Easytork®

High-Performance Quarter-Turn Solutions

Solving Problems No One Else Can

Version: May 2022

We believe in selling “easy”. Easytork brings differentiating features and benefits to the process control industry through our focus on innovation and quality.

Easytork has been awarded numerous awards including:

2013 – Arch Grants Recipient

2015 – Accelerate St. Louis

2017 – Frost & Sullivan New Product Innovation Award

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Select Industries and Select Applications

Aerospace & defense: Fuel feed for rockets, deluge valve actuators, portable launch fuel and water control valves, fast acting control for aerospace engine systems.

Chemical: Filling and feed valves, transfer valves, mixed liquor valves, waste valves on batch mixing tanks.

Dampers: Flue gas dampers, furnace fuel feed, radial vane air control dampers.

Power generation: Steam turbine control, boiler and water feed.

Energy: Natural gas control valves, natural gas controlled dump valves, isolation ball valves for skid mounted compressor stations.

Food processing: Enzymatic interesterification (EIE), sorting, diverting, conveying, filter systems.

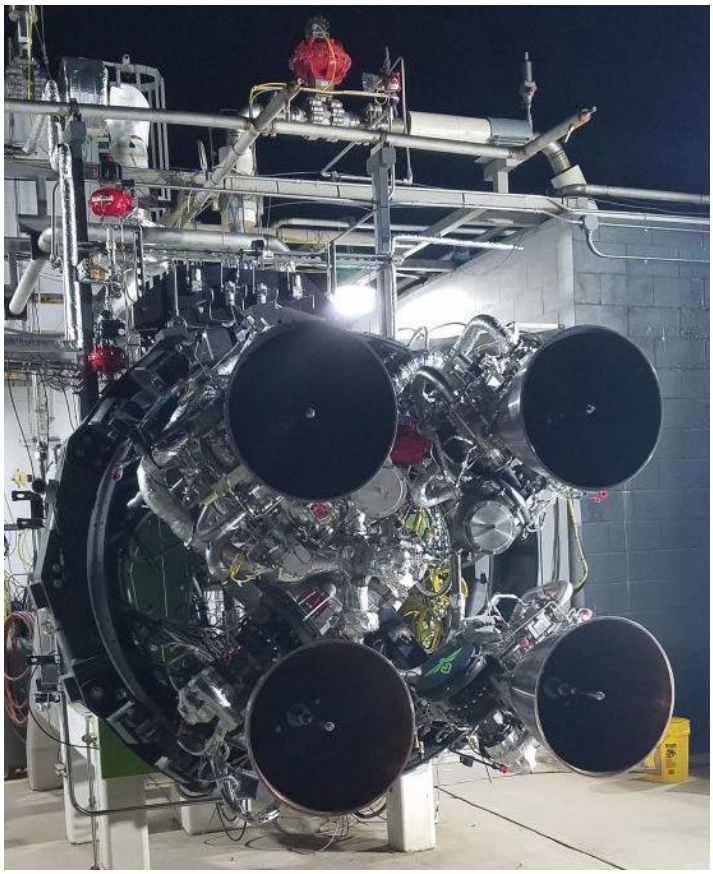
General industrial: Skid manufacturing.

Mining: Cyanide dosing circuits, lime dosing circuits, underground dewatering valves, underground pastefill distribution valves, acid valves, high pressure water isolation valves.

Pulp and paper: Dewatering valves, skids, bleaching.

Water systems / municipal: Digester gas valves, filter control, aeration control, odor control, high service pump control, flocculate waste drain valves.

Steel: Cooling spray valve.



Easytork

Easytork Vane Actuator

An End-User's 3 Year Journey To LOVING Easytork

Springless-Return Actuator

Compact, Efficient, Fast, and

Tough against BAD environment and air

FROST & SULLIVAN

2017 New Product Innovation Award

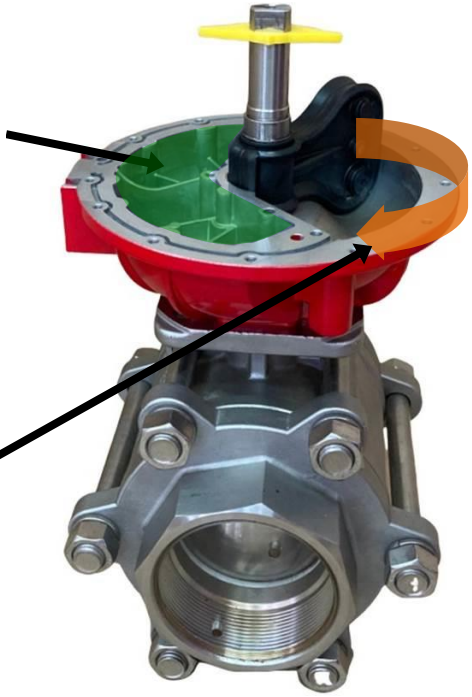
Easytork Vane Actuator (“EVA”) Built to Last

Take the guesswork out of predictive maintenance and reliability

Predictive maintenance

Using internal air reservoir for fail-safe

Air reservoirs in fail-safe systems are commonly used to replace springs for large mission critical emergency shut down valves. Spring failure and its performance decay are common occurrences but are hard to detect.



Product reliability

One moving piece – pure rotary-to-rotary movement

EVAs only have one moving part that creates pure rotary-to-rotary movement. Not only does the simplistic design contribute to better lifespan, the singular moving component simplifies predictive maintenance monitoring.

Design features that make your operations easier

Easy air reservoir integration

Traditional actuators with air reservoirs require costly external piping and pilot valves that make it more costly than spring-return actuators. Utilization of Easytork’s air reservoir system is easier and in most instances more economical than spring-return actuators.

Easy travel limit change

The standard travel stop adjustment is +/- 5˚ at CCW and CW +/- 5˚ for a total of 80˚ to 100˚. Extended travel stop are also available for adjustments between 60˚ to 100˚.

Heavy duty DU bushings

Result in a supported vane shaft and life long lubrication.

Patents: Pneumatic Actuator Structure
USA = 8,671,672
Other countries pending

Patents: Integral Unit & Zero Eccentricity
China = 2785284, Taiwan = M445076, other countries pending

One Moving Piece Built to Last

Minimal maintenance occurrence through simplistic and improved design

Design features that further reduce maintenance

Non-O-ring sealing

O-rings are meant for static sealing and not for dynamic sealing. Yet, most brands use O-rings for direct sealing which result in problems such as high friction, high break away torque, and high wear and tear.

No stick-slip, and low friction

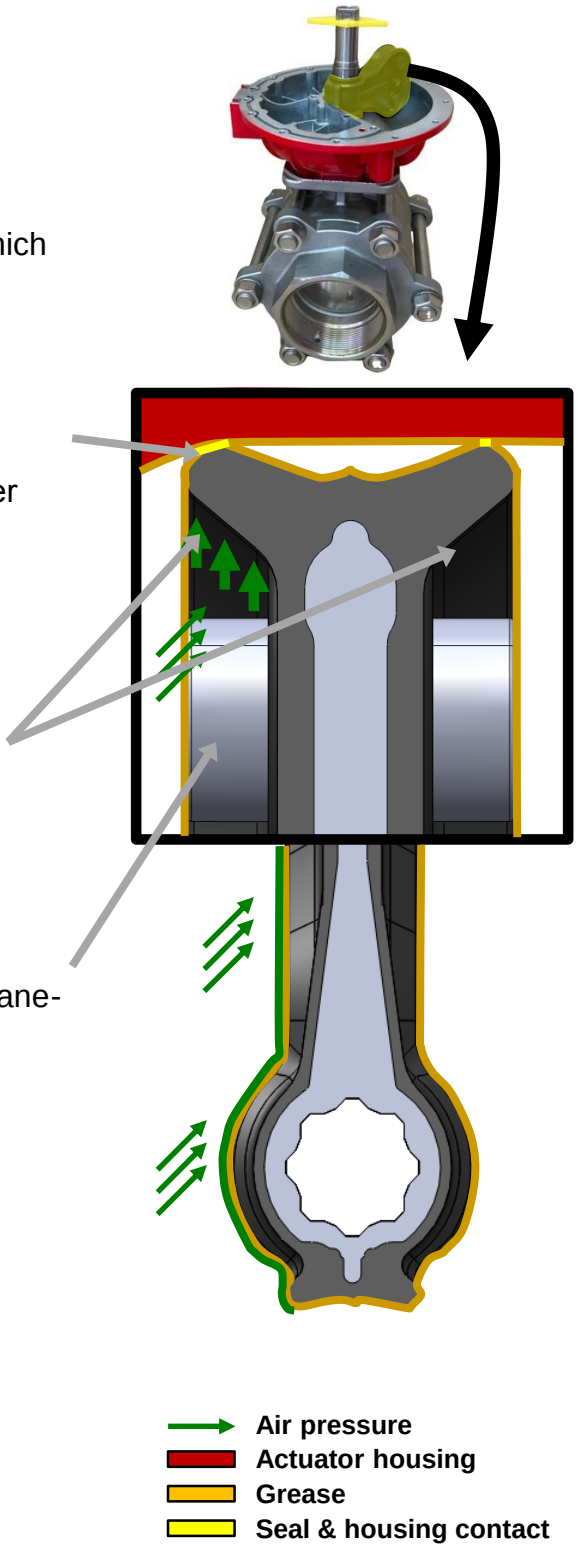
Vane has limited contact to housing body which results in low friction, smooth operation, and no “stick-slip” even after extended cycles. Ideal for both on-off and precision modulating controls.

Double lip-seal

With increased air pressure, pressure pushes against double lip-seal allowing for greater tightness against housing body. Lip-sealing aligns and provides tightness under pressure.

Stopper bolt to vane contact

Stopper bolt does not impact vane sealing but against stainless steel vane assembly extrusion. The core of the vane-shaft is lightweight. This reduces the vane’s impact to the stopper bolts and prolongs cycle life.



Design features that make your operations easier

Wide temperature range

Modified CR (Neoprene) is the standard material, it is fully bonded to the vane/shaft. EVA is suitable from -40˚C to 120˚C (-40˚F to 248˚F), covering everything from low to high temperature applications.

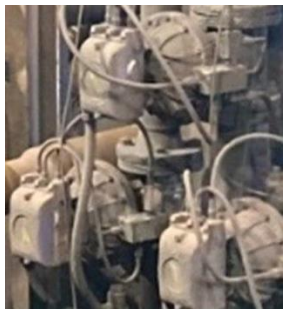
EVA Actuator's Unique Solutions and Benefits

Easytork benefits that improve your SYSTEMS

Ideal for dirty environment & poor instrument air

Environment air never enters actuator. Unlike springs, air reservoir fail-safe systems never pulls in environment air into actuator. While clean instrument air is important, Easytork's rugged vane handles poor air supply significantly better than traditional actuators.

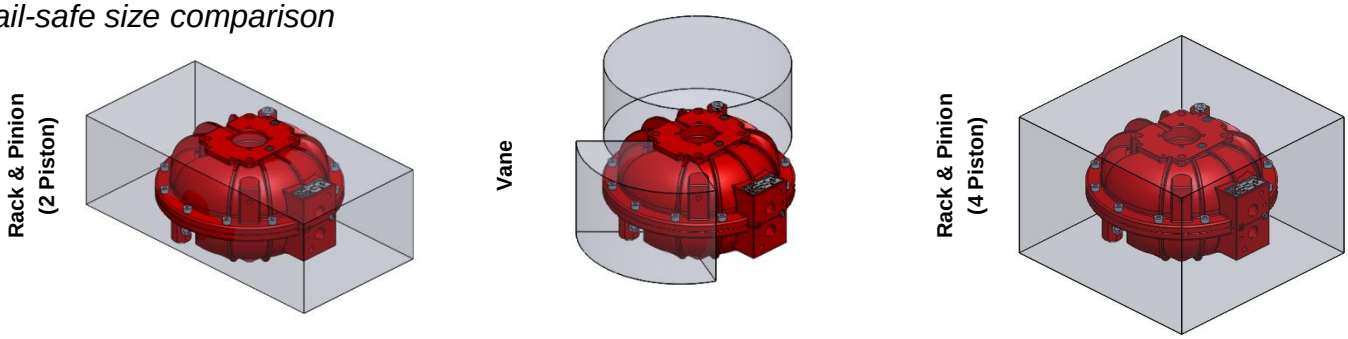
"Mining and milling present some of the harshest environments for automated valves. Instrument air is not guaranteed to be clean, dry and particle free. Environmental air can be of poor quality and laden with contaminants. Easytork actuators thrive in these conditions and have been used extensively in mining on a multitude of applications."
– Customer testimonial (first install since 2015)



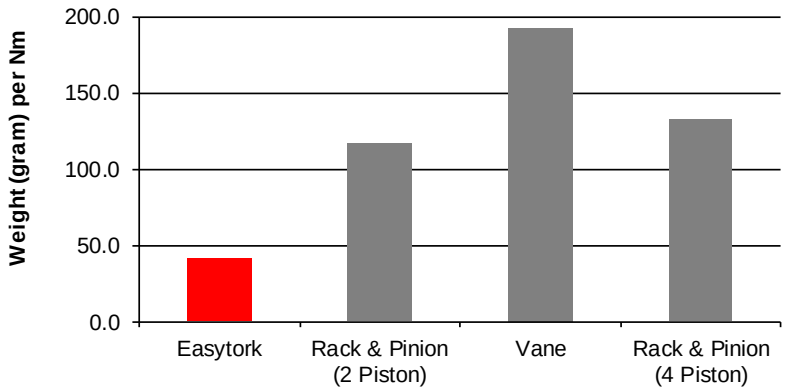
Smallest, lightest and one of the fastest actuator

Spring-return actuators are sized up to compensate for the resistance of the spring, while air reservoir fail-safe actuators do not have to account for spring resistance, as such EVA is the smallest, lightest, and one of the fastest actuator for any fail-safe application. It is also more compact than most actuator used in double-acting applications.

Fail-safe size comparison



Fail-safe weight comparison @ 5.5 BAR (80 PSI)



Automating 12" butterfly valve for fail-safe

49 lb (~22kg) EVA

or

120 lb (~54kg) spring-return rack & pinion

EVA Actuator's Unique Solutions and Benefits

Easytork benefits that improve your OPERATIONS; MRO's best ally

"We have one size mounted to a minimum of seven different valves quite easily, with minimum equipment required. So if you upgrade a plant and you wish to reduce your inventory and variability for your maintenance, you can do this with Easytork."
– Customer testimonial

Upgrade your valves and systems hassle-free (regardless of valve brand)

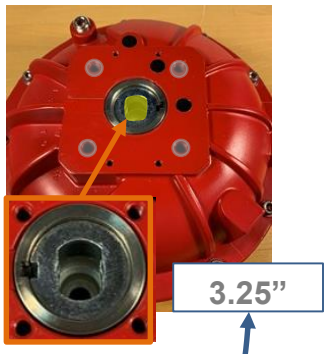
Easytork direct mounts to almost all valve brands, actuator accessories, or existing mounting hardware. With the most flange pattern (accessed by flipping actuator) coupled with adaptable drive insert, Easytork has more mounting combination than any actuator in the market. https://vimeo.com/416933488

Example shown EVA-0717, all combinations are from the same actuator

All combination on right can direct mount with actuator accessories

Sq. (parallel)

Sq. (diamond)



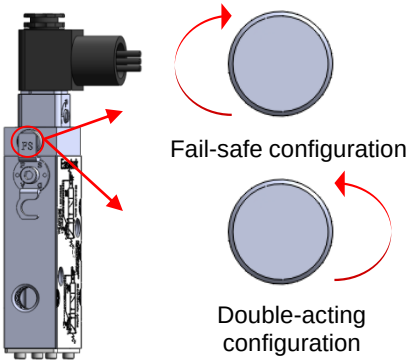
DD

Additional flange pattern by flipping actuator (top is now bottom, bottom is now top)

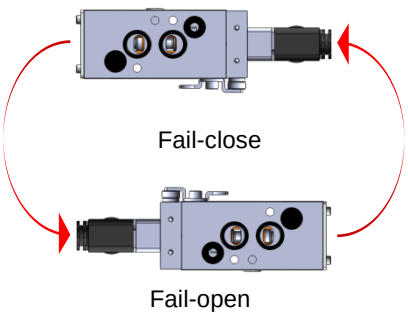
8 total Easytork SKUs for all your valve torque needs (up to a 24" butterfly valve)

1 Easytork SKU replaces at least 67x SKU. Easytork allows for easy conversion between double-acting or fail-safe (open or close).

Convert Actuator to FS or DA



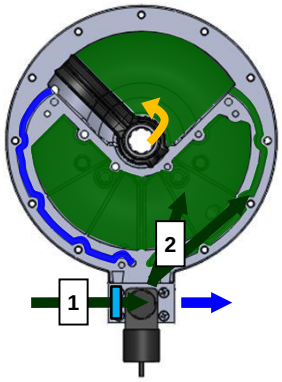
Convert Actuator to FC or FO



Direct Mounted Solenoid – Air Flow Path Principle

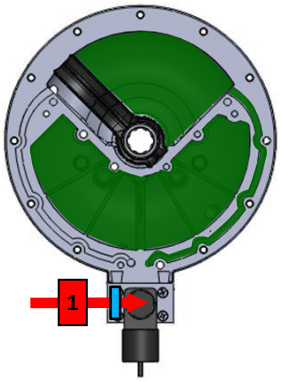
Double-acting with Easytork Solenoid Valve

Counter-Clockwise



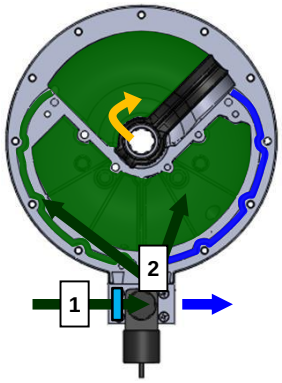
- With air supply
- With electricity

No Position Change



- Without air supply
- With electricity

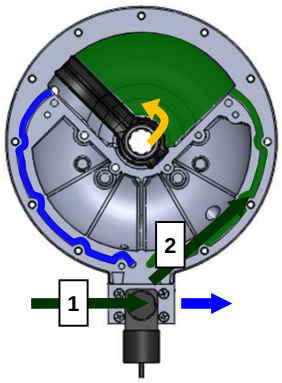
Clockwise



- With air supply
- Without electricity

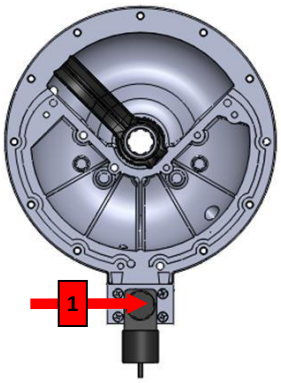
Double-acting with 5/2 solenoid valve

Counter-Clockwise



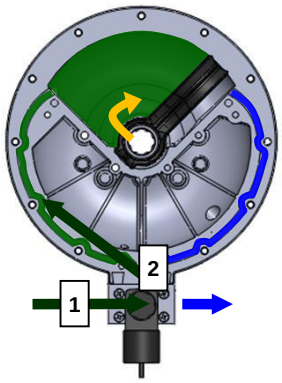
- With air supply
- With electricity

No Position Change



- Without air supply
- With electricity

Clockwise



- With air supply
- Without electricity

Patents: Air Flow Principle

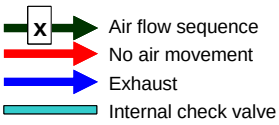
USA = 8,573,558

China = 2701057, 2323461, 2173061

Taiwan = M412285, M414523, M425196

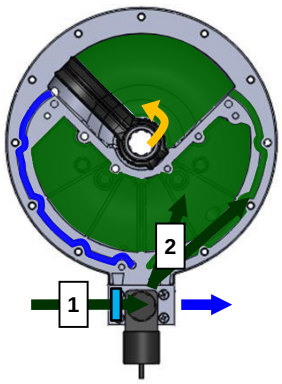
PCT Filing = PCT/CN2011/071074, PCT/CN2011/077685

