

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



EL Matic™

Year: 2015
Type: F0150U
Serial no.: SAMPLE 3
PED group: 2
Pop max @ Bar (100 PSI)
Temp range: -20°C (-5°F) to +75°C (+165°F) @ T0
-20°C (-5°F) to +80°C (+175°F) @ T5
For surface temp. "T5" see the Safety Guide 5000, 5010 or 5040 (S. 15)
Trade Name: AMPSE-CO2102, Emerson, Hengelo, 15068R, NL



EL Matic™

Pneumatic Rack & Pinion Actuators



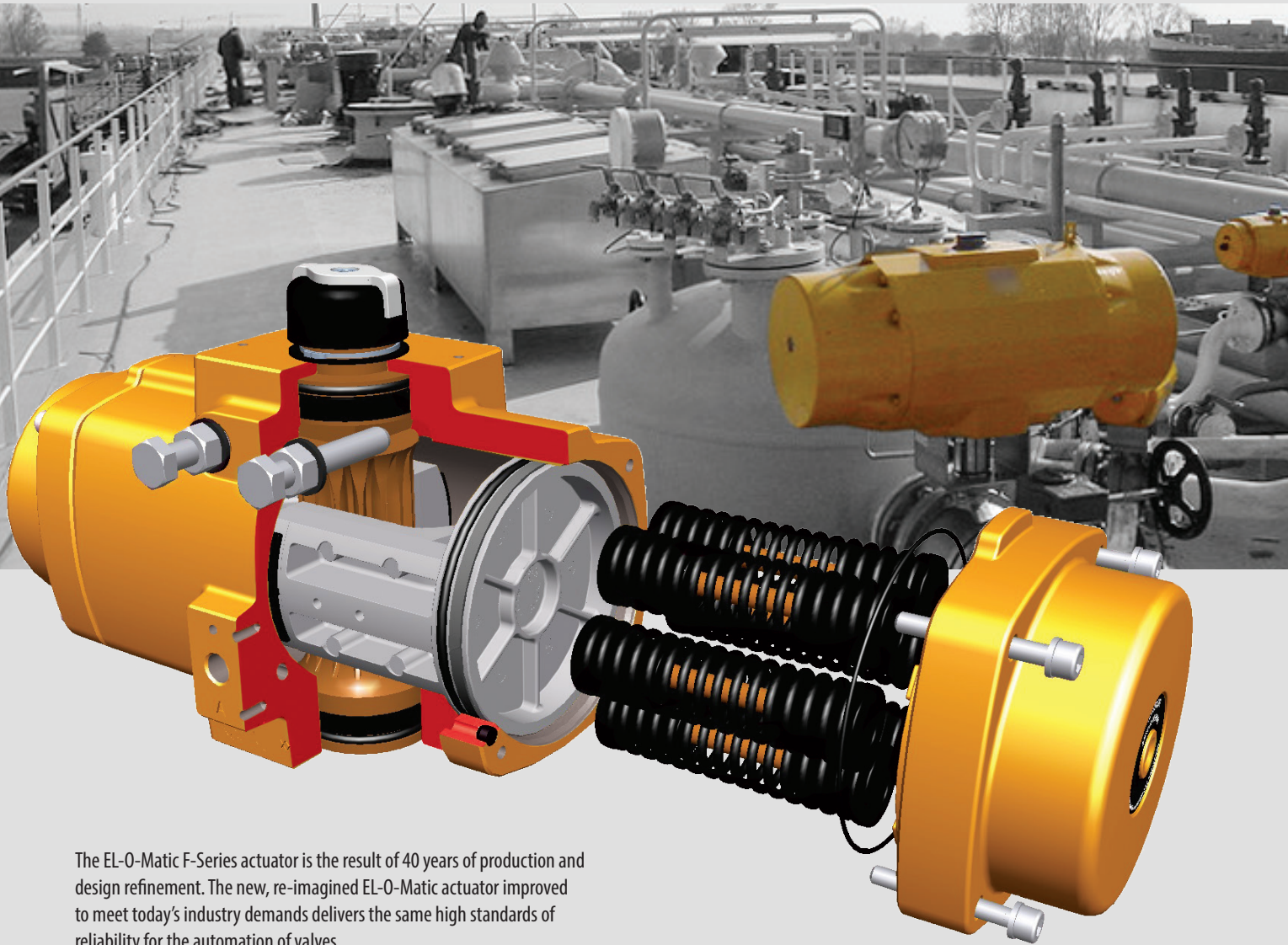
K.E. JEPSEN

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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, re-imagined EL-O-Matic actuator improved to meet today's industry demands delivers the same high standards of reliability for the automation of valves.



