

# EL-O-Matic E and P Series

Technical data pneumatic Rack and Pinion actuators

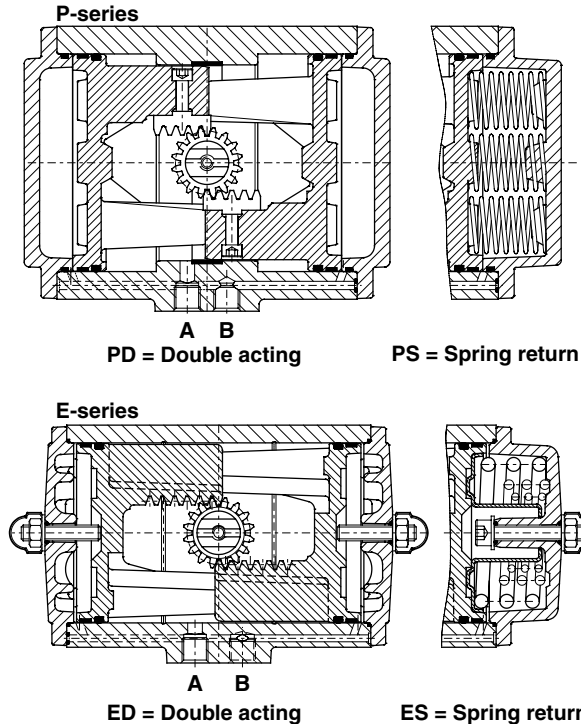


# Data sheet

Sheet No.: A1.102 Rev. B  
Date: June 2010

## TECHNICAL DETAILS, STANDARD ACTUATOR

E/P



### Specification

Pressure range : Double acting 20 to 120 psi  
: Spring return 80 to 120 psi, with max. spring set 40 to 120 psi, reduced spring quantity

Torque : 180° actuators 87 psi maximum  
: 1133 to 40,000 in.lb at 80psi supply  
See torque datasheets 1.104.01 and 1.104.02

Operating media : Air, dry or lubricated and inert gasses  
: For sub-zero applications take appropriate measures

Temperature : -4° to +176°F

Lubrication : Factory lubricated for the normal life of the actuator

Construction : Suitable for indoor and outdoor installation

Finish : Polyester non-TGIC based powder coating (see data sheet A4.204.01)

Rotation : 91.5° (-0.5° CW to 91° CCW)

Double acting : Standard counter clockwise with port "A" pressurized (code A, see data sheet A1.503 for other assembly codes)

Spring return : Clockwise fail action (code A, see data sheet A1.504 for other assembly codes)

Limit stops : Standard on E-series. Adjustable range 91°/80°  
: Optional on P-series. See datasheet A1.501.01  
: For double stroke adjustment. See datasheet A1.501.05

### European Directives

PED : All actuators are suitable for use with Group 2 gasses according to Pressure Equipement Directive 97/23/EC

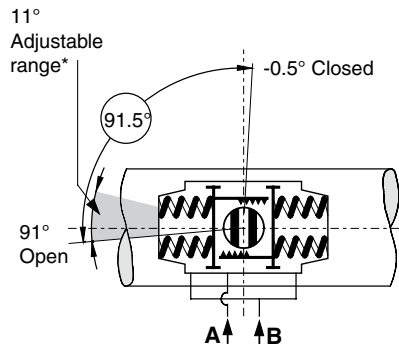
ATEX : Optional : actuators suitable for use with Group 1 gasses  
: All basic actuators are suitable for use in hazardous area's classified II 2 GD, zones 1 or 2 (Gasses) and 21 or 22 (Dust)

### Russian Approvals

EI-O-Matic E and P series pneumatic actuators are available with the GOST-R and Rostechnadzor (RTN) approvals.

### Note

1. Operating time is average with actuator under load and solenoid valve fitted.
2. Air consumption is the actual free air volume at 1 atm.
3. Pressure is in barg.



\* only standard on E-Series actuators

ACTUATOR TYPE		E12	E25	E40	E65	E100	E150	E200	E350	E600	E950	E1600	P2500	P4000
Bore	inch	1.8	2.2	2.8	3.1	3.6	4.1	4.3	5.7	6.9	7.9	9.1	11.8	12.8
Stroke	inch	0.5	0.6	0.7	0.9	1.0	1.2	1.5	1.5	1.7	2.0	2.5	2.2	3.2
Weight:	Double acting	lb.	1.3	2.9	4.0	5.3	6.8	10.5	12.8	23	43	58	94	125
	Spring return	lb.	1.5	3.7	5.3	7.9	10.1	15.2	20.1	37	61	85	145	194
Operating time	sec.	0.4	0.5	0.7	1.1	1.2	1.8	2.3	3.6	4.5	5.4	6.9	7	12
Air consumption at 1 atm (cu./in.)	port A stroke	3.1	6.1	9.8	20	21	45	49	110	177	287	445	488	824
	port B stroke	3.7	6.7	13	22	30	40	61	116	189	299	488	568	1,068

