



STC-1 PRODUCT DATA

## GENERAL DESCRIPTION

The **SUPERIOR® SAFE-T-CLOSE Series STC Valve Actuator** is the newest technology emergency cylinder closure system for compressed chlorine, sulfur dioxide, and ammonia gas containers. The SAFE-T-CLOSE is mounted directly to the container valve and is activated by the close of a dry contact switch, such as one from a SUPERIOR™ Gas Leak Detector, an Emergency Shutoff Switch, or a SCADA system, when a chemical release is detected. SAFE-T-CLOSE automatically closes the cylinder, protecting both equipment and personnel from potentially hazardous releases. The SAFE-T-CLOSE bold design incorporates a 24-volt DC battery charged power source which maintains uninterrupted operations during power outages for up to several days. SAFE-T-CLOSE has local open and close operation and can also be activated remotely. Easy installation requires no special tools. SAFE-T-CLOSE can fit on all cylinder valve orientations with or without auxiliary connections. SAFE-T-CLOSE complies with the Chlorine Institute recommendations and International Fire Codes. SAFE-T-CLOSE valve actuators and controllers are easy to add to your system and are a smart component for your risk assessment plan. The SUPERIOR™ name for safety and at a great price.



## STC-1 TYPICAL INSTALLATION



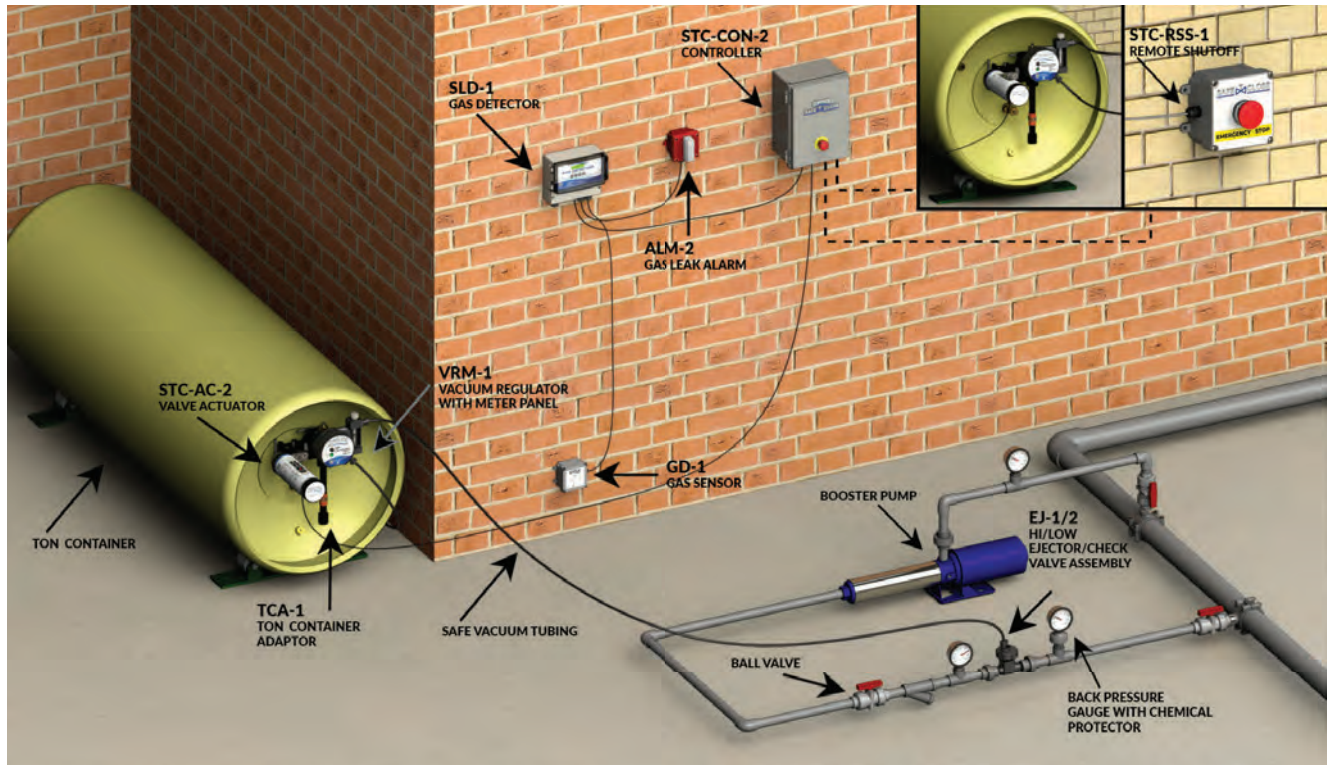
## FEATURES

The SUPERIOR® SAFE-T-CLOSE represents the most advanced design technology coupled with the very best materials available to create the outstanding, user friendly piece of equipment, designed with personal safety as the primary objective. Connection to the cylinder valve is by way of an adjustable screw clamp that does not mount on, or in any way interfere with, any chlorination equipment, yokes, or piping, thereby avoiding any chance of loosening or damage.

1. SUPERIOR® SAFE-T-CLOSE actuators are powered by high capacity batteries kept at full charge by an internal battery maintenance circuit and can supply several days of standby power.
2. Internal relays for low battery alarm, open or closed status of each actuator, and emergency close activation.
3. SAFE-T-CLOSE provides both open and close operation at each actuator, individually at the valve, or together from the controller.
4. Allows for placement of several remote emergency close buttons in other areas where personnel can activate shutoff manually.
5. No special tools required for installation. The standard cylinder valve wrench is the only tool needed.
6. The only operator maintenance is occasional battery replacement when needed. Easy to read input voltage indicator is standard.
7. No annual calibration or service is required.
8. Adjustable valve opening rotation can be specified at 90, 180, and 360 degree actuation from the factory.
9. Control panel mounted emergency close button.
