

4D-100/200/600/700 2 1/2-10"

IV. CHECK VALVE MAINTENANCE

If the valve experiences inadequate test readings, often it is a sign of foreign particles or debris collected on the seat disc of one of the check valves. The check assembly must be removed for inspection. Clean or replace the seat disc as necessary. Also inspect the sealing lip on the seat for damage. A deep scratch or knick can affect the check readings.

CHECK ASSEMBLY REMOVAL See Figure 4:

Make sure there is no pressure on the valve by opening the test cock on the lid. Remove the upper groove connection coupling by removing the bolts and nuts.

Slide away the coupling clamps and remove the rubber gasket. Lift off the lid. The valve should be drained of water (the relief valve will open releasing the water in the zone when the source pressure is off).

Either check valve assembly can be removed without disturbing the other. Remove the nuts from the studs that are screwed into the body. The nuts can be removed using standard tools (socket wrench and extension shown).

2.5"-4" sizes: Remove the four (4) lock hex nuts holding each check assembly using 1/2" hex socket wrench. Lift out the check assembly.

6" size: Remove the six (6) lock hex nuts holding each check assembly using 9/16" hex socket wrench. Lift out the check assembly.

8" & 10" sizes: Remove the six (6) hex nuts holding each check assembly using 3/4" hex socket. Lift out the check assembly.

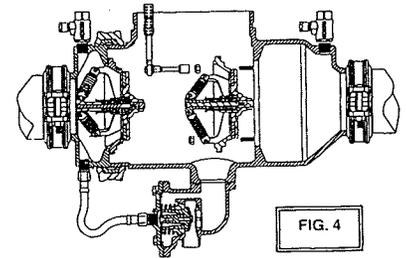


FIG. 4

SEAT DISC INSPECTION OR REPLACEMENT See Figure 5:

To inspect or replace the seat disc remove the long socket head cap screw that holds the spring hub assembly in place. This will release the load from the spring and allow the disc holder to slide away from the front of the assembly.

2.5"-4" sizes: Remove the cap screw with a 3/16" hex drive (Allen wrench). With the disc holder loose, remove the three (3) screws that hold the disc plate with a 5/32" hex drive (Allen wrench). Remove the rubber disc and clean or replace.

6" size: Remove the cap screw with a 5/16" hex drive (Allen wrench). With the disc holder loose, remove the four (4) screws that hold the disc plate with a 7/32" hex drive (Allen wrench). Remove the rubber disc and clean or replace.

8" & 10" sizes: Remove the cap screw with a 1/2" hex drive (Allen wrench). With the disc holder loose, remove the six (6) screws that hold the disc plate. Use a 7/32" hex drive (Allen wrench). Remove the rubber disc and clean or replace.

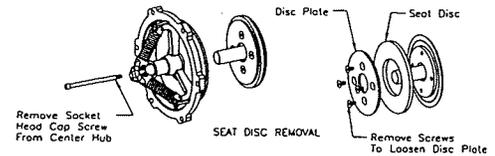


FIG. 5

RE-ASSEMBLING THE CHECK ASSEMBLY:

Install the screws firmly. Use of a medium strength thread locking Loctite® is recommended on all threads. Re-install the cap screw that holds the assembly together and applies the spring load. This screw is designed to be screwed in all the way until it runs out of threads.

When re-installing the checks, make certain the o-ring is seated in its groove. Use a non-toxic grease to aid retention of the o-ring in its groove. Tighten the hex nuts to hold the check assembly in place. These should be tightened firmly and evenly for the o-ring to seal.

WARNING: Do not mix springs between first and second checks (item 2a & 2b or item 3a & 3b).

ITEM	DESCRIPTION
1	Screw, Socket Head Cap
2a	Kit, Joint Assembly, RP
2b	Kit, Joint Assembly, DC
3a	Spring, Center, RP
3b	Spring, Center, DC
4	Sleeve, Stem
5	Stem, Check
6	O-Ring (stem)
7	O-Ring (seat)
8a	Seat, First Check, Mach.
8b	Seat, Second Check, Mach.
9	Screw, Flat Head Hex Drive
10	Plate, Disc, Mach.
11	Disc, Seat
12	Retainer, Seat, Mach.
13	Washer
14	Nut, Jam

