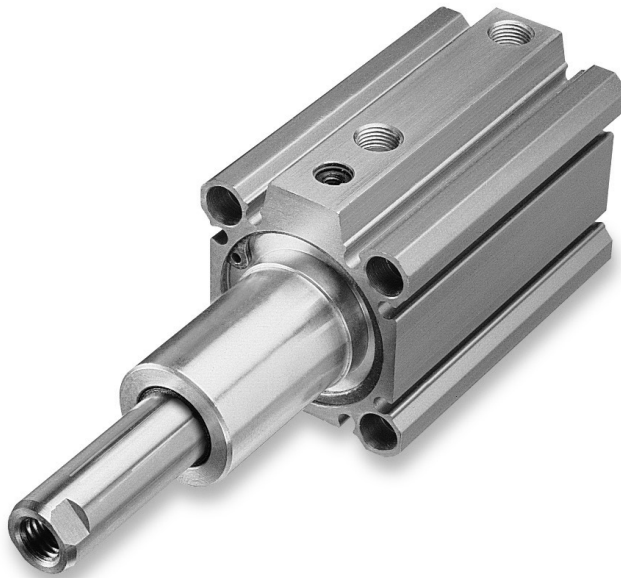


Twist Clamp Compact Cylinders



The IMI IMI Bimba Twist Clamp Cylinder combines linear and 90° rotary motion with an internal pin/cam mechanism. The rotary action moves a clamping arm away from the workpiece, allowing for easy loading and unloading of parts.

Materials of Construction

End Caps: Anodized Aluminum Alloy
Cylinder Body: 304 Stainless Steel
Piston Rod: 303 Hard Chrome Plated Stainless Steel
Lubrication: Semi-Synthetic Grease
Seals: Buna-N Standard; High and Low Temperature (optional)

Engineering Specifications

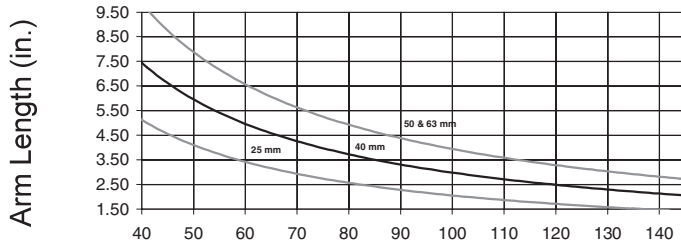
Operating Medium: Air
Maximum Operating Pressure: 140 PSI
Ambient and Fluid Temperature: 15° F to 160° F
Lubrication: PTFE Grease

Shipping Weight

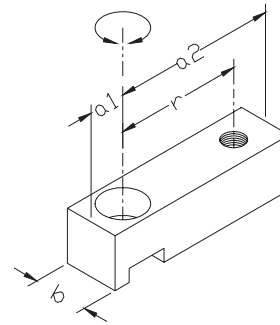
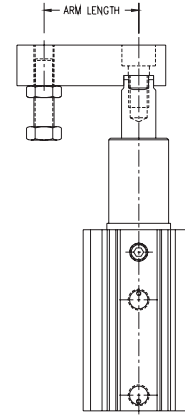
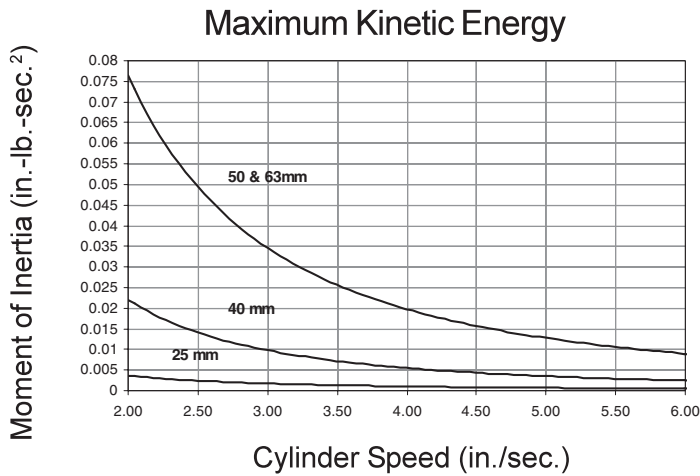
Bore	Weight
25mm	0.76
40mm	1.34
50mm	3.22
63mm	4.33

Twist Clamp Cylinders

Maximum Clamp Arm Length



Maximum Kinetic Energy



$$I = \frac{W_{a1}}{g} * \frac{4(a1)^2 + b^2}{12} + \frac{W_{a2}}{g} * \frac{4(a2)^2 + b^2}{12}$$

