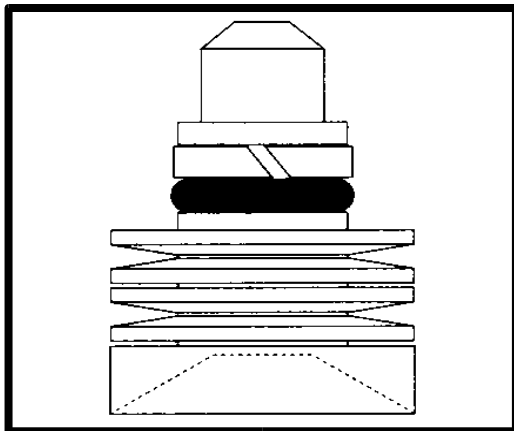


# Genesis GF200 Balanced Regulator

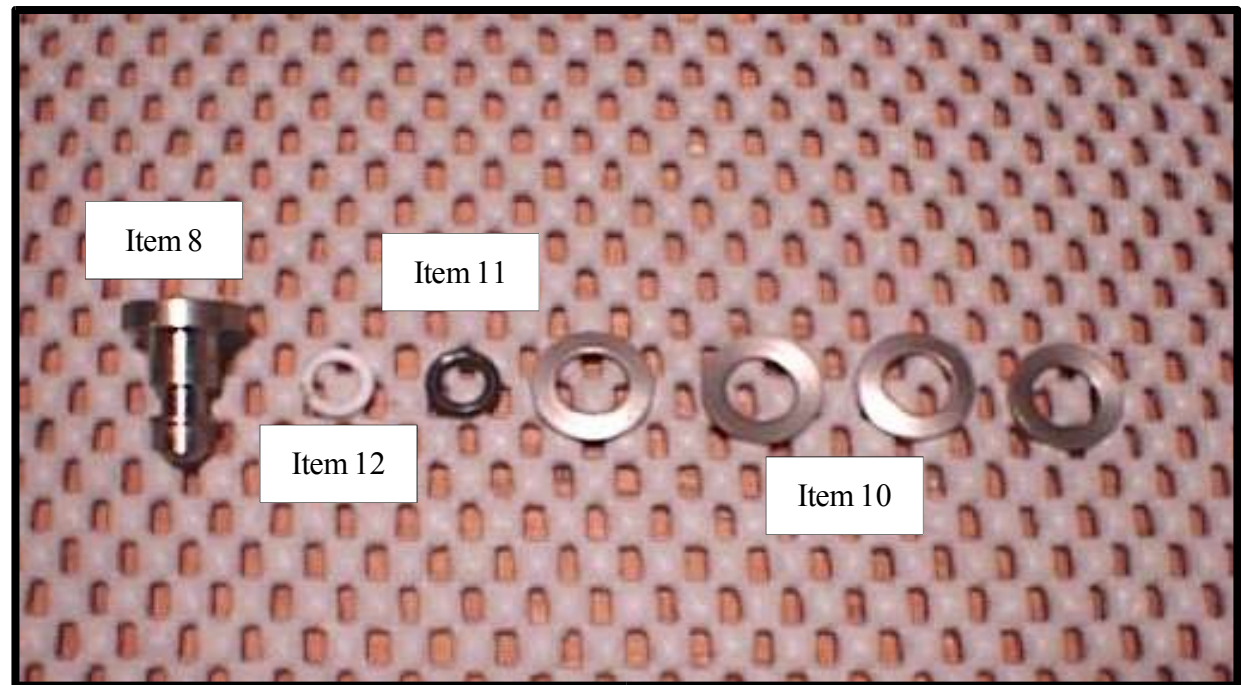
## Re-assembly



- 1) Install the spring washers on the orifice stem (item 8) in the orientation shown.
- 2) Lightly lubricate the o-ring (item 11) and roll it into the o-ring groove on the orifice.
- 3) Gently stretch the backup ring (item 12) into the o-ring groove on the orifice.



