

# Zero Emissions Actuation Solutions for Your Natural Gas Pipeline



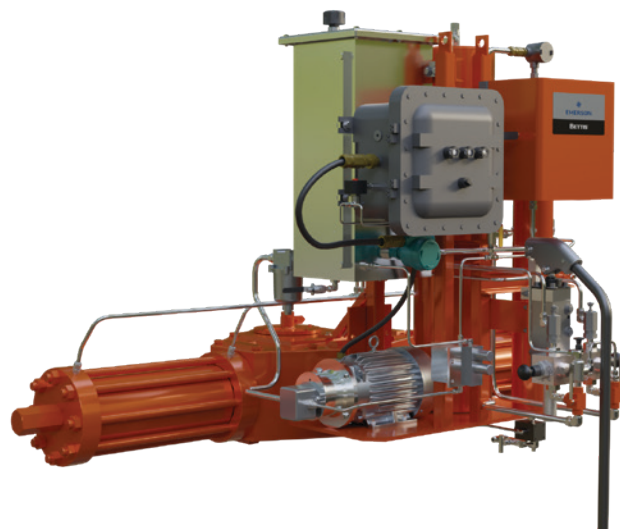
**ECAT™ – Emissions Controlled Actuator Technology**  
A versatile and reliable power system for high-pressure actuators with no associated gas emissions



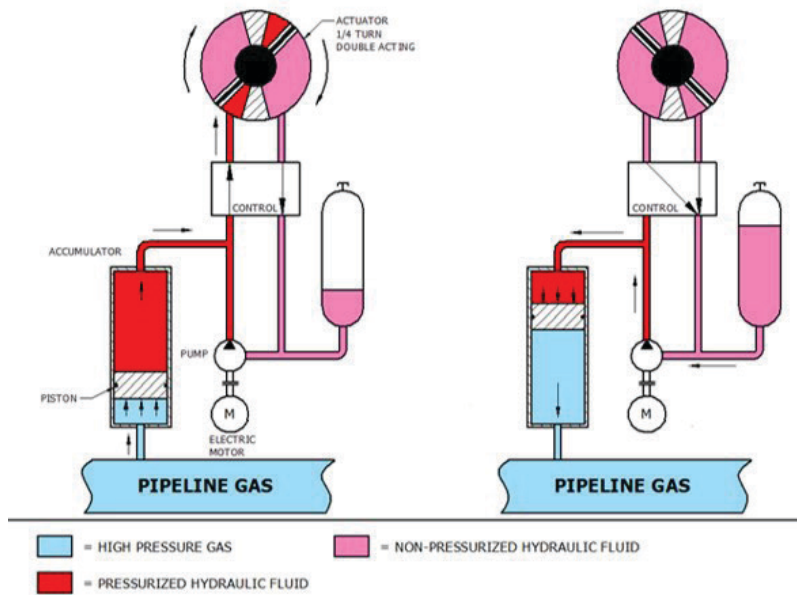
*Meet your emissions  
reduction targets with*

# Emissions Controlled Actuator Technology

*As new regulations require operators to  
reduce natural gas emissions, users are  
challenged to find solutions that perform at  
the same level as gas-powered actuation.  
ECAT suite of solutions will transform your  
valve operating systems into an emissions  
free operation delivering the same reliability,  
compatibility, and performance of your  
existing critical pipeline applications where  
dependability of the equipment is essential.*



# Eliminate High Pressure Vented Emissions



Using pipeline gas to pressurize hydraulic fluid and actuate the valve, the ECAT eliminates high-pressure gas venting from the tanks through the control panel.

## Components

**1** Electric Motor & Pump  
Re-Inject Gas Into Pipeline

**2** Patented Thermal Volume Controller  
Control Motor Start & Stop

**3** Accumulator  
Store Reserve Hydraulic Power  
1 to 2 actuator strokes stored  
Not dependent on electricity

**Power Options:**

- 1 Grid Power**  
Power with existing facility infrastructure
- 2 Solar**  
Combine with solar connection for remote applications without electricity
- 3 Manual Handpump**  
Manually supply stroke reserve for remote applications without electricity



# Minimize Waste, Maximize Savings



## Reduce Emissions



Recover otherwise wasted gas back into your pipeline.