Other countries pending



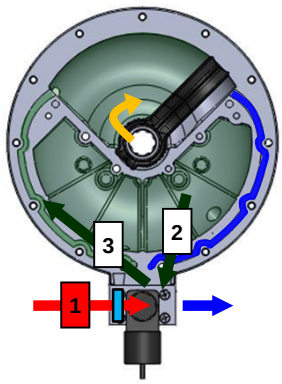
Fail-safe with Easytork Solenoid Valve

Counter-Clockwise

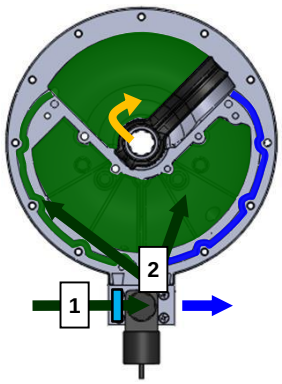


- With air supply
- With electricity

Clockwise



- Without air supply
- With electricity

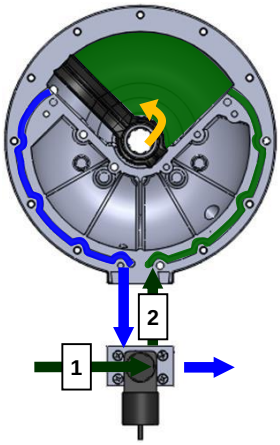


- With air supply
- Without electricity

Remote Mounted Solenoid – Air Flow Path Principle

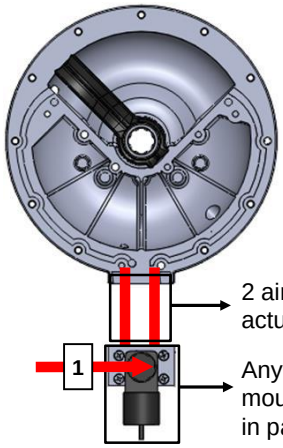
Remote mounted solenoid valve (5/2)

Counter-Clockwise



- With air supply
- With electricity

No Position Change

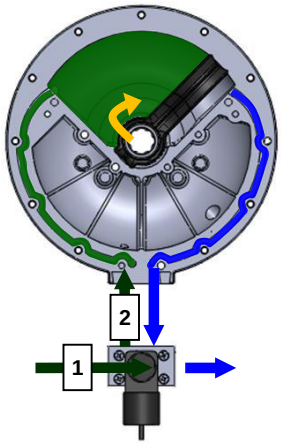


2 airlines to actuator

Any 5/2 remote mounted solenoid (i.e. in panel)

- Without air supply
- With electricity

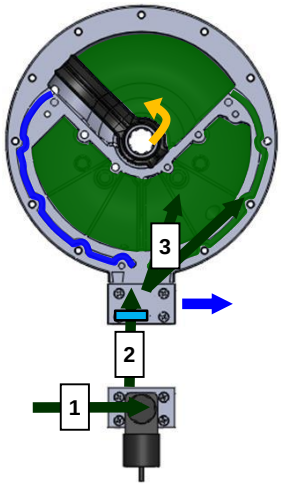
Clockwise



- With air supply
- Without electricity

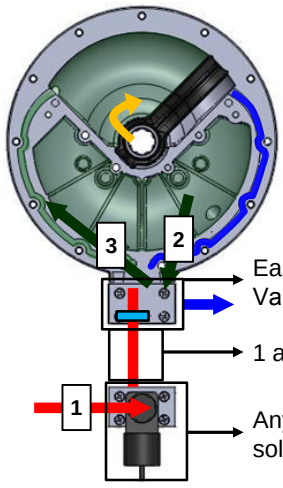
Remote mounted solenoid valve (3/2)

Counter-Clockwise



- With air supply
- With electricity

Clockwise



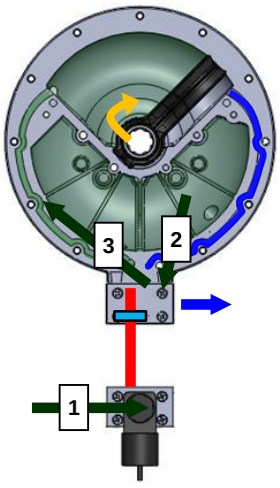
Easytork Air Pilot Valve (“EPV”)

1 airline to EPV

Any 3/2 remote mounted solenoid (i.e. in panel)

- Without air supply
- With electricity

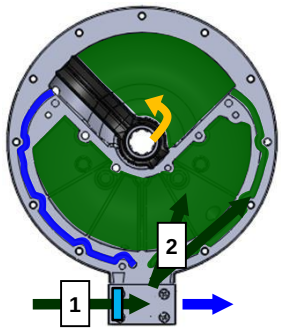
Clockwise



- With air supply
- Without electricity

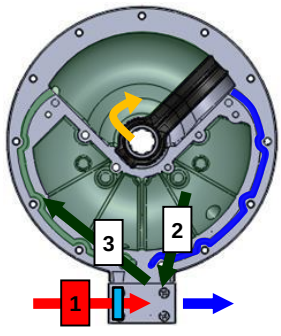
Easytork Air Pilot Valve

Counter-Clockwise



- With air supply

Clockwise



- Without air supply

Remote mounted setup (spec friendly)

Remote mounted setup allows users to use other brands of solenoid valves, and not just the ESV.

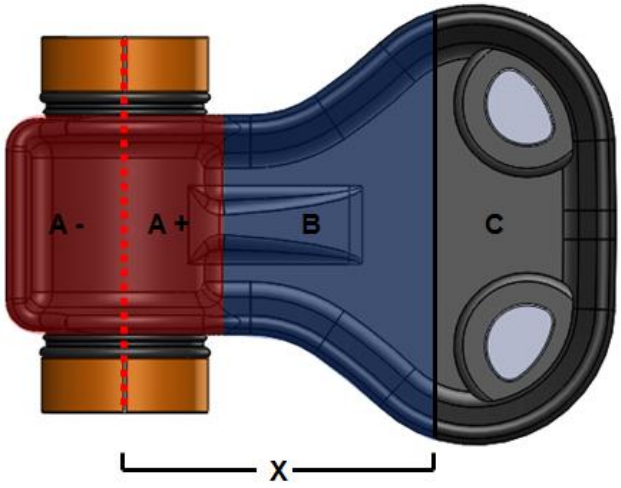
Easytork Air Pilot Valve

- Instead of a solenoid valve, the EVA can be fitted with a 5/2 air pilot valve.
- This setup will allow the EVA to operate only with or without air supply.
- Requires only one main air supply for this setup.

EVA Double-Acting Principle and Sizing

Double-acting principle

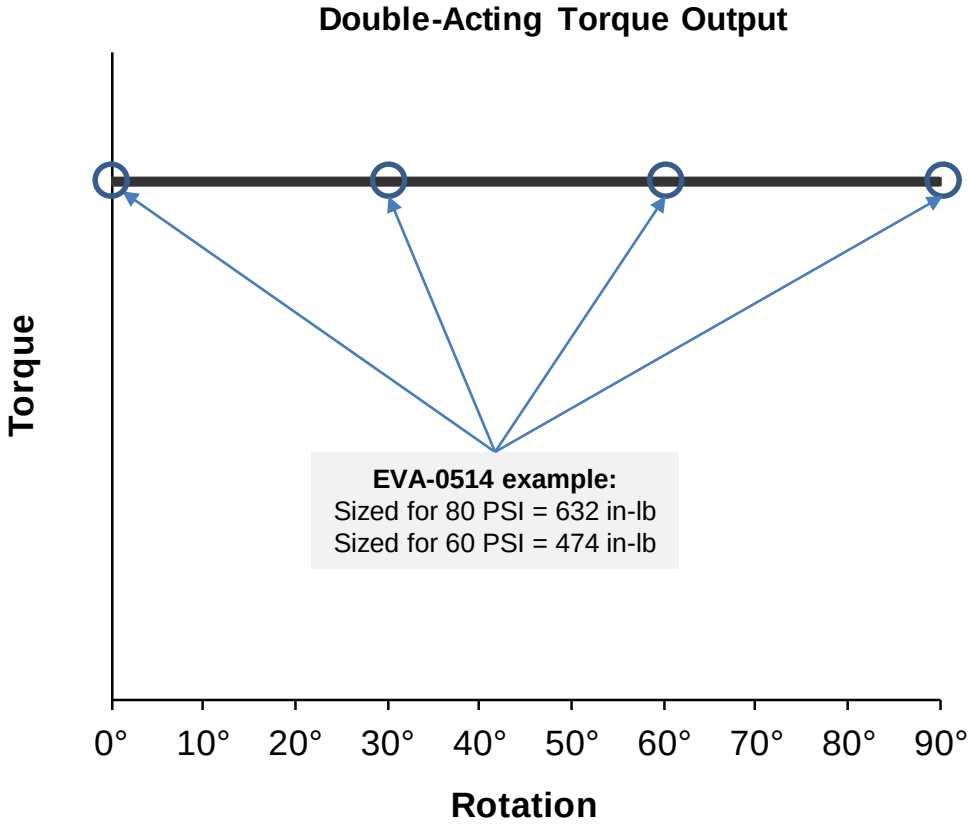
Torque is determined by multiplying the applied force by the distance from the pivot point to the point where the force is applied.



Torque calculation

As Easytork's vane is a pear shape, torque is calculated as such:

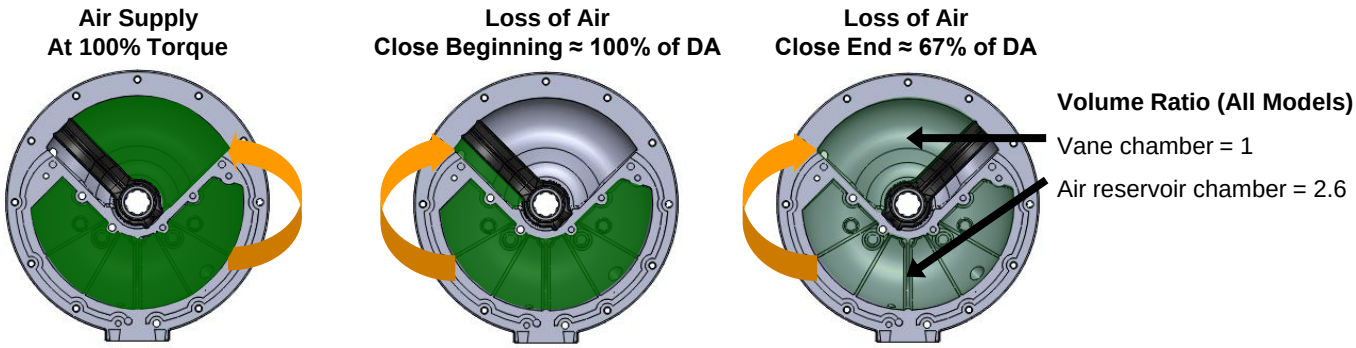
- Area A does not generate any force, the positive area is negated by the negative area.
- Area B and C have the same surface area.
- X is the distance from the pivot point to where area B and C are divided.
- Torque = (Force on B + C) * X - force lost for friction.
- X is constant so torque is linear.

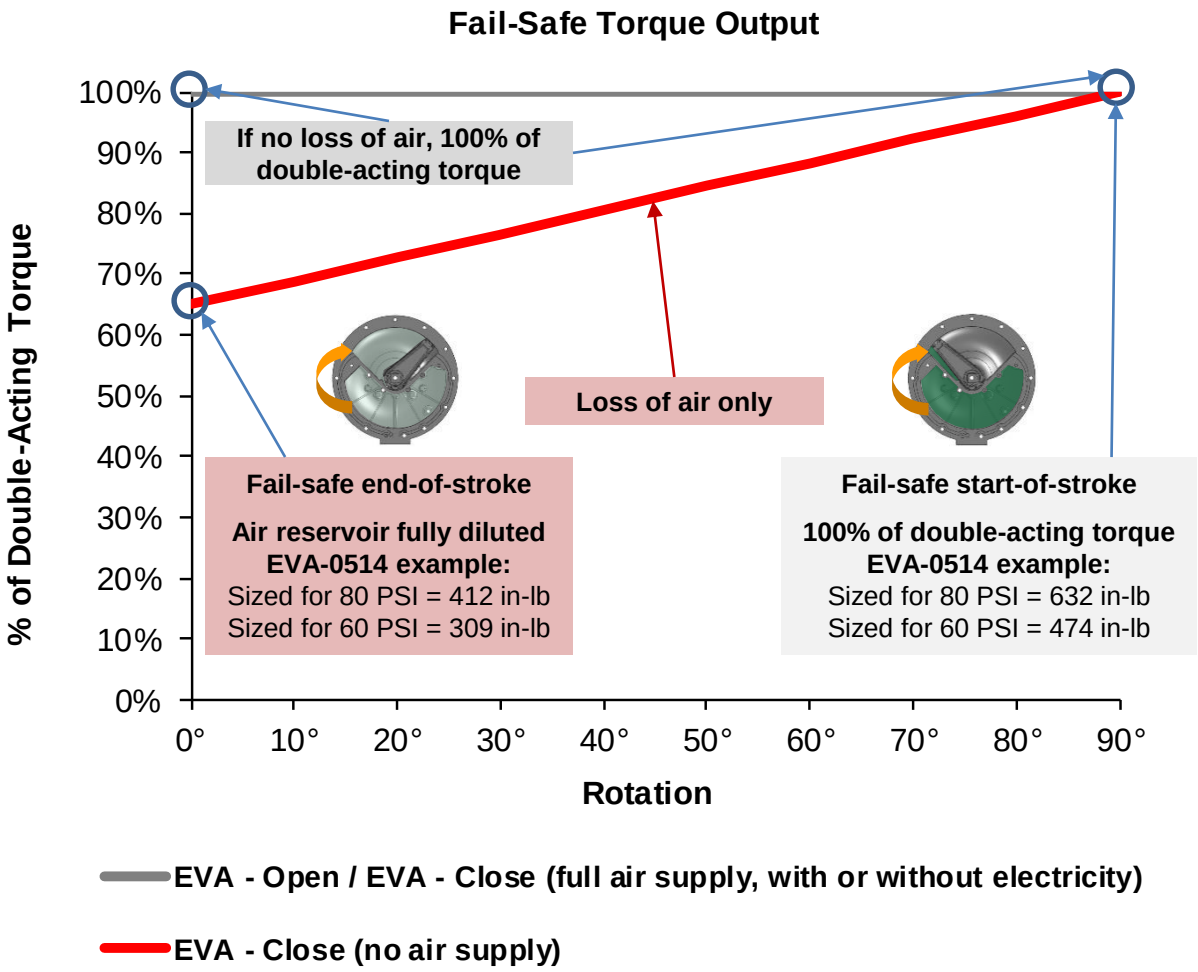


EVA Fail-Safe Principle and Sizing

Fail-safe principle

EVA utilizes an internal air reservoir to assure valve closure. When there is air failure, the pressurized air stored in the air reservoir is released and diluted with the vane chamber. Boyle's Law ($P_2V_2=P_1V_1$) can be used to calculate the end-of-stroke fail-safe torque, where P_1 is the pressure of the air reservoir, V_1 is the volume in the air reservoir, P_2 is the pressure in the vane and reservoir, and V_2 is the volume in the vane and reservoir.





EVA Torque Output

Metric

Double-Acting (NM)

Model / BAR	2.0	3.0	4.0	5.0	5.5	6.0	7.0
EVA-0411	14.0	21.1	28.1	35.1	38.6	42.1	49.2
EVA-0514	25.9	38.8	51.8	64.7	71.2	77.6	90.6
EVA-0717	55.2	82.7	110.3	137.9	151.7	165.5	193.1
EVA-1022	111.5	167.2	222.9	278.7	306.6	334.4	390.2
EVA-1227	247.3	370.9	494.5	618.1	679.9	741.8	865.4
EVA-1436	431.4	647.1	862.8	1,078.5	1,186.4	1,294.2	1,509.9
EVA-1646	948.0	1,422.0	1,896.0	2,370.0	2,607.0	2,844.0	3,318.0
EVA-1646 Tandem	1,896.0	2,844.0	3,792.0	4,740.0	5,214.0	5,688.0	6,636.0

Fail-Safe (Minimum Torque At End-Of-Stroke) (NM)

Model / BAR	2.0	3.0	4.0	5.0	5.5	6.0	7.0
EVA-0411	9.0	13.5	18.0	22.5	24.7	27.0	31.5
EVA-0514	16.9	25.3	33.7	42.2	46.4	50.6	59.0
EVA-0717	36.7	55.0	73.4	91.7	100.9	110.0	128.4
EVA-1022	73.8	110.7	147.5	184.4	202.9	221.3	258.2
EVA-1227	167.0	250.5	334.0	417.4	459.2	500.9	584.4
EVA-1436	291.2	436.8	582.4	728.0	800.8	873.6	1,019.2
EVA-1646	635.1	952.7	1,270.2	1,587.8	1,746.5	1,905.3	2,222.9
EVA-1646 Tandem	1,270.2	1,905.3	2,540.4	3,175.5	3,493.1	3,810.6	4,445.7

Imperial

Double-Acting (In-Lb)

Model / PSI	30	40	50	60	70	80	90	100
EVA-0411	129	171	214	257	300	343	386	429
EVA-0514	237	316	395	474	553	632	711	790
EVA-0717	505	673	842	1,010	1,178	1,347	1,515	1,683
EVA-1022	1,020	1,361	1,701	2,041	2,381	2,721	3,061	3,401
EVA-1227	2,263	3,018	3,772	4,527	5,281	6,036	6,790	7,545
EVA-1436	3,949	5,265	6,582	7,898	9,215	10,531	11,847	13,164
EVA-1646	8,678	11,571	14,463	17,356	20,249	23,141	26,034	28,927
EVA-1646 Tandem	17,356	23,141	28,927	34,712	40,498	46,283	52,068	57,854

Fail-Safe (Minimum Torque At End-Of-Stroke) (In-Lb)

Model / PSI	30	40	50	60	70	80	90	100
EVA-0411	82	110	137	165	192	219	247	274
EVA-0514	154	206	257	309	360	412	463	514
EVA-0717	336	448	560	672	783	895	1,007	1,119
EVA-1022	675	900	1,126	1,351	1,576	1,801	2,026	2,251
EVA-1227	1,529	2,038	2,548	3,057	3,567	4,076	4,586	5,095
EVA-1436	2,666	3,554	4,443	5,331	6,220	7,108	7,997	8,886
EVA-1646	5,814	7,752	9,690	11,627	13,565	15,503	17,441	19,379
EVA-1646 Tandem	11,627	15,503	19,379	23,255	27,131	31,007	34,882	38,758

Note: Published torques are actual output torque values and do not contain safety factor.

