

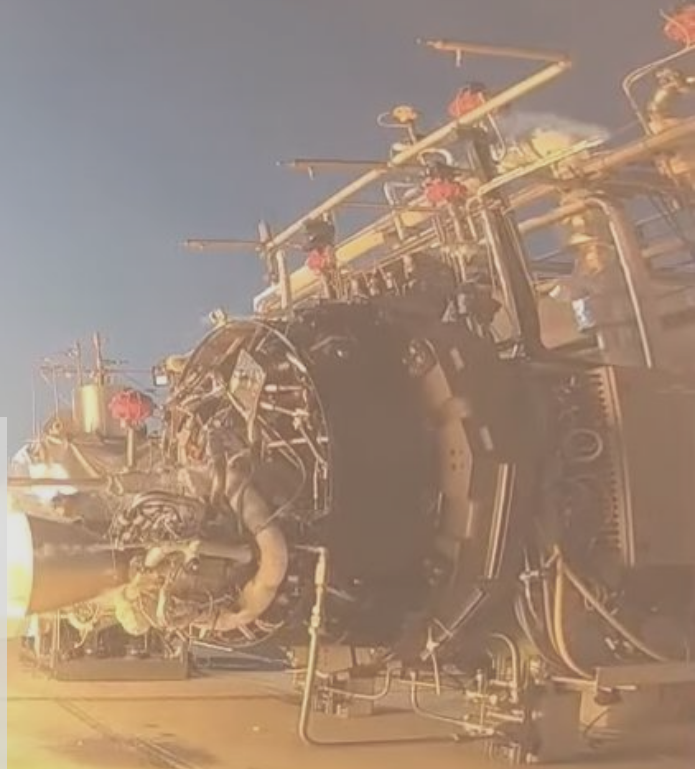
# Easytork®

## High-Performance Quarter-Turn Solutions

**Solving  
Problems**



**No One Else Can**



# Our Story

Easytork is the first and only actuation company to standardize the integration of actuators and air reservoirs.

Easytork pneumatic rotary actuators with integrated air reservoirs reduce costs and inefficiencies associated with other fail-safe spring return actuators.

Easytork products improve, simplify, and bring peace of mind to flow processes. We're a one-stop shop for everything above the valve.

Easytork has been awarded numerous awards including:

2013 – Arch Grants Recipient

2015 – Accelerate St. Louis

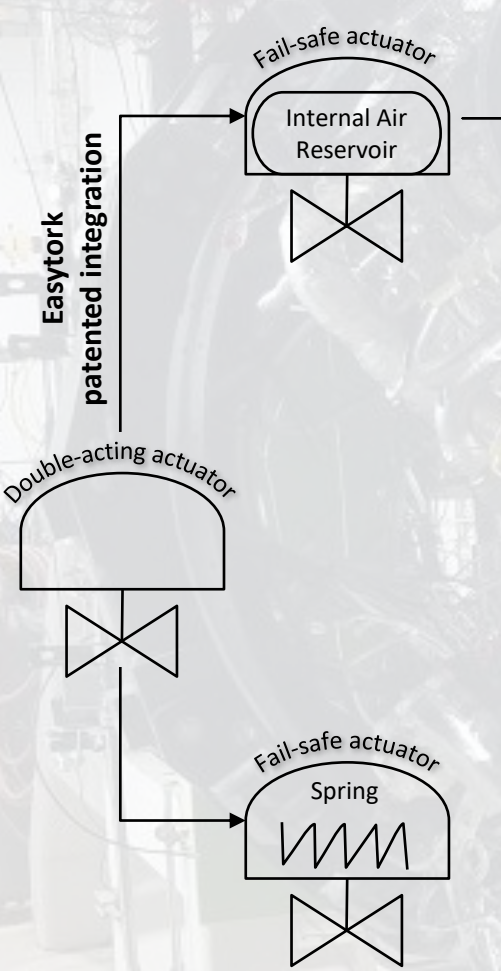
2017 – Frost & Sullivan New Product Innovation Award

Long form article

Valve  
World

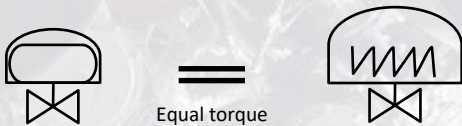


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computer for link

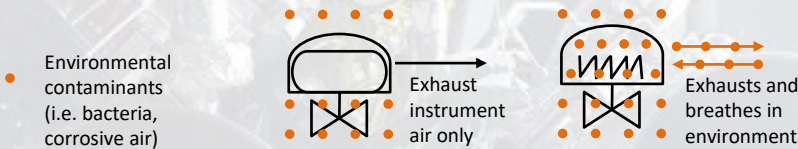


## Market advancements with air reservoir fail-safe:

- A more efficient design for fail-safe, a smaller actuator required for the same output torque.



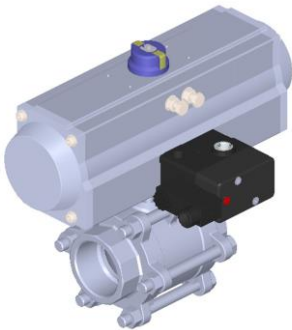
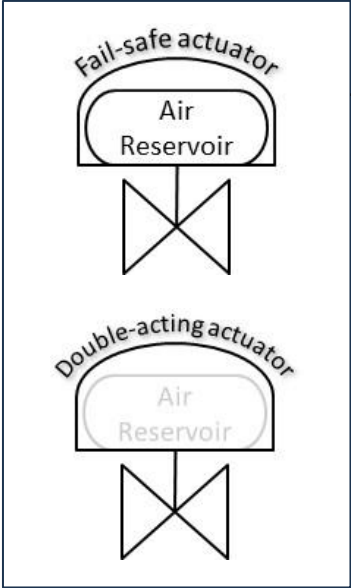
- Closed-loop system, does not breathe in or out with the environment. Essential for dirty or high-purity environments.



- Inventory reduction, zero cost and time to convert double-acting actuator to fail-safe (fail-close or fail-open).



# Easytork's Pneumatic Actuator Line



## Key Features

Vane

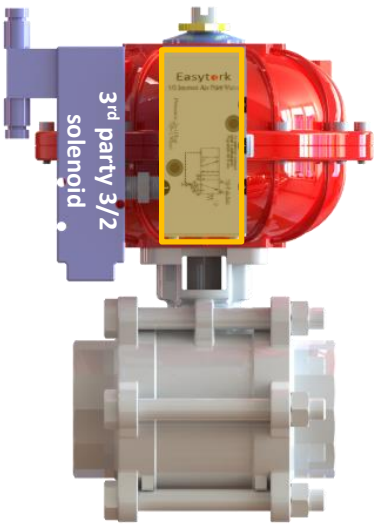
Rack & Pinion

| Issue                               | Case study / video                                                                  | EVA Series (Patented)                                                            | ERPA Series (Patent pending)                                                     |
|-------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Dirty / high purity environment     |   | <b>Yes</b><br>Closed-loop system does not breathe in or out with the environment | <b>Yes</b><br>Closed-loop system does not breathe in or out with the environment |
| Inventory reduction                 |  | <b>Yes</b><br>30x SKU reduction                                                  | <b>Yes</b><br>24x SKU reduction                                                  |
| Lighter & smaller                   |  | <b>Yes</b><br>Lightest and smallest actuator in the market                       |                                                                                  |
| Excellent accuracy for control      |  | <b>Yes</b><br>Equal or better performance to spring & diaphragm                  |                                                                                  |
| Fast speed                          |  | <b>Yes</b><br>Faster in DA and FS                                                | <b>Yes</b><br>Faster in FS                                                       |
| Direct mount to ISO & non-ISO valve |  | <b>Yes</b><br>D.M. to ball and butterfly, ISO or non-ISO                         | <b>Yes</b><br>D.M. to most ISO ball and butterfly                                |
| Max torque @ 80 psi                 |                                                                                     | DA – 45,038 in-lb.<br>FS – 30,143 in-lb.                                         | DA – 78,434 in-lb.<br>FS – 50,982 in-lb.                                         |



# Control Accessories For Air Reservoir Fail-Safe

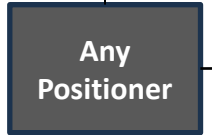
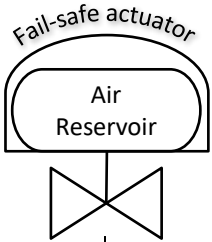
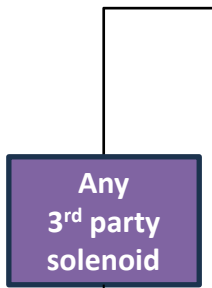
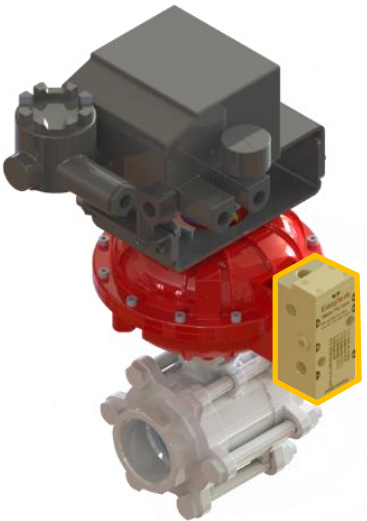
| <i>Patent pending</i> | Pilot Valve (EPV Series)                                                                                                           |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Use (On/Off)          | Allows 3 <sup>rd</sup> party solenoid valve access to air reservoir for fail-safe                                                  |
| Key Features          | <ul style="list-style-type: none"><li>Closed-loop system does not breathe in or out with the environment</li><li>High Cv</li></ul> |
| Note:                 | Not required for double-acting                                                                                                     |



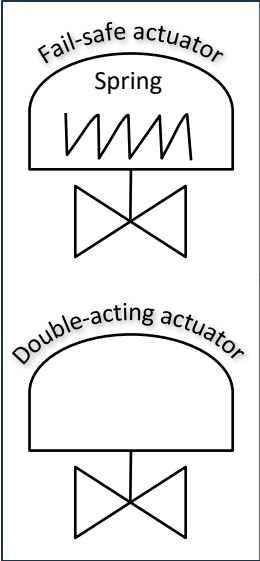
| <i>Patented</i> | Easytork Solenoid Valve (ESV Series)                                                                                                                                                        |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use (On/Off)    | Direct Namur mount with access to air reservoir for fail-safe                                                                                                                               |
| Key Features    | <ul style="list-style-type: none"><li>Closed-loop system does not breathe in or out with the environment</li><li>High Cv</li><li>Available in any electrical rating or connection</li></ul> |



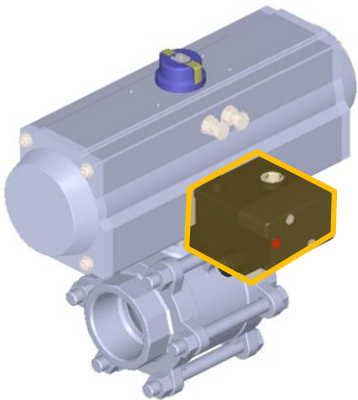
| <i>Patented</i>  | Namur Trip Valve (NTV Series)                                                                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use (Modulating) | Allows actuators with positioners to fail-safe on disruption of air supply                                                                                                    |
| Key Features     | <ul style="list-style-type: none"><li>Closed-loop system does not breathe in or out with the environment</li><li>High Cv</li><li>Enhances control valve performance</li></ul> |
| Note:            | Not required for double-acting                                                                                                                                                |



# Control Accessories



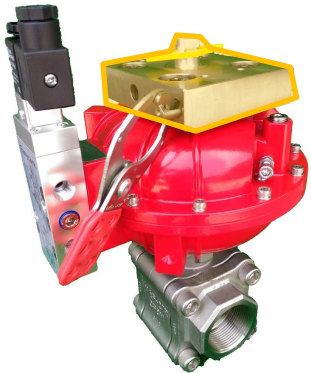
|              | Composite Solenoid Valve (CSV Series)                                                                                                                                  |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use          | A composite 3/2 or 5/2 solenoid valve                                                                                                                                  |
| Key Features | <ul style="list-style-type: none"><li>• Composite build of material</li><li>• Poppet valve design</li><li>• Available in any electrical rating or connection</li></ul> |



|              | Declutchable Gear Operator (EGO Series)                                                                                                              |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use          | Gear operator for actuation system                                                                                                                   |
| Key Features | <ul style="list-style-type: none"><li>• WCB body surface treated by phosphating, epoxy and polyester coating</li><li>• Up to 61,950 in-lb.</li></ul> |



|              | Lockout Device (LPST Series)                                                                                                                          |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use          | Lockout on EVA actuators                                                                                                                              |
| Key Features | <ul style="list-style-type: none"><li>• Integral add-on to actuator</li><li>• Limit switch or positioner can be installed on top of lockout</li></ul> |



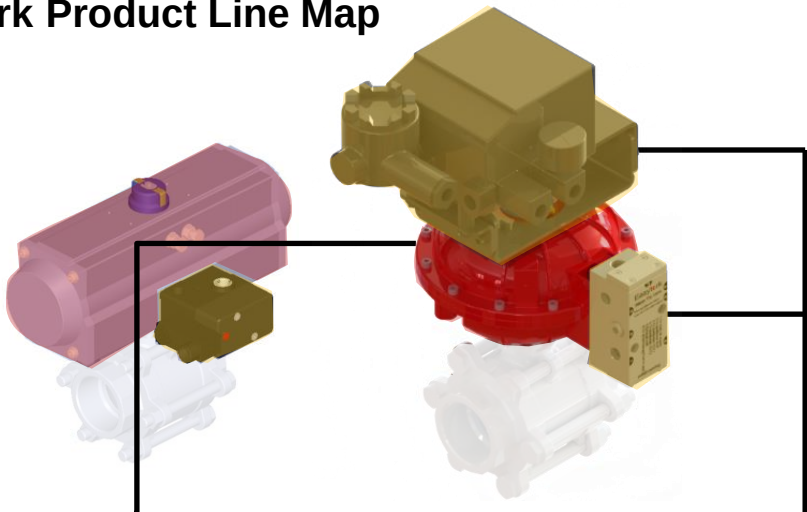
Limit Switch



Positioner



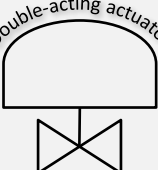
# Easytork Product Line Map



One-stop shop:  
Everything above the  
valve

**Actuator**

**Control Accessories**

| AR & DA System     |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                           |                                                                                                                                                                            |                                                                                                                                                                              |  |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                    | <div>Vane w/ integrated AR</div> <div>EVA</div> <div></div>                                                                                                                                                                                                                    | <div>Solenoid for AR actuators</div> <div>ESV</div> <div></div>          | <div>Pilot valve for AR + 3<sup>rd</sup> party solenoid</div> <div>EPV</div> <div></div> | <div>Trip valve for AR + 3<sup>rd</sup> party positioner</div> <div>NTV</div> <div></div> |  |
|                    | <div>Rack &amp; pinion w/ integrated AR</div> <div>ERPA</div> <div></div>                                                                                                                                                                                                     |                                                                                                                                                           |                                                                                                                                                                            |                                                                                                                                                                              |  |
| SR & DA System     |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                           |                                                                                                                                                                            |                                                                                                                                                                              |  |
|                    | <div>Actuator Type</div> <div>AR</div> <div></div> <div>SR</div> <div></div> <div>DA</div> <div></div> | <div>Composite solenoid for actuators</div> <div>CSV</div> <div></div> |                                                                                                                                                                            |                                                                                                                                                                              |  |
|                    |                                                                                                                                                                                                                                                                                                                                                                 | <div>Lockout</div> <div>LPST</div> <div></div>                         |                                                                                                                                                                            | <div>Declutchable gearbox</div> <div>EGO</div> <div></div>                              |  |
|                    |                                                                                                                                                                                                                                                                                                                                                                 | <div>Limit switch</div> <div></div>                                    |                                                                                                                                                                            | <div>Positioner</div> <div></div>                                                       |  |
| AR, SR & DA System |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                           |                                                                                                                                                                            |                                                                                                                                                                              |  |



## Easytork Vane Actuator



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



## Spring**less**-Return Actuator

**Compact, Efficient, Fast, and  
Tough against BAD environment and air**

# Easytork Vane Actuator ("EVA") Design

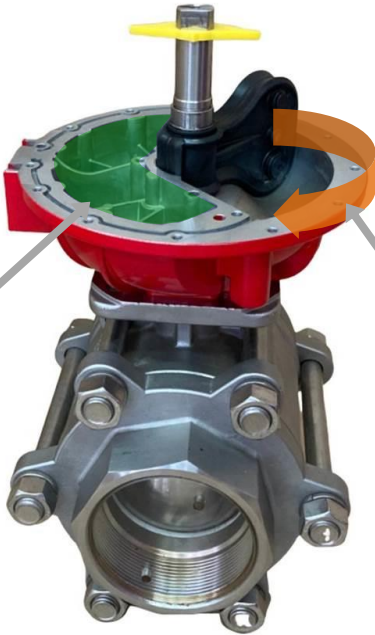
## Air reservoir

Air reservoirs in fail-safe systems are commonly used to replace springs for large mission-critical emergency shut-down valves.

Fail-safe  
video



Click QR codes on  
computer for link



## Vane actuator = pure rotary-to-rotary movement

EVAs only have one moving part that creates pure rotary-to-rotary movement which contributes to better lifespan.

EVA  
movement  
video



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

## Vane Design

### 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

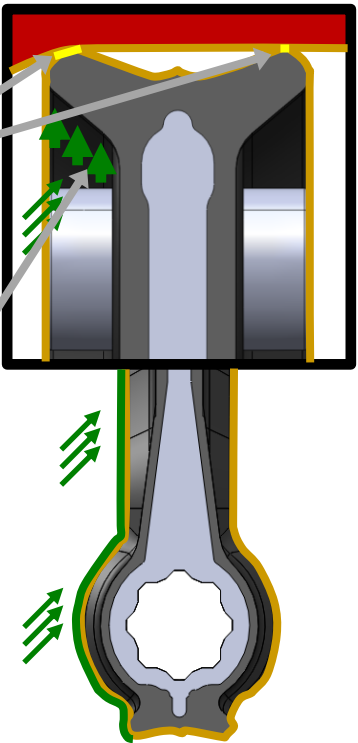
Stopper bolt does not impact vane sealing but against stainless steel vane assembly extrusion. The core of the vane-shaft is lightweight. This reduces the vane's impact to the stopper bolts and prolongs cycle life.

### Heavy duty DU bushings

Result in a supported vane shaft and life long lubrication.

### 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°.



- Air pressure
- Actuator housing
- Grease
- Seal & housing contact



# EVA Features and Benefits

Dirty or High-Purity Environments

Case study and video



Years of usage in dirty and caustic environment



Exterior of actuator



Clean interior

Video: Few parts



Video: Simple movement



Easytork parts



Rack & pinion parts

Less Parts

Lighter & Smaller

Video



Case study



120 lbs.

49 lbs.