Pneumatic Rack & Pinion Actuators

Fit & Forget

EL-O-Matic continues to be the industry standard with innovative features and greater customer benefits from Emerson's portfolio of rack & pinion actuators.

Built upon 40 years of proven service from millions of applications, 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 Chemicals, Refining, Power Generation, Pulp & Paper, Pharmaceuticals and Food & Beverage. Designed and produced according to standards for high engineering accuracy, in manufacturing sites certified to ISO 9000:2008, assure a long cycle life.



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

"Fit & Forget" Means Reliability

Product reliability is key to customer satisfaction. EL-O-Matic actuators are quick and easy to install and function faultlessly throughout their long working life.

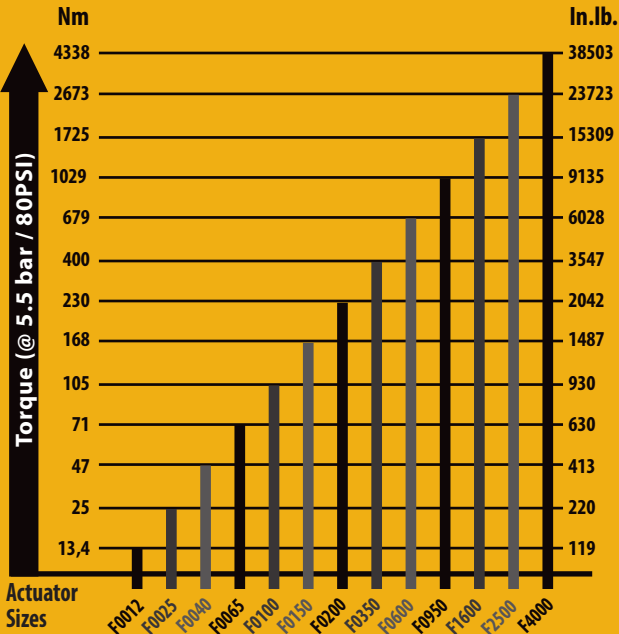
Rugged, cast aluminum bodies and advanced powder coated finishing provide corrosion protection even in the harsh environments. Modular construction, interchangeable components, dual drilled mounting holes and pinion inserts provide the widest range of mounting options. Drive pinions of aircraft grade 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 combine to provide greater cost savings and better long-term value.

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



designed to improve Operations and Easy Maintenance

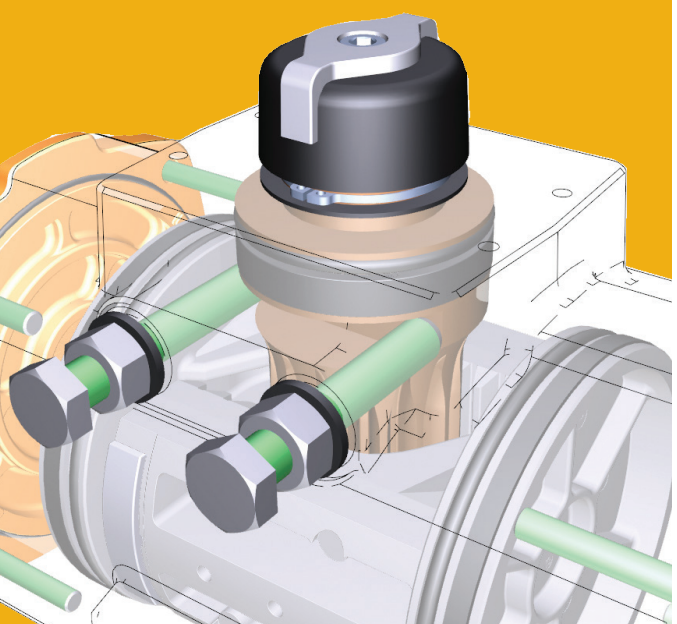
EL-O-Matic F-Series - 13 Sizes



- Kleptypen:**
- Ball:** 1/2" / DN12 12" / DN300
 - Butterfly:** 2" / DN50 30" / DN750

