



Diamond Series 3 Pressure Relief Valve Maintenance Instructions

S3 PRV Spares Kits:

Valve Size	Spares Kit Pt No.	This Kit
1.0"	KP3R10 _____	_____
1.5"	KP3R15 _____	_____
2.0"	KP3R20 _____	_____
2.5"	KP3R25 _____	_____
3.0"	KP3R30 _____	_____
4.0"	KP3R40 _____	_____

IMPORTANT

Please read carefully before commencing any work on this valve:

1. Ensure that the line pressure is zero and fully drained and that all pneumatic and power supplies are turned off and isolated.
2. When manually operating the valve ensure that fingers are clear of moving parts to avoid injury.
3. Gaskets and seals should be stored away from UV light to increase shelf life.
4. Ensure that pipes and connections are properly aligned to avoid undue stress and leakage.
5. The additional ATEX Installation and Maintenance Instructions must be used in conjunction with this document to ensure safe use for ATEX rated valves. CONNECTING PIPEWORK MUST BE EARTHED.
6. Always operate the valve open and closed several times before use to ensure correct function.
7. The user should adopt a maintenance programme for valves depending on frequency of use and application particulars. DPL recommends seal replacement at least every two years.

Dismantling Procedures - use the valve image on page 2 for reference.

The valve does not need to be fully dismantled and the pressure setting should not need re-setting when following the seal replacement procedure below:

Dismantling - Seal Replacement Procedure:

1. Place the valve body in a soft jaw vice. Use only sufficient pressure to hold the valve in place, excessive force may damage the valve body. Lift the lever to relieve the spring pressure from the valve seat.
2. With the lever held in the raised position carefully undo and remove the four hex-head body bolts.
3. Carefully lower the lever. The bonnet assembly will lift away from the valve body slightly. Carefully lift the bonnet assembly away from the valve body. Make sure that the body O ring is also removed from the body.
4. Place the bonnet assembly on a clean bench. Remove the lever retaining pin, clip, lever and lift off the bonnet cap.
5. Place a suitable diameter screw driver shaft through the hole in the spindle shaft (at the top of the valve). Hold this in place and using an adjustable spanner, carefully undo the seat seal retaining screw (at the other end of the valve). It may be necessary to hold the valve in the soft jaw vice to assist with this process.
6. The seat seal and seat "O" ring can now be removed. Next carefully slide the body plate down and along the valve spindle to reveal the spindle seal and spindle bush.
7. All of the seals mentioned above are included in seal kits that are available from DPL. The seals can now be replaced accordingly. A small amount of food grade, process compatible grease should be used to help fit new seals in place. Grease will also help hold the body "O" ring in place and avoid damage on re-assembly.
8. Please follow the dismantling procedure in reverse order to re-assemble the valve in conjunction with the re-assembly information given below. Alternatively, continue to step 9 below to fully dismantle the valve.

Full Dismantling Procedure - Continue from step 8 above:

9. Please note that this procedure will involve releasing the spring tension and thus losing the pressure relief setting. The procedure for re-setting the relief pressure is shown on page 2 of this document.
10. Using an adjustable spanner, undo and remove the lock-nut. Next, un-screw and remove the pressure adjusting screw. Lift out the top bearing, spring and valve spindle. The valve internals are now fully exposed.
11. Please follow the dismantling procedure in reverse order to re-assemble the valve, in conjunction with the re-assembly information given below.

Important Re-assembly Information:

When re-assembling, ensure all parts are correctly located as per the image on page 2. Do not forget to use a small amount of food grade, process compatible grease when re-fitting seals. When re-assembling the bonnet assembly into the valve body, ensure that the body O ring is correctly located. Lift the valve lever and replace the four body bolts, tightening each one in turn to ensure correct seating between the bonnet and body. Make sure there are no gaps between the bonnet and body flange as this could indicate incorrect assembly or that the body O ring has become trapped. Carefully lower the valve lever so that the valve is seated closed once more.