Eliminate high-pressure vented emissions and reduce fugitive emission potential

## Reliable Design and Performance



Proven component design

Low maintenance

Trusted actuator performance and controls

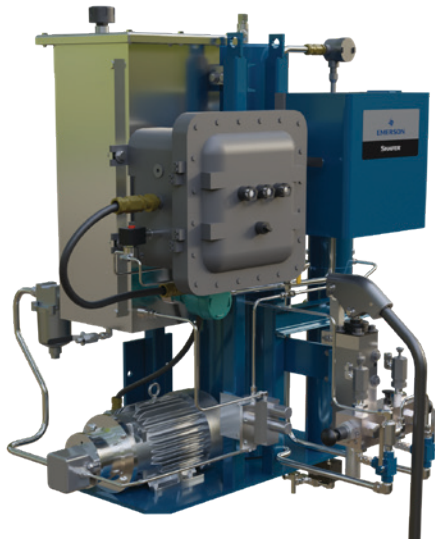
Wide torque range

## Compatible



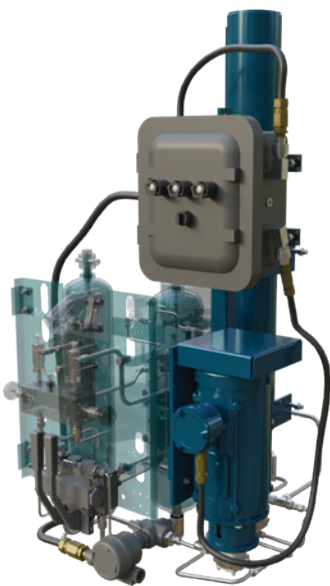
Retrofit onto any actuator

Convert existing assets with ECAT controls without interruption



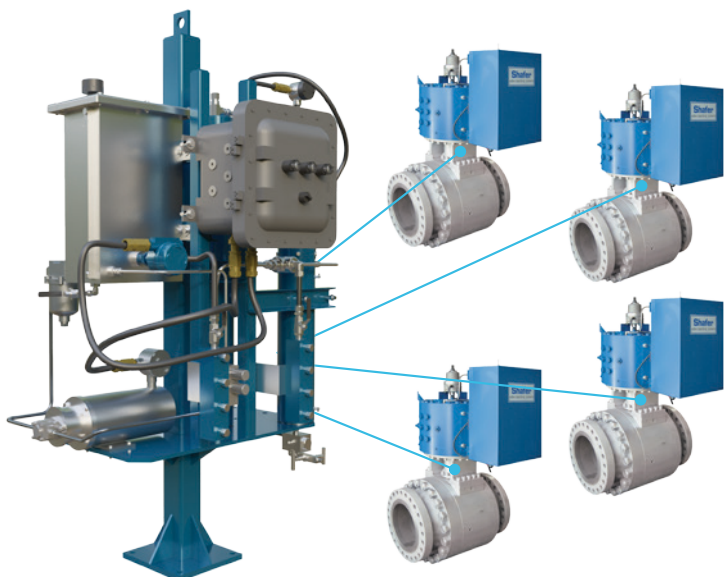
## ECAT

Complete valve operating system (VOS) with actuator and controls ready to mount on valve.



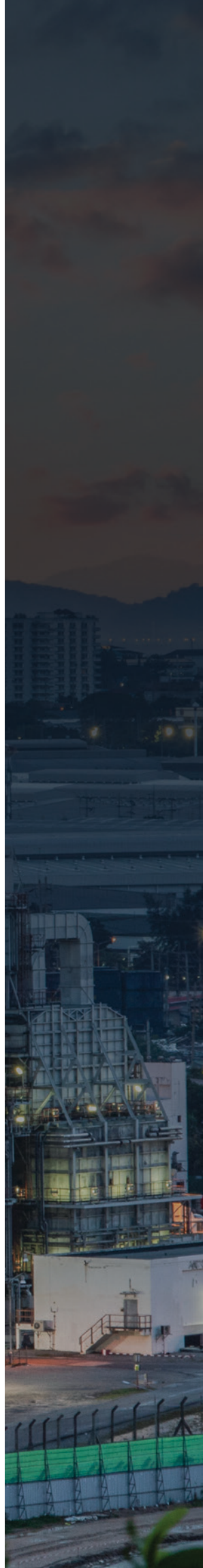
## ECAT Retro

Bolt-on design is field installed, reducing operational downtime.