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# Data sheet

Sheet No.: A1.102.10 Rev. C  
Date: November 2010

## EL-O-MATIC BASIC PNEUMATIC ACTUATOR CONFIGURATION

E/P

	<b>Single or Double action</b> <b>ES or PS</b> = Single acting, <b>ED or PD</b> = Double acting																																									
	<b>Actuator size</b> E-series <b>0012</b> = E12 <b>0025</b> = E25 <b>0040</b> = E40 <b>0065</b> = E65 <b>0100</b> = E100 <b>0150</b> = E150 <b>0200</b> = E200 <b>0350</b> = E 350 <b>0600</b> = E600 <b>0950</b> = E950 <b>1600</b> = E1600 P-series <b>2500</b> = P2500 <b>4000</b> = P4000																																									
	<b>Valve flange</b> <table border="0"> <tr> <td>Metric <u>ISO 5211</u></td> <td>Metric <u>DIN 3337</u></td> <td>UNC/NPT <u>ISO 5211</u></td> <td><b>Finish</b></td> </tr> <tr> <td><b>M</b> =</td> <td><b>D</b> =</td> <td><b>U</b> =</td> <td>Standard</td> </tr> <tr> <td><b>N</b> =</td> <td><b>E</b> =</td> <td><b>V</b> =</td> <td>CSR coating <sup>(2)</sup> + Aluminum pinion</td> </tr> <tr> <td><b>O</b> =</td> <td><b>F</b> =</td> <td><b>W</b> =</td> <td>CSR coating <sup>(2)</sup> + Stainless Steel pinion <sup>(3)</sup></td> </tr> </table>	Metric <u>ISO 5211</u>	Metric <u>DIN 3337</u>	UNC/NPT <u>ISO 5211</u>	<b>Finish</b>	<b>M</b> =	<b>D</b> =	<b>U</b> =	Standard	<b>N</b> =	<b>E</b> =	<b>V</b> =	CSR coating <sup>(2)</sup> + Aluminum pinion	<b>O</b> =	<b>F</b> =	<b>W</b> =	CSR coating <sup>(2)</sup> + Stainless Steel pinion <sup>(3)</sup>																									
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	<b>Limit stops</b> <b>0</b> = No limit stops Standard on P-series <b>1</b> = L1 One way limit stops Standard on E-Series <b>2</b> = Double Stroke Adjustment Standard on DSA-Series																																									
	<b>Assembly code</b> <table border="0"> <tr> <td>Code</td> <td>Action</td> <td>Rotation</td> <td>Mounting</td> </tr> <tr> <td><b>A</b> =</td> <td>Spring to close</td> <td>clock wise</td> <td>in line with pipeline</td> </tr> <tr> <td><b>B</b> =</td> <td>Spring to close</td> <td>clock wise</td> <td>across pipeline</td> </tr> <tr> <td><b>C</b> =</td> <td>Spring to open</td> <td>counter clock wise</td> <td>across pipeline</td> </tr> <tr> <td><b>D</b> =</td> <td>Spring to open</td> <td>counter clock wise</td> <td>in line with pipeline</td> </tr> </table>	Code	Action	Rotation	Mounting	<b>A</b> =	Spring to close	clock wise	in line with pipeline	<b>B</b> =	Spring to close	clock wise	across pipeline	<b>C</b> =	Spring to open	counter clock wise	across pipeline	<b>D</b> =	Spring to open	counter clock wise	in line with pipeline																					
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<b>Default Insert</b> Size (in mm.) <sup>(1)</sup> <table border="0"> <tr> <td></td> <td>E12</td> <td>E25</td> <td>E40</td> <td>E65</td> <td>E100</td> <td>E150</td> <td>E200</td> <td>E 350</td> <td>E600</td> <td>E950</td> <td>E1600</td> <td>P2500</td> <td>P4000</td> </tr> <tr> <td>- ISO or UNC</td> <td>00</td> <td>11</td> <td>14</td> <td>14</td> <td>19</td> <td>19</td> <td>22</td> <td>27</td> <td>27</td> <td>36</td> <td>46</td> <td>00</td> <td>00</td> </tr> <tr> <td>- DIN</td> <td>00</td> <td>11</td> <td>14</td> <td>14</td> <td>17</td> <td>17</td> <td>22</td> <td>22</td> <td>27</td> <td>36</td> <td>46</td> <td>00</td> <td>00</td> </tr> </table>		E12	E25	E40	E65	E100	E150	E200	E 350	E600	E950	E1600	P2500	P4000	- ISO or UNC	00	11	14	14	19	19	22	27	27	36	46	00	00	- DIN	00	11	14	14	17	17	22	22	27	36	46	00	00
	E12	E25	E40	E65	E100	E150	E200	E 350	E600	E950	E1600	P2500	P4000																													
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- DIN	00	11	14	14	17	17	22	22	27	36	46	00	00																													
<b>Visual Indication Code</b> <b>D</b> = Disk <b>K</b> = Knob <b>N</b> = No visual indication																																										
<b>Temperature range</b> <b>0</b> = Standard    TS: 80°C (176°F) -20°C ( -4°F) <b>1</b> = High temp    TS: 120°C (248°F) -20°C ( -4°F) <b>2</b> = Low temp    TS: 80°C (176°F) -40°C (-40°F)																																										

ES 0040.M 1 A 05 A.14 N 1

See following data sheets for more information

A1.104.01 / A1.104.02

A1.103.106 / A1.103.073 /  
A1.103.102 / A1.103.103  
A1.101.30 / A1.101.33 /  
A4.204.01

A1.501.01/  
A1.501.05

A1.503/  
A1.504

A1.104.02

A1.103.073  
A1.103.106  
A1.103.120

A1.101.70 / A1.101.71

<sup>(1)</sup> Actuators E12, P2500 and P4000 have no inserts. They have have a inner square the shaft  
180° actuators are not covered by this configuration matrix.

