

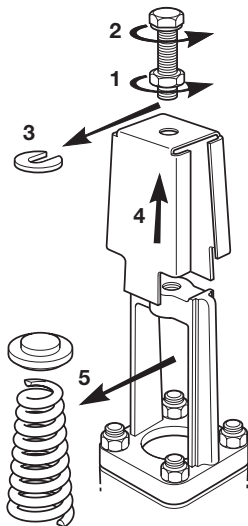
## DP17 to DP27

# Pilot Valve Assembly Upgrade Kit Fitting Instructions Installation and Maintenance Instructions

### In this kit you will find:

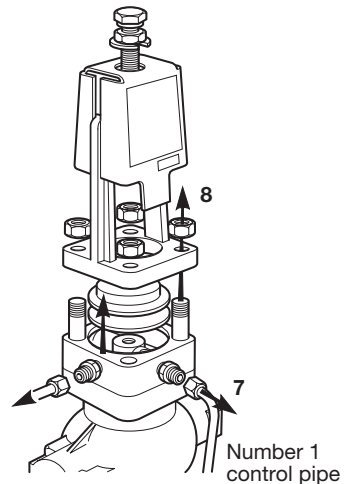
- Fitting instructions IM-P100-16.
- A carton containing a body gasket and pilot diaphragm set.
- A spare filter element.
- A replacement main valve return spring. (1/2", 3/4", DN15 and DN20 sizes only).
- A polythene bag containing an 'L' shaped downstream sensing line adaptor pipe, a replacement No.1 control pipe and internal sensing pipe with fittings and blanking plug.
- A DP27 pilot valve chamber assembly fitted with plunger - the plunger is retained in place for transit by a clear tape, which should be removed before fitting.
- A self-adhesive label indicating that the valve has been upgraded.

## Before dismantling the valve isolate and ensure no excess pressure exists within the valve



### Removing the DP17 control spring:

1. Release the lock-nut (1).
2. Turn the adjustment screw (2) anticlockwise.
3. Slide out the 'C' washer (3).
4. Remove the cover (4).
5. Remove the spring and top plate (5).

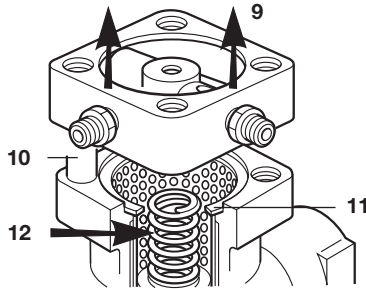


### Removing the DP17 pilot valve chamber assembly:

1. Unscrew the unions (7) and remove either internal sensing pipe or downstream sensing line connection and the number 1 control pipe (joins upper 'T' union connection to chamber).
2. Unscrew the nuts and remove the spring housing with adjuster bolt and lock-nut and bottom spring plate (8).
3. Remove the pilot valve chamber assembly (9, see illustration overleaf).

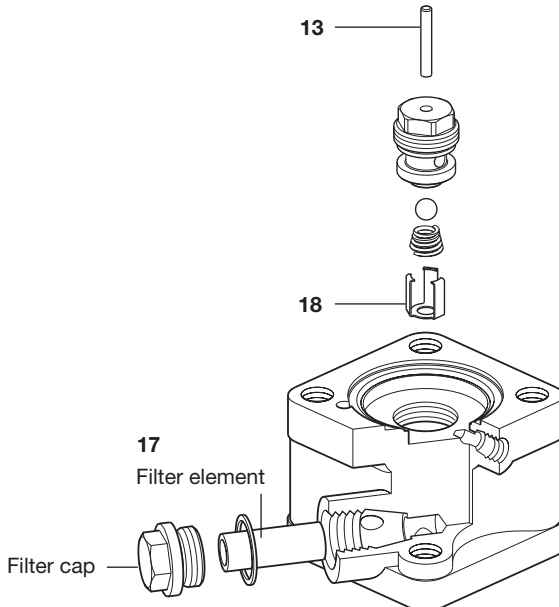
## Removing and replacing the pilot valve chamber studs:

1. Unscrew the 4 off chamber securing studs (10) and discard.  
**Note:** M10 for DN15 - DN32 valves and M12 for DN40 and DN50 sizes.
2. Check the condition of the graphite body gasket (11) and replace if necessary.  
**Note:** The graphite gaskets have a very sharp stainless steel reinforcing strip, which can easily inflict deep cuts if handled carelessly.
3. Fit the longer studs supplied.



## Fitting the DP27 chamber assembly:

1. Locate the chamber assembly over the 4 studs with the filter cap on the upstream side ensuring that the main valve return spring (12) is properly located on the machined boss on the underside of the chamber casting. It is recommended that the new main valve return spring (supplied) is used for all DN15 - DN32 valves but it is essential for all DN15 and DN20 valves built before mid 2001, since these valves used a small diameter spring not compatible with the DP27 pilot assembly.
2. Ensure the pilot valve plunger (13) is inserted into the recess in the top of the chamber. The pilot diaphragms are fitted in pairs. The lower diaphragm has a line of pre-coated gasket sealant around its outer circumference, which must face down against the machined face in the chamber recess.



