

reliable actuators  
to **Fit**  
& **Forget**



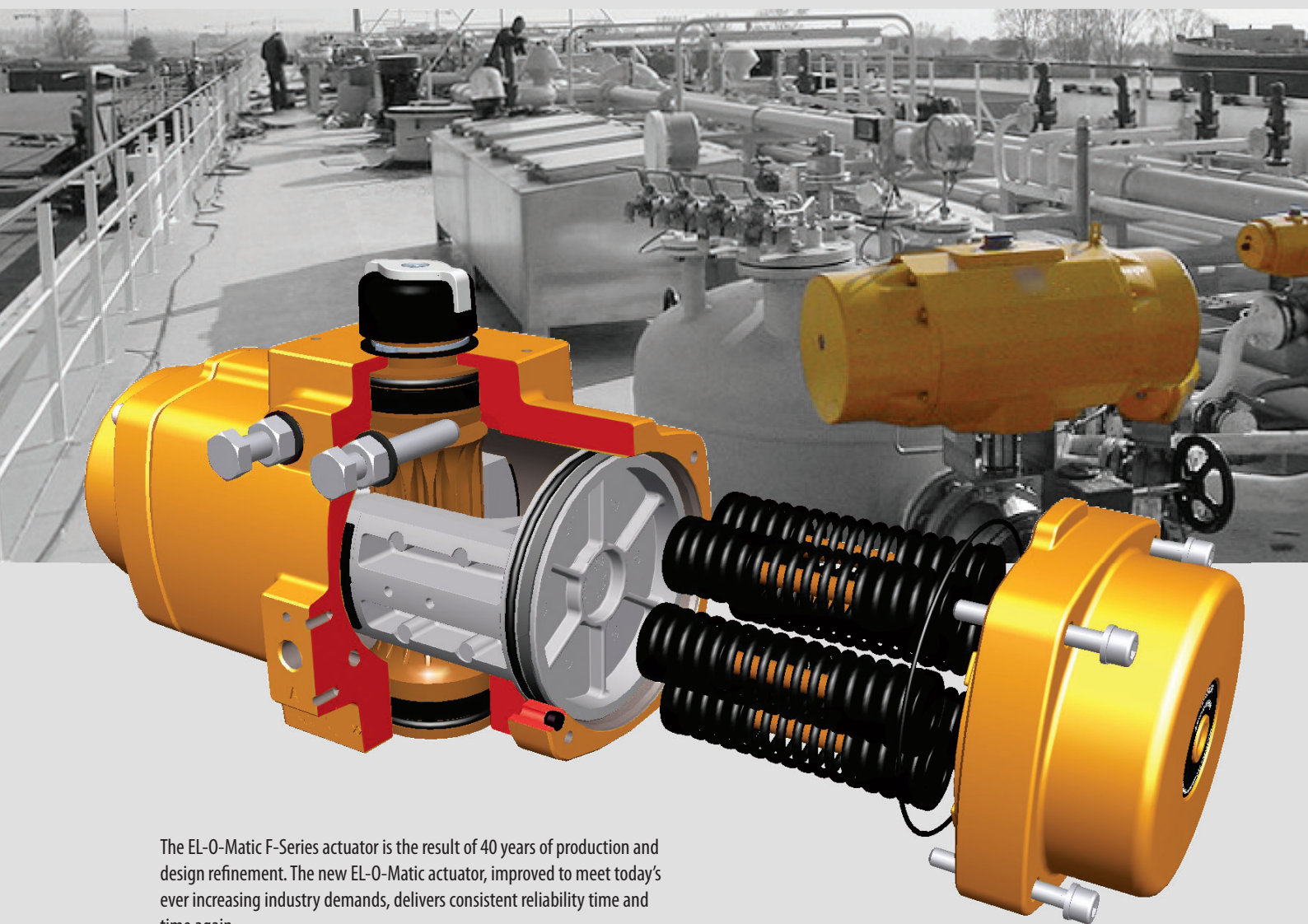
**EL Matic**<sup>TM</sup>

Pneumatic Rack & Pinion Actuators

a new look

# Reliable As Ever

40 years of success and still delivering



The EL-O-Matic F-Series actuator is the result of 40 years of production and design refinement. The new EL-O-Matic actuator, improved to meet today's ever increasing industry demands, delivers consistent reliability time and time again.