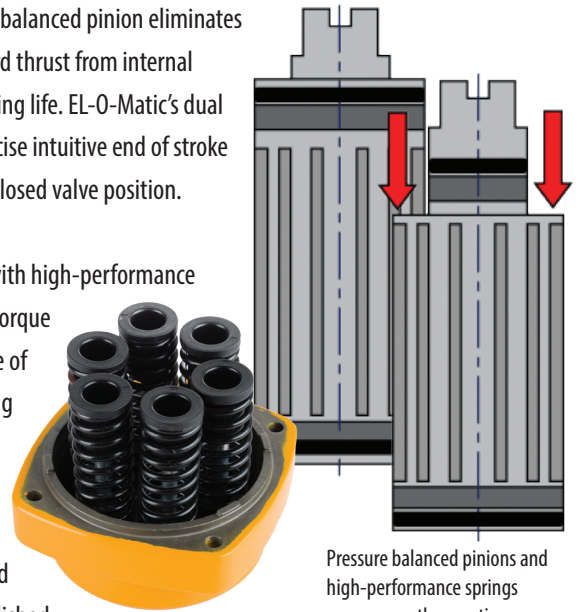
Actuator Temperature Ranges

- 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)



EL-O-Matic actuators' pressure balanced pinion eliminates "endwise" forces and downward thrust from internal pressures to extend their working life. EL-O-Matic's 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.

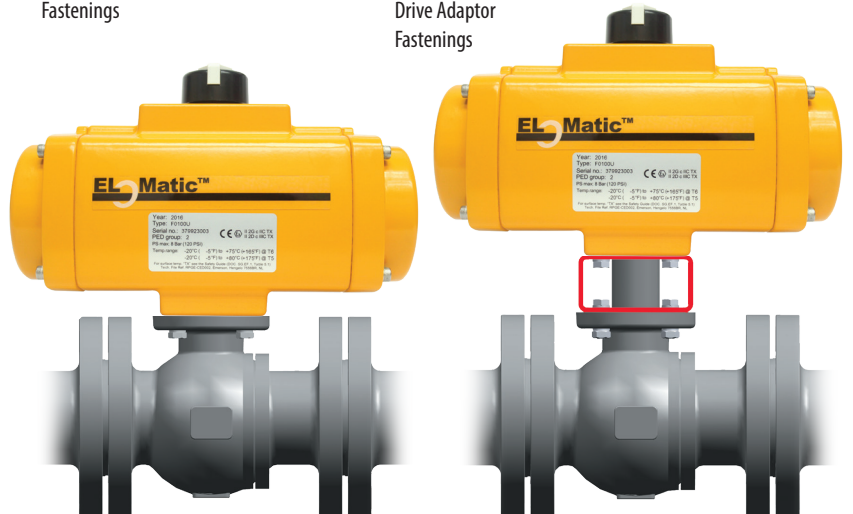


Pressure balanced pinions and high-performance springs assure smooth operation.

EL-O-Matic actuators' wide torque ranges meet all cycle speed demands through 13 sizes with a torque output 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

