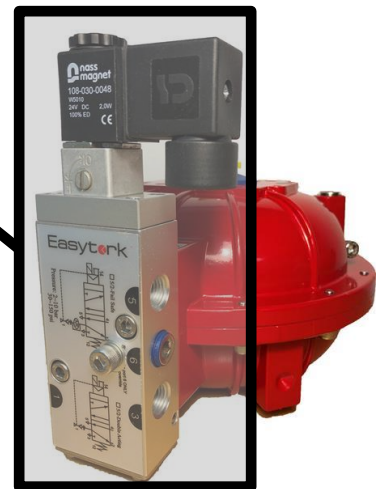


Solenoid Valve ESV Series



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

Double-acting **Fail-close** **Fail-open**

ESV video

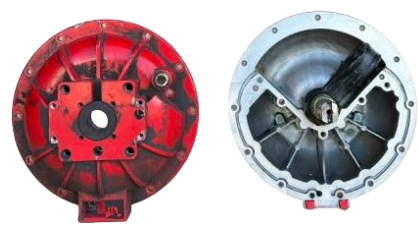


Click QR codes on computer for link

ESV removes problems caused by springs

ESV's closed-loop benefits

Case study



Clean internals with years of usage in dirty environment

- Easytork's ESV
- 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

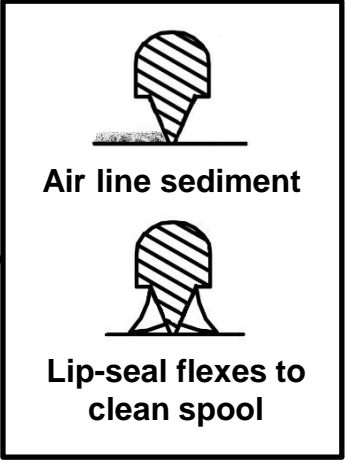
ESV Overview

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.

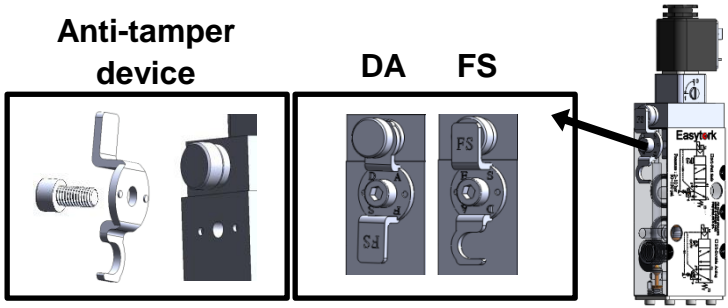
This design also eliminates sticking problems and avoids spiral twist associated with O-rings.

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 1/4" 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 ZL2015 2 0872022.7 2264921

Coil Options

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

Standard Series



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

Ex-Proof Series



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

ATEX EX Series



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

Intrinsically-Safe Series



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

Low Temperature Series



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

Low Power Series



Low power ESV body only good for low power coil.

Technical Data

ESV specifications

Technical Specification

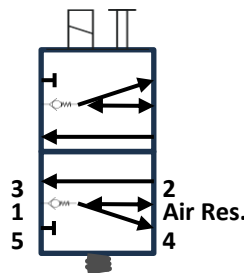
Operating pressure ⁽¹⁾⁽²⁾	2 - 10 bar (30 - 150 psi)
Operating medium	Air (dry or lubricated)
Flow l/min (Cv)	Port size: 1/4" 1750 l/min (Cv = 1.8)
ESV body standard temp. range (NBR) ⁽³⁾	-20°C to 80°C (-4°F to 176°F)