12" Video



Faster Speed

Excellent Accuracy for Control

Black diamond test report



Case study



Accuracy better or equal to spring & diaphragms

Direct Mount to Valve & Auxiliary

Video



Non-ISO Valve



ISO Valve

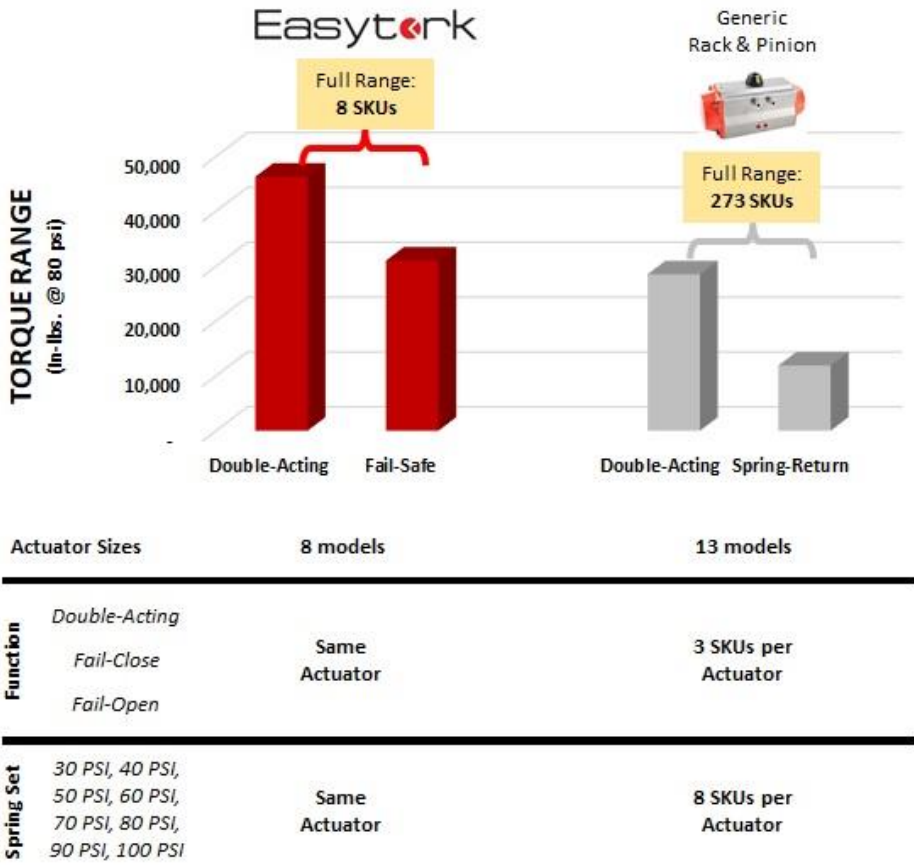


Same actuator

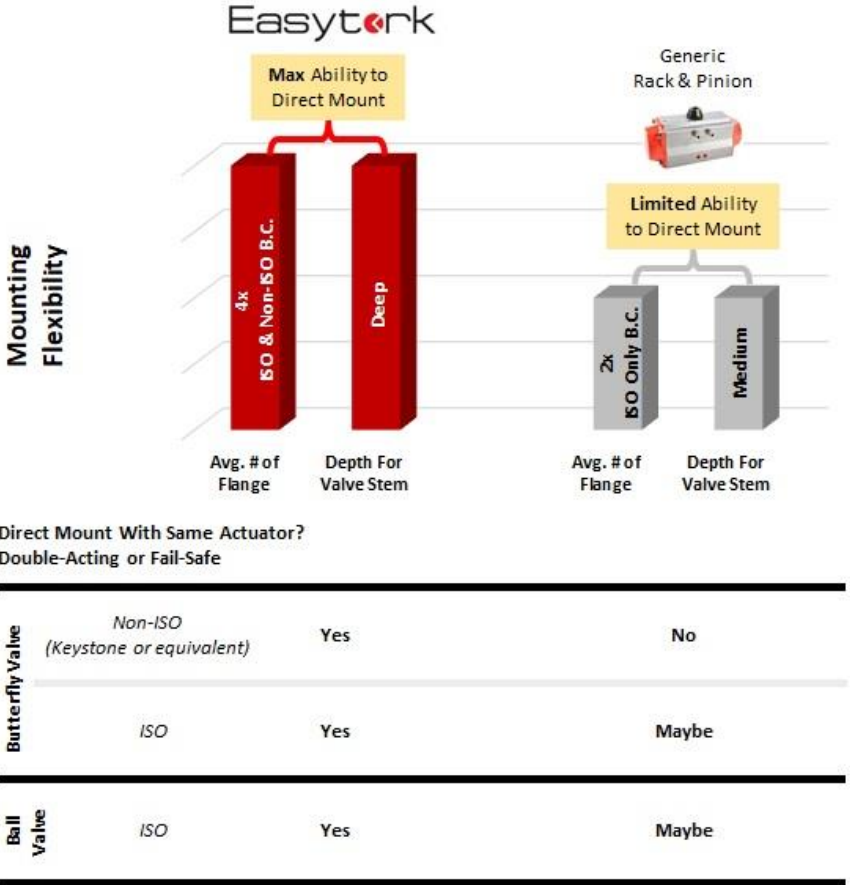
# EVA Features and Benefits

1 EVA replaces 30 traditional actuator SKUs

1 EVA direct mounts to many valves (ISO or non-ISO)



Video



Video



# EVA Air Flow

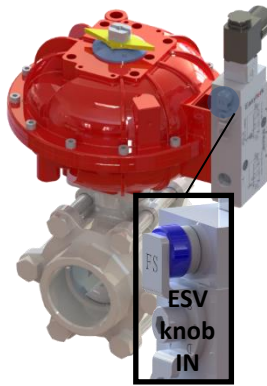
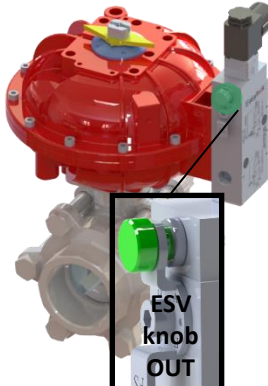
Any Electrical Rating  
With Easytork Solenoid Valve

Double-acting

Fail-close

Fail-open

Air flow video

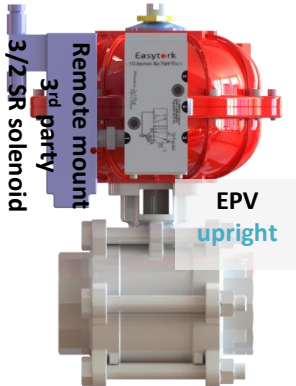
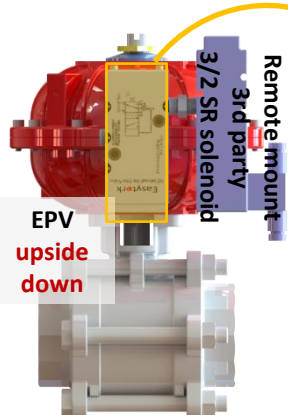




Solenoid options



Universal Compatibility  
With Any 3rd Party Solenoid

Air flow video

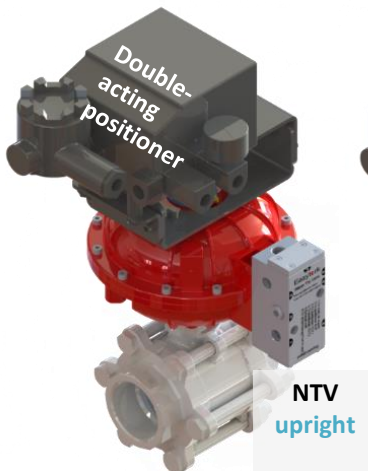
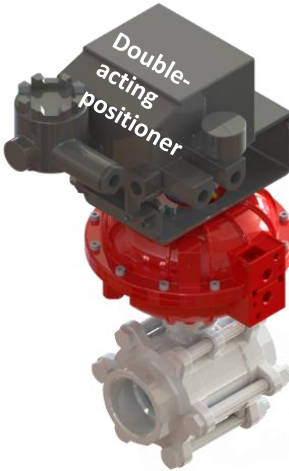
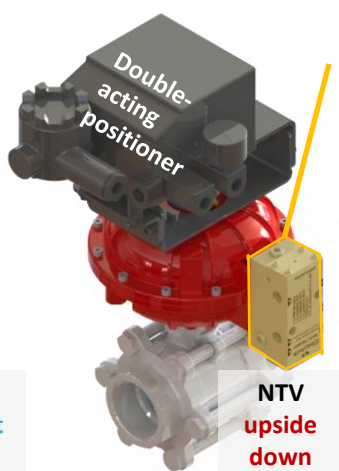




Pilot valve options



Universal Compatibility  
With Any Positioner

Air flow video

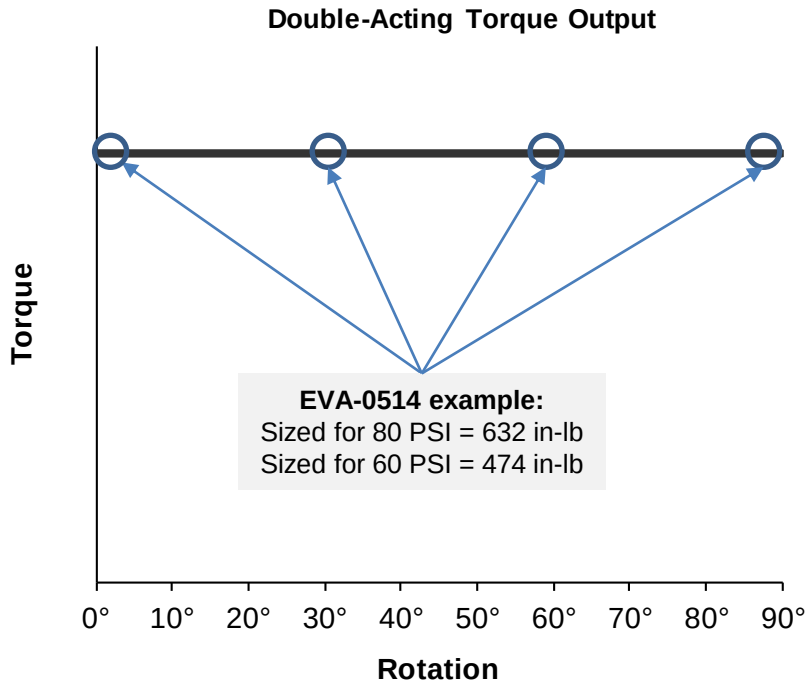
Trip valve options



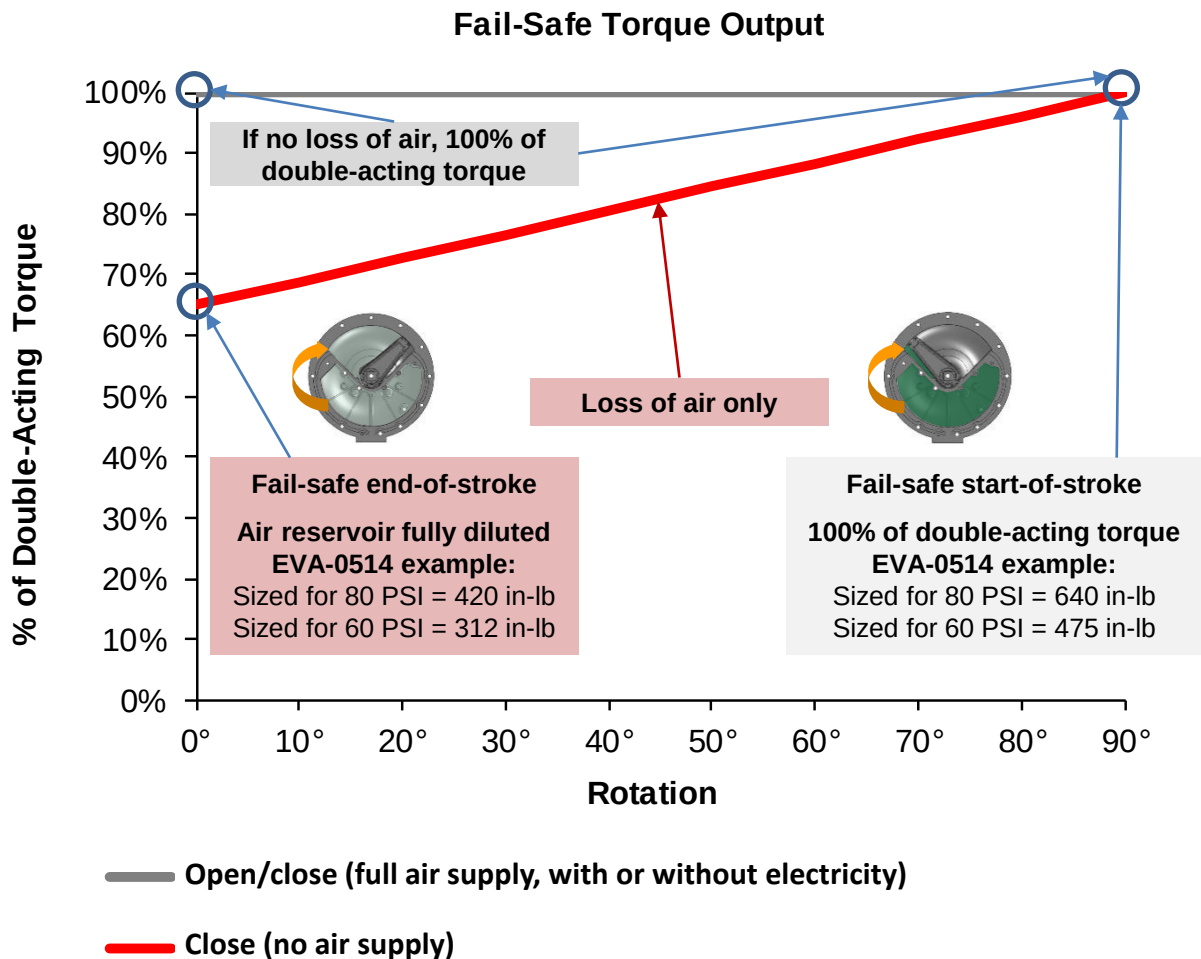
Patents: Air Flow Principle  
USA = 8,573,558  
China = 2701057, 2323461, 2173061  
Taiwan = M412285, M414523, M425196  
PCT Filing = PCT/CN2011/071074, PCT/CN2011/077685  
Other countries pending

# EVA Torque Curve

## Double-Acting Torque Curve



## Fail-Safe Torque Curve





# EVA Torque Output

## Metric

| Double-Acting (NM) |         |         |         |         |         |         |
|--------------------|---------|---------|---------|---------|---------|---------|
| Model / BAR        | 3.0     | 4.0     | 5.0     | 5.5     | 6.0     | 7.0     |
| EVA-0411           | 21.1    | 28.1    | 35.1    | 38.6    | 42.1    | 49.2    |
| EVA-0514           | 38.1    | 51.8    | 65.4    | 72.1    | 78.7    | 91.6    |
| EVA-0717           | 84.5    | 119.5   | 146.7   | 158.7   | 170.8   | 193.4   |
| EVA-1022           | 170.6   | 233.0   | 295.0   | 326.2   | 355.9   | 417.1   |
| EVA-1227           | 367.0   | 496.0   | 622.0   | 683.0   | 748.0   | 875.0   |
| EVA-1436           | 631.0   | 862.0   | 1,090.0 | 1,212.0 | 1,330.0 | 1,550.0 |
| EVA-1646           | 1,367.0 | 1,829.0 | 2,299.0 | 2,537.0 | 2,768.0 | 3,207.0 |
| EVA-1646 Tandem    | 2,734.0 | 3,658.0 | 4,598.0 | 5,074.0 | 5,536.0 | 6,414.0 |

| Fail-Safe (Minimum Torque At End-Of-Stroke) (NM) |         |         |         |         |         |         |
|--------------------------------------------------|---------|---------|---------|---------|---------|---------|
| Model / BAR                                      | 3.0     | 4.0     | 5.0     | 5.5     | 6.0     | 7.0     |
| EVA-0411                                         | 13.5    | 18.0    | 22.5    | 24.7    | 27.0    | 31.5    |
| EVA-0514                                         | 24.7    | 34.0    | 43.1    | 47.4    | 52.1    | 60.4    |
| EVA-0717                                         | 58.3    | 78.8    | 99.9    | 110.7   | 120.5   | 138.0   |
| EVA-1022                                         | 114.0   | 157.6   | 200.2   | 221.1   | 241.6   | 284.0   |
| EVA-1227                                         | 247.0   | 336.0   | 419.0   | 465.0   | 510.0   | 588.0   |
| EVA-1436                                         | 415.0   | 560.0   | 727.0   | 810.0   | 886.0   | 1,044.0 |
| EVA-1646                                         | 900.0   | 1,220.0 | 1,536.0 | 1,698.0 | 1,867.0 | 2,163.0 |
| EVA-1646 Tandem                                  | 1,800.0 | 2,440.0 | 3,072.0 | 3,396.0 | 3,734.0 | 4,326.0 |

## Imperial

| Double-Acting (In-Lb) |        |        |        |        |        |        |        |
|-----------------------|--------|--------|--------|--------|--------|--------|--------|
| Model / PSI           | 40     | 50     | 60     | 70     | 80     | 90     | 100    |
| EVA-0411              | 171    | 214    | 257    | 300    | 343    | 386    | 429    |
| EVA-0514              | 310    | 392    | 475    | 559    | 640    | 720    | 799    |
| EVA-0717              | 688    | 889    | 1,094  | 1,253  | 1,409  | 1,563  | 1,686  |
| EVA-1022              | 1,388  | 1,759  | 2,133  | 2,520  | 2,895  | 3,258  | 3,636  |
| EVA-1227              | 2,986  | 3,762  | 4,540  | 5,314  | 6,062  | 6,847  | 7,628  |
| EVA-1436              | 5,134  | 6,508  | 7,890  | 9,312  | 10,758 | 12,174 | 13,512 |
| EVA-1646              | 11,123 | 13,931 | 16,742 | 19,641 | 22,519 | 25,337 | 27,958 |
| EVA-1646 Tandem       | 22,245 | 27,862 | 33,484 | 39,282 | 45,038 | 50,674 | 55,915 |

| Fail-Safe (Minimum Torque At End-Of-Stroke) (In-Lb) |        |        |        |        |        |        |        |
|-----------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Model / PSI                                         | 40     | 50     | 60     | 70     | 80     | 90     | 100    |
| EVA-0411                                            | 110    | 137    | 165    | 192    | 219    | 247    | 274    |
| EVA-0514                                            | 201    | 256    | 312    | 369    | 420    | 477    | 527    |
| EVA-0717                                            | 474    | 598    | 721    | 853    | 983    | 1,103  | 1,203  |
| EVA-1022                                            | 928    | 1,184  | 1,443  | 1,710  | 1,963  | 2,211  | 2,476  |
| EVA-1227                                            | 2,010  | 2,541  | 3,076  | 3,580  | 4,127  | 4,668  | 5,126  |
| EVA-1436                                            | 3,377  | 4,250  | 5,126  | 6,211  | 7,190  | 8,110  | 9,101  |
| EVA-1646                                            | 7,323  | 9,241  | 11,167 | 13,123 | 15,072 | 17,090 | 18,856 |
| EVA-1646 Tandem                                     | 14,646 | 18,481 | 22,335 | 26,245 | 30,143 | 34,179 | 37,713 |

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  |
|-----------------------------------------------------------|----------------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>Weight</b>                                             |                | 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     |
| <b>Total air volume</b><br>90° stroke with<br>dead volume | DA or FS       | Litre           | 0.150     | 0.300     | 0.600     | 1.200     | 2.400     | 4.800     | 9.600     |
|                                                           | CCW or CW      | In <sup>3</sup> | 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 <sup>3</sup> | 18.3      | 36.6      | 73.2      | 146.5     | 292.9     | 585.8     | 1171.7    |
| <b>Stroke time</b>                                        |                |                 |           |           |           |           |           |           |           |
| With 1.8 Cv                                               | DA             | 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 |
| At 5.5 bar or 80 psi                                      | (open / close) |                 |           |           |           |           |           |           |           |
| No load                                                   | FS             | 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 |
|                                                           | (open / close) |                 |           |           |           |           |           |           |           |

| Technical Specifications           |                                                                                                                               |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>Travel adjustment</b>           | Extended stopper: -5°/+5° on each side, total of 80° - 100°<br>Extended stopper: -22.5°/+5° on each side, total of 45° - 100° |
| <b>Temperature range</b>           | Standard temp: -20°C to 80°C (-4°F to 176°F)                                                                                  |
| <b>Pressure rating</b>             | Maximum recommended working pressure: 100 psi (7 bar)<br>Maximum overload pressure: 150 psi (10 bar)                          |
| <b>Operating medium (standard)</b> | Must use inert gases                                                                                                          |