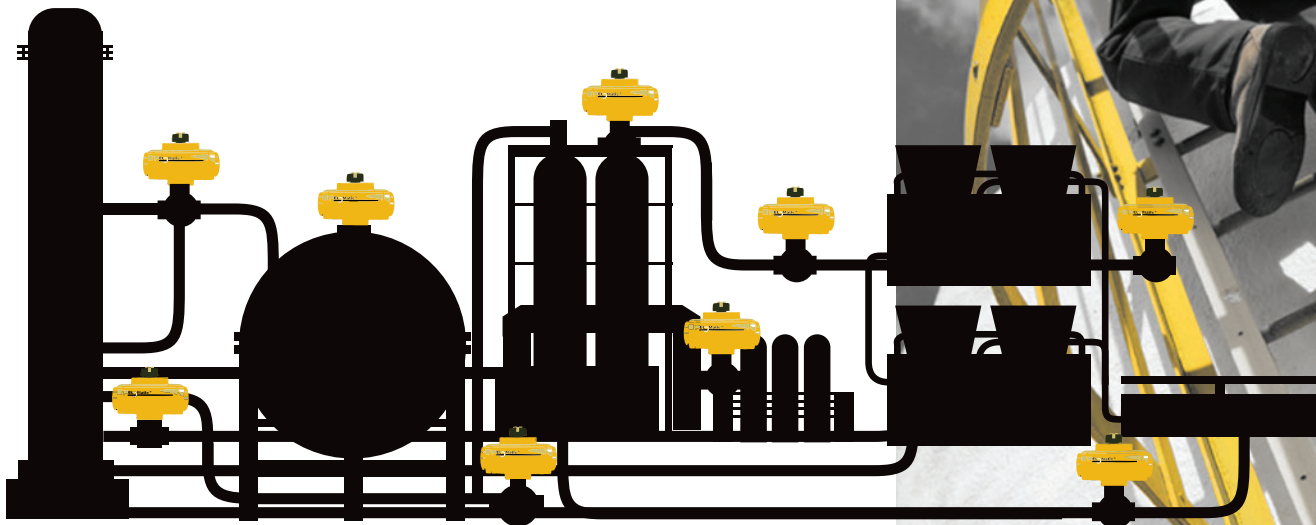
Indirect Mounting
Box Section Bracket
Drive Adaptor
Fastenings



safety completes the Reliability Picture

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 actuator's Blow-Out-Proof pinion design improves safe maintenance by 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:

- **European** Machinery Directive 2006/42/EC,
- **Directives** Pressure Equipment Directive 2014/68/EU,
ATEX Directive 2014/34/EU
ROHS 2 Directive 2011/65/EU
ROHS 3 Directive 2015/863/EU
Regulation (EC) No 1907/2006 (REACH)
- **Euro-Asian** TR 010 certificate - Mechanical Safety,
- **Customs Union** TR 012 certificate - Explosion Safety



Imperial Tables

Torque Double Acting

Actuator Size	Torque in lbf.in Supply pressure (psig)			
	60	80	100	120
FD0012	89	119	149	179
FD0025	165	220	276	321
FD0040	309	413	518	601
FD0065	471	630	789	916
FD0100	696	931	1166	1354
FD0150	1115	1492	1868	2169
FD0200	1527	2042	2557	2969
FD0350	2653	3547	4442	5158
FD0600	4508	6028	7549	8766
FD0950	6830	9135	11440	13744
FD1600	11447	15309	19172	23034
FD2500	17738	23723	29708	35693
FD4000	28789	38503	48217	57931