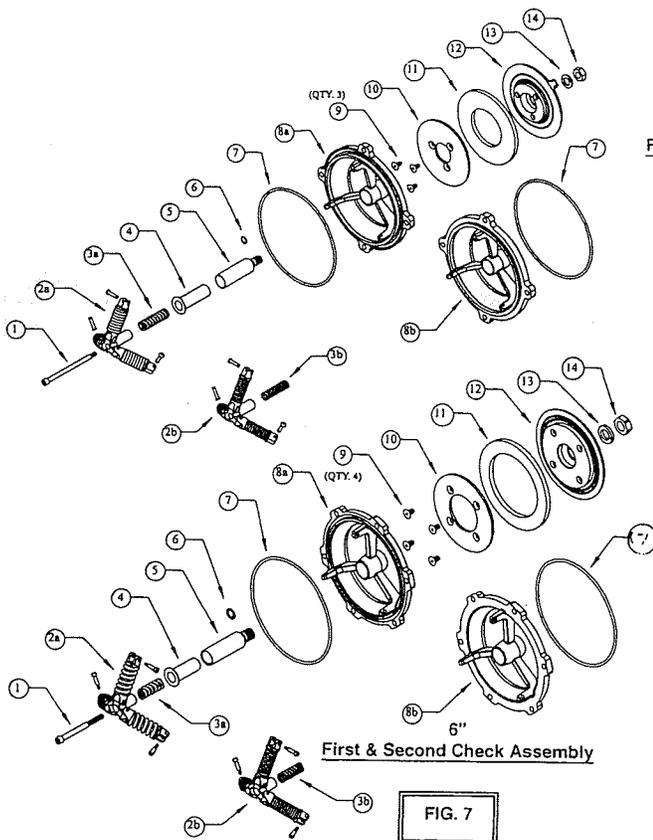


FIG. 7

2 1/2" - 4"
First & Second Check Assembly

FIG. 6

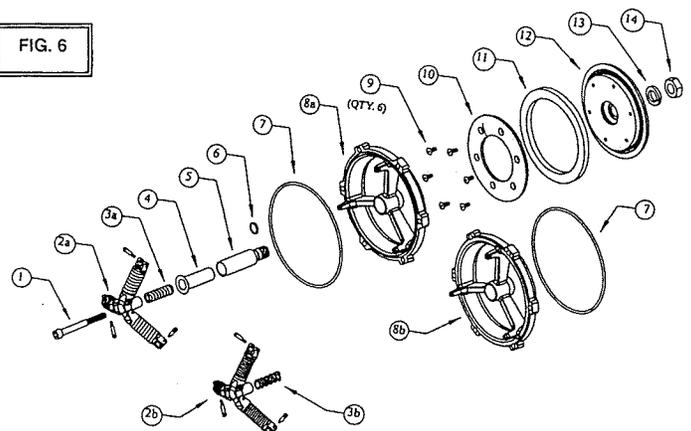


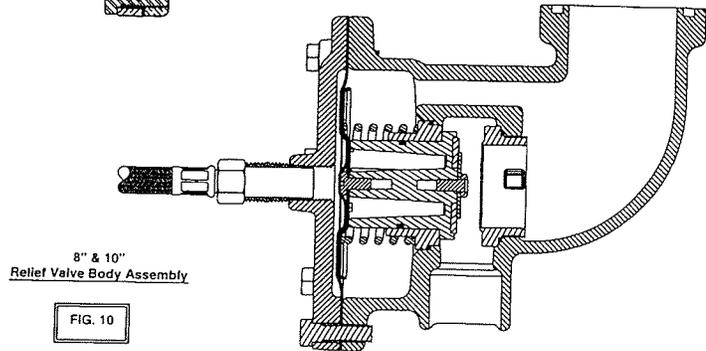
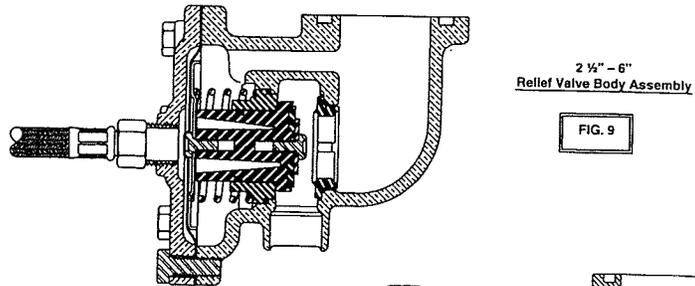
FIG. 8

8" & 10"
First & Second Check Assembly

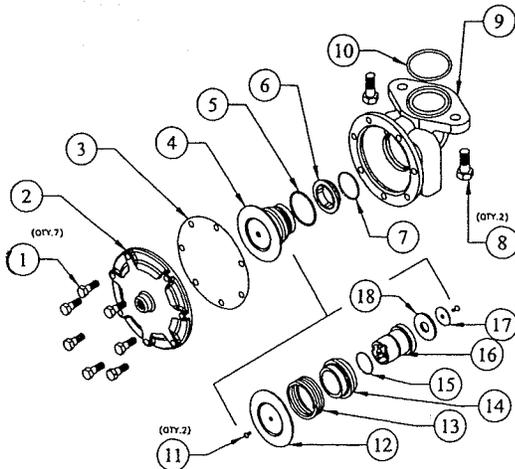
V. RELIEF VALVE MAINTENANCE

1. For all sizes (2 1/2" – 10"): Disconnect the flexible hose from the RV cover by unscrewing the swivel nut. Remove (2) screws and remove relief valve body assembly.
2. Remove cover screws, cover, and diaphragm.
3. Remove relief valve cartridge assembly. The unit pulls straight out.
4. Remove diaphragm plate retaining screws, and seat disc retaining screws.
5. Inspect seat disc, diaphragm, and O-rings for damage. Damaged seat disc may be turned over, but should be replaced as soon as possible. Replace damaged O-rings or diaphragm.
6. Lubricate stem and stem O-ring with FDA approved silicone lubricant and reassemble relief valve cartridge.
7. The RV seat is replaceable, but normally does not need to be removed from the RV body. Inspect the RV seat sealing surface for defects. Replace if necessary with a new o-ring.
8. Insert relief valve cartridge into body.
9. Replace diaphragm, cover, and cover screws.
10. Replace flexible hose.

ITEM	DESCRIPTION
1	Screw, Hex Head Cap Screw
2	Cover, Relief Valve, Mach.
3	Diaphragm, 4D Series
4	Sub-Assembly, Relief Valve, 4D Series
5	O-Ring
6	Seat, Relief Valve
7	O-Ring
8	Screw, Hex Head Cap Screw
9	Body, Relief Valve, Mach.
10	O-Ring
11	Screw, Pan Head Machine Screw
12	Plate, Diaphragm, 40/4S/4D Series
13	Spring, Relief Valve, 4D Series
14	Bushing, Relief Valve, 4D Series
15	O-Ring
16	Stem, Relief Valve, 40/4S/4D Series
17	Washer
18	Disc Seat, Relief Valve, 40/4S/4D Series



2 1/2" – 6"
Relief Valve Body Assembly
FIG. 11



8" & 10"
Relief Valve Body Assembly
FIG. 12

