

Mobrey

Sequencing & isolating valve for boiler controls

Introduction

A Sequencing Valve designed for isolation and blow-down of Mobrey boiler controls having side and bottom, or top and bottom, steam and water connections. Blow-down of the float chamber and water connection is effected separately and in a pre-determined sequence.

A ratchet mechanism incorporated in the handwheel ensures that once the operation of the valve has been started it cannot be returned to its normal working position without going through the fill sequence of blow-down procedure.

Mobrey Sequencing Valves are interchangeable with existing combined angle and blow-down assemblies of corresponding size.

Sequence of operation

- 1 Turn handwheel clockwise until valve is in mid-travel position. Remain in this position for a minimum of 10 seconds to ensure full blow-down of water leg
- 2 Continue to turn handwheel clockwise to full extent of travel. Remain in this position for a minimum of 10 seconds to ensure full blow-down of float chamber.
- 3 Return valve to normal working position by turning handwheel anti-clockwise to full extent of travel.

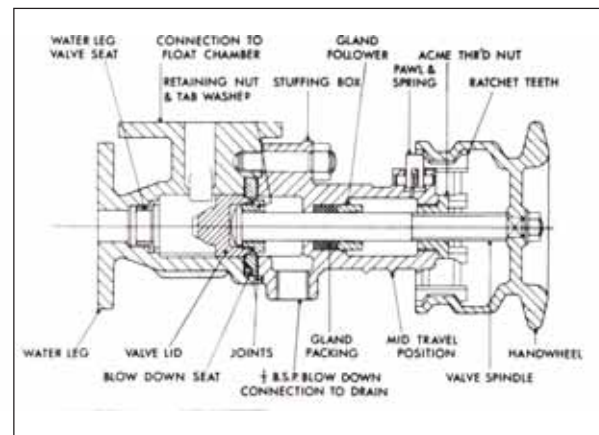
Note: The handwheel cannot be turned anti-clockwise until the sequence of operation detailed above has been completed.

Installation

IMPORTANT. Due to the force of ejection of the steam and water through the blowdown port, the blowdown connection should be piped directly to an independent covered drain, or tundish with reovable lid, capable of accepting the full discharge without danger of blow-back. The bore of the blowdown pipe should not be less than 12mm and the length should be kept as short as possible. The torque applied to asseble the blowdown pipe connection to the valve must not exceed 94NM (69lbf ft).

Sight glasses must not be fitted in the blowdown line.

No other valve should be fitted in the line from the ½" blowdown connection - any existing vavle must positively be removed.



SEQUENCE OF OPERATION



Maintenance

- 1 Isolate and shut down the boiler. Ensure that there is no steam pressure in the boiler and that the electrical power to the controls is switched off.
- 2 Drain the boiler until the water level is just below the water leg to the Sequencing Valve.
- 3 Carry out the blow-down procedure (to check that there is no pressure in the boiler and that the water is drained from the float chamber of the control) by turning the handwheel clockwise to the full extent and then anti-clockwise to the mid-travel position.

Note: All rotations stated are viewed on the face of the handwheel.

- 4 Disconnect the drain connection and unscrew by approximately 5mm the large nuts holding the stuffing box to the valve body. Pull back the stuffing box casting and insert 5mm thick packing pieces between the flanges of the stuffing box and the valve body casting. Resume turning the handwheel anti-clockwise to the full extent of the valve travel. This will break the joint between the valve body and the blow-down seat. Remove the nuts and withdraw the stuffing box assembly from the valve body.
- 5 Turn the handwheel clock-wise until the valve retaining nut is exposed. Unscrew the valve lid from the retaining nut (left-hand thread).
- 6 Unscrew the smaller nuts holding the gland follower to release the stuffing box packing. Remove the handwheel. Unscrew the spindle clockwise through the stuffing box casting and remove the spindle, gland and gland packing (taking care not to damage the spindle).
- 7 Examine:
 - a) Valve spindle for straightness, excessive wear, corrosion or damage.
 - b) Valve lid and both seats for wear and corrosion. The water leg valve seat may be unscrewed (right-hand thread) if it requires to be renewed.
 - c) Ratchet pawl and spring for excessive wear and check that the pawl operates freely. (No oil or grease should be used to lubricate the pawl.
 - d) Internal form of the handwheel for wear of the ratchet teeth.
 - e) Threaded nut on the stuffing box casting for worn or defective Acme thread. Do not attempt to remove the nut from the casting.

- f) Valve body and stuffing box castings for scale and corrosion on the machined faces and bores.
- g) All studs for worn or damaged threads.
- h) Water leg and chamber connections for obstructions and build-up of scale.

Important

At commissioning the seal follower should be gently tightened to stop any leakage which occurs. Some bedding down will occur over the next few months and the valve should be regularly inspected for leakage. If any occurs, the seal follower should again be gently tightened. After this first bedding down period the valve seal is unlikely to require further adjustment. Regular inspections should however, be made and the necessary corrective action taken.

Reassembly

- 1 If replacement of the water leg valve seat has been necessary, screw the seat into the valve body using a minimum of jointing compound painted on the threads and joint faces. Do not allow the jointing compound to adhere to the bore of the valve body.
- 2 Assemble the valve lid to the spindle using a new tab washer between the lid and the retaining nut.
- 3 Pass the valve spindle through the blow-down seat and joints, ensuring that the chamfered edge of the seat mates up with the conical sealing face of the valve lid. Offer the spindle to the stuffing box, ensuring that the gland follower is in the position before the spindle enters the stuffing box; renew packing and refit handwheel.
- 4 Wind back the spindle to centre the blow-down seat with the lid.
- 5 Reassemble the stuffing box to the body leaving the large retaining nuts finger tight.
- 6 Wind the spindle fully forward and back so that the lid and blow down seat are again centered.
- 7 Tighten the stuffing box retaining nuts and gland nuts
- 8 Attach the drain connection.
- 9 Check that the valve can be operated freely in both directions and when it is fully closed, tighten the hand wheel nut.
- 10 LEAVE THE VALVE IN THE NORMAL WORKING POSITION.

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