<sup>(2)</sup> CSR Coating not possible in combination with Double Stroke Adjustment limit stops (DSA series).

<sup>(3)</sup> Stainless Steel Pinion not possible in combination with Double Stroke Adjustment limit stops (DSA series).



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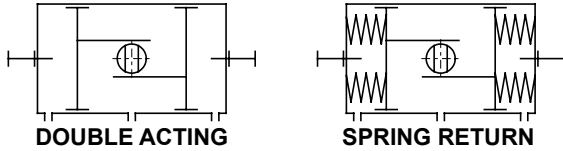
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# Data sheet

Sheet No.: A1.501.01 Rev. A  
Date: November 2009

## EL-O-MATIC ACTUATOR WITH ONE WAY LIMIT STOPS

L1/LF



Dim. in inch	ACTUATOR TYPE	
	P2500	P4000
A	22.8	27.9
B	31.3	45.4
C	14.0	15
D	1.2	1.2

### Description

Actuators with one way adjustable limit stops are used where the maximum opening (or closing) position of the valve needs to be reduced. For instance to adjust the maximum capacity of a remote operated valve.

Also actuators with 180° rotation are available with these stops.

### Operation

Stop screws are fitted to both endcaps and the screw length is such that adjustment is possible through the specified rotation of the actuator.

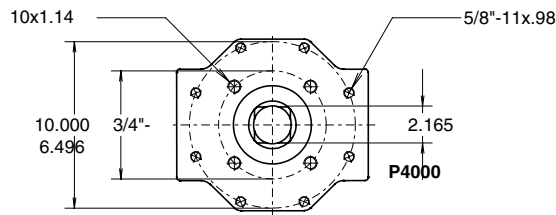
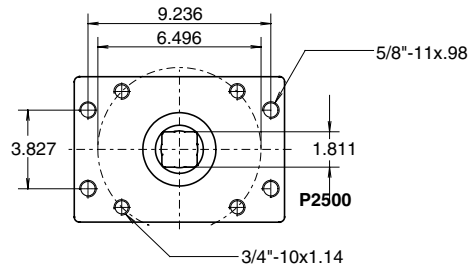
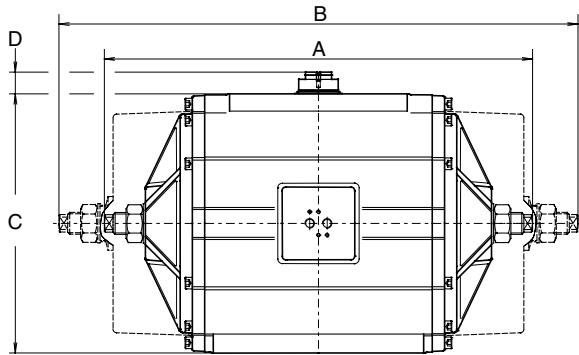
The modified endcap is machined for -0.5° to +93° rotation for all P-series models.

### Identification

"L1" is added to the basic part number i.e. PD2500-L1

### Specification:

Pressure : Up to 120 PSI  
 Media : Air, dry or lubricated or non-corrosive gas  
 Torque (90°) : Data sheet A1.104.01 - A1.104.04  
 (180°) : Data sheet P-series A1.204.01 and A1.204.02  
 Other dimensions : Data sheet A 1.103.XXX (90°)  
 : Data sheet A 1.203.011 (180°)  
 Temperature : -4.0° to +176°F  
 Adjustable range : 80°-93°(90°) or 160°-186° (180°)



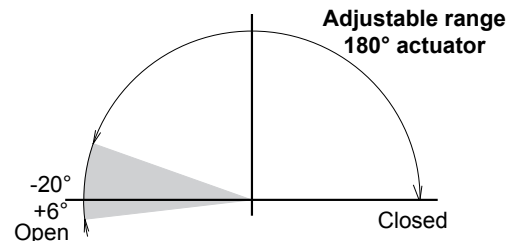
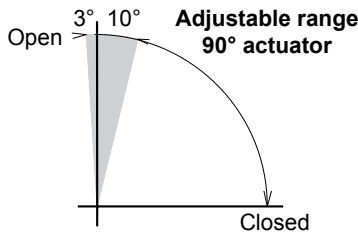
### Adjustable position (see data sheet A1.503 or A1.504)

code	position
A	Valve open (spring to close)
B	Valve open (spring to close)
C	Valve closed (spring to open)
D	Valve closed (spring to open)

### Note:

- 1) Can be provided with extra long screws for full range adjustment (identification: PD2500-LF)
- 2) This option in combination of a manual override gearbox is redundant

**Note:** Do not adjust under pressure



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# Data sheet

Sheet No.: A1.501.03 Rev. A  
Date: November 2009

## LIMIT STOP PLATE DIMENSIONS

LS 420

### Description

These limit stop plates are used when precise control is required for both end of stroke positions. It is possible to adjust 15° of both ends of the standard stroke.

### Construction

The complete stop plate assembly may be added to the 90° P- series actuators. The assembly is normally sandwiched between the actuator and mounting surface of the valve or bracket. Bearing rings are used at both surfaces to provide a long life expectancy.

The unit is assembled with a drive adaptor which passes through the stop plate, into the square actuator and provides the coupling between the two components. This drive adaptor normally also accommodates the coupling of the valve stem.