Example, for standard EFCA-40-E

a1 = .50 in Wa1 = .028 lbs

a2 = 2.25 in Wa2 = .127 lbs

b = .75 in

r = 1.75 in

g = 386 in/sec²

clamp bolt and nut = .081 lbs

$$I_{arm} = \frac{.028 \text{ lb.}}{386 \text{ in./sec.}^2} * \frac{4(.50 \text{ in.})^2 + (.75 \text{ in.})^2}{12} + \frac{.127 \text{ lb.}}{386 \text{ in./sec.}^2} * \frac{4(2.25 \text{ in.})^2 + (.75 \text{ in.})^2}{12}$$

$$I_{arm} = .000578 \text{ in.-lb.-sec.}^2$$

$$I_{bolt/nut} = \frac{.081 \text{ lbs.}}{386 \text{ in./sec.}^2} * (1.75 \text{ in.})^2 = .000642 \text{ in.-lb.-sec.}^2$$

$$I_{total} = .000578 + .000642 = 0.00122 \text{ in.-lb.-sec.}^2$$

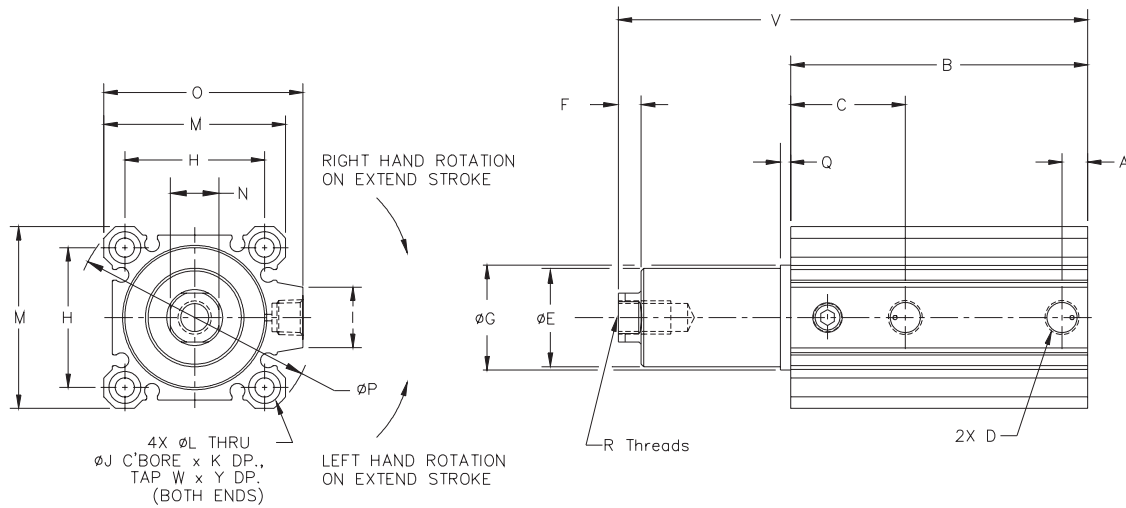
Operating Precautions:

- Do not clamp during rotary portion of stroke.
- Cylinder should be mounted vertically.
- Any force applied to clamped part perpendicular to clamping direction should not exceed 5% of the clamp force.

Bore	Power Factor
25mm	0.58
40mm	1.63
50mm	2.55
63mm	4.34

Clamp Force (lbs.) = pressure (psi) x power factor

Twist Clamp Cylinder Options and Dimensions

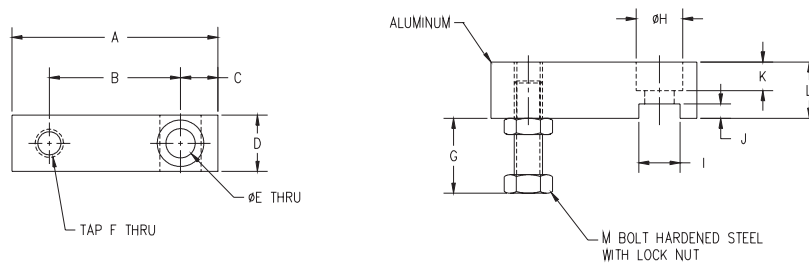


Bore	A	B	C	D	E	F	G	H	I	J
25mm	0.20	3.27	1.22	#10-32	0.84	0.16	0.905	1.10	0.41	0.35
40mm	0.29	3.34	1.29	1/8 NPT	1.12	0.26	1.180	1.57	0.68	0.35
50mm	0.37	4.98	1.29	1/4 NPT	1.39	0.30	1.456	1.97	0.79	0.44
63mm	0.38	5.12	1.37	1/4 NPT	1.82	0.30	1.888	2.36	0.79	0.56

