

MODEL INFORMATION

Gas	CGA Inlet No.	Model No.	Delivery Range
Argon & Argon/CO mix	580	AF 150	8-25 SCFH
Argon & Argon/CO mix	580	AFP 150	Preset @ 13.2 SCFH
CO ₂	320	CF 153	8-20 SCFH
CO ₂	320	CFP 153	Preset @ 13 SCFH

WARNING!

Welding apparatus improperly operated, maintained or repaired can be dangerous. Some parts and accessories manufactured by others may fit VICTOR apparatus but not conform to VICTOR's exacting standards. For your own protection, specify and use ONLY VICTOR-made parts and accessories with your VICTOR apparatus.

Service or repair of VICTOR apparatus should be performed only by a qualified technician. Improper service or repair, or modification of the product could result in damage to the product or injury to the operator.

AF 150 and CF 153 Series Regulators

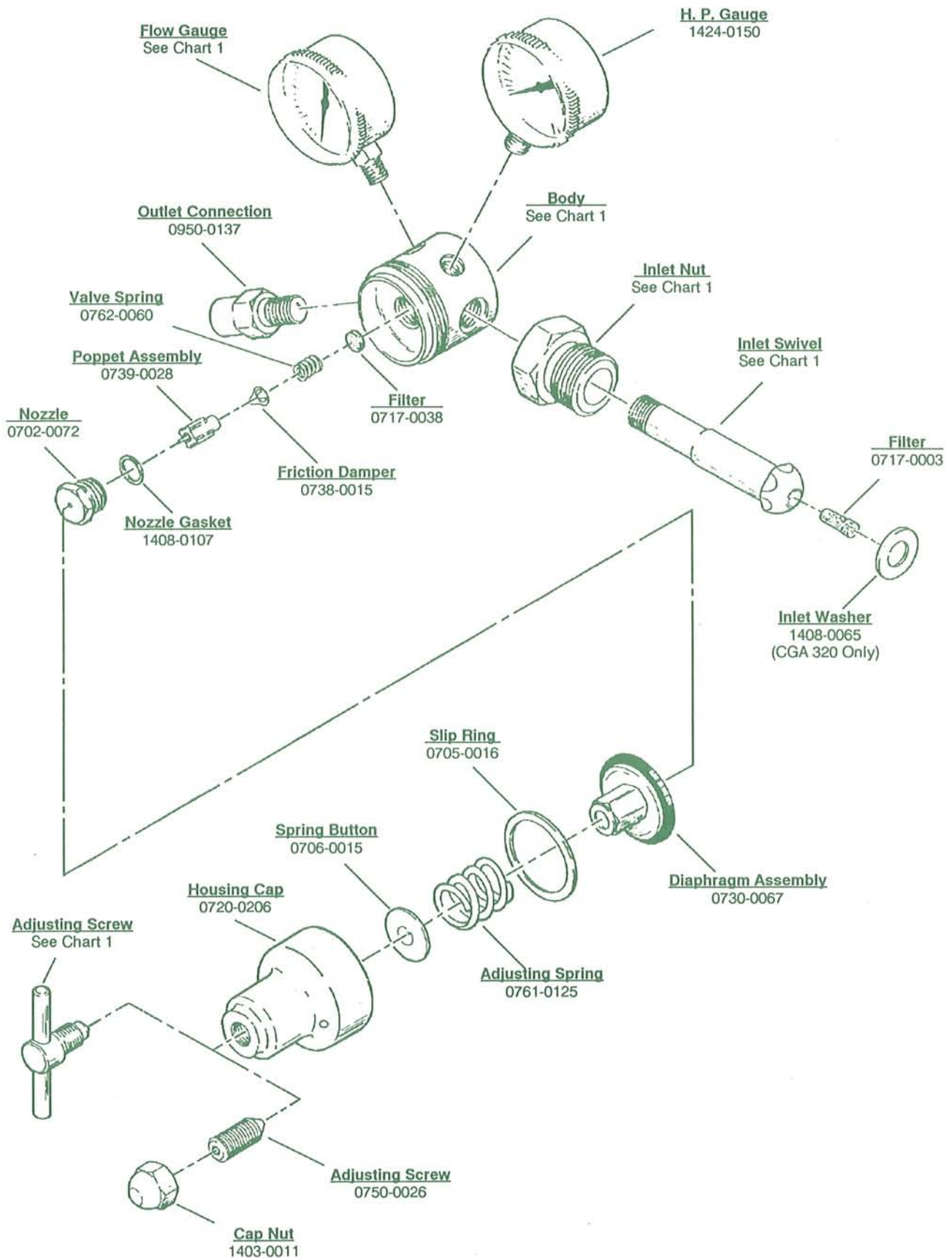


CHART 1

Description	AF 150	AFP 150	CF 153	CFP 153
Body	0701-0261	0701-0262	0701-0261	0701-0262
Flow Gauge	1424-0254	N/A	1424-0254	N/A
Inlet Nut	0973-0003	0973-0003	0985-0030	0985-0030
Inlet Swivel	0970-0005	0970-0005	0985-0004	0985-0004