### Identification

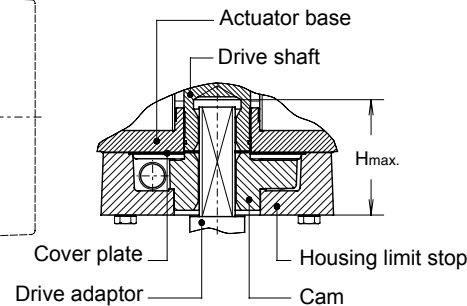
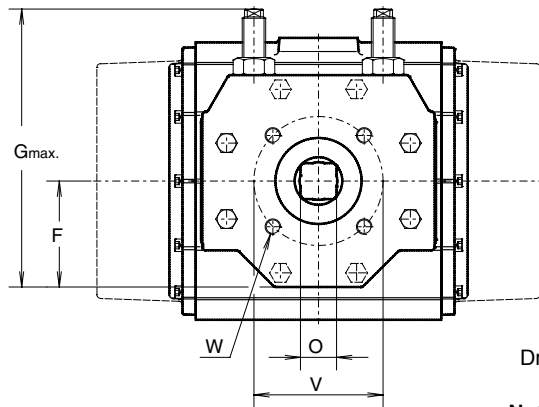
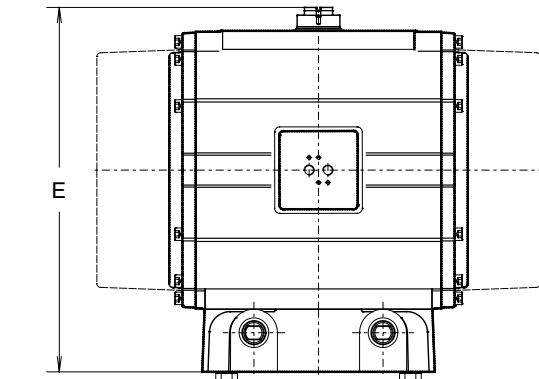
"LS420" is added to the basic part number i.e. PD2500-LS420

### Other dimensions

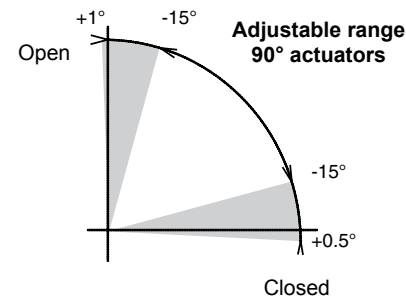
See data sheet A1.103.xxx

### Option

Version for 180° or DIN-standard actuator



**Note:** Cover plate only in combination with P2500



Dim. in inches	ACTUATOR TYPE	
	P2500	P4000
E	18.3	19.3
F	5.3	5.3
G	12.7	12.7
H	5.1	5.6
O	1.8	2.2
V	165	165
W	M20x30	M20x30

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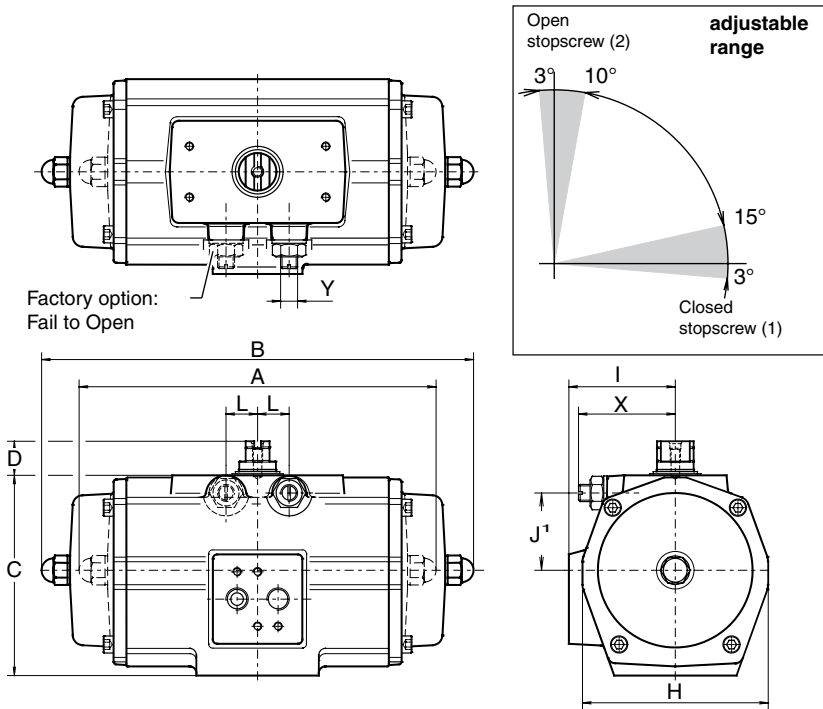
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# Data sheet

Sheet No.: A1.501.05 Rev. A  
Date: November 2009

## EL-O-MATIC ACTUATOR WITH DOUBLE STROKE ADJUSTMENT

DSA



### Description

Actuators with double stroke adjustment are normally used for high performance butterfly valves where a fine adjustment is required for the closed position. In this version adjustment is provided at the end of the opening and closing stroke positions. DSA actuators may be double acting or spring return, though are normally used as spring return (fail close) actuators.

### Operation

The closed position is adjusted by means of the stop-screw (1) located in the actuator body and for the open position by the stop-screws (2) in the actuator end caps.