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

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

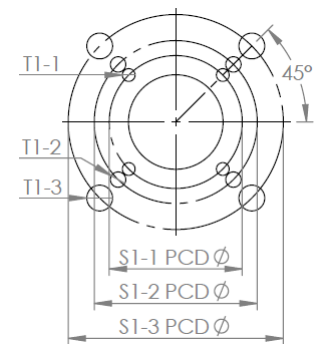
# EVA Valve Interface Dimensions

## EVA valve and auxiliary interface summary

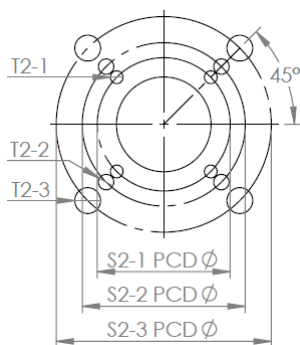
| Actuator Size | Valve Mounting        |     |     |     |     |     |     |     |     |         |       |              |          |        |        | Auxiliary Mounting |       |        |
|---------------|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|---------|-------|--------------|----------|--------|--------|--------------------|-------|--------|
|               | Flange Type Available |     |     |     |     |     |     |     |     |         |       | Drive Insert |          | Shafts |        | VD/INDE<br>3845    | NAMUR |        |
|               | ISO                   |     |     |     |     |     |     |     |     | Non ISO |       | Standard     | Semi-    |        |        |                    |       |        |
|               | F03                   | F04 | F05 | F07 | F10 | F12 | F14 | F16 | F25 | 3.25"   | 5.00" | 6.50"        | Issuance | Other  | Direct |                    |       | Direct |
| 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      |                       |     |     |     |     |     |     | √   | √   |         |       | √            | 46mm sq  | √      | √      | √                  | √     | √      |

## Flange type (ISO compliant and traditional mounting available)

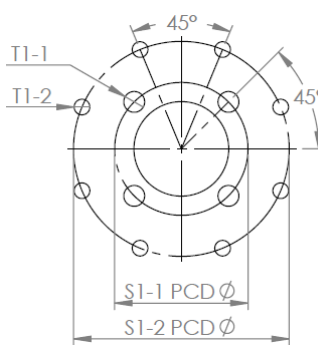
EVA-0309 to 1436 bottom side



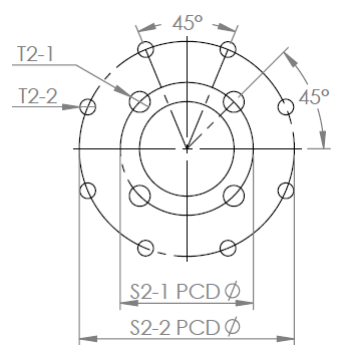
EVA-0309 to 1436 top side



EVA-1646 bottom side

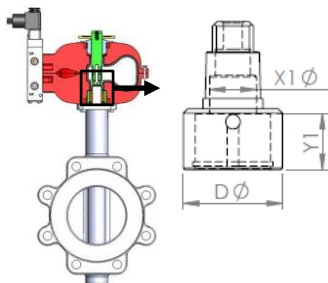


EVA-1646 top side

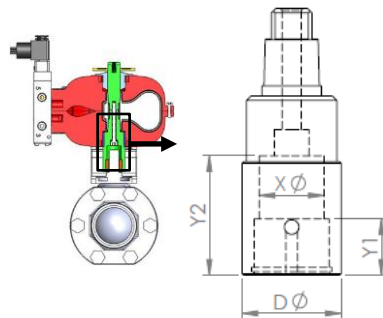


## Shafts (shafts can be indexed every 45°)

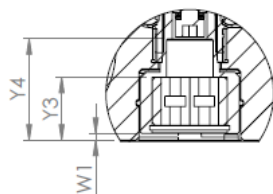
Direct mount shaft



Semi-direct mount shaft

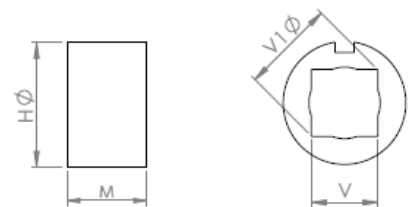


Direct mount shaft in EVA  
(Available space for valve stem)



**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)



(Imperial)

| 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<br>Deep 0.31   | 4x1/4-20UNC<br>Deep 0.35  | 4x1/4-20UNC<br>Deep 0.35  | 4x5/16-18UNC<br>Deep 0.47 | 4x3/8-16UNC<br>Deep0.59 | 4x1/2-13UNC<br>Deep0.71 | 4x3/4-10UNC<br>Deep 1.18 |
| T1-2       | 4x1/4-20UNC<br>Deep 0.35  | 4x5/16-18UNC<br>Deep 0.47 | 4x5/16-18UNC<br>Deep 0.47 | 4x3/8-16UNC<br>Deep 0.59  | 4x1/2-13UNC<br>Deep0.71 | 4x3/4-10UNC<br>Deep1.18 | 8x5/8-11UNC<br>Deep 0.94 |
| T1-3       | 4x5/16-18UNC<br>Deep 0.47 | -                         | 4x3/8-16UNC<br>Deep 0.59  | 4x1/2-13UNC<br>Deep 0.71  | 4x3/4-10UNC<br>Deep1.18 | -                       | -                        |
| T2-1       | 4x10-24UNC<br>Deep 0.31   | 4x10-24UNC<br>Deep 0.31   | 4x3/8-16UNC<br>Deep 0.59  | 4x3/8-16UNC<br>Deep 0.59  | 4x3/8-16UNC<br>Deep0.59 | 4x1/2-13UNC<br>Deep0.71 | 4x3/4-10UNC<br>Deep 1.18 |
| T2-2       | -                         | 4x3/8-16UNC<br>Deep 0.59  | -                         | 4x1/2-13UNC<br>Deep 0.71  | 4x1/2-13UNC<br>Deep0.71 | 4x3/4-10UNC<br>Deep1.18 | 8x5/8-11UNC<br>Deep 0.94 |
| T2-3       | -                         | -                         | -                         | -                         | 4x3/4-10UNC<br>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 | 1.81 |
| V1 Ø | 0.56 | 0.77 | 0.94 | 1.21 | 1.46 | 1.93 | 2.52 |
| 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 |
|---------|------|------|------|------|------|------|------|



(Metric)

| 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<br>Deep 8.0   | 4-M6x1.0<br>Deep 9.0   | 4-M6x1.0<br>Deep 9.0   | 4-M8x1.25<br>Deep 12.0  | 4-M10x1.5<br>Deep 15.0  | 4-M12x1.75<br>Deep18.0 | 4-M20x2.5<br>Deep 30.0 |
| T1-2       | 4-M6x1.0<br>Deep 9.0   | 4-M8x1.25<br>Deep 12.0 | 4-M8x1.25<br>Deep 12.0 | 4-M10x1.5<br>Deep 15.0  | 4-M12x1.75<br>Deep18.0  | 4-M20x2.5<br>Deep30.0  | 8-M16x2<br>Deep 24.0   |
| T1-3       | 4-M8x1.25<br>Deep 12.0 | -                      | 4-M10x1.5<br>Deep 15.0 | 4-M12x1.75<br>Deep 18.0 | 4-M20x2.5<br>Deep30.0   | -                      | -                      |
| T2-1       | 4-M5x0.8<br>Deep 8.0   | 4-M5x0.8<br>Deep 8.0   | 4-M10x1.5<br>Deep 15.0 | 4-M10x1.5<br>Deep 15.0  | 4-M10x1.5<br>Deep 15.0  | 4-M12x1.75<br>Deep18.0 | 4-M20x2.5<br>Deep 30.0 |
| T2-2       | -                      | 4-M10x1.5<br>Deep 15.0 | -                      | 4-M12x1.75<br>Deep 18.0 | 4-M12x1.75<br>Deep 18.0 | 4-M20x2.5<br>Deep30.0  | 8-M16x2<br>Deep 24.0   |
| T2-3       | -                      | -                      | -                      | -                       | 4-M20x2.5<br>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 | 46.0 |
| V1 Ø | 14.3 | 19.7 | 23.9 | 30.8 | 37.1 | 49.1 | 64.0 |
| 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

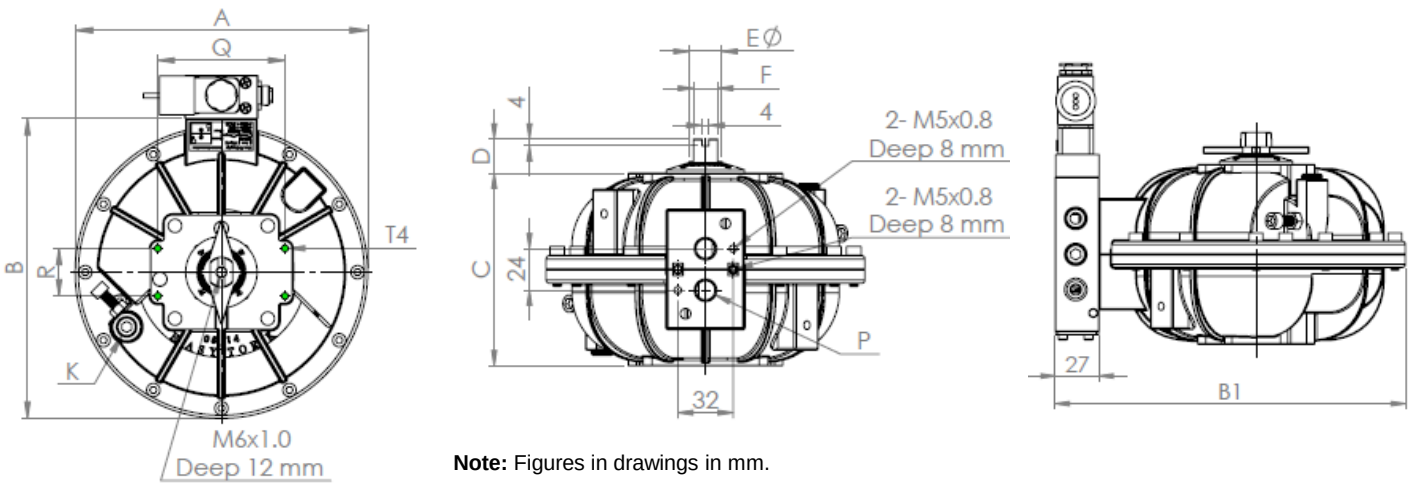
|     |      |      |      |      |      |      |      |
|-----|------|------|------|------|------|------|------|
| G   | 25.4 | 38.1 | 38.1 | 44.5 | 44.5 | 50.8 | 76.2 |
| X Ø | 18.1 | 22.1 | 28.1 | 36.1 | 52.0 | 68.0 | C/F  |
| Y2  | 33.4 | 40.4 | 56.5 | 60.0 | 65.0 | 70.0 | C/F  |

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

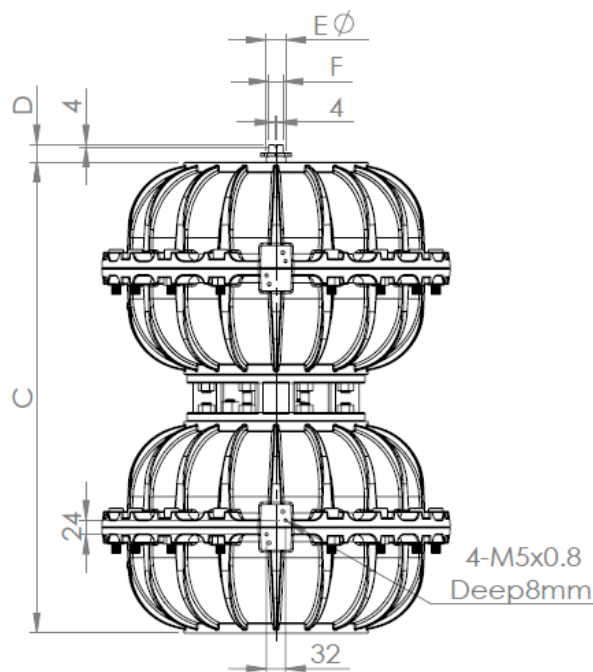
| Dimensions (inch)                                | Model                   |                         |                         |                         |                         |                         |                         |
|--------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                                                  | EVA-0411                | EVA-0514                | EVA-0717                | EVA-1022                | EVA-1227                | EVA-1436                | EVA-1646                |
| <b>Actuator Dimensions</b>                       |                         |                         |                         |                         |                         |                         |                         |
| 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               |
| <b>Actuator Dimensions of Accessories Flange</b> |                         |                         |                         |                         |                         |                         |                         |
| 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<br>Deep 0.31 | 4x10-24UNC<br>Deep 0.31 | 4x10-24UNC<br>Deep 0.31 | 4x10-24UNC<br>Deep 0.31 | 4x10-24UNC<br>Deep 0.31 | 4x10-24UNC<br>Deep 0.31 | 4x10-24UNC<br>Deep 0.31 |

Metric

| Dimensions (mm)                                  | Model              |                    |                    |                    |                    |                    |                    |
|--------------------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                                                  | EVA-0411           | EVA-0514           | EVA-0717           | EVA-1022           | EVA-1227           | EVA-1436           | EVA-1646           |
| <b>Actuator Dimensions</b>                       |                    |                    |                    |                    |                    |                    |                    |
| 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          |
| <b>Actuator Dimensions of Accessories Flange</b> |                    |                    |                    |                    |                    |                    |                    |
| 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<br>Deep 8 | 4-M5x0.8<br>Deep 8 | 4-M5x0.8<br>Deep 8 | 4-M5x0.8<br>Deep 8 | 4-M5x0.8<br>Deep 8 | 4-M5x0.8<br>Deep 8 | 4-M5x0.8<br>Deep 8 |

Dual-stack

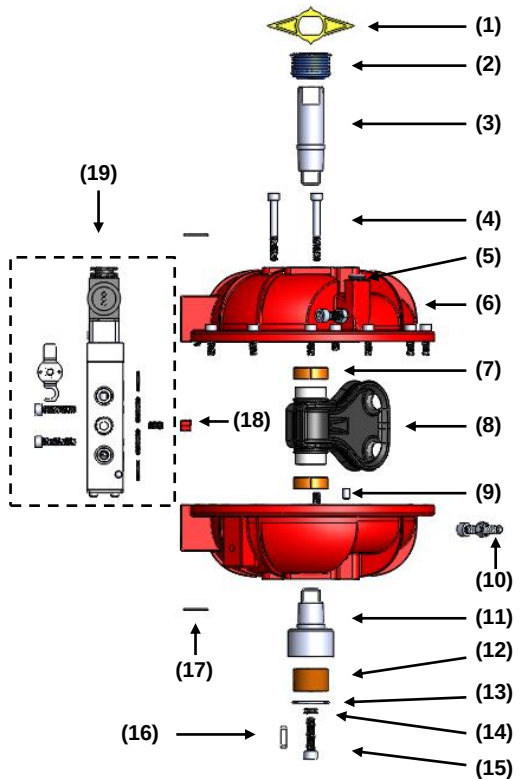
EVA's can be dual-stacked to achieve increased torque output.



Note: Figures in drawings in mm.

| Model                                     |                     |                         |
|-------------------------------------------|---------------------|-------------------------|
| Dimensions                                | 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<br>Deep 8  | 4x10-24UNC<br>Deep 0.31 |

# EVA Bill of Material



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

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

# EVA Ordering Codes

| Prefix                     | Product Type       | Model Number                                            | Actuator Attributes |                                    |                         | Valve Interface Installed With Actuator |                        |                         |
|----------------------------|--------------------|---------------------------------------------------------|---------------------|------------------------------------|-------------------------|-----------------------------------------|------------------------|-------------------------|
|                            |                    |                                                         | Thread              | EVA Material<br>(Corrosion Rating) | Seal<br>(Temp. Rating)  | Low er Shaft Type                       | Drive Insert Type      | Drive Insert Size       |
| <b>C</b>                   | <b>-</b>           | <b>A</b>                                                | <b>-</b>            | <b>X</b>                           | <b>-</b>                | <b>X</b>                                | <b>X</b>               | <b>X</b>                |
| <b>C:</b> Complete product | <b>A:</b> Actuator | <b>1:</b> EVA-0309                                      | <b>1:</b> Imperial  | <b>1:</b> Standard version         | <b>1:</b> Standard temp | <b>1:</b> Direct mount                  | <b>1:</b> Square drive | <b>1:</b> Standard size |
|                            |                    | <b>2:</b> EVA-0411                                      | <b>2:</b> Metric    |                                    | (-20°C to 80°C or       | (standard issuance)                     | (standard issuance)    | (standard issuance)     |
|                            |                    | <b>3:</b> EVA-0514                                      |                     |                                    | -4°F to 176°F)          | <b>2:</b> Semi-direct mount             |                        |                         |
|                            |                    | <b>4:</b> EVA-0717                                      |                     |                                    |                         |                                         |                        |                         |
|                            |                    | <b>5:</b> EVA-1022                                      |                     |                                    |                         |                                         |                        |                         |
|                            |                    | <b>6:</b> EVA-1227                                      |                     |                                    |                         |                                         |                        |                         |
|                            |                    | <b>7:</b> EVA-1436                                      |                     |                                    |                         |                                         |                        |                         |
|                            |                    | <b>8:</b> EVA-1646                                      |                     |                                    |                         |                                         |                        |                         |
|                            |                    | <b>1T - 8T:</b> Corresponding actuator's tandem version |                     |                                    |                         |                                         |                        |                         |
|                            |                    |                                                         |                     |                                    |                         |                                         |                        |                         |

## About

Easytork is the first and only actuation company to standardize the integration of actuators and air reservoirs. Our pneumatic rotary actuators with integrated air reservoirs reduce costs and inefficiencies associated with other fail-safe spring return actuators. Easytork products improve, simplify, and bring peace of mind to flow processes. We're a one-stop shop for everything above the valve.

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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www.easytork.com





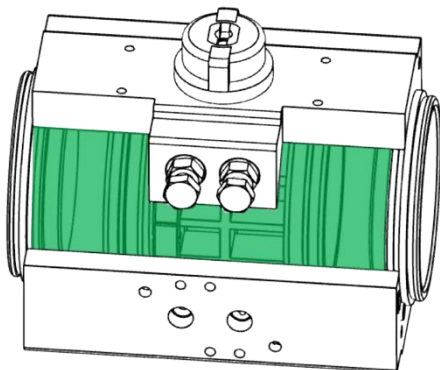
# **Easytork Rack & Pinion Actuator ERPA Series**



Patent pending

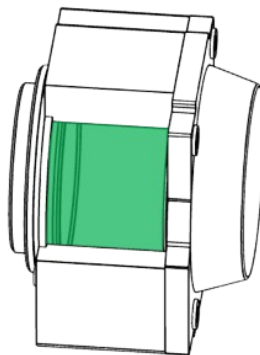
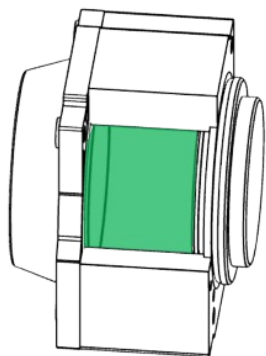
# ERPA Design

**ERPA is a traditional rack & pinion actuator with an integrated air reservoir**



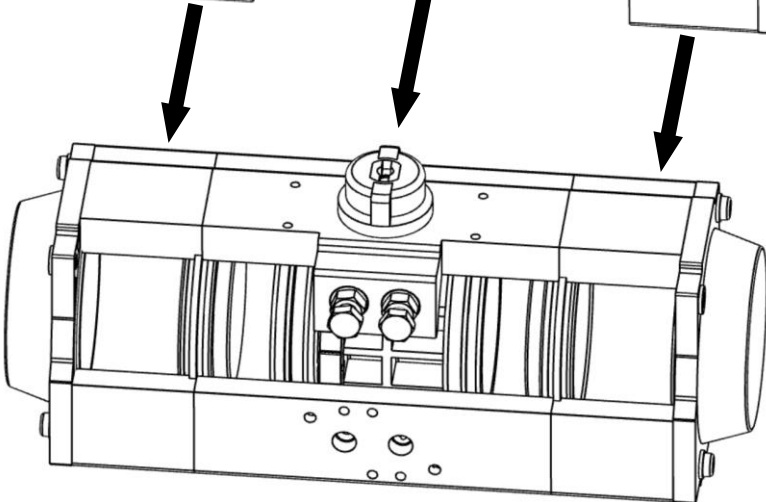
## Double-acting rack and pinion

Traditional rack and pinion actuator.



## With an integral air reservoir

Air reservoirs in fail-safe systems are commonly used to replace springs in large mission-critical emergency shut-down valves.



## Unique features and benefits

- “0” cost and time to make the actuator double-acting, fail-close or fail-open
- “0” issues with springs
- “0” effect from environment
- 24x inventory reduction compared to traditional double-acting and spring-return actuators

## Food & beverage and pharma markets benefit highlight – “0” effect from environment

Spring-return actuators can be a site for microbial contamination. They are open-loop, meaning the actuators breathe in and out with the environment. Additionally, the internals of spring-return actuators are unable to be swab tested or washed down. The microbial growth that does get breathed in, gets developed inside the actuator, and gets breathed back out into the environment. In contrast, the ERPA is a closed-loop actuator, meaning the environment never gets into the actuator, and therefore does not require internal swab tests or washdowns.