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## Refitting the pressure control spring assembly:

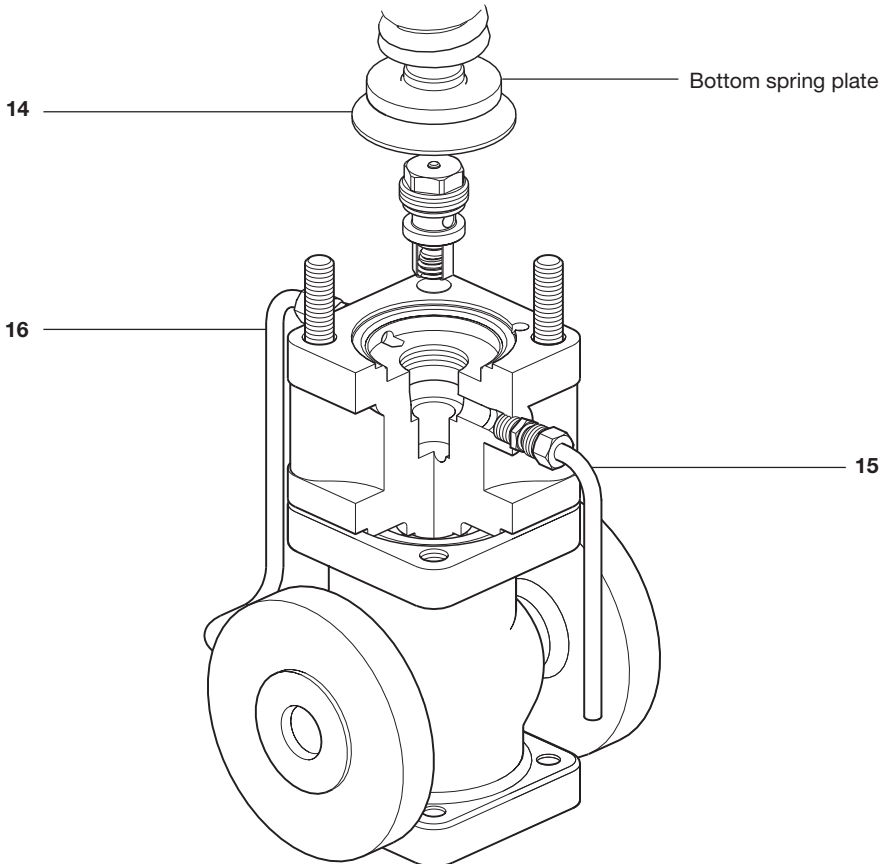
1. Place the bottom spring plate centrally on the pilot diaphragm (14) and replace the spring housing assembly and fit the nuts to the protruding studs. Torque tighten evenly to 50 N m (36 lbf ft) for the M10 studs and 55 N m (40 lbf ft) for the M12 studs.
2. Replace the control spring and top spring plate and screw in the adjuster bolt until it just touches the upper spring plate.
3. Refit the spring housing cover and 'C' washer.
4. Stick label on the spring housing cover which indicates an upgrade kit is fitted.

## Fitting the sensing and control pipes:

**Note:** The DP27 pipework adaptor kit is supplied separately and is dependant on the size of each valve.

1. Fit the new taller number 1 control pipe (15) between the 'T' fitting and the chamber connection.
2. Either fit the new taller internal sensing pipe (16) or a downstream sensing pipe (recommended).

Note that where the DP17 downstream sensing pipe connection was located on the downstream face of the pilot block the DP27 valve shares the side location as the internal sensing pipe. An 'L' shaped adaptor and necessary fittings is supplied with the upgrade kit to enable the original downstream sensing line to be connected to the side sensing port of the DP27 pilot chamber.



## Commissioning the valve:

1. Bring the valve back into commission following the start-up procedure in the standard Spirax Sarco DP17 Installation and Maintenance Instructions (IM-P100-05).
2. It is recommended that the DP27 pilot valve filter element is inspected soon after commissioning and changed or cleaned if necessary to remove any pipeline debris resulting from the service/commissioning work. Unscrewing the 19 A/F filter cap located on the upstream side of the pilot chamber block accesses the filter element. Note that the valve must be isolated and pressure released before removing the strainer cap. The filter cap uses a reusable 'S' type gasket and should be tightened to a torque value of 100 N m (74 lbf ft).

## Future maintenance suggestions:

1. To protect the pilot valve the built-in filter (17) should be examined periodically and replaced or cleaned as necessary. Note that the valve must be isolated and pressure released before removing the filter cap. The filter cap uses a reusable 'S' type gasket and should be re-tightened to a torque value of 100 N m (74 lbf ft).
2. With the DP27 it is extremely quick and easy to service or change the pilot assembly should this be necessary. Simply removing the spring housing assembly enables the pilot diaphragms to be removed exposing the 19 A/F hex. of the pilot assembly, which can then be unscrewed. Unlike the DP17, the control pipework does not need to be disturbed. The spring clip (18) can be removed from the pilot assembly by hand allowing access to the pilot valve ball, seat face and conical return spring for examination and cleaning. Replacement of the pilot valve assembly is simply a reversal of the removal procedure; a torque of 55 N m (40 lbf ft) should be applied.