EVA Technical Data

	Note	Unit	EVA-0411	EVA-0514	EVA-0717	EVA-1022	EVA-1227	EVA-1436	EVA-1646
Weight		Kg	1.8	2.8	5.8	10.5	22.2	39.1	75.6
		Lb	4.0	6.1	12.7	23.1	48.9	86.1	166.7
Total air volume	DA or FS	Litre	0.150	0.300	0.600	1.200	2.400	4.800	9.600
90° stroke with dead volume	CCW *or* CW	In^3	9.2	18.3	36.6	73.2	146.5	292.9	585.8
	DA and FS	Litre	0.300	0.600	1.200	2.400	4.800	9.600	19.200
	CCW *and* CW	In^3	18.3	36.6	73.2	146.5	292.9	585.8	1171.7
Stroke time									
With 1.8 Cv At 5.5 bar or 80 psi No load	*DA (open / close)*	Sec	0.24/0.24	0.36/0.36	0.45/0.45	0.59/0.59	0.75/0.75	1.34/1.34	3.30/3.30
	FS (open / close)	Sec	0.24/0.27	0.36/0.39	0.45/0.47	0.59/0.60	0.75/0.84	1.34/1.47	3.30/3.41

Technical Specifications

Travel adjustment	Extended stopper: -5°/+5° on each side, total of 80° - 100°
	Extended stopper: -22.5°/+5° on each side, total of 45° - 100°
Temperature range	Modified CR Neoprene(standard temp): -40°C to 120°C (-40°F to 248°F)
Pressure rating	2 -10 bar (30 - 150 psi)
Operating medium (standard)	Must use inert gases

Mounting Specifications

Actuator to valve	Mounting standard per EN ISO5211 (DIN3337 optional) and traditional mounting
Drive components	Parallel or diagonal square head per EN ISO5211
Accessories	NAMUR VDI/VDE 3845

Standard and Specifications Complied

ISO 5211:2001 (E)	Industrial valves – part-turn actuator attachments
Namur VDI/VDE 3845	Interface between valves, actuators and auxiliary equipments
CEN/TC 69	Basic requirements for pneumatic part-turn actuators on industrial valves
CE Marking	Machinery Directive 2006/42/EC
MESC SPE 77/211	Valve stem and stem adaptor dimensions and bracket drilling patterns for actuated quarter-turn valves
ANSI/AWWA C541-08	Hydraulic and pneumatic cylinders and vane-type actuators for valves and slide gates

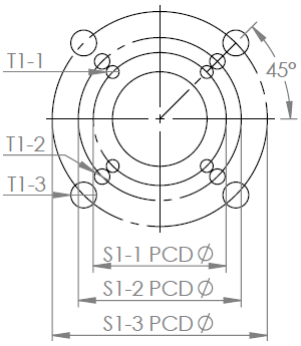
EVA Valve Interface Dimensions

EVA Valve and Auxiliary Interface Summary

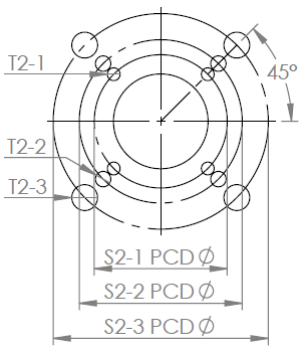
	Valve Mounting															Auxiliary Mounting	
	Flange Type Available												Drive Insert		Shafts		
	ISO									Non ISO			Standard			Semi-	
Actuator Size	F03	F04	F05	F07	F10	F12	F14	F16	F25	3.25"	5.00"	6.50"	Issuance	Other	Direct	Direct	VDI/VDE 3845	NAMUR
EVA-0411	√	√	√	√									11mm sq	√	√	√	√	√
EVA-0514		√	√	√						√			14mm sq	√	√	√	√	√
EVA-0717			√	√	√					√			17mm sq	√	√	√	√	√
EVA-1022				√	√	√				√	√		22mm sq	√	√	√	√	√
EVA-1227					√	√		√		√	√	√	27mm sq	√	√	√	√	√
EVA-1436						√		√			√	√	36mm sq	√	√	√	√	√
EVA-1646								√	√			√	Blank	√	√	√	√	√

Flange Type (ISO Compliant and Traditional Mounting Available)

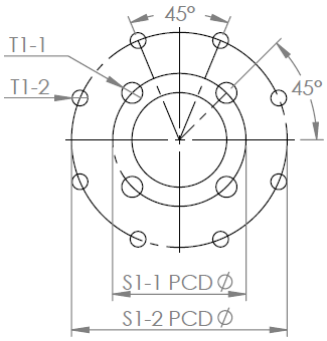
EVA-0309 to 1436 bottom side



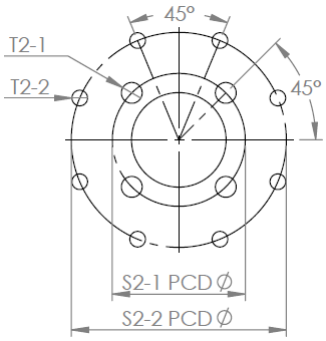
EVA-0309 to 1436 top side



EVA-1646 bottom side

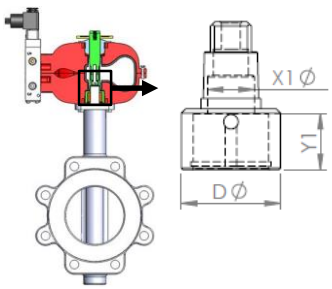


EVA-1646 top side

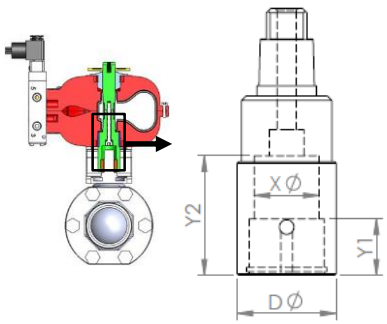


Shafts (Shafts Can Be Indexed Every 45˚)

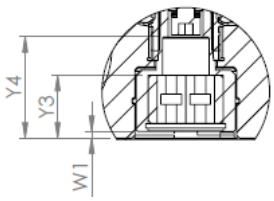
Direct mount shaft



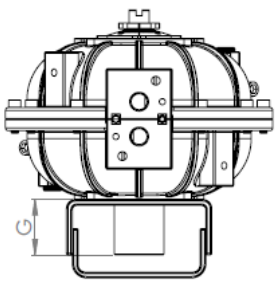
Semi-direct mount shaft



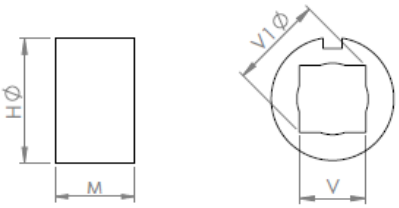
Direct mount shaft in EVA
(Available space for valve stem)



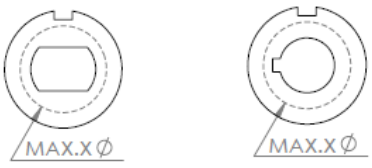
Note: If X1 Ø is wide enough for valve stem's max dia., Y4 is max valve stem depth. If not, use Y3.



Standard Issuance Drive Insert Square Head (ISO5211 Compliant)



Custom Insert (Max Size Allowed)



EVA Valve Interface Dimensions

(Imperial)

Note: Individual model specs downloadable online

Dimensions (inch)	Model						
	EVA-0411	EVA-0514	EVA-0717	EVA-1022	EVA-1227	EVA-1436	EVA-1646
Flange Type Available (ISO5211 Compliant)							
S1-1 PCD Ø	1.42 / F03	1.97 / F05	1.97 / F05	2.76 / F07	4.02 / F10	4.92 / F12	6.50 / F16
S1-2 PCD Ø	1.97 / F05	2.76 / F07	2.76 / F07	4.02 / F10	4.92 / F12	6.50 / F16	10.0 / F25
S1-3 PCD Ø	2.76 / F07	-	4.02 / F10	4.92 / F12	6.50 / F16	-	-
S2-1 PCD Ø	1.65 / F04	1.65 / F04	3.25	3.25	3.25	5.00	6.50 / F16
S2-2 PCD Ø	-	3.25	-	5.00	5.00	6.50 / F16	10.0 / F25
S2-3 PCD Ø					6.50 / F16	-	
T1-1	4x10-24UNC Deep 0.31	4x1/4-20UNC Deep 0.35	4x1/4-20UNC Deep 0.35	4x5/16-18UNC Deep 0.47	4x3/8-16UNC Deep0.59	4x1/2-13UNC Deep0.71	4x3/4-10UNC Deep 1.18
T1-2	4x1/4-20UNC Deep 0.35	4x5/16-18UNC Deep 0.47	4x5/16-18UNC Deep 0.47	4x3/8-16UNC Deep 0.59	4x1/2-13UNC Deep0.71	4x3/4-10UNC Deep1.18	8x5/8-11UNC Deep 0.94
T1-3	4x5/16-18UNC Deep 0.47	-	4x3/8-16UNC Deep 0.59	4x1/2-13UNC Deep 0.71	4x3/4-10UNC Deep1.18	-	-
T2-1	4x10-24UNC Deep 0.31	4x10-24UNC Deep 0.31	4x3/8-16UNC Deep 0.59	4x3/8-16UNC Deep 0.59	4x3/8-16UNC Deep0.59	4x1/2-13UNC Deep0.71	4x3/4-10UNC Deep 1.18
T2-2	-	4x3/8-16UNC Deep 0.59	-	4x1/2-13UNC Deep 0.71	4x1/2-13UNC Deep0.71	4x3/4-10UNC Deep1.18	8x5/8-11UNC Deep 0.94
T2-3	-	-	-	-	4x3/4-10UNC Deep1.18	-	-
Standard Issued Drive Insert (V measurements reflect valve stem. Inserts subsequently made with appropriate tolerance for valve stem interface)							
V	0.43	0.55	0.67	0.87	1.06	1.42	Blank
V1 Ø	0.56	0.77	0.94	1.21	1.46	1.93	Blank
H Ø	0.87	1.02	1.28	1.73	2.36	3.07	3.74
M	0.55	0.65	0.83	1.02	1.34	1.71	2.19
Shaft							
Y1	0.63	0.75	0.94	1.16	1.50	1.89	2.46
D Ø	1.06	1.34	1.59	2.14	2.81	3.62	4.72
Direct Mount Shaft							
X1 Ø	0.51	0.63	0.83	1.13	1.40	1.69	2.26
Y3	0.71	0.84	1.05	1.26	1.61	2.05	2.64
Y4	1.04	1.35	1.68	2.07	3.06	3.50	4.29
W1	0.08	0.09	0.10	0.10	0.11	0.16	0.18
Semi-Direct Mount Shaft							
G	1.00	1.50	1.50	1.75	1.75	2.00	3.00
X Ø	0.71	0.87	1.11	1.42	2.05	2.68	C/F
Y2	1.31	1.59	2.22	2.36	2.56	2.76	C/F
Custom Drive Insert (Maximum dimension on insert allowed)							
MAX.X Ø	0.71	0.87	1.11	1.42	2.05	2.68	3.07

EVA Valve Interface Dimensions

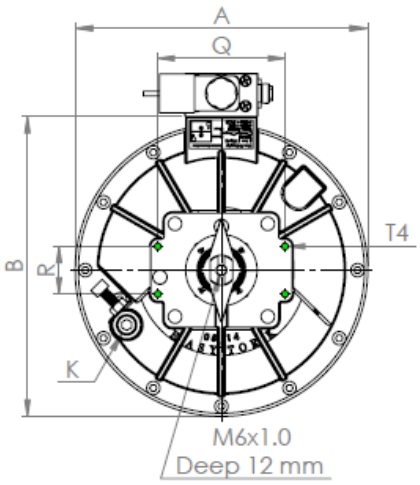
(Metric)

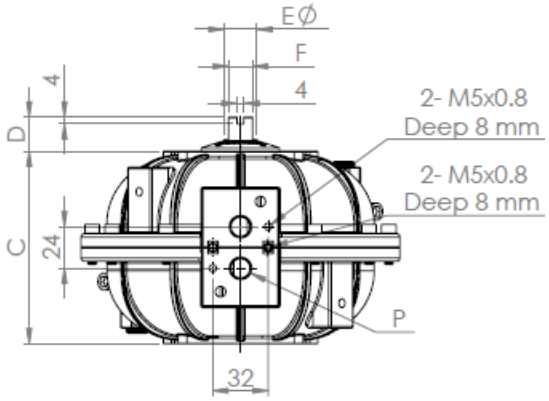
Note: Individual model specs downloadable online

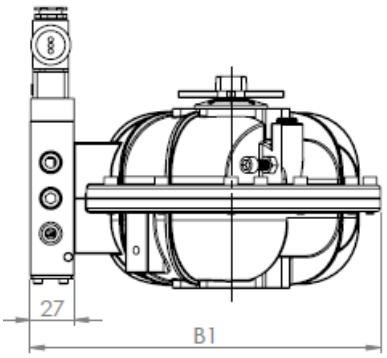
Dimensions (mm)	Model						
	EVA-0411	EVA-0514	EVA-0717	EVA-1022	EVA-1227	EVA-1436	EVA-1646
Flange Type Available (ISO5211 Compliant)							
S1-1 PCD Ø	36.0 / F03	50.0 / F05	50.0 / F05	70.0 / F07	102.0 / F10	125.0 / F12	165.0 / F16
S1-2 PCD Ø	50.0 / F05	70.0 / F07	70.0 / F07	102.0 / F10	125.0 / F12	165.0 / F16	254.0 / F25
S1-3 PCD Ø	70.0 / F07	-	102.0 / F10	125.0 / F12	165.0 / F16	-	-
S2-1 PCD Ø	42.0 / F04	42.0 / F04	82.6	82.6	82.6	127.0	165.0 / F16
S2-2 PCD Ø	-	82.6	-	127.0	127.0	165.0 / F16	254.0 / F25
S2-3 PCD Ø					165.0 / F16		
T1-1	4-M5x0.8 Deep 8.0	4-M6x1.0 Deep 9.0	4-M6x1.0 Deep 9.0	4-M8x1.25 Deep 12.0	4-M10x1.5 Deep 15.0	4-M12x1.75 Deep18.0	4-M20x2.5 Deep 30.0
T1-2	4-M6x1.0 Deep 9.0	4-M8x1.25 Deep 12.0	4-M8x1.25 Deep 12.0	4-M10x1.5 Deep 15.0	4-M12x1.75 Deep18.0	4-M20x2.5 Deep30.0	8-M16x2 Deep 24.0
T1-3	4-M8x1.25 Deep 12.0	-	4-M10x1.5 Deep 15.0	4-M12x1.75 Deep 18.0	4-M20x2.5 Deep30.0	-	-
T2-1	4-M5x0.8 Deep 8.0	4-M5x0.8 Deep 8.0	4-M10x1.5 Deep 15.0	4-M10x1.5 Deep 15.0	4-M10x1.5 Deep 15.0	4-M12x1.75 Deep18.0	4-M20x2.5 Deep 30.0
T2-2	-	4-M10x1.5 Deep 15.0	-	4-M12x1.75 Deep 18.0	4-M12x1.75 Deep 18.0	4-M20x2.5 Deep30.0	8-M16x2 Deep 24.0
T2-3	-	-	-	-	4-M20x2.5 Deep30.0	-	-
Standard Issued Drive Insert (V measurements reflect valve stem. Inserts subsequently made with appropriate tolerance for valve stem interface)							
V	11.0	14.0	17.0	22.0	27.0	36.0	Blank
V1 Ø	14.3	19.7	23.9	30.8	37.1	49.1	Blank
H Ø	22.0	25.8	32.5	44.0	60.0	78.0	95.0
M	14.0	16.5	21.0	26.0	34.0	43.5	55.5
Shaft							
Y1	16.0	19.0	24.0	29.5	38.0	48.0	62.5
D Ø	27.0	34.0	40.5	54.3	71.5	92.0	119.9
Direct Mount Shaft							
X1 Ø	13.0	16.0	21.0	28.7	35.5	43.0	57.5
Y3	18.0	21.3	26.6	32.0	40.8	52.0	67.0
Y4	26.5	34.3	42.6	52.5	77.8	89.0	109.0
W1	2.0	2.3	2.6	2.5	2.8	4.0	4.5
Semi-Direct Mount Shaft							
G	25.4	38.1	38.1	44.5	44.5	50.8	76.2
X Ø	18.1	22.1	28.1	36.1	52.0	68.0	C/F
Y2	33.4	40.4	56.5	60.0	65.0	70.0	C/F
Custom Drive Insert (Maximum dimension on insert allowed)							
MAX.X Ø	18.1	22.1	28.1	36.1	52.0	68.0	78.0

EVA and Auxiliary Interface Dimensions

Note: Individual model specs downloadable online







Note: Figures in drawings in mm.

Imperial

Dimensions (inch)	Model						
	EVA-0411	EVA-0514	EVA-0717	EVA-1022	EVA-1227	EVA-1436	EVA-1646
Actuator Dimensions							
A	6.02	7.24	9.41	11.61	15.20	18.50	23.03
B	6.22	7.44	9.61	11.81	15.31	18.70	23.21
B1	7.28	8.50	10.67	12.87	16.38	19.76	24.27
C	3.62	4.41	5.71	7.17	9.37	11.26	14.08
F	0.55	0.55	0.55	0.94	0.94	0.94	0.94
E Ø	0.75	0.75	0.75	1.30	1.30	1.30	1.30
P	1/8-27NPT	1/4-18NPT	1/4-18NPT	1/4-18NPT	1/4-18NPT	1/4-18NPT	
K		1/4-18NPT	1/4-18NPT	1/4-18NPT	3/8-18NPT	3/8-18NPT	3/8-18NPT
Standard Stop Bolt & Nut	M5x30mm	M6x35mm	M8x45mm	M8x50mm	M12x60mm	M12x70mm	M16x100mm
Actuator Dimensions of Accessories Flange							
D	0.79	0.79	0.79	1.18	1.18	1.18	1.18
R	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Q	3.15	3.15	3.15	3.15	5.12	5.12	5.12
T4	4x10-24UNC Deep 0.31	4x10-24UNC Deep 0.31	4x10-24UNC Deep 0.31	4x10-24UNC Deep 0.31	4x10-24UNC Deep 0.31	4x10-24UNC Deep 0.31	4x10-24UNC Deep 0.31

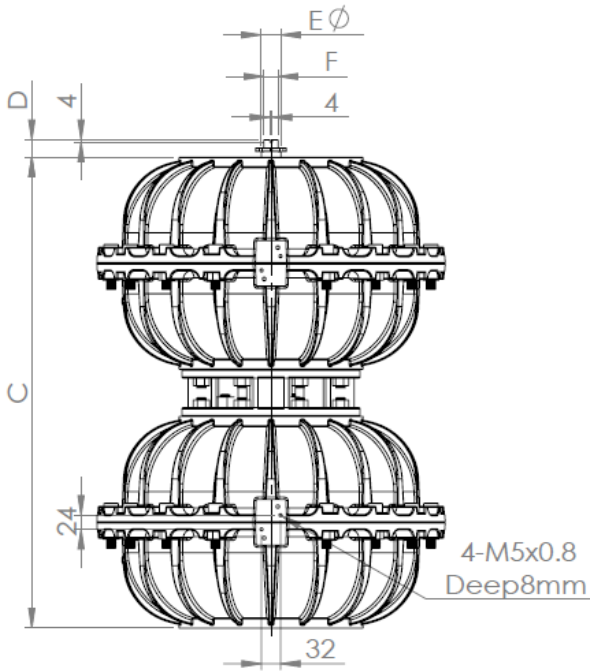
Metric

Dimensions (mm)	Model						
	EVA-0411	EVA-0514	EVA-0717	EVA-1022	EVA-1227	EVA-1436	EVA-1646
Actuator Dimensions							
A	153	184	239	295	386	470	585
B	158	189	244	300	389	475	590
B1	185	216	271	327	416	502	617
C	92	112	145	182	238	286	358
F	14	14	14	24	24	24	24
E Ø	19	19	19	33	33	33	33
P	1/8-28 BSPP	1/4-19 BSPP	1/4-19 BSPP	1/4-19 BSPP	1/4-19 BSPP	1/4-19 BSPP	
K		1/4-19 BSPP	1/4-19 BSPP	1/4-19 BSPP	3/8-19 BSPP	3/8-19 BSPP	3/8-19 BSPP
Standard Stop Bolt & Nut	M5x30mm	M6x35mm	M8x45mm	M8x50mm	M12x60mm	M12x70mm	M16x100mm
Actuator Dimensions of Accessories Flange							
D	20	20	20	30	30	30	30
R	30	30	30	30	30	30	30
Q	80	80	80	80	130	130	130
T4	4-M5x0.8 Deep 8	4-M5x0.8 Deep 8	4-M5x0.8 Deep 8	4-M5x0.8 Deep 8	4-M5x0.8 Deep 8	4-M5x0.8 Deep 8	4-M5x0.8 Deep 8

Note: Individual model specs downloadable online

Dual-stack

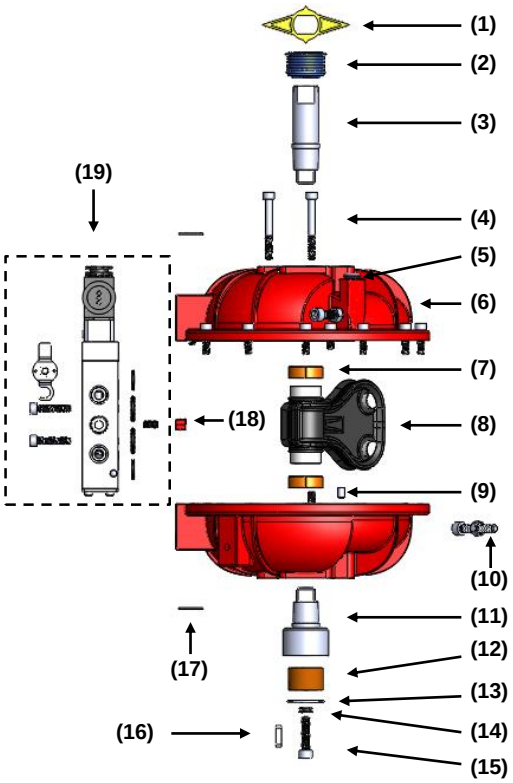
EVAs can be dual-stacked to achieve increased torque output.



