



Elster Jeavons J123 Gas Pressure Regulator Inlet Pressures up to 4bar



**For
J123 Regulator 50mm, 80mm and 100mm size**

J123EN | 05/01/17



Index

Commissioning Instructions	3
General Arrangement	6
Parts List	9
Spares Kits	11
Maintenance Instructions	12

Commissioning Instructions



Fig. 1

FITTING REGULATOR INTO PIPEWORK

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 protection plugs from inlet and outlet ports.
5. Ensure that installation pipework is thoroughly clean.
6. The direction of gas flow must be the same as the arrows on the regulator body. See Fig. 1.
7. Install the regulator into pipework.

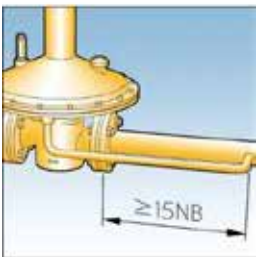


Fig. 2

INSTALLATION OF IMPULSE LINE

1. Remove the plastic protection plug.
2. Connect the impulse line (1/2"), using a jointing compound approved to national standards, and lead to a point downstream not less than fifteen times the nominal pipe diameter from the outlet. See Fig. 2.

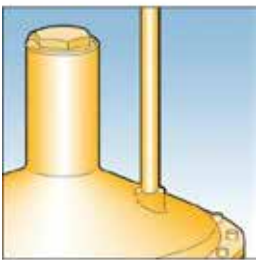


Fig. 3

INSTALLATION OF VENT LINE. (If Required)

1. Remove breather cover from regulator top case / cover.
2. Connect the vent line (1/2"), using a jointing compound approved to national standards, and lead to atmosphere in accordance with national standards. Ensure that no water can penetrate vent pipe. See Fig. 3.
3. If vent connection is to be used for top loading or other similar use refer to your own installation instructions.

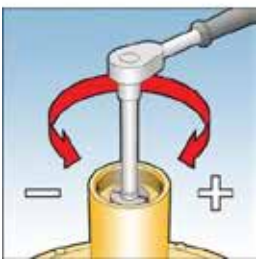


Fig. 4

SETTING THE OUTLET PRESSURE.

1. Turn off inlet and outlet valves.
2. Remove top cap.
3. For L.P. 50mm and 80mm unit insert 1/2" square socket extension piece into square hole, or flat blade screwdriver into slot in spring adjuster. See Fig. 4.
4. For M.P. 50mm and 80mm unit, slacken locknut on spring adjusting stem and connect suitable spanner (24mm A/F) to hexagon of spring adjusting stem. See Fig. 5.
5. For 100mm unit connect suitable spanner (27mm A/F) to hexagon of spring adjusting nut. See Fig. 6.
6. Turn spring adjustment anticlockwise to reduce pressure on loading spring.
7. Slowly turn on inlet supply.
8. Increase loading on spring by turning spring adjustment clockwise until the required outlet pressure, plus approximately 2.5mbar, is obtained.

Commissioning Instructions

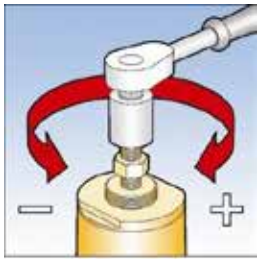


Fig. 5

SETTING THE OUTLET PRESSURE (Cont.)

9. Commission downstream appliance(s).
10. Trim the outlet pressure of the regulator, if necessary, when normal working flow rates have been achieved.
11. Replace the top cap.

IF THE REQUIRED OUTLET PRESSURE CAN NOT BE ACHIEVED WITH THE SPRING FITTED

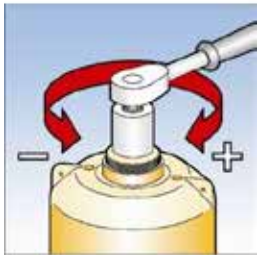


Fig. 6

1. Choose a loading spring from the catalogue that will give the required outlet pressure range.

For L.P. 50mm and 80mm units: See Fig. 7.

2. Remove top cap.
3. Fully unscrew and remove the spring holder.
4. Remove loading spring.
5. Insert new loading spring.
6. Screw spring holder back in place ensuring that spigot is located in loading spring.
7. Adjust the outlet pressure, as described earlier, until the required setting is achieved.
8. Replace top cap.

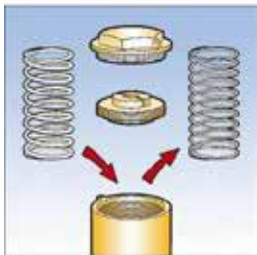


Fig. 7

For M.P. 50mm and 80mm units: See Fig. 8.

9. Remove top cap.
10. Slacken locknut on spring adjusting stem.
11. Turn spring adjuster anticlockwise to reduce loading on spring.
12. Unscrew spring adjusting bush.
13. Remove top spring holder and loading spring.
14. Insert new loading spring.
15. Place top spring holder over spring ensuring that spigot is located in loading spring.
16. Screw spring adjusting bush into top cover making sure that the end of the stem is located in the recess in the top spring holder.
17. Adjust the outlet pressure, as described earlier, until the required setting is achieved.
18. Tighten locknut.
19. Replace top cap.

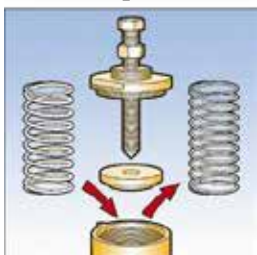


Fig. 8



Commissioning Instructions

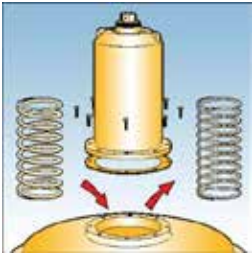


Fig. 9

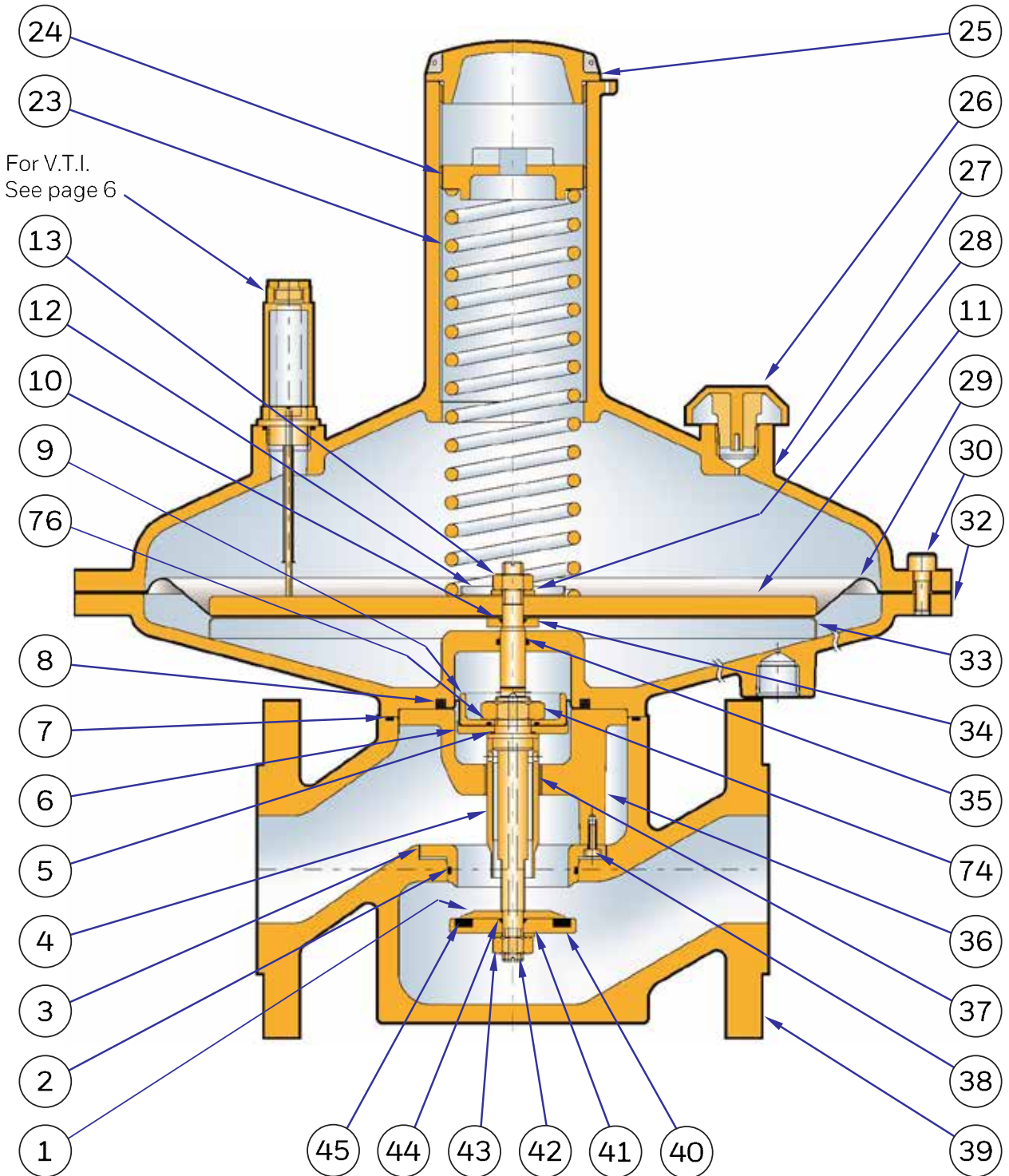
For 100mm units: See Fig. 9

20. Remove top cap.
21. Turn spring adjusting nut anticlockwise to reduce loading on spring.
22. Remove 8 hexagon head screws that secure top cover to top diaphragm case. Carefully lift off top cover assembly and gasket.
23. Remove loading spring
24. Install new loading spring over spring location washer in centre of diaphragm.
25. Replace gasket and top cover assembly and secure with 8 hexagon head screws.
26. Adjust the outlet pressure, as described on earlier, until the required setting is found.
27. Replace top cap.

These setting instructions are for direct acting applications. If other control systems are to be used please refer to your own installations instructions.

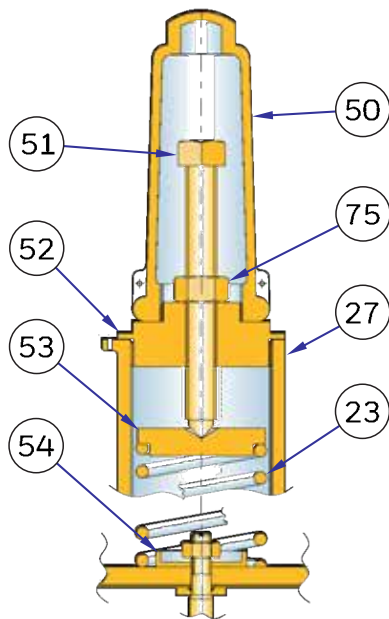
General Arrangement

50MM AND 80MM SIZES - FIG. 10.

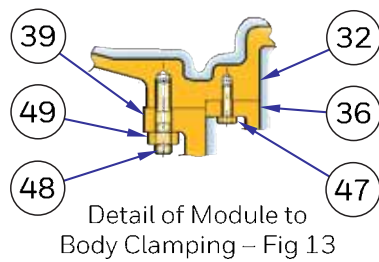


General Arrangement

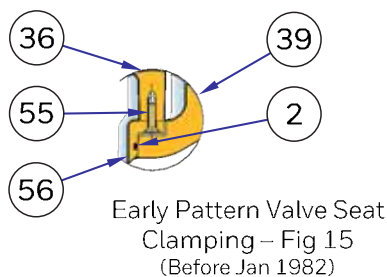
50MM AND 80MM SIZES



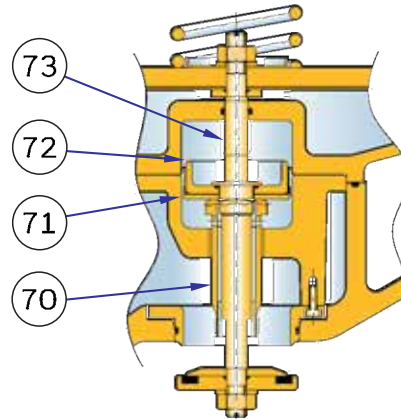
Details of Medium Pressure
 Spring Adjustment Assembly
 Fig 11



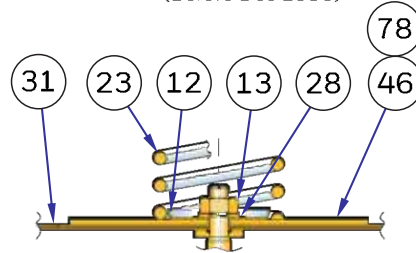
Detail of Module to
 Body Clamping – Fig 13



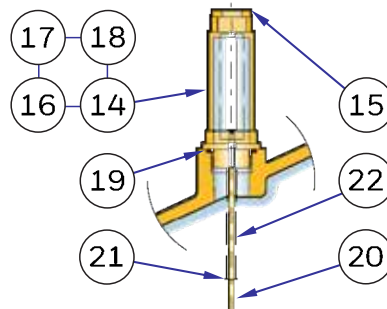
Early Pattern Valve Seat
 Clamping – Fig 15
 (Before Jan 1982)



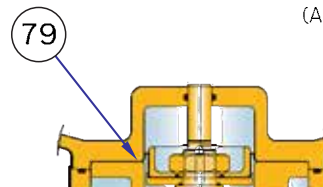
Early Pattern Secondary
 Diaphragm Assembly – Fig 12
 (Before Dec 1986)



Early Pattern Main Diaphragm Assembly – Fig 14
 (Item 46 used before Sept 1986, item 78 used on current
 regulators with outlet pressure below 40mb)



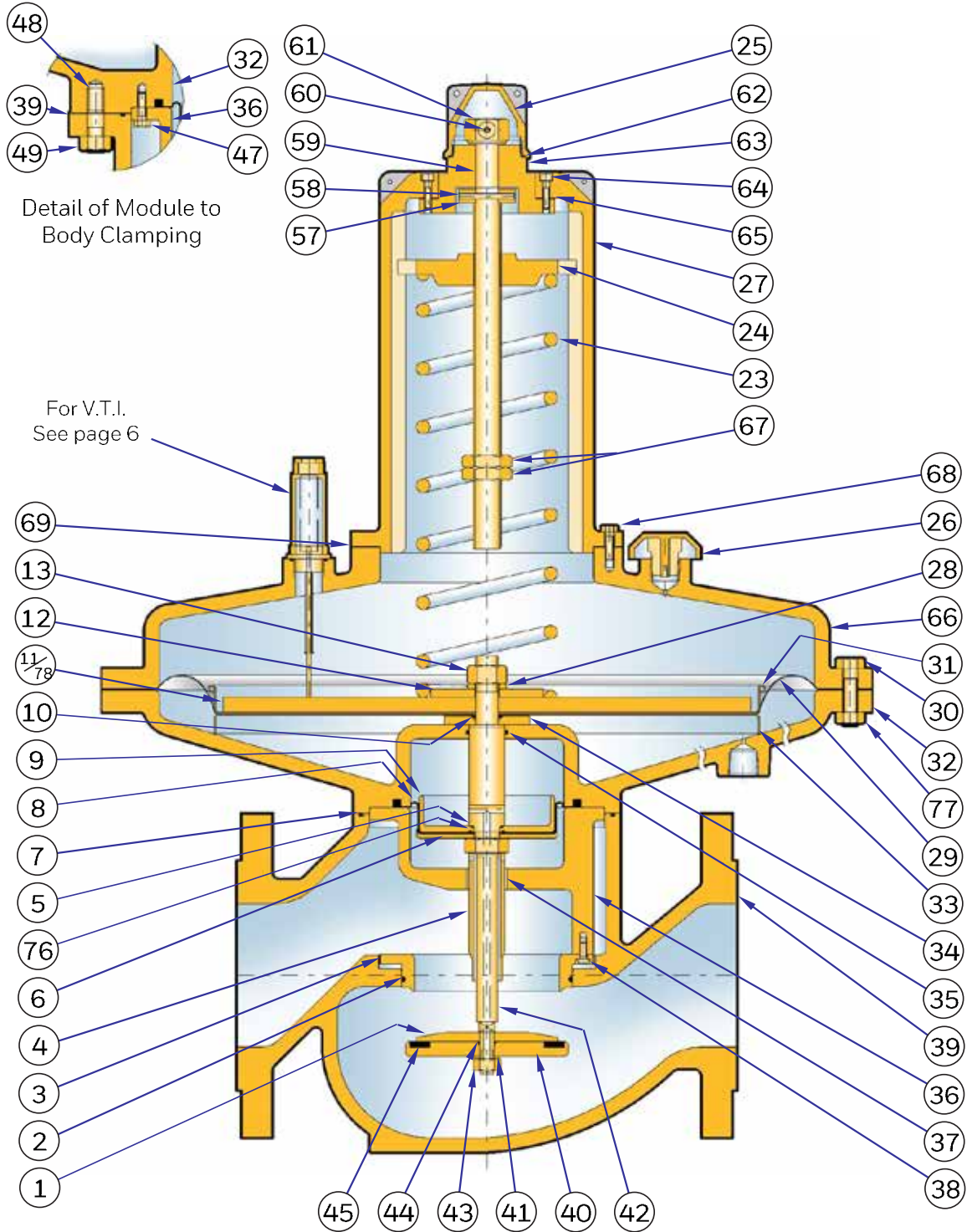
Detail of V.T.I. – Fig 16
 (All Sizes)



Old Pattern Secondary Diaphragm – Fig 18
 (DN50 only, before Apr 2011)

General Arrangement

50MM AND 80MM SIZES



Parts List

Item	Description	50mm	No. Off	80mm	No. Off	100mm	No. Off
1	Valve Disc Clamping Washer	J12309 009	1	J12311 009	1	J12312 009	1
2	'O' Ring Sea.	JORM0586 24	* 1	JORM0845 30	* 1	JORM1145 30	* 1
3	Valve Seat	J12309 006	1	J12311 011	1	J12312 011	1
4	Valve Spindle Guide	J12309 016 (Part of tem 42)		J12311 017 (Part of tem 42)		J12312 018	1
5	'O' Ring Sea.	JORM0181 16	* 1	JORM0181 16	* 1	JORM0181 16	* 1
6	Lower Secondary Diaphragm Plate	J12309 012	1	J12311 014	1	J12312 014	1
7	'O' Ring Sea.	JORM1195 30	* 1	JORM1395 30	* 1	JORM1745 30	* 1
8	Secondary Diaphragm	J12309 052	* 1	J12311 005	* 1	J12312 006	* 1
9	Upper Secondary Diaphragm Plate	J12309 011	1	J12311 013	1	J12312 013	1
10	'O' Ring Sea.	JOBS012	* 1	JOBS012	* 1	JORM0156 24	* 1
11	Main Diaphragm Reinforcing Plate	J12309 041	1	J12309 041	1	J12312 024Z04	1
12	Spring Locating Washer LP	J4811 018	1	J4811 018	1	J3312 052	1
13	Full Nut M10 or M16	03580038	1	03580038	1	JNB16FZD	1
14	Valve Travel Indicator Body	J8112 099Z01	1	J8112 099Z01	1	J8112 099Z01	1
15	V.T.I. Top Cap	J8112 100	1	J8112 100	1	J8112 100	1
16	V.T.I. Tube	J8112 101	1	J8112 101	1	J8112 101	1
17	V.T.I. Nameplate	J8112 124	1	J8112 124	1	J8112 124	1
18	V.T.I. 'O' Ring Seal	JOBS012	* 2	JOBS012	* 2	JOBS012	* 2
19	V.T.I. 'O' Ring Seal	JORM0216 24	* 1	JORM0216 24	* 1	JORM0216 24	* 1
20	V.T.I. Spindle	J12309 032	1	J12309 032	1	J8111 070	1
21	Starlock Washer	JW1/8B F7025	2	JW1/8B F7025	2	JW1/8B F7025	2
22	V.T.I. Spring	J8112 119	1	J8112 119	1	J8112 119	1
23	Loading Spring	SEE TABLE	1	SEE TABLE	1	SEE TABLE	1
24	Spring Holder LP	J4811 052Z01	1	J4811 052Z01	1	J8112 049Z01	1
25	Top Cap LP	J4811 017Z01	1	J4811 017Z01	1	J12312 036Z01	1
26	Breather Hole Cover	J12309 029	1	J12309 029	1	J12309 029	1
27	Top Cover	J12309 048 +	1	J12309 048 +	1	J8112 048 +	1
28	Spring Washer M10 or M16	JWM10BS4464BM	1	JWM10BS4464BM	1	JWM16BS4464BM	1
29	Main Diaphragm	J12309 020	* 1	J12309 020	* 1	J12312 005	* 1
30	Cap Hd Screws M8 / Hex Hd Bolts M10	JSA825SANZI	16	JSA825SANZI	16	J3A1045HEXZG	20
31	Upper Main Diaphragm Plate	J12309 022	1	J12309 022	1	J12312 021	1
32	Bottom Diaphragm Case	J12309 002 +	1	J12311 002 +	1	J12312 023 +	1
33	Lower Main Diaphragm Plate	J12309 022	1	J12309 022	1	J12312 016	1
34	Main Diaphragm Washer	J12309 017	1	J12309 017	1	J12312 019	1
35	'O' Ring Sea.	JORM0146 24	* 1	JORM0146 24	* 1	JORM0246 24	* 1
36	Valve Seat Holder	J12309 003Z01	1	J12311 004Z01	1	J12312 003Z01	1
37	Glacier DJ Bush	JDUMB2515JU	1	JDUMB2515JU	1	JDUMB2515JU	1
38	Socket Head Cap Screw M4x12	JSA412SANZI	3	JSA412SANZI	3	JSA512SBNZH	3
39	Body	J12309 001 +	1	J12311 001 +	1	J12312 001 +	1
40	Valve Disc Holder	J12309 008	1	J12311 010	1	J12312 010	1
41	Spring Washer	JWM10BS4464BM	1	JWM10BS4464BM	1	JWM10BS4464BM	1
42	Spindle	J12309 043	1	J12311 025	1	J12312 007	1
43	Full Nut M10 Zn	03580038	1	03580038	1	03580038	1
44	'O' Ring Sea.	JOBS012	* 1	JOBS012	* 1	JOBS012	* 1
45	Valve Disc	J12309 010	* 1	J12311 018	* 1	J12312 017	* 1
46	Diaphragm Reinforcing Plate	J12309 030	1	J12309 030	1		
47	Hex Head Screw M5 & M6	03512149	6	03512173	6	JSA620HHNZG	6
48	Stud M8 x 37 or M12 x 45	J12309 044	4	J12309 044	4	J12312 034	4
49	Full Nut M8 or M12	JNA8FZD	4	JNA8FZD	4	03580168	4
50	M.P. Top Cap	JCC85 017Z01	1	JCC85 017Z01	1		

Note: Part numbers marked + require connector standard to be specified with order.



Parts List

Item	Description	50mm	No. Off	80mm	No. Off	100mm	No. Off
51	M.P. Spring Adjusting Stem	J3309 016	1	J3309 016	1		
52	M.P. Spring Adjusting Bush	J12309 046	1	J12309 046	1		
53	M.P. Top Spring Halcer	J12309 045	1	J12309 045	1		
54	M.P. Lower Spring Holder	J12309 040	1	J12309 040	1		
55	C/sunk Head Screw M4 x 12	.SA4:2SKNZI	3	.SA4:2SKNZI	3	.SA4:2SKNZI	3
56	Valve Seat	J12309 006 lss 3	1	J12311 011 lss 0	1	J12311 011 lss 0	1
57	Thrust Washer					J8112 051	1
58	Tension Pin 4 x 40					JTP4X40	1
59	Spring Adjusting Screw					J8112 103	1
60	Tension Pin 4 x 25					JTP4X25	1
61	Spring Adjusting Nut					J8112 052	1
62	*O' Ring Seal					J0200032 4475	* 1
63	Spring Adjusting Bush					J8111 071	1
64	Cap Head Screw M5 x 20					.SA520SAMZI	2
65	Gasket					J8111 072	* 1
66	Top Diaphragm Case					J12312 022 +	1
67	Lock Nut					.NA20LZD	2
68	Hexagon Head Screw M6 x 20					.SA620HHAZG	8
69	Gasket					J8112 012	* 1
70	Valve Spindle Guide	J12309 016 lss 1	1	J12311 017 lss 1	1		
71	Lower Secondary Diaphragm Plate	J12309 012 lss 3	1	J12311 014 lss 2	1		
72	Upper Secondary Diaphragm Plate	J12309 011 lss 6	1	J12311 013 lss 13	1		
73	Spindle	J12309 004 lss 8	1	J12311 007 lss 10	1		
74	Secondary Diap Clamping Nut M18	J12309 042	1	J12309 042	1		
75	Full Nut M16	.NA16FZD	1	.NA16FZD	1		
76	*O' Ring Seal			JORM0221 16	* 1	JORM0221 16	* 1
77	Full Nut M10					03580038	20
78	Diaphragm Rein Plate (Po. Lo to 40mc)	J4811 015	1	J4811 015	1	J3314 044	1
79	Secondary Diaphragm (no bead)	J12309 031	* 1				

Note: Part numbers marked - require connect on thread to be specified with order.

Loading Springs

SPRING RANGE			50 & 80mm	100mm
Low Pressure	10 - 25mb	4 - 10* wg	J12311-024 Dark Blue / Gold	J12312-025* Red / Gold
	20 - 40mb	8 - 16* wg	J4811-029 White	J12312-026 Red / Silver
	35 - 50mb	14 - 20* wg	J4811-030 White / Red	J12312-027 Red / Pink
	45 - 75mb	18 - 30* wg	J12311-023 Dark Blue / Yellow	J12312-028 Red / Light Green
Medium Pressure	70 - 100mb	28 - 40* wg	J12311-022 Dark Blue / Orange	J12312-029 Red / Dark Blue
	100 - 150mb	40 - 60* wg	J12311-021 Dark Blue / Dark Green	J12312-030 Red / Dark Green
	0.15 - 0.2 Bar	2.2 - 3 PSI	J12311-020 Dark Blue / Light Blue	J12312-031 Red / Light Blue
	0.20 - 0.34 Bar	3 - 5 PSI	J12311-019 Dark Blue / Brown	J12312-032 Red / Brown

* No longer available.



Spares Kits

50MM AND 80MM SIZES

SPARES KIT CODE	SIZE
SK2309-01	50mm Low & Medium Pressure
SK2311-01	80mm Low & Medium Pressure
SK2312-01	100mm

Spares kit contents are marked * on parts list above.

Each Spares Kit comprises all diaphragms, valve seats, gaskets and "O" ring seals all packed in one plastic bag. Precise details of contents will be on the outside of each bag.



Maintenance Instructions - 50mm and 80mm Sizes

Drawing Reference: Figs. 10 - 16

NOTE: Numbers in brackets identify items on drawings

Dismantling Procedure.

Note: Regulator can be serviced with body still in pipeline. Ensure that pressure is isolated and exhausted.

1. Check external surfaces for excessive corrosion.
 2. Remove 4 nuts (49) to separate regulator module assembly from body (39).
 3. Take "O" ring (7) from body (39).
- For MP unit go to instruction No.5.
4. Unscrew and remove top cap (25).
 5. Unscrew spring holder (24) (to reduce load spring force to a minimum) and remove from chimney of top cover (27). Remove loading spring (23). Go to instruction No.9.
 6. Unscrew MP top cap (50).
 7. Loosen nut (75) and remove MP stem (51) and nut (75).
 8. Unscrew MP spring adjusting bush (52).
 9. Remove MP top spring holder (53) and loading spring (23).
 10. Unscrew Valve Travel Indicator assembly (14 - 22), and carefully remove "O" ring seal (19).
 11. Invert regulator assembly, remove valve retaining nut (43) from top end of valve spindle (42).
 12. Remove spring washer (41), Valve disc holder (40) including valve disc (45), "O" ring seal (44) and clamping plate (1) from valve spindle (42).
 13. Unscrew 3 socket head screws (38) and remove valve seat (3) from valve seat holder (36).
 14. Take "O" ring seal (2) from valve seat (3).
 15. Remove 6 hexagon head screws (47) and lift valve seat holder (36) from bottom diaphragm case (32). DO NOT remove bush (37) from valve seat holder unless necessary.
 16. Unscrew 16 screws (30), remove the top cover (27) from the bottom diaphragm case (32).
 17. Insert a flat bladed screwdriver into slot on top of valve spindle (42), and slacken off main diaphragm assembly retaining nut (13).
 18. Remove retaining nut (13), Spring washer (LP only)(28), location washer LP (12) or MP (54), main diaphragm reinforcing plate(11), main diaphragm (29) & lower main diaphragm plate (33).
 19. Remove main diaphragm washer (34) taking care not to damage "O" ring seal (10).
 20. The valve spindle assembly (42) can now be removed from the bottom diaphragm case (32), taking care not to damage "O" ring seal (35).



Maintenance Instructions - 50mm and 80mm Sizes

Dismantling Procedure (Continued).

21. The valve spindle guide (4) MUST NOT be separated from the valve spindle (42) as this will affect the performance of the assembly.
22. Unscrew retaining nut (74) so secondary diaphragm assembly consisting of, upper secondary diaphragm plate (9), "O" ring seal (76) (80mm only), secondary diaphragm (8), lower secondary diaphragm plate (6), and "O" ring seal (5) can be removed.
23. Carefully remove "O" ring seal (35) from bottom diaphragm case (32).
24. Remove breather hole cover (26) from top cover (27) and check that hole in top cover is clear.
25. If required the valve travel indicator can be disassembled by unscrewing the top cap (15) and withdrawing the tube (16) with "O" ring seals (18).

Rebuilding Procedure.

NOTE: Inspect all sealing "O" rings, and replace where necessary (a soft spares kit is available for this purpose, see page 17).

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. Carefully fit "O" ring seal (5) into groove on lower secondary diaphragm plate (6).
2. For 80mm unit only carefully fit "O" ring seal (76) into groove in upper secondary diaphragm plate (9).
3. With lip facing upwards replace lower secondary diaphragm plate (6) over valve spindle (42) with M18 thread end facing upwards.
4. Place secondary diaphragm (8) on top of lower secondary diaphragm plate (6), ensure correct orientation.
5. With lip facing upwards replace upper secondary diaphragm plate (9) on top of secondary diaphragm (8).
6. Screw together secondary diaphragm assembly using retaining nut (74).
7. Carefully replace "O" ring seal (35) in lower diaphragm case (32).
8. Insert valve spindle assembly (42) with M18 end first, into lower diaphragm case (32).
9. Fit "O" ring seal (10) into groove on main diaphragm washer (34).
10. Replace main diaphragm washer (34) (with "O" ring facing upwards) on top of valve spindle (42).
11. With lip facing downwards replace lower main diaphragm plate (33) on top of main diaphragm washer (34).
12. Carefully replace main diaphragm (29) on top of lower main diaphragm plate (33). Ensure holes align with lower diaphragm case (32).
13. Fit main diaphragm reinforcing plate (11) over main diaphragm (29).
14. With lip facing upwards replace location washer LP (12) or MP (54) on top of main diaphragm reinforcing plate (11).
15. Place spring washer (28) on top of location washer LP (12) or MP (54).
16. Screw nut (13) over valve spindle assembly (42) and tighten.
17. Carefully fit top cover (27) on top of main diaphragm (29) and bottom diaphragm case (32) ensuring hole align correctly, then screw together using 16 socket head screws (30).



Maintenance Instructions - 50mm and 80mm Sizes

Rebuilding Procedure (Continued).

18. Reposition the valve seat holder (36) over the bottom of the valve spindle (42), ensuring that the secondary diaphragm (8) is fully home in the lower diaphragm case (32), and that the 3 location pillars provide a unobtrusive gasway when fitted, in relation to the inlet port of the body (39).tighten evenly in place using 6 hexagon head screws (47).
19. Using 3 socket head screws (38) secure valve seat (3) to valve seat holder (36).
20. Refit "O" ring seal (2) onto valve seat holder (3).
21. With flat face facing downwards, fit valve disc clamping washer (1) over bottom end of valve spindle (42).
22. Ensure valve disc (45) is attached to valve disc holder (40).
23. Refit "O" ring seal (44) into valve disc holder (40).
24. With valve disc (45) facing upwards replace valve disc holder (40) and "O" ring (44) onto valve disc clamping washer (1).
25. Replace spring washer (41) over valve disc holder (40).
26. Using flat bladed screwdriver in slot in valve spindle (42), screw together valve disc assembly with retaining nut (43). Tighten to a torque of 16 - 20 Nm.
27. Carefully replace main "O" ring seal (7) in body (39).
28. Replace regulator assembly into body (39), ensure in correct position i.e. unrestricted inlet porting.
29. Secure together regulator assembly and body (39) using 4 studs (48) and nuts (49).
30. Replace loading spring (23) inside chimney of top cover (27). For MP unit go to instruction No.32.
31. Screw LP top spring holder (24) with spigot locating into loading spring (23), into chimney of top cover (27). Go to instruction (36).
32. Replace MP top spring holder (53) with spigot locating into loading spring (23).
33. Screw MP spring adjusting bush (52) into chimney of top cover (27).
34. Screw MP nut (75) on to shaft of MP spring adjusting stem (51).
35. Screw MP spring adjusting stem (51) into spring adjusting bush (52), with the end of the stem (51) locating into the recess in the top spring holder (53).
36. Set Regulator to correct outlet pressure then screw MP top cap (50) on to MP spring adjusting bush (52).
37. Set Regulator to correct outlet pressure then screw LP top cap (25) into top cover (27).
38. Replace breather cover (26).
39. If taken apart - reassemble valve travel indicator by inserting tube (16), with "O" rings (18) at either end, into V.T.I. body (14). Replace V.T.I. top cap (15).
40. Screw valve travel indicator assembly (14-22) into hole in top cover (27).

Maintenance Instructions - 100mm Size

Drawing Reference: Fig. 17

NOTE: Numbers in brackets identify items on drawings

Dismantling Procedure.

Note: Regulator can be serviced with body still in pipeline. Ensure that pressure is isolated and exhausted.

1. Check external surfaces for excessive corrosion.
2. Remove 4 nuts (49) and separate regulator module assembly from body (39). Take care as this unit is heavy. Remove "O" ring seal (7) from body (39).
3. Take off top cap (25) and turn spring adjusting nut (61) anticlockwise to reduce loading spring force to a minimum.
4. Remove 8 hexagon head screws (68) from top diaphragm case (66) and lift off top cover assembly (27), loading spring (23) and gasket (69). If top cover assembly does not require dismantling go to instruction No.8.
5. Drift out pin (60), remove spring adjusting nut (61) and withdraw spring adjusting stem (59).
6. Unscrew locknuts (67) – first noting their position, and spring holder (24) from spring adjusting stem (59).
7. Drift out pin (58) and remove thrust washer (57) from spring adjusting stem (59).
8. Take out 2 socket head screws (64) and remove spring adjusting bush (63) and gasket (65).
9. Unscrew valve travel indicator (14-20) and breather hole cover (26). Check that hole in top diaphragm case (66) is clear.
10. Invert assembly and slacken off valve retaining nut (43) from lower end of valve spindle (42).
11. Remove spring washer (41), valve disc holder (40) – including valve disc (45), sealing "O" ring (44) and clamping plate (1) from valve spindle (42).
12. Unscrew 3 socket head screws (38) and remove valve seat (3) from valve seat holder (36).
13. Take "O" ring seal (2) from valve seat (3).
14. Remove 6 hexagon head screws (47), remove valve seat holder (36) from lower diaphragm case (32). DO NOT remove bush (37) from valve seat holder unless necessary.
15. Unscrew 20 hexagon head bolts (30) and nuts (77) and separate top diaphragm case (66) from lower diaphragm case (32).
16. With a flat bladed screwdriver inserted into slot on top of valve spindle (42), slacken off main diaphragm assembly retaining nut (13).
17. Remove nut (13), spring washer (28), spring location plate (12), diaphragm reinforcing plate (11) or (78) on L.P. unit, upper diaphragm plate (31), diaphragm (29) & lower diaphragm plate (33) from spindle (42).
18. Remove main diaphragm washer (34), taking care not to damage sealing "O" ring (10).
19. Valve spindle assembly (42) may then be removed complete.
20. Unscrew valve spindle guide (4) from spindle (42) and remove lower diaphragm plate (6), rolling diaphragm (8) & upper diaphragm plate (9) together with sealing "O" rings (5) and (76).
21. Remove sealing "O" ring (35) from lower diaphragm case (32) for inspection if required.
22. If required the valve travel indicator can be disassembled by unscrewing the top cap (15) and withdrawing the tube (16) with "O" ring seals (18)



Maintenance Instructions - 100mm Size

Rebuilding Procedure

NOTE: Inspect all sealing "O" rings, and replace where necessary (a soft spares kit is available for this purpose, see page 17).

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 upper secondary diaphragm plate 'O' ring seal (5) on main valve spindle (42).
2. The secondary diaphragm assembly is now replaced in the following sequence:- upper secondary diaphragm plate (9), "O" ring seal (76), rolling secondary diaphragm (8) - ensuring correct orientation, lower secondary diaphragm plate (6).
3. The secondary diaphragm plate assembly is clamped in place using the valve spindle guide (4).
4. Replace sealing "O" ring (35) in lower diaphragm case (32).
5. Insert spindle assembly (42) into lower diaphragm case (32).
6. Position main diaphragm washer (43) together with "O" ring seal (10) on spindle (42).
7. Fit lower diaphragm plate (33), main diaphragm (29), upper diaphragm plate (31), diaphragm reinforcing plate (11) or (78) on L.P. unit, spring location plate (12), spring washer (28) and retaining nut (13). Fully tighten assembly.
8. Position main diaphragm (29) in relation to clamping holes on lower diaphragm case (32).
9. Fit top diaphragm case (66) and secure in place by 20 hexagon head bolts (30) and nuts (77).
10. Reposition valve seat holder (36), ensuring that the secondary diaphragm (8) is full home in lower diaphragm case (32) and that the 3 location pillars provide an unobstructed gasway when fitted in relation to the inlet port of the body (39). Tighten evenly in place using 6 hexagon head screws (47).
11. Using 3 socket head screws (38) secure valve seat (3) to valve seat holder (36).
12. Position valve clamping washer (1) on spindle (42), followed by sealing 'O' ring (44), valve disc holder (40) - including valve disc (45), spring washer (41) and clamping nut (43). Tighten assembly to a torque of 16 - 20 Nm using slot at top end of spindle (42) to stop spindle rotating.
13. Replace main sealing 'O' ring (7) in regulator body (39) and "O" ring seal (2) on valve seat (3) and grease appropriately.
14. Replace module assembly into body (39) ensuring correct orientation, i.e. unrestricted inlet porting.
15. Replace and tighten 4 retaining nuts (49) onto studs (48), securing module to body. If top cover assembly has not been dismantled go to instruction No.23.
16. Insert spring adjusting bush (63) and gasket (65), ensuring correct alignment of holes, into top cover (27).
17. Secure spring adjusting bush (63) in place with 2 socket head screws (64).
18. Push thrust washer (57) onto stem (59) and refit pin (58).
19. Screw spring holder (24) onto stem (59) with smaller boss facing thrust washer (57).
20. Replace locknuts (67) onto stem (59) and tighten in their previously noted position.
21. Insert stem assembly (59) into top cover (27) and push smaller end through spring adjusting bush (63).
22. Reposition spring adjusting nut (61) over spring adjusting stem (59) and secure with pin (60).
23. Replace loading spring (23), top cover assembly (27) and gasket (69) using 8 hexagon head screws (68).
24. If taken apart - reassemble valve travel indicator by inserting tube (16), with "O" rings (18) at either end, into V.T.I. body (14).



Maintenance Instructions - 100mm Size

Rebuilding Procedure (Continued).

25. Replace V.T.I. top cap (15).
26. Replace breather hole cover (26) and valve travel assembly (14) with 'O' ring (19) in top diaphragm case (66).
27. Set regulator to required outlet pressure (see commissioning instructions) and replace top cap (25).