Click QR codes on computer for link

Video



- “0” cost and time to make the actuator double-acting, fail-close or fail-open
- 24x inventory reduction

TORQUE RANGE  
(In-lbs. @ 80 psi)

80,000  
70,000  
60,000  
50,000  
40,000  
30,000  
20,000  
10,000  
-

Double-Acting

Fail-Safe

Double-Acting

Spring-Return

Actuator Sizes

17 models

17 models

Function

Double-Acting

Fail-Close

Fail-Open

Same Actuator

3 SKUs per Actuator

Spring Set

30 PSI, 40 PSI,  
50 PSI, 60 PSI,  
70 PSI, 80 PSI,  
90 PSI, 100 PSI

Same Actuator

8 SKUs per Actuator

Easytork



Generic Rack & Pinion

Full Range:  
17 SKUs

24-fold  
inventory  
reduction

Full Range:  
273 SKUs

Case study  
and video



Years of usage in dirty and  
caustic environment



Exterior of  
actuator



Clean  
interior

Spring-return actuators

- Always breathe in and out environment; issues in dirty or high-purity environments are inevitable; short life-span



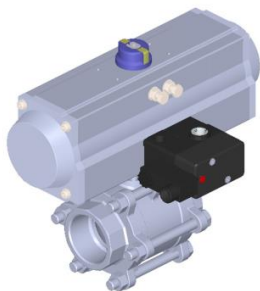
# ERPA Air Flow

Any Electrical Rating

With Easytork Solenoid Valve

## Double-acting

Air flow video



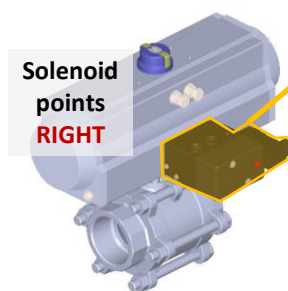
## Fail-close

Solenoid points  
LEFT



## Fail-open

Solenoid points  
RIGHT



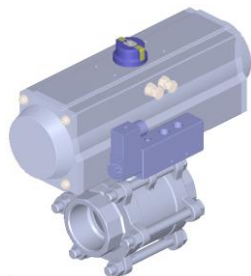
Solenoid options



Universal Compatibility

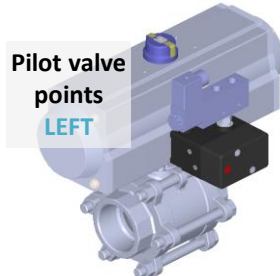
With Any 3<sup>rd</sup> Party Solenoid

Air flow video



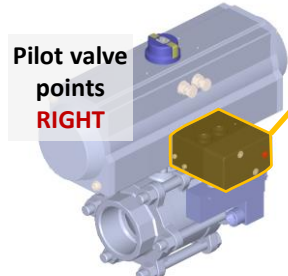
With 3<sup>rd</sup> party  
5/2 DA solenoid

Pilot valve points  
LEFT



With 3<sup>rd</sup> party  
3/2 DA solenoid

Pilot valve points  
RIGHT



With 3<sup>rd</sup> party  
3/2 DA solenoid

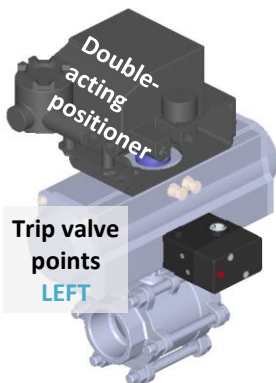
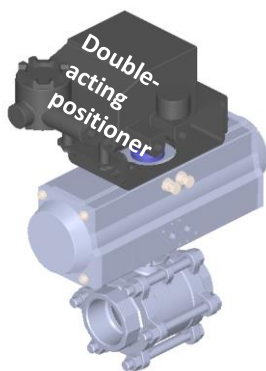
Pilot valve options



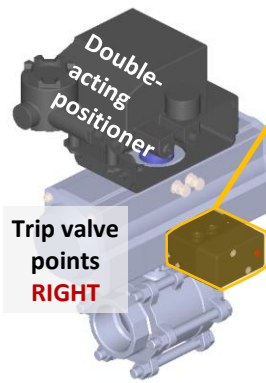
Universal Compatibility

With Any Positioner

Air flow video



Trip valve points  
LEFT



Trip valve points  
RIGHT

Trip valve options

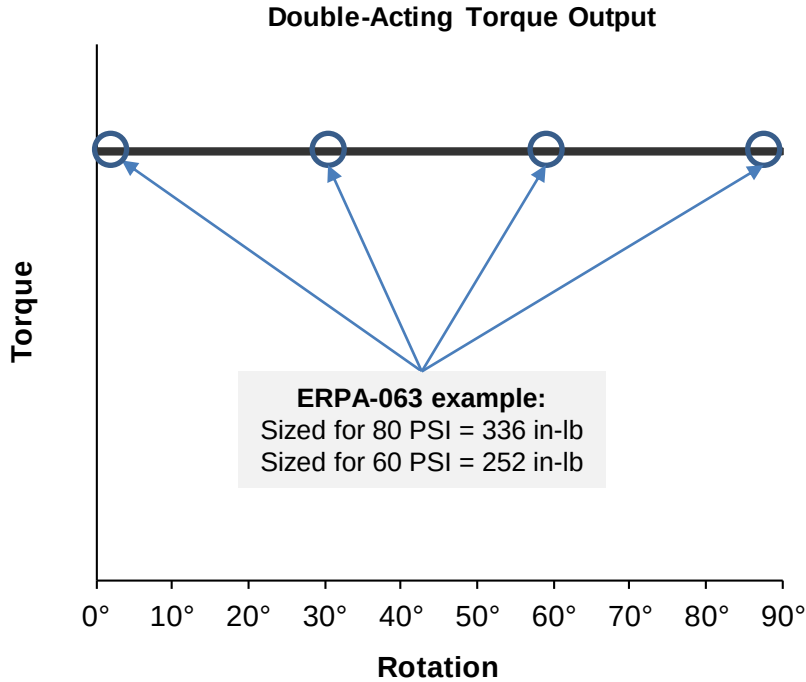


### Patents: Air Flow Principle

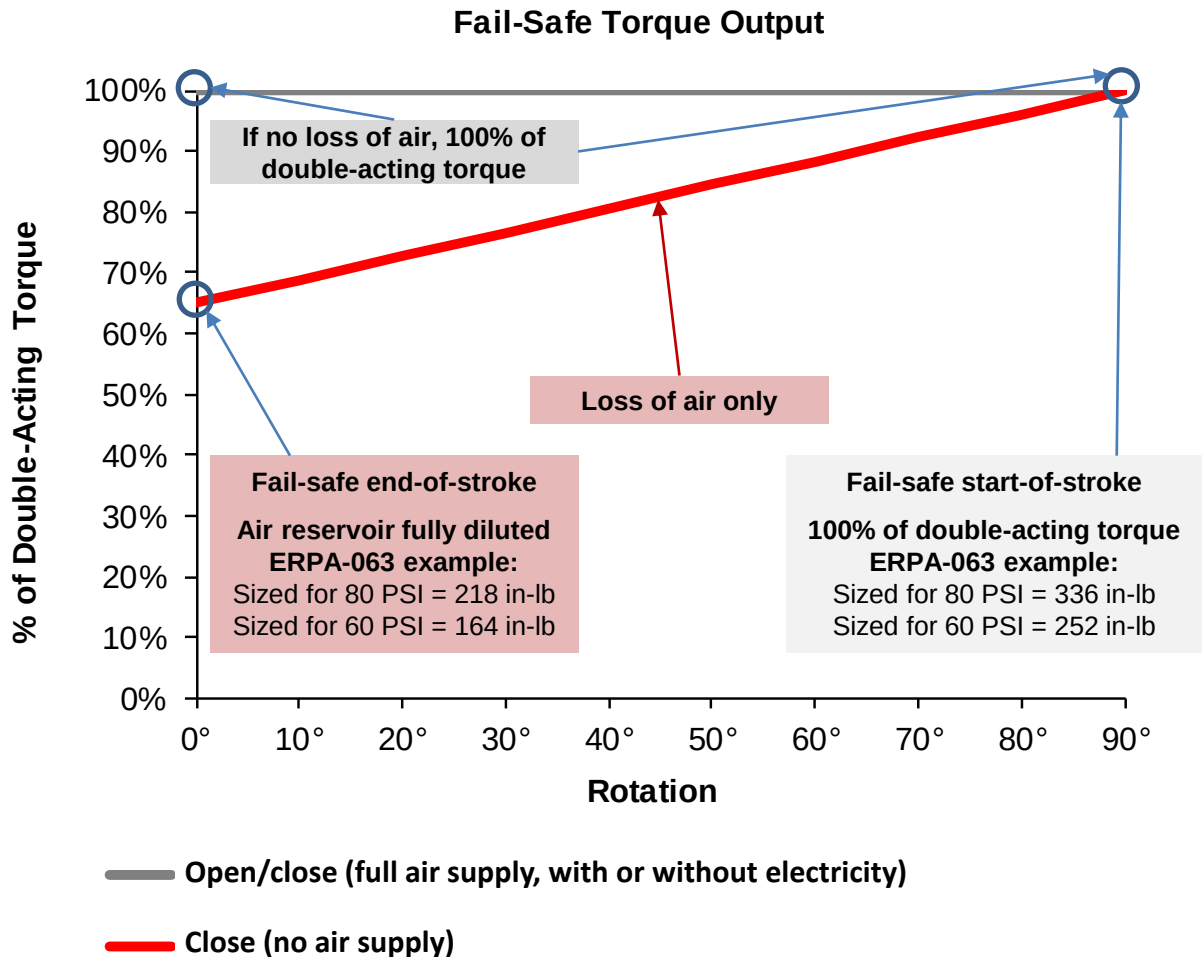
USA US9,546,737B1, 11,280,428  
Taiwan M514532, M515055, M425965  
China ZL2015 2 0641475.9.7  
ZL2015 2 0872022.7  
2264921  
Other counties pending

# ERPA Torque Curve

## Double-Acting Torque Curve



## Fail-Safe Torque Curve



# ERPA Torque Output & Weight

## Metric

| Double-Acting (NM) |         |         |         |         |         |         |          | Weight |
|--------------------|---------|---------|---------|---------|---------|---------|----------|--------|
| Model / BAR        | 2.0     | 3.0     | 4.0     | 5.0     | 5.5     | 6.0     | 7.0      | Kg     |
| ERPA-32            | 2.7     | 4.1     | 5.9     | 7.4     | 8.1     | 8.8     | 9.8      | CF     |
| ERPA-52            | 7.7     | 11.6    | 15.5    | 19.3    | 21.3    | 23.2    | 27.1     | 2.1    |
| ERPA-63            | 13.8    | 20.6    | 27.5    | 34.4    | 37.9    | 41.3    | 48.2     | 3.1    |
| ERPA-75            | 22.3    | 33.7    | 44.7    | 55.9    | 61.5    | 67.0    | 78.2     | 4.3    |
| ERPA-83            | 28.2    | 42.3    | 56.4    | 70.5    | 77.6    | 84.6    | 98.7     | 4.9    |
| ERPA-92            | 43.2    | 64.8    | 86.5    | 108.0   | 118.8   | 129.6   | 151.2    | 7.3    |
| ERPA-105           | 63.1    | 94.7    | 127.2   | 157.8   | 173.6   | 189.4   | 220.9    | 8.9    |
| ERPA-125           | 108.4   | 162.7   | 216.9   | 271.1   | 298.2   | 325.3   | 379.5    | 13.7   |
| ERPA-140           | 163.2   | 244.8   | 326.4   | 408.0   | 448.8   | 489.6   | 571.2    | 20.0   |
| ERPA-160           | 251.4   | 377.0   | 502.7   | 628.4   | 691.3   | 754.1   | 879.7    | 28.5   |
| ERPA-190           | 405.1   | 607.7   | 810.2   | 1,012.8 | 1,114.1 | 1,215.3 | 1,417.9  | 43.3   |
| ERPA-210           | 557.0   | 835.0   | 1,113.0 | 1,392.0 | 1,531.0 | 1,670.0 | 1,948.0  | 57.3   |
| ERPA-240           | 873.0   | 1,309.0 | 1,745.0 | 2,182.0 | 2,400.0 | 2,618.0 | 3,054.0  | CF     |
| ERPA-270           | 1,227.0 | 1,841.0 | 2,454.0 | 3,068.0 | 3,374.5 | 3,681.0 | 4,295.0  | CF     |
| ERPA-300           | 1,506.0 | 2,259.0 | 3,013.0 | 3,766.0 | 4,142.5 | 4,519.0 | 5,272.0  | CF     |
| ERPA-350           | 2,255.0 | 3,382.0 | 4,510.0 | 5,638.0 | 6,201.5 | 6,765.0 | 7,893.0  | CF     |
| ERPA-400           | 3,213.0 | 4,819.0 | 6,427.0 | 8,033.0 | 8,836.5 | 9,640.0 | 11,246.0 | CF     |

| Fail-Safe (Minimum Torque At End-Of-Stroke) (NM) |         |         |         |         |         |         |         | Weight |
|--------------------------------------------------|---------|---------|---------|---------|---------|---------|---------|--------|
| Model / BAR                                      | 2.0     | 3.0     | 4.0     | 5.0     | 5.5     | 6.0     | 7.0     | Kg     |
| ERPA-32                                          | 1.8     | 2.7     | 3.8     | 4.8     | 5.3     | 5.7     | 6.4     | CF     |
| ERPA-52                                          | 5.0     | 7.5     | 10.1    | 12.5    | 13.8    | 15.1    | 17.6    | 2.1    |
| ERPA-63                                          | 9.0     | 13.4    | 17.9    | 22.4    | 24.6    | 26.8    | 31.3    | 3.1    |
| ERPA-75                                          | 14.5    | 21.9    | 29.1    | 36.3    | 39.9    | 43.6    | 50.8    | 4.3    |
| ERPA-83                                          | 18.3    | 27.5    | 36.7    | 45.8    | 50.4    | 55.0    | 64.2    | 4.9    |
| ERPA-92                                          | 28.1    | 42.1    | 56.2    | 70.2    | 77.2    | 84.2    | 98.3    | 7.3    |
| ERPA-105                                         | 41.0    | 61.6    | 82.7    | 102.6   | 112.8   | 123.1   | 143.6   | 8.9    |
| ERPA-125                                         | 70.5    | 105.8   | 141.0   | 176.2   | 193.8   | 211.4   | 246.7   | 13.7   |
| ERPA-140                                         | 106.1   | 159.1   | 212.2   | 265.2   | 291.7   | 318.2   | 371.3   | 20.0   |
| ERPA-160                                         | 163.4   | 245.1   | 326.8   | 408.5   | 449.3   | 490.2   | 571.8   | 28.5   |
| ERPA-190                                         | 263.3   | 395.0   | 526.6   | 658.3   | 724.1   | 789.9   | 921.6   | 43.3   |
| ERPA-210                                         | 362.1   | 542.8   | 723.5   | 904.8   | 995.2   | 1,085.5 | 1,266.2 | 57.3   |
| ERPA-240                                         | 567.5   | 850.9   | 1,134.3 | 1,418.3 | 1,560.0 | 1,701.7 | 1,985.1 | CF     |
| ERPA-270                                         | 797.6   | 1,196.7 | 1,595.1 | 1,994.2 | 2,193.4 | 2,392.7 | 2,791.8 | CF     |
| ERPA-300                                         | 978.9   | 1,468.4 | 1,958.5 | 2,447.9 | 2,692.6 | 2,937.4 | 3,426.8 | CF     |
| ERPA-350                                         | 1,465.8 | 2,198.3 | 2,931.5 | 3,664.7 | 4,031.0 | 4,397.3 | 5,130.5 | CF     |
| ERPA-400                                         | 2,088.5 | 3,132.4 | 4,177.6 | 5,221.5 | 5,743.7 | 6,266.0 | 7,309.9 | CF     |

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



# ERPA Torque Output & Weight

## Imperial

| Double-Acting (In-Lb) |        |        |        |        |        |        |        |        | Weight |
|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Model / PSI           | 30     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | Lbs    |
| ERPA-32               | 25     | 33     | 44     | 54     | 63     | 72     | 81     | 85     | CF     |
| ERPA-52               | 70     | 94     | 118    | 142    | 165    | 189    | 212    | 236    | 4.6    |
| ERPA-63               | 126    | 168    | 210    | 252    | 294    | 336    | 378    | 420    | 6.8    |
| ERPA-75               | 204    | 274    | 342    | 409    | 478    | 545    | 613    | 682    | 9.5    |
| ERPA-83               | 258    | 344    | 430    | 516    | 602    | 688    | 774    | 860    | 10.8   |
| ERPA-92               | 395    | 527    | 659    | 792    | 923    | 1,054  | 1,186  | 1,318  | 16.1   |
| ERPA-105              | 578    | 771    | 967    | 1,164  | 1,348  | 1,541  | 1,734  | 1,926  | 19.6   |
| ERPA-125              | 992    | 1,324  | 1,655  | 1,985  | 2,316  | 2,647  | 2,978  | 3,308  | 30.2   |
| ERPA-140              | 1,494  | 1,992  | 2,490  | 2,988  | 3,486  | 3,984  | 4,482  | 4,980  | 44.1   |
| ERPA-160              | 2,301  | 3,067  | 3,834  | 4,601  | 5,369  | 6,136  | 6,903  | 7,669  | 62.8   |
| ERPA-190              | 3,708  | 4,945  | 6,180  | 7,416  | 8,653  | 9,888  | 11,124 | 12,361 | 95.5   |
| ERPA-210              | 5,099  | 6,794  | 8,491  | 10,188 | 11,892 | 13,589 | 15,286 | 16,982 | 126.3  |
| ERPA-240              | 7,991  | 10,651 | 13,312 | 15,973 | 18,641 | 21,303 | 23,964 | 26,624 | CF     |
| ERPA-270              | 11,231 | 14,979 | 18,721 | 22,463 | 26,211 | 29,953 | 33,694 | 37,442 | CF     |
| ERPA-300              | 13,785 | 18,380 | 22,980 | 27,580 | 32,174 | 36,770 | 41,365 | 45,960 | CF     |
| ERPA-350              | 20,641 | 27,518 | 34,400 | 41,282 | 48,167 | 55,046 | 61,924 | 68,809 | CF     |
| ERPA-400              | 29,410 | 39,210 | 49,019 | 58,830 | 68,628 | 78,434 | 88,240 | 98,039 | CF     |

| Fail-Safe (Minimum Torque At End-Of-Stroke) (In-Lb) |        |        |        |        |        |        |        |        | Weight |
|-----------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Model / PSI                                         | 30     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | Lbs    |
| ERPA-32                                             | 16     | 22     | 28     | 35     | 41     | 47     | 52     | 56     | CF     |
| ERPA-52                                             | 46     | 61     | 77     | 92     | 107    | 123    | 138    | 154    | 4.6    |
| ERPA-63                                             | 82     | 109    | 136    | 164    | 191    | 218    | 246    | 273    | 6.8    |
| ERPA-75                                             | 133    | 178    | 222    | 266    | 310    | 355    | 399    | 443    | 9.5    |
| ERPA-83                                             | 168    | 224    | 280    | 336    | 391    | 447    | 503    | 559    | 10.8   |
| ERPA-92                                             | 257    | 343    | 429    | 515    | 600    | 685    | 771    | 857    | 16.1   |
| ERPA-105                                            | 375    | 501    | 629    | 757    | 876    | 1,002  | 1,127  | 1,252  | 19.6   |
| ERPA-125                                            | 645    | 860    | 1,075  | 1,291  | 1,505  | 1,720  | 1,935  | 2,150  | 30.2   |
| ERPA-140                                            | 971    | 1,295  | 1,618  | 1,942  | 2,266  | 2,589  | 2,913  | 3,237  | 44.1   |
| ERPA-160                                            | 1,496  | 1,994  | 2,492  | 2,991  | 3,490  | 3,988  | 4,487  | 4,985  | 62.8   |
| ERPA-190                                            | 2,410  | 3,214  | 4,017  | 4,821  | 5,624  | 6,428  | 7,231  | 8,035  | 95.5   |
| ERPA-210                                            | 3,314  | 4,416  | 5,519  | 6,622  | 7,730  | 8,833  | 9,936  | 11,038 | 126.3  |
| ERPA-240                                            | 5,194  | 6,923  | 8,653  | 10,382 | 12,117 | 13,847 | 15,577 | 17,305 | CF     |
| ERPA-270                                            | 7,300  | 9,737  | 12,169 | 14,601 | 17,037 | 19,469 | 21,901 | 24,338 | CF     |
| ERPA-300                                            | 8,960  | 11,947 | 14,937 | 17,927 | 20,913 | 23,900 | 26,887 | 29,874 | CF     |
| ERPA-350                                            | 13,417 | 17,886 | 22,360 | 26,834 | 31,309 | 35,780 | 40,250 | 44,726 | CF     |
| ERPA-400                                            | 19,117 | 25,486 | 31,863 | 38,239 | 44,608 | 50,982 | 57,356 | 63,725 | CF     |

