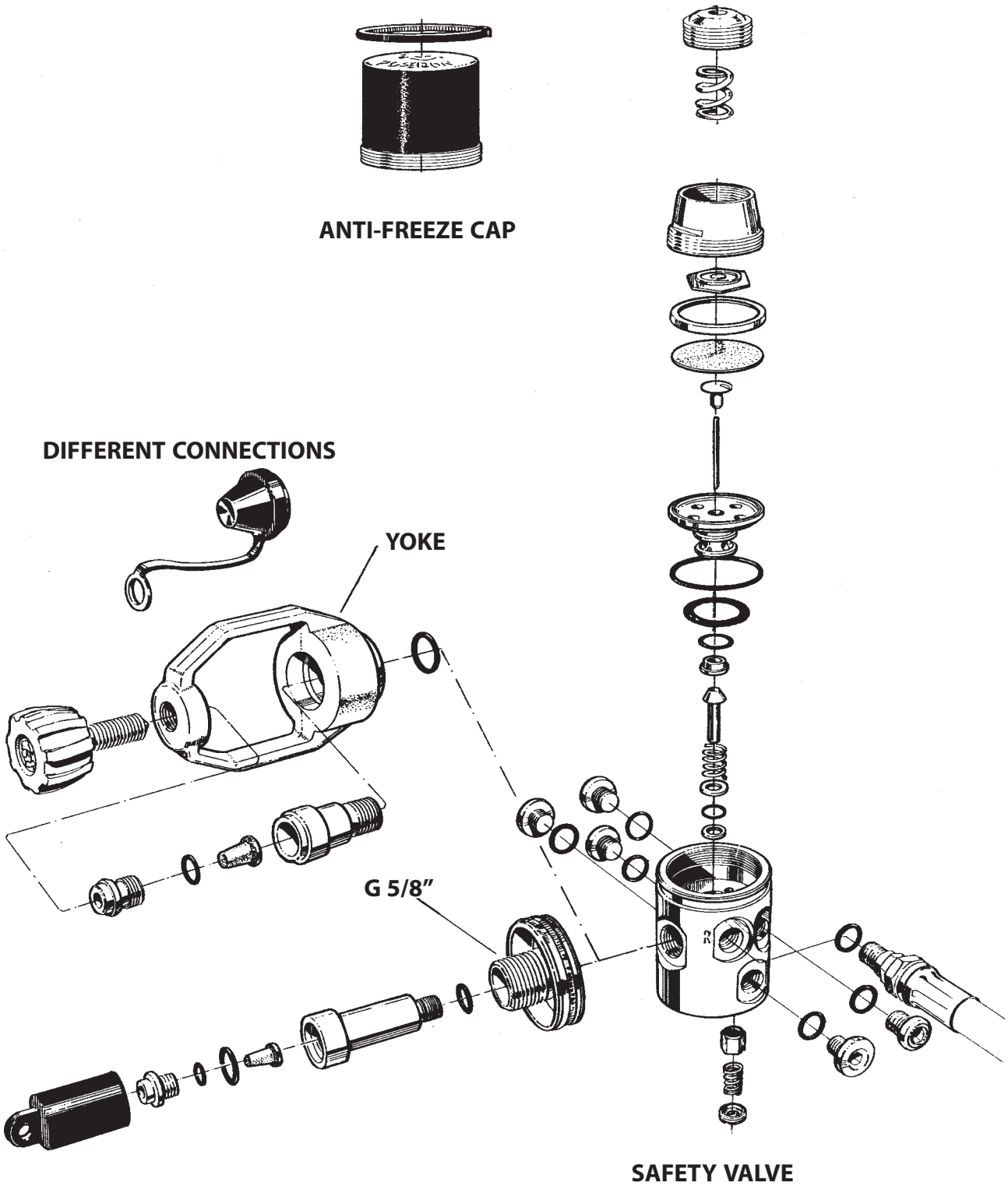
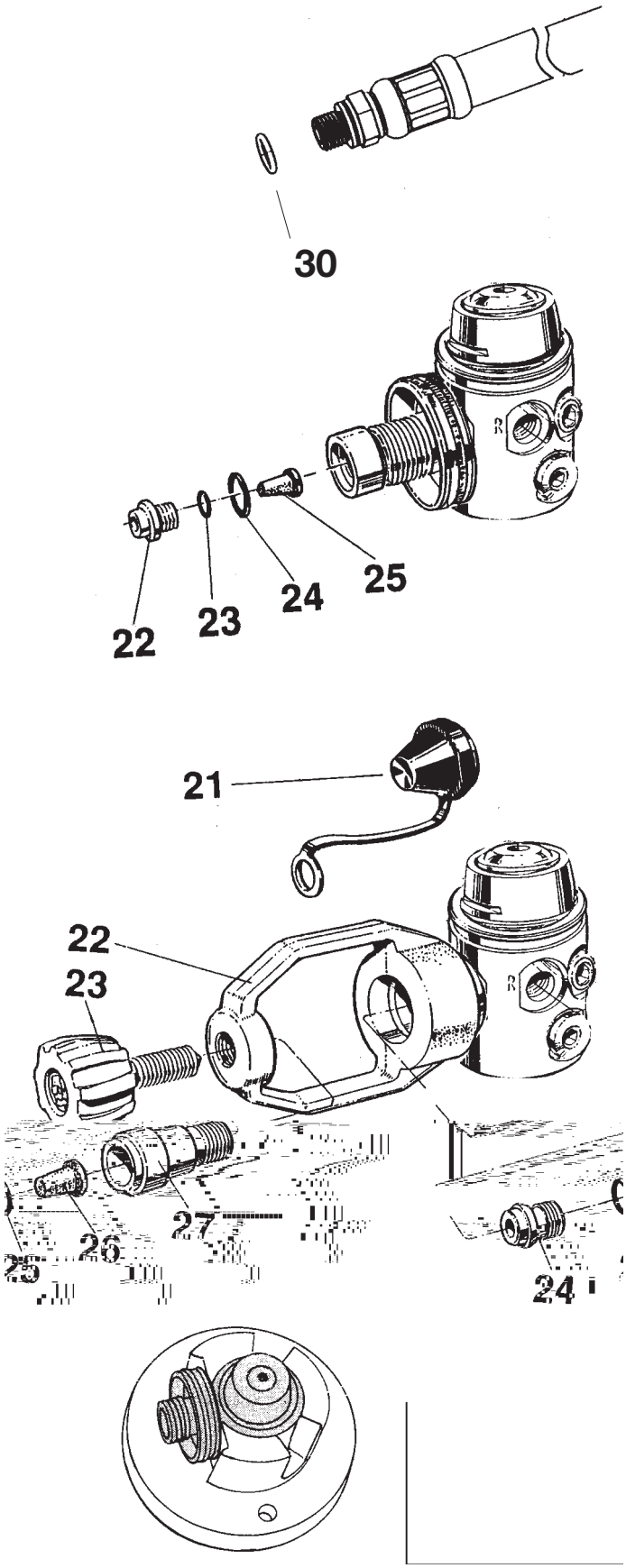
REPAIR INSTRUCTIONS FIRST STAGE REDUCING VALVE