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

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

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

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

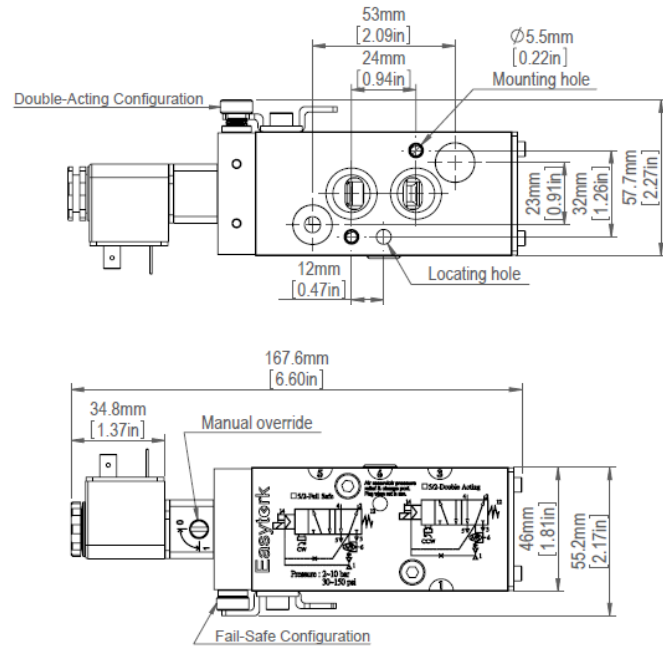
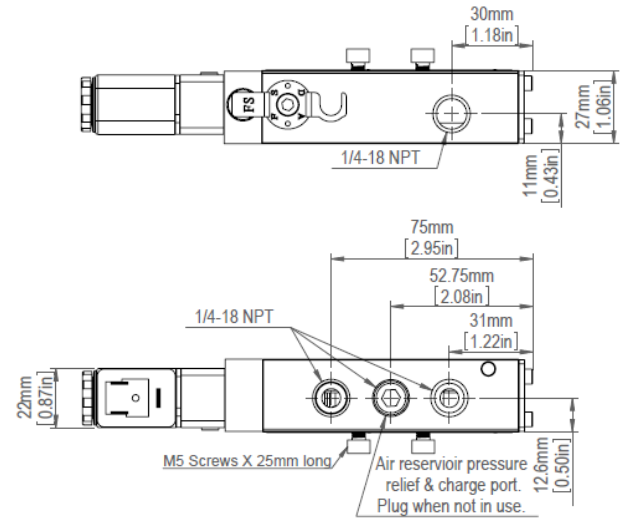
Air flow video



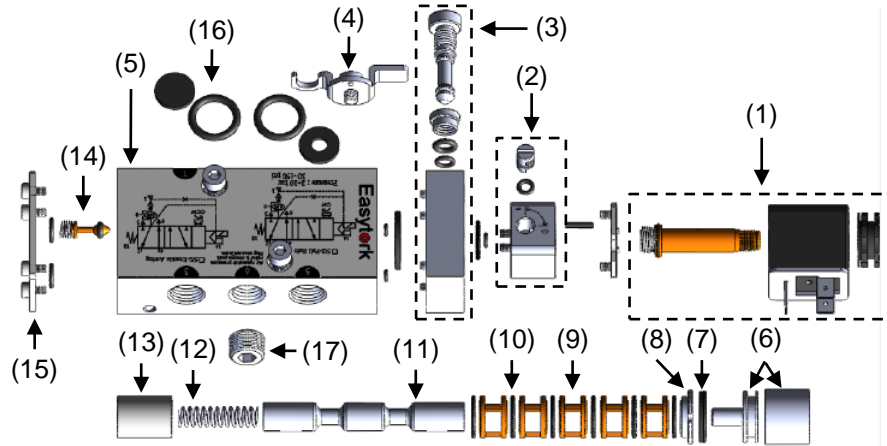
Coil	Voltage Tolerance	Ambient Temp.	Duty Cycle	Voltage	Frequency (Hz)	Output	Max. Pressure
Standard	+/- 10%	-20°C to 50°C (-4°F to 122°F)	100%	24 DC	-	2.0 W	10 bar (150 psi)
				110 AC	50	4.1 VA	10 bar (150 psi)
				110 AC	60	3.3 VA	10 bar (150 psi)
				230 AC	50	3.9 VA	10 bar (150 psi)
				230 AC	60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

