

# Operating Manual

## VTI Actuator

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### Distribution

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### Scope

This document explains the process for re-configuring VTI Actuators. Models included are VTI-04, VTI-05, VTI-06, VTI-08, VTI-10, in both spring return “SR” and double acting “DA” versions.

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### Amendments

Issue	Date	Revisions
1	Jan 01, 2013	First Issue

## Warning

Prior to disassembling the actuator, insure that the air supply and all electrical connections have been disconnected.

## Lubrication

All moving parts are factory lubricated for cycle life with no further lubrication required. When applied to high cycle or severe environmental conditions additional lubrication may be required.

## Air Supply

Filtered dry or lubricated air, clean chemical-free water or light hydraulic oil may be used. For versions of the VTI actuator with accessories, the standard filter/regulator meets this requirement. Use of other non-corrosive gases should be verified with Engineering prior to use.

## Manual Operation

Actuators must be fully de-pressurized prior to manual operation, using suitable vent valves. Double acting actuators (VTI-04DA, VTI-05DA, VTI-06DA, VTI-08DA, VTI-10DA) may be manually operated using suitable hand levers or gear boxes, as required.

## Installation

Actuators may be mounted in any orientation. When installing actuator on valve, insure that actuator drive bore and valve shaft are in alignment. Mis-alignment may cause excessive friction, binding and/or premature seal failure. Actuators should be stroked to verify proper alignment.

## Adjustment

Actuators have a 90 degree stroke, which may be adjusted  $\pm 3$  degrees by adjusting screws in the end cap. In practice, most VTI Actuators will be sold and assembled with the Integral Stop Mounting Kit, which insures that the actuator will never over travel on the valve.

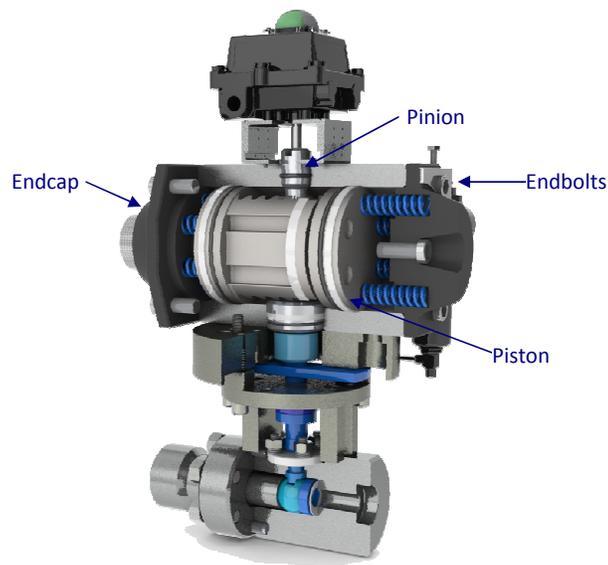
## Accessories



VTI Actuators come pre-assembled with accessories, or just by themselves. For the version with accessories, a limit switch, filter/regulator and solenoid valve with interchangeable coil are provided.

## Disassembly

- Remove end bolts from end cap using cross corners method to equalize bolt loading.
- Remove end caps.
- Rotate pinion counter-clockwise to remove pistons from body. (Clockwise if set up for Fail Open).
- After piston removal, remove circlip from pinion.
- Removal of circlip allows the pinion to be removed from the body by lightly pressing from accessory side.
- Replace as necessary, or replace all "soft goods" as contained in spare repair kit. This consists of piston guide, pinion guide ring, "O" ring, pinion guide ring, "O" ring, plug, "O" ring, piston guide ring and "O" ring.



## Assembly

- Install pinion, thrust washer, and circlip.
- Install pistons by pushing into cylinder simultaneously and rotating pinion.
- Install end caps (with springs if Spring Return) and bolt in place using cross corners bolting sequence.
- Reinstall solenoids, switches.
- Actuator is ready for re-installation on valve.

### **How to change a fail open actuator into a fail close actuator**

- Stop pressure feeding to actuator. The valve is in open position with the disc at 90°.
- Stop pressure feeding to piping.
- Stop electrical feeding to solenoid valve, if present.
- Remove the 4 screws which fix the actuator to the flange of the valve
- Take off the actuator from upside.
- By means of a key, move the disc in fail close position 0°.
- Mount the actuator on the valve making sure to adhere to the flange
- Tie the screws which fix the actuator to the flange of the valve. Wait before closing definitively.
- Feed the actuator and make 2/3 maneuver in order to check the functioning.
- Replace the 4 screws which fix the actuator to the flange of the valve.
- Open the pressure feeding to piping and electric feeding to solenoid valve, if present.

The disc is fail open when air passes through, the disc is fail close when there is no air in, because of the springs.

### **Adding or removing Springs**

- Disassemble actuator end caps as described above.
- Spring cartridges may be added or deleted as required to obtain the appropriate spring end torque.
- Springs are to be installed in specific locations dependent on number, shown as solid circles below.
- Reassemble actuator end caps.