3790 - First stage G 5/8”
3790-10 - First stage YOKE





FIRST STAGE VALVE 3790

Secondary side:

1. Disconnect the low pressure hose from the first stage valve using a 13 mm open end wrench.

2. Remove the o-ring (30) from the low pressure hose with the o-ring remover.

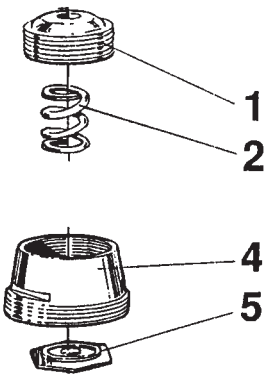
First stage valve with G 5/8":

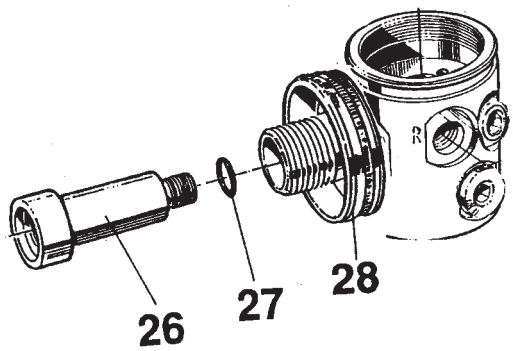
3. Remove the locking screw (22) with a 6 mm Allen wrench. Remove the o-ring (24) and the cup-filter (25) with o-ring (23).