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

# ERPA Technical Data

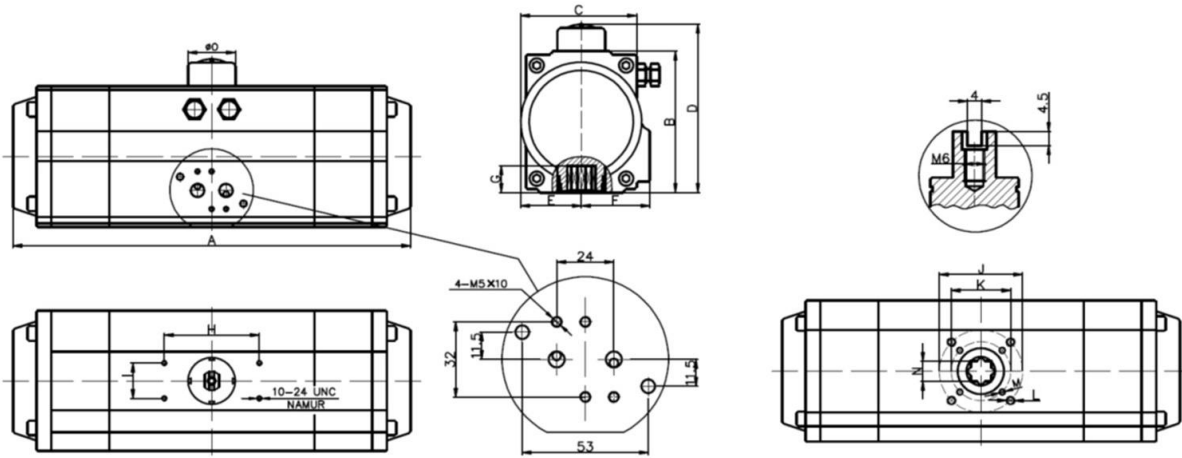
| Technical Specifications    |                                                             |
|-----------------------------|-------------------------------------------------------------|
| Travel adjustment           | Extended stopper: -5°/+5° on each side, total of 80° - 100° |
| Temperature range           | Standard Temp: -20°C to 80°C (-4°F to 176°F)                |
| Pressure rating             | 2 - 7 bar (30 - 100 psi)                                    |
| Operating medium (standard) | Must use inert gases                                        |

| Mounting Specifications |                                                                              |
|-------------------------|------------------------------------------------------------------------------|
| Actuator to valve       | Mounting standard per EN ISO5211 (DIN3337 optional) and traditional mounting |
| Accessories             | NAMUR VDI/VDE 3845                                                           |

| Standard and Specifications Complied                 |                                                                                                       |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| ISO 5211:2001 (E)                                    | Industrial valves – part-turn actuator attachments                                                    |
| MESC SPE 77/211                                      | Valve stem and stem adaptor dimensions and bracket drilling patterns for actuated quarter-turn valves |
| With adapter plate making port 2 and port 4 1/4" NPT |                                                                                                       |
| Namur VDI/VDE 3845                                   | Interface between valves, actuators and auxiliary equipments                                          |
| CEN/TC 69                                            | Basic requirements for pneumatic part-turn actuators on industrial valves                             |

# ERPA Dimensions

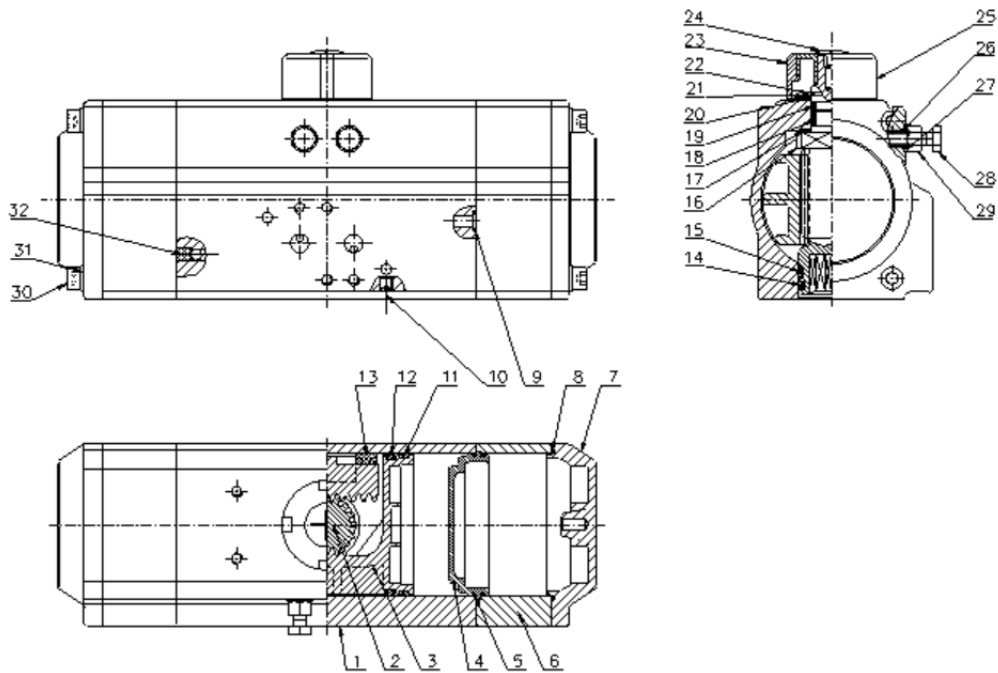
Note: Individual model specs downloadable online



| Metric   | Dimensions (mm) |     |       |     |      |     |      |     |    |         |         |        |        |    |    |
|----------|-----------------|-----|-------|-----|------|-----|------|-----|----|---------|---------|--------|--------|----|----|
| Model    | A               | B   | C     | D   | E    | F   | G    | H   | I  | J       | K       | L      | M      | N  | O  |
| ERPA-032 | --              | --  | --    | --  | --   | --  | --   | --  | -- | --      | --      | --     | --     | -- | -- |
| ERPA-052 | 258             | 74  | 60    | 99  | 30   | 41  | 14   | 80  | 30 | F05Φ50  | F03Φ36  | M6x11  | M5x10  | 11 | 40 |
| ERPA-063 | 290             | 88  | 69    | 113 | 36   | 45  | 18   | 80  | 30 | F07Φ70  | F05Φ50  | M8x15  | M6x12  | 14 | 40 |
| ERPA-075 | 330             | 100 | 79    | 125 | 42   | 52  | 20   | 80  | 30 | F07Φ70  | F05Φ50  | M8x13  | M6x11  | 14 | 40 |
| ERPA-083 | 332             | 109 | 88    | 134 | 46   | 53  | 20   | 80  | 30 | F07Φ70  | F05Φ50  | M8x15  | M6x12  | 17 | 40 |
| ERPA-092 | 409             | 120 | 97.5  | 145 | 51   | 58  | 22   | 80  | 30 | F07Φ70  | F05Φ50  | M8x13  | M6x12  | 17 | 40 |
| ERPA-105 | 450             | 133 | 105.5 | 158 | 57.5 | 64  | 24   | 80  | 30 | F10Φ102 | F07Φ70  | M10x18 | M8x14  | 22 | 40 |
| ERPA-125 | 540             | 155 | 120.5 | 182 | 67.5 | 70  | 27.5 | 80  | 30 | F10Φ102 | F07Φ70  | M10x18 | M8x14  | 22 | 65 |
| ERPA-140 | 654             | 172 | 137   | 198 | 76   | 77  | 32   | 80  | 30 | F12Φ125 | F10Φ102 | M12x22 | M10x18 | 27 | 65 |
| ERPA-160 | 730             | 197 | 159.5 | 224 | 86.5 | 88  | 34   | 80  | 30 | F12Φ125 | F10Φ102 | M12x22 | M10x18 | 27 | 65 |
| ERPA-190 | 830             | 230 | 186   | 269 | 103  | 103 | 40   | 130 | 30 | F14Φ140 | /       | M16x23 | /      | 36 | 78 |
| ERPA-210 | 934             | 255 | 202   | 294 | 113  | 113 | 40   | 130 | 30 | F14Φ140 | /       | M16x25 | /      | 36 | 78 |
| ERPA-240 | --              | --  | --    | --  | --   | --  | --   | --  | -- | --      | --      | --     | --     | -- | -- |
| ERPA-270 | --              | --  | --    | --  | --   | --  | --   | --  | -- | --      | --      | --     | --     | -- | -- |
| ERPA-300 | --              | --  | --    | --  | --   | --  | --   | --  | -- | --      | --      | --     | --     | -- | -- |
| ERPA-350 | --              | --  | --    | --  | --   | --  | --   | --  | -- | --      | --      | --     | --     | -- | -- |
| ERPA-400 | --              | --  | --    | --  | --   | --  | --   | --  | -- | --      | --      | --     | --     | -- | -- |

| Imperial | Dimensions (in) |       |      |       |      |      |      |      |      |          |          |             |             |      |      |
|----------|-----------------|-------|------|-------|------|------|------|------|------|----------|----------|-------------|-------------|------|------|
| Model    | A               | B     | C    | D     | E    | F    | G    | H    | I    | J        | K        | L           | M           | N    | O    |
| ERPA-032 | --              | --    | --   | --    | --   | --   | --   | --   | --   | --       | --       | --          | --          | --   | --   |
| ERPA-052 | 10.16           | 2.91  | 2.36 | 3.90  | 1.18 | 1.61 | 0.55 | 3.15 | 1.18 | F05Φ1.97 | F03Φ1.42 | 1/4-20 UNC  | 10-24UNC    | 0.43 | 1.57 |
| ERPA-063 | 11.42           | 3.46  | 2.72 | 4.45  | 1.42 | 1.77 | 0.71 | 3.15 | 1.18 | F07Φ2.76 | F05Φ1.97 | 5/16-18 UNC | 1/4-20 UNC  | 0.55 | 1.57 |
| ERPA-075 | 12.99           | 3.94  | 3.11 | 4.92  | 1.65 | 2.05 | 0.79 | 3.15 | 1.18 | F07Φ2.76 | F05Φ1.97 | 5/16-18 UNC | 1/4-20 UNC  | 0.55 | 1.57 |
| ERPA-083 | 13.07           | 4.29  | 3.46 | 5.28  | 1.81 | 2.07 | 0.79 | 3.15 | 1.18 | F07Φ2.76 | F05Φ1.97 | 5/16-18 UNC | 1/4-20 UNC  | 0.67 | 1.57 |
| ERPA-092 | 16.10           | 4.72  | 3.84 | 5.71  | 2.01 | 2.26 | 0.87 | 3.15 | 1.18 | F07Φ2.76 | F05Φ1.97 | 5/16-18 UNC | 1/4-20 UNC  | 0.67 | 1.57 |
| ERPA-105 | 17.72           | 5.24  | 4.15 | 6.22  | 2.26 | 2.52 | 0.94 | 3.15 | 1.18 | F10Φ4.02 | F07Φ2.76 | 3/8-16 UNC  | 5/16-18 UNC | 0.87 | 1.57 |
| ERPA-125 | 21.26           | 6.10  | 4.74 | 7.17  | 2.66 | 2.76 | 1.08 | 3.15 | 1.18 | F10Φ4.02 | F07Φ2.76 | 3/8-16 UNC  | 5/16-18 UNC | 0.87 | 2.56 |
| ERPA-140 | 25.75           | 6.75  | 5.39 | 7.80  | 2.99 | 3.03 | 1.26 | 3.15 | 1.18 | F12Φ4.92 | F10Φ4.02 | 1/2-13 UNC  | 3/8-16 UNC  | 1.06 | 2.56 |
| ERPA-160 | 28.74           | 7.76  | 6.28 | 8.82  | 3.41 | 3.44 | 1.34 | 3.15 | 1.18 | F12Φ4.92 | F10Φ4.02 | 1/2-13 UNC  | 3/8-16 UNC  | 1.06 | 2.56 |
| ERPA-190 | 32.68           | 9.06  | 7.32 | 10.59 | 4.06 | 4.06 | 1.57 | 5.12 | 1.18 | F14Φ5.51 | /        | 5/8-11 UNC  | /           | 1.42 | 3.07 |
| ERPA-210 | 36.77           | 10.04 | 7.95 | 11.57 | 4.45 | 4.45 | 1.57 | 5.12 | 1.18 | F14Φ5.51 | /        | 5/8-11 UNC  | /           | 1.42 | 3.07 |
| ERPA-240 | --              | --    | --   | --    | --   | --   | --   | --   | --   | --       | --       | --          | --          | --   | --   |
| ERPA-270 | --              | --    | --   | --    | --   | --   | --   | --   | --   | --       | --       | --          | --          | --   | --   |
| ERPA-300 | --              | --    | --   | --    | --   | --   | --   | --   | --   | --       | --       | --          | --          | --   | --   |
| ERPA-350 | --              | --    | --   | --    | --   | --   | --   | --   | --   | --       | --       | --          | --          | --   | --   |
| ERPA-400 | --              | --    | --   | --    | --   | --   | --   | --   | --   | --       | --       | --          | --          | --   | --   |

# ERPA Build of Material



| BOM |                   |                 |     |                           |
|-----|-------------------|-----------------|-----|---------------------------|
| #   | Description       | Material        | QTY | Protection                |
| 1   | Body              | Aluminum        | 1   | Anodized                  |
| 2   | Pinion            | Carbon steel    | 1   | Nickel plated             |
| 3   | Piston            | Aluminum        | 2   | Anodized                  |
| 4   | AR Plate          | Aluminum        | 2   | Anodized                  |
| 5   | O-ring            | NBR             | 4   |                           |
| 6   | AR Compartment    | Aluminum        | 2   | Anodized                  |
| 7   | Cap               | Aluminum        | 2   | Epoxy coated              |
| 8   | O-ring            | NBR             | 2   |                           |
| 9   | O-ring            | NBR             | 2   |                           |
| 10  | Plug              | Stainless steel | 1   |                           |
| 11  | Guide Ring        | POM             | 2   |                           |
| 12  | O-ring            | NBR             | 2   |                           |
| 13  | Support Ring      | POM             | 2   |                           |
| 14  | O-ring            | NBR             | 1   |                           |
| 15  | Bearing           | POM             | 1   |                           |
| 16  | Spacer            | Carbon steel    | 1   | Phosphatized / galvanized |
| 17  | Thrust Bearing    | POM             | 1   |                           |
| 18  | Bearing           | POM             | 1   |                           |
| 19  | O-ring            | NBR             | 1   |                           |
| 20  | Thrust Bearing    | POM             | 1   |                           |
| 21  | Thrust Washer     | Stainless steel | 1   |                           |
| 22  | Circlip           | Stainless steel | 1   |                           |
| 23  | Indicator Pointer | Plastic         | 4   |                           |
| 24  | Indicator Nut     | Plastic         | 1   |                           |
| 25  | Indicator Pointer | Plastic         | 1   |                           |
| 26  | O-ring            | NBR             | 2   |                           |
| 27  | Washer            | Stainless steel | 2   |                           |
| 28  | Adjusting Screw   | Stainless steel | 2   |                           |
| 29  | Adjusting Nut     | Stainless steel | 2   |                           |
| 30  | Cylinder Screw    | Stainless steel | 8   |                           |
| 31  | Washer            | Stainless steel | 8   |                           |
| 32  | Rubber Plug       | NBR             | 2   |                           |

# ERPA Ordering Codes

| Product Type                    | Model Number          | Actuator Attributes |                            |                           |
|---------------------------------|-----------------------|---------------------|----------------------------|---------------------------|
|                                 |                       | Thread              | Corrosion Rating           | Temp. Rating              |
| <b>ERPA</b>                     | <b>- X</b>            | <b>- X</b>          | <b>X</b>                   | <b>- X</b>                |
| <b>ERPA:</b>                    | <b>032, 052, 063,</b> | <b>1: Imperial</b>  | <b>1: Standard version</b> | <b>ST: Standard temp</b>  |
| Easytork rack & pinion actuator | <b>075, 083, 092,</b> | <b>2: Metric</b>    |                            | <b>(-20°C to 80°C</b>     |
|                                 | <b>105, 125, 140,</b> |                     |                            | <b>or -4°F to 176°F)</b>  |
|                                 | <b>160, 190, 210,</b> |                     |                            |                           |
|                                 | <b>240, 270, 300,</b> |                     |                            | <b>HT: High temp</b>      |
|                                 | <b>350, 400</b>       |                     |                            | <b>(-20°C to 160°C</b>    |
|                                 |                       |                     |                            | <b>or -4°F to 320°F)</b>  |
|                                 |                       |                     |                            | <b>LT: Low temp</b>       |
|                                 |                       |                     |                            | <b>(-40°C to 80°C</b>     |
|                                 |                       |                     |                            | <b>or -40°F to 176°F)</b> |

**About**

Easytork is the first and only actuation company to standardize the integration of actuators and air reservoirs. Our pneumatic rotary actuators with integrated air reservoirs reduce costs and inefficiencies associated with other fail-safe spring return actuators. Easytork products improve, simplify, and bring peace of mind to flow processes. We're a one-stop shop for everything above the valve.

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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## Composite Solenoid Valve CSV Series





# Composite Solenoid Valve (“CSV”)

Made of high-performance plastic (polyamide)

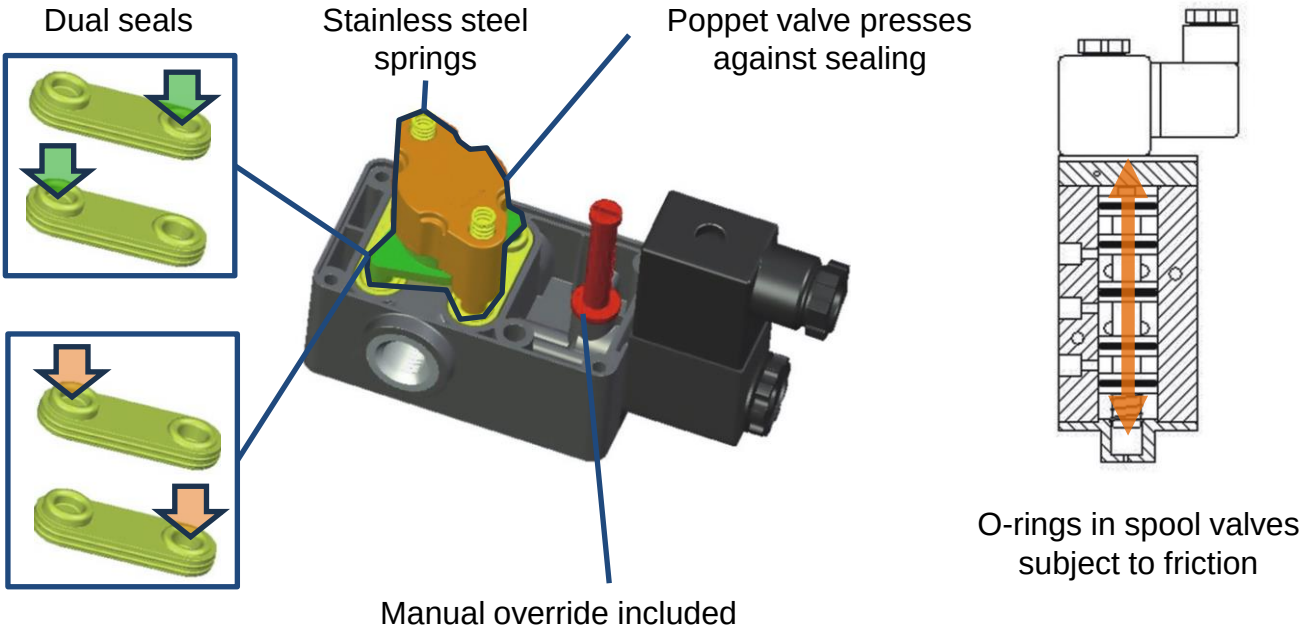
Polyamide is a top-performing corrosion-resistant material.

