Electrohydraulic Actuated

Main Burner Oil Valve Systems

System Description

The Skotch Trifecta is a valve system with all components housed within a single body utilized with oil fired burners requiring steam or air atomization. Model T1001 is a fail in last position precision built switching valve system, while Model T1003 is designed to fail in the closed position. Both offer Trifecta's proven performance advantages over separate valves or packaged multiple valve systems, including:

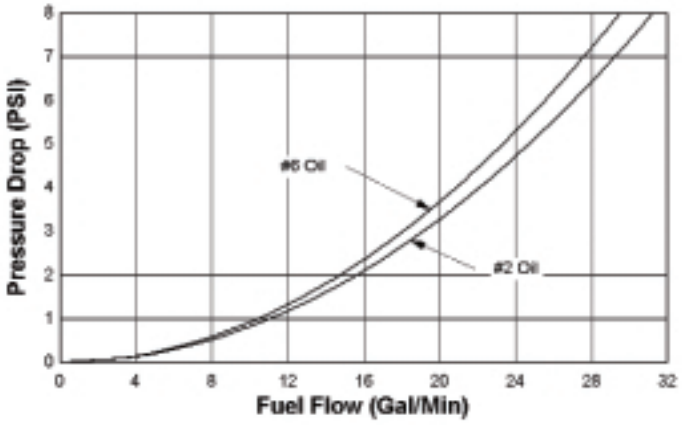
- Prevention of out-of-sequence operation, eliminating contamination of the atomizing or purging media.
- Purge sequence is an integral part of our valve closure, allowing almost instantaneous switching from firing to purging modes.

Actuation

The T1001/T1003 valves use an electrohydraulic actuator requiring only 110VAC or 220VAC power. Operation is as follows:

- Signaling the valve to move from closed to purge or fire causes an internal pump to pressurize a cylinder and push the atomizing valve stem down.
- A force limit stops the actuator when the atomizing valve contacts the purge seat and the valve is in the fire position.
- Signaling the valve to move from fire to purge or closed causes two dump valves to open, relieving hydraulic pressure and allowing a spring to move the valve stem up.
- Model T1001 uses normally closed dump valves for energize to trip, fail in last position operation.
- Model T1003 uses normally open dump valves for deenergize to trip, fail closed operation. This version is Factory Mutual approved, when incorporating appropriate accessories.