10. Actuator unit's robust design is o-ring sealed.
11. NEMA 4X controller enclosure.
12. Controller available to operate up to (6) actuators (optional).
13. Integrated power supply voltage switch for installing in 120V or 240V environments.
14. 2 year warranty.



## STC-2 TYPICAL INSTALLATION



## SYSTEM OPERATION

The Safe-TClose valve actuator is mounted onto a cylinder valve stem and held tightly in place with a positive clamp around the valve body. The positive clamp design mounts directly to the cylinder valve, not a yoke. One or more Safe-T-Close actuators can be connected to a single controller which can be connected to a Gas Detector, Scada System, or manual emergency shutoff switches that will signal the controller to automatically trigger each actuator to close its cylinder valve. Additional remote actuator switches can be located in areas where plant personnel can access them without entering the gas container area. Relays in the controller can be connected to external alarms to indicate that the actuators have been closed. The 24 Volt DC actuators are powered through a battery system in the controller enclosure, which are automatically kept charged via the standard onboard battery maintenance circuit. LED indicators on the actuator indicate the status of the valve.

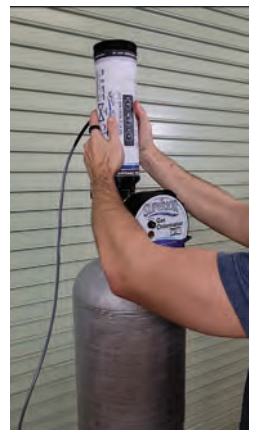
When the controller receives a signal from a gas detector (for example) indicating a gas leak in the area it then drives the actuator(s) motor to close the cylinder valve. The Safe-T-Close motor applies a closing force to the cylinder valve shaft, closing the valve until it is seated. The amount of torque applied to the valve shaft is automatically limited to 50 foot pounds, as recommended by The Chlorine Institute, to avoid damaging the valve components, while effecting a tight seal. Relays located on the controller PC board can send signals to remote devices, such as a SCADA system, to indicate an emergency closure as well as to indicate the open/close status of each actuator. Low battery status alarm contacts are also provided.

## MATERIALS OF CONSTRUCTION

One of SUPERIOR's® major competitive advantages is the use of the finest, strongest and most durable materials available. Extensive use of rigid synthetic PVC polymers and anodized aluminum allow SUPERIOR® Safe-T-Close valve actuators and emergency shutoff controllers to give the longest operational life.

## ONLINE INSTALLATION INSTRUCTIONS

SUPERIOR™ SAFE-T-Close valve actuators are operator friendly and easy to install. Chemical Injection Technologies, Inc. provides user friendly instructions, right on the actuator label. Online video installation instructions are also available and are easy to follow. This QR code leads to your installation video instructions.