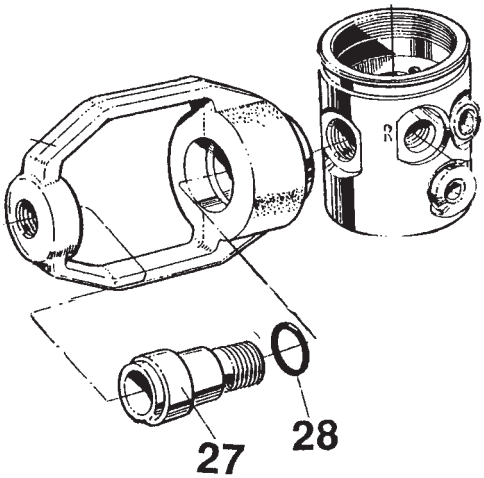
First stage valve with Yoke:

3. Remove the knob (23) and the protective cap (21). Remove the locking screw (24) with a 6 mm Allen wrench. Remove the cup filter (26) and the o-ring (25).

4. Place the first stage valve with the secondary side facing upwards in the fixture.







FIRST STAGE VALVE 3790

Removal:

1. Remove the pressure adjusting screw (1) with a 6 mm Allen wrench and remove the spring (2 and 3).

2. Remove the cover (4) using a 27 mm crowsfoot and the upper diaphragm center (5).

First stage valve with G 5/8":

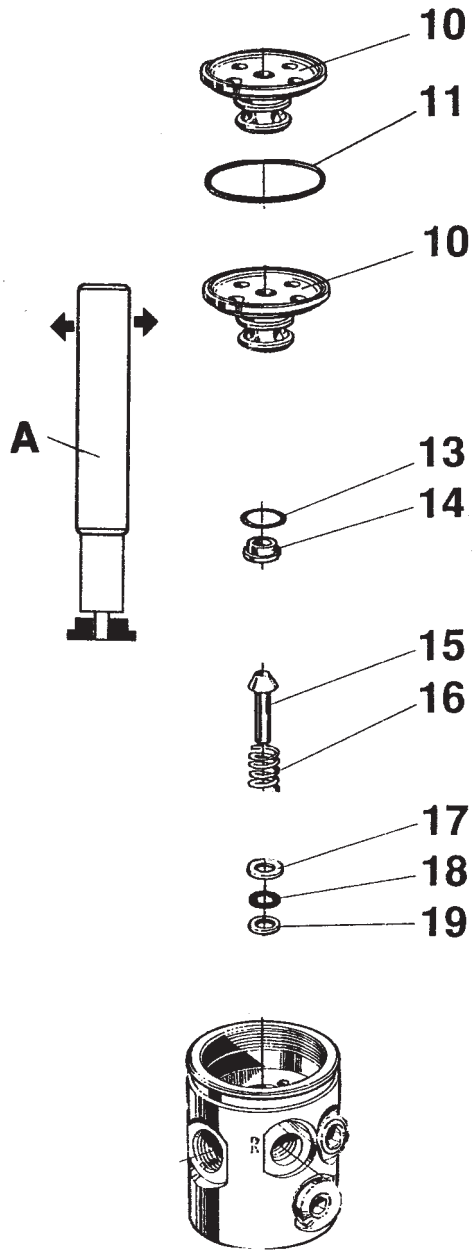
3. Remove the connection (26) and the wheel (28) with a 6 mm Allen wrench.