## ECAT Hub

Centralized power system that operates multiple actuators. Can be used for retrofits, new installations, or a combination of both.

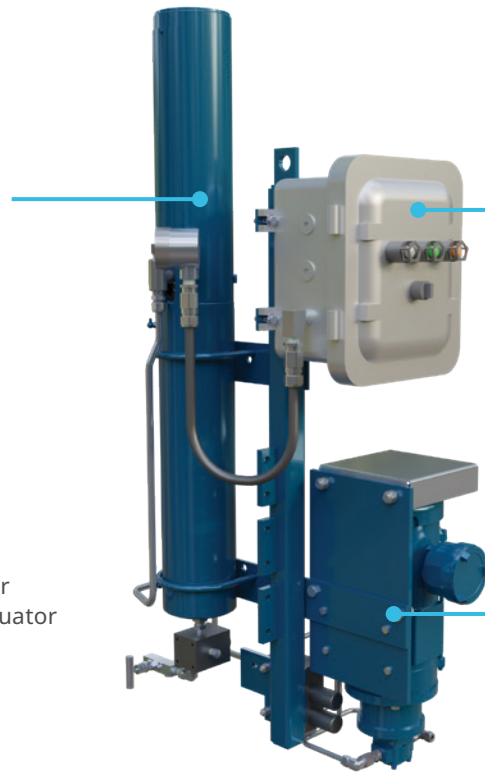


# ECAT Hub Consolidates Redundant Components, Resulting in Lower Cost and Less Maintenance

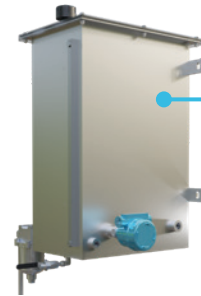
**Thermal Volume Controller**  
 Motor start and stop control  
 Thermal compensation