✓ Note the orientation of the spring washers (items 10)



**4) Press the orifice assembly into the regulator inlet with the tip of your finger.**

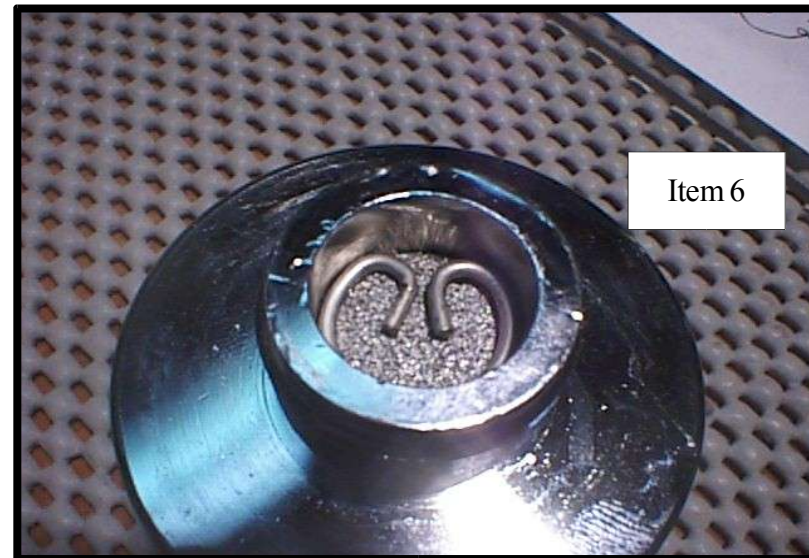


**✓ CAUTION: Use care when handling the orifice assembly to prevent damage to the delicate sealing surface. Even minor damage can cause pressure creep and decreased performance.**



**5) Place a new filter (item 7) on top of the orifice; smoothest side toward the orifice).**

**6) Push the tension clip (item 6) into the regulator inlet until it touches the filter.**



- 7) Lightly lubricate the o-ring (item 22) and roll it into the groove on the stem of the piston.
- 8) Lightly lubricate the large o-ring (item 25) and roll it into the flange of the piston.
- 9) Gently stretch the backup ring (item 23) into the groove on the stem of the piston.
- 10) Gently stretch the backup ring (item 28) into the groove on the flange of the piston.