SERVICE INSTRUCTIONS

Recommended Tools and Supplies:

Body Wrench RT-120 (1420-0191)
 Strap Wrench RT-119(1420-0190)
 Adjustable Open-End Wrench
 Socket Wrench
 9/16", 3/4", 11/16" Sockets
 Torque Wrench
 Inlet Swivel Ass'y Plug RT-85 (1420-0134) - CGA 580
 Inlet Swivel Ass'y Plug RT-81 (1420-0127) - CGA 320
 Bench Vise
 LOCTITE® #79 (0028-0056)
 TEFLON® Tape (0028-0028)
 LIQUID O-RING® #151L (0034-0021)

Disassembly Procedure

1. Clamp the appropriate Inlet Swivel Assembly Plug in the Bench Vise and attach the Regulator to it with Gauge(s) face up.
2. **ADJUSTABLE REGULATORS:** Remove the Adjusting Screw from the Housing Cap.
PRESET REGULATORS: Remove the Cap Nut and Adjusting Screw from the Housing Cap.
3. Remove the Housing Cap from the Body with the Strap Wrench.
4. Remove the Spring Button, Adjusting Spring, Slip Ring, and Diaphragm Assembly from the Body. Discard the Slip Ring.
5. Remove the Nozzle from the Body with the Hex Socket.
6. Remove the the Nozzle Gasket, Poppet Assembly, Friction Damper, Valve Spring and Filter from the Body. Discard the Nozzle Gasket, Poppet Assembly, Friction Damper and Filter.
7. Secure the Body in the Body Wrench. Clamp the Body Wrench handle in the Bench Vise.
8. Remove the Outlet Connection from the Body.
9. Remove the Gauge(s) from the Body.
10. Remove the Inlet Swivel from the Body. Remove the Inlet Nut and Filter from the Inlet Swivel. Discard the Filter.

CAUTION: Discard the Slip Ring, Nozzle Gasket, Poppet Assembly, Friction Damper and Filters. Replace them each time you reassemble a Regulator.

Cleaning Regulator Parts

Clean all metal parts with FREON® TF solvent or equivalent. Always use cleaning solvents in accordance with the manufacturers instructions. **WARNING: DO NOT** allow non-metal parts to come in contact with any cleaning solvent!

Cleaning solvents cause these materials to swell and stress crack. If these parts require cleaning, use a mild soap solution, followed by a thorough rinsing in water. Dry these parts completely before installing in the regulator. **REPLACE NONMETAL PARTS THAT HAVE COME IN CONTACT WITH OIL, GREASE, OR ANY OTHER PETROLEUM BASED SUBSTANCE!** Petroleum based substances become dangerously flammable in the presence of oxygen.

Assembly Procedure

1. Place the Body Wrench in the Bench Vise. Install the Body in the Body Wrench.
2. Press the new Filter into the Inlet Swivel.
3. Slide the Inlet Nut onto the Inlet Swivel. Apply two or three layers of TEFLON® tape around the Inlet Swivel threads. Install the Inlet Swivel in the Body and tighten to a torque of 20 to 25 ft.-lbs.
4. Apply two or three layers of TEFLON® tape around the Gauge threads. Install the Gauge(s) in the Body and tighten to a torque of 10 ft.-lbs. minimum.
5. Apply a small amount of LOCTITE® #79 to the second and third male threads of the Outlet Connection. Install the Outlet Connection in the Body and tighten to a torque of 20-22 ft.-lbs.
6. Remove the Body from the Body Wrench.
CAUTION: To remove contaminants that could cause Regulator malfunction, connect the Inlet Swivel to a source of oil-free air or dry nitrogen. Slowly open and close the Cylinder Valve two or three times. Blow out the Body with pressurized oil-free air or dry nitrogen to remove debris.
7. Clamp the Inlet Swivel Assembly Plug in the Bench Vise and attach the Regulator to it with the Gauge(s) face up.
8. Place the new Friction Damper on the new Poppet Assembly.
9. Place the new Filter, Valve Spring, Poppet Assembly and Nozzle Gasket in the Body.
10. Install the Nozzle in the Body and tighten it to a torque of 8 to 10 ft.-lbs.
11. Place the Diaphragm Assembly, a new Slip Ring and the Adjusting Spring on the Body.
12. Place the Spring Button (raised side toward the Adjusting Spring) on the Adjusting Spring.
13. Carefully place the Housing Cap over the Adjusting Spring and screw it onto the Body. Tighten the Housing Cap to a torque of 25 to 27 ft.-lbs.