### Identification

See data sheet A1.102.10

### Specification

Pressure : Up to 120 psi  
 Operating media : Air, dry or lubricated or non-corrosive gas  
 Torque (90°) : Data sheet A1.104.01 - A1.104.02  
 Rotation -  
 - Spring return : Clock-wise on air failure.  
 - Double acting : Counter clock-wise with port "A" pressurised.  
 Other dimensions : Data sheet A1.103.XXX  
 Temperature : -4° to +176° F  
 Adjustable range : Closed position (1), -3° - 15°  
                           Open position (2), 80° - 93°

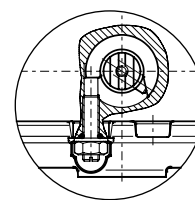
### Note

- 1) Can be provided with extra long end-cap stop screws for full range adjustment of the "open" position.
- 2) This DSA option is not required on actuators fitted with manual override gearboxes, as MO gearboxes already incorporate this function.

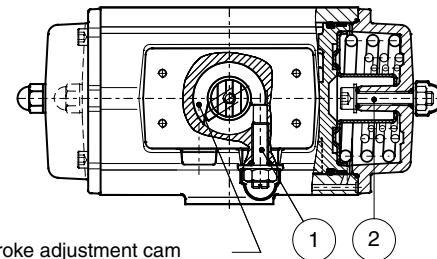
### Important

- 1) "Fail open" is factory option.
- 2) When assembled for "fail open" operation (code D; see data sheet A1.504), both stop-screws (1) and (2) will adjust the closed position. There is no adjustment for the open position!

Dim. in inch.	Actuator type									
	E25	E40	E65	E100	E150	E200	E350	E600	E950	E1600
<b>A DA</b>	6.26	7.09	7.83	8.70	10.00	11.14	12.01	15.35	17.32	20.47
<b>B SR</b>	6.77	8.03	9.80	10.51	12.20	14.17	15.24	18.90	20.94	25.24
<b>C</b>	3.15	3.66	4.13	4.65	5.51	5.63	7.13	8.66	10.20	11.69
<b>D</b>	0.79	0.79	0.79	0.79	0.79	0.79	0.79	1.18	1.18	1.18
<b>H</b>	2.91	3.39	3.86	4.25	4.76	5.04	6.81	8.15	9.09	264.00
<b>I</b>	1.81	2.01	2.26	2.48	2.76	2.87	3.71	4.45	4.96	5.59
<b>J1</b>	1.11	1.38	1.57	1.72	1.92	2.12	2.85	3.50	4.03	4.50
<b>L</b>	0.45	0.61	0.61	0.73	0.97	0.97	0.97	1.63	1.63	1.87
<b>Y</b>	1/4"-20	5/16"-18	5/16"-19	3/8"-16	3/8"-16	1/2"-13	1/2"-13	5/8"-11	5/8"-11	3/4"-10
<b>X max.</b>	1.42	1.63	1.63	1.99	2.36	2.46	2.85	4.02	4.02	4.31
<b>X max.</b>	1.63	1.91	1.91	2.30	2.64	2.91	3.31	4.51	4.51	4.88



Factory option:  
"Fail open"



Stroke adjustment cam

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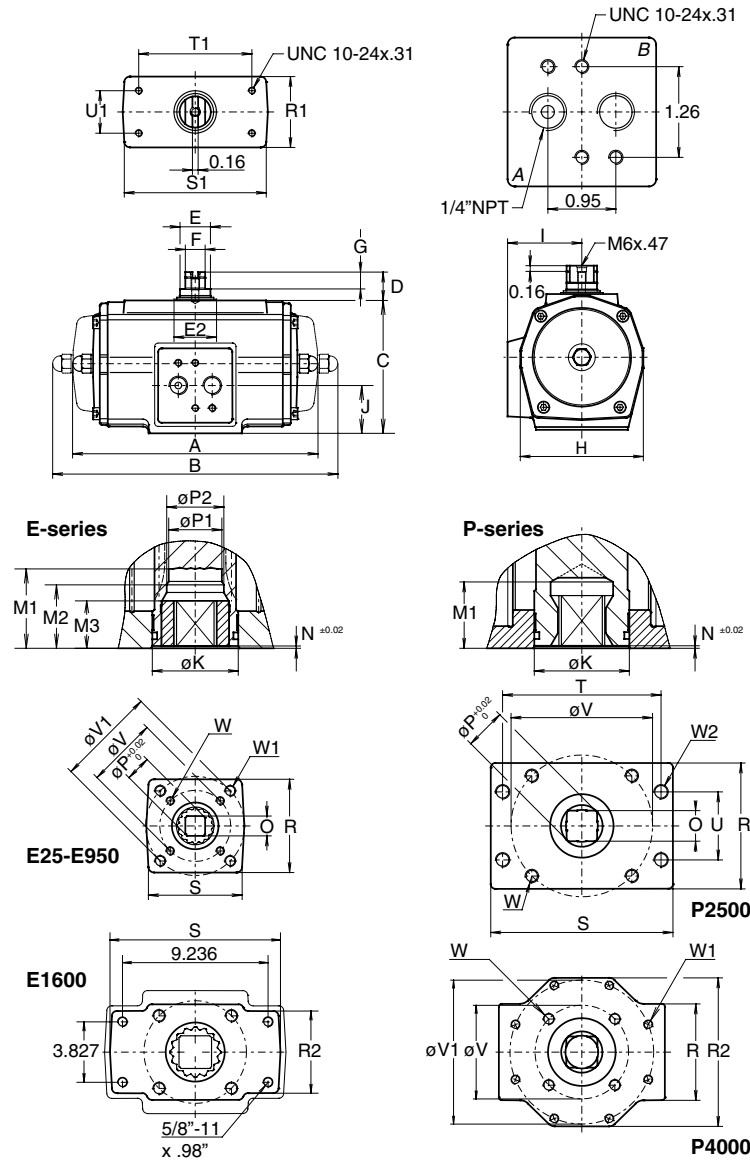
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# Data sheet