4. Remove the o-ring (27) with an o-ring remover. Make sure the sealing surfaces are not damaged.

First stage valve with Yoke:

3. Remove the connection (27) and the yoke (22) with a 6 mm Allen wrench.

4. Remove the o-ring (28) with an o-ring remover. Make sure the sealing surfaces are not damaged.



FIRST STAGE VALVE 3790

Removal:

1. Remove the valve centre, upper (6) and the diaphragm (7).

2. Remove the diaphragm centre, lower (8) and the valve needle (9).

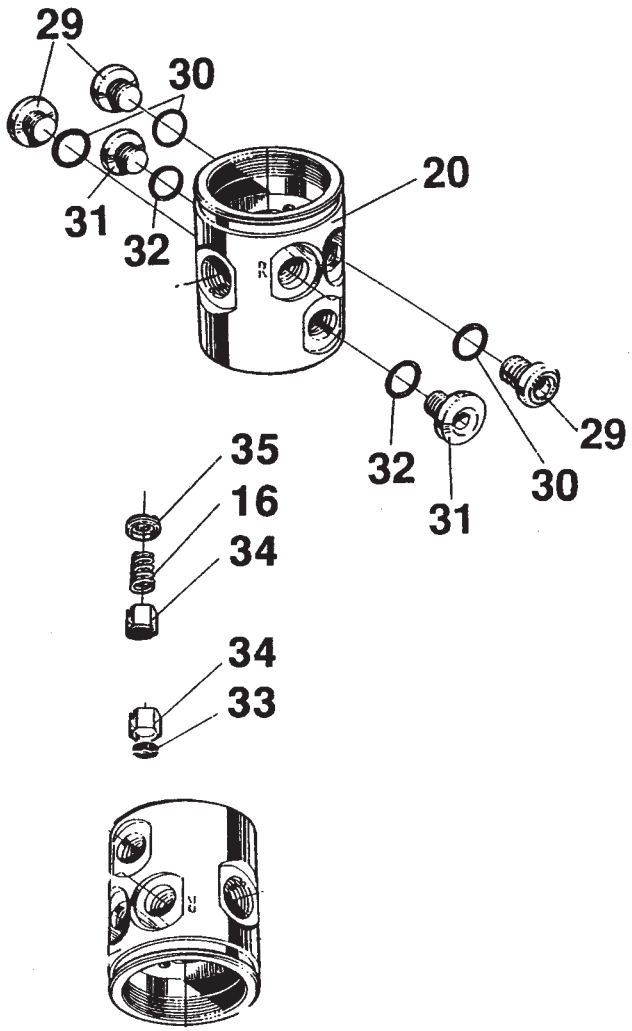
3. Remove the valve centre, lower (10) and the o-ring (11) with an o-ring remover. Make sure the sealing surfaces are not damaged.

4. Remove the o-ring (12), only 3790, from the valve centre, lower (10) with an o-rings remover. Make sure the surfaces are not damaged.

5. Remove the valve seat (14) and the o-ring (13) with the assembly drift A.

6. Remove the valve piston (15) and the pressure spring (16).

7. Remove the washer, steel (17), the o-ring (18) and the washer, teflon (19) with an o-ring remover. Make sure the surfaces, are not damaged.



FIRST STAGE VALVE 3790

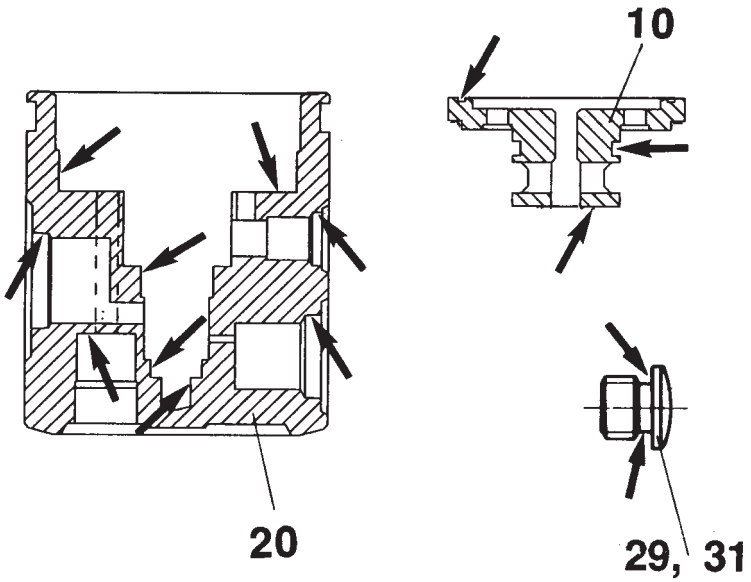
Removal:

1. Remove the blind screw (29 and 31) with a 5 mm Allen wrench. Remove the o-rings (30 and 32) with an o-ring remover. Make sure the sealing surfaces are not damaged.

