			382	486	589	692	795	898	1001			257	360	463	566	669	772	875
	9				408	266				466	559	662	766	869	972				314	418	521	624	727	830
	10				453	296				427	530	633	736	839	942				269	372	475	579	682	785
	11				498	325					500	603	706	810	913					327	430	533	636	740
	12				544	355						574	677	780	883						385	488	591	694
	5	4	4	0	464	255		368	493	617	742	866	991	1115	1240		159	284	408	533	657	782	907	1031
5		4	1	522	287			461	585	710	834	959	1083	1208			226	350	475	599	724	849	973	
6		4	2	580	319			429	553	678	803	927	1052	1176			168	292	417	541	666	791	915	
7		4	3	637	350				522	646	771	895	1020	1144				234	359	484	608	733	857	
8	4	4	695	382					614	739	863	988	1112					301	426	550	675	799		
6	4	4	0	769	422		604	810	1015	1220	1426	1631	1836	2042		259	464	669	874	1080	1285	1490	1696	
	5	4	1	864	475			757	962	1168	1373	1578	1783	1989			368	573	778	984	1189	1394	1600	
	6	4	2	960	528			704	909	1115	1320	1525	1731	1936			272	477	682	888	1093	1298	1504	
	7	4	3	1056	581				856	1062	1267	1472	1678	1883				381	586	792	997	1202	1408	
8	4	4	1152	634					804	1009	1214	1420	1625	1830					285	490	696	901	1106	1312
7	4	4	0	1423	782		1120	1500	1881	2261	2642	3022	3403	3783		479	860	1240	1621	2001	2382	2762	3143	
	5	4	1	1601	880		1022	1403	1783	2164	2544	2924	3305	3685		302	682	1063	1443	1823	2204	2584	2965	
	6	4	2	1778	978			1305	1685	2066	2446	2827	3207	3588			504	885	1265	1646	2026	2406	2787	
	7	4	3	1956	1075			1207	1568	1968	2349	2729	3109	3490			326	707	1087	1468	1848	2229	2609	
8	4	4	2134	1173				1490	1870	2251	2631	3012	3392				529	909	1290	1670	2051	2431		
9	4	4	0	3133	1726			3282	4116	4951	5785						1877	2712	3548	4383				
	6	4	2	3921	2151			2858	3692	4527	5362						1098	1935	2771	3607				
	7	4	3	4310	2372				3472	4306	5141							1538	2374	3209				
	8	4	4	4699	2584					4095	4929								1986	2821				
10	4	4	0	4266	2345			4470	5606	6742	7878						2554	3690	4827	5964				
	6	4	2	5337	2929			3881	5016	6151	7286						1485	2622	3759	4896				
	7	4	3	5868	3230				4723	5860	6996							2093	3230	4367				
	8	4	4	6399	3522					5568	6705								2700	3838				
12	6			8284	5363			10711	13391	16070	18749							7797	10477	13158	15838			
	8			11045	7151			8928	11607	14287	16967							5042	7723	10404	13085			
	10			13806	8939			9824	12505	15185									4969	7651	10333			
	12			16567	10726					10722	13403									4898	7581			