Sheet No.: A1.103.106 Rev. D  
Date: May 2011

## DIMENSION SHEET STANDARD ACTUATOR - ISO

E/P



Dim. in inch	Actuators E-series										P-series	
	E 12	E 25	E 40	E 65	E100	E150	E200	E 350	E600	E950	E1600	P2500
A DA	6.26	7.09	7.83	8.70	10.00	11.14	12.01	15.24	16.69	20.31	14.88	19.76
B SR	6.77	8.03	9.80	10.51	12.20	14.17	15.24	18.78	20.35	25.08	22.44	32.83
C	3.15	3.66	4.13	4.65	5.51	5.63	7.13	8.66	10.20	11.69	14.02	14.96
D	0.79	0.79	0.79	0.79	0.79	0.79	0.79	1.18	1.18	1.18	1.18	1.18
E	0.63	0.87	0.87	0.87	1.42	1.42	1.42	2.17	2.17	2.52	2.17	2.52
E2	0.91	1.18	1.18	1.18	1.77	1.77	1.77	2.56	2.56	2.95	2.56	3.15
F	0.39	0.55	0.55	0.55	0.75	0.75	0.75	1.42	1.42	1.42	1.42	1.42
G	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.39	0.39	0.39	0.39	0.39
H	2.91	3.39	3.86	4.25	4.76	5.04	6.81	8.15	9.09	10.43	13.78	14.96
I	1.81	2.09	2.26	2.48	2.76	2.87	3.71	4.45	4.96	5.59	7.28	7.87
J	1.26	1.32	1.54	1.59	1.59	1.99	2.85	3.33	4.15	4.74	7.01	7.48
K	0.94	1.30	1.30	1.50	2.17	2.17	2.17	2.68	2.95	3.74	3.35	4.72
M1	1.36	1.36	1.36	1.36	1.97	1.97	1.97	2.05	2.52	3.23	2.60	3.03
M2	-	-	-	1.06	-	1.46	1.46	-	-	-	-	-
M3	0.669	0.669	0.669	0.787	0.787	1.161	1.161	1.161	1.949	2.303	-	-
N	0.04	0.04	0.04	0.06	0.04	0.06	0.06	0.06	0.06	0.06	0.12	0.06
O max.	0.437	0.556	0.556	0.753	0.871	0.871	1.068	1.068	1.424	1.817	1.817	2.173
O min.	0.433	0.551	0.551	0.748	0.866	0.866	1.063	1.063	1.417	1.811	1.811	2.165
P	0.555	0.713	0.713	0.992	1.110	1.110	1.425	1.425	1.898	2.370	2.370	2.843
P1	0.555	0.713	0.831	0.909	1.303	1.303	1.303	1.437	1.909	2.382	-	-
P2	-	-	-	0.988	1.264	1.264	-	-	-	-	-	-
R	2.05	2.56	2.76	2.76	3.39	3.54	4.49	4.88	5.12	6.06	6.69	6.69
R1	1.97	1.97	1.97	2.36	2.36	2.36	2.36	3.54	3.54	4.92	6.30	6.30
R2	-	-	-	-	-	-	-	-	-	5.20	-	10.31
S	2.05	2.56	2.76	2.76	3.62	3.54	4.49	4.88	5.59	11.02	11.42	11.42
S1	3.94	3.94	3.94	3.94	3.94	3.94	3.94	6.69	6.69	8.27	9.65	9.65
T1	3.150	3.150	3.150	3.150	3.150	3.150	3.150	5.118	5.118	5.118	5.118	5.118
U1	1.181	1.181	1.181	1.181	1.181	1.181	1.181	1.181	1.181	1.181	1.181	1.181
F03	F05	F05	F05	F05	F07	F07	F07	F10	F10	F16	F16	F16
V	1.417	1.969	1.969	1.969	2.756	2.756	2.756	4.016	4.016	6.496	6.496	6.496
W	10-24 x.31"	1/4"-20 x.39"	1/4"-20 x.39"	1/4"-20 x.39"	5/16"-18 x.39"	5/16"-18 x.39"	5/16"-18 x.39"	3/8"-16 x.63"	3/8"-16 x.63"	3/4"-10 x1.14"	3/4"-10 x1.14"	3/4"-10 x1.14"
V1	1.969	2.756	2.756	2.756	4.016	4.016	4.016	4.921	5.512	-	-	10.000
W1	1/4"-20 x.39"	5/16"-18 x.39"	5/16"-18 x.39"	5/16"-18 x.39"	3/8"-16 x.63"	3/8"-16 x.63"	3/8"-16 x.63"	1/2"-13 x.79"	5/8"-11 x.98"	-	-	5/8"-11 x.98"

For E12 dimensions see data sheet A1.103.102

### Note

1. Flange and square drive to ISO 5211
2. Top and solenoid flange to VDI/VE 3845 (NAMUR)
3. For P-series actuators with limit stops see A1.501.01

