

# Main Steam Isolation & Vent

## Innovations in Boiler Purge

**Plant Type:** Subcritical  
**Location:** Take-off from Main Steam Line,  
Immediately Exiting Boiler  
**Service:** Steam  
**Temperature:** 1010°F / 544°C  
**Pressure:** 2650 psig  
**Size:** 6 x 4 inch  
**Class:** ASME 2500 Special Class  
**Materials:** Ball / Seat – 410 SS / Chrome Carbide  
Inner Stem Seal – Stellite 3  
Body – F22  
**Cycling:** Low, Rapid Operation  
**Testing:** MSS-SP-61  
**Operator:** Morin Pneumatic, Spring Return

**Application:** Used during boiler maintenance, these main steam isolation and vent tandem C-Series valves are utilized for a new boiler tube purge system. While the plant is offline, the tubes inside the boiler are filled with 130 psi of compressed air. The air is mixed with loose slag and other debris that have collected in the boiler tubes throughout the maintenance outage. The manual valve is then opened and the automated valve is cycled rapidly releasing the pressurized air and debris to atmosphere.

The MOGAS C-Series, which is made in accordance with boiler codes, was chosen for this application for its large bore and ability to handle rapid, quarter-turn operation without breakdown of internal components. It is critical that the manual valve provide a tight seal during online operation to avoid leaking valuable steam to atmosphere. The automated valve needs to operate from full close to full open within two seconds to create enough velocity to shake free the slag and boiler crud that has shifted into the boiler tube elbows.



*The C-Series valve was chosen for our customer's Boiler Purge System because of the rapid operation available with quick, quarter-turn rotation and absolute shut-off. These photos were taken during a routine maintenance shutdown with part of the insulation removed.*