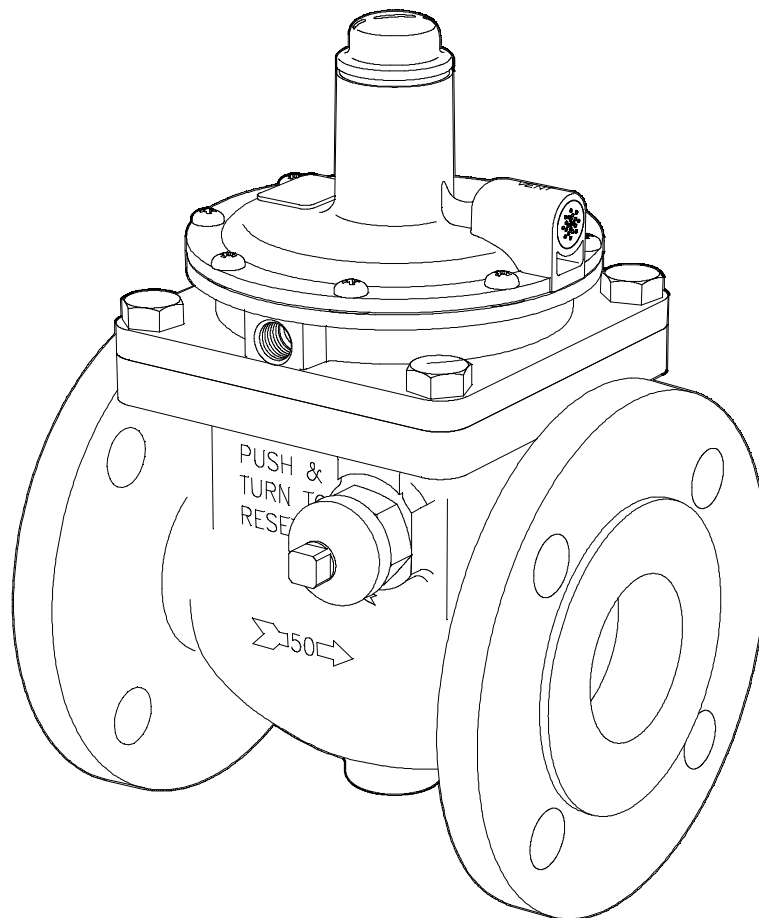


## **COMMISSIONING AND MAINTENANCE INSTRUCTIONS**



Available in Low, Medium and High Pressure Versions.

## INSTALLATION, OPERATION AND MAINTENANCE

### INSTALLATION INSTRUCTIONS (fig 1)

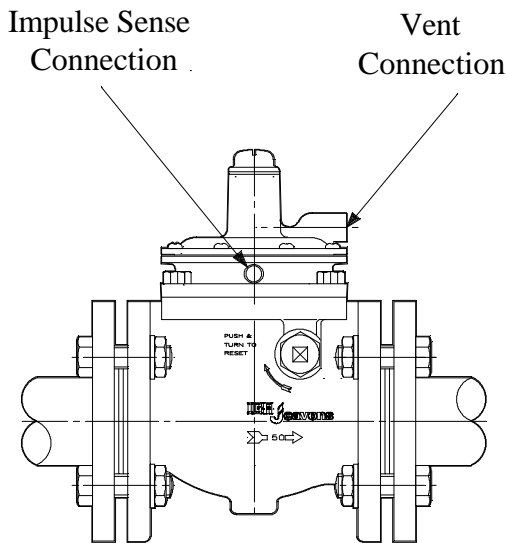


Fig 1

1. Remove protective discs from flanges on inlet and outlet ports.
2. Ensure installation pipework is thoroughly clean.
3. The direction of gas flow must be the same as the arrows on the slam shut body.
4. Install the slam shut valve into the pipework, using gaskets and bolting approved to National Standards.
5. Connect impulse line to sense chamber tapping, using jointing compound approved to National Standards.
6. Vent line can be installed as below if required:

Remove vent protective screen and connect vent pipe line to top cover, using jointing compound approved to National Standards.

Lead pipe to atmosphere in accordance with National Standards.

Ensure no water can penetrate pipe termination point.

### VALVE OPERATION (Fig 2)

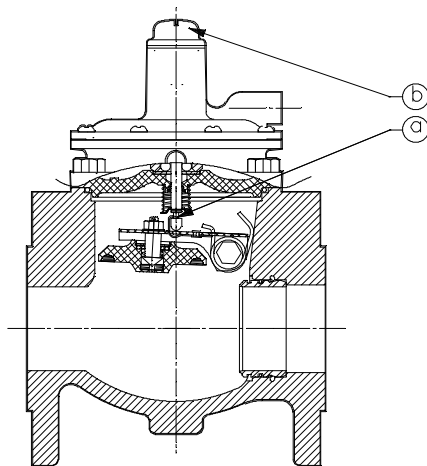


Fig 2

As the sense pressure rises to the desired trip point, it acts against the pressure sensing diaphragm and pressure setting spring.

A bearing cage is lifted, allowing ball bearings to move radially outwards against the bearing cage taper, to a point where the shoulder diameter on the spring loaded shaft, is free to pass thru the bearings (TRIP POINT).

As the shaft moves thru the bearings, it releases the spring clip (a) thereby allowing the valve seat assembly to operate in the closed position.

A valve position indicator (b) indicates that the valve has moved to the closed position.