Pneumatic Rack & Pinion Actuators

# Fit & Forget Sets the standard for quality

EL-O-Matic continues to set the standard high with innovative features and greater customer benefits thus completing the Emerson's portfolio of rack & pinion actuators.

Built upon more than 40 years of field experience, EL-O-Matic actuators remain second to none in dependability, providing the optimum "Fit & Forget" performance in a wide range of process industry applications such as chemical, refining, power generation, pulp & paper, pharmaceutical and food & beverage. Designed and produced according to standards for high engineering accuracy, and ISO 9000:2008 certified, assures a long cycle life.



Valve drive adaptors make the EL-O-Matic's installation quick and reliable.

## Fit & Forget Means Reliability

Cast aluminum with two part coating with powder coating provides superior corrosion protection.

Product reliability is key to customer satisfaction. The F-Series is easy to install and performs continuously and faultlessly throughout their long working life.

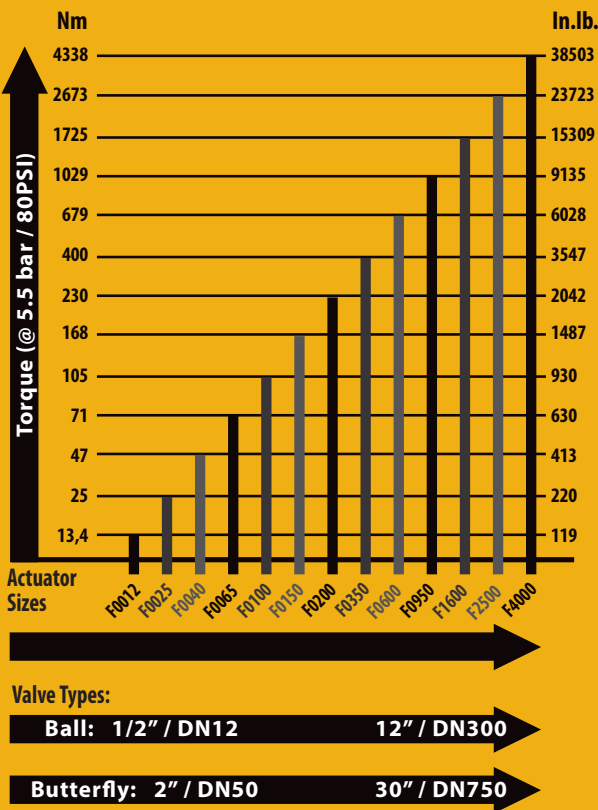
Rugged, cast aluminum body and advanced powder coated finishing provide corrosion protection even in the harshest of environments.

Modular construction, interchangeable components, dual drilled mounting holes and pinion inserts provide the widest range of mounting options. Drive pinions of aircraft grade ASTM 7075 T6 aluminum alloy ensure the ultimate combination of strength/weight ratio and additional protection against galvanic corrosion. Stainless steel external fasteners complete the corrosion protection specification and provides greater cost savings and long-term value.



# EL-O-Matic F-Series

Available in 13 Sizes



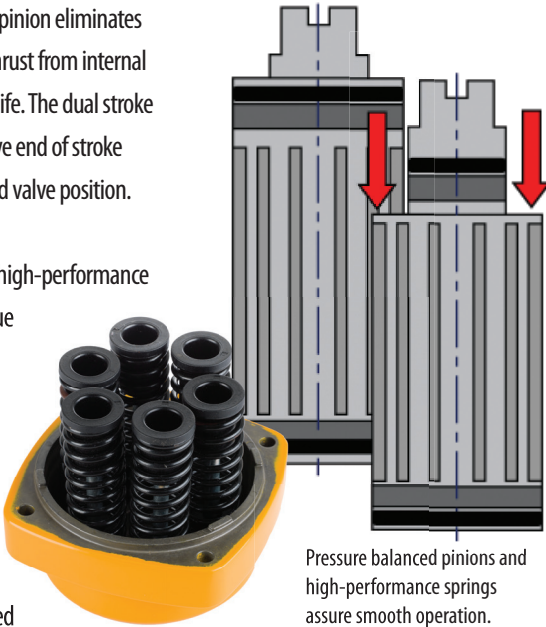
## Temperature Range

Standard	-20 °C to +80 °C (-4 °F to +176 °F)
High Temperature	-10 °C to +120 °C (+14 °F to +250 °F)
Low Temperature	-40 °C to +80 °C (-40 °F to +176 °F)