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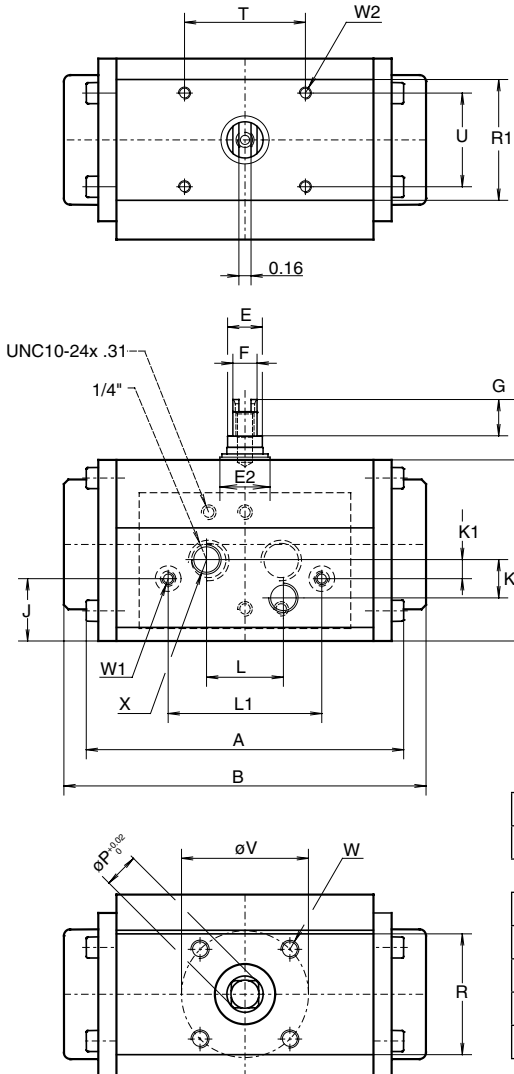


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# Data sheet

Sheet No.: A1.103.102 Rev. A  
Date: November 2009

## DIMENSION SHEET ACTUATOR ISO E12 (90°/180°)



### DOUBLE ACTING TORQUE (ED)

Pressure	psi	40	50	60	70	80	90	100	120
Torque 90°/180°	(in.lb.)	59	74	89	104	119	134	149	179

### SINGLE ACTING TORQUE (ES)

Pressure	psi	Air stroke						Spring stroke	
		60		80		100		start	end
Position	-	start	end	start	end	start	end		
Torque 90°	(in.lb.)	48	23	80	55	112	87	64	41
Torque 180°	(in.lb.)	49	25	81	57	112	88	63	40

Dim. in Inches	90°	180°
A ED	4.06	6.10
B ES	4.65	8.50
C	2.36	2.36
D	0.79	0.79
E	0.63	0.63
E2	0.91	0.91
F	0.39	0.39
G	0.47	0.47
H	2.36	2.36
I	1.30	1.30
J	0.83	0.83
K	0.50	0.50
K1	0.25	0.25
L	1.00	1.00
L1	2.00	2.00
M	0.65	0.65
N	0.039	0.039
Omax.	0.358	0.358
Omin.	0.354	0.354
P	0.476	0.476
R	1.57	1.57
R1	1.57	1.57
T	1.57	1.57
U	1.22	1.22
V	1.654	1.654
W	10-24 UNCx.24"	10-24 UNCx.24"
W1	10-24 UNCx.24"	10-24 UNCx.24"
W2	10-24 UNCx.24"	10-24 UNCx.24"
X	1/8"NPT	1/8"NPT
Y	M6x.48	M6x.48

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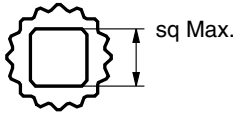
# Data sheet

Sheet No.: A1.103.200 Rev. B  
Date: May 2011

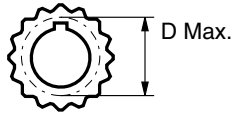
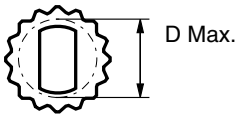
## DRIVE INSERTS FOR EL-O-MATIC ACTUATORS

E

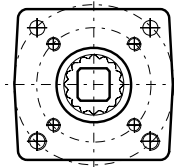
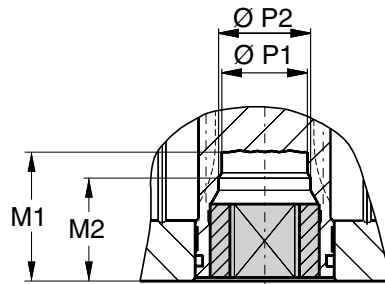
### Standard available insert shapes



### Optional available insert shapes



### Insert mounting acc. ISO 5211



### Description

Most of the EI-O-Matic actuators are fitted with drive inserts. This enables actuators to be directly mounted onto suitable valves and eliminates the need for a bracket and coupling type mounting kit. The use of direct mounts significantly cuts the cost of the valve/actuator assembly.

Standard actuators are fitted with square drive inserts in accordance with ISO 5211 (or DIN 3337), but a wide variety of other inserts are also available. Special inserts may have oversize or undersize squares, double-D and shaft key way forms.

Drive inserts can be supplied on factory built actuators or as loose items and are easily replaceable at distributor or end user level.

