

The Emergency Shutdown Valve (ESDV) controls process media flow and is responsible for isolating the supply of hazardous gasses and fluids within the pipeline in the event of an emergency. As a result, these valves provide more reliable performance than standard on-off valves.

## Emergency Shutdown Valves Safety Features

### ■ Tight Shut Off

With a double-seated design, ESDV's are rated up to ANSI Class VI shutoff providing bubble tight shutoff.

### ■ Fire Safe

In the event of an emergency, your assets may be exposed to fire, all ESDV's are rated to API 607 Fire Safe.

### ■ Fast-Acting

Quick response is critical to reducing escalation of hazards, ESDV's can go from full-open to full close in less than a second.

### ■ Manual and Automatic Release Options

Users have flexibility on resumption of system operation after shutdown.

### ■ Rugged Design

Designed to withstand shocks and vibrations that could cause false trips, ensuring your systems is up and running when it needs to be

### ■ Customizable Configurations

Several unique configurations can be engineered to meet your specific application's needs

### ■ Certified Safety Integrity Level (SIL) per IEC 61508

The ESDV has been evaluated by an independent third party, those that have not been evaluated are relying solely on manufacturers' product claims

### ■ Capable of Both Local and Remote Partial Stroke Test

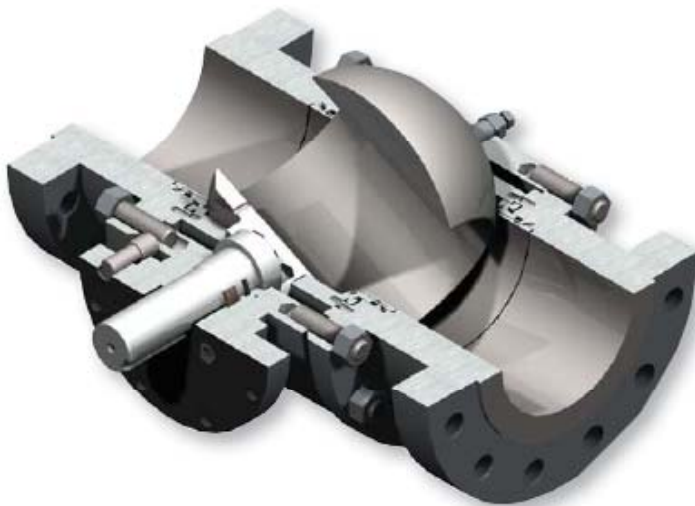
Users can minimize system disturbances to prevent and diagnose potential operational problems



# Emergency Shut Down Valve

## ESDV features are designed for accuracy and dependability

- Trunnion-mounted ball valve
- Fail-safe spring return actuator
- Low emissions design
- Anti-blow out stem configuration
- Fast response time
- Suitable for use in SIL 3 applications



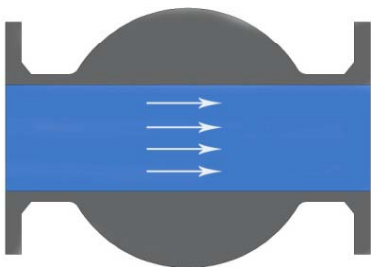
Emergency Shutdown Valve

A full port ball valve's (FPBV) quarter-turn operation allows the valve to close in less than a second when an emergency situation arises.

### Full Open Position – Normal Operation

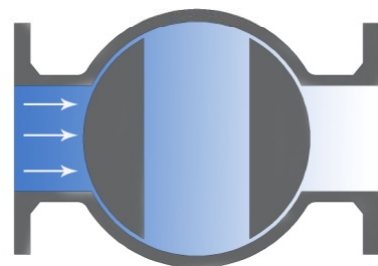
The ESDV provides minimal pressure Differential when the valve is in full-open position.

The full bore ball valve virtually acts like a pipe minimizing process fluid turbulence .



### Full Closed Position – Emergency Situation

Set point pressure has been exceeded and the ESDV has fully closed providing tight shutoff with its double-seated design.



**The Emergency Shutdown Valve is engineered, built and tested with the industry's international standards to ensure product quality.**

## Product Specifications

- Valve Type : Trunnion mounted full port ball valve
- Body Style : Side entry, forged body
- Actuator Type : Single-acting, spring return
- Instrumentation : Pneumatic
- Size Range : 6 – 36"
- Pressure Ratings : ANSI Class 150 - 2500
- Shut Off : Soft seat - tested up to Class VI  
Metal seat - tested up to Class V
- End Connections : RFFE, RTJ, weld end
- Closing Time < 2 second (depending on size)

## Standard Code

- ASME B16.5 -Valve flange dimensions
- ASME B16.10 -Valve face-to-face/end-to-end dimensions
- ASME B16.25 -Valve butt weld ends
- ASME B16.34 -Valve design, test & performance
- API6D -Specification for pipeline valves
- API 607- Fire test for soft-seated quarter-turn valves
- NACE MR0175- Petroleum and natural gas Industries -materials for use in H2S containing environments in oil and gas production
- SIL - Up to SIL 3 per IEC 61508

## Partial Stroke Test Assures Reliability

Since the Emergency Shutdown Valve remains open and not in use for prolonged periods, the system's performance and reliability should be checked periodically but without interrupting the operation. Without proper testing, the probability of this component failing when called upon increases over time. Our technology offers test procedures, such as partial stroke testing, an effective and practical method for testing device functionality.