Note: Figures in drawings in mm.

Dimensions	Model EVA-1646 Dual-Stack	
Actuator Dimensions	**Metric (mm)**	**Imperial (inch)**
A	587	23.12
B	592	23.31
B1	619	24.37
C	803	31.62
F	24	0.94
E Ø	33	1.30
P	-	
K	3/8-19 BSPP	3/8-18NPT
Standard Stop Bolt & Nut	M16x100mm	M16x100mm
Actuator Dimensions of Accessories Flange		
D	30	1.18
R	30	1.18
Q	130	5.12
T4	4-M5x0.8 Deep 8	4x10-24UNC Deep 0.31

EVA Bill of Material



Ref No	Description	Standard Version	Chemical Version	Quantity
1	Yellow position & degree indicator	NBR	NBR	1
2	Blue graduated ring	NBR	NBR	1
3	Upper shaft	Nickel-plated steel	Stainless steel	1
4	Connecting bolt & nut	Stainless steel	Stainless steel	1 lot
5	Plug	Nickel-plated steel	Stainless steel	1 lot
6	Housing	Aluminum A383 / epoxy external & internal finish	Aluminum A383 / Xylan external finish	2
7	Vane / shaft bearing	PTFE lined steel baked bronze bushing	PTFE lined steel baked bronze bushing	2
8	Vane / shaft assembly*	Stainless Steel or NPS bonded with modified CR	Stainless Steel or NPS bonded with modified CR	1
9	Location pin	Mild steel	Mild steel	2
10	Stopper bolt and nut set	Stainless steel	Stainless steel	2
11	Lower shaft	Nickel-plated steel	Stainless steel	1
12	Drive insert lower	Nickel-plated steel	Stainless steel	1
13	Drive insert circlip	Stainless steel	Stainless steel	1
14	Belleville washer	High tensile steel	High tensile steel	2
15	Shaft connect bolt	Stainless steel	Stainless steel	1
16	Drive insert key	Keysteel	Keysteel	1
17	Tag plate*	Stainless steel	Stainless steel	1
18	Locator insert*	Plastic	Plastic	2
19	Main solenoid valve	(See ESV for details)	(See ESV for details)	1

* Items marked with an asterisk are included in repair kit.

Ordering Codes

Easytork Vane Actuator

Prefix		Product Type		Model Number		Actuator Attributes					Valve Interface Installed With Actuator					
						Thread	EVA Material *(Corrosion Rating)*		Seal *(Temp. Rating)*		Lower Shaft Type		Drive Insert Type		Drive Insert Size	
C	-	**A**	-	**X**	-	**X**	**X**		**X**	-	**X**		**X**		**X**	
C: Complete product		**A**: Actuator		1: EVA-0309 **2**: EVA-0411 **3**: EVA-0514 **4**: EVA-0717 **5**: EVA-1022 **6**: EVA-1227 **7**: EVA-1436 **8**: EVA-1646 **1T - 8T:** Corresponding actuator's tandem version **1W - 8W:** Corresponding actuator, propelled with water instead of pressurized air		**1**: Imperial 2: Metric	**1**: Standard version 2: Chemical resistant version		**1**: CR for all temp rating (-40°C to 120°C or -40°F to 248°F)		**1**: Direct mount (standard issuance) **2**: Semi-direct mount		**1**: Square drive (standard issuance)		**1**: Standard size (standard issuance)	

About

We believe in selling “easy”. Easytork brings differentiating features and benefits to the process control industry through our focus on innovation and quality. Easytork has been awarded numerous awards including:

2013 – Arch Grants Recipient

2015 – Accelerate St. Louis

2017 – Frost & Sullivan Product Innovation Award

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Engineered for actuators with onboard reservoirs

Easytork Solenoid Valve (“ESV”)

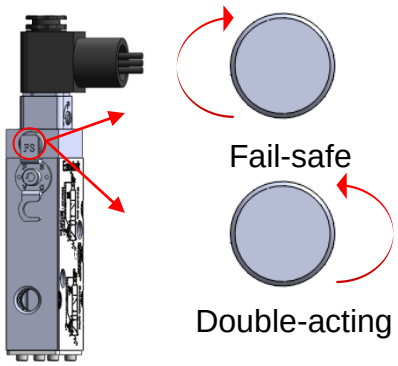
ESV is Easytork’s NAMUR compliant solenoid valve to allow users to easily integrate air reservoir fail-safe systems. ESV complies with almost all any electrical specification requirement and is a 5/2 design valve (four-way, two-position).

ESV benefits that improve your OPERATIONS

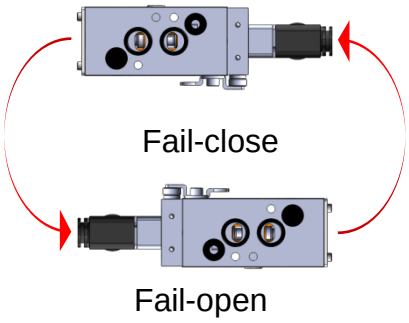
ESV + Easytork actuator reduces your SKU by a factor of 67x

A singular ESV alters the function of an Easytork actuator between double-acting or fail-safe (open or close). In addition, all coil and conduit types are modular to the ESV.

Fail-safe or double-acting



Fail-close or fail-open



ESV benefits that improve your SYSTEMS

Specification friendly

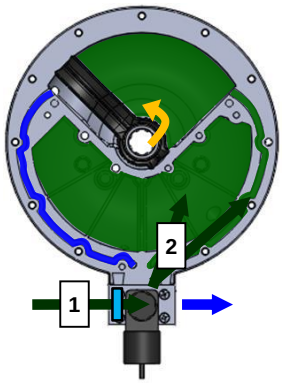
Compliant with nearly all electrical specification and conduit requirement. NEMA 4, Ex-Proof and ATEX EX from ¼” NPT conduit to strain relief among many other options are available.

Ideal for corrosive / dirty environment

In fail-safe, environment air never enters the ESV through vacuum which is associated with other spring-return actuators. As seen on the right, coupled with the Easytork actuator, the system is always pushing instrument air out as the system has no spring to pull environment air in.

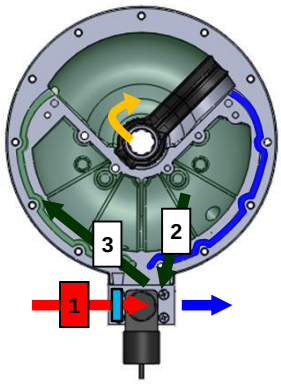
Fail-Safe with ESV + Easytork Actuator

Counter-Clockwise

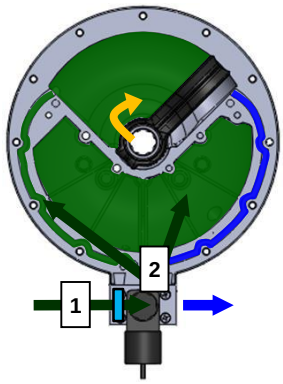


- With air supply
- With electricity

Clockwise



- Without air supply
- With electricity



- With air supply
- Without electricity

Easytork Solenoid Valve (“ESV”)

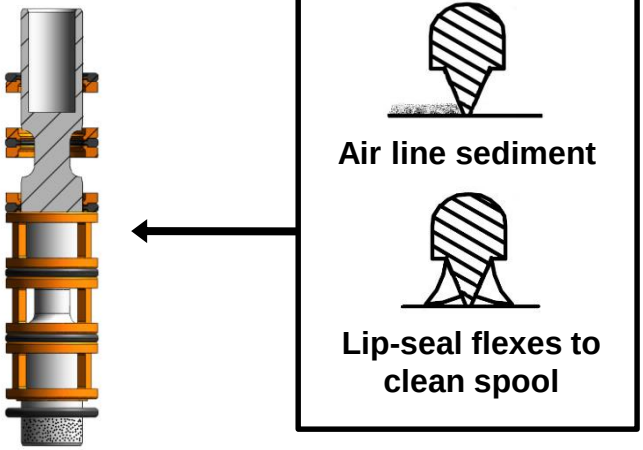
Design features that further reduce maintenance

Improved resistance against poor instrument air

Dynamic sealing does not rely on O-rings. Instead, ESV utilizes bi-directional tapered lip-seal that wipes air line sediment and keeps spool surface clean. A high CV 1750l/min (Cv=1.8) further helps remove sediments.

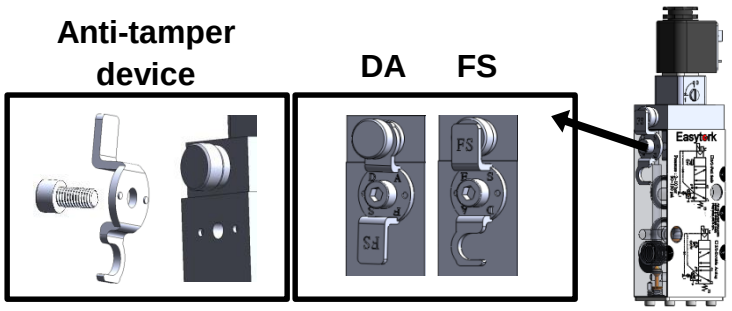
This design also eliminates sticking problems and avoids spiral twist associated with O-rings.

ESV Spool



Anti-tampering device

ESV design incorporates a lock to prevent third parties from accidentally changing the intended ESV’s functionality.



ESV reduces costs associated with utilizing air reservoir

Easy air reservoir integration

Traditional actuators with air reservoirs require costly external piping and pilot valves that ultimately make it more costly than spring-return actuators. ESV removes the need for external piping or pilot valves, resulting system in most instances to be more economical than spring-return actuators.

Patents:

USA	US9,546,737B1
Taiwan	M514532, M515055, M425965
China	ZL2015 2 0641475.9.7 ZL2015 2 0872022.7 2264921

Coil Options

Standard, Ex-Proof and ATEX EX coils utilize the same ESV body, so coils are interchangeable.

Standard Series

Same ESV body for standard, Ex-Proof, and ATEX EX coil.

Ex-Proof Series

Same ESV body for standard, Ex-Proof, and ATEX EX coil.

ATEX EX Series

Same ESV body for standard, Ex-Proof, and ATEX EX coil.

Intrinsically-Safe Series

I/S ESV body only good for I/S coil.

Low Temperature Series

Low temp. ESV body only good for low temp. coil.

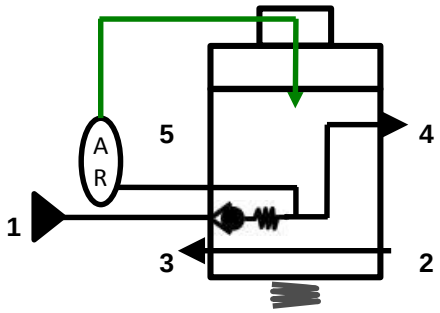
Low Power Series

Low power ESV body only good for low power coil.

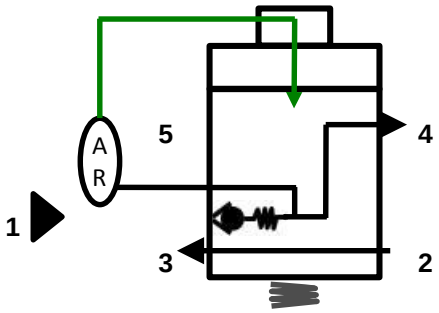
Easytork Solenoid Valve Operation

Double-acting principle

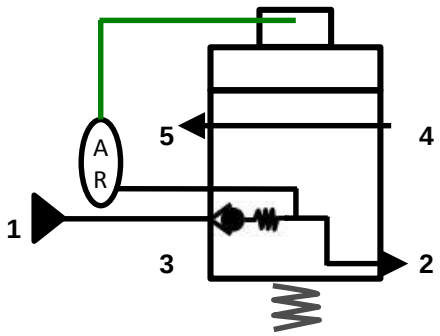
Electricity / Main Air



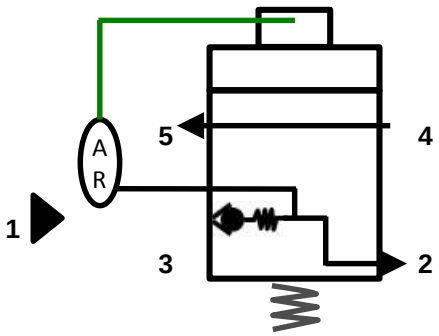
Electricity / No Main Air



No Electricity / Main Air

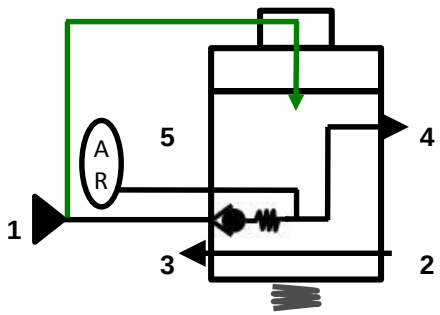


No Electricity / No Main Air

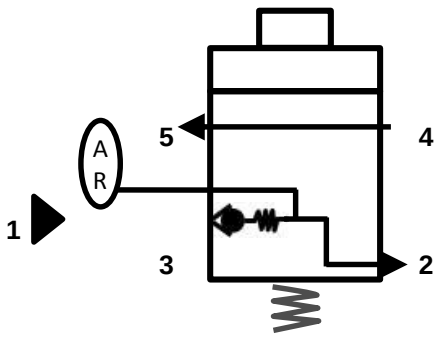


Fail-safe principle

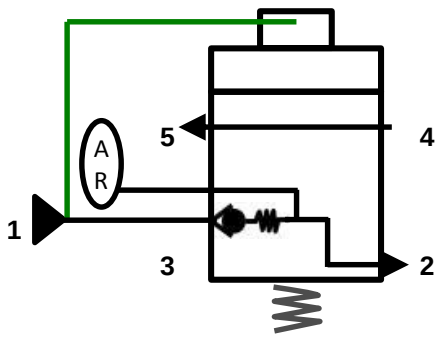
Electricity / Main Air



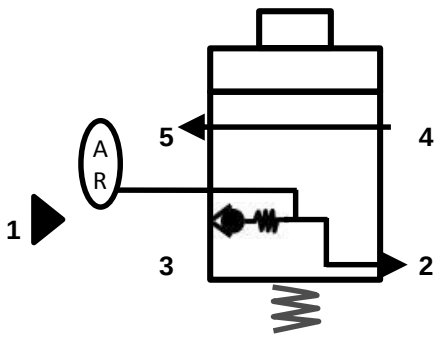
Electricity / No Main Air



No Electricity / Main Air



No Electricity / No Main Air



ESV Internal Air Pilot

ESV Spool Chamber

EVA Air Reservoir

Main Air Supply

ESV Internal Check Valve

Technical Data

ESV specifications

Technical Specification		
Operating pressure [1] [2]		2 - 10 bar (30 - 150 psi)
Operating medium		Air (dry or lubricated)
Flow l/min (Cv)	Port size: 1/4"	1750 l/min (Cv = 1.8)
ESV body standard temp. range (NBR) [3]		-20°C to 80°C (-4°F to 176°F)

Note (1): For Intrinsically-Safe and Low Power version, 2 - 8 bar (30 - 120 psi).

Note (2): If required, consult factory for minimum pressure setting for over 2 bar (30 psi).

Note (3): Temperature range for all series besides Wide Temperature version. Refers only to ESV body temperature rating. Coil temperature rating is separate, refer to coil specifications.

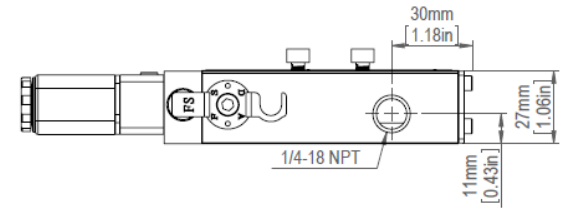
Coil specifications

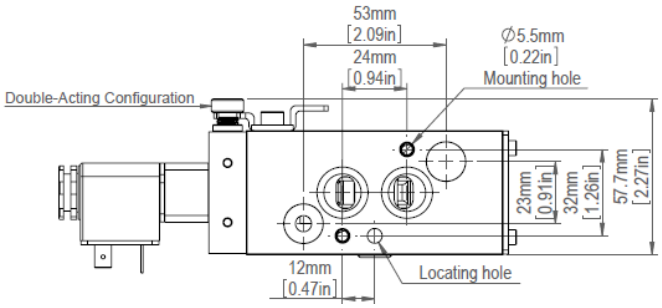
Coil	Connection	Note	Width (mm)
Standard	DIN 43650 industrial form B connection or 1/2" conduit with 18" leads	NEMA 4X	22
Explosion Proof	1/2" conduit with 24" leads	NEMA 4, 4X, 7C, 7D, 9 CSA & FM Approved CL. I; Zone1 Ex m II T4; AEx m II CL. I; Div.1; GR. A, B, C, D CL. II; GR. E, F, G CL. III T4 Ta=-20°C to +60°C	36
ATEX EX	3m cable & strain relief	Ex m II T5 PTB 03 ATEX 2018 X Ex II 2 G EEx m II T5 Ex II 2 D IP65 T95°C	22
Intrinsically-Safe	EN175301-803-A/ISO4400	Exia CL. I; GR. A, B, C, D CL. II; GR. E, F, G CL. III; Div. 1;T5	30
Low Temperature	DIN 43650 industrial form B connection or 1/2" conduit with 18" leads	NEMA 4X	22
Low Power (1.1W)	DIN 43650 industrial form B connection or 1/2" conduit with 18" leads	NEMA 4X	22

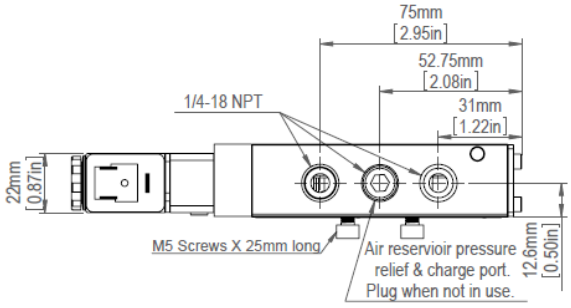
Coil	Voltage Tolerance	Ambient Temp.	Duty Cycle	Voltage	Frequency (Hz)	Output	Max. Pressure
Standard	+/- 10%	-20°C to 50°C (-4°F to 122°F)	100%	24 DC	-	2.0 W	10 bar (150 psi)
				110 AC	50	4.1 VA	10 bar (150 psi)
				110 AC	60	3.3 VA	10 bar (150 psi)
				230 AC	50	3.9 VA	10 bar (150 psi)
				230 AC	60	3.2 VA	10 bar (150 psi)
Explosion Proof	+/- 10%	-20°C to 60°C (-4°F to 140°F)	100%	24 DC	-	4.6 W	10 bar (150 psi)
				120 AC	60	6.8 VA	10 bar (150 psi)
				230 AC	50	7.5 VA	10 bar (150 psi)
ATEX EX	+/- 10%	-20°C to 50°C (-4°F to 122°F)	100%	24 DC	-	5.0 W	10 bar (150 psi)
				110 AC	50/60	3.8 VA	10 bar (150 psi)
				230 AC	50/60	5.1 VA	10 bar (150 psi)
Intrinsically-Safe (Barrier not included)		-40°C to 50°C (-40°F to 122°F)	100%	24 DC Current > 37 mA	-		8 bar (120 psi)
Low Temperature	+/- 10%	-40°C to 50°C (-40°F to 122°F)	100%	24 DC	-	2.0 W	10 bar (150 psi)
				110 AC	50	4.1 VA	10 bar (150 psi)
				110 AC	60	3.3 VA	10 bar (150 psi)
				230 AC	50	3.9 VA	10 bar (150 psi)
				230 AC	60	3.2 VA	10 bar (150 psi)
Low Power (1.1W, 22mm coil)	+/- 10%	-20°C to 50°C (-4°F to 122°F)	100%	24 DC	-	1.1 W	8 bar (120 psi)