Where direct mounts are not possible, for instance on valves with exposed grand packing, the use of inserts often simplifies the design of the mounting kit.

Material : Aluminum alloy  
Finish : Anodized

The following actuator types do not have inserts.

- E12,
- P2500 and P4000
- 180° actuators

These actuators have inner square directly in the bottom of the pinion. See the following data sheets for more information :

E12	ISO5211	A1.103.102
P2500/P4000	ISO 5211	A1.103.106
180°	ISO 5211	A1.203.011

Standard inserts with inner-square-dimensions per actuator type									
	E25	E40 / E65	E100	E150	E200	E350	E600	E950	E1600
	0.433	0.551	0.748	0.866	0.866	1.063	1.063	1.417	1.811
Optional insert dimensions									
	0.354	0.394	0.472	0.551	0.551	0.551	0.551	0.866	
	0.394	0.472	0.551	0.630	0.630	0.630	0.630		
			0.63	0.669	0.669	0.669	0.669		
				0.748	0.748	0.748	0.748		
				0.945	0.945	0.866	0.866		
				1.063	1.063	0.945	0.945		
Maximum insert dimensions									
M1	1.36	1.36	1.36	1.97	1.97	1.97	2.05	2.52	3.23
M2	-	-	1.06	1.46	1.46	1.46	-	-	-
P1	0.71	0.71	0.91	1.26	1.26	1.26	1.44	1.91	2.38
P2	-	-	0.99	1.43	1.43	1.43	-	-	-
SQ max.	0.630	0.630	0.748	1.063	1.063	1.063	1.063	1.417	1.811
D max.	0.827	0.827	0.929	1.323	1.323	1.323	1.323	1.772	2.362

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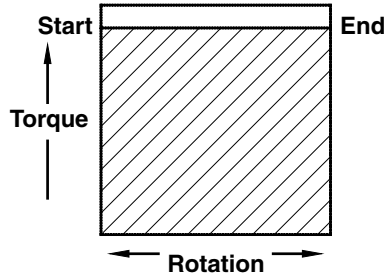
# Data sheet

Sheet No.: A1.104.01 Rev. B  
Date: January 2010

## DOUBLE ACTING ACTUATOR TORQUE (In.lb.)

90°

### DOUBLE ACTING TORQUE

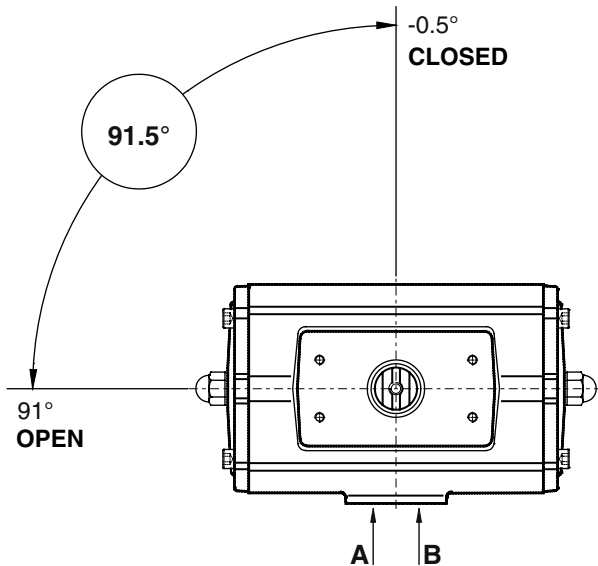


Actuator		Torque of double acting actuators (in In.lb) Supply pressure (psi)												
Type	Size	30	35	40	45	50	55	60	70	75	80	90	100	120
ED	12	43.9	51.4	58.9	66.4	73.9	81.4	88.9	104	111	119	134	149	179
ED	25	81.4	95.3	109	123	137	151	165	193	206	220	248	276	332
ED	40	153	179	205	231	257	283	309	361	387	413	466	518	622
ED	65	233	272	312	352	392	431	471	551	590	630	709	789	948
ED	100	344	402	461	520	578	637	696	813	872	930	1048	1165	1400
ED	150	551	645	739	833	927	1021	1115	1303	1397	1491	1680	1868	2244
ED	200	754	883	1011	1140	1269	1398	1527	1784	1913	2042	2299	2557	3072
ED	350	1310	1534	1757	1981	2205	2428	2652	3100	3323	3547	3994	4442	5337
ED	600	2226	2606	2986	3366	3747	4127	4507	5267	5647	6028	6788	7548	9069
ED	950	3323	3890	4458	5025	5593	6160	6728	7862	8430	8997	10132	11267	13537
ED	1600	5493	6431	7369	8307	9245	10183	11121	12998	13936	14874	16750	18626	22379
PD	2500	8774	10273	11825	13270	14768	16267	17847	20858	22363	23869	26880	29891	35912
PD	4000	14874	17414	19962	22495	25035	27576	30127	35210	37751	40293	45375	50458	60623

### Note

- Emerson Process Management recommends that the valve manufacturer supply the maximum required torque values (Including any adjustments or suggested safety factors for valve service conditions or application). Additionally, the valve manufacturer must identify at which position(s) and direction(s) of rotation (Counter Clock Wise or Clock Wise) these maximum requirements occur.
- If in doubt, or you require any assistance with sizing actuators, do not hesitate to contact your nearest Emerson's Valve Automation Division representative.
- Pressure on port "A" opens the actuator\*
- The actuator is shown in closed position\*

(\* code A, data sheet A1.503)



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