2. Remove the locking screw (35) with a 4mm Allen wrench. Remove the pressure spring (16) and the valve piston (34).

3. Remove the valve sealing (33) from the valve piston (34) with an o-ring remover.

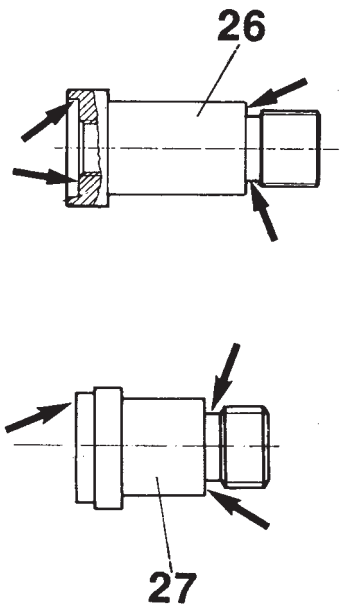
Cleaning:
If corrosion or salt deposits occurs, place all metal parts in concentrated Hempocid* or 15% Hydrochloric acid for about 10 minutes. Then rinse them thoroughly and blow dry with air. The synthetic parts in the second stage must not be treated with solvent. They shall be cleaned in freshwater only. *Hempocid = Acid Liquid Detergent Containing phosphoric acid (5-10%) and bactericid for desinfectant cleaning.



FIRST STAGE VALVE, 3790

When servicing the regulator the following parts should be replaced:
(see chapter Servicekit)

1. All o-rings
2. Diaphragm
3. Cup filter
4. Valve seat
5. Washer
6. Valve sealing



Checking:

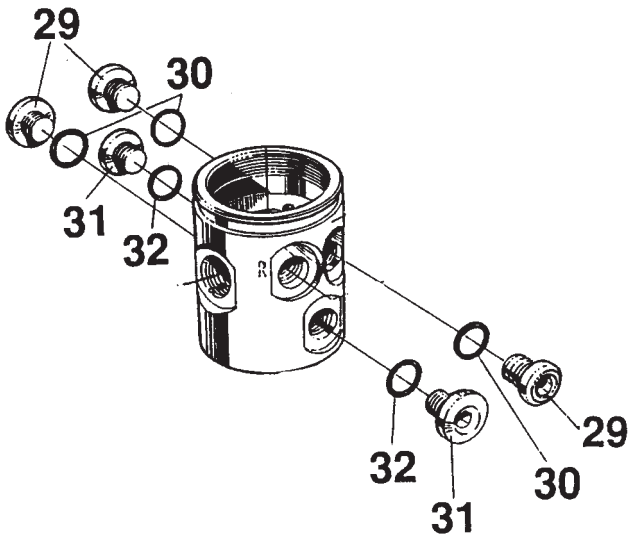
Check the following parts to make sure the sealing surfaces are undamaged. Also check that the threads are not damaged.

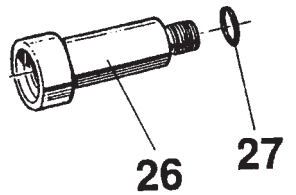
1. The blind screws (29 and 3 1)

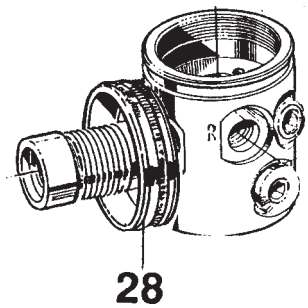
2. The valve housing (20)

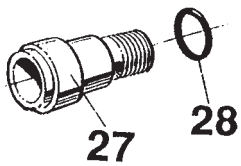
3. Valve centre (10)