**Accumulator**  
 Store Reserve Hydraulic Power  
 Up to 2 strokes stored per actuator  
 Not dependent on electricity

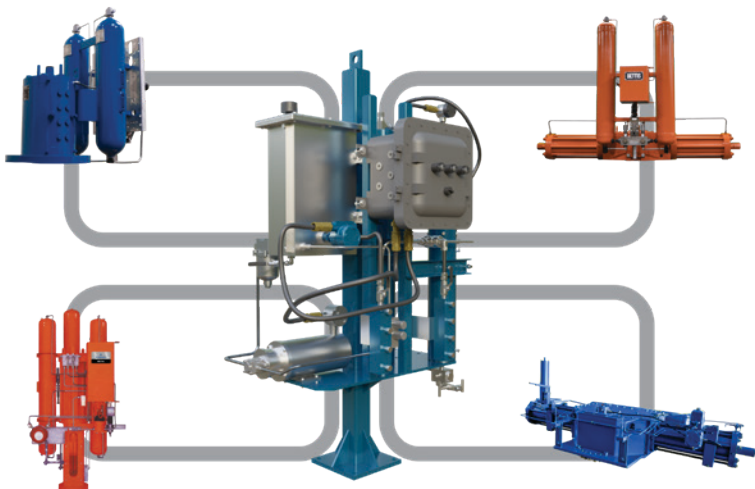


**Electrical Control Enclosure**



**Reservoir**

**Electric Motor & Hydraulic Pump**



**ECAT Hub Savings**

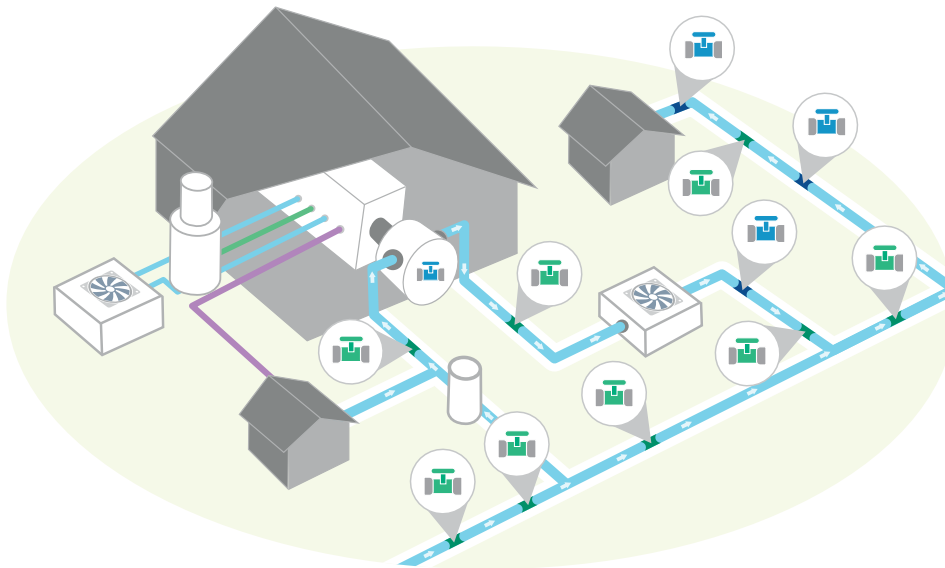








One Hub can serve an entire compressor station (in most cases)

	Compared to New ECAT	Compared to ECAT Retro
CAPEX Savings	10-50%	20-75%

## Without ECAT Hub

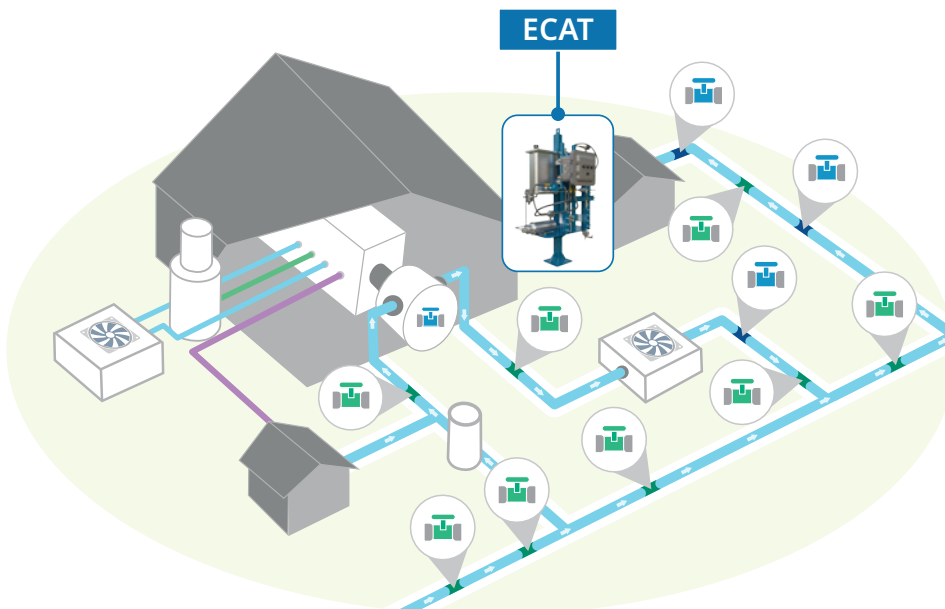
### TYPICAL COMPRESSOR STATION









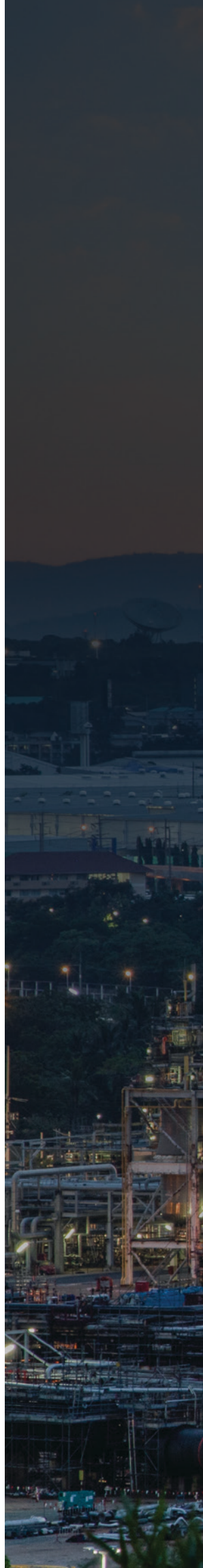
-  Larger Bore (16"-48")  
5-50 kg of CO<sub>2</sub>E/ stroke
-  Smaller Bore (4"-12")  
1-4 kg of CO<sub>2</sub>E/ stroke
-  Natural Gas
-  Fuel Gas
-  Lube Oil
-  Muffler