## SETTING THE TRIP PRESSURE (Fig 3)

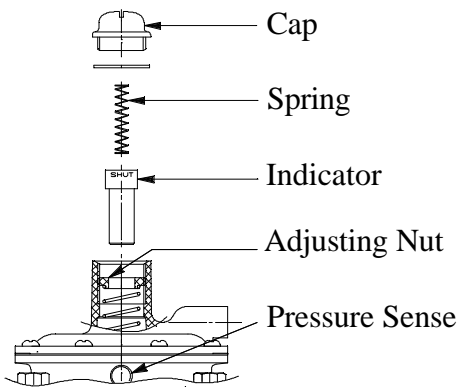


Fig 3

1. Ensure valve is depressurised.
2. Remove cap, spring and indicator.
3. Screw adjusting nut clockwise as far as it will go, Do Not Force.
4. Induce desired set pressure at pressure sense point.
5. Wind out (anti-clockwise) adjusting nut half a turn at a time until valve trips.
6. Remove pressure, reset valve (see below).
7. Slowly induce pressure at sense point, and check that valve trips at desired pressure. Adjust as necessary.
8. Valve is now set.
9. Refit indicator, spring and cap.
10. NOTE; if correct trip pressure is not obtainable, choose correct spring from tables on page 13, and go back to instruction 3 above.

## RE-ARMING THE VALVE (Fig 4)

Re-arming of the valve is carried out manually. Prior to re-arming, the cause of operation should first be ascertained and rectified. The valve must be isolated and downstream pressure vented. In order to operate the correct procedure must be followed.

The reset shaft requires to be pushed and rotated (1) until it is felt to engage the latching assembly. Further rotation using light pressure causes the automatic equalising valve to operate.

Do not attempt to force the valve open. Once pressure has equalised the valve seat assembly will be felt to lift from the seat allowing the reset shaft to be easily rotated (2) to the latching position.

When the valve is satisfactory re-armed the valve position indicator will move from the window. ((b) Fig 2).

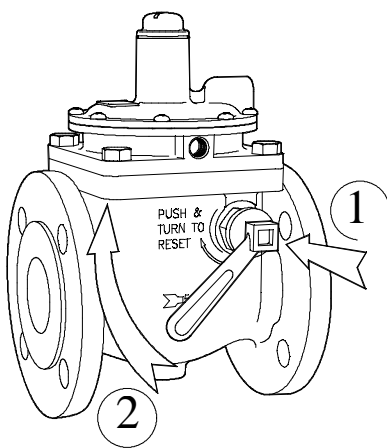
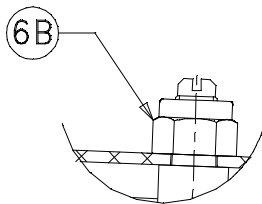
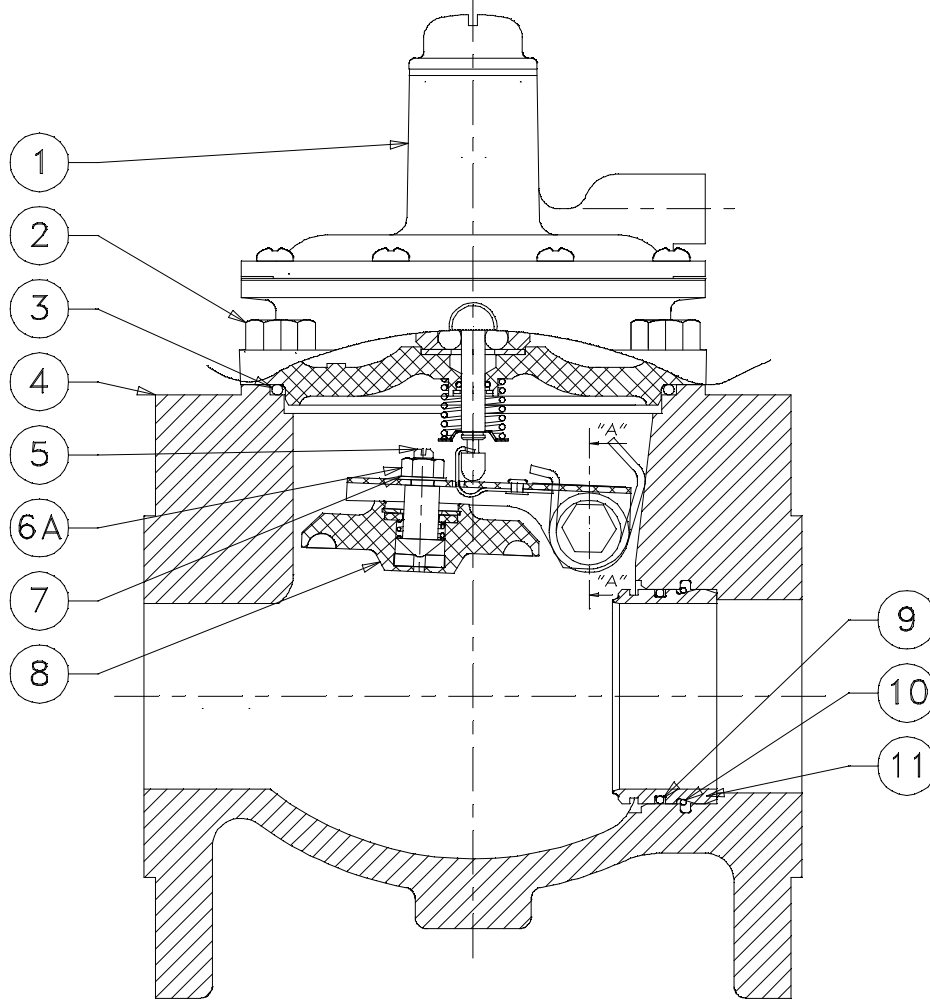
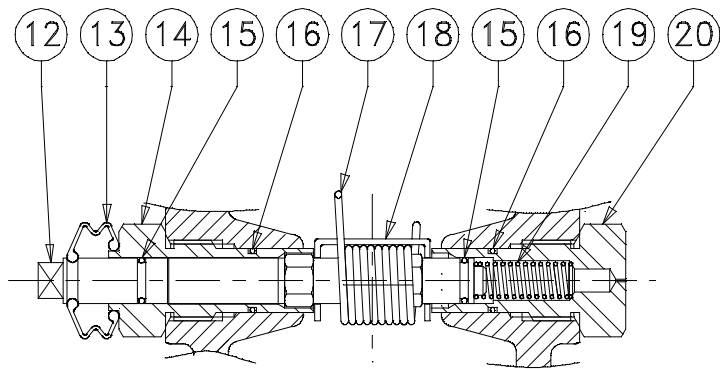


Fig 4

SLAM SHUT ASSEMBLY Fig 5

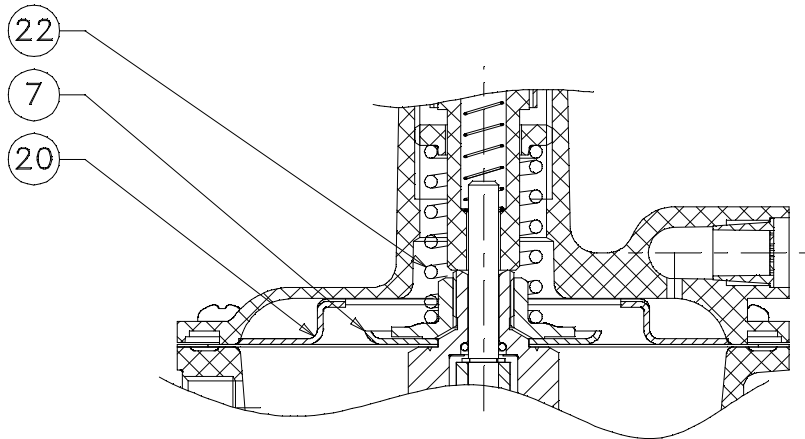
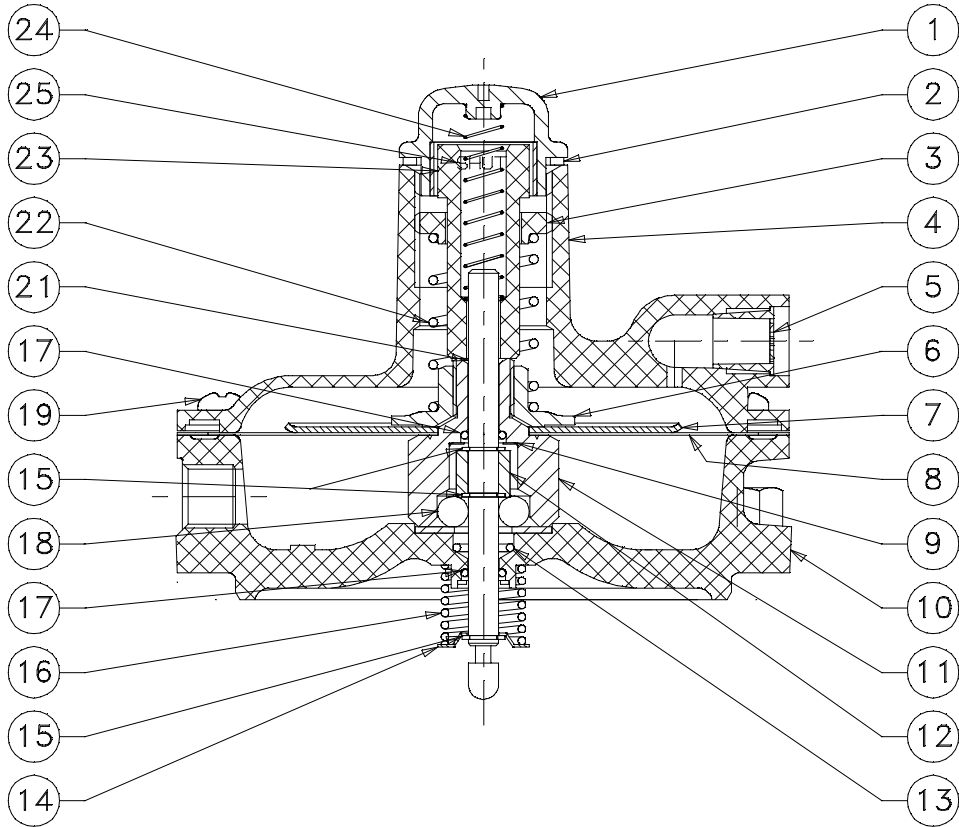


ALTERNATIVE VERSION  
(Washer Item 7 Not required)



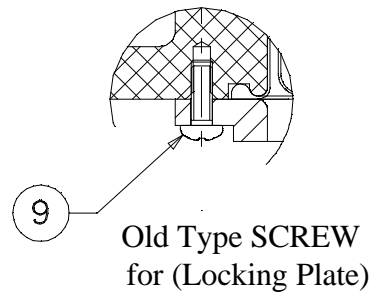
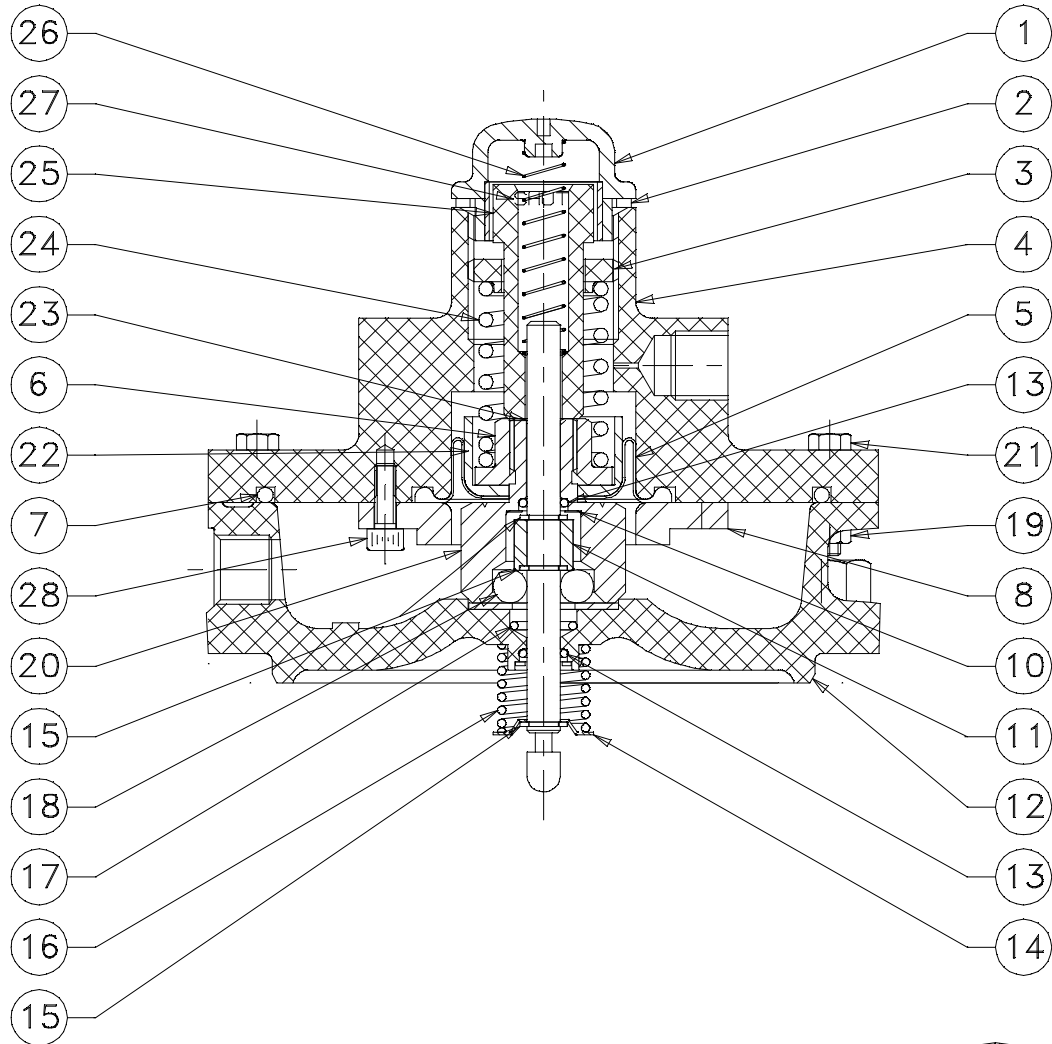
SECTION A-A Fig 6

LP OPSO ASSEMBLY Fig 7



MP OPSO ASSEMBLY Fig 8

HP OPSO ASSEMBLY Fig 9



PARTS LIST FOR SLAM-SHUT ASSEMBLY  
AND SECTION "A-A" SEE FIGS 5 AND 6

ITEM No.	DESCRIPTION	AMCO PART No.	JEAUVONS PART No.	No. Off	SIZE
1	OPSO ASSEMBLY LP	72986G243	S1HL09	1	2", 3"
	OPSO ASSEMBLY LP	72986G244	S1HL12	1	4"
	OPSO ASSEMBLY MP	72986G241	S1HM09	1	2", 3"
	OPSO ASSEMBLY MP	72986G242	S1HM12	1	4"
	OPSO ASSEMBLY HP	72986G239	S1HH09	1	2", 3"
	OPSO ASSEMBLY HP	72986G240	S1HH12	1	4"
2	SCREW	11635P053	JSA1025HHNZG	4	2", 3", 4"
3	"O" RING	78037P115	JOBS243 ✱	1	2", 3"
	"O" RING	78037P121	JOBS247 ✱	1	4"
4	BODY ANSI 150 RAISED FACE	-	J10009-040I01	1	2"
	BODY ANSI 150 FLAT FACE	-	J10009-040I02	1	2"
	BODY ANSI 150 RAISED FACE	-	J10011-001I01	1	3"
	BODY ANSI 150 FLAT FACE	-	J10011-001I02	1	3"
	BODY ANSI 150 RAISED FACE	-	J10012-001I01	1	4"
	BODY ANSI 150 FLAT FACE	-	J10012-001I02	1	4"
5	STEM (Included in Item 8)	-			
6A	NUT (Normal Nut)	22032P079	JNA6FSD	1	2", 3", 4"
6B	NUT (Lock Nut)	54505P006	JNA6PZ	1	2", 3", 4"
7	WASHER	13981P080	JWM6ETLS	1	2", 3", 4"
8	SEAT DISC ASSEMBLY	72720G005	S1VC09 ✱	1	2"
	SEAT DISC ASSEMBLY	72720G006	S1VC11 ✱	1	3"
	SEAT DISC ASSEMBLY	72720G007	S1VC12 ✱	1	4"

## PARTS LIST FOR SLAM-SHUT ASSEMBLY AND SECTION "A-A" SEE FIGS 5 AND 6 CONT'D

ITEM No.	DESCRIPTION	AMCO PART No.	JEAUVONS PART No.	No. Off	SIZE
9	"O" RING	78037P114	JOBS138 *	1	2"
	"O" RING	78037P119	JO200152-4475 *	1	3"
	"O" RING	78037P163	JOBS243 *	1	4"
10	RING RETAINER	73841P001	J10009-031	1	2"
	RING RETAINER	73841P002	J10011-004	1	3"
	RING RETAINER	73841P003	J10012-004	1	4"
11	SEAT RING	73840P001	J10009-010	1	2"
	SEAT RING	73840P002	J10011-002	1	3"
	SEAT RING	73840P003	J10012-002	1	4"
12	SHAFT	72644P004	J10009-028	1	2", 3", 4"
13	GAITER V6-438	78198P003	I544199	1	2", 3", 4"
14	RESET SHAFT BUSH	14596P003	J10009-029	1	2", 3", 4"
15	"O" RING	42710P027	JOBS012 *	2	2", 3", 4"
16	"O" RING	42710P152	JOBS015 *	2	2", 3", 4"
17	SPRING CLOSING	73849P001	J10009-030	1	2", 3"
	SPRING CLOSING	73849P002	J10012-005	1	4"
18	LEVER ASSEMBLY	72626G003	S1LC09	1	2"
	LEVER ASSEMBLY	72626G004	S1LC11	1	3"
	LEVER ASSEMBLY	72626G005	S1LC12	1	4"
19	SPRING	71402P003	J10009-005	1	2", 3", 4"
20	SPRING RESET SHAFT BUSH	73862P001	J10009-023	1	2", 3", 4"

## PARTS LIST LOW/MEDIUM PRESSURE OPSO ASSEMBLIES FIGS 7 AND 8

ITEM No.	DESCRIPTION	AMCO PART No.	JEAUVONS PART No.	No. Off	SIZE
1	PLUG SEAL	73877P001	I544127	1	2", 3", 4"
2	GASKET (PLUG SEAL)	70019P108	J10009-006 *	1	2", 3", 4"
3	SCREW ADJUSTMENT	71824P005	I513121	1	2", 3", 4"
4	TOP COVER (1/4NPT)	-	I513125	1	2", 3", 4"
5	SCREEN VENT	70034P001	J12506-277	1	2", 3", 4"
6	NUT (DIAPHRAGM)	72642P001	J10009-035Z01	1	2", 3", 4"
7	DIAPHRAGM PLATE LP	70012P042	I513108	1	2", 3", 4"
	DIAPHRAGM PLATE MP	70012P045	I513101	1	2", 3", 4"
8	DIAPHRAGM	70014P155	I513112 *	1	2", 3", 4"
9	WASHER STARLOCK	78074P013	JCIR1305-056Z *	1	2", 3", 4"
10	ADAPTOR BODY 1/4" NPT	-	J10009-009F01	1	2", 3"
	ADAPTOR BODY 1/4" NPT	-	J10009-009F02	1	4"
11	BALL CAGE	72649P001	J10009-021	1	2", 3", 4"
12	COLLAR	72648P001	J10009-022	1	2", 3", 4"
13	"O" RING	42710P027	JOBS012 *	1	2", 3", 4"
14	RETAINER	72363P002	I544145	1	2", 3", 4"
15	RING	78074P014	JCIR1800-25B	3	2", 3", 4"
16	SPRING (SHUT-OFF)	71411P045	J10009-004	1	2", 3", 4"
17	"O" RING	42710P146	JOBS010M *	2	2", 3", 4"
18	BALL (1/4 DIA)	78067P013	JBALL1/4	6	2", 3", 4"
19	SCREW (BODY)	78008P006	JSA512XPTZ	8	2", 3", 4"
20	REDUCING RING MP	72646P001	I513102	1	2", 3", 4"
21	SHAFT	72644P003	J10009-027	1	2", 3", 4"
22	LOADING SPRINGS LP/MP	SEE TABLE	SEE TABLE	1	2", 3", 4"
23	POSITION INDICATOR	73874P001	J10009-026	1	2", 3", 4"
24	SPRING (INDICATOR)	71401P002	J10009-002	1	2", 3", 4"
25	DECAL POSITION INDICATOR	73875P001	J10009-025	1	2", 3", 4"

## PARTS LIST HIGH PRESSURE OPSO ASSEMBLY FIG 9

ITEM No.	DESCRIPTION	AMCO PART No.	JEAVONS PART No.	No Off	SIZE
1	PLUG SEAL	73877P001	I544127	1	2", 3", 4"
2	GASKET (PLUG SEAL)	70019P001	J10009-006 *	1	2", 3", 4"
3	SCREW ADJUSTMENT	71824P005	I513121	1	2", 3", 4"
4	TOP COVER	-	J10009-032	1	2", 3", 4"
5	DIAPHRAGM	72688P300	J10009-038 *	1	2", 3", 4"
6	NUT (DIAPHRAGM)	72642P301	J10009-039	1	2", 3", 4"
7	"O" RING	78037P115	JOBS243 *	1	2", 3", 4"
8	LOCKING PLATE	72646P300	J10009-034	1	2", 3", 4"
9	SCREW (LOCKING PLATE)	78000P300	JSA412SANZI	4	2", 3", 4"
10	WASHER STARLOCK	78074P013	JCIR1305-056Z *	1	2", 3", 4"
11	COLLAR	72648P001	J10009-022	1	2", 3", 4"
12	ADAPTOR BODY Rc1/4	-	J10009-009A01	1	2", 3"
	ADAPTOR BODY 1/4" NPT	-	J10009-009F01	1	2", 3"
	ADAPTOR BODY 1/4" NPT	-	J10009-009F02	1	4"
13	"O" RING	42710P146	JOBS010M *	2	2", 3", 4"
14	RETAINER	72363P002	I544145	1	2", 3", 4"
15	RING	78074P014	JCIR1800-025B	3	2", 3", 4"
16	SPRING (SHUT-OFF)	71411P045	J10009-004	1	2", 3", 4"
17	"O" RING	42710P027	JOBS012 *	1	2", 3", 4"
18	BALL (1/4 DIA)	78067P013	JBALL1/4	6	2", 3", 4"
19	NUT (BODY )	78020P300	JNA4FZ	8	2", 3", 4"
20	BALL CAGE	72649P301	J10009-036	1	2", 3", 4"
21	SCREW (BODY)	78000P301	JSA420HHNZG	8	2", 3", 4"
22	DIAPHRAGM CUP	72689P300	J10009-033	1	2", 3", 4"
23	SHAFT	72644P003	J10009-027	1	2", 3", 4"
24	LOADING SPRINGS HP	SEE TABLE	SEE TABLE	1	2", 3", 4"
25	POSITION INDICATOR	73874P001	J10009-026	1	2", 3", 4"
26	SPRING	71401P002	J10009-002	1	2", 3", 4"
27	DECAL POSITION INDICATOR	73875P001	J10009-025	1	2", 3", 4"
28	Old Type SCREW (LOCKING PLATE)	-	JSA410XPNZ	4	2", 3", 4"

NOTE: Items marked \* in parts lists are contained in spares kits (see table below).

**SPARES KITS**

DESCRIPTION	AMCO PART No.	JEA VONS PART No.
2" LP/MP		SK109-01
2" HP		SK109-02
3" LP/MP		SK111-01
3" HP		SK111-02
4" LP/MP		SK112-01
4" HP		SK112-02

## LOW PRESSURE SPRINGS (All Sizes)

"wc / PSIG	AMCO PART No.	JEAVONS PART No.	COLOR CODE
7" - 14" wc	70017P091	J10009-011	-
14" - 28" wc	70017P075	J10009-012	LIGHT BLUE
1 - 2 PSIG	70017P076	J10009-013	RED BROWN
2 - 3 PSIG	70017P077	J10009-014	PURPLE
3 - 5 PSIG	70017P078	J10009-015	ORANGE / YELLOW
5 - 8 PSIG	70017P079	J10009-016	ORANGE / GREEN

Low pressure units use Diaphragm Plate Part No. 70012P042 (I513108)

## MEDIUM PRESSURE SPRINGS (All Sizes)

PSIG	AMCO PART No.	JEAVONS PART No.	COLOR CODE
8 - 14	70017P078	J10009-015	ORANGE / YELLOW
14 - 20	70017P079	J10009-016	ORANGE / GREEN

For medium pressure replace LP Diaphragm plate, with MP Diaphragm plate Part No.70012P045 (I513101), and add MP Reducing ring Part No. 72646P001 (I513102).

## HIGH PRESSURE SPRINGS (All Sizes)

PSIG	AMCO PART No.	JEAVONS PART No.	COLOR CODE
14 - 26	70017P077	J10009-014	PURPLE
24 - 51	70017P078	J10009-015	ORANGE / YELLOW
36 - 87	70017P079	J10009-016	ORANGE / GREEN

Drawing Reference: Fig 5, Fig 6  
Parts List Reference: Table 1

NOTE: Numbers in brackets identify items on drawings

## Dismantling Procedure for Slam Shut Assembly:

### Removal of OPSO assembly from Slam-Shut Body:

1. Ensure all valves are closed, and line is fully vented to the atmosphere.
2. Remove impulse line to OPSO assembly (1) and mark position of OPSO assembly relative to slam-shut body (4).
3. Remove 4 screws (2) holding OPSO assembly (1) to the slam-shut body (4). If the slam-shut is closed, the OPSO assembly can be lifted out vertically. If the slam-shut is open, then raise OPSO assembly at outlet side and slide towards outlet, this will release the latch closing the slam shut and allowing the OPSO assembly to be lifted clear of the slam shut body.

### Dismantling of Slam-Shut Body:

4. Remove "O" ring (3) from slam-shut body (4).
5. Carefully using pliers, disengage closing spring (17) by pulling tail of spring into locking slot on lever assembly (18). Seat disc assembly (8) and lever assembly (18) will now be free to swing, without resistance from closing spring (17).
6. Remove top cover (13) from shaft (12), then unscrew reset bush (14) from slam-shut body (4)
7. Whilst holding seat disc assembly (8) with lever assembly (18) withdraw shaft (12) from slam-shut body (4). (a slight rotation may be required to remove shaft from lever assembly).
8. The seat disc assembly (8) with lever assembly (18) can now be lifted clear of the slam-shut body (4).

WARNING: Do not disengage spring (17) from the slot in the lever assembly (18).

9. Unscrew reset bush (20) from slam shut body (4), remove spring (19) from inside reset bush (20).
10. The face of seat ring (11) can now be inspected for evidence of damage.
11. If seat ring (11) is damaged remove as follows:  
Place a screwdriver in seat ring slot, and using the screwdriver as a lever, slide seat ring towards inlet, repositioning screwdriver as far round both sides of seat ring as possible, to ensure seat ring (11) slides out square to slam-shut body (4). (Note: seat ring (11) is a push fit into slam-shut body (4), and is held in place by a seat ring retainer (10) and is sealed by "O" ring (9).
12. "O" ring (9) and seat ring retainer (10) can now be removed from slam-shut body (4).
13. Unscrew valve stem nut (6A) or (6B) (whilst using screwdriver to prevent valve stem (5) from rotating), Remove washer (7) if fitted from under valve stem nut (6). Seat disc Assembly (8) can now be removed from lever assembly (18).
14. Remove "O" rings (15) and (16) from shaft (12) and bushes (14) and (20).

Discard all "O" rings, seat disc assembly (8) and replace with new parts from spares kit.

To maintain OPSO see separate instructions later.

## Rebuilding Procedure for Slam-Shut Assembly:

### Rebuilding of slam-shut body :

It is recommended that all "O" rings be lightly greased, before assembly using Dow Corning Molycote 55M

1. Replace seat retaining ring (10) into slot in slam-shut body (4).
2. Refit "O" ring (9) onto seat ring (11) middle groove and lightly lubricate with silicon grease.
3. Fit seat ring (11) into slam-shut body (4) with the chamfer on the inside of the seat ring (11) to be facing inwards. Care should be taken not to damage seating face.
4. If removed fit closing spring (17) into lever assembly (18), (using pliers ) the short leg of the spring fits into the hole in the lever assembly, the long leg of the spring fits into the slot in the lever assembly .

NOTE: The reset shaft assembly is universal handed, and can be refitted from either side of the slam shut valve.

5. Attach the seat disc assembly (8) to the lever assembly (18) by fitting stem (5) of valve disc assembly thru hole in lever assembly (18), and securing in position using washer (7) if fitted and nut (6A) or (6B). If self locking nut (6B) is used Do not fit washer (7).
6. Fit "O" ring (16) into groove in reset shaft bush (14).
7. Fit "O" ring (16) into groove in spring reset shaft bush (20).
8. Place spring (19) into spring reset shaft bush (20) then screw reset shaft into slam-shut body (4). On the opposite side to recocking .
9. Refit 2 "O" rings (15) into grooves in shaft (12), lightly lubricate shaft and "O" rings.
10. Holding seat disc assembly (8) with lever assembly (18) in slam-shut body (4), insert shaft (12) thru lever assembly, so that spigot on the end of the shaft locates into the spring (19), which is held in the slam-shut body by the reset shaft bush (20). (A slight rotation of the shaft (12), may be required to ensure the hexagon section of the shaft passes thru the lever assembly).
11. Whilst pushing the shaft (12) in to the slam-shut body (4), place the reset shaft bush (14) over the end of shaft (12), and screw into the slam-shut body (4).
12. Refit shaft cover (13) onto shaft (12).
13. Check that seat disc assembly (8) with lever assembly (18) is free to swing.
14. CAREFULLY (using pliers) Release spring tail out of slot in the lever assembly (18) (see label on lever assembly for direction to release spring).
15. Using a 9/16" Spanner or reset tool on reset shaft (12), check the operation of assembly by pressing shaft towards the slam-shut body (4), and rotating clockwise. A slight rotation may be required to locate shaft hexagon in lever assembly. Slam-shut should freely open and close when pressure on reset shaft is released.
16. Lightly lubricate "O" ring (3) and fit into groove in slam-shut body (4).
17. Once OPSO assembly (1) has been assembled in TRIPPED position, (see section for OPSO assembly procedure) place OPSO assembly (1) on top of slam-shut body (4). Check (see fig 5) orientation of OPSO assembly (1) to slam-shut body (4). Or replace using alignment marking taken on dismantling.
18. Secure OPSO assembly (1) to slam-shut body (4) using 4 screws (2).
19. Recommission unit as described in commissioning instructions.

Drawing Reference: Fig 7, Fig 8 , Fig 10

Parts List Reference: Table 2, 4

NOTE: Numbers in brackets identify items in drawings

## Dismantling Procedure for LP/MP OPSO Assemblies:

(Drawing Ref.: Fig 7,8 Table 2.)

1. Unscrew seal plug (1) together with gasket (2) from chimney of top cover (4), and lift out position indicator (23) (with label (25) glued on side), and spring (24).
2. Remove gasket (2) from seal plug (1).
3. Turn screw adjustment (3) anti-clockwise and remove, then lift out spring (22).
4. Make note of the position of the vent in the top cover (4), relative to the horizontal tapped hole in the adaptor body (10).
5. Remove 8 screws (19) holding top cover (4) onto the adaptor body (10), then lift off top cover (4).
6. For MP ONLY, Remove the reducing ring (20) from the adaptor body (10).
7. Carefully lift off diaphragm assembly from adaptor body (10), taking care that all 6 balls (18) fall into adaptor body (10).
8. Remove all 6 balls (18) from adaptor body (10).
9. Unscrew diaphragm nut (6) from ball cage (11), lift off diaphragm plate (7) and diaphragm (8).
10. Remove starlock washer (9) and "O" ring (17) from ball cage (11).
11. Place adaptor body (10) in vice fitted with soft jaws, with shut-off spring (16) uppermost, taking care not to over tighten which could result in damage to the body.
12. Compress shut-off spring (16) with pliers, pushing down on retainer (14). Using fine pointed pliers remove circlip (15). (as circlip is small, care must be taken so that is not misplaced).
13. Shut-off spring (16), retainer (14) and shaft (21) can now be removed.
14. Remove adaptor body (10) from vice, and check that shock absorber "O" ring (13) is either on the shaft (21) or still in the adaptor body (10). Then remove "O" ring (13).
15. Carefully remove "o" ring (17) from adaptor body (10).
16. It is not necessary to remove collar (12) from shaft (21) unless damaged. This can be removed by carefully removing circlips (15) and sliding off collar (12) from shaft (21).

Discard "O" rings and diaphragm (8) and replace with new parts from spares kits.

## Rebuilding Procedure for LP/MP OPSO Assemblies:

(Drawing Ref.: Fig 7,8 Table 2).

It is recommended that all "O" rings be lightly greased before assembly, using Dow Corning Molycote 55M

1. Fit "O" ring (17) into adaptor body (10), taking care not to damage it whilst fitting (use only blunt nose tools if needed).
  2. Lightly lubricate shaft (21) with silicon grease, place thru adaptor body , Fit shock absorber "O" ring (13) into underside of adaptor body (10),
  3. Place adaptor body assembly (10) in vice, fitted with soft jaws, with "O" ring (17) uppermost, taking care not to over tighten which could result in damage to the body, refit spring (16) and retainer (14) over shaft (21).
  4. To enable spring (16) to be compressed for refitting of circlips (15), it may be necessary to place packing below the shaft (21) in the vice.  
Using tool add circlip (15) into the groove nearest round end of shaft (21), (so spring (16) and retainer (14) are held in position.
  5. Remove adaptor body assembly (10) from vice, then invert and reclamp in vice.If removed place collar (12) over shaft (21) with counter bore of collar facing adaptor body (10), retain collar (12) in position on shaft (21), by fitting 2 circlips (15) (using tool) into 2 grooves on shaft (21).
  6. Fit "O" ring (17) into ball cage (11), retain in position by fitting starlock washer (9) into ball cage (11).
  7. Place diaphragm (8) with Reinforcing facing upwards over ball cage (11), add diaphragm plate (7) on top of diaphragm (8).
  8. Fasten diaphragm assembly (8) together by threading diaphragm nut (6) over ball cage (11).
  9. Apply grease to 6 balls (18), locate balls around collar (12), grease will hold the balls in position.
  10. Place Diaphragm assembly (8) over shaft (21), ensuring 6 balls are fitted inside ball cage (11), and the 8 holes in diaphragm (8) line up with holes in the adaptor body (10).
  11. For MP ONLY Place reducing ring (20) over diaphragm assembly (8).
  12. Place top cover (4) onto adaptor body assembly (10), ensure holes in diaphragm (8), adaptor body (10) and cover (4) line up. Clamp top cover (4) onto adaptor body assembly (10), using 8 taptite screws (19).
- NOTE: The position of the vent in the top cover (4), relative to the tapped hole in the side of the adaptor body (10) should be as shown in fig 5, or as noted in dismantling instructions.
13. Replace spring (22) in cover (4) over spigot of diaphragm nut (6).
  14. Thread adjusting screw (3) into chimney of top cover (4).
  15. If removed add screen vent (5) into vent of top cover (4).