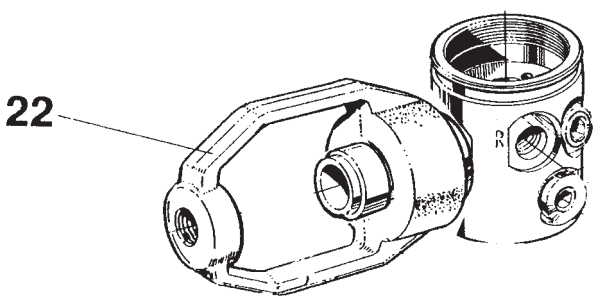
4. The connections (26 or 27)











FIRST STAGE VALVE 3790

Assembly:

1. Install the o-rings(30 and 32) on the blind screws (29 and 31). Lubricate the outlets.

2. Screw the blind screws in the LP-HP outlets. Use a 5 mm hexagon spanner and tighten up by hand.

First stage valve with G 5/8":

1. Install the o-ring (27) on the connection (26). Lubricate the o-ring and the thread.

2. Install the wheel (28) on the connection.

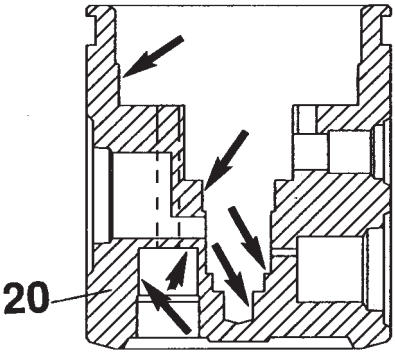
3. Screw the wheel connection assembly into the valve housing assembly with a 6 mm Allen wrench.

First stage valve with Yoke:

1. Install the o-ring (28) on the connection (27). Lubricate the o-ring and the thread.

2. Install the yoke (22) on the connection.

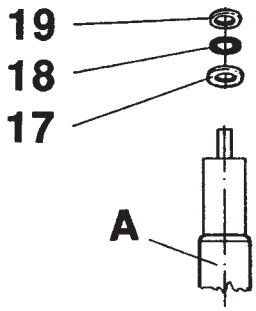
3. Screw the wheel connection assembly into the valve housing assembly with a 6 mm Allen wrench.



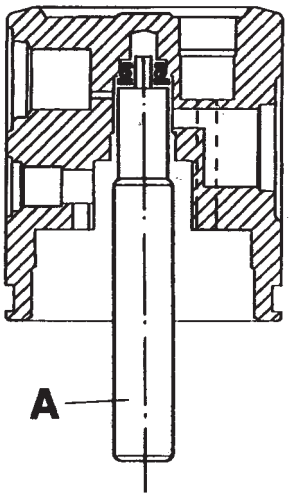
FIRST STAGE VALVE 3790

Assembly:

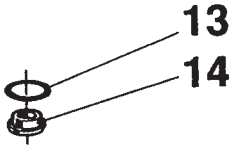
1. Lubricate the valve housing (20).



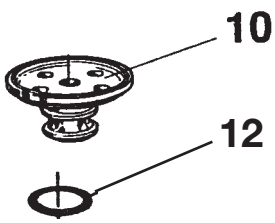
2. Place on the assembly drift A:
   -washer, steel (17)
   -O-ring (18)
   -washer, teflon (19)



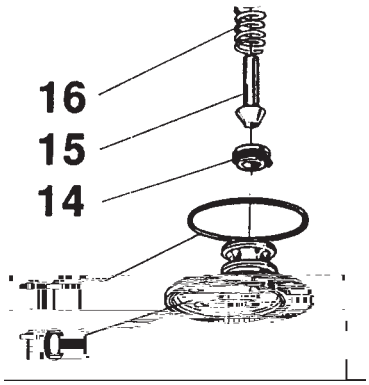
3. Install the valve housing. Lubricate the washers and the o-ring.