Composite is cost-effective alternative to stainless steel solenoid valves



## Compression not friction

The airflow to the actuator is based on the dual seals. Poppet valve pushes against the dual sealing to direct airflow to provide better cycle life reliability. Traditional solenoid valves use a spool to direct air flows and O-ring type seals are subject to friction.



# CSV Options

## Various coils & connectors



Standard



Ex-Proof



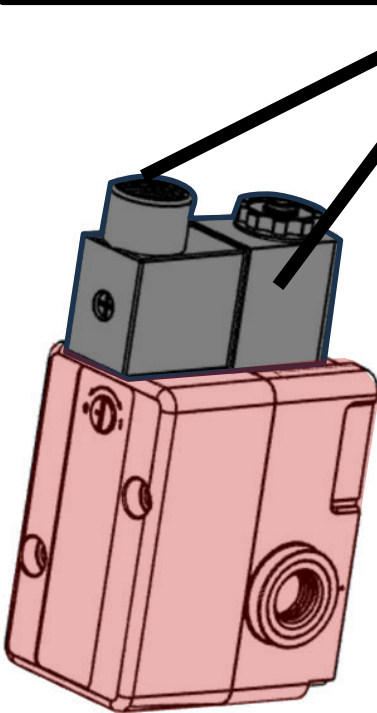
I-Safe



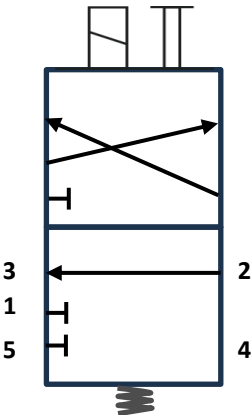
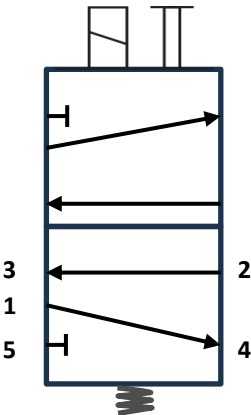
Atex



Low Power



Available in 3/2 (spring-return) or 5/2 (double-acting)



# Technical Data

## CSV specifications

| ECSV Technical Specification    |                               |
|---------------------------------|-------------------------------|
| Operating pressure              | 2.4 - 8.3 bar (35 - 120 psi)  |
| Operating medium                | Air (dry or lubricated)       |
| Flow l/min (Cv) Port size: 1/4" | Cv = 1.1                      |
| Temperature range (standard)    | -20°C to 80°C (-4°F to 176°F) |

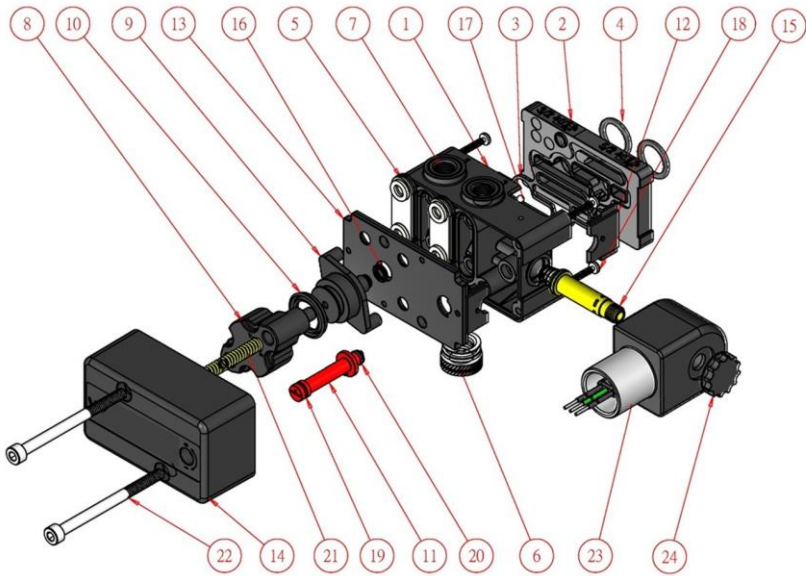
## Coil specifications

| 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<br>CSA & FM Approved<br>CL. I; Zone1 Ex m II T4; AEx m II<br>CL. I; Div.1; GR. A, B, C, D<br>CL. II; GR. E, F, G CL. III<br>T4 Ta=-20°C to +60°C | 36         |
| ATEX EX            | 3m cable & strain relief                                              | Ex m II T5 PTB 03 ATEX 2018 X<br>Ex II 2 G EEx m II T5<br>Ex II 2 D IP65 T95°C                                                                                         | 22         |
| Intrinsically-Safe | EN175301-803-A/ISO4400                                                | Exia<br>CL. I; GR. A, B, C, D<br>CL. II; GR. E, F, G<br>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         |

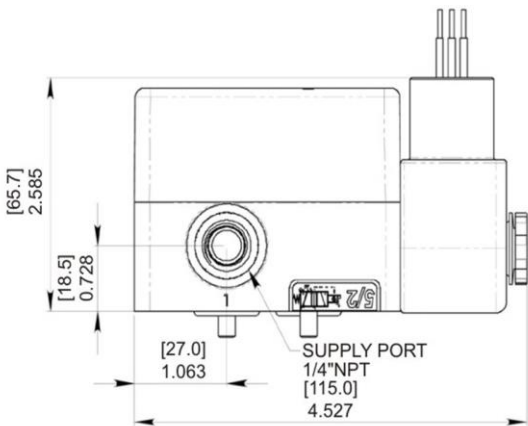
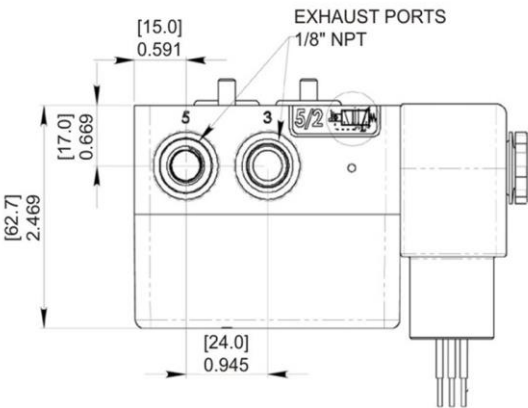
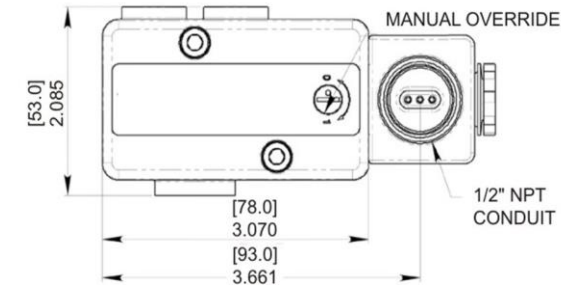
| Coil                                         | Voltage Tolerance | Ambient Temp.                     | Duty Cycle | Voltage                     | Frequency (Hz) | Output          | Max. Pressure    |
|----------------------------------------------|-------------------|-----------------------------------|------------|-----------------------------|----------------|-----------------|------------------|
| Standard                                     | +/- 10%           | -20°C to 50°C<br>(-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<br>(-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<br>(-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<br>(Barrier not included) |                   | -40°C to 50°C<br>(-40°F to 122°F) | 100%       | 24 DC<br>Current ><br>37 mA | -              | 8 bar (120 psi) |                  |
|                                              |                   |                                   |            |                             |                |                 |                  |
| Low Temperature                              | +/- 10%           | -40°C to 50°C<br>(-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<br>(1.1W, 22mm coil)               | +/- 10%           | -20°C to 50°C<br>(-4°F to 122°F)  | 100%       | 24 DC                       | -              | 1.1 W           | 8 bar (120 psi)  |

# Technical Data (Represented with Ex-Proof Coil)

## Bill of material



| Ref No  | Description        | Corrosion Rating        |                 |
|---------|--------------------|-------------------------|-----------------|
|         |                    | Standard Version        | Severe Service  |
| 1       | Body               | Polyamide + glass fiber | --              |
| 2       | Adapter plate      | Polyamide + glass fiber | --              |
| 3       | Adapter plate seal | NBR                     | --              |
| 4       | O-ring             | NBR                     | --              |
| 5       | Seal               | Dupont                  | --              |
| 6       | 1/4" NPT           | NPS                     | Stainless steel |
| 7       | 1/8" NPT           | NPS                     | Stainless steel |
| 8 & 9   | Piston             | Polyamide + glass fiber | --              |
| 10      | Piston seal        | NBR                     | --              |
| 11      | Adjustment lever   | Polyamide               | --              |
| 12      | Plate              | Polyamide               | --              |
| 13      | Plate              | Polyamide               | --              |
| 14      | Body cover         | Polyamide               | --              |
| 15      | Armature parts     | Brass                   | Stainless steel |
| 16      | Seal               | NBR                     | --              |
| 17      | Steel ball         | Stainless steel         | --              |
| 18      | Bolt               | Stainless steel         | --              |
| 19 & 20 | O-ring             | NBR                     | --              |
| 21      | Spring             | Stainless steel         | --              |
| 22      | Screw              | Stainless steel         | --              |
| 23 & 24 | Coil system        | Polyamide               | --              |



Note: mm (top), inch (bottom)

# CSV Ordering Codes

| Product Type                  |   | Model Number                                             | Coil Attributes                                                                   |                                                                                                                               | Solenoid Attributes                                                               |                |                                          |                          |   |
|-------------------------------|---|----------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------|------------------------------------------|--------------------------|---|
|                               |   |                                                          | Coil Type                                                                         | Voltage                                                                                                                       | Solenoid Valve Seal<br>(Temp. Rating of ECSV) <sup>(1)</sup>                      | # of Coils     | ECSV Body Material<br>(Corrosion Rating) | Thread                   |   |
| CSV                           | - | X                                                        | -                                                                                 | X                                                                                                                             | X                                                                                 | -              | X                                        | X                        | X |
| CSV: Composite solenoid valve |   | 5/2: 5/2 for double-acting<br>3/2: 3/2 for spring-return | 1: Standard<br>2: ATEX<br>3: Ex-Proof<br>4: I-Safe<br>5: Low Temp<br>7: Low Power | 1: 24VDC<br>2: 110VAC<br>3: 230VAC<br>0: Other (specify)                                                                      | 1: NBR seal (for all coils besides low temp coil, -20°C to 80°C or -4°F to 176°F) | 1: Single coil | 1: Standard<br>3: Severe service         | 1: Imperial<br>2: Metric |   |
|                               |   |                                                          | X: None                                                                           | X: None                                                                                                                       | X: None                                                                           | X: None        | X: None                                  | X: None                  |   |
|                               |   | If ordering solenoid body only, X out this section       |                                                                                   | If ordering coil only, X out these sections                                                                                   |                                                                                   |                |                                          |                          |   |
|                               |   |                                                          |                                                                                   | Note (1): Refers only to solenoid body temperature rating. Coil temperature rating is separate, refer to coil specifications. |                                                                                   |                |                                          |                          |   |

## About

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## Solenoid Valve ESV Series



Engineered for  
actuators with  
onboard reservoirs



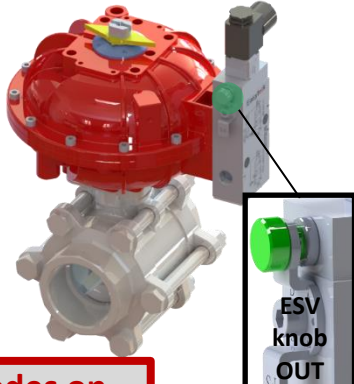
# Easytork Solenoid Valve (“ESV”)

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 reduces inventory complexity

ESV video



| Double-acting                                                                     | Fail-close                                                                        | Fail-open                                                                          |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |  |

Click QR codes on computer for link

ESV removes problems caused by springs

Case study



ESV’s closed-loop benefits



Easytork’s ESV

- Never breathes in or out environment

Clean internals with years of usage in dirty environment

Spring-return open-loop problems



Spring-return actuators

- Always breathes in and out environment, therefore issues in dirty or high-purity environments are inevitable

Actuator breathes in and out the environment in spring-return

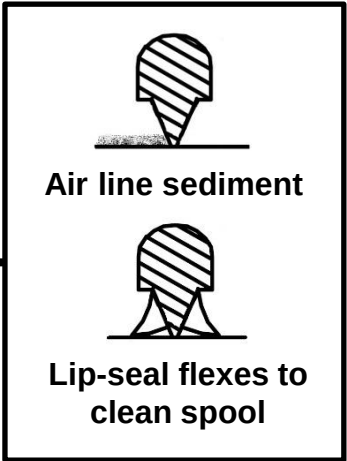
# ESV Overview

## 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.

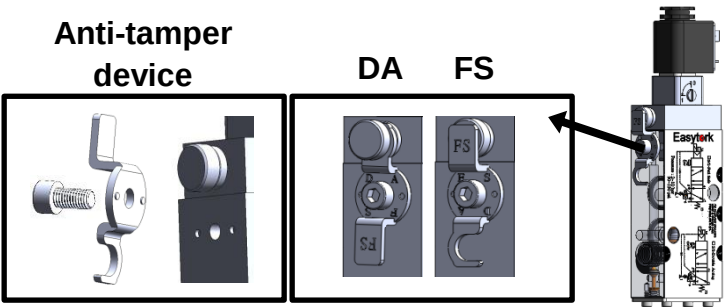
This design also eliminates sticking problems and avoids spiral twist associated with O-rings.

ESV Spool



## Anti-tampering device

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



## 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.

| Patents: |                                                       |
|----------|-------------------------------------------------------|
| USA      | US9,546,737B1                                         |
| Taiwan   | M514532, M515055, M425965                             |
| China    | ZL2015 2 0641475.9.7<br>ZL2015 2 0872022.7<br>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



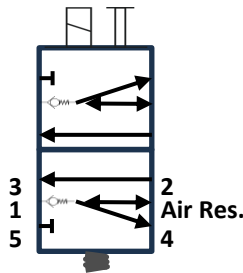
Low power ESV body only good for low power coil.

# Technical Data

## ESV specifications

| Technical Specification                                                                                                                                                                     |                 |                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Operating pressure <sup>(1) (2)</sup>                                                                                                                                                       |                 | 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) <sup>(3)</sup>                                                                                                                                          |                 | -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. |                 |                               |

## Schematic



## 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<br>CSA & FM Approved<br>CL. I; Zone1 Ex m II T4; AEx m II<br>CL. I; Div.1; GR. A, B, C, D<br>CL. II; GR. E, F, G CL. III<br>T4 Ta=-20°C to +60°C | 36         |
| ATEX EX            | 3m cable & strain relief                                              | Ex m II T5 PTB 03 ATEX 2018 X<br>Ex II 2 G EEx m II T5<br>Ex II 2 D IP65 T95°C                                                                                         | 22         |
| Intrinsically-Safe | EN175301-803-A/ISO4400                                                | Exia<br>CL. I; GR. A, B, C, D<br>CL. II; GR. E, F, G<br>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         |

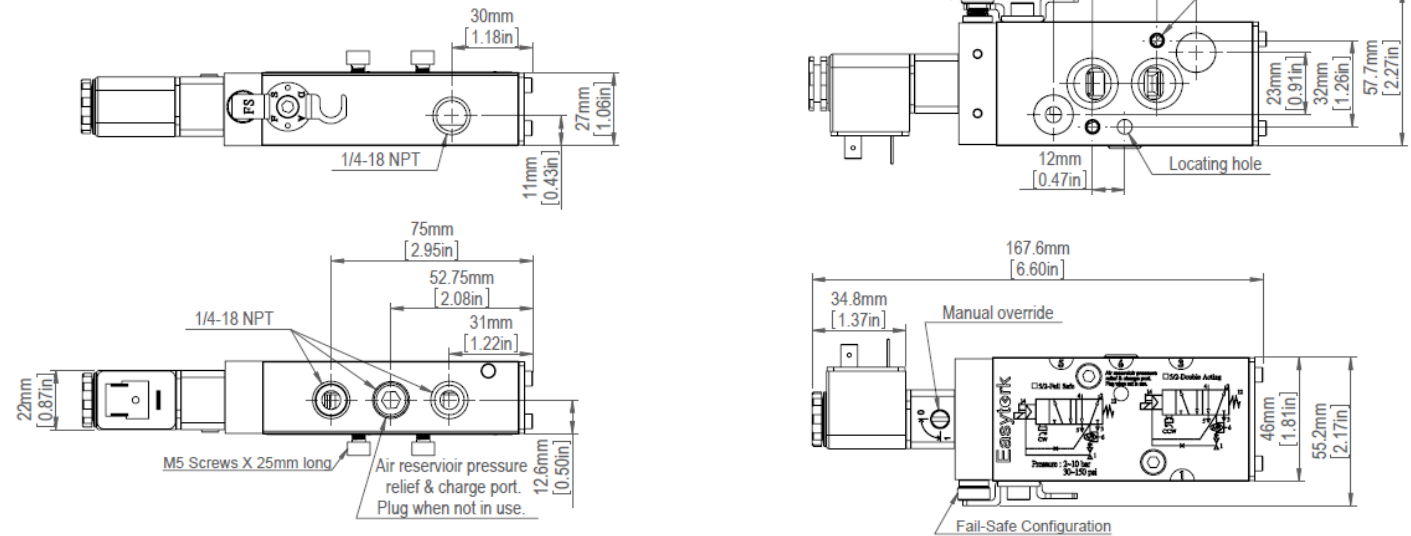
## Air flow video



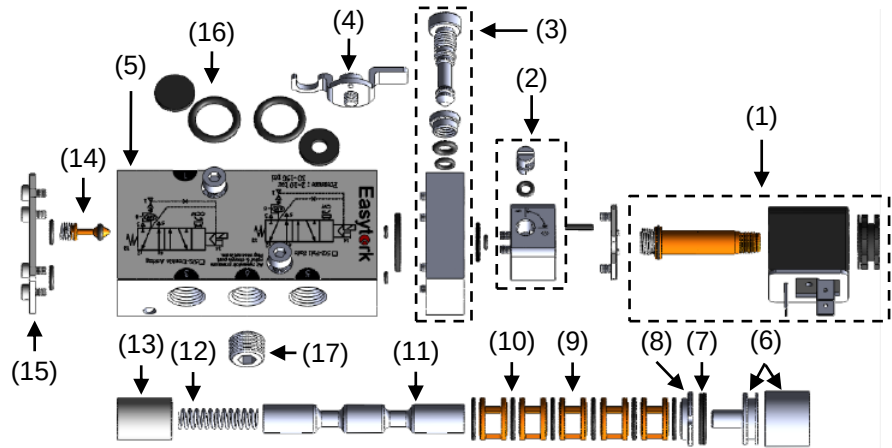
| Coil                                         | Voltage Tolerance | Ambient Temp.                     | Duty Cycle | Voltage | Frequency (Hz)  | Output          | Max. Pressure    |
|----------------------------------------------|-------------------|-----------------------------------|------------|---------|-----------------|-----------------|------------------|
| Standard                                     | +/- 10%           | -20°C to 50°C<br>(-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<br>(-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<br>(-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<br>(Barrier not included) |                   | -40°C to 50°C<br>(-40°F to 122°F) | 100%       |         |                 | 8 bar (120 psi) |                  |
|                                              |                   |                                   |            | 24 DC   | Current > 37 mA |                 |                  |
| Low Temperature                              | +/- 10%           | -40°C to 50°C<br>(-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<br>(1.1W, 22mm coil)               | +/- 10%           | -20°C to 50°C<br>(-4°F to 122°F)  | 100%       | 24 DC   | -               | 1.1 W           | 8 bar (120 psi)  |