T1001/T1003 Valve Systems



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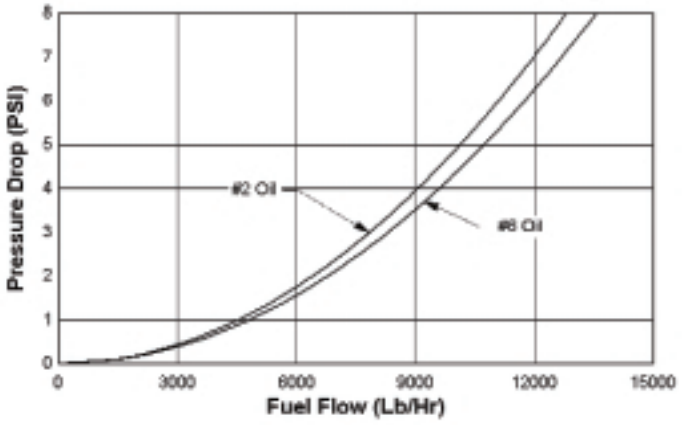
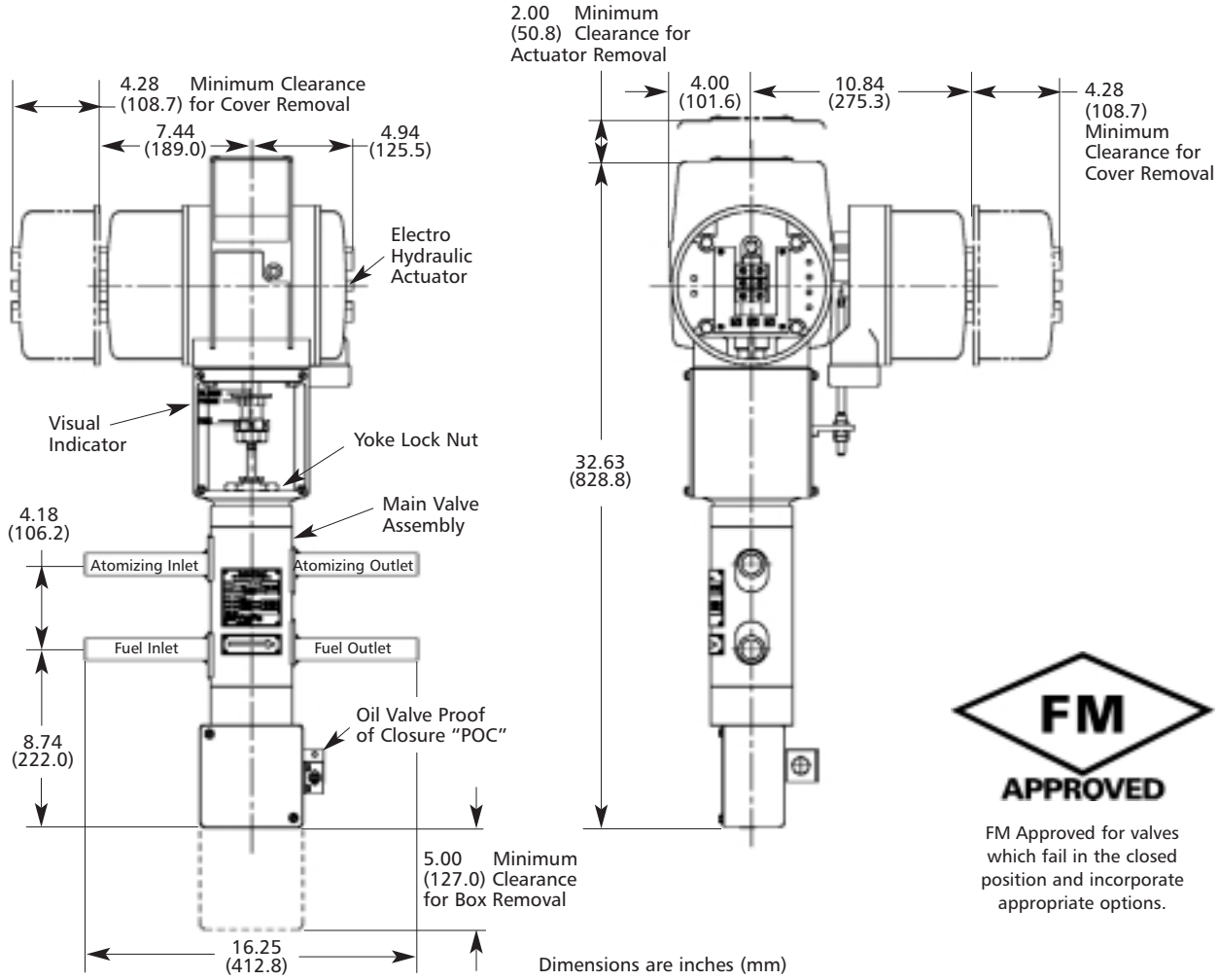


Dimensional Specifications for the T1001/T1003



FM Approved for valves which fail in the closed position and incorporate appropriate options.

Dimensions are inches (mm)

Specifications for the T1001/T1003

Design Pressure and Temperature
Standard Valve: 300 PSIG @ 450° F
Optional: 1100 PSIG (fuel) @ 450° F
Maximum Differential Pressure:
Equal to design rating
Sizes: ¾" or 1"
Other sizes available on request
End Connections:
Sch. 40 or 80 Spigot Weld, Butt Weld, ANSI CL. 300 Raised Face Flange, socketweld
Male NPT in Sch. 80
Flow Orientation:
Left-to-right or right-to-left
Field reversible (consult factory)
Failure Mode: Closed or last position
Shutoff Classification:
Per ANSI/FCI 70-2
Atomizing seat – Meets or exceeds CL. IV
Purge seat – Meets or exceeds CL. IV
Fuel seat – Meets or exceeds CL. VI
Total Stroke: 1 ¼" for both models

Operating Speed:
Opening – Approximately 25 seconds
Closing – Oil valve closure in approximately 1 second, full closure in approximately 2 seconds
Ambient Temperature Rating:
Standard: 140°F (FM approved)
Optional: 180°F (non-FM approved)
Electrical Rating:
Nema 4 and 13 standard
Switch Rating:
Auxiliary Switches SPDT – 15 Amps @ 125 VAC
Proof of Closure Switch – 10 Amps @ 125 VAC
Voltages: 110 VAC, 220 VAC, 50/60 Hz
Weight: Approximately 85 lbs per valve assembly depending on options selected.
Cv Ratings:
Atomizing Cv – 10.0
Purge Cv* – 3.5
Fuel Cv – 10.0
*Note Total Atomizing flow in Purge position is limited to the atomizing Cv.