Item 22

Item 23

Item 28

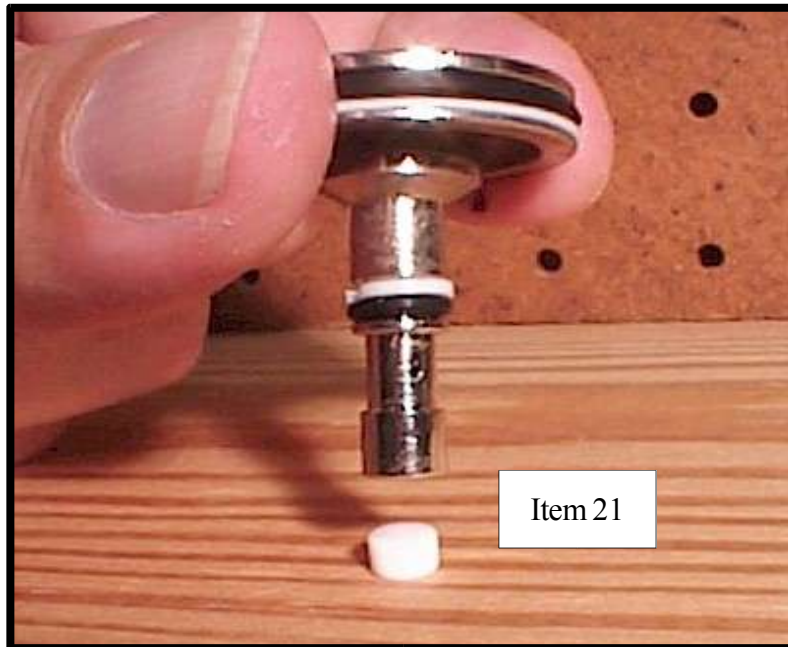
Item 25



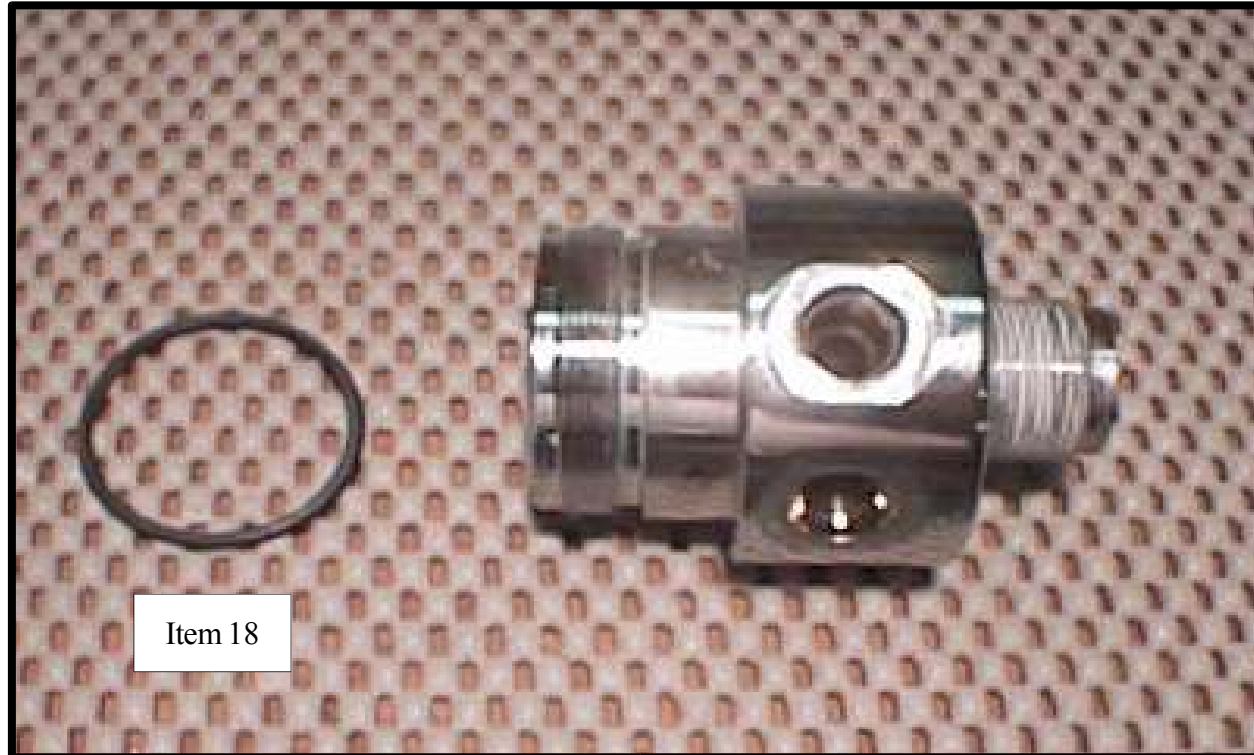
✓ Note position of o-rings to back-up rings.  
Rings are installed in order as shown.