Technical Data

ESV dimensions



Bill of material



Ref No	Description	Corrosion Rating		Qty
		Standard Version	Severe Service	
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 (Temp. Rating of ESV) ⁽¹⁾	# of Coils	ESV Body Material (Corrosion Rating)	Thread		
C	S	X	X	X	X	X	X	X	X	
C : Complete product	S : Solenoid valve	1: ESV for EVA-0411 through 1436 1E: ESV external port for fast acting or models EVA-1646	1: Standard 2: ATEX 3: Ex-Proof 4: I-Safe	1: 24VDC 2: 110VAC 3: 230VAC 0: Other (specify)	1: NBR seal (for all coils besides low temp coil, -20°C to 80°C or -4°F to 176°F)	1: Single coil	1: Standard 3: Severe service	1: Imperial 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** **1**

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

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

Coil only (for I-Safe 24VDC)

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

About

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



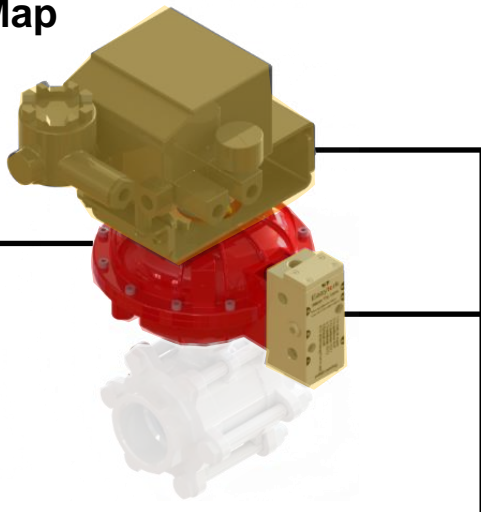
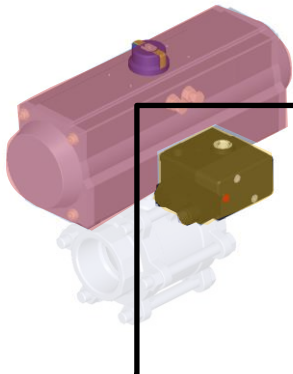
Global Headquarters

2505 Metro Blvd, Suite A / B
 Maryland Heights, MO 63043
 USA

Main Tel: +1-314-266-6880

info@easytork.com
 www.easytork.com

Easytork Product Line Map



One-stop shop:
Everything above the valve

Actuator

Control Accessories

AR & DA System

Vane w/ integrated AR

EVA

Rack & pinion w/ integrated AR

ERPA

Solenoid for AR actuators

ESV

Pilot valve for AR + 3rd party solenoid

EPV

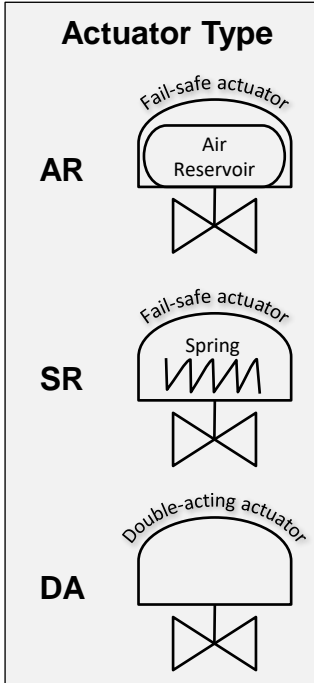
Trip valve for AR + 3rd party positioner

NTV

Open/Close

Control

SR & DA System



Composite solenoid for actuators

CSV

Lockout

LPST

Limit switch

Declutchable gearbox

EGO

Positioner

AR, SR & DA System