Rebuilding Procedure for LP/MP OPSO Assemblies Continued:

19. Place Indicator position (23) over shaft (21), (decals position indicator (25) should be stuck on side of item (23)).
20. Place spring (24) over shaft (21) and into position indicator (23).
21. Add gasket (2) on to seal plug (1).
22. Screw seal plug (1) into chimney of top cover (4).

NOTE: Before assembling OPSO unit into main body, ensure OPSO is in the "TRIPPED" position i.e. position indicator shows SHUT.

Refer to rebuilding procedure for slam-shut assembly to replace OPSO assembly back onto main slam-shut assembly.

Drawing Reference: Fig 9, Fig 10

Parts List Reference: Table 3,4

NOTE: Numbers in brackets identify items in drawings

## Dismantling Procedure for HP OPSO Assembly:

(Drawing ref.: Fig 9 Table 3).

1. Unscrew seal plug (1) together with gasket (2) from chimney of top cover (4) and lift out position indicator (25) (with label (27) glued on side) and spring (26).
2. Remove gasket (2) from seal plug (1).
3. Turn screw adjustment (3) anti-clockwise, then lift out spring (24).
4. Make note of the position of the vent in the top cover (4), relative to the horizontal tapped hole in the adaptor body (12).
5. Remove 8 nuts (19) and screws (21) holding the top cover (4) on to the adaptor body (12), lift off top cover (4), taking care that the 6 balls (18) fall into the adaptor body (12) .
6. Remove all 6 balls (18) from the adaptor body (12).
7. Remove "O" ring (7) from top cover (4).
8. Unscrew 4 locking plate screws (9), and remove locking plate (8) and diaphragm assembly.
9. Unscrew diaphragm nut (6) from ball cage (20), lift off diaphragm cup (22) and diaphragm (5).
10. Remove "O" ring (13) and starlock washer (10) from ball cage (20).
11. Place adaptor body (12) in vice fitted with soft jaws, with shut off spring (16) uppermost, taking care not to overtighten, which could result in damage to the adaptor body.
12. Compress spring (16) with pliers, pushing down on retainer (14). Using fine pointed pliers, remove circlip (15) (as circlip is small care must be taken so that it is not misplaced).
13. Spring (16), retainer (14) and shaft (23) can now be removed.
14. Remove adaptor body (12) from vice, and check that shock absorber "O" ring (17) is either on shaft (23) or still in the adaptor body (12), then remove "O" ring (17).
15. Carefully remove "O" ring (13) from adaptor body (12).
16. It is not necessary to remove collar (11) from shaft (23) unless damaged, this can be removed by carefully removing circlips (15) and sliding off collar (11) from shaft (23).

Discard all "O" rings and diaphragm (8), and replace with new parts from spares kit.

## Rebuilding Procedure for HP OPSO Assembly:

(Drawing Ref.: Fig 9 Table 3)

It is recommended that all "o" rings be lightly greased, before assembly using Dow Corning Molycote 55M.

1. Fit "O" ring (13) into adaptor body (12), taking care not to damage it whilst fitting, (use only blunt nose tools if needed).
2. Lightly lubricate shaft (23) with silicon grease, and place thru adaptor body (12), fit shock absorber "O" ring (17) into underside of adaptor body (12).
3. Place adaptor body assembly (12) in vice fitted with soft jaws, with "O" ring (13) upper most taking care not to over tighten, which could result in damage to the body. Refit spring (16) and retainer (14) over shaft (23).
4. To enable spring (16) to be compressed for refitting of circlips (15), it may be necessary to place packing piece below the shaft (23) in the vice. Using tool add circlip (15) into the groove nearest the round end of shaft (23), so spring (16) and retainer (14) are held in position.

### Rebuilding Procedure for HP OPSO Assembly Continued

5. Remove adaptor body assembly (12) from vice, then invert and reclamp in vice. If removed, place collar (11) over shaft (23) with counterbore of collar facing adaptor body (12). Retain collar (11) in position on shaft (23), by fitting 2 circlips (15) (using tool) into 2 grooves on shaft (23).
  6. Fit "O" ring (13) into ball cage (20), retain in position by fitting starlock washer (10).
  7. Place diaphragm (5) with reinforcing facing upwards, over ball cage (20). Add diaphragm cup (22) on top of the diaphragm (5), over spigot on ball cage (20).
  8. Fasten diaphragm assembly (5) together by threading diaphragm nut (6) over ball cage (20).
  9. Apply grease to 6 balls (18), locate balls around collar (11), grease will hold balls in position.
  10. Refit diaphragm assembly (5) into top cover (4), ensure that diaphragm (5) fits correctly into the groove in the top cover (4), and around the diaphragm cup (22).
  11. Using 4 screws (9), attach locking plate (8) to top cover (4), trapping diaphragm assembly (5) in position.
  12. Fit "O" ring (7) into groove in top cover (4).
  13. Place diaphragm assembly (5) and top cover (4) over shaft (23), ensuring 6 balls (18) are fitted inside ball cage (20).
  14. Refit top cover (4) onto adaptor body (12), using 8 nuts (19) and screws (21).
- NOTE: The position of the vent in the top cover (4), relative to the tapped hole in the side of the adaptor body (12) should be as shown in fig 5, or as noted in dismantling instructions.
15. Replace spring (24) into top cover (4) and over spigot on diaphragm nut (6).
  16. Thread adjusting screw (3) into chimney of top cover (4).
  17. Place position indicator (25) over shaft (23), (decals (27) should be stuck on side of item (25)).
  18. Place spring (26) over shaft (23) and into position indicator (25).
  19. Add gasket (2) onto plug seal (1).
  20. Screw seal plug (1) into chimney of top cover (4).

NOTE: Before assembling OPSO Unit into main body, ensure OPSO is in the TRIPPED position i.e. position indicator shows Shut. Refer to rebuilding procedure for slam-shut assembly to replace OPSO assembly back onto main slam-shut assembly.

The Series 100 Slam shut valve is also available with a Safety Top Cap version which is not included in these instructions.

(A separate instruction booklet is available upon request from Jeavons Engineering).

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