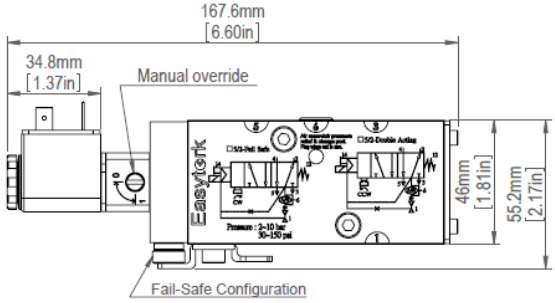
Technical Data

ESV dimensions

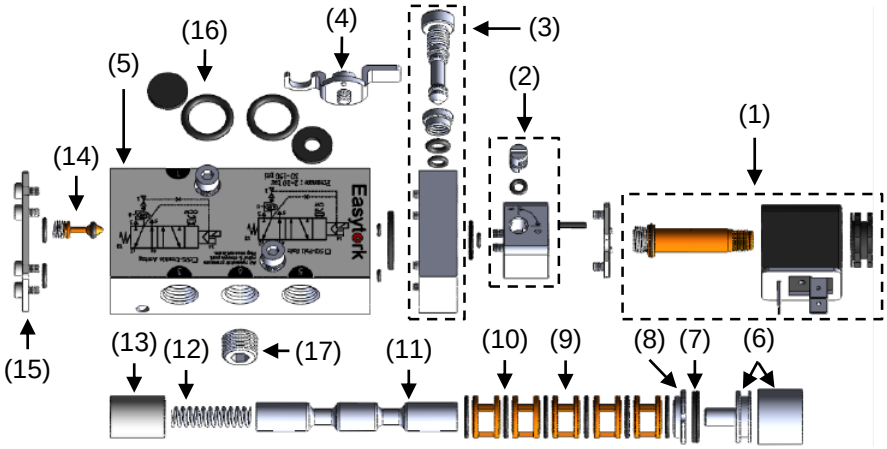








Bill of material



Ref No	Description	Standard Version	Chemical Version	Quantity
1	Coil & armature system	Polyamide 6.6 / brass	Polyamide 6.6 / stainless steel	1
2	Pilot system	Polyamide 6.6	Stainless steel (SS303)	1
3	DA / FS switch system	Nickel-plated steel + aluminum	Stainless steel (SS303)	1 set
4	Anti-tamper system	Nickel-plated steel	Stainless steel (SS303)	1 set
5	Valve body*	Aluminum	Stainless steel (SS303)	1
6	Piston sleeve* / piston	Aluminum	Stainless steel	2
7	Piston seal*	NBR	NBR	2
8	Retainer	Aluminum	Stainless steel	1
9	Spacer	Brass	Brass	5
10	Lip seal*	NBR	NBR	6
11	Spool*	Stainless steel	Stainless steel	1
12	Spring	Stainless steel (SS304)	Stainless steel (SS304)	1
13	Sleeve	Aluminum	Stainless steel	1
14	Internal check valve	Brass w/ stainless steel spring	Brass w/ stainless steel spring	2
15	All bolting / plate	Stainless steel (SS304)	Stainless steel (SS304)	1 lot
16	O-ring and seal plate	NBR	NBR	
17	Plug	Nickle-plated steel	Nickle-plated steel	

* Items marked with an asterisk require thin film of lubricant

Ordering Codes

Easytork Solenoid Valve

Prefix	Product Type	Model Number	Coil Attributes		ESV Attributes			
			Coil Type	Voltage	Solenoid Valve Seal *(Temp. Rating of ESV)* (1)	# of Coils	ESV Body Material *(Corrosion Rating)*	Thread
C -	**S** -	**X** -	**X**	**X** -	**X** -	**X**	**X**	**X**
C: Complete product	**S**: Solenoid valve	**1**: ESV - Easytork solenoid valve **1E**: ESV - Easytork solenoid valve with external port (for EVA-1646)	**1**: Standard **2**: ATEX **3**: Ex-Proof **4**: I-Safe **5**: Low Temp **7**: Low Power (1.1W)	**1**: 24VDC **2**: 110VAC **3**: 230VAC **0**: Other (specify)	**1**: NBR seal (for all coils besides low temp coil, -20°C to 80°C or -4°F to 176°F) **3**: Wide temp seal (compatible with low temp coil, -40°C to 120°C / -40°F to 248°F)	**1**: Single coil	**1**: Standard version **2**: Chemical resistant version	**1**: Imperial **2**: Metric
				X: None	**X**: None	**X**: None	**X**: None	**X**: None
				If ordering ESV body only, X out this section	If ordering coil only, X out these sections			

Note (1): Refers only to ESV body temperature rating. Coil temperature rating is separate, refer to coil specifications.

Examples

Ex-Proof 24VDC ESV

C - **S** - **1** - **2** **1** - **1** - **1** **1** **1**

ESV body only (Standard, ATEX, and Ex-Proof Series are interchangeable)

C - **S** - **1** - **1** **X** - **1** - **1** **1** **1**

Coil only (for I-Safe 24VDC)

C - **S** - **1** - **4** **1** - **X** - **X** **X** **X**

About

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2013 – Arch Grants Recipient

2015 – Accelerate St. Louis

2017 – Frost & Sullivan Product Innovation Award

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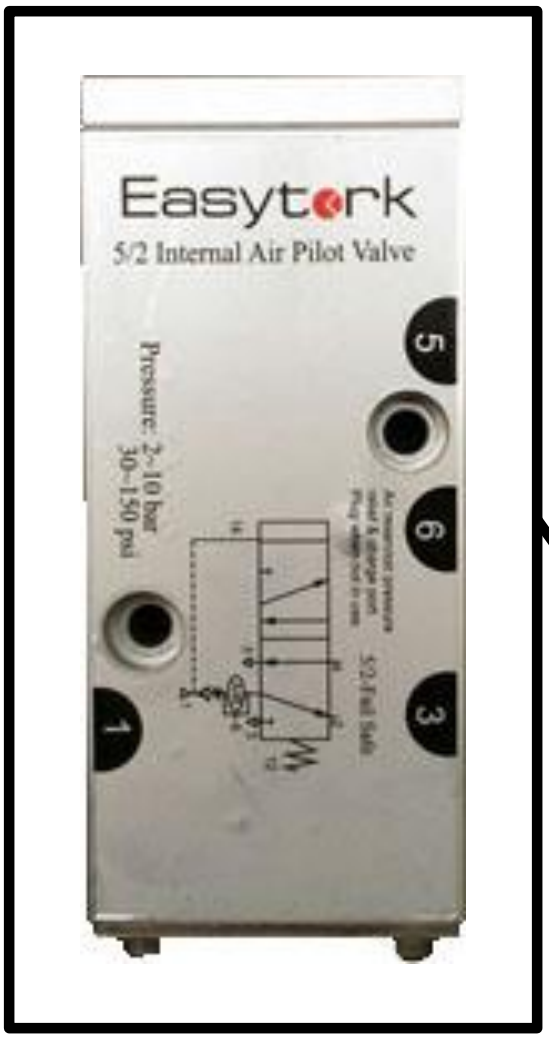
Air Pilot Valve
EPV Series



How it Helps

Engineered for actuators with onboard reservoirs

Easytork Air Pilot Valve (“EPV”)

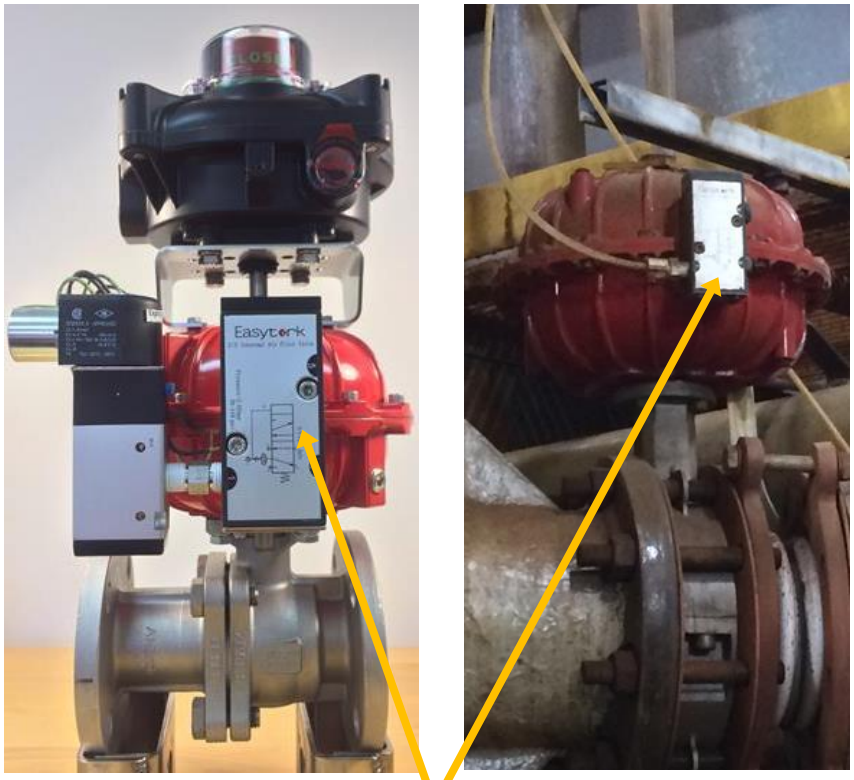
EPV is Easytork’s NAMUR compliant pilot valve to allow users to easily integrate air reservoir fail-safe systems with non-Easytork branded solenoid valve. The EPV is a 5/2 air pilot valve and can be nipple or remote mounted to any 3/2 solenoid valve, this allows users to achieve air reservoir fail-safe function without the need of an Easytork solenoid valve.

Access Easytork fail-safe with any NON-EASYTORK solenoid valve brand

Using any 3rd party 3/2 solenoid valve for fail-safe

Remote mount or nipple mount 3rd party 3/2 solenoid valve and still allow Easytork actuators to fail-safe with loss of supply air.

Nipple mount **Remote mount**



EPV

Description: Both setups achieve fail-safe with Easytork actuator with a 3rd party 3/2 solenoid valve.

Patent pending

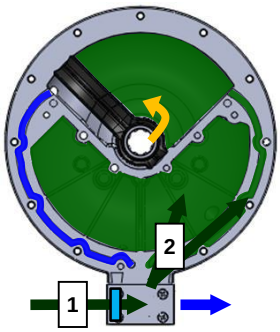
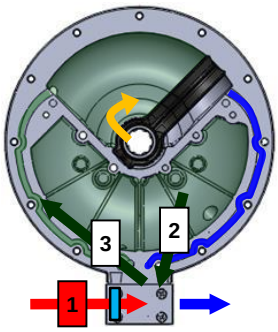
Easytork Air Pilot Valve (“EPV”)

EPV benefits that improve your SYSTEMS

Ideal for corrosive / dirty environment

In fail-safe, environment air never enters the EPV through vacuum which is associated with other spring-return actuators.

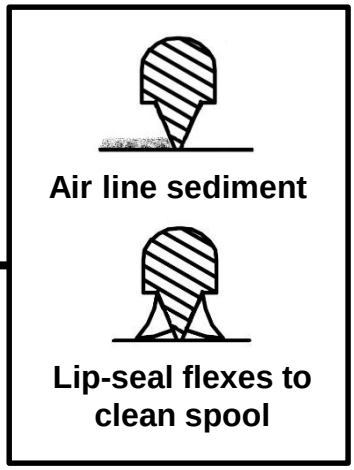
As seen in the EPV operation principle on the right, the actuator is always pushing instrument air out as the system has no spring to pull environment air in.

Counter-Clockwise	Clockwise
	
▪ With air supply	▪ Without air supply

Improved resistance against poor instrument air

Dynamic sealing does not rely on O-rings. Instead, EPV utilizes bi-directional tapered lip-seal that wipes air line sediment and keeps spool surface clean. A high CV 1750l/min (Cv=1.8) further help remove sediments. This design also eliminates sticking problems and avoids spiral twist associated with O-rings.

EPV Spool



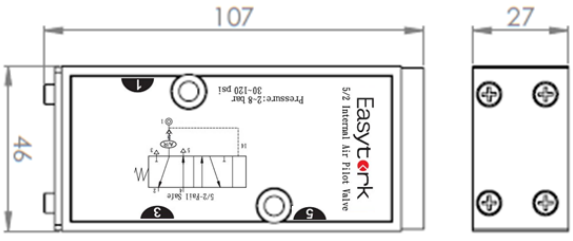
EPV benefits that improve your OPERATIONS

Specification friendly

Any 3/2 solenoid valve can be piped to the main air supply port of the EPV.

EPV Technical Specification	
Operating pressure [1]	2 - 10 bar (30 - 150 psi)
Operating medium	Air (dry or lubricated)
Flow l/min (Cv) *Port size: 1/4"*	1750 l/min (Cv = 1.8)
Temperature range (standard)	-20°C to 80°C (-4°F to 176°F)
Temperature range (wide temp)	-40°C to 120°C (-40°F to 248°F)

Note (1): If required, consult factory for minimum pressure setting for over 2 bar (30 psi).



Note: Figures in mm

Ordering Codes

Easytork Air Pilot Valve

Prefix	Product Type	Model Number	EPV Attributes		
			Seal *(Temp. Rating)*	EPV Body Material *(Corrosion Rating)*	Thread
C -	**AP** -	**X** -	**X** -	**X**	**X**
C: Complete product	**AP**: Air pilot valve	**1**: EPV - Easytork air pilot valve **1E**: EPV - Easytork air pilot valve with external port (For EVA-1646)	**1**: NBR seal (-20°C to 80°C or -4°F to 176°F) **3**: Wide temp seal (-40°C to 120°C or -40°F to 248°F)	**1**: Standard version **2**: Chemical resistant version	**1**: Imperial **2**: Metric

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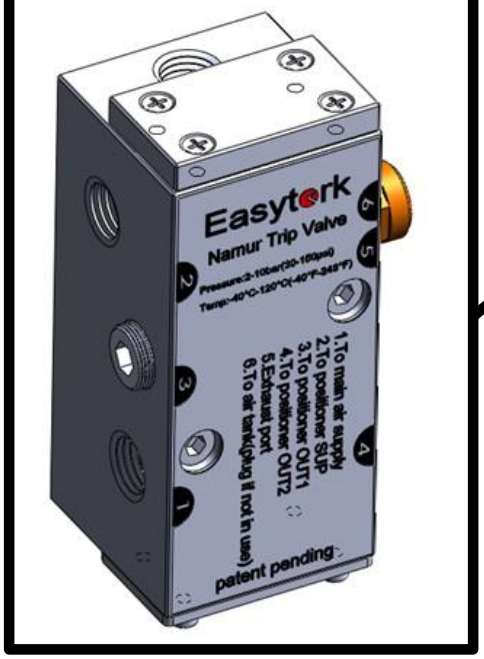
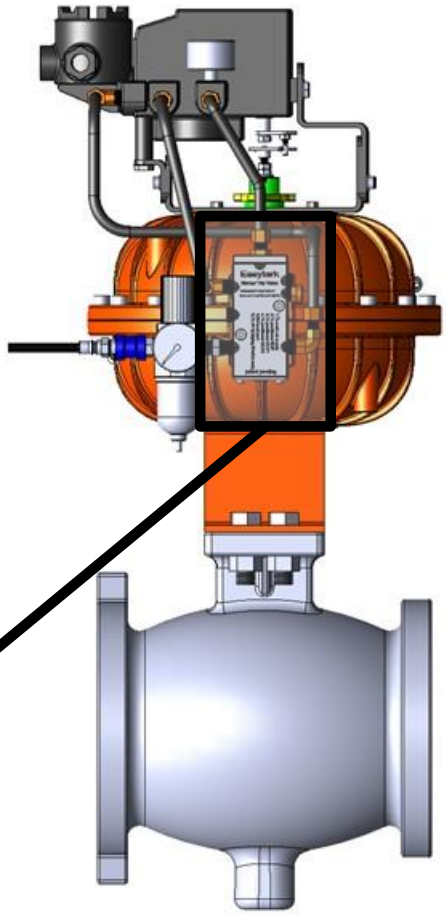
NAMUR Trip Valve
(For Positioners)

How it Helps





Engineered for actuators with onboard reservoirs

Namur Trip Valve (“NTV”)

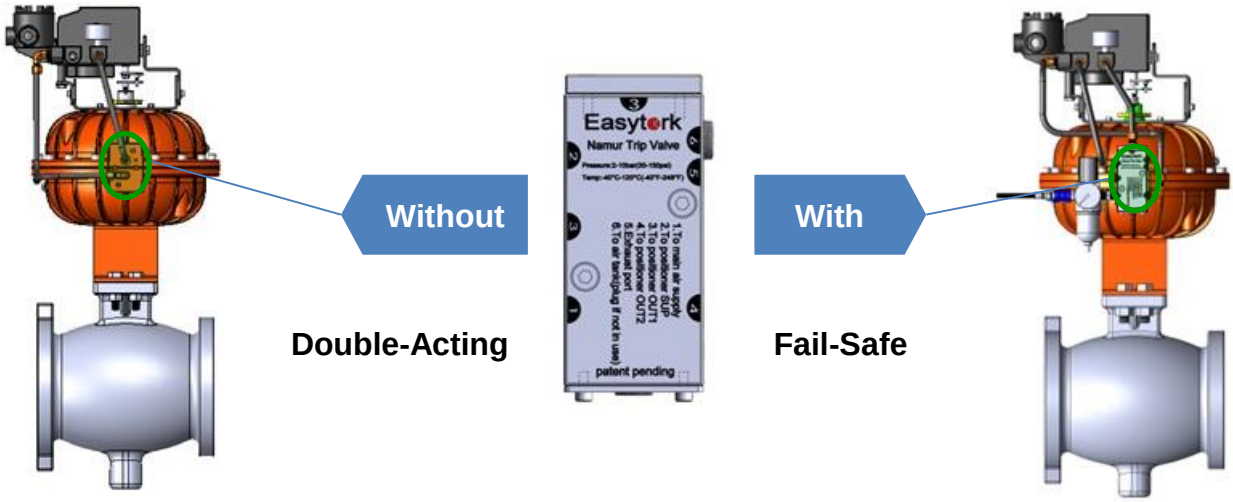
Easytork, or any Namur compatible actuator, can be fitted to the NTV. This setup allows a modulating actuator with a reservoir system and a double-acting positioner to fail-safe or double-acting actuator to fail-freeze.

NTV benefits that improve your OPERATIONS

Fail-Safe

Installing an NTV on an Easytork actuator allows the actuator to fail-safe.

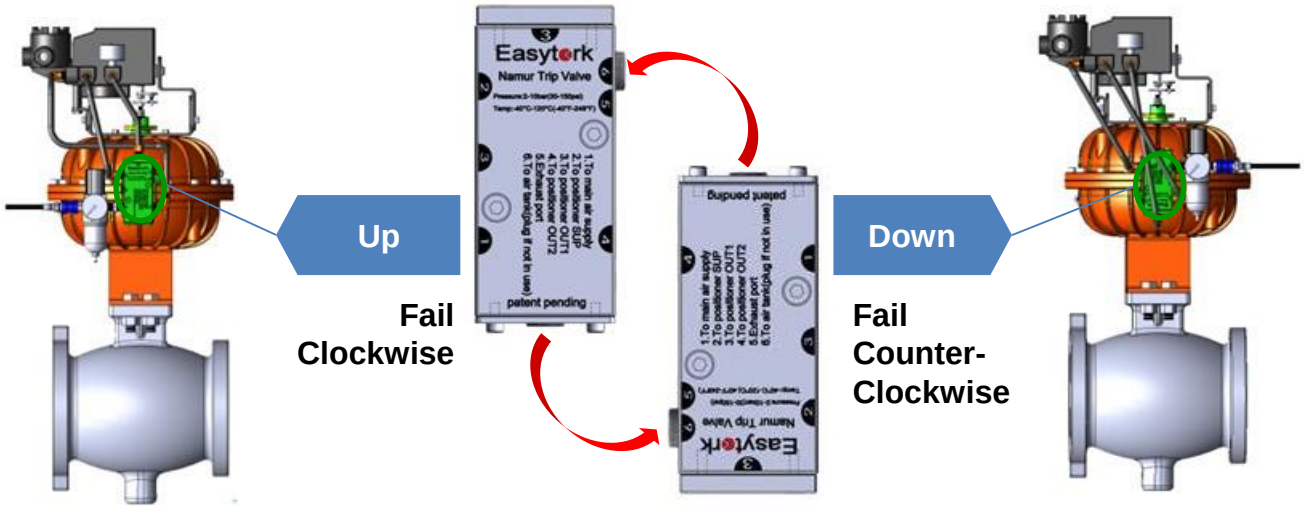
Click or Scan Here: Video



Fail clockwise or fail counter-clockwise

With loss of air, if the NTV is installed pointing up would cause the actuator to fail clockwise, or if the NTV is installed pointing down would cause the actuator to fail counter clockwise.