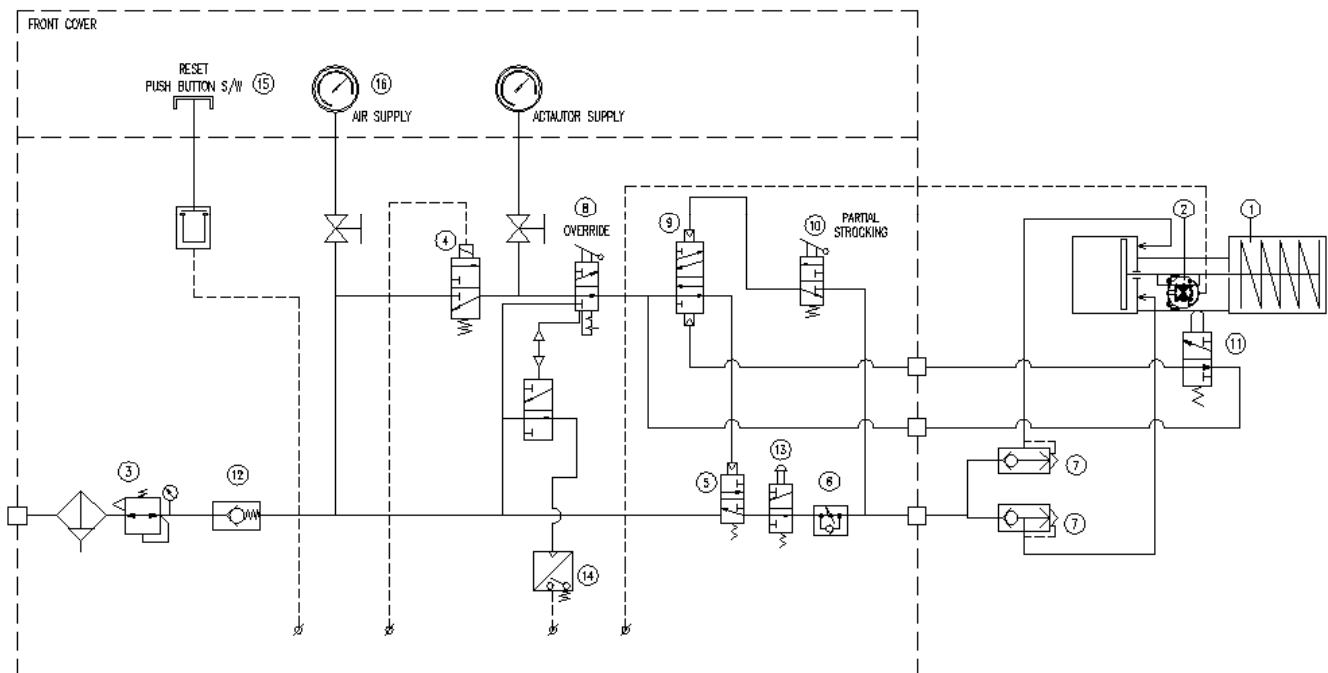
A device that does not have this option is at risk for false trips and potential failure to react when require. Additionally using devices without this capability may required complete shutdown and potentially removing equipment from the line. These types of methods are labor intensive and therefore prone to human error.

Emergency Shutdown Valve is capable of both local and remote partial stroke testing through pneumatic configurations. Using a device that can perform partial stroke testing provides the following benefits

- No operation disruptions
- Eliminates need for bypass line
- Improved SIL rating
- Prevention and diagnoses potential problems
- Even while testing, the valve will still shut if emergency signal received

# Emergency Shut Down Valve

## Partial Stroke Schematic Diagram



PARTS	NAME	PARTS	NAME	PARTS	NAME	PARTS	NAME
1	HEAVYDUTY ACTUATOR	5	MASTER VALVE	9	MASTER VALVE	13	MACHINICAL V/V
2	LIMIT SWITCH	6	SPEED CONTROLLER	10	MACHINICAL V/V	14	PRESSURE S/W
3	AIR SET	7	QUICK EXHAUST VALVE	11	MACHINICAL V/V	15	PUSH BUTTON S/W
4	SOLENOID VALVE	8	3-PORIT MACHINICAL V/V	12	CHECK VALVE	16	PRESSURE GUAGE

## DAEJU CONTROL

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