# OPERATING & MAINTENANCE INSTRUCTIONS

# 'S' & SFV TYPE DIAPHRAGM VALVES

# HANDWHEEL OPERATED WITH RUBBER/PTFE DIAPHRAGM

# INSTALLATION & TESTING

1. The valve is not designed to carry unsupported lengths of pipeline.

2. The valve should not be used for applications other than those for which it was specifically designed and supplied without first seeking advice from Warren-Morrison Valves.

3. All valves have been tested in accordance with BS5156 1974 before despatch from our works, i.e. Seat Test at 1.1 x Maximum Working Pressure and Body Test at 1.5 x Nominal Pressure Rating

4. **After transit/storage, the body/bonnet seal may leak and therefore all bolts shall require re-tightening due to permanent set of the rubber diaphragm since the valve was originally manufactured and tested. This is standard practice with any diaphragm valve. For the SFV hydrant valve, a two stage tightening process is advised at an initial torque of 34 Nm and a final torque of 54-61 Nm.**

   PROCEDURE FOR ABOVE: First ensure that there is no pressure in the line slacken each retaining in bolt approximately three full turns in a anti-clockwise direction to remove the pressure set of the diaphragm between the bonnet and the body Close the valve fully then open two turns of the handwheel and tighten nuts evenly corner to corner until sufficient pressure has been applied to ensure leak tightness between bonnet diaphragm and body DO NOT OVER-TIGHTEN.AS THIS MAY DAMAGE THE DIAPHRAGM AND MAY CAUSE THE VALVE TO SEAT AND SEAL INCORRECTLY

5. When valve has been installed in the line, if a further body/line test is to be carried out, we would recommend that the valve is in the partly open position. This is to avoid any unnecessary stress on the diaphragm due to possible fluctuations of the test pressure and/or long periods under line test pressure. Test pressure must not exceed 1.5 times the nominal pressure rating of the valve.
   PROCEDURE FOR ABOVE: Close valve fully then open two turns of the handwheel. Do not operate the valve mechanism at body test pressure

6. The 'S' type diaphragm valve has been designed to withstand testing pressures in accordance with BS5156.

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# MAINTENANCE

## TO REPLACE VALVE DIAPHRAGM

1. Check that new diaphragm is suitable for the duty.

2. Isolate the valve from line pressure and drain the section of line adjacent to the valve.

3. Remove body/bonnet bolting nuts and remove bonnet assembly from valve body. It may be necessary to rock the bonnet to break the seal between the diaphragm and the body.

4A FOR VALVES ½" TO 6" NOMINAL BORE
Withdraw bolts and operate mechanism until the pressure plate is in the closed position. The diaphragm may now be removed by unscrewing anti-clockwise from the pressure plate. For access to spindle operate mechanism until pressure plate spindle or pressure plate nut disengages from handwheel spindle. SEE SECTION 5 FOR GREASING. To fit diaphragm, re-assemble pressure plate and return to closed position. Fit diaphragm by screwing fully but not forcefully into the pressure plate until boss on back of diaphragm touches the casting and turning back to register the bolt holes.

4B FOR VALVES 8" TO 18" NOMINAL BORE
Withdraw bolts and operate mechanism until pressure plate nut disengages from handwheel spindle. Remove diaphragm, holding nuts at back of pressure plate. SEE SECTION 5 FOR GREASING. To fit diaphragm, tighten holding nuts applying only sufficient pressure to hold diaphragm firmly against the face of the pressure plate, re-assemble pressure plate to handwheel spindle and return to closed position.

5. Clean mechanism and smear the spindle with a little grease (such as Shell Alvania R2 or R3). Excessive use of grease is not recommended and care must be taken to avoid contaminating the diaphragm.

6. Replace body/bonnet bolts and relocate the bonnet assembly on the valve. Tighten nuts evenly, sufficient to hold the diaphragm in position. Open valve two turns of the handwheel and tighten nuts until sufficient pressure has been applied to ensure leak tightness between body and diaphragm. DO NOT OVER-TIGHTEN.

7. Failure to follow these important instructions may make it difficult to obtain "Drip Tight" closure and may damage the diaphragm.

IF THE ABOVE PROCEDURES AND RECOMMENDATIONS ARE NOT OBSERVED, WARREN-MORRISON VALVES LIMITED ACCEPT NO LIABILITY FOR DAMAGE TO ANY PART OR PERON/S DURING INSTALLATION AND SUBSEQUENT TESTING.