14. **ADJUSTABLE REGULATORS ONLY:** Apply a small amount of LIQUID O-RING® #151L to the end and first few threads of the Adjusting Screw. Start the Adjusting Screw in the Housing Cap.
PRESET REGULATORS ONLY: Start the Adjusting Screw in the Housing Cap.

AF 150: 5 PSIG (2 SCFH)
 AFP 150: 5 PSIG
 CF 153: 5 PSIG (2 SCFH)
 CFP 153: 4 PSIG

During the next four (4) minutes no creep (0 PSIG increase) is allowed.

6. MINIMUM DELIVERY (ADJUSTABLE REGULATORS ONLY)

With the Test Gun open, adjust the Regulator to deliver the appropriate minimum pressure listed below.

AF 150: 40 PSIG (25 SCFH)
 CF 153: 20 SCFH

7. MAXIMUM DELIVERY (ADJUSTABLE REGULATORS ONLY)

With the Test Gun closed, turn the Adjusting Screw clockwise until it stops. The Regulator should deliver the appropriate maximum pressure listed below.

AF 150: 70 PSIG
 CF 153: 70 PSIG (Reading from 100 PSIG Test Gauge)

8. PRESETTING THE REGULATOR (PRESET REGULATORS ONLY)

a. With the Test Gun open, adjust the Regulator to deliver the appropriate pressure listed below.

AFP 150: 15 PSIG (13.2 SCFH)
 CFP 153: 17 PSIG (13.0 SCFH)

b. Attach the Cap Nut to the Adjusting Screw and recheck the Regulator setting.

9. LEAK TEST

a. With the Test Gun closed, adjust the Regulator to deliver the appropriate pressure listed below.

AF 150: 40 PSIG (25 SCFH)
 AFP 150: Preset @ 15 PSIG (13.2 SCFH)
 CF 153: 20 SCFH
 CFP 153: Preset @ 17 PSIG (13.0 SCFH)

b. Close the Cylinder Valve or Test Manifold.

c. Observe the Gauges for five (5) minutes. If the H.P. Gauge reading drops, there is a leak in the Cylinder Valve, Inlet Fitting or H.P. Gauge. If the L.P. Gauge reading drops, there is a leak in the downstream equipment, hose, hose fittings or L.P. Gauge. Check for leaks using an approved leak detector solution. If the H.P. Gauge drops at the same time the L.P. Gauge increases, there is a leak in the Regulator Seat. In either case, disassemble the Regulator and replace any suspect or damaged parts. Reassemble and retest the Regulator.

10. Release pressure from the Regulator by opening the Test Gun.

11. Remove the Test Gun and Test Gauge from the Regulator.

12. Remove the Regulator from the Test Manifold.

Test Procedure

Recommended Tools and Supplies:

- Test Gun (quick-opening on/off valve) with #77.(018) Restricting Orifice
- 30 PSIG Test Gauge (AFP 150 & CFP 153)
- 100 PSIG Test Gauge (AF 150 & CF 153)
- 2000 ±200 PSI Source of Oil-Free Air or Dry Nitrogen

WARNING: Always perform the following test procedure after assembling a regulator. Test with oil-free air or dry nitrogen ONLY! Always wear eye protection when testing a regulator. *Never stand directly in front of or behind a regulator when opening the Cylinder Valve or Test Manifold.* Always stand so that the Cylinder Valve or Test Manifold is between you and the Regulator.

1. Slowly open and close the Cylinder Valve Or Test Manifold several times to remove any contaminants that may enter the Regulator. Leave the valve closed.

2. Attach the Regulator to the Cylinder Valve or Test Manifold. The Cylinder Valve or Test Manifold must deliver the appropriate pressure listed below.

AF 150: 2000 ±200 PSIG
 AFP 150: 1500 ±200 PSIG
 CF 153: 800 ±100 PSIG
 CFP 153: 800 ±100 PSIG

3. Turn the Adjusting Screw clockwise several turns to open the Seat. Slowly open and close the Cylinder Valve or Test Manifold several times. Back out the Adjusting Screw until there is no pressure on the Adjusting Spring.

4. Attach the Test Gun (with #77 orifice) to the Outlet Connection.

5. CREEP TