

PNEUMATIC ACTUATORS:



El-O-Matic Pneumatic actuators are powerful and compact double rack and pinion units for use with ball, butterfly and plug valves and any device requiring accurate and dependable quarter turn rotary motion.

The use of high grade steel and aluminium components together with El-O-Matic's patented 3 point piston support provides a tough reliable unit for the automation of today's high performance industrial valves. Modern synthetic bearings ensure no metallic contact between moving components.

Spring return actuators incorporate the multiple spring concept for maximum flexibility, they are also "field reversible". Safety features include an anti-blow out spindle and a spring retaining system which ensures no spring tension on disassembly.

A wide range of control options are available to cover each and every industrial application.

'E' Series actuators incorporate a body of cast aluminium and have pistons where the rack teeth are precision machined onto the aluminium casting. Spring return versions have a

maximum of 6 springs, 3 in each end cap assembled as a concentric stack.

'P' Series actuators cover the large end of the torque range. These all incorporate a body of cast aluminium and have steel for the rack on pinion drive. Spring return versions have a maximum of 14 springs 7 in each end cap assembled within a hexagon pattern.

All actuators have mounting flanges and drives to ISO 5211. Mounting kits can be provided for most of the world's quarter turn valves.

OPTIONS

- Double Acting Actuator
- Single Acting Actuator
- Actuator with steel housing
- Actuator with 180° rotation
- Three position Actuator
- Limit stops in the end caps
- Limit stop with Limit stop plate
- Actuator with $\pm 3^\circ$ extra travel



SPECIFICATIONS:

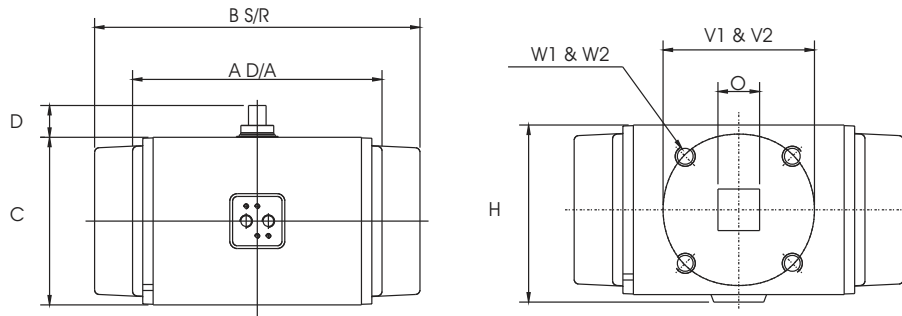
Pressure : Upto 8 bar
 Temperature : - 20° to 80° C
 Media : Air (dry or lubricated)
 Non-corrosive gas or light hydraulic oil
 Construction : Suitable for indoor or outdoor installation
 Material : Housing - Aluminium Alloy
 Drive Shaft : Carbon Steel

Finish : Two coat polyurethane
 Rotation (Standard) : Counter clockwise to open with port 'A' pressurised
 Spring return Actuators air fail to close clockwise
 Movement (Standard) : 91.5° from -0.5° to 91° counter-clockwise
 Lubrication : Factory lubricated for the normal life of Actuators
 Life : 5,00,000 operations minimum

ACTUATOR TORQUE - AT 6 BAR

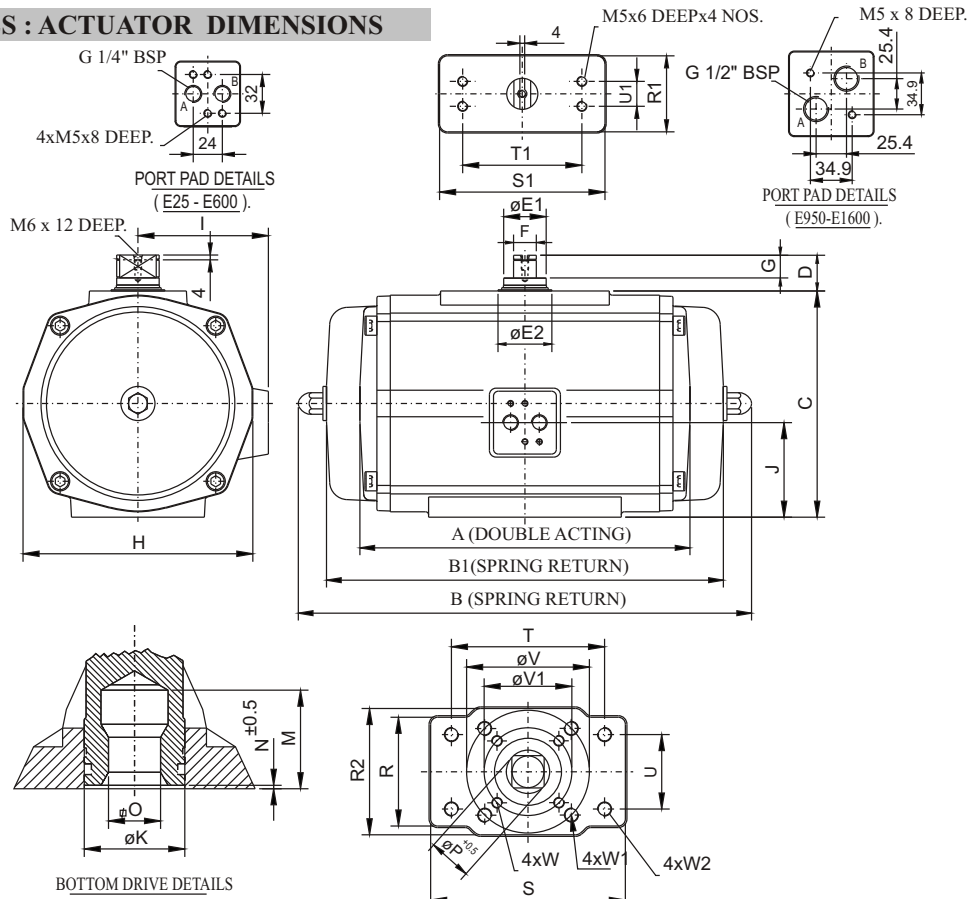
Model			E12	E25	E40	E100	E200	E350	E600	E950	E1600	P60	P150	P280	P500	P750	P1100	P2500	P4000
DA Torque (Nm)			14.6	27	51	115	251	436	741	1107	1829	69	174	329	581	864	1274	2935	4955
SR Torque (Nm)	Air Stroke	Start	10.3	13	25	58	125	206	364	554	907	42	109	195	382	582	834	2086	3240
		End	7.5	4	8	21	41	63	114	174	305	22	65	76	102	217	429	1338	1660
	Spring Stroke	Start	7.2	21	40	88	196	347	584	869	1421	44	102	236	448	605	791	1495	3084
		End	4.6	13	25	55	123	223	367	538	897	25	59	120	179	253	396	764	1544

ACTUATOR DIMENSIONS (mm)



Model	A	B	C	D	H	O	V1	V2	W1	W2
E12	103	118	60	20	60	9	42	-	M6x8	-
E25	135	178	81	20	83	11	50	-	M6x9	-
E40	147	204	95	20	97	14	50	70	M6x9	M8x10
E100	176	267	118	20	117	19	50	70	M6x9	M8x10
E200	237	360	143	20	137	22	70	102	M8x10	M10x12
E350	305	387	181	20	182	27	70	102	M8x10	M10x12
E600	387	477	220	30	217	27	102	125	M10x12	M12x15
E950	424	517	259	30	242	36	102	140	M10x12	M16x20
E1600	516	570	297	30	275	46	165	-	M20x25	-
P60	155	184	101	20	110	14	50	70	M6x9	M8x10
P150	186	217	135	20	144	19	70	102	M8x10	M10x12
P280	232	312	160	20	173	22	70	102	M8x10	M10x12
P500	271	352	190	30	206	27	102	125	M10x12	M12x15
P750	285	388	234	30	255	27	102	125	M10x12	M12x15
P1100	340	478	247	30	261	36	140	-	M16x20	-
P2500	380	568	360	30	360	46	165	-	M20x25	-
P4000	498	835	380	30	390	55	254	-	M16x20x8	-

15. E SERIES : ACTUATOR DIMENSIONS

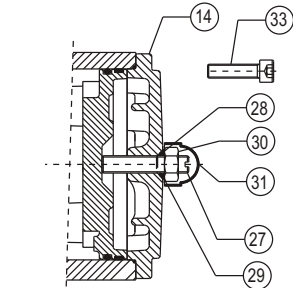
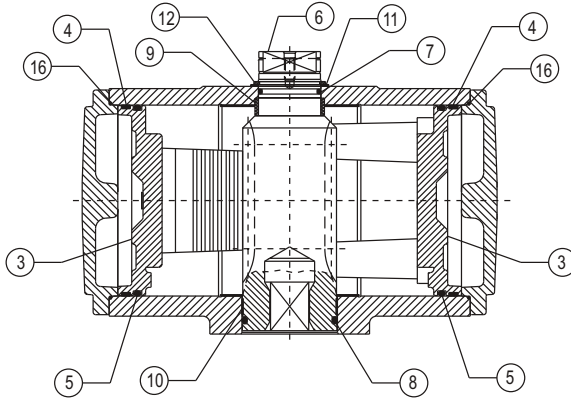


DIM	E25	E40	E100	E200	E350	E600	E950	E1600
A	135	147	176	237	260	331	366	446
B	178	204	267	360	410	-	-	-
B1	-	-	-	-	-	417	460	565
C	80	94	118	143	181	220	259	297
D	20	20	20	20	20	30	30	30
φ E1	16	22	22	36	36	55	55	64
φ E2	23	30	30	45	45	65	65	75
F	10	14	14	19	19	36	36	36
G	12	12	12	12	10	10	10	10
H	74	86	108	128	173	207	231	265
I	46	53	63	73	95	113	126	142
J	32	33.5	45	50.5	73	84.5	106	120.5
K	24	33	38	55	55	68	75	95
M	27	27	27	31	38	38	51	66
N	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5
O'max	11.11	14.11	19.13	22.13	27.13	27.13	36.16	46.16
O'min	11.00	14.00	19.00	22.00	27.00	27.00	36.00	46.00

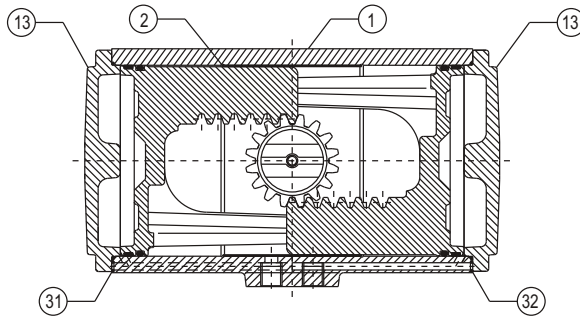
DIM	E25	E40	E100	E200	E350	E600	E950	E1600	
P	14.1	18.1	25.2	28.2	36.2	36.2	48.2	60.2	
R	52	65	70	90	114	124	130	132	
R1	50	50	60	60	60	90	90	125	
R2	-	-	-	-	-	-	-	154	
S	52	65	70	90	114	124	142	280	
S1	100	100	100	100	100	170	170	210	
T	-	-	-	-	-	-	-	234.6	
T1	80	80	80	80	80	130	130	130	
U	-	-	-	-	-	-	-	97.2	
W	-	M6X9	M6X9	M8X13	M8X13	M10X16	M16X20	M20X30	
W1	M6X9	M8X13	M8X13	M10X16	M10X16	M12X16	M10X16	-	
W2	-	-	-	-	-	-	-	M16X25	
U1	30	30	30	30	30	30	30	30	
φ V	50	70	70	102	102	125	140	-	
φ V1	-	50	50	70	70	102	102	165	
WEIGHT IN KG	ED	1.3	2.0	3.7	6.88	10.4	19.4	26.4	42.7
	ES	1.7	2.6	5.0	10.34	16.9	27.6	38.6	65.8

- NOTE :**
1. FLANGE & SQUARE DRIVE TO ISO 5211.
 2. TOP & SOLENOID FLANGE TO VDI / VDE 3845 (NAMUR).
 3. FOR E950 & E1600 PORT PAD IS NON NAMUR.

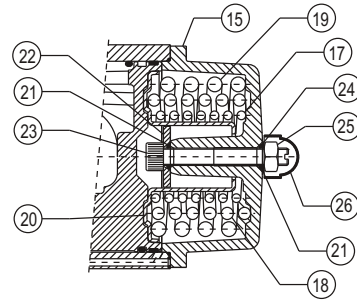
16. E SERIES : CONSTRUCTION, PARTS AND MATERIALS:



DOUBLE ACTING ACTUATOR-ED-L1.



DOUBLE ACTING ACTUATOR-ED.

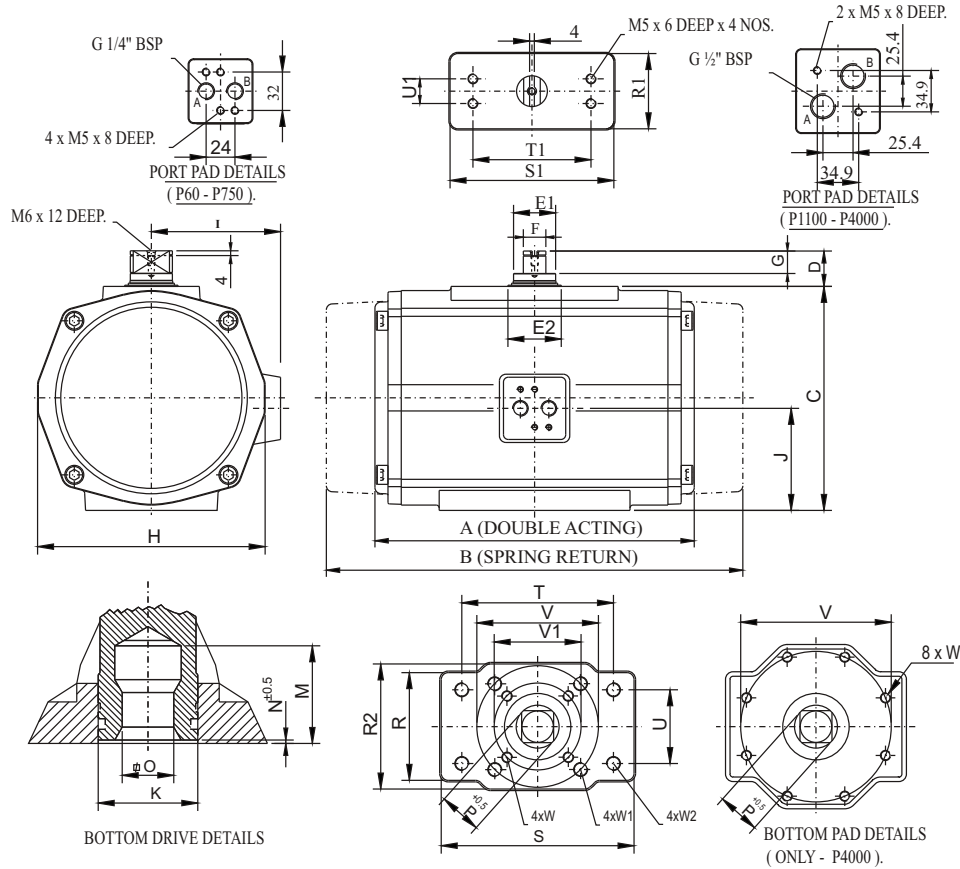


SPRING RETURN ACTUATOR-ES & L1.

Part No.	Description	Qty	Material	Part No.	Description	Qty	Material
1	Body (Hsg)	1	Aluminium Alloy	17	Spring, Inner	2	Steel
2	* Guide Band (Hsg)	1	Nylatron GS	18	Spring, Middle	2	Steel
3	Piston	2	Aluminium Alloy	19	Spring, Outer	2	Steel
4	* Guide Band (Piston)	2	PTFE, Carbon Filled	20	Spring Holder	2	Steel
5	* O-ring Piston	2	Nitrile Rubber	21	* O-ring, ES Arrangement	4	Nitrile Rubber
6	Drive shaft	1	Steel	22	Washer ES (S.Holder)	2	Steel
7	* O-ring, Shaft Top	1	Nitrile Rubber	23	Limit Stop Bolt ES	2	Stainless Steel
8	* O-ring, Shaft Bottom	1	Nitrile Rubber	24	* Washer ES	2	Nylon
9	* Bearing Bush Top	1	Delrin	25	Nut	2	Stainless Steel
10	* Bearing Band, Bottom	1	Nylatron GS	26	Nut Cover (Plastic)	2	Polyethylene
11	* Washer	1	Delrin	27	Limit Stop Bolt ED	2	Stainless Steel
12	* Spring Clip	1	Steel	28	* O-ring, EDL1	2	Nitrile Rubber
13	End Cap ED	2	Aluminium Alloy	29	* Washer EDL1	2	Nylon
14	End Cap ED L	2	Aluminium Alloy	30	Nut ED	2	Stainless Steel
15	End Cap ES	2	Aluminium Alloy	31	Nut Cover ED	2	Plastic
16	* O-ring End Cap	2	Nitrile Rubber	32	* O-ring, Passage	2	Nitrile Rubber