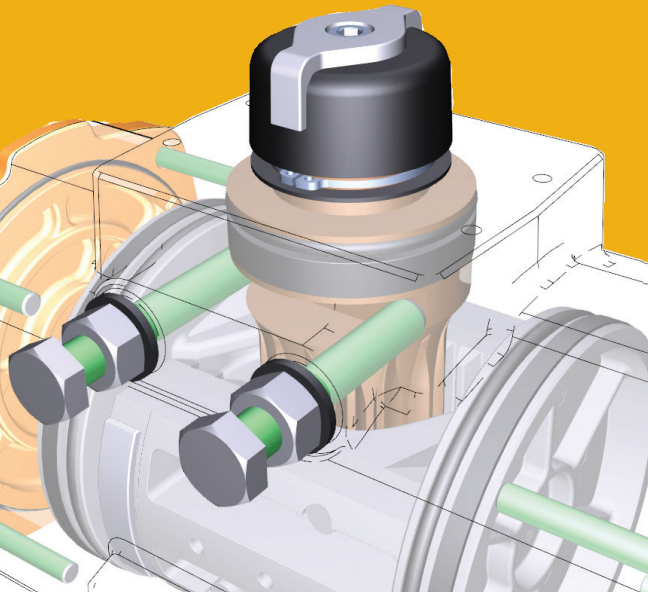
# designed to improve Operation and Easy Maintenance

The EL-O-Matic pressure balanced pinion eliminates “endwise” forces and downward thrust from internal pressures to extend their working life. The dual stroke adjustment provide precise intuitive end of stroke adjustment for the open and closed valve position.

Actuator torque is optimized with high-performance springs, designed to deliver a torque range suitable for a wide range of applications. Six separate spring sets allow proper sizing to all quarter-turn valve types with a wide range of supply pressures. Maximum safety and ease of conversion are accomplished with pre-assembled springs.



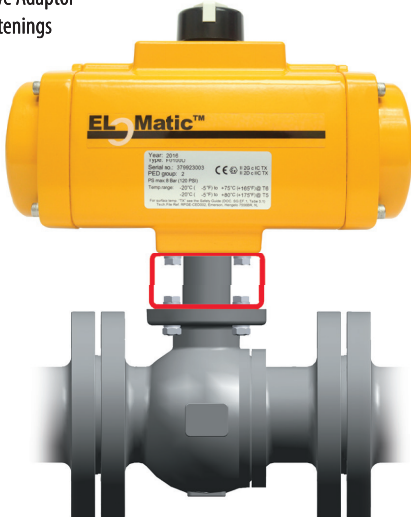
The F-Series offers a wide torque range to meet all cycle speed demands with 13 sizes ranging from 13.4 to 4338 Nm (119 to 38503 lbf.in) for ball valves from 1/2” to 12” and butterfly valves to 30”. Cycle speeds are maximized by the use of large internal air ports. Optional “super-fast” and reduced speed versions are also available.