Click or Scan Here: Video



Namur Trip Valve

NTV benefits that improve your SYSTEMS

Specification friendly – <u>Universally compatible with any positioner</u>

Any double-acting positioner can be used with the NTV to fail-safe an actuator with air reservoir.

Simplified integration with air reservoir

NTV removes integration complexity between actuator, positioner and air reservoir. In most instances, set-up is significantly easier and more economical than spring-return actuators.

With Easytork's built-in air reservoirs, system integrator only needs to connect signal source to positioner and supply air to Easytork's system.

Legacy design:

Actuators with air reservoirs require an external check valve, trip valve, associated piping and fitting between those components with positioner, actuator, and air reservoir. Picture below shows such integration.

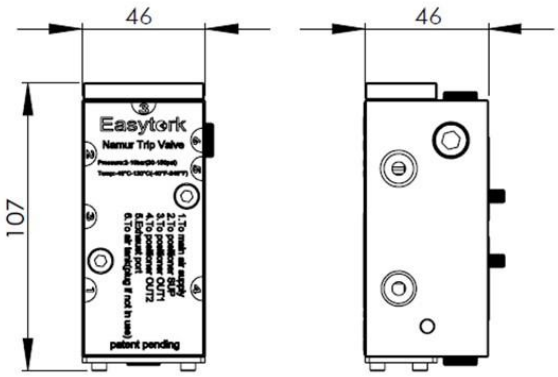
External air reservoir connected to actuator in picture below.

Complex ad-hoc piping and integration with various components to achieve fail-safe with external air reservoir.

NTV Specification

NTV Technical Specification	
Operating pressure [1]	2 - 10 bar (30 - 150 psi)
Operating medium	Air (dry or lubricated)
Flow l/min (Cv) Port size: 1/4"	1000 l/min (Cv = 1.0)
Temperature range	-20°C to 80°C (-4°F to 176°F)

Note (1): If required, consult factory for minimum pressure setting for over 2 bar (30 psi).



(Figures in mm)

Patents: NTV
Patent pending

Patents:
USA: 11,280,428
All other countries pending

Ordering Codes

Easytork Namur Trip Valve

Prefix	Product Type	Model Number	NTV Attributes		
			Seal *(Temp. Rating)*	NTV Body Material *(Corrosion Rating)*	Thread
C -	**PV** -	**X** -	**X** -	**X** -	**X**
C: Complete product	**PV**: Universal positioner valve	**1**: NTV - Easytork Namur trip valve	**1**: Standard seal (for all temp -20°C to 80°C or -4°F to 176°F)	**1**: Standard version **2**: Chemical resistant version	**1**: Imperial **2**: Metric

About

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2015 – Accelerate St. Louis

2017 – Frost & Sullivan Product Innovation Award

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Easytork

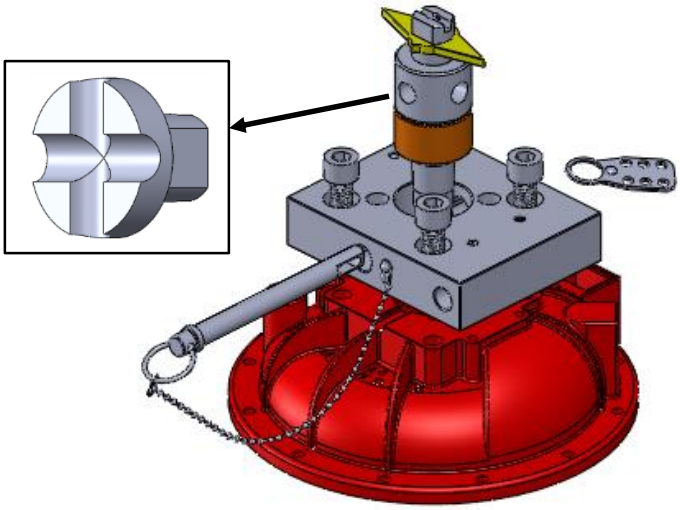
Lockout Device

Lockout Device

Easytork Lockout Device benefits that improve your OPERATIONS

Easily upgrade actuator with lockout device

Lockout device can be purchased as a kit and is easily adaptable to Easytork actuators.



Easytork Lockout Device benefits that improve your SYSTEMS

Specification friendly

Lockout valve and actuators in both the fully open and fully closed positions.

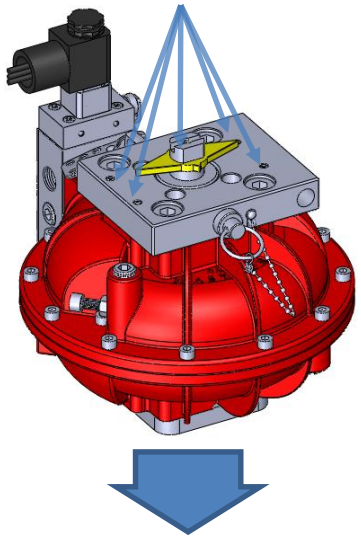
Compact system

Unlike bracket and coupling lockout devices, Easytork lockouts only add minimal height to the system.

Standards

Lockout and PST device does not affect the interfaces of actuator/valve or the attachments of ancillaries.

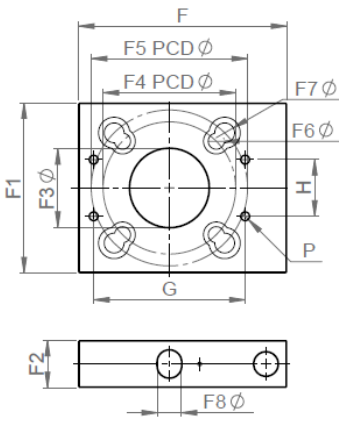
Actuator can still mount to other actuator auxiliaries



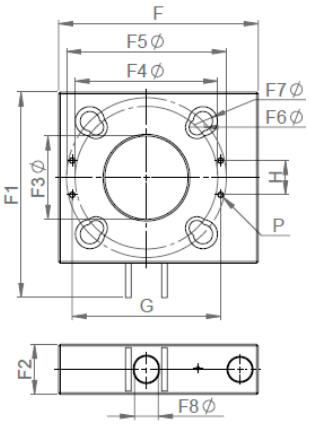
Actuator can still direct mount to VALVE

Lockout Device Dimensions

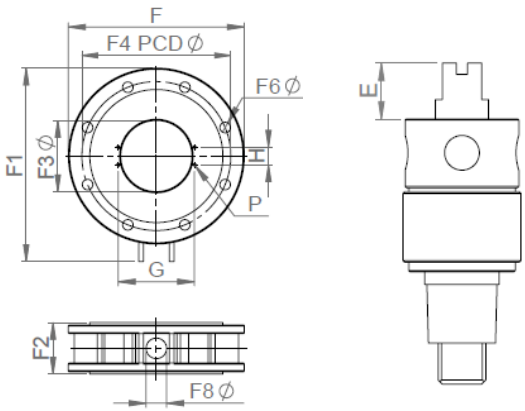
EVA-0309 to EVA-0717



EVA-1022 to EVA-1436



EVA-1646



Metric

Dimensions (mm)	Model							
	EVA-0309	EVA-0411	EVA-0514	EVA-0717	EVA-1022	EVA-1227	EVA-1436	EVA-1646
F	94.0	94.0	110.0	110.0	150.0	175.0	200.0	300.0
F1	55.0	55.0	90.0	90.0	156.0	180.0	204.0	330.0
F2	15.0	15.0	25.0	25.0	30.0	44.0	44.0	84.0
F3 Ø	20.0	28.0	35.0	41.6	55.0	73.0	94.0	121.5
F4 PCD Ø	42.0	42.0	50.0	70.0	125/127	125/127	140.0	254.0
F5 PCD Ø	50.0	50.0	82.6	82.6	-	140.0	165.0	-
F6 Ø	5.5	5.5	6.8	8.5	15.5	13.5	17.0	18.4
F7 Ø	6.8	6.8	10.5	10.5	-	17.0	21.0	-
F8 Ø	8.0	8.0	11.0	13.0	17.0	21.0	25.0	35.0
Actuator Dimensions of Accessories Flange								
G	80.0	80.0	80.0	80.0	80.0	130.0	130.0	130.0
H	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
E	20.0	20.0	20.0	20.0	30.0	30.0	30.0	30.0
P	4-M5x0.8 Deep8	4-M5x0.8 Deep8	4-M5x0.8 Deep8	4-M5x0.8 Deep8	4-M5x0.8 Deep8	4-M5x0.8 Deep8	4-M5x0.8 Deep8	4-M5x0.8 Deep8

Imperial

Dimensions (inch)	Model							
	EVA-0309	EVA-0411	EVA-0514	EVA-0717	EVA-1022	EVA-1227	EVA-1436	EVA-1646
F	3.70	3.70	4.33	4.33	5.91	6.89	7.87	11.81
F1	2.17	2.17	3.54	3.54	6.14	7.09	8.03	12.99
F2	0.59	0.59	0.98	0.98	1.18	1.73	1.73	3.31
F3 Ø	0.79	1.10	1.38	1.64	2.17	2.87	3.70	4.78
F4 PCD Ø	1.65	1.65	1.97	2.76	4.92/5.00	4.92/5.00	5.51	10.00
F5 PCD Ø	1.97	1.97	3.25	3.25	-	5.51	6.50	-
F6 Ø	0.22	0.22	0.27	0.33	0.61	0.53	0.67	0.72
F7 Ø	0.27	0.27	0.41	0.41	-	0.67	0.83	-
F8 Ø	0.31	0.31	0.43	0.51	0.67	0.83	0.98	1.38
Actuator Dimensions of Accessories Flange								
G	3.15	3.15	3.15	3.15	3.15	5.12	5.12	5.12
H	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
E	0.79	0.79	0.79	0.79	1.18	1.18	1.18	1.18
P	4x10-24UNC Deep0.31	4x10-24UNC Deep0.31	4x10-24UNC Deep0.31	4x10-24UNC Deep0.31	4x10-24UNC Deep0.31	4x10-24UNC Deep0.31	4x10-24UNC Deep0.31	4x10-24UNC Deep0.31

Patents: Lockout and Partial Stroke Test Device
China =278493 Taiwan = M447275, other countries pending

Ordering Codes

Lockout Device

Prefix	Product Type	Model Number	For Which Actuator		
			Actuator Size	LPST Material *(Corrosion Rating)*	Thread
K -	**LPST** -	**X** -	**X** -	**X** -	**X**
K: Kit	**LPST**: Manual lockout	**1**: Easytork lockout kit	**1**: EVA-0309 **2**: EVA-0411 **3**: EVA-0514 **4**: EVA-0717 **5**: EVA-1022 **6**: EVA-1227 **7**: EVA-1436 **8**: EVA-1646	**1**: Standard version **2:** Chemical resistant version	**1**: Imperial **2**: Metric

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Easytork

Declutchable Gear

EGO Series Declutchable Gearbox: Overview / BOM

Overview

-High strength and torque

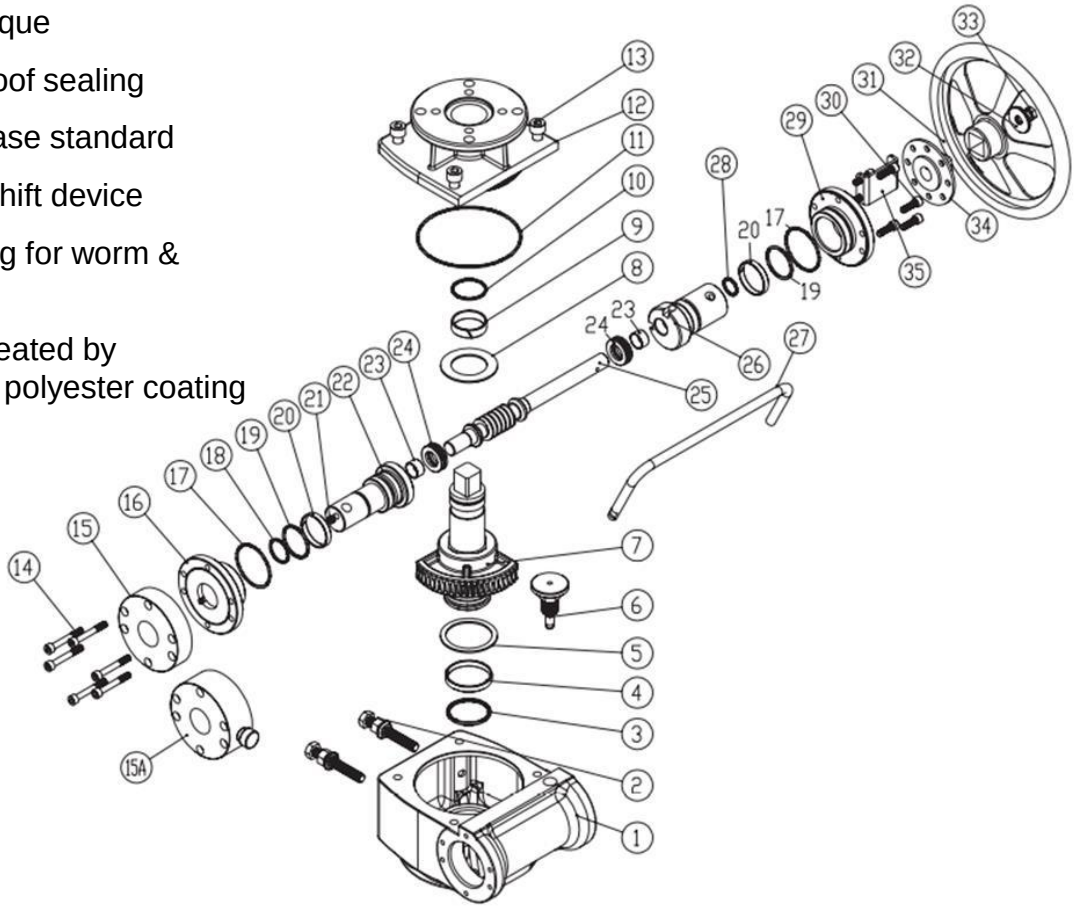
-IP67 solid weatherproof sealing

-ISO5211 mounting base standard

-Auto – manual safe shift device

-Self lubricated bearing for worm & worm gear

-WCB body surface treated by phosphating, epoxy & polyester coating

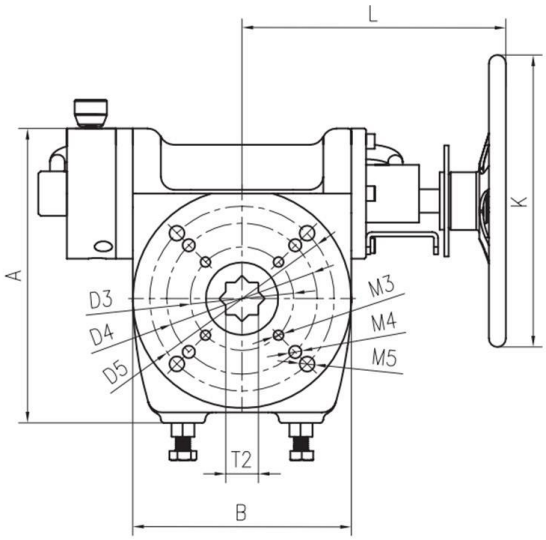


Ref No	Description	Qty	Material
1	Body	1	WCB
2	Adjust Bolt	2	304
3	O-ring	1	NBR
4	Bearing	1	POM
5	Bearing	1	POM
6	Positioning unit	1	45
7	Shaft	1	45
8	Washer	1	POM
9	Bearing	1	POM
10	O-ring	1	NBR
11	O-ring	1	NBR
12	Cap	1	WCB
13	Screw	4	304
14	Screw	6	304
15	Cap	1	45
17	O-ring	2	NBR

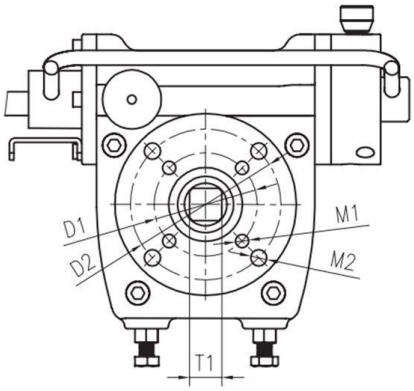
Ref No	Description	Qty	Material
18	O-ring	1	NBR
19	O-ring	2	NBR
20	Eccentric axle bearing	2	POM
21	Bolt	1	304
22	Eccentric half axle	1	45
23	Bearing	2	Cu
24	Thrust ball bearing	2	Steel
25	Worm shaft	1	45
26	Eccentric half axle	1	45
27	Shift handle	1	45
28	O-ring	1	NBR
29	Cap	1	45
30	Screw	6	304
31	Hand wheel	1	20
32	Washer	1	20
33	Bolt	1	304

EGO Series Declutchable Gearbox: Dimensions

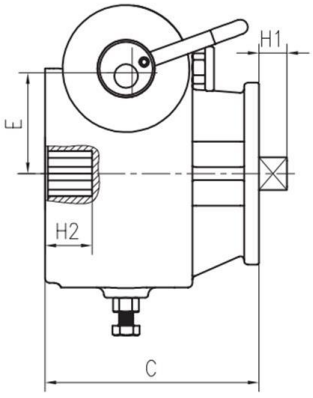
Gear to valve side (Bottom)



Gear to actuator side (Top)



To actuator → ← To valve



Imperial	Torque		Dimensions (inch)																	
			Gear-Valve Interface			Gear Dimension							Gear-Actuator Interface					
Model	Input	Output	D3.D4.D5	T2	H2	A	B	C	E	L	K	J	D1	D2	T1	H1	M1	M2
K-EGO-015B	195	1,770	F05/F07	□ 0.67	0.75	4.7	3.9	4.1	1.8	4.7	φ 7.9	1/4" NPT	F05	F07	□ 0.67	□ 0.67	φ 0.28	φ 0.35
K-EGO-060	372	5,310	F07/F10/F12	□ 1.06	1.14	7.6	5.8	5.7	2.8	6.9	φ 7.9	1/4" NPT	F07	F10	□ 0.87	□ 0.87	φ 0.35	φ 0.43
K-EGO-090A	620	7,965	F07/F10/F12	□ 1.06	1.14	7.6	5.8	5.7	2.8	7.0	φ 9.8	1/4" NPT	F07	F10	□ 1.06	□ 1.10	φ 0.35	φ 0.43
K-EGO-090B	850	10,620	F07/F10/F12	□ 1.06	1.14	7.6	5.8	5.7	2.8	7.1	φ 11.8	1/4" NPT	F07	F10	□ 1.06	□ 1.10	φ 0.35	φ 0.43
K-EGO-160A	708	14,160	F10/F12	□ 1.42	1.50	10.2	7.7	7.5	4.2	10.6	φ 13.8	1/4" NPT	F10	F12	□ 1.42	□ 1.34	φ 0.43	φ 0.51
K-EGO-160B	885	17,700	F10/F12	□ 1.42	1.50	10.2	7.7	7.5	4.2	10.7	φ 15.7	1/4" NPT	F10	F12	□ 1.42	□ 1.34	φ 0.43	φ 0.51
K-EGO-350A	1,682	29,205	F12/F16	□ 1.81	6.93	13.1	10.0	7.1	4.8	10.7	φ 23.6	1/4" NPT	F16	-	□ 1.81	□ 1.77	φ 0.87	-
K-EGO-350B	2,036	35,400	F12/F16	□ 1.81	6.93	13.1	10.0	7.1	4.8	10.8	φ 27.6	1/4" NPT	F16	-	□ 1.81	□ 1.77	φ 0.87	-
K-EGO-700	974	61,950	F16/F25	□ 1.81	7.72	15.3	11.7	9.8	6.1	16.5	φ 19.7	1/2" NPT	F16	F25	□1.81/□2.17	□ 1.77	φ 0.87	φ 0.51