## With ECAT Hub

### COMPRESSOR STATION

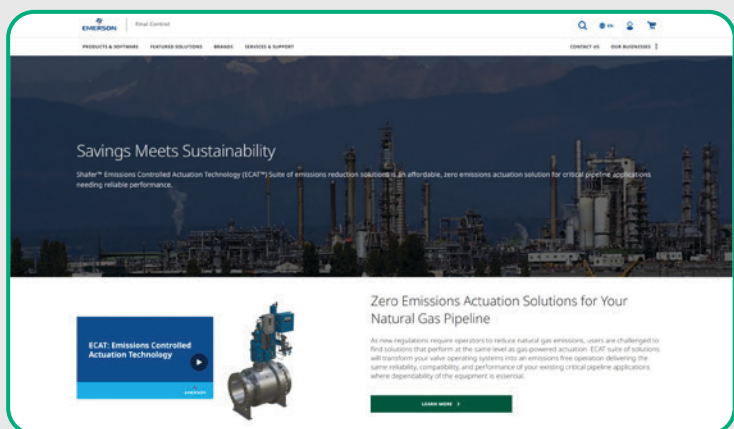


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# Emerson Provides a Wide Variety of Zero Emission Technologies for All Your Project and Installed Base Needs

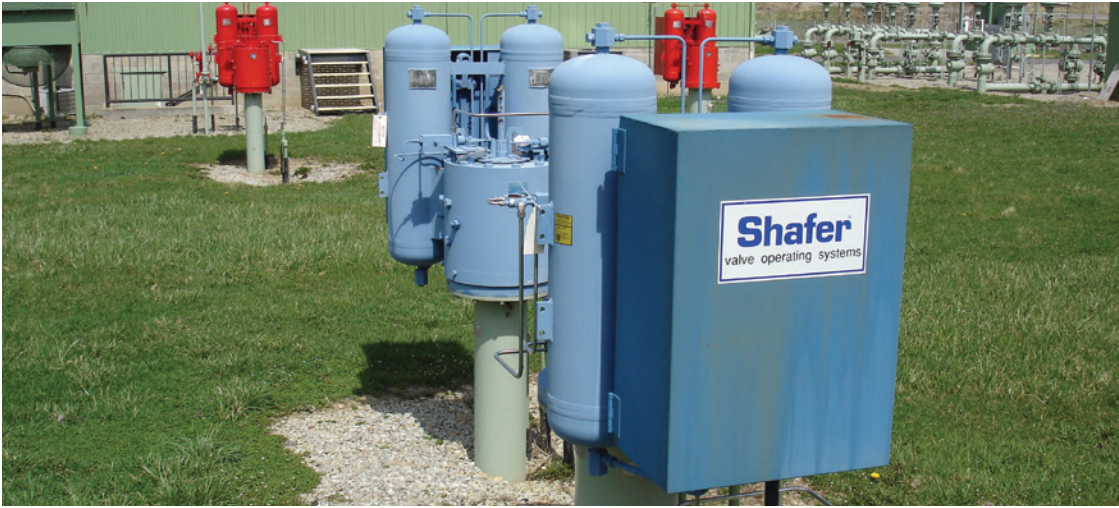
ZERO EMISSIONS SOLUTIONS		
POWER SOURCE	SOLUTION	RECOMMENDED USE CASE
ELECTRIC		Low torque requirement, speed not critical, power already available, valve positioning and modulating
PNEUMATIC		Air compressor already in operation, low to medium torque requirements, fail-safe
ELECTRO-HYDRAULIC		Medium to high torque requirements, fail-safe, valve positioning and modulating High pressure pipeline gas not available
GAS CAPTURE		High torque with fast stroking speeds, high vibration, utilize familiar controls, fail-safe, new and existing equipment



Click the image on the left or scan the QR code to **Learn More..**



# Reliable and Compatible Performance



**SHAFER™**  
**BETTIS™**

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