**Direct Mounting**  
Spindle Insert  
Fastenings



**Indirect Mounting**  
Box Section Bracket  
Drive Adaptor  
Fastenings

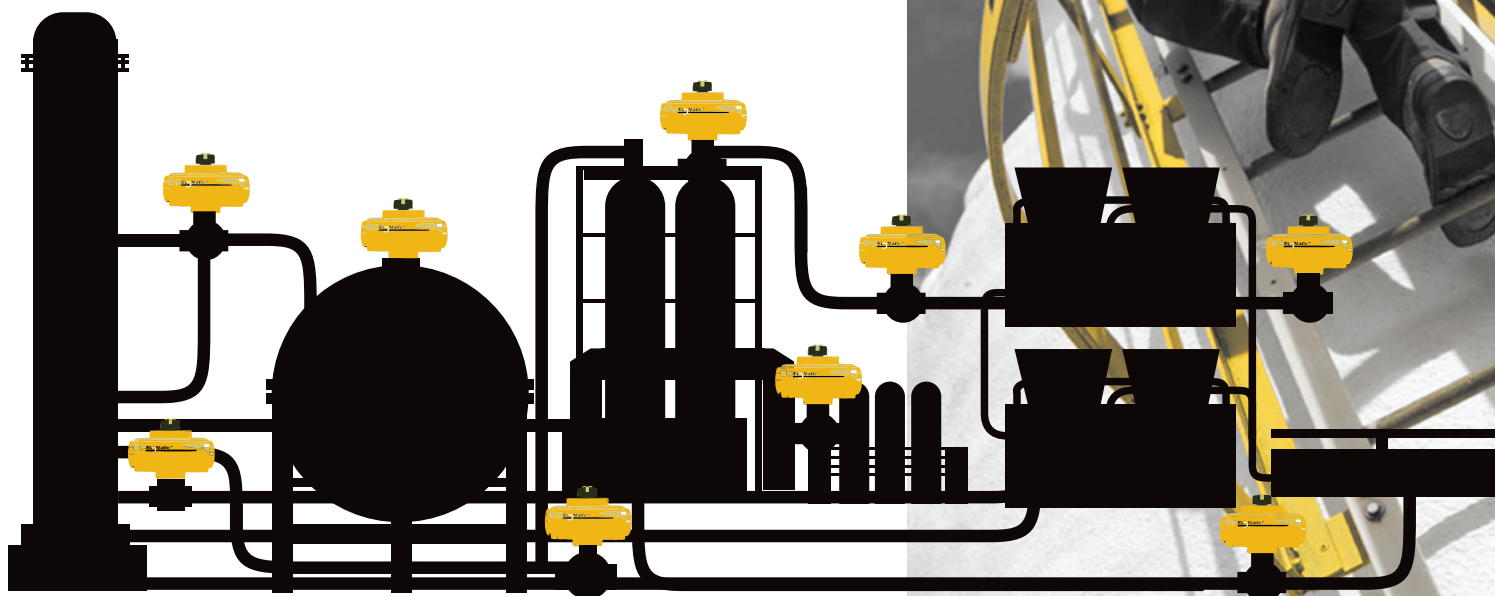




# designed for **Safety** and **Reliability**

Compliance to relevant industry standards ensures EL-O-Matic actuators afford customers the widest range of applications, and the longest working life, safety and reliability.

The F-Series Blow-Out-Proof pinion design improves safe maintenance ensuring the pinion remains in the housing. Actuators not having this feature are in danger of sudden ejection of the pinion when the actuator is pressurized and the clip has been removed.



EL-O-Matic actuators comply with the following standards:

- ISO 5211 for the valve interface
- VDI/VDE 3845 (NAMUR) for air connection interface (solenoid valve) and top mount interface (switch box or positioner)
- EN 15714 part 3 for working life and performance
- ASTM B117 for corrosion protection
- IEC 61508: 2010 for Functional Safety related systems (SIL 3 rating)

EL-O-Matic F-Series actuators also comply with all relevant health and safety standards across all areas of operation including:

- EU Machinery Directive 2006/42/EC for mechanical safety
- EU Pressure Equipment Directive 97/23/EC for pressure safety
- EU ATEX Directive 94/9/EC for explosive safety
- TR 010 Certificate for EAC Customs union (Mechanical Safety)
- TR 012 Certificate for EAC Customs union (Explosion Safety)

## Metric Tables

### Torque Double Acting

Actuator Size	Torque in Nm Supply pressure (barg)			
	4	5	5.5	6
FD0012	9.7	12.2	13.4	14.6
FD0025	18	23	25	27
FD0040	34	42	47	51
FD0065	51	64	71	77
FD0100	76	95	105	115
FD0150	122	153	168	183
FD0200	167	209	230	251
FD0350	290	363	400	436
FD0600	492	617	679	741
FD0950	746	935	1029	1124
FD1600	1250	1566	1725	1883
FD2500	1937	2427	2673	2918
FD4000	3144	3940	4338	4736