# SPECIFICATIONS

The Emergency Shutoff Valve Actuator shall be the SUPERIOR Safe-T-Close Model \_\_\_\_\_ by Chemical Injection Technologies, Inc., Ft. Pierce Florida. The actuator shall be capable of both opening and closing the cylinder valve of a (150# gas cylinder/ one ton gas container).

The actuator shall be of modular design consisting of an electronic controller box, and one or more valve actuators. The controller shall be housed in a NEMA 4X enclosure and shall have an internal battery charger, two (2) 12 volt power supply and backup batteries, and will provide 24 volt DC power to each connected actuator. The high capacity batteries shall be kept at full charge by an internal battery maintenance circuit and can supply backup power up to a week. The controller shall have a main power input supply of 120/240 VAC 50/60 Hz. The controller shall be supplied with 30 Ft. of cable to connect to each supplied actuator.

The actuator(s) shall be housed in an O-ring sealed unit with no user serviceable parts inside. It shall require no annual calibration or service. Adjustable valve opening rotation can be specified at 90, 180, or 360 degrees. The Safe-T-Close actuator(s) shall be mounted directly onto the cylinder valve(s) with a self-centering screw clamp which will not interfere with chlorination, sulfur dioxide, or ammonia equipment, yokes, or piping. No special tool shall be required for installation. A standard cylinder valve wrench is the only tool required.

The emergency actuator system shall automatically close the cylinder valve(s) and is activated by the close of a dry contact switch, such as on from a gas leak detector, a SCADA system, or remotely from an emergency shutoff switch located on the face of the controller box as well as additional remote switches connected to the controller box. Each individual actuator shall also be capable of manual opening and closing utilizing buttons on the outside of the actuator with 3.5" LED indicators for "Open", "Close" and "Set". The LEDs shall also function as diagnostic indicators. The actuator(s) shall automatically limit closing torque to 50 footpounds as recommended by the Chlorine Institute.

The Safe-T-Close system shall have output relays to provide indication of the Open/Close status of each actuator, and a low battery alarm. A storage bracket for each actuator shall be provided for convenience when changing gas containers.



Add RSS-1 for additional remote shutoff locations.

SUPERIOR™ products are proudly made by Chemical Injection Technologies, Inc.  
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## SPECIFICATIONS STANDARD ACCESSORIES

- 30 ft. - Shielded Actuator Signal Cable
- 1 Actuator Storage Bracket

## SAFE-T-CLOSE PRODUCTS

STC-AC-1:	VALVE ACTUATOR FOR USE WITH SINGLE 150# CYLINDER
STC-AC-2:	VALVE ACTUATOR FOR USE WITH SINGLE TON CONTAINER USED WITH TON CONTAINER MOUNTED VACUUM REGULATOR
STC-AC-3:	STC-AC-3 ACTUATOR + (1) STC-CON-1 CONTROLLER FOR SINGLE TON CONTAINER USED WITHOUT TON CONTAINER MOUNTED VACUUM REGULATOR OR FOR USE WITH FLEX CONNECTOR
STC-CON-2:	CONTROLLER FOR USE WITH 1 OR 2 ACTUATORS
STC-CON-6:	CONTROLLER FOR USE WITH UP TO 6 ACTUATORS
STC-RSS-1:	REMOTE SHUTOFF SWITCH FOR ADDITIONAL SHUTOFF LOCATIONS

## OTHER SUPERIOR™ SOLUTIONS AVAILABLE

- SUPERIOR™ GAS DETECTOR
- VAS-4 VACUUM ALARM SAFETY DEVICE
- INSTRUMENTATION, ANALYZERS, & CONTROLS
- CHLOR-CLEAR EDUCTOR TUBE CLEARING SYSTEM
- GAS CHLORINATORS UP TO 10,000 POUNDS PER DAY (200 KG/HR)
- GAS SULFONATORS (DECHLORINATOR)
- GAS AMMONIATORS
- AUTOMATIC FLOW PROPORTIONING CONTROL
- AUTOMATIC RESIDUAL CONTROL
- ULTRA™ CHLORINE RESIDUAL WATER QUALITY ANALYZER