Torque Spring Return

Actuator Size	Spring Set	Spring Stroke (lbf.in)		Air Stroke (lbf.in) Supply pressure in barg							
				60 psi		80 psi		100 psi		120 psi	
		Start	End	Start	End	Start	End	Start	End	Start	End
FS0012	20	64	41	47	21	79	53	111	84	142	116
FS0025	40	125	79	84	31	143	90	202	149	261	208
	50	156	99	-	-	120	54	179	113	238	172
	60	188	118	-	-	98	18	157	77	216	136
FS0040	40	231	146	159	62	270	172	380	283	491	393
	50	289	183	-	-	228	106	338	216	449	327
	60	347	220	-	-	186	39	296	150	407	260
FS0065	40	361	228	237	84	406	252	574	420	742	589
	50	452	285	-	-	340	148	509	317	677	485
	60	542	341	-	-	275	44	443	213	612	381
FS0100	40	523	331	357	136	606	385	855	634	1104	883
	50	654	414	-	-	511	235	760	484	1009	733
	60	785	497	-	-	416	85	665	334	914	583
FS0150	40	833	524	580	224	979	623	1377	1022	1776	1421
	50	1041	654	-	-	828	384	1227	783	1626	1181
	60	1249	785	-	-	678	145	1076	543	1475	942
FS0200	40	1156	729	780	289	1325	834	1871	1380	2417	1926
	50	1445	911	-	-	1116	502	1662	1048	2207	1593
	60	1734	1093	-	-	906	170	1452	716	1998	1261
FS0350	40	1979	1248	1376	535	2324	1483	3272	2431	4221	3380
	50	2474	1560	-	-	1966	914	2914	1863	3862	2811
	60	2969	1872	-	-	1607	346	2555	1294	3504	2242
FS0600	40	3391	2135	2321	878	3933	2490	5544	4101	7155	5712
	50	4238	2669	-	-	3319	1515	4930	3127	6542	4738
	60	5086	3203	-	-	2706	541	4317	2152	5928	3763
FS0950	40	4282	2739	3665	1736	6057	4128	8449	6519	10841	8911
	50	5353	3423	2810	398	5201	2789	7593	5181	9985	7573
	60	6424	4108	-	-	4346	1451	6737	3843	9129	6235
FS1600	40	7342	4563	6177	2702	10185	6710	14194	10719	18202	14727
	50	9178	5703	4751	407	8759	4416	12768	8424	16776	12433
	60	11014	6844	-	-	7333	2121	11342	6130	15350	10138
FS2500	40	10431	6388	10424	5371	16635	11582	22847	17794	29058	24005
	50	13038	7985	8427	2111	14639	8323	20850	14534	27062	20746
	60	15646	9583	-	-	12642	5063	18854	11275	25065	17486
FS4000	40	16734	10579	16655	8961	26736	19042	36817	29123	46899	39205
	50	20918	13224	13349	3731	23430	13813	33511	23894	43593	33975
	60	25101	15869	-	-	20124	8583	30205	18664	40287	28746

More technical information is available from:
www.EL-O-Matic.com/F-Series/Documentation

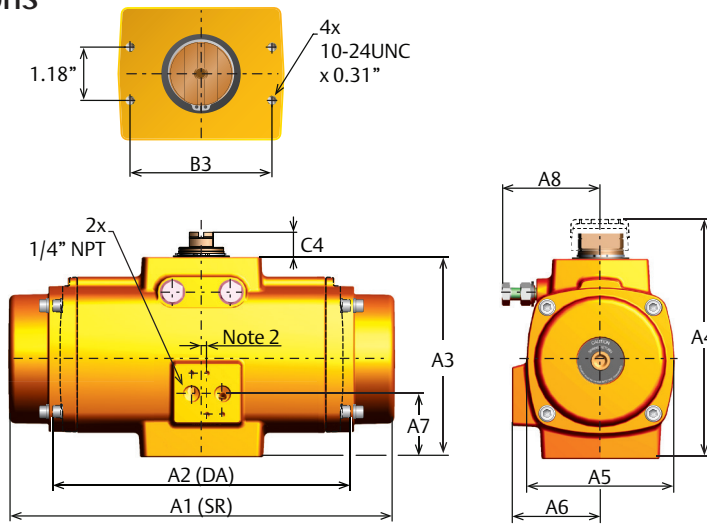


Various accessories can complete your Valve Operating System™



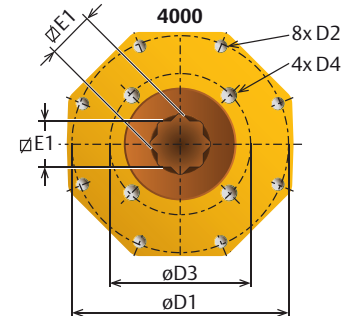
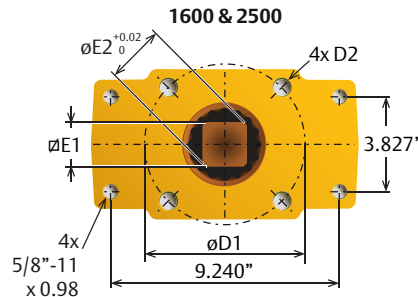
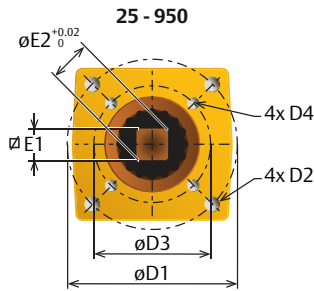
Imperial Tables