### Torque Spring Return

Actuator Size	Spring Set	Air Stroke (Nm) Supply pressure in barg							
		Spring Stroke (Nm)		5.0 barg		5.5 barg		6.0 barg	
				Start	End	Start	End	Start	End
FS0012	20	7	5	8	5	9	6	10	7
FS0025	40	14	9	14	8	16	10	18	12
	50	18	11	11	4	14	6	16	8
	60	21	13	-	-	11	2	13	4
FS0040	40	26	17	26	15	30	19	35	24
	50	33	21	21	7	26	12	30	16
	60	39	25	-	-	21	4	25	9
FS0065	40	41	26	39	21	46	28	52	35
	50	51	32	31	10	38	17	45	23
	60	61	39	-	-	31	5	38	12
FS0100	40	59	37	58	33	68	43	78	53
	50	74	47	47	16	57	26	68	36
	60	89	56	-	-	47	9	57	19
FS0150	40	94	59	94	54	110	70	126	86
	50	118	74	77	26	93	43	109	59
	60	141	89	-	-	76	16	92	32
FS0200	40	131	82	127	71	149	93	171	116
	50	163	103	103	34	125	56	148	78
	60	196	124	-	-	102	18	124	41
FS0350	40	224	141	222	127	261	166	300	205
	50	280	176	182	63	221	102	260	141
	60	335	211	-	-	180	38	219	77
FS0600	40	383	241	376	213	442	279	508	345
	50	479	302	307	103	373	169	439	235
	60	575	362	-	-	303	59	369	125
FS0950	40	484	309	583	365	681	463	779	561
	50	605	387	487	214	585	312	683	410
	60	726	464	390	63	488	161	586	259
FS1600	40	830	516	981	589	1146	753	1310	917
	50	1037	644	820	330	984	494	1149	658
	60	1244	773	659	70	823	234	988	399
FS2500	40	1178	722	1617	1046	1871	1301	2126	1555
	50	1473	902	1391	678	1646	932	1900	1187
	60	1768	1083	1166	310	1420	564	1675	819
FS4000	40	1891	1195	2595	1725	3008	2138	3421	2551
	50	2363	1494	2221	1135	2634	1548	3047	1961
	60	2836	1793	1848	544	2261	957	2674	1370