Bore	K	L	M	N	Rod Dia.	O	P	Q	R	V	W	Y
25mm	0.28	0.22	1.57	0.39	0.47	1.57	2.05	0.16	5/16-24	4.47	1/4-20	0.67
40mm	0.28	0.22	2.05	0.54	0.63	2.24	2.72	0.11	3/8-24	5.30	1/4-20	0.67
50mm	0.31	0.27	2.52	0.66	0.79	2.80	3.39	0.14	1/2-20	8.35	5/16-18	0.86
63mm	0.41	0.35	3.03	0.66	0.79	3.31	4.06	0.16	1/2-20	8.47	7/16-14	1.12

Twist Clamp Accessory Options and Dimensions

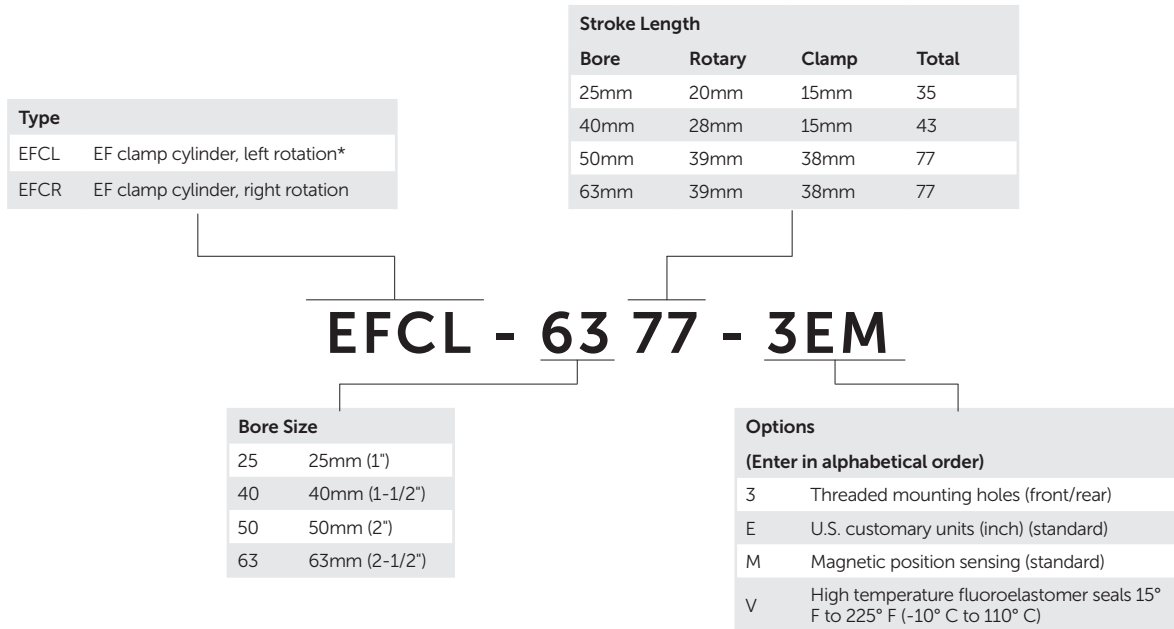
Clamp Arm



Bore	A	B	C	D	E	F	G	H	I	J	K	L	M
25mm	2.00	1.38	0.38	0.63	0.34	1/4-20	1.13	0.50	0.393	0.08	0.32	0.63	1/4-20
40mm	2.75	1.75	0.50	0.75	0.39	3/8-16	1.00	0.62	0.550	0.19	0.38	0.75	3/8-16
50mm	3.44	2.50	0.50	1.25	0.53	3/8-16	1.00	0.78	0.668	0.19	0.50	1.00	3/8-16
63mm	3.44	2.50	0.50	1.25	0.53	3/8-16	1.00	0.78	0.668	0.19	0.50	1.00	3/8-16

The Model Number for all EF Twist Clamp cylinders consists of alphanumeric clusters. These designate type, bore size, stroke length, and special options. Please refer to the charts below for an example of a standard EFCL model with 63mm bore, 77mm stroke, and additional options.

Please note the following features are standard, and are included in all model numbers: 3 (threaded front/rear mounting holes), E (US/inch units), and M (magnetic position sensing).



* Left rotation is achieved as cylinder extends. As cylinder retracts, rotation will be to the right.

** Stroke in model number is called out as TOTAL stroke.