* = Repair kit items

13. P SERIES : ACTUATOR DIMENSIONS (APPLICABLE FOR 90°)

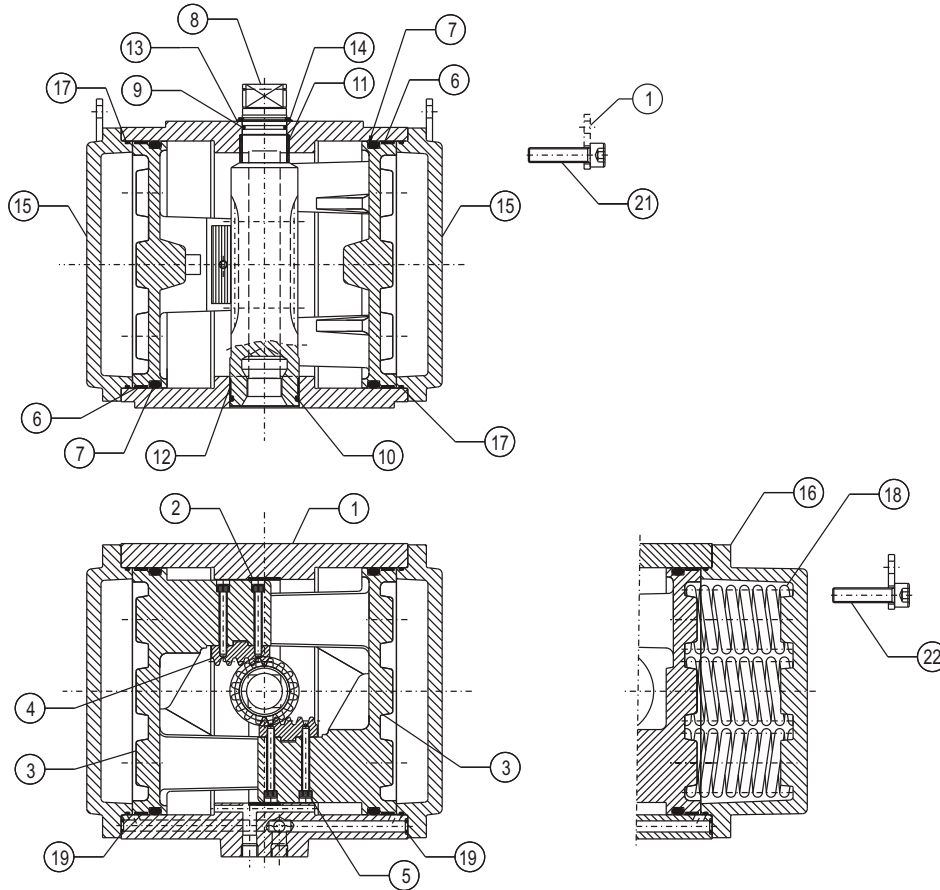


DIM	P60	P150	P280	P500	P750	P1100	P2500	P4000
A	155	186	232	271	285	340	380	502
B	184	217	312	352	388	478	570	835
C	101	135	160	190	234	247	356	380
D	20	20	20	30	30	30	30	30
φ E1	16	22	26	36	36	45	55	64
φ E2	23	30	35	45	45	55	65	80
F	10	14	14	19	19	30	36	36
G	12	12	12	19	19	10	10	10
H	103	138	168	192	239	250	344	372
I	58	75	89	109	134	135	183	200
J	43	53	69	95	116	125	178	190
K	28	38	48	56	56	75	85	120
M	27	27	31	38	38	51	66	77
N	1.0	1.0	1.5	1.5	2.0	2.5	3.0	1.5
O ^{max}	14.11	19.13	22.13	27.13	27.13	36.16	46.16	55.19
O ^{min}	14.00	19.00	22.00	27.00	27.00	36.00	46.00	55.00
P	18.1	25.2	28.2	36.2	36.2	48.2	60.2	72.2

DIM	P60	P150	P280	P500	P750	P1100	P2500	P4000
R	60	80	101	111	140	140	170	170
R1	51	60	71	81	100	120	160	160
R2	70	100	-	-	-	-	-	262
S	111	130	141	161	210	210	290	290
S1	111	130	141	141	160	210	245	245
T	-	-	-	-	-	-	234.6	-
T1	80	80	80	130	130	130	130	130
U	-	-	-	-	-	-	97.2	-
U1	30	30	30	30	30	30	30	30
φ V	70	102	102	125	125	140	165	254
φ V1	50	70	70	102	102	-	-	-
W	M6x9	M8x13	M8x13	M10x16	M10x16	-	-	-
W1	M8x13	M10x16	M10x16	M12x16	M12x16	M16x20	M20x30	M16x25
W2	-	-	-	-	-	-	M16x25	-
WEIGHT IN KGS								
PD	2.6	5.3	9.2	14.0	22.4	30.8	64.7	97.8
PE	3.0	6.4	11.6	19.2	33.4	41.5	97.9	143

- NOTE :**
- FLANGE & SQUARE DRIVE TO ISO 5211.**
 - TOP & SOLENOID FLANGE TO VDI / VDE 3845 (NAMUR).**
 - FOR P1100 TO P4000 PORT PAD IS NON NAMUR.**

14. P SERIES : CONSTRUCTION, PARTS AND MATERIALS



DOUBLE ACTING ACTUATOR-PD.

SPRING RETURN ACTUATOR-PE.

Part No.	Description	Qty	Material
1	Body (Hsg)	1	Aluminium Alloy
2	* Guide Band (Hsg)	2	PTFE, Carbon Filled
3	Piston	2	Aluminium Alloy
4	Gear Rack	2	Steel
5	Bolt Rack	2	HTS
6	* Guide Band (Piston)	2	PTFE, Carbon Filled
7	* O-ring Piston	2	Nitrile Rubber
8	Drive shaft	1	Steel
9	* O-ring, Shaft Top	1	Nitrile Rubber
10	* O-ring, Shaft Bottom	1	Nitrile Rubber
11	* Bearing Bush	1	Delrin

Part No.	Description	Qty	Material
12	* Bearing Band	1	Nylatron GS
13	* Thrust Washer	1	Delrin
14	* Spring Clip	1	Spring Steel
15	End Cap PD	2	Aluminium Alloy
16	End Cap PE	2	Aluminium Alloy
17	* O-ring, Endcap	2	Nitrile Rubber
18	Spring	14	Steel
19	* O-ring, Passage	2/4	Nitrile Rubber
20	** Lifting Lug	2	Steel
21	Endcap Bolt PD	8/20	Stainless Steel
22	Endcap Bolt PE	8/20	Stainless Steel

* = Repair kit items ** = Sizes above P1100