## Accessories for your Valve Operating System™



Wireless Transmitters



Solenoids

Pressure Regulators

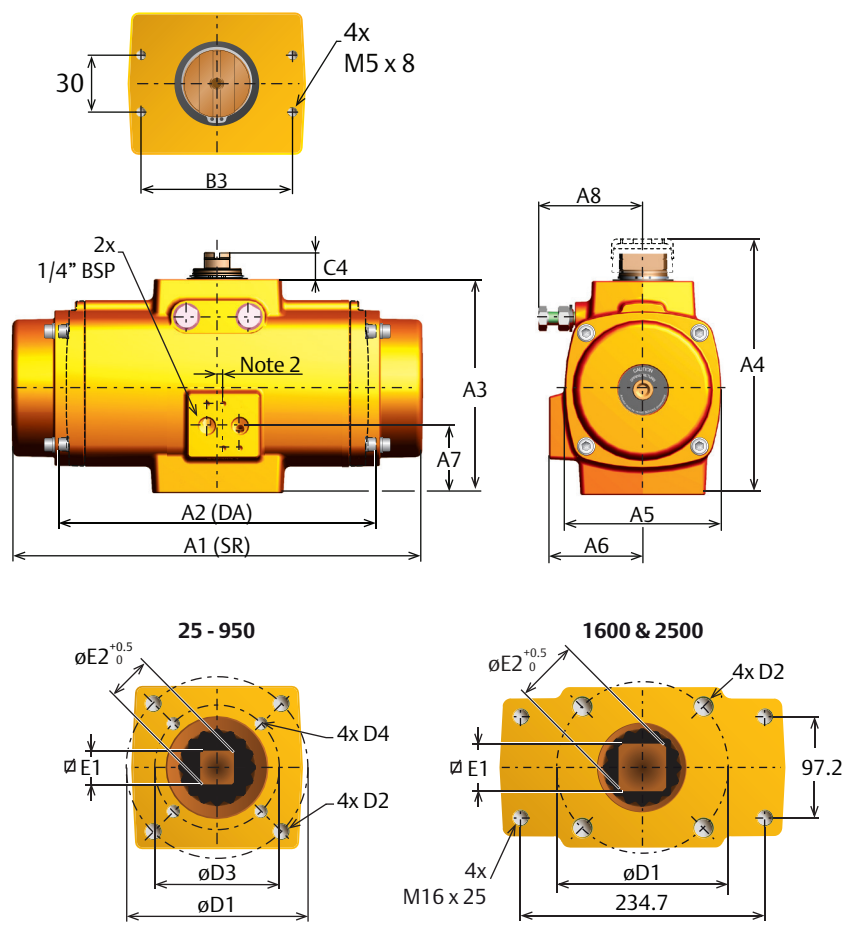


Digital Valve Positioners  
(DVCs)



# Metric Tables

## Dimensions



### Note:

1. DA = Double Acting, SR = Spring Return.
2. The solenoid drilling pattern is shifted versus the centerline of the actuator.  
- 4 mm for size 0025  
- 2 mm for size 0040  
- 12 mm for sizes 0950 to 4000
3. Solenoid interface and top mounting interface according VDI/VDE3845 (NAMUR).
4. F25\* = For sizes 1600 and 2500 drilling pattern 234.7 x 97.2 represent 4 holes of a F25 drilling pattern.
5. [Dimension data sheets available online](#) contain detailed dimensional information.

Dim. in mm	Actuator size												
	0012	0025	0040	0065	0100	0150	0200	0350	0600	0950	1600	2500	4000
A1	166	192	217	247	247	304	362	385	476	658	732	877	959
A2	166	192	217	247	247	235	265	284	356	400	462	550	649
A3	91	112	124	131	157	163	201	248	268	302	354	389	389
A4	119	139	151	158	185	191	230	292	305	339	392	427	427
A5	68	82	92	103	116	124	161	195	239	239	306	350	400
A6	49	55	58	64	69	72	85	102	131	149	170	196	196
A7	30	34	38	38	49	49	42	67	121	137	157	184	184
A8	48	58	69	69	75	87	109	132	131	156	181	175	175
B3	80	80	80	80	80	80	80	130	130	130	130	130	130
C4	20	20	20	20	20	20	20	30	30	30	30	30	30
ISO 1	F05	F07	F07	F07	F10	F10	F10	F12	F14	F16	F16	F25	F25
D1	50	70	70	70	102	102	102	125	140	165	165	254	254
D2	M6x10	M8x13	M8x13	M8x13	M10x15	M10x15	M10x15	M12x18	M16x25	M20x20	M20x20	M16x25	M16x25
ISO 2	F03	F05	F05	F05	F07	F07	F07	F10	F10	F25*	F25*	F16	F16
D3	36	50	50	50	70	70	70	102	102	-/-	-/-	165	165
D4	M5x8	M6x10	M6x10	M6x10	M8x13	M8x13	M8x13	M10x16	M10x16	M16x25	M16x25	M20x20	M20x20
E1 Max.	11.08	14.08	14.08	19.08	19.08	22.10	27.11	27.11	36.16	46.16	46.16	55.24	55.24
E1 Min.	11.00	14.00	14.00	19.00	19.00	22.00	27.00	27.00	36.00	46.00	46.00	55.00	55.00
E2	14.1	18.1	18.1	25.2	25.5	28.2	36.2	36.2	58.2	60.2	60.2	72.2	72.2

For dimensions of size 0012 see data sheet EFM.06.0012

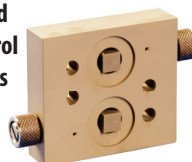


Manual  
Override  
Gear Boxes

Switchbox



Speed  
Control  
Plates



Breather/  
Block & Bleed  
Valves