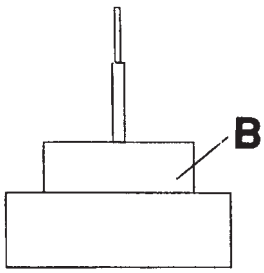


4. Install the o-ring (13) on the valve seat (14).



5. Install the o-ring (12), on the valve centre, lower (10).

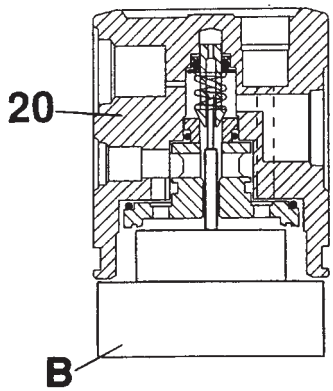




FIRST STAGE VALVE 3790

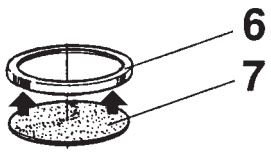
Assembly:

1. Place on the assembly fixture B:
   - valve centre, lowér (10)
   - o-ring (11), lubricate
   - valve seat (14) with o-ring downwards
   - valve piston (15), lubricate, and pressure spring (16) on valve piston.

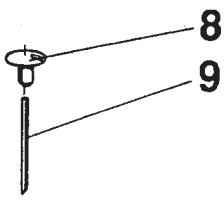


2. Install the valve housing (20).

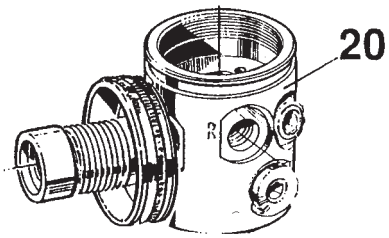
3. Turn the valve housing (20) with the secondary side upwards.



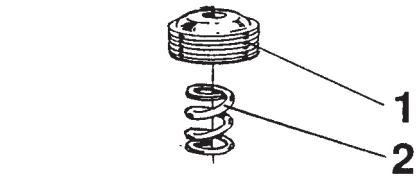
4. Install the valve needle (9).

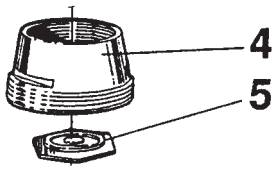


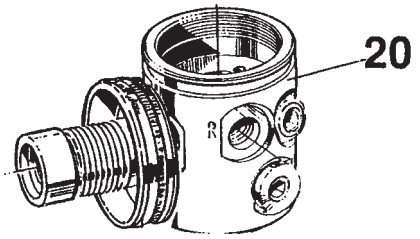
5. Install the lower diaphragm centre (8).

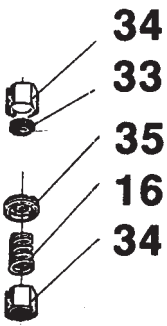


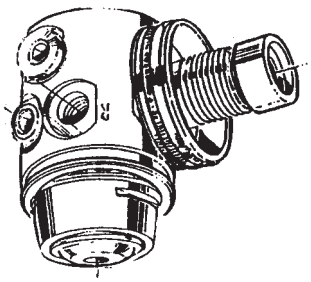
6. Install the diaphragm (7) in the valve centre, upper, convex part up (6). Install the valve housing (20).











FIRST STAGE VALVE 3790

Assembly:

1. Install the diaphragm centre, upper (5) in the valve housing (20).

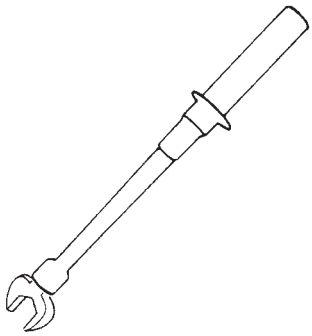
2. Grease the thread on the cover (4) and tighten up by hand.

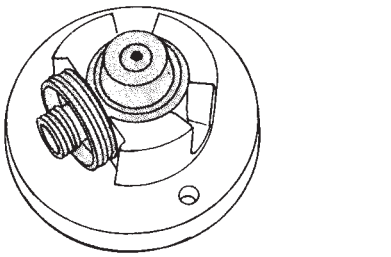
3. Check to make sure that the parts are correctly installed by pressing at the valve centre. It should move approximately 2 mm (1/16").