Metric	Torque		Dimensions (mm)															
			Gear-Valve Interface			Gear Dimension							Gear-Actuator Interface					
Model	Input	Output	D3.D4.D5	T2	H2	A	B	C	E	L	K	J	D1	D2	T1	H1	M1	M2
K-EGO-015B	22	200	F05/F07	□ 17	19	120	100	104	44.5	120	φ 200	1/4" NPT	F05	F07	□ 17	17	φ 7	φ 9
K-EGO-060	42	600	F07/F10/F12	□ 27	29	192	148	145	71	175	φ 200	1/4" NPT	F07	F10	□ 22	22	φ 9	φ 11
K-EGO-090A	70	900	F07/F10/F12	□ 27	29	192	148	145	71	178	φ 250	1/4" NPT	F07	F10	□ 27	28	φ 9	φ 11
K-EGO-090B	96	1,200	F07/F10/F12	□ 27	29	192	148	145	71	181	φ 300	1/4" NPT	F07	F10	□ 27	28	φ 9	φ 11
K-EGO-160A	80	1,600	F10/F12	□ 36	38	260	196	192	107.5	268	φ 350	1/4" NPT	F10	F12	□ 36	34	φ 11	φ 13
K-EGO-160B	100	2,000	F10/F12	□ 36	38	260	196	192	107.5	272	φ 400	1/4" NPT	F10	F12	□ 36	34	φ 11	φ 13
K-EGO-350A	190	3,300	F12/F16	□ 46	176	334	255	181	123	272	φ 600	1/4" NPT	F16	-	□ 46	45	φ 22	-
K-EGO-350B	230	4,000	F12/F16	□ 46	176	334	255	181	123	275	φ 700	1/4" NPT	F16	-	□ 46	45	φ 22	-
K-EGO-700	110	7,000	F16/F25	□ 46	196	389	297	249	156	418	φ 500	1/2" NPT	F16	F25	□46 / □55	45	φ 22	φ 13

Ordering Codes

Easytork Declutchable Direct Mount Gear Operator

Prefix	Product Type	Model Number
K	- EGO	- X

			Output Torque (in-lb)	Direct Mount to Actuator	To Valve Dimension ISO	To Valve Dimension Drive
K: Kit	**EGO**: Declutchable Manual Override Gear Operator	**015B**	1,770	0514 / 0717 / 1022	F05/F07	17mm sq
		060	5,310	0717 / 1022 / 1227	F07/F10/F12	27mm sq
		090A	7,965	1022 / 1227	F07/F10/F12	27mm sq
		090B	10,620	1022 / 1227	F07/F10/F12	27mm sq
		160A	14,160	1227 / 1436	F10/F12	36mm sq
		160B	17,700	1227 / 1436	F10/F12	36mm sq
		350A	29,205	1436 / 1646	F12/F16	46mm sq
		350B	35,400	1436 / 1646	F12/F16	46mm sq
		700	61,950	1436 / 1646	F16/F25	46mm sq

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Limit Switch

LS Series Limit Switch: Overview

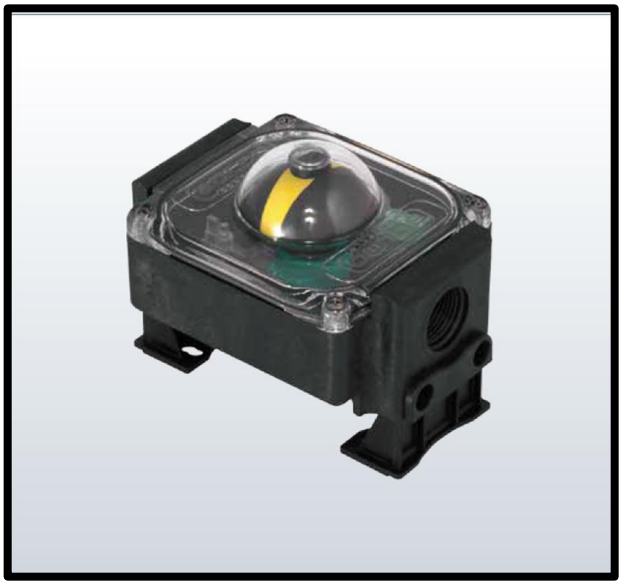
Overview

Compact limit switch box, designed not only for the industrial market, but for indoor applications in hazardous areas.

Available in either glass reinforced resin or nickel plated aluminum, with flat lid or 3D indicator.

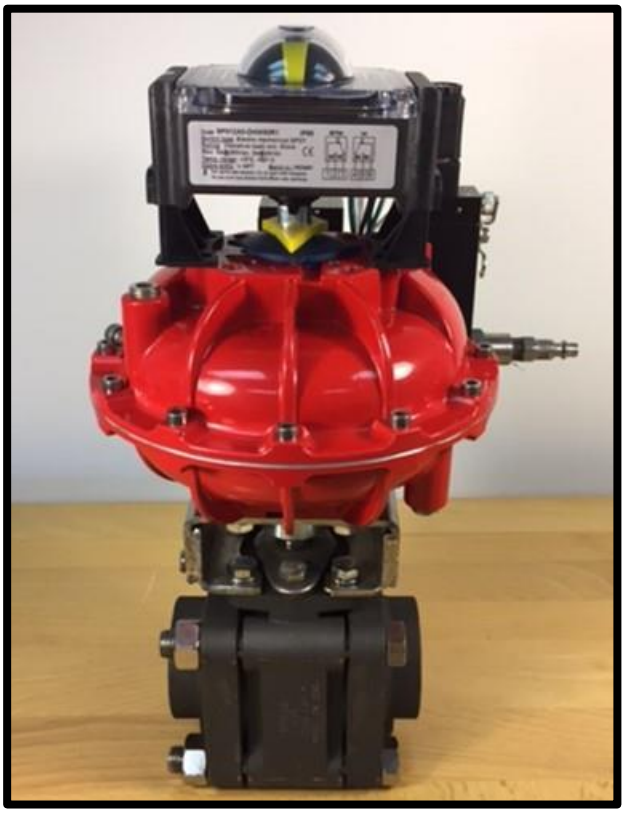
The LS Series is a corrosion resistant device, able to satisfy the needing in water treatment and desalination plants, can also match the Ex ia IIC T6 standards with the integral intrinsically safe certification, covering enclosure and electrical components inside.

With these devices, we are providing a ready to mount solution, thanks to the integrated Namur mounting kit.



Features

- Glass reinforced resin enclosure with transparent polycarbonate lid, ensuring a device totally unaffected by corrosion, in salty and humid environment.
- One cable entry as standard, either metrics or imperial.
- Enhanced strength on the composite enclosure, with a thick molding and durable threaded cable entries.
- Easy wiring through the terminal PCB board.
- ASI communication protocol board.
- Integrated mounting kit for Namur actuators.



LS Series Limit Switch: Technical data

Technical Data

Materials

- Glass reinforced resin body with transparent polycarbonate cover.
- Stainless steel fasteners.

Approvals

ATEX, EAC:

EX II 2GD Ex ia IIC T4/T5/T6

Ex ia IIIB T44˚C……. T108˚C Db IP6*

Ta: -15˚C ≤ Ta ≤ 80˚C

SIL certificate:

Up to SIL 2 Certified by TÜV

Protection rating:

IP 65

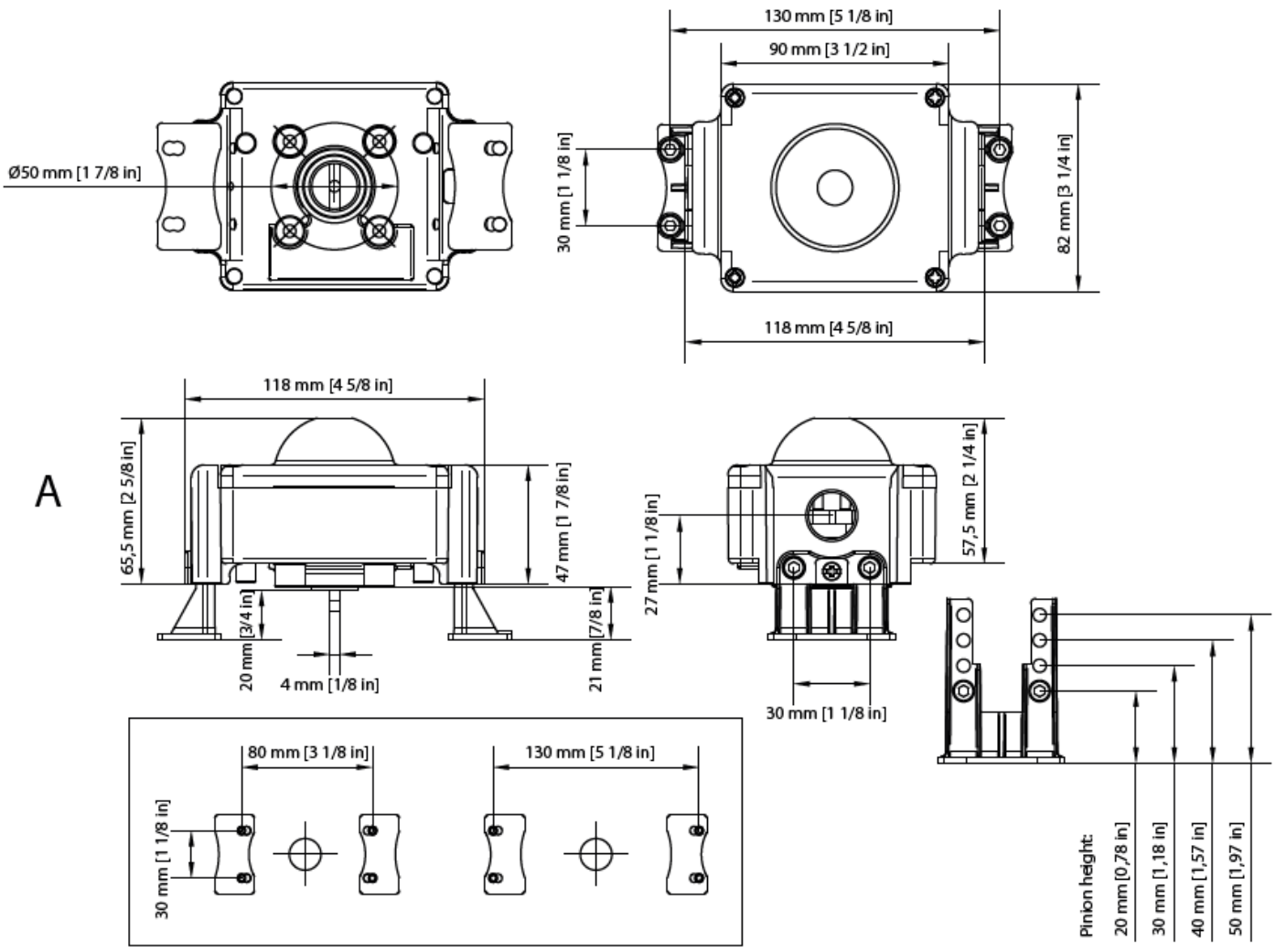
Cable entries options:

One cable entry M20 or ½" NPT

Temperature:

-15˚C + 80˚C as standard temperature range

Dimensional Data



Ordering Codes

LS Series Limit Switch

Product Type	Model	ID
	Limit Switch Model	ID

LS - X - X

LS: Limit switch

SPB01200D: For EVA-0411 and larger; includes built-in limit switch bracket. Resin housing, 3D indicator, 2 switches, one 1/2"NPT port

RT

Limit Switch Bracket (If Needed)

Product Type	Bracket Material	Flange Measurement	Bracket Height	Version
	Bracket Material *(Corrosion Rating)*	Actuator's VDI/VDE 3845 Measurement	Total Limit Switch Bracket Height	Wrench Accessible

LB - X - X - X - X

LB: Limit switch bracket

2: Chemical resistant version

Width x length
Format: 0mm

Height
Format: 0mm

X: Non-wrench accessible
WR: For wrench manual overrid

Easytork's Stock Standard Limit Switch Bracket Stocking

LB	-	**2**	-	**30x80mm**	-	**45mm**	-	**X**
LB	-	**2**	-	**30x80mm**	-	**55mm**	-	**X**
LB	-	**2**	-	**30x130mm**	-	**55mm**	-	**X**
LB	-	**2**	-	**25x50mm**	-	**45mm**	-	**WR**
LB	-	**2**	-	**30x80mm**	-	**45mm**	-	**WR**

Note: For dimensions not listed above, call for custom made limit switch brackets. Easytork does not readily stock limit switch brackets not listed

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Positioner


YT-3300
SMART POSITIONER
ROTARY POSITIONER
YOUNGTECH Co.,Ltd.

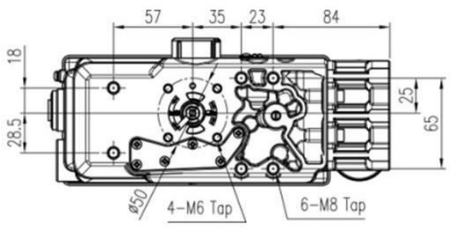
Positioner Overview

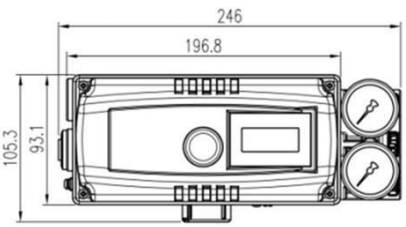
Smart positioner

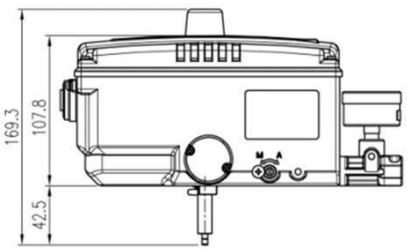
The 3300 Smart Valve Positioner accurately controls valve stroke, according to input signal of 4~20mA being delivered from controller.

- Auto calibration
- Auto/Manual switch
- HART communication
- LCD display
- PID control
- 4 buttons for local control
- Feedback signal
- Limit switch

Item · Type		YT-3300	YT-3350
Input Signal		4~20mA DC	
Supply Pressure		0.14~0.7MPa(1.4~7 bar)	
Stroke	Linear Type	10~150mm	
	Rotary Type	0 ~ 90°	
Impedance		Max.500Ω @ 20mA DC	
Air Connection		PT(NPT,G)1/4	NPT 1/4
Gauge Connection		PT(NPT)1/8	NPT 1/8
Conduit		G(PF,NPT)1/2,M20	G(PF)1/2
Operating Temp	Standard Type.	-30℃ ~ 85℃ (-22~185° F)	
	Low Temp. Type.	-40℃ ~ 85℃ (-40~185° F)	
LCD Operating Temp.		-30℃ ~ 85℃ (-22~185° F)	
Ambient Temp. of Explosion Proof		-40~60℃(T5) / -40~40℃(T6)	
Linearity		±0.5% F.S.	
Hysteresis		±0.5% F.S.	
Sensitivity		±0.2% F.S.	
Repeatability		±0.3% F.S.	
Air Consumption		Below 2LPM (sup=0.14MPa)	
Flow Capacity		70LPM (sup=0.14MPa)	
Output Characteristics		Linear, EQ%, Quick Open user set (16 Point)	
Material		Aluminum Diecasting	Stainless Steel 316
Ingress Protection		IP66	
Explosion Protection Type		**ATEX, IECEx** Ex ia IIC T5/T6 Gb, EX iaD IIIC T100℃/T85℃ Db IP66 **NEPSI** Ex ia IIC T5/ T6 **KCs** Ex ia IIC T5/T6, EX iaD IIIC T100℃/T85℃ **CSA** Pending **FM** Class I, Div 1, Groups ABCD Class I, Zone 0 AEx ia IIC Class II/III, Div 1, Groups EFG Class I, II, III, Div 2, Groups ABCDEFG NEMA Type 4 IP66 AMBENT TEMP: -40℃ ~ 60℃ (T5) / -40℃ ~ 40℃ (T6)	
Communication(Option)		HART(ver.7)	
L/S Rating	Mechanical Type(Omron)	AC 125V, 3A DC 30V, 2A	
	Proximity Type(P&F)	DC 8.2V 8.2mA	
Weight		2kg (4.4lb)	5.1kg(11.2lb)







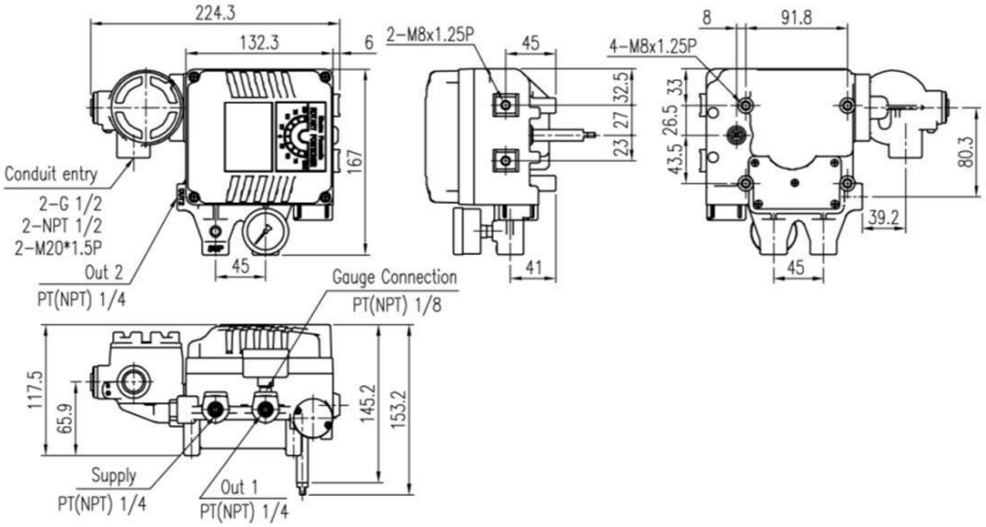
Positioner Overview

Electro pneumatic positioner

The Electro-Pneumatic Positioner 1000R is used for operation of pneumatic rotary valve actuators by means of electrical controller or control system with an analog output signal of DC 4 to 20mA or split ranges.

- Simple zero and span adjustment
- No resonance between 5-200Hz
- Auto/Manual switch
- RA vs.. DA action and 1/2 split range setting by simple adjustment.
- Internal feedback signal is available as an option (weather proof only)

Item · Type		Single	Double
Input Signal		4-20mA DC	
Impedance		250±15 Ω	
Supply Pressure		0.14~0.7MPa(1.4~7 bar)	
Stroke		0 ~ 90°	
Air Connection		PT(NPT,G)1/4	
Gauge Connection		PT(NPT) 1/8	
Conduit		G(PF,NPT)1/2, M20	
Explosion Protection Type		**ATEX** (II 2 G)Ex dmb IIB T5 **IECEx** (II 2 G)EEx md IIB T5 **KCs** Ex dmb IIB T5/Ex d IIC T5 IP66/Ex ia IIB T6 Gb **TS** Ex db mb IIB T5 Gb X **CSA** (Class I, Zone 1)Ex dm IIB T5 **FM** XP-S/I/1/CD/T5 Ta=60□; DIP/II,III/1/EFG/T5 Ta=60□ ;Type 4X **NEPSI** Ex dmb IIC T6 Gb **TIIS** Ex dmb IIB T5	
Ingress Protection		IP66	
Operating Temp	Operating	-20℃~70℃(-4~158°F)	
	Explosion	-20℃~60℃(-4~140°F)	
Linearity		±1% F.S.	±2% F.S.
Hysteresis		±1% F.S.	
Sensitivity		±0.2% F.S.	±0.5% F.S.
Repeatability		±0.5% F.S.	
Air Consumption		2.5LPM (sup=0.14MPa)	
Flow Capacity		80LPM (sup=0.14MPa)	
Material		Aluminum Diecasting	
Weight		2.8kg (6.2 lb)	



Ordering Codes

Smart positioner – YT 3300

Prefix		Model Number	Adders to Basic Version			Model
		Rotork Smart Positioner / YT-3300 / 4-20mA Input	Double acting. Rotary. Connection: NPT. -30°~85°C. Pressure gauge. Stock Bracket to Actuator.			Model
PS	**-**	**3300RDN55**	**X**	**X**	**S -**	**YT**
PS: Positioner			**0**: Basic Stock Version; Everything Listed Above **2**: HART; with everything listed above	**0**: No Adder **1**: 4-20mA feedback (PTM) **2**: Limit Switch (Mechanical) **4**: Visual Indicator + 4-20mA feedback (PTM) + Limit Switch (Mechanical)		

Basic positioner – YT 1000

Prefix		Model Number	Rating	Model Number	Adders to Basic Version			Model
		Rotork Basic Positioner / YT-1000R / 4-20mA Input	Rating		Double acting. Rotary. Connection: NPT. -20°~60°C. Pressure gauge. Stock Bracket to Actuator.			Model
PS	**-**	**1000RD**	**X**	**535S**	**X**	**X**	**-**	**YT**
PS: Positioner			**N**: Standard Version **F**: Ex-Proof FM (Available only with basic version - no other adders, i.e. 4-20ma feedback, or limit switch)		**0**: Basic Stock Version; Everything Listed Above	**0**: No Adder **1**: 4-20mA feedback (SPTM Internal) **3**: Limit Switch (Mechanical)		

About

We believe in selling “easy”. Easytork brings differentiating features and benefits to the process control industry through our focus on innovation and quality. Easytork has been awarded numerous awards including:

2013 – Arch Grants Recipient

2015 – Accelerate St. Louis

2017 – Frost & Sullivan Product Innovation Award

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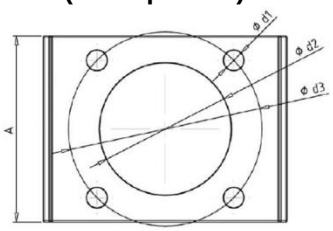
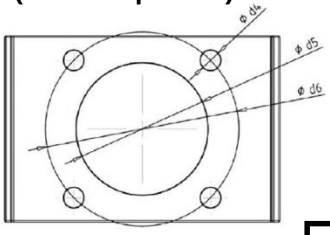
Hardware

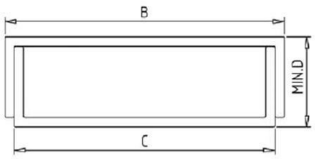
ISO Mounting Bracket Dimensions

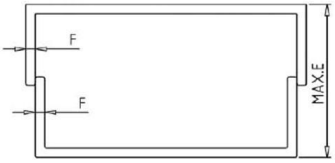
Bottom side (valve pattern)



Top side (actuator pattern)







Mix and match any bottom side and top side bracket within the same series.