**11) Place a new HP seat (item 21) on a clean pad on your work surface.**

**12) Gently push the piston down onto the seat**

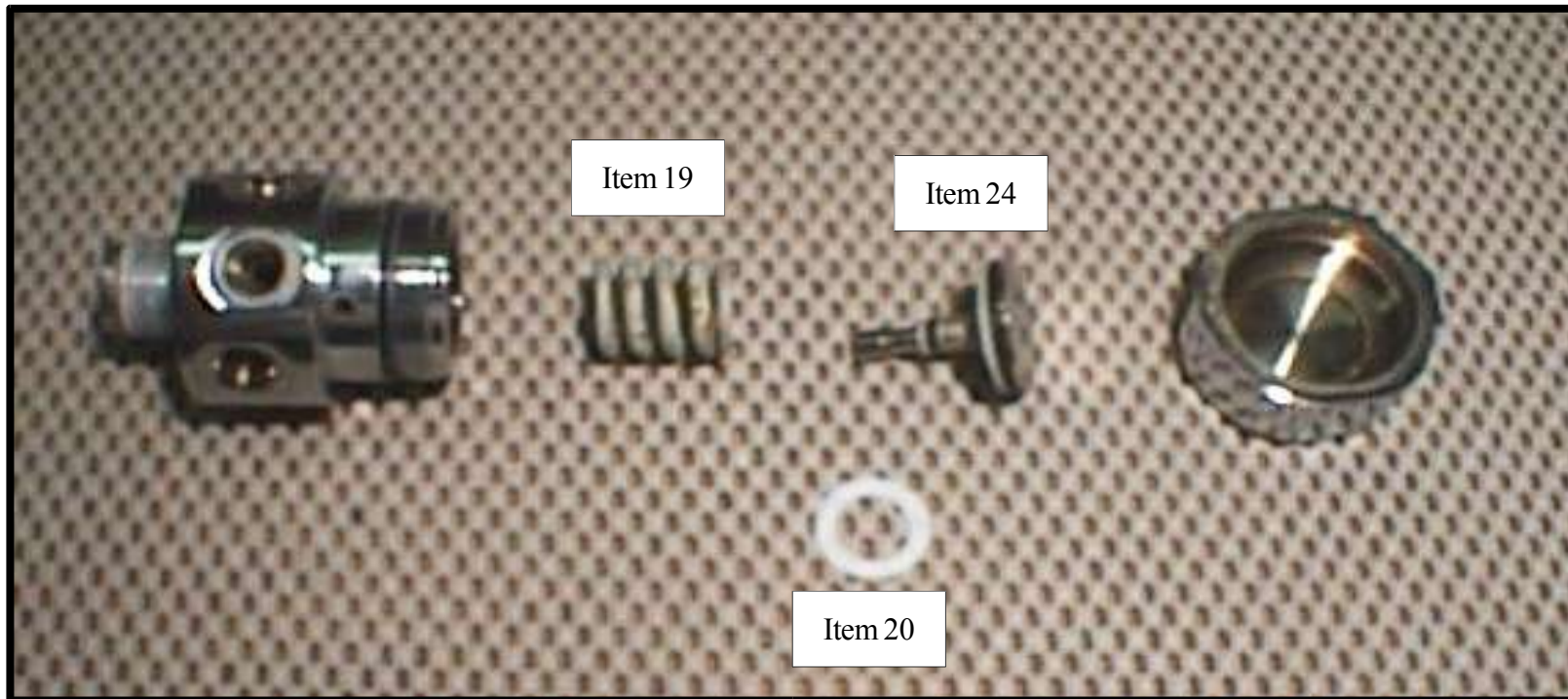


**13) Lightly lubricate the o-ring (item 18) and gently stretch it into the o-ring groove on the regulator body.**





- 14) Replace all shims (item 20) that were removed from the regulator body.
- 15) Place the spring (item 19) in the regulator body.
- 16) Insert the piston (item 24) through the spring into the inner bore of the regulator body.





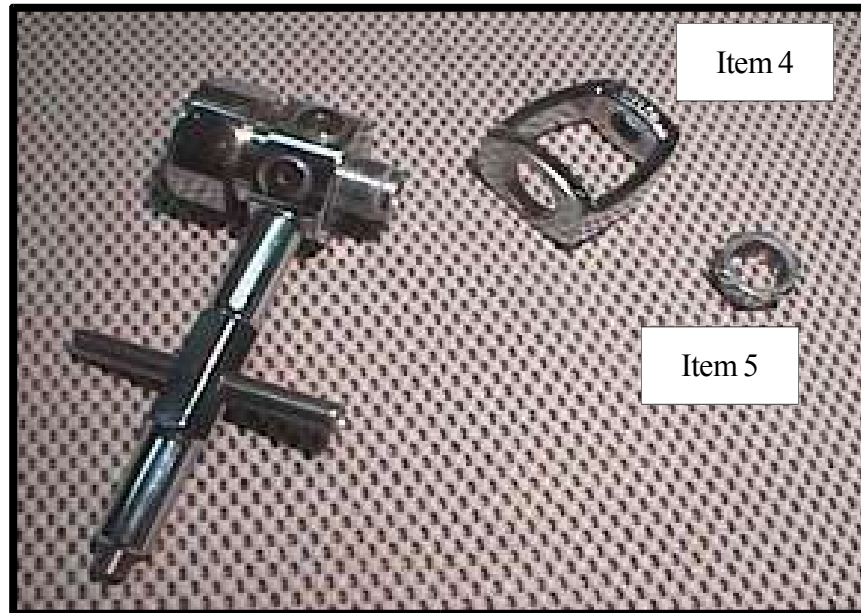
**17) Lightly lubricate the threads on the end cap (item 26) and screw the end cap onto the body. Tighten to 12 ft-lbs.**