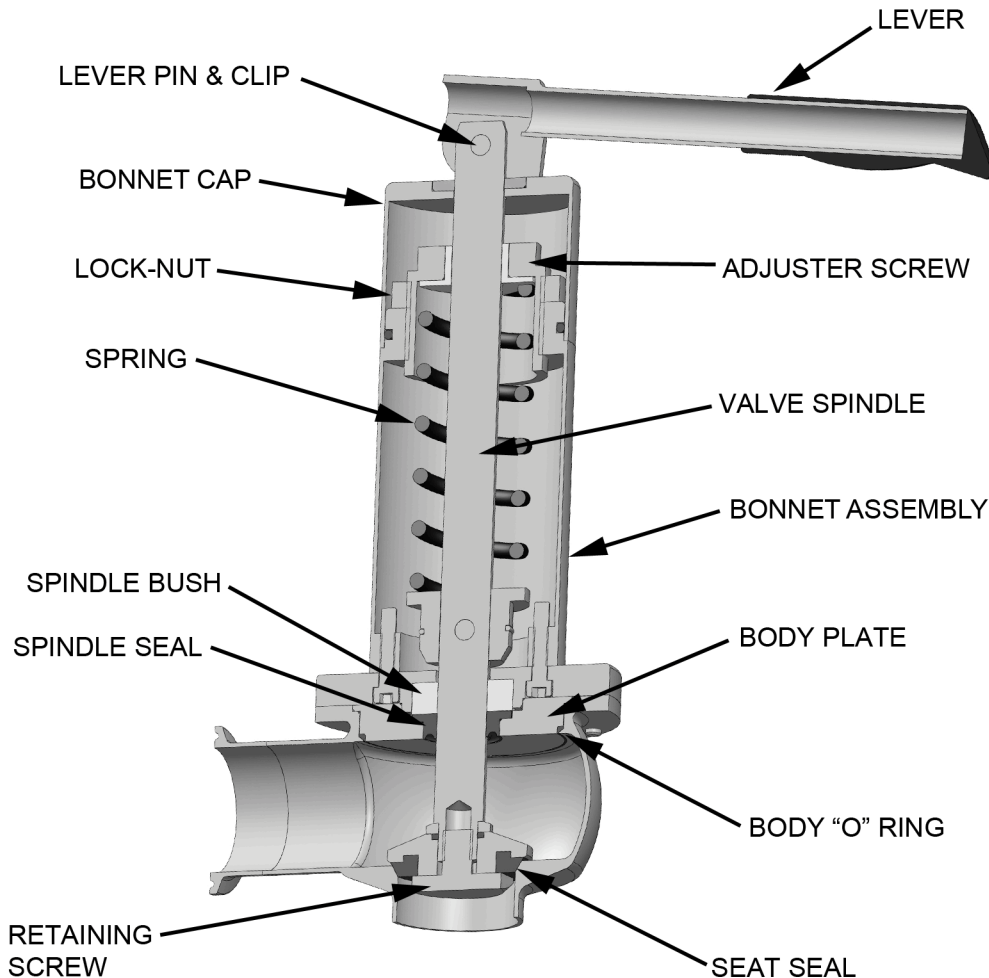


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Pressure Setting Adjustment Procedure

Please Note: A calibrated pressure gauge and hydrostatic test rig / hand pump is required to carry out this procedure. If the valve is welded in place and the valve body can not be removed from the process line, a spare valve body will be needed to re-set the pressure setting. Alternatively contact DPL to arrange our factory re-setting service.



1. Ensure that the important safety precautions have been followed from page 1 of this document prior to removing the valve from the process line.
2. Fit the lower valve connection (inlet) to your pressure test rig. Remove the lever retaining clip, pin and lever from the top of the valve. Lift off the bonnet cap.
3. Hold the adjuster screw in place with a suitable spanner and loosen the lock-nut (with a second spanner). Unscrew the locknut clear of the bonnet body to allow room for adjustment.
4. Apply water pressure to the valve inlet, slowly increasing the pressure until the valve seat lifts. Note the relief pressure at this point.
5. The adjuster screw can now be rotated clockwise to increase the relief pressure or anti-clockwise to decrease.
6. Once the desired relief pressure is reached, the adjuster screw should be held in place with the spanner and the locknut re-tightened down to ensure that the adjuster screw is locked in place.
7. Replace the bonnet cap, lever, pin and clip. With the test rig pressure at zero, lift and lower the valve lever several times to ensure correct operation.
8. Apply water pressure once more to ensure that the relief pressure is correct. If adjustment is required, follow the procedure once more to make the adjustment.