Metric

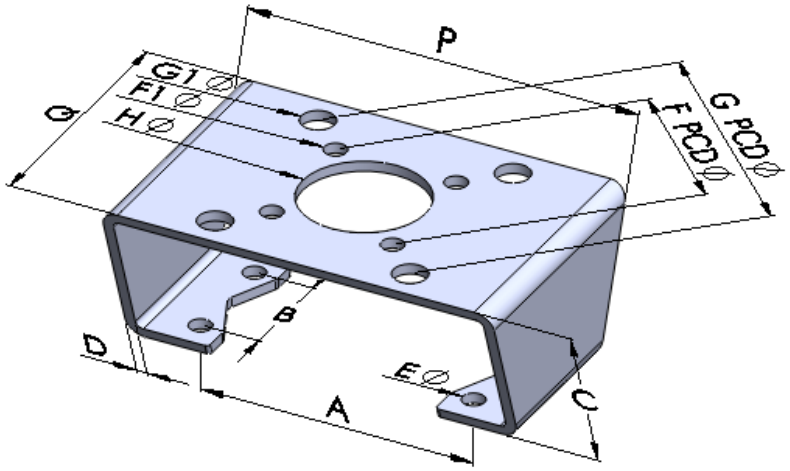
Bottom Side (ie. Valve Pattern) Availability	Top Side (ie. Actuator Pattern) Availability	Dimensions (mm)											
		Top & Bottom Joint Dimension						Bottom Dimension			Top Dimension		
		A	B	C	F	MIN.D	MAX.E	Ød1	Ød2	Ød3	Ød4	Ød5	Ød6
S Series Bracket		50	66	60	3	30	50						
F03S	**F03S**							5.3	25	36	5.3	25	36
F04S	**F04S**							5.3	30	42	5.3	30	42
F05S	**F05S**							6.4	35	50	6.4	35	50
M Series Bracket		70	100	92	4	42	62						
F03M	**F03M**							5.3	25	36	5.3	25	36
F04M	**F04M**							5.3	30	42	5.3	30	42
F05M	**F05M**							6.4	35	50	6.4	35	50
F07M	**F07M**							8.4	55	70	8.4	55	70
L Series Bracket		120	150	140	5	52	80						
F07L								8.4	55	70			
F10L	**F10L**							10.5	70	102	10.5	70	102
F12L	**F12L**							13.0	85	125	13.0	85	125
XL Series Bracket		160	160	150	5	70	100						
F10XL								10.5	70	102			
F12XL								13.0	85	125			
F14XL	**F14XL**							17.0	100	140	17.0	100	140

Imperial

Bottom Side (ie. Valve Pattern) Availability	Top Side (ie. Actuator Pattern) Availability	Dimensions (inch)											
		Top & Bottom Joint Dimension						Bottom Dimension			Top Dimension		
		A	B	C	F	MIN.D	MAX.E	Ød1	Ød2	Ød3	Ød4	Ød5	Ød6
S Series Bracket		1.97	2.60	2.36	0.12	1.18	1.97						
F03S	**F03S**							0.21	0.98	1.42	0.21	0.98	1.42
F04S	**F04S**							0.21	1.18	1.65	0.21	1.18	1.65
F05S	**F05S**							0.25	1.38	1.97	0.25	1.38	1.97
M Series Bracket		2.76	3.94	3.62	0.16	1.65	2.44						
F03M	**F03M**							0.21	0.98	1.42	0.21	0.98	1.42
F04M	**F04M**							0.21	1.18	1.65	0.21	1.18	1.65
F05M	**F05M**							0.25	1.38	1.97	0.25	1.38	1.97
F07M	**F07M**							0.33	2.17	2.76	0.33	2.17	2.76
L Series Bracket		4.72	5.91	5.51	0.20	2.05	3.15						
F07L								0.33	2.17	2.76			
F10L	**F10L**							0.41	2.76	4.02	0.41	2.76	4.02
F12L	**F12L**							0.51	3.35	4.92	0.51	3.35	4.92
XL Series Bracket		6.30	6.30	5.91	0.20	2.76	3.94						
F10XL								0.41	2.76	4.02			
F12XL								0.51	3.35	4.92			
F14XL	**F14XL**							0.67	3.94	5.51	0.67	3.94	5.51

Note ▬ : Mix and match any Bottom Side and Top Side ISO pattern within the same Series. For example, F03S-F03S, F03S-F04S, F03S-05S, F04S-F03S, F04S-F04S, F04S-F05S, F05S-F03S, F05S-F04S, F05S-F05S.

NAMUR Mounting Bracket



Metric

Dimensions (mm)	Limit Switch Bracket Ordering Code		
	LB-2-30x80mm-45mm-X	LB-2-30x80mm-55mm-X	LB-2-30x130mm-55mm-X
A	80.0	80.0	130.0
B	30.0	30.0	30.0
C	45.0	55.0	55.0
D	3.0	3.0	3.0
E Ø	6.0	6.0	6.0
F PCD Ø	50.0	50.0	50.0
F1 Ø	7.0	7.0	7.0
G PCD Ø	80.8	80.8	80.8
G1 Ø	9.0	9.0	9.0
H Ø	36.0	36.0	36.0
P	114.5	114.5	165.0
Q	76.0	76.0	76.0

Imperial

Dimensions (inch)	Limit Switch Bracket Ordering Code		
	LB-2-30x80mm-45mm-X	LB-2-30x80mm-55mm-X	LB-2-30x130mm-55mm-X
A	3.15	3.15	5.12
B	1.18	1.18	1.18
C	1.77	2.17	2.17
D	0.12	0.12	0.12
E Ø	0.24	0.24	0.24
F PCD Ø	1.97	1.97	1.97
F1 Ø	0.28	0.28	0.28
G PCD Ø	3.18	3.18	3.18
G1 Ø	0.35	0.35	0.35
H Ø	1.42	1.42	1.42
P	4.51	4.51	6.50
Q	2.99	2.99	2.99

Butterfly Valve Spacer Plate Dimensions

BFV Size	Model						
	EVA-0309	EVA-0411	EVA-0514	EVA-0717	EVA-1022	EVA-1227	EVA-1436

Keystone and Similar Butterfly Valve

2" 2.5" 3" 4" 5" 6" 8" 10" 12" 14" 16"

Metric order code = P-1-82.6mm-F05-16.0mm
Imperial order code = P-1-3.25in-F05-0.63in

Metric order code = P-1-82.6mm-F05-11.0mm
Imperial order code = P-1-3.25in-F05-0.43in

Designates Tapped Design

Designates Through Design

Metric order code = P-1-F1012-F1012-6.0mm
Imperial order code = P-1-F1012-F1012-0.24in

Note: Individual plates can be stacked to achieve desired height

Centerline, ABZ and Similar Butterfly Valve

2" 2.5" 3" 4" 5" 6" 8" 10" 12" 14" 16"

Metric order code =P-1-F07-F05-16.0mm
Imperial order code = P-1-F07-F05-0.63in

Metric order code = P-1-F07-F07-6.0mm
Imperial order code = P-1-F07-F07-0.24in

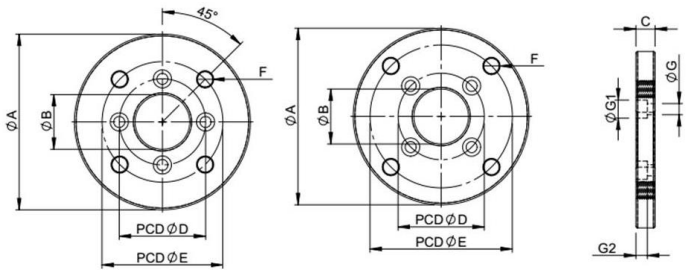
Note: Stack individual plates to achieve desired height

Metric order code = P-1-F1012-F1012-6.0mm
Imperial order code = P-1-F1012-F1012-0.24in

Note: Individual plates can be stacked to achieve desired height

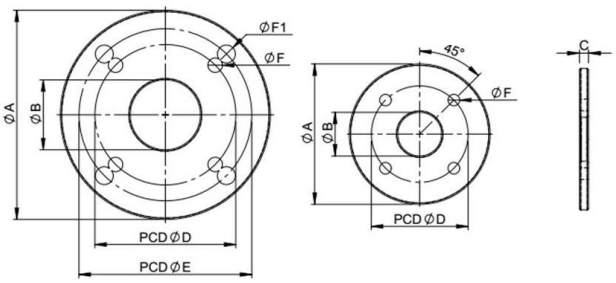
Spacer Plate With Tapped Hole

Tapped hole to interface valve side.



Space Plate With Through Hole

Through hole allows multiple plates to be stacked to achieve desired height.



Metric

Dimensions (mm)	Plate Ordering Code				
	P-1-82.6mm-F05-16.0mm	P-1-82.6mm-F05-11.0mm	P-1-F07-F05-16.0mm	P-1-F07-F07-6.0mm	P-1-F1012-F1012-6.0mm
Type	Tapped	Tapped	Tapped	Through	Through
A Ø	102.0	102.0	102.0	102.0	152.0
B Ø	31.8	31.8	31.8	31.8	50.8
C	16.0	11.0	16.0	6.0	6.0
D Ø	50.0 / F05	50.0 / F05	50.0 / F05	70.0 / F07	102.0 / F10
For	*EVA*	*EVA*	*EVA*	*Valve & EVA*	*Valve & EVA*
E Ø	82.6	82.6	70.0 / F07		125.0 / F12
For	*Valve*	*Valve*	*Valve*		*Valve & EVA*
F Ø	M8	M8	M8	8.4	10.5
F1 Ø					13.0
G Ø	6.4	6.4	6.4		
G1 Ø	10.5	10.5	10.5		
G2	6.5	6.5	6.5		

Imperial

Dimensions (inch)	Plate Ordering Code				
	P-1-3.25in-F05-0.63in	P-1-3.25in-F05-0.43in	P-1-F07-F05-0.63in	P-1-F07-F07-0.24in	P-1-F1012-F1012-0.24in
Type	Tapped	Tapped	Tapped	Through	Through
A Ø	4.02	4.02	4.02	4.02	5.98
B Ø	1.25	1.25	1.25	1.25	2.00
C	0.63	0.43	0.63	0.24	0.24
D Ø	1.97 / F05	1.97 / F05	1.97 / F05	2.76 / F07	4.02 / F10
For	*EVA*	*EVA*	*EVA*	*Valve & EVA*	*Valve & EVA*
E Ø	3.25	3.25	2.76 / F07		4.92 / F12
For	*Valve*	*Valve*	*Valve*		*Valve & EVA*
F Ø	3/8-16	3/8-16	5/16-18	0.33	0.41
F1 Ø					0.51
G Ø	0.25	0.25	0.25		
G1 Ø	0.41	0.41	0.41		
G2	0.26	0.26	0.26		

Ordering Codes

Mounting Bracket

Product Type	Bracket Material	Loose Bracket Parts		If Welded
	Bracket Material *(Corrosion Rating)*	Bottom Side Valve Pattern	Top Side Actuator Pattern	Fill Section Only If Welding Done By Easytork
B -	**X** -	**X** -	**X** -	**X**
B: Easytork mounting bracket	**2**: Stainless steel (SS304)	Mix and Match Within S Series **F03S, F04S, F05S** **F03S, F04S, F05S** Mix and Match Within M Series **F03M, F04M, F05M, F07M** **F03M, F04M, F05M, F07M** Mix and Match Within L Series **F07L, F10L, F12L** **F10L, F12L** Mix and Match Within XL Series **F10XL, F12XL, F14XL** **F14XL** **0**: Custom		Define by total height dimension (refer to MIN.D and MAX.E) *Format:* *0.0mm* *0.00in* **X:** None

Spacer Plate for Butterfly Valves

Product Type	Plate Material	Flange Description		Plate Height
	Plate Material *(Corrosion Rating)*	Valve Flange Available	Actuator Flange Available	Plate Height
P -	**X** -	**X** -	**X** -	**X**
P: Spacer plate for butterfly valve	**1**: Standard version **2**: Chemical resistant version	If ISO pattern **F05**: F05 **F07**: F07 **F1012**: F10 & F12 If non-ISO, define by PCD dimension *Format* *0.0mm* *0.00in*	Define by ISO pattern **F05**: F05 **F07**: F07 **F1012**: F10 & F12	Define by height dimension *Format* *0.0mm* *0.00in* Note: "mm" or "in" designates metric or imperial threading for tapped plate designs

Ordering Codes

Direct and Semi-Direct EVA Shafts

Prefix	Product Type	Type of Shaft		Shaft Attributes	
		Actuator Size	Shaft Material *(Corrosion Rating)*	Shaft Orientation	Shaft Type
K -	**AS** -	**X** -	**X** -	**X** -	**X**
K: Kit	**AS**: Actuator shaft	**1**: EVA-0309 **2**: EVA-0411 **3**: EVA-0514 **4**: EVA-0717 **5**: EVA-1022 **6**: EVA-1227 **7**: EVA-1436 **8**: EVA-1646	**1**: Standard version **2**: Chemical resistant version	**1**: Lower shaft (standard, 1 valve operation)	**1**: Direct mount **2**: Semi-direct mount **0**: Custom Note: For custom shafts, call for custom made shafts.

Limit Switch Bracket

Product Type	Bracket Material	Flange Measurement	Bracket Height	Version
	Bracket Material *(Corrosion Rating)*	Actuator's VDI/VDE 3845 Measurement	Total Limit Switch Bracket Height	Wrench Accessible
LB -	**X** -	**X** -	**X** -	**X**
LB: Limit switch bracket	**2**: Chemical resistant version	Width x length *Format: 0mm*	Height *Format: 0mm*	**X**: Non-wrench accessible **WR**: For wrench manual overrid

Easytork's Stock Standard Limit Switch Bracket Stocking

LB	-	**2**	-	**30x80mm**	-	**45mm**	-	**X**
LB	-	**2**	-	**30x80mm**	-	**55mm**	-	**X**
LB	-	**2**	-	**30x130mm**	-	**55mm**	-	**X**
LB	-	**2**	-	**25x50mm**	-	**45mm**	-	**WR**
LB	-	**2**	-	**30x80mm**	-	**45mm**	-	**WR**

Note: For dimensions not listed above, call for custom made limit switch brackets. Easytork does not readily stock limit switch brackets not listed

Ordering Codes

EVA Drive Inserts (to fit various valve stems)

Product Type	Type of Insert				Insert Measurement	
	Actuator Size	Insert Material *(Corrosion Rating)*	Drive Insert Type		Drive Insert Size *(Measurement of Valve Stem)*	
D	- **X**	**X**	**X**	-	**X**	**XX**
D: Actuator drive insert	**1**: EVA-0309 **2**: EVA-0411 **3**: EVA-0514 **4**: EVA-0717 **5**: EVA-1022 **6**: EVA-1227 **7**: EVA-1436 **8**: EVA-1646	**1**: Standard version **2**: Chemical resistant version	**1**: Square drive **2**: Double d **3**: Keyw ay **4**: Blank (w ith a hole drilled) **0**: Custom		If Sqr: Flat (**V**) **x** flat (**V**) If DD: Circle diameter (**V**) **x** flat (**V1**) If Key: Circle diameter (**V**) x key (**V1**) x key (**V2**) *Format:* *0.00mm* *0.000in* *Leave section empty for blank inserts*	**in**: In inches **mm**: In millimeter

Measurements V, V1 and V2 reflect valve stem dimensions. Inserts subsequently made with appropriate tolerance for valve stem interface.

Select Examples of Easytork's Standard Drive Insert Stocking

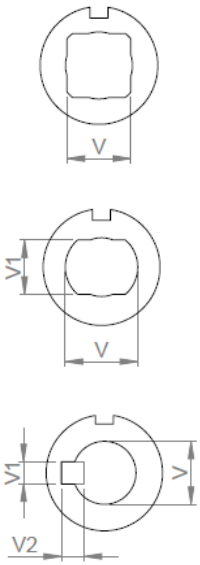
ISO Standard Square Stems

	D	-	**[1,2]**	**[1,2]**	**1**	-	**9.00x9.00**	**mm**
	D	-	**[1,2,3]**	**[1,2]**	**1**	-	**11.00x11.00**	**mm**
	D	-	**[2,3,4]**	**[1,2]**	**1**	-	**14.00x14.00**	**mm**
	D	-	**[3,4,5]**	**[1,2]**	**1**	-	**17.00x17.00**	**mm**
	D	-	**[4,5]**	**[1,2]**	**1**	-	**19.00x19.00**	**mm**
	D	-	**[4,5,6]**	**[1,2]**	**1**	-	**22.00x22.00**	**mm**
	D	-	**[5,6]**	**[1,2]**	**1**	-	**27.00x27.00**	**mm**
	D	-	**[6]**	**[1,2]**	**1**	-	**36.00x36.00**	**mm**

To Justify Popular Butterfly Valve Brand Stem

Keystone, ABZ and Similar Butterfly Valve Size / Corresponding Drive Insert Ordering Code

2"	**D**	-	**[2,3]**	**[1,2]**	**2**	-	**0.563x0.375**	**in**
2.5"	**D**	-	**[2,3]**	**[1,2]**	**2**	-	**0.563x0.375**	**in**
3"	**D**	-	**[2,3]**	**[1,2]**	**2**	-	**0.563x0.375**	**in**
4"	**D**	-	**[2,3,4]**	**[1,2]**	**2**	-	**0.625x0.438**	**in**
5"	**D**	-	**[4,5]**	**[1,2]**	**2**	-	**0.750x0.500**	**in**
6"	**D**	-	**[4,5]**	**[1,2]**	**2**	-	**0.750x0.500**	**in**
8"	**D**	-	**[4,5,6]**	**[1,2]**	**2**	-	**0.875x0.625**	**in**
10"	**D**	-	**[5,6,7]**	**[1,2]**	**3**	-	**1.125x0.250x0.250**	**in**
12"	**D**	-	**[5,6,7]**	**[1,2]**	**3**	-	**1.125x0.250x0.250**	**in**
14"	**D**	-	**[6,7]**	**[1,2]**	**3**	-	**1.375x0.313x0.313**	**in**



About

We believe in selling “easy”. Easytork brings differentiating features and benefits to the process control industry through our focus on innovation and quality. Easytork has been awarded numerous awards including:

2013 – Arch Grants Recipient

2015 – Accelerate St. Louis

2017 – Frost & Sullivan Product Innovation Award

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