**18) Lightly lubricate the threads on the yoke nut (item 5).**

**19) Place the yoke (item 4) on the regulator inlet.**

**20) Secure with the yoke nut and tighten to 12 ft-lbs.**



- 1) Lightly lubricate the handwheel threads (item 2)
- 2) Install the dust cap (item 3) onto the threads of the handwheel.
- 23) Install the handwheel into the yoke.



# Adjustment and Testing Procedures

- ✓ **A working second stage or over-pressure relief assembly should be installed on one of the low pressure ports to protect the test gauge and technician.**

## High Pressure Testing

1. Install the regulator on a SCUBA tank or test bench with a supply pressure of **2900 to 3200 psi**.
2. Install an intermediate pressure test gauge into one low pressure port.
3. Plug all remaining ports.
4. SLOWLY turn on the air and watch the gauge.
  - a. Listen for any unusual leaks. If any are heard, turn off the air and correct the problem before proceeding
  - b. Press the second stage purge button or relief valve several times to allow the new parts to seat themselves.



# Adjustment and Testing Procedures

- c. The pressure should rapidly rise and remain steady between 135 and 150 psig.
  - i. There should be no more than 5 psig of creep within 15 seconds of cycling the regulator.
  - ii. It is normal for piston regulators of this design to experience a slight drop in pressure after lockup, due to the superior efficiency of design.
  - iii. If the pressure continues to rise **above 150 psig**, turn off the air and disassemble the first stage to find and correct the problem. Refer to Troubleshooting for additional information. A simple removal of shims (item 20) may be all that is required. Inspect the HP seat (item 21) and orifice (item 8) for defects. Correct the problem and begin again with step 5.
  - iv. If the pressure is **below 135 psig**, add shims in the main spring area to raise pressure. Use no more than 3 shims in a Genesis first stage. If the maximum number of shims is already present, replace the main spring, reassemble, and retest.

# Adjustment and Testing Procedures

- d. Slowly release a small amount of air from the gauge or second stage.
  - i. Hose pressure should not drop more than 5 psi.
  - ii. When the air flow is stopped, the pressure should immediately return to 135 - 150 psig and remain steady.

## Low Pressure Testing

- 5. Place the regulator on a cylinder or test bench with supply pressure of **300 - 500 psig**.
- 6. SLOWLY turn on the air and watch the gauge. Valor hose pressure should drop no more than 5 psi from the initial reading at high source pressure.
- 7. If pressure is okay, go to step 9.

# Adjustment and Testing Procedures

8. A pressure drop greater than 5 psig indicates a sealing problem between the piston seat (item 21) and the orifice (item 8).
  - a. Remove the regulator from the air source.
  - b. Remove the end cap and piston.
  - c. Examine the high pressure seat for damage or foreign particles. Clean or replace as necessary
  - d. Remove the retainer ring and filter from the regulator inlet.
  - e. Insert the **blunt end** of the HP seat tool into the end cap side of the regulator body. Gently push the orifice assembly out the inlet side of the regulator body.
  - f. Examine the sealing surface of the orifice for damage. Clean or replace as necessary.
  - g. Reassemble and retest (Step 4 above).

# Adjustment and Testing Procedures

## Leak Testing

9. Install the first stage assembly on a full SCUBA cylinder.
10. SLOWLY turn on the air supply.
11. Submerge the entire first stage assembly in water and gently agitate to dislodge any bubbles. There should be no bubbles leaking from the assembly. If bubbles appear, determine the source of the leak, disassemble to replace any worn parts, reassemble and retest (Step 4).