Dimensions



Note:

1. DA = Double Acting, SR = Spring Return.
2. The solenoid drilling pattern is shifted versus the centerline of the actuator.
 - 0.16" for size 0025
 - 0.08" for size 0040
 - 0.47" 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 9.240" x 3.827" represent 4 holes of a F25 drilling pattern.
5. Our online dimension data sheets contain detailed dimensional information.



Dim in. Inches	Actuator size												
	0012	0025	0040	0065	0100	0150	0200	0350	0600	0950	1600	2500	4000
A1	6.54	7.55	8.53	9.72	11.97	14.23	15.15	18.73	25.91	28.82	34.53	37.76	
A2	6.54	7.55	8.53	9.72	9.25	10.43	11.18	14.02	15.75	18.19	21.65	25.55	
A3	3.59	4.39	4.86	5.14	6.19	6.42	7.92	9.77	10.55	11.89	13.94	15.31	
A4	4.69	5.47	5.94	6.22	7.28	7.52	9.06	11.50	12.01	13.35	15.43	16.81	
A5	2.68	3.23	3.62	4.06	4.57	4.88	6.34	7.68	9.41	12.05	13.78	15.75	
A6	1.91	2.15	2.28	2.50	2.72	2.83	3.35	4.02	5.16	5.87	6.69	7.72	
A7	1.16	1.34	1.48	1.50	1.93	1.92	1.65	2.64	4.76	5.39	6.18	7.24	
A8	1.89	2.28	2.72	2.72	2.95	3.43	4.29	5.20	5.16	6.14	7.13	6.89	
B3	3.15	3.15	3.15	3.15	3.15	3.15	3.15	5.12	5.12	5.12	5.12	5.12	
C4	0.79	0.79	0.79	0.79	0.79	0.79	0.79	1.18	1.18	1.18	1.18	1.18	
ISO 1	F05	F07	F07	F07	F10	F10	F10	F12	F14	F16	F16	F25	
D1	1.969	2.756	2.756	2.756	4.016	4.016	4.016	4.921	5.512	6.496	6.496	10.000	
D2	1/4"-20 x0.35"	5/16"-18 x0.47"	5/16"-18 x0.47"	5/16"-18 x0.47"	3/8"-16 x0.59"	3/8"-16 x0.59"	3/8"-16 x0.59"	1/2"-13 x0.79"	5/8"-11 x0.94"	3/4"-10 x1.18"	3/4"-10 x1.18"	5/8"-11 x0.94"	
ISO 2	F03	F05	F05	F05	F07	F07	F07	F10	F10	F25*	F25*	F16	
D3	1.417	1.969	1.969	1.969	2.756	2.756	2.756	4.016	4.016	-/-	-/-	6.496	
D4	10-24 x0.31"	1/4"-20 x0.35"	1/4"-20 x0.35"	1/4"-20 x0.35"	5/16"-18 x0.47"	5/16"-18 x0.47"	5/16"-18 x0.47"	3/8"-16 x0.59"	3/8"-16 x0.59"	5/8"-11 x0.94"	5/8"-11 x0.94"	3/4"-10 x1.18"	
E1 Max.	0.436	0.554	0.554	0.751	0.751	0.87	1.067	1.067	1.424	1.817	1.817	2.175	
E1 Min.	0.433	0.551	0.551	0.748	0.748	0.866	1.063	1.063	1.417	1.811	1.811	2.165	
E2	0.555	0.713	0.713	0.992	1.004	1.11	1.425	1.425	2.291	2.37	2.37	2.843	

For dimensions of size 0012 see data sheet EFl.06.0012

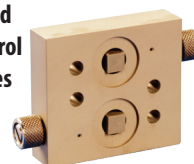


Manual
Override
Gear-boxes

Switchbox



Speed
Control
Plates



Breather/
Block & Bleed
Valves





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