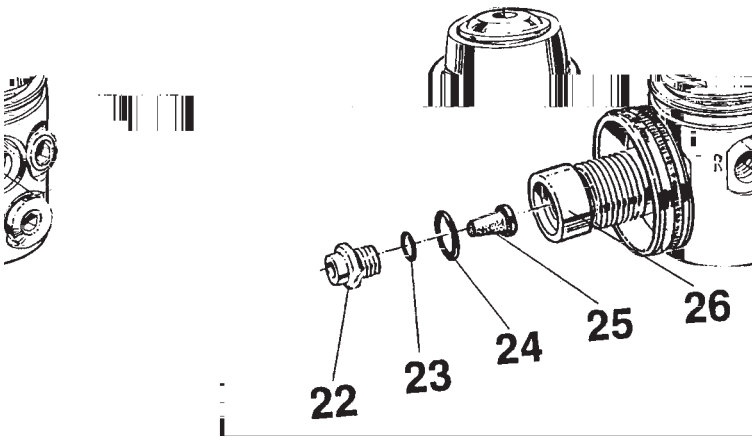
4. Lubricate both ends of the spring (2 and 3) and install. Lubricate the thread on pressure adjusting screw (1), and tighten 7 turns with a 6 mm Allen wrench.

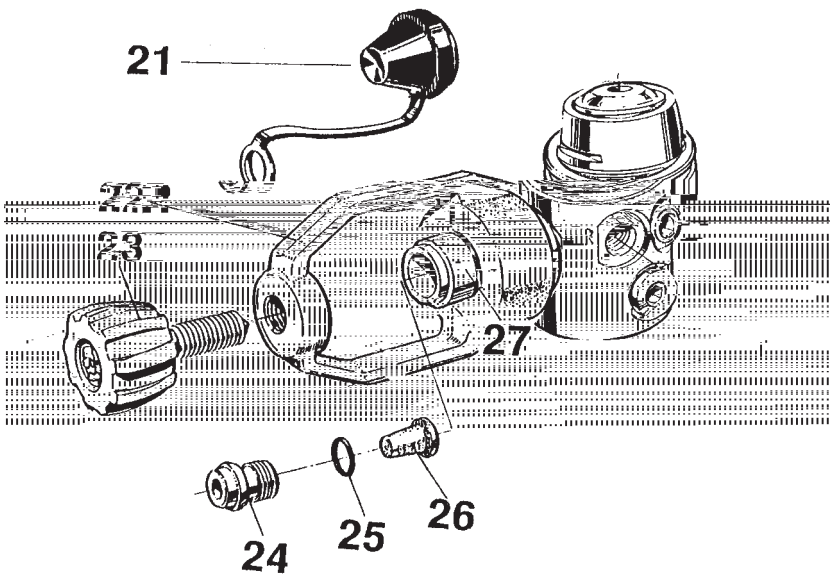
5. Install the valve sealing (33) on the valve piston (34).

6. Install the valve piston (34) and the pressure spring (16). Install the locking screw (35) with a 4 mm Allen wrench. Tighten up by hand.









FIRST STAGE VALVE 3790

Assembly:

1. Place the valve housing (20) in a fixture.

2. Tighten the cover for valve housing with a torque wrench (30 Nm) and an open ended insert tool 27 mm.

3. Tighten the connection with a torque wrench (30 Nm) and holder insert tool/ bits. **IMPORTANT!** Use bits nr 3119 (L = 40 mm).

First stage valve with G5/8":

4. Put o-ring (23) on the cup type filter (25). Install them and the o-ring (24) and the locking screw (22) in the connection (26). Tighten with a Allen wrench 6 mm.

First stage valve with Yoke:

4. Put o-ring (25) on the cup type filter (26). Install them and the locking screw (24) in the connection (27). Tighten with a Allen Wrench 6 mm. Put the protective cap (21) on the knob (23). Lubricate and screw in the knob.

5. Install o-ring (30) on the low pressure hose. Lubricate the o-ring and the thread. Tighten the hose with a 13 mm open wrench.