

# J48HL

## Gas Pressure Regulator



Commissioning Instructions

General Arrangement

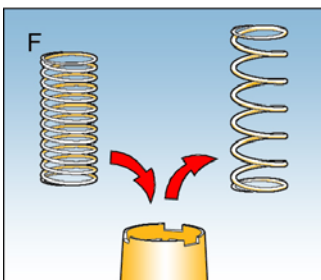
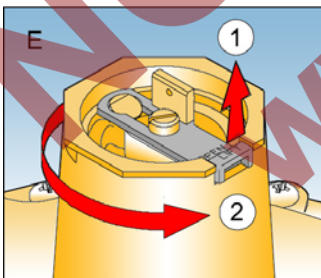
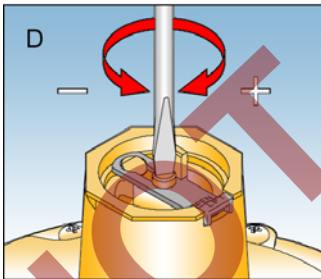
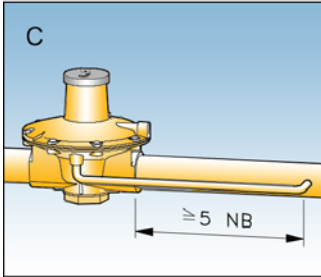
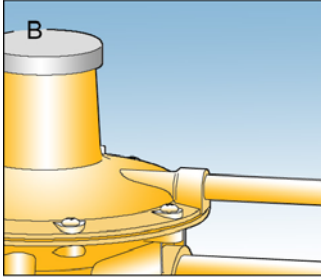
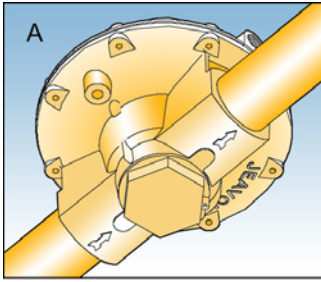
Parts List

Maintenance Instructions

For: J48HL Regulator  $\frac{3}{4}$ " - 2"

**This product is discontinued!**

# J48HL: Commissioning Instructions



## OPERATING INSTRUCTIONS

- Ensure that this product is suitable for the chosen application.
- Installation, adjustment and maintenance by authorised, trained personnel only.
- When being fitted to an appliance, refer to the appliance manufacturers instructions.

**Warning!** Incorrect installation, adjustment, modification, operation and maintenance may cause injury or damage.  
Read instructions before use. This control must be installed in accordance with the rules in force.

## FITTING REGULATOR INTO PIPEWORK (A)

1. The unit should not be installed in a corrosive environment.
2. The ambient temperature (surface temperature) should be within the limits stated on the regulator catalogue.
3. Check the maximum allowable pressure on the regulator nameplate against the installation specification.
4. Remove the plastic protection plugs from inlet and outlet (and breather if applicable).
5. Ensure that installation pipework is thoroughly clean.
6. The direction of gas flow must be the same as the arrow(s) on the regulator body.
7. Install the regulator into pipework using a jointing compound approved to national standards.

## INSTALLATION OF VENT LINE (B) IF REQUIRED

8. Remove the plastic protection plug.
9. Connect the vent line (1/4" connection), using a jointing compound approved to national standards, and lead to atmosphere in accordance with national standards. Ensure that no water can penetrate vent pipeline.

## INSTALLATION OF EXTERNAL IMPULSE LINE (C) IF REQUIRED

10. Remove the plastic protection plug.
11. Connect the impulse line (1/8" connection), using a jointing compound approved to national standards, and lead to a point downstream not less than five times the nominal pipe diameter from the outlet.

## FOR PRE - SET REGULATORS

12. Turn off downstream valves.
13. Slowly turn on inlet supply.
14. Commission downstream appliance(s).

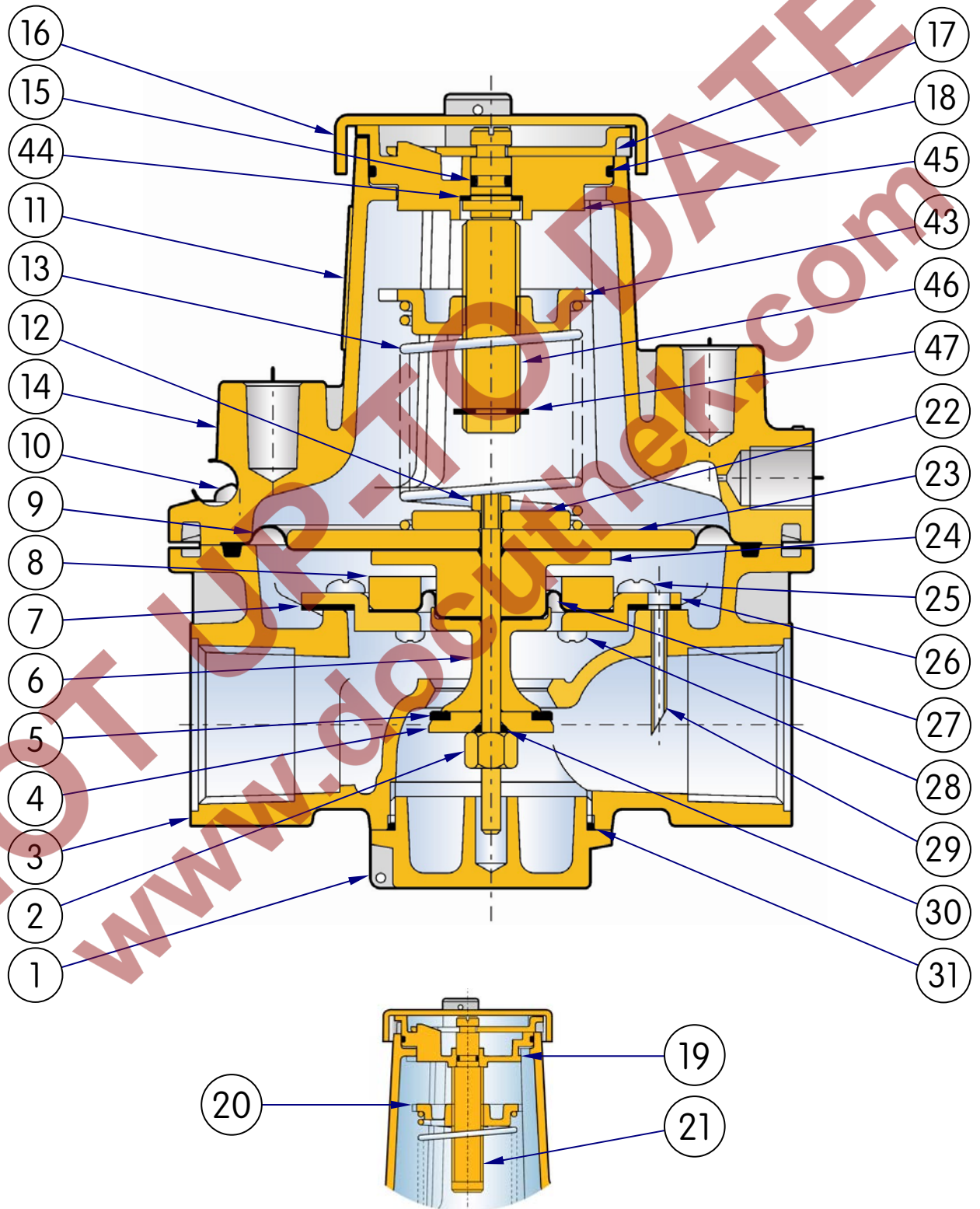
## SETTING OF OUTLET PRESSURE (D)

15. Turn off downstream valves.
16. Remove the top cap.
17. Insert a flat bladed screwdriver into the slot in the end of the spring adjusting screw.
18. Turn anticlockwise to reduce pressure on the loading spring.
19. Slowly turn on inlet supply.
20. Increase loading on the spring by turning the spring adjusting screw clockwise until the required outlet pressure, plus approximately 2.5mbar, is obtained.
21. Commission downstream appliance(s).
22. Trim the outlet pressure of the regulator, if necessary, when normal working flow rates have been achieved.
23. Replace the top cap (and seal if necessary).

## IF REQUIRED OUTLET PRESSURE CANNOT BE ACHIEVED WITH SPRING FITTED. (E) & (F).

24. Choose a loading spring from the catalogue that will give the required outlet pressure range.
25. Turn spring adjusting screw anticlockwise (to reduce loading on spring).
26. Carefully lift protruding end of locking lever just clear of adjusting bush (1), whilst in this position turn (octagon shaped) adjusting bush assembly anticlockwise until disengaged (2). The adjusting bush assembly can then be removed from the top cover.
27. Remove the loading spring.
28. Insert the new spring - take the label from the spares kit bag and stick it below the nameplate of the regulator.
29. Screw top spring holder anticlockwise to within 10mm of underside of adjusting bush.
30. Position underside of top spring holder on to loading spring.
31. Align slots in top spring holder with splines in top cover and push adjusting bush assembly into top cover as far as possible.
32. Turn adjusting bush assembly clockwise until locking lever snaps into any of the three locking castellations in the top cover.
33. Adjust the outlet pressure, as described above, until the required setting is found.
34. Replace the top cap (and seal if necessary).

# J48HL Regulator: General Arrangement



Spring Adjustment  
Pre October 2000

# J48HL: Parts List

¾" and 1" sizes

ITEM	DESCRIPTION	¾"	No. Off	1"	No. Off
1	BOTTOM PLUG	J4806-017Z03	1	J4806-017Z03	1
2	VALVE SPINDLE	J4806-054	1	J4806-054	1
3	BODY	J4805-005+	1	J4806-094+	1
4	VALVE DISC HOLDER	J4806-053	1	J4806-053	1
5	VALVE DISC	J4806-025	* 1	J4806-025	* 1
6	VALVE SPACER	J4806-051	1	J4806-051	1
7	SEC DIAPHRAGM CLAMP PLATE GASKET	J4806-087	* 1	J4806-087	* 1
8	SEC DIAPHRAGM CLAMPING PLATE	J4806-086	1	J4806-086	1
9	MAIN DIAPHRAGM	J4806-011	* 1	J4806-011	* 1
10	SCREW	JSA520XPTZ	6	JSA520XPTZ	6
11	NAMEPLATE	J8112-124	1	J8112-124	1
12	FULL NUT	JNA4FZ	1	JNA4FZ	1
13	LOADING SPRING	SEE TABLE	1	SEE TABLE	1
14	TOP COVER	J4806-103+	1	J4806-103+	1
15	"O" RING SEAL	JORM0051-16	* 1	JORM0051-16	* 1
16	TOP CAP	J4806-099	1	J4806-099	1
17	LOCKING LEVER	J4806-105	1	J4806-105	1
18	"O" RING SEAL	JO200032-4475	* 1	JO200032-4475	* 1
19	ADJUSTING BUSH (Old Design)	J4806-100	1	J4806-100	1
20	TOP SPRING HOLDER (Course Thread)	J4806-098	1	J4806-098	1
21	SPRING ADJUSTING SCREW (Course Thread)	J4806-097	1	J4806-097	1
22	SPRING LOCATION WASHER	J4806-057	1	J4806-057	1
23	TOP DIAPHRAGM PLATE	J4806-055	1	J4806-055	1
24	DIAPHRAGM SPACER	J4806-052	1	J4806-052	1
25	SCREW	JSA410XPTZ	6	JSA410XPTZ	6
26	SEC DIAP MOUNTING PLATE	J4806-085	1	J4806-085	1
27	SECONDARY DIAPHRAGM	J4806-088	* 1	J4806-088	* 1
28	SCREW	JSA38XPNZ	6	JSA38XPNZ	6
29	IMPULSE TUBE	J4706-072	1	J4706-072	1
30	"O" RING SEAL	JORM0031-16	* 1	JORM0031-16	* 1
31	"O" RING SEAL	JORM0376-24	* 1	JORM0376-24	* 1
43	TOP SPRING HOLDER (Fine Thread)	J4806-127	1	J4806-127	1
44	WASHER	J4806-134	1	J4806-134	1
45	ADJUSTMENT BUSH (New Design)	J4806-100Z01	1	J4806-100Z01	1
46	SPRING ADJUSTING SCREW (Fine Thread)	J4806-128	1	J4806-128	1
47	CIRCLIP	JCIR1500-080Z	1	JCIR1500-080Z	1

# J48HL: Parts List

1¼", 1½" and 2" sizes

ITEM	DESCRIPTION	1¼"	No. Off	1½"	No. Off	2"	No. Off
1	BOTTOM PLUG	J4808-017Z03	1	J4808-017Z03	1	J4809-017Z03	1
2	VALVE SPINDLE	J4808-058	1	J4808-058	1	J4809-050	1
3	BODY	J4807-011+	1	J4808-084+	1	J4809-071+	1
4	VALVE DISC HOLDER	J4808-057	1	J4808-057	1	J4809-049	1
5	VALVE DISC	J4808-035	* 1	J4808-035	* 1	J4809-027	* 1
6	VALVE SPACER	J4808-055	1	J4808-055	1	J4809-047	1
7	SEC DIAPHRAGM CLAMP PLATE GASKET	J4808-068	* 1	J4808-068	* 1	J4809-062	* 1
8	SEC DIAPHRAGM CLAMPING PLATE	J4808-067	1	J4808-067	1	J4809-061	1
9	MAIN DIAPHRAGM	J4808-011	* 1	J4808-011	* 1	J4809-011	* 1
10	SCREW	JSA520XPTZ	8	JSA520XPTZ	8	JSA520XPTZ	8
11	NAMEPLATE	J8112-124	1	J8112-124	1	J8112-124	1
12	FULL NUT	JNA6FZD	1	JNA6FZD	1	JNA8FZD	1
13	LOADING SPRING	SEE TABLE	1	SEE TABLE	1	SEE TABLE	1
14	TOP COVER	J4808-078+	1	J4808-078+	1	J4809-067+	1
15	"O" RING SEAL	JORM0051-16	* 1	JORM0051-16	* 1	JORM0051-16	* 1
16	TOP CAP	J4806-099	1	J4806-099	1	J4806-099	1
17	LOCKING LEVER	J4806-105	1	J4806-105	1	J4806-105	1
18	"O" RING SEAL	JO200032-4475	* 1	JO200032-4475	* 1	JO200032-4475	* 1
19	ADJUSTING BUSH (Old Design)	J4806-100	1	J4806-100	1	J4806-100	1
20	TOP SPRING HOLDER (Course Thread)	J4806-098	1	J4806-098	1	J4806-098	1
21	SPRING ADJUSTING SCREW (Course Thread)	J4806-097	1	J4806-097	1	J4806-097	1
22	SPRING LOCATION WASHER	J9812-022	1	J9812-022	1	J4809-053	1
23	TOP DIAPHRAGM PLATE	J9812-024	1	J9812-024	1	J4809-051	1
24	DIAPHRAGM SPACER	J4808-056	1	J4808-056	1	J4809-048	1
25	SCREW	JSA512XPTZ	6	JSA512XPTZ	6	JSA516XPTZ	8
26	SEC DIAP MOUNTING PLATE	J4808-066	1	J4808-066	1	J4809-060	1
27	SECONDARY DIAPHRAGM	J4808-069	* 1	J4808-069	* 1	J4809-059	* 1
28	SCREW	JSA412XPNZ	6	JSA412XPNZ	6	JSA410XPNZ	6
29	IMPULSE TUBE	J4808-076	1	J4808-076	1	J4709-060	1
30	"O" RING SEAL	JORM0051-16	* 1	JORM0051-16	* 1	JORM0076-24	* 1
31	"O" RING SEAL	JORM0546-24	* 1	JORM0546-24	* 1	JORM0745-32	* 1
43	TOP SPRING HOLDER (Fine Thread)	J4806-127	1	J4806-127	1	J4806-127	1
44	WASHER	J4806-134	1	J4806-134	1	J4806-134	1
45	ADJUSTMENT BUSH (New Design)	J4806-100Z01	1	J4806-100Z01	1	J4806-100Z01	1
46	SPRING ADJUSTING SCREW (Fine Thread)	J4806-128	1	J4806-128	1	J4806-128	1
47	CIRCLIP	JCIR1500-080Z	1	JCIR1500-080Z	1	JCIR1500-080Z	1

Note: Part numbers marked + require connection thread to be specified with order.



# J48HL: Spares and Loading Springs

## SPARES KITS

Spares kit contents are marked \* on parts list

SPARES KIT CODE	SIZE
SK4806-04	3/4" – 1"
SK4808-04	1 1/4" – 1 1/2"
SK4809-04	2"

## Springs for J48HL

Spring Range		Part No Colour Code.		
mbar	"wg	3/4" & 1"	1 1/4" & 1 1/2"	2"
5 – 15	2 – 6	J4806-007 Yellow	J4808-004 Red / Yellow	J4809-007 Dark Blue / Yellow
12.5 – 25	5 – 10	J4806-004 Black	J4808-007 Red / Black	J4809-004 Dark Blue / Black
22.5 – 35	9 – 14	J4806-005 Orange	J4808-008 Red / Orange	J4809-005 Dark Blue / Orange
22 – 75	10 – 30	J4806-101 Yellow / Black	J4808-077 Yellow / Orange	J4809-066 Yellow / Dark Green
70 – 100	28 – 40	J4806-079 Pink / Gold	J4808-075 Pink / Silver	J4809-065 Grey / Gold
90 – 160	36 – 64	J4808-077 Yellow / Orange	J4809-065 Grey / Gold	

## J48HL: Maintenance Instructions

Maintenance Instructions for: J48HL Regulator 3/4" - 2",

### Dismantling Procedure:

1. Pull off top cap (16).
2. Turn spring adjusting screw (46) anticlockwise (to reduce loading on spring).
3. Carefully lift protruding end of locking lever (17) just above adjusting bush (45) whilst in this position turn (octagon shaped) adjusting bush assembly (19) anticlockwise until disengaged. The adjusting bush (45) can then be removed from the top cover (14).
4. Remove the loading spring (13) from the top cover (14).
5. Lift keyhole end of locking lever (17) over sloping peg in adjusting bush (45), and slide forward until disengaged from spring adjusting screw (46) and remove.  
NOTE: If adjusting bush assembly is to be dismantled for "O" ring replacement, follow procedure. If to be left assembled proceed to instruction number 9.
6. Pull spring adjusting screw (46) from adjusting bush (45).
7. Remove "O" rings (15) & (18) from spring adjusting screw (46) and adjusting bush (45) respectively.
8. Lift washer (44) from spring adjusting screw (46) and remove.
9. Remove top cover screws (10) then carefully remove the top cover (14).
10. Unscrew bottom plug (1) and remove from body (3).
11. Remove "O" ring (31) from bottom plug (1).
12. Restrain valve spindle (2) with suitable box spanner through bottom plug opening in body (3).
13. Unscrew full nut (12).

# J48HL: Maintenance Instructions

## Dismantling Procedure (continued):

14. Remove the spring location washer (22).
15. Remove top diaphragm plate (23).
16. Carefully remove main diaphragm (9).
17. Remove diaphragm spacer (24).
18. Withdraw the valve spindle (2) through the bottom plug opening in body (3).
19. Remove "O" ring seal (30) from the valve spindle (2).
20. Withdraw valve disc holder (4) complete with valve disc (5) through bottom plug opening in body (3).
21. Unscrew the secondary diaphragm screws (25) then lift off the secondary diaphragm assembly (8), (26), (27) & (28) through the top of the body (3).
22. Remove valve spacer (6) from secondary diaphragm assembly.
23. Remove secondary diaphragm mounting plate gasket (7).
24. Unscrew secondary diaphragm clamping plate screws (28).
25. Remove secondary diaphragm clamping plate (8).
26. Carefully remove the secondary diaphragm (27).
27. Check that hole in impulse tube (29) is clear. DO NOT REMOVE FROM BODY.
28. Wipe valve seat and body clean of any dirt particles, taking care not to damage sealing surface in body.
29. Inspect all diaphragms and soft seals and replace where necessary (a spares kit is available for this purpose).

## Rebuilding procedure:

Note: Inspect all sealing 'O' rings, diaphragms, valves discs, gaskets and replace where necessary (a soft spares kit is available for this purpose).

The use of Molykote 111 "O" ring lubricant is recommended during the rebuild- unless for use with oxygen when no lubricant should be used.

1. Replace "O" ring seal (30) over threaded end of valve spindle (2) until it rests against shoulder of spindle.
2. Assemble valve disc (5) onto valve disc holder (4) with bead uppermost.
3. Replace valve disc assembly (4) & (5) over threaded end of valve spindle (2) with chamfer around centre facing downward.
4. Load valve spindle assembly (2) through bottom plug opening in body (3). This will ease assembly of valve spacer (6) and secondary diaphragm.
5. Replace bottom plug (1) in bottom aperture of body ensuring that valve spindle assembly (2) is located correctly.
6. Load the valve spacer (6) through the top of the body (counter bore upwards) onto the valve spindle assembly (2).
7. Place the secondary diaphragm (27) on top of the secondary diaphragm clamping plate (8) with the internal radii on the secondary diaphragm clamping plate (8) facing upward. Ensure the holes in each component line up correctly.
8. Place the secondary diaphragm mounting plate (26), with counterbore facing downward, onto the secondary diaphragm (27) and secondary diaphragm clamping plate (8). Ensure the holes in each component line up correctly.
9. Secure secondary diaphragm mounting plate (26) to the secondary diaphragm (27) and secondary diaphragm clamping plate (8) using screws (28) and tighten.
10. Place secondary diaphragm mounting plate gasket (7) in position on top of flange in body (3).
11. With heads of screws (28) on underside, place the secondary diaphragm assembly over valve spindle (2), ensure the secondary diaphragm fits into the counterbore of the valve spacer (6). Orientate the secondary diaphragm assembly so that the holes for screws (25) and impulse tube (29) are in line.

# J48HL: Maintenance Instructions

## Rebuilding procedure (continued):

12. Insert the screws (25) through the secondary diaphragm assembly and gasket (7) and tighten.
  13. Place the diaphragm spacer (24) over the valve spindle (2), with the boss facing downward, fitting onto the counterbore of the valve spacer (6) around the secondary diaphragm (27).
  14. Place the main diaphragm (9) with the convolution uppermost in position ensuring that the bead is located in the groove in the body (3).
  15. Position the top diaphragm plate (23) and spring location washer (22) onto valve spindle (2), then screw nut (12) onto spindle. DO NOT TIGHTEN.
  16. Remove the bottom plug (1).
  17. Restrain valve spindle (2) with a suitable box spanner and tighten nut (12).
  18. Place "O" ring seal (31) into "O" ring seal groove in bottom plug (1).
  19. Replace bottom plug (1) over centre shaft of valve spindle (2) into body (3) and screw tightly into position.
  20. Carefully place top cover (14) onto body (3) with vent facing the outlet (unless alternative position required) and secure with top cover screws (10).
  21. Insert loading spring (13) over spring location washer (22).
- NOTE: If adjusting bush assembly (45) has been dismantled follow procedure, if it has been left assembled then proceed to instruction number 26.
22. Slide "O" ring seal (15) over slotted end of spring adjusting screw (46) into second groove. (i.e. groove nearest thread).
  23. Replace washer (44) over slotted end of spring adjusting screw (46) and slide down until it sits on shoulder of adjusting screw.
  24. Slide "O" ring seal (18) into "O" ring groove on adjusting bush (45).
  25. Push spring adjusting screw (46) into hole in the bottom of the adjusting bush (45) until parts are firmly together.
  26. Position key hole slot in locking lever (17) over slotted end of spring adjusting screw (46) and slide over slopping peg in adjusting bush (45) until firmly locked in position.
  27. Screw top spring holder (43) anticlockwise to within 10mm of underside of adjusting bush (45).
  28. Position underside of top spring holder (43) on to loading spring (13).
  29. Align slots in top spring holder (43) with splines in top cover (14) and push adjusting bush (45) assembly into top cover (14) as far as possible.
  30. Turn adjusting bush assembly (19) clockwise until locking lever (17) snaps into any of the three locking castellations in top cover (14).
  31. Commission regulator.
  32. Replace top cap (16) by aligning slot in cap with sealing wire lug and push over until it clicks into position, and seal if necessary.

Elster Jeavons is committed to a programme of continuous quality enhancement. All equipment designed by Elster Jeavons and manufactured within the Elster-Instromet Group benefits from the groups quality assurance standards, which are approved to EN ISO9001:2008.

Elster Jeavons has a programme of continuous product development and improvement and in consequence the information in this leaflet may be subject to change or modification without notice.

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