# Technical Data

## ESV dimensions



## Bill of material



| Corrosion Rating |                         |                                          |                                          |       |
|------------------|-------------------------|------------------------------------------|------------------------------------------|-------|
| Ref No           | Description             | Standard Version                         | Severe Service                           | Qty   |
| 1                | Coil & armature system  | Polyamide 6.6 / brass                    | Polyamide 6.6 / brass                    | 1     |
| 2                | Pilot system            | Aluminum                                 | Aluminum                                 | 1     |
| 3                | DA / FS switch system   | Stainless steel + aluminum               | Stainless steel + aluminum               | 1 set |
| 4                | Anti-tamper system      | Stainless steel (SS303)                  | Stainless steel (SS303)                  | 1 set |
| 5                | Valve body*             | Aluminum                                 | Aluminum                                 | 1     |
| 6                | Piston sleeve* / piston | Aluminum                                 | Stainless steel (SS316)                  | 2     |
| 7                | Piston seal*            | NBR                                      | NBR                                      | 2     |
| 8                | Retainer                | Aluminum                                 | Stainless steel (SS316)                  | 1     |
| 9                | Spacer                  | Brass                                    | Brass                                    | 5     |
| 10               | Lip seal*               | NBR                                      | NBR                                      | 6     |
| 11               | Spool*                  | Stainless steel                          | Stainless steel (SS316)                  | 1     |
| 12               | Spring                  | Stainless steel (SS304)                  | Stainless steel (SS304)                  | 1     |
| 13               | Sleeve                  | Aluminum                                 | Stainless steel (SS316)                  | 1     |
| 14               | Internal check valve    | Stainless steel / stainless steel spring | Stainless steel / stainless steel spring | 2     |
| 15               | All bolting / plate     | Stainless steel (SS304)                  | Stainless steel (SS304)                  | 1 lot |
| 16               | O-ring and seal plate   | NBR                                      | NBR                                      | 1 lot |
| 17               | Plug                    | Nickle-plated steel                      | Nickle-plated steel                      | 1     |

\* Items marked with an asterisk require thin film of lubricant

# ESV Ordering Codes

| Prefix              | Product Type      | Model Number                                                                                     | Coil Attributes                                    |                                                                                             | ESV Attributes                                                                                                           |                |                                         |                          |          |
|---------------------|-------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------------|--------------------------|----------|
|                     |                   |                                                                                                  | Coil Type                                          | Voltage                                                                                     | Solenoid Valve Seal<br>(Temp. Rating of ESV) <sup>(1)</sup>                                                              | # of Coils     | ESV Body Material<br>(Corrosion Rating) | Thread                   |          |
| <b>C</b>            | <b>-</b>          | <b>S</b>                                                                                         | <b>-</b>                                           | <b>X</b>                                                                                    | <b>X</b>                                                                                                                 | <b>-</b>       | <b>X</b>                                | <b>X</b>                 | <b>X</b> |
| C: Complete product | S: Solenoid valve | 1: ESV for EVA-0411 through 1436<br><br>1E: ESV external port for fast acting or models EVA-1646 | 1: Standard<br>2: ATEX<br>3: Ex-Proof<br>4: I-Safe | 1: 24VDC<br>2: 110VAC<br>3: 230VAC<br>0: Other (specify)<br><br>5: Low Temp<br>7: Low Power | 1: NBR seal (for all coils besides low temp coil, -20°C to 80°C or -4°F to 176°F)                                        | 1: Single coil | 1: Standard<br>3: Severe service        | 1: Imperial<br>2: Metric |          |
|                     |                   |                                                                                                  | X: None                                            | 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

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

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

Coil only (for I-Safe 24VDC)

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

### About

Easytork is the first and only actuation company to standardize the integration of actuators and air reservoirs. Our pneumatic rotary actuators with integrated air reservoirs reduce costs and inefficiencies associated with other fail-safe spring return actuators. Easytork products improve, simplify, and bring peace of mind to flow processes. We're a one-stop shop for everything above the valve.

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2015 – Accelerate St. Louis  
2017 – Frost & Sullivan New Product Innovation Award



### Global Headquarters

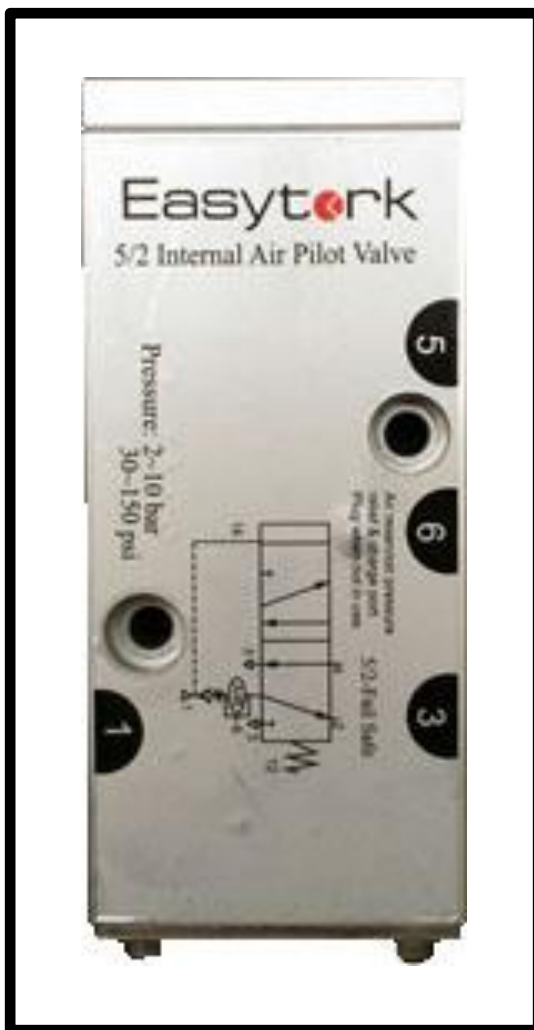
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Maryland Heights, MO 63043  
USA

Main Tel: +1-314-266-6880

info@easytork.com  
www.easytork.com



## Air Pilot Valve EPV Series



Engineered for  
actuators with  
onboard reservoirs

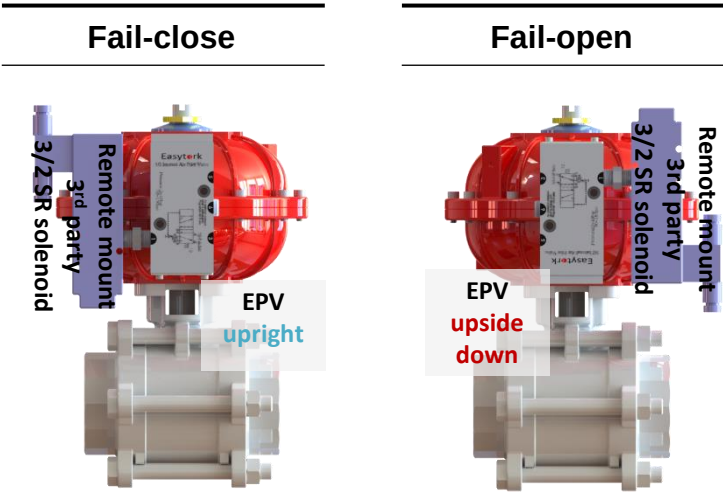
# Easytork Air Pilot Valve (“EPV”)

EPV allows any solenoid valve brand to work with Easytork’s fail-safe

## Fail-safe with any 3<sup>rd</sup> party solenoid valve

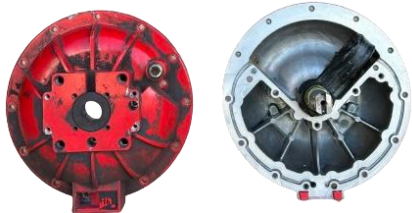
Remote mount or nipple mount  
3<sup>rd</sup> party 3/2 solenoid valve and  
still allow Easytork actuators to  
fail-safe with loss of supply air.

EPV IOM video



EPV removes problems caused by springs

## Case study



Clean internals with years of  
usage in dirty environment

## EPV’s closed-loop benefits

- Easytork’s EPV
- Never breathes in or out environment.

## Spring-return open-loop problems



Actuator breathes in and out the  
environment in spring-return

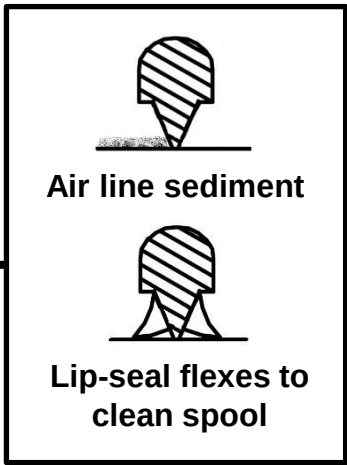
- Spring-return actuators
- Always breathes in and out environment, therefore issues in dirty or high-purity environments are inevitable.

# EPV Overview

## 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.

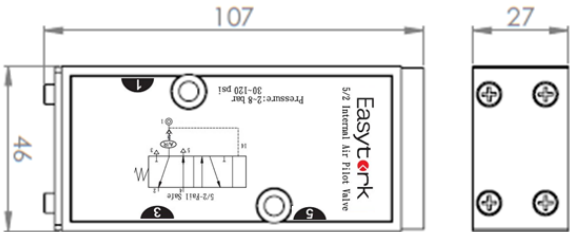
EPV spool



## Technical

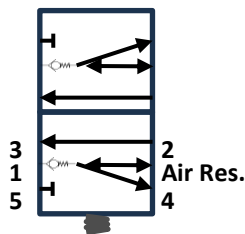
| EPV Technical Specification       |                                 |
|-----------------------------------|---------------------------------|
| Operating pressure <sup>(1)</sup> | 2 - 10 bar (30 - 150 psi)       |
| Operating medium                  | Air (dry or lubricated)         |
| Flow l/min (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

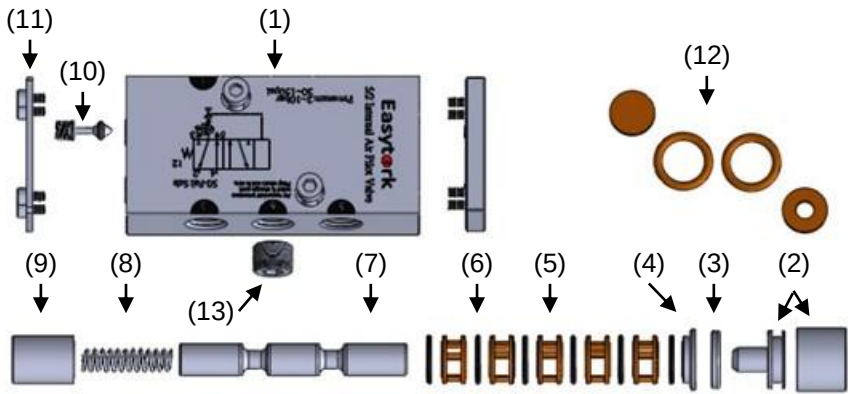
Schematic



Air flow video



# Build of Materials



| Ref No | Description             | Corrosion Rating                         |                                          | Qty   |
|--------|-------------------------|------------------------------------------|------------------------------------------|-------|
|        |                         | Standard                                 | Severe Service                           |       |
| 1      | Valve body*             | Aluminum                                 | Aluminum                                 | 1     |
| 2      | Piston sleeve* / piston | Aluminum                                 | Stainless steel (SS316)                  | 1 set |
| 3      | Piston seal*            | NBR                                      | NBR                                      | 1     |
| 4      | Retainer                | Aluminum                                 | Stainless steel (SS316)                  | 1     |
| 5      | Spacer                  | Brass                                    | Brass                                    | 1 set |
| 6      | Lip seal*               | NBR                                      | NBR                                      | 1 set |
| 7      | Spool*                  | Stainless steel                          | Stainless steel (SS316)                  | 1     |
| 8      | Spring                  | Stainless steel (SS304)                  | Stainless steel (SS304)                  | 1     |
| 9      | Sleeve                  | Aluminum                                 | Stainless steel (SS316)                  | 1     |
| 10     | Internal check valve    | Stainless steel / stainless steel spring | Stainless steel / stainless steel spring | 1     |
| 11     | All bolting / plate     | Stainless steel (SS304)                  | Stainless steel (SS304)                  | 1 set |
| 12     | O-ring and seal plate   | NBR                                      | NBR                                      | 1 set |
| 13     | Plug                    | Nickle-plated steel                      | Nickle-plated steel                      | 1 set |

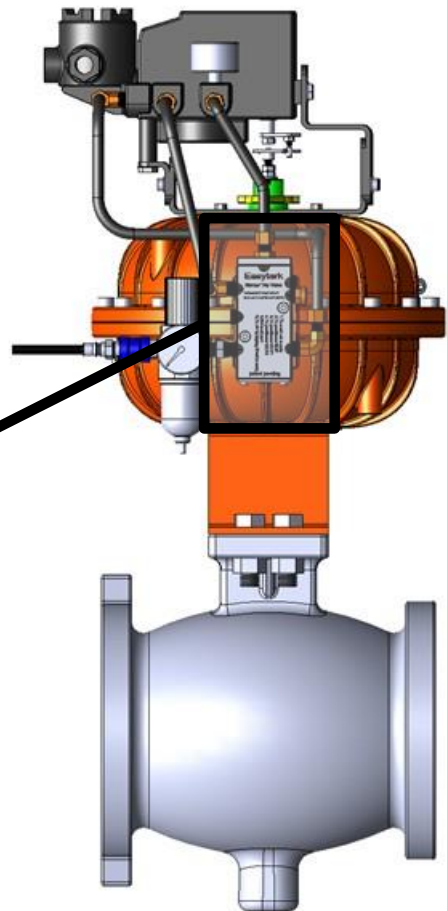
\* Items marked with an asterisk require thin film of lubricant

## Ordering Codes

### Easytork Air Pilot Valve

| Prefix              |   | Product Type        | Model Number |                                                                                                  | EPV Attributes                               |                                                     |                          |
|---------------------|---|---------------------|--------------|--------------------------------------------------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|--------------------------|
|                     |   |                     |              |                                                                                                  | Seal<br>(Temp. Rating)                       | EPV Body Material<br>(Corrosion Rating)             | Thread                   |
| C                   | - | AP                  | -            | X                                                                                                | -                                            | X                                                   | X                        |
| C: Complete product |   | AP: Air pilot valve |              | 1: EPV for EVA-0411 through 1436<br><br>1E: ESV external port for fast acting or models EVA-1646 | 1: NBR seal (-20°C to 80°C or -4°F to 176°F) | 1: Standard (discontinued)<br><br>3: Severe service | 1: Imperial<br>2: Metric |

## NAMUR Trip Valve (For Positioners)



**Patents:**

**USA: 11,280,428**

**All other countries pending**

# 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.

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

Universal Compatibility  
With Any Positioner

IOM video



| Double-acting | Fail-close | Fail-open |
|---------------|------------|-----------|
|               |            |           |

NTV removes problems caused by springs

Case study

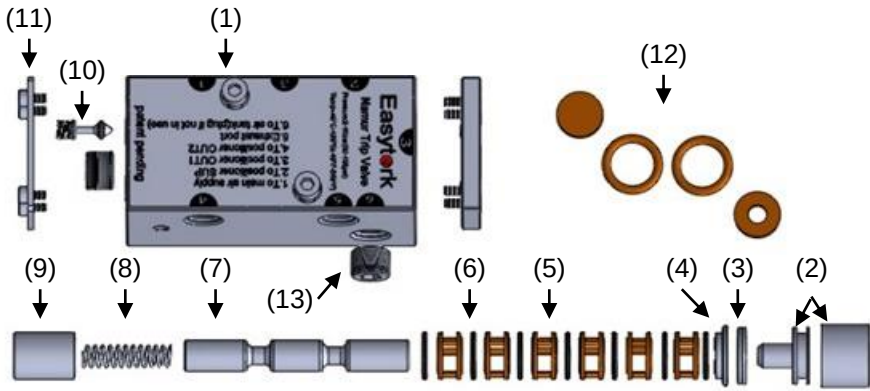


| NTV's closed-loop benefits                                      |                                                                                                               |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
|                                                                 | <p>Easytork's NTV</p> <ul style="list-style-type: none"><li>• Never breathes in or out environment.</li></ul> |
|                                                                 |                                                                                                               |
| <p>Clean internals with years of usage in dirty environment</p> |                                                                                                               |

| Spring-return open-loop problems                                     |                                                                                                                                                                                                |
|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                      | <p>Spring-return actuators</p> <ul style="list-style-type: none"><li>• Always breathes in and out environment, therefore issues in dirty or high-purity environments are inevitable.</li></ul> |
|                                                                      |                                                                                                                                                                                                |
| <p>Actuator breathes in and out the environment in spring-return</p> |                                                                                                                                                                                                |



# NTV Build of Materials



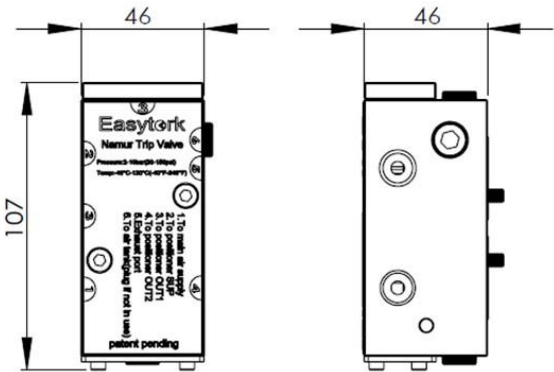
| Ref No | Description             | Standard                                 | Corrosion Rating                         |                | Qty   |
|--------|-------------------------|------------------------------------------|------------------------------------------|----------------|-------|
|        |                         |                                          |                                          | Severe Service |       |
| 1      | Valve body*             | Aluminum                                 | Aluminum                                 |                | 1     |
| 2      | Piston sleeve* / piston | Aluminum                                 | Stainless steel (SS316)                  |                | 1 set |
| 3      | Piston seal*            | NBR                                      | NBR                                      |                | 1     |
| 4      | Retainer                | Aluminum                                 | Stainless steel (SS316)                  |                | 1     |
| 5      | Spacer                  | Brass                                    | Brass                                    |                | 1 set |
| 6      | Lip seal*               | NBR                                      | NBR                                      |                | 1 set |
| 7      | Spool*                  | Stainless steel                          | Stainless steel (SS316)                  |                | 1     |
| 8      | Spring                  | Stainless steel (SS304)                  | Stainless steel (SS304)                  |                | 1     |
| 9      | Sleeve                  | Aluminum                                 | Stainless steel (SS316)                  |                | 1     |
| 10     | Internal check valve    | Stainless steel / stainless steel spring | Stainless steel / stainless steel spring |                | 1     |
| 11     | All bolting / plate     | Stainless steel (SS304)                  | Stainless steel (SS304)                  |                | 1 set |
| 12     | O-ring and seal plate   | NBR                                      | NBR                                      |                | 1 set |
| 13     | Plug                    | Nickle-plated steel                      | Nickle-plated steel                      |                | 1 set |

\* Items marked with an asterisk require thin film of lubricant

# NTV Specification

| NTV Technical Specification                                                                  |                               |  |
|----------------------------------------------------------------------------------------------|-------------------------------|--|
| Operating pressure <sup>(1)</sup>                                                            | 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). |                               |  |

Air flow  
video



(Figures in mm)

# Ordering Codes

## Easytork Namur Trip Valve

| Prefix              | Product Type                   | Model Number                       | NTV Attributes                                                 |                                         |                          |  |
|---------------------|--------------------------------|------------------------------------|----------------------------------------------------------------|-----------------------------------------|--------------------------|--|
|                     |                                |                                    | Seal<br>(Temp. Rating)                                         | NTV Body Material<br>(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<br>3: Severe service        | 1: Imperial<br>2: Metric |  |

About

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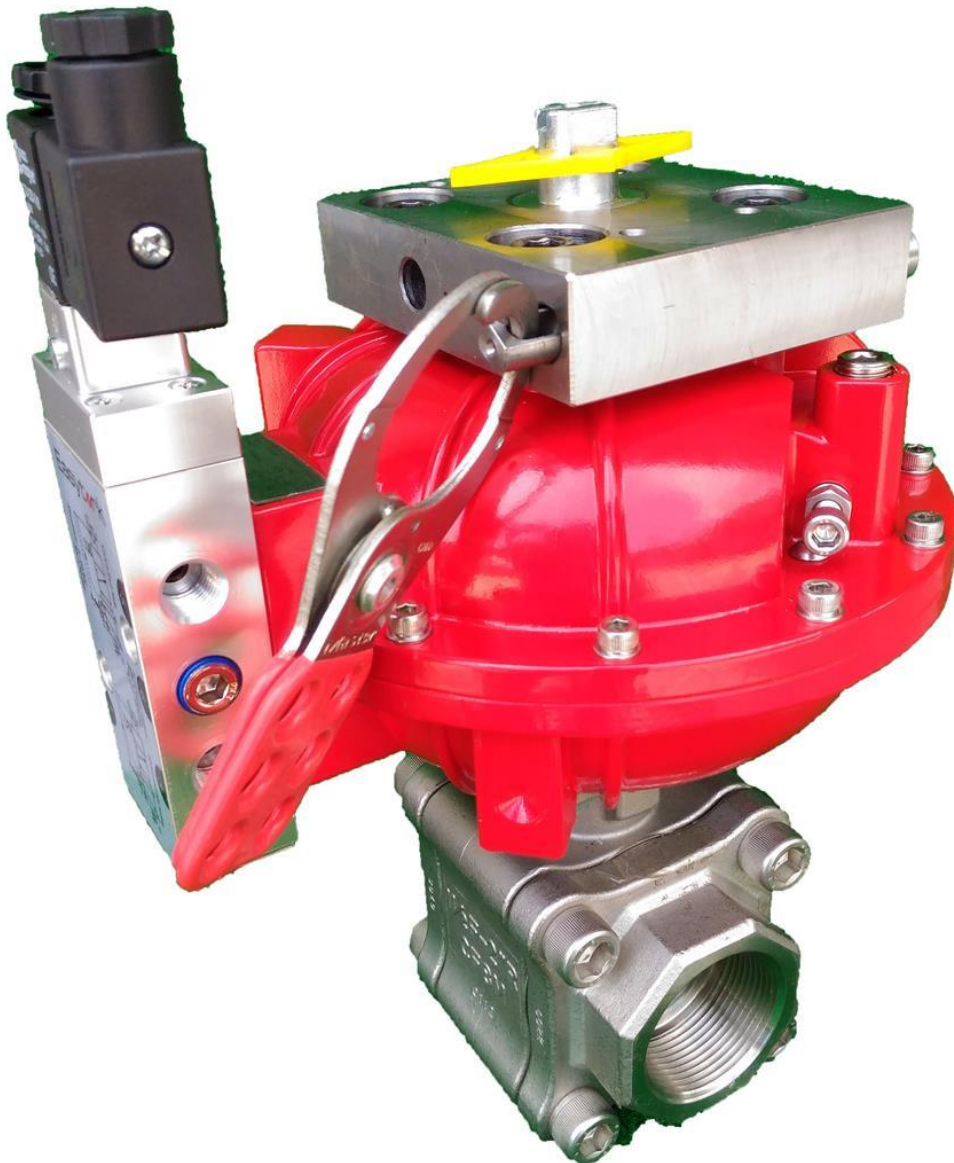


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info@easytork.com  
www.easytork.com

## Lockout Device

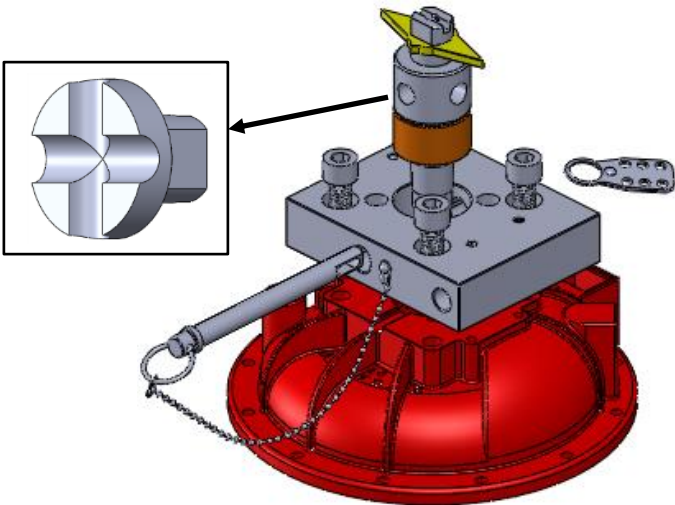


# Lockout Device

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.

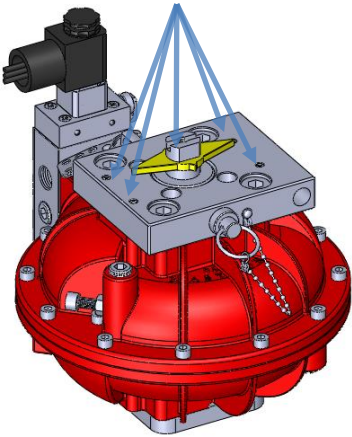
## Compact system

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

## Standards

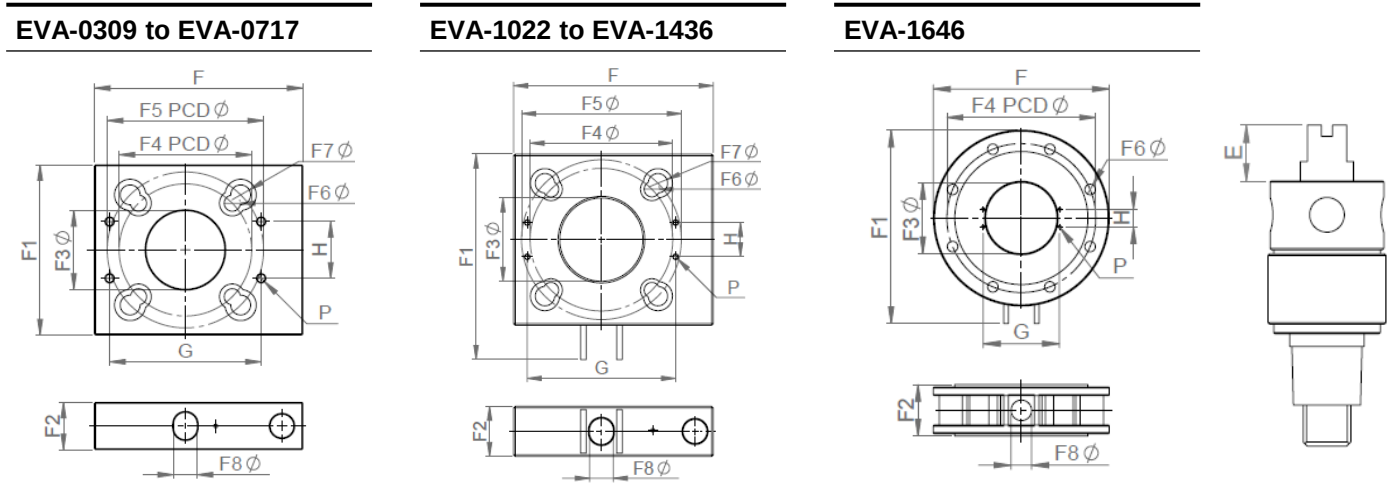
Lockout and PST device does not affect the interfaces of actuator/valve or the attachments of ancillaries.

Actuator can still mount to other actuator auxiliaries



Actuator can still direct mount to VALVE

# Lockout Device Dimensions



| Metric                                    | Model             |                   |                   |                   |                   |                   |                   |                   |          |
|-------------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|----------|
|                                           | Dimensions (mm)   | 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<br>Deep8 | 4-M5x0.8<br>Deep8 | 4-M5x0.8<br>Deep8 | 4-M5x0.8<br>Deep8 | 4-M5x0.8<br>Deep8 | 4-M5x0.8<br>Deep8 | 4-M5x0.8<br>Deep8 | 4-M5x0.8<br>Deep8 |          |

| Imperial                                  | Model                  |                        |                        |                        |                        |                        |                        |                        |          |
|-------------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|----------|
|                                           | Dimensions (inch)      | 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<br>Deep0.31 | 4x10-24UNC<br>Deep0.31 | 4x10-24UNC<br>Deep0.31 | 4x10-24UNC<br>Deep0.31 | 4x10-24UNC<br>Deep0.31 | 4x10-24UNC<br>Deep0.31 | 4x10-24UNC<br>Deep0.31 | 4x10-24UNC<br>Deep0.31 |          |

# Ordering Codes

## Lockout Device

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

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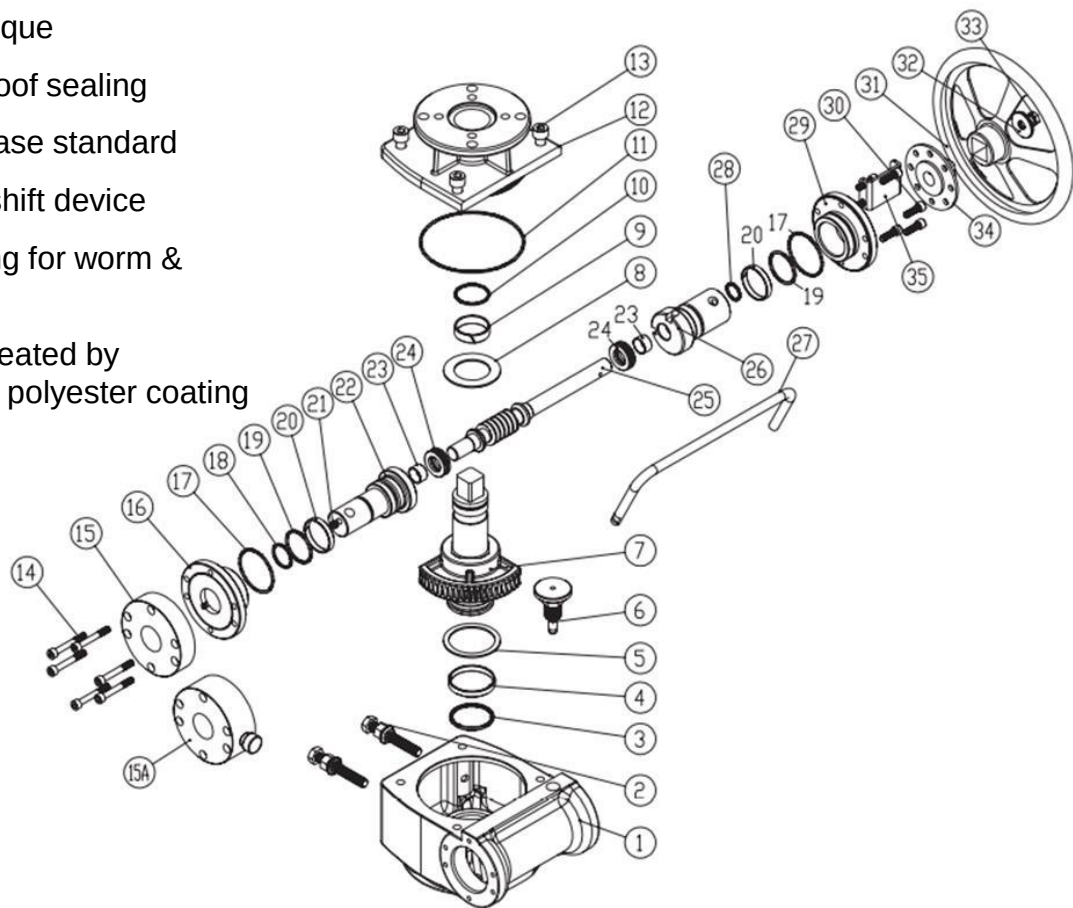
## Declutchable Gear



# 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

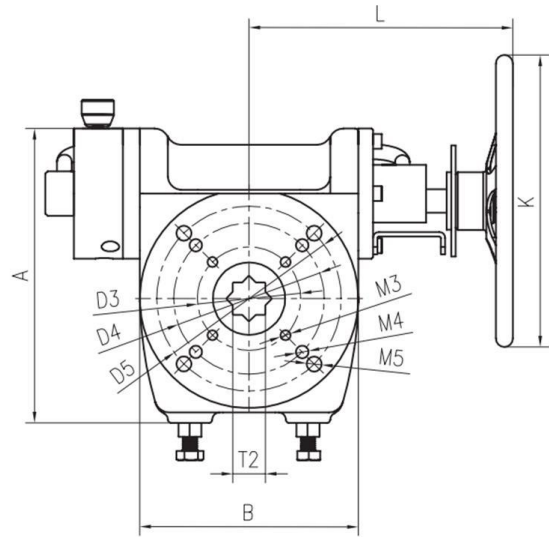


| Ref No | Description      | Qty | Material |
|--------|------------------|-----|----------|
| 1      | Body             | 1   | WCB      |
| 2      | Adjust Bolt      | 2   | SS304    |
| 3      | O-ring           | 1   | NBR      |
| 4      | Bearing          | 1   | POM      |
| 5      | Bearing          | 1   | POM      |
| 6      | Positioning unit | 1   | CS       |
| 7      | Shaft            | 1   | CS       |
| 8      | Bearing          | 1   | POM      |
| 9      | Bearing          | 1   | POM      |
| 10     | O-ring           | 1   | NBR      |
| 11     | O-ring           | 1   | NBR      |
| 12     | Cap              | 1   | WCB      |
| 13     | Screw            | 4   | SS304    |
| 14     | Screw            | 6   | SS304    |
| 15     | Cap              | 1   | CS       |
| 17     | O-ring           | 2   | NBR      |

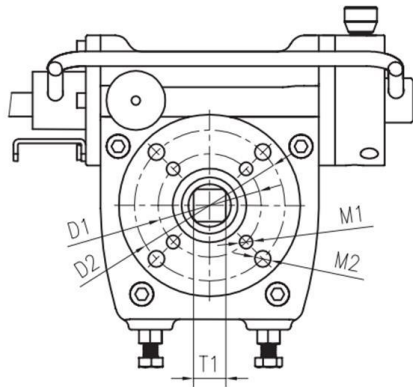
| Ref No | Description         | Qty | Material      |
|--------|---------------------|-----|---------------|
| 18     | O-ring              | 1   | NBR           |
| 19     | O-ring              | 2   | NBR           |
| 20     | Eccentric axle bear | 2   | POM           |
| 21     | Bolt                | 1   | SS304         |
| 22     | Eccentric half axle | 1   | CS            |
| 23     | Bearing             | 2   | Cu            |
| 24     | Thrust ball bearing | 2   | bearing steel |
| 25     | Worm shaft          | 1   | CS            |
| 26     | Eccentric half axle | 1   | CS            |
| 27     | Shift handle        | 1   | SS304         |
| 28     | O-ring              | 1   | NBR           |
| 29     | Cap                 | 1   | CS            |
| 30     | Screw               | 6   | SS304         |
| 31     | Hand wheel          | 1   | D1/20         |
| 32     | Washer              | 1   | CS            |
| 33     | Bolt                | 1   | SS304         |

EGO Series Declutchable Gearbox: Dimensions

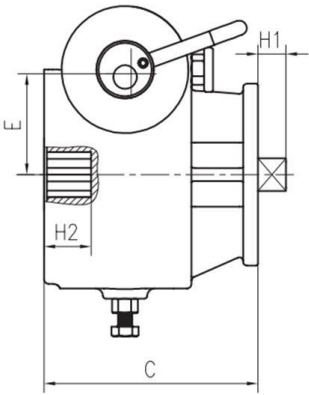
Gear to valve side  
(Bottom)



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 |                          | To Valve Dimension |         |
|--------|-------------------------------------------------|------|---------------|--------------------------|--------------------|---------|
|        |                                                 |      | (in-lb)       | Direct Mount to Actuator | ISO                | 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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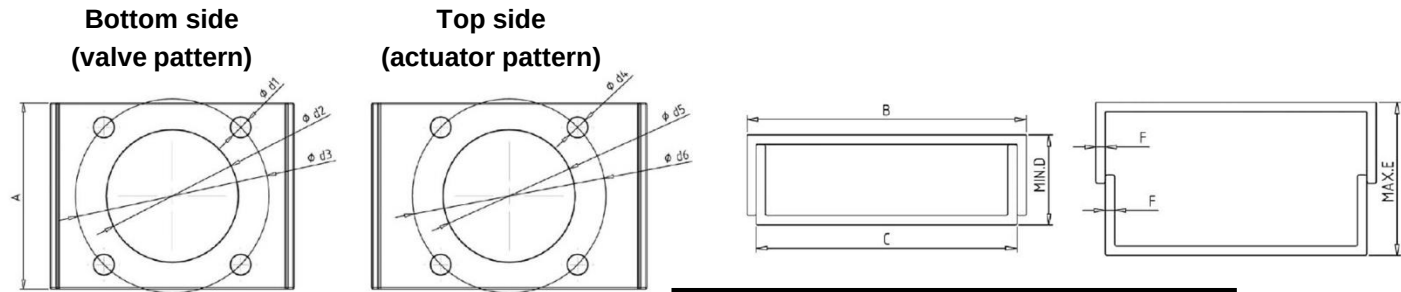
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## Hardware



ISO Mounting Bracket Dimensions



Metric

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

| Bottom Side<br>(ie. Valve Pattern)<br>Availability | Top Side<br>(ie. Actuator Pattern)<br>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<br>(ie. Valve Pattern)<br>Availability | Top Side<br>(ie. Actuator Pattern)<br>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-F05S, F04S-F03S, F04S-F04S, F04S-F05S, F05S-F03S, F05S-F04S, F05S-F05S.

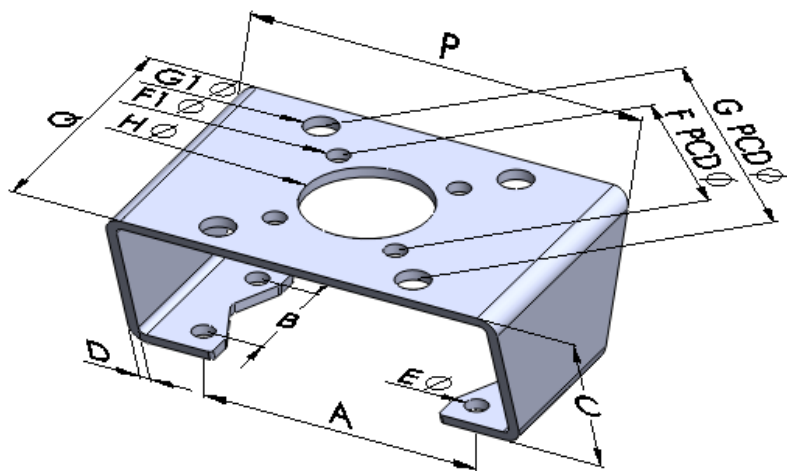


# Ordering Codes

## Mounting Bracket

| Product Type                    | Bracket Material                       | Loose Bracket Parts            |     |                              |     | If Welded                                                         |
|---------------------------------|----------------------------------------|--------------------------------|-----|------------------------------|-----|-------------------------------------------------------------------|
|                                 | Bracket Material<br>(Corrosion Rating) | Bottom Side<br>Valve Pattern   |     | Top Side<br>Actuator Pattern |     | Fill Section Only If Welding<br>Done By Easytork                  |
| B                               | - X                                    | - X                            | - X | - X                          | - X |                                                                   |
| B: Easytork<br>mounting bracket | 2: Stainless steel<br>(SS304)          | Mix and Match Within S Series  |     |                              |     | Define by total height<br>dimension (refer to<br>MIN.D and MAX.E) |
|                                 |                                        | 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 |     |                              |     | Format:                                                           |
| F10XL, F12XL, F14XL             |                                        | F14XL                          |     | 0.0mm                        |     |                                                                   |
|                                 |                                        |                                |     | 0.00in                       |     |                                                                   |
|                                 |                                        | 0: Custom                      |     |                              |     | X: None                                                           |

# NAMUR Mounting Bracket



## Metric

| Dimensions<br>(mm) | Limit Switch Bracket Ordering Code |                    |                     |
|--------------------|------------------------------------|--------------------|---------------------|
|                    | LB-2-                              | LB-2-              | LB-2-               |
|                    | 30x80mm-<br>45mm-X                 | 30x80mm-<br>55mm-X | 30x130mm-<br>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<br>(inch) | Limit Switch Bracket Ordering Code |                    |                     |
|----------------------|------------------------------------|--------------------|---------------------|
|                      | LB-2-                              | LB-2-              | LB-2-               |
|                      | 30x80mm-<br>45mm-X                 | 30x80mm-<br>55mm-X | 30x130mm-<br>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                |

# Ordering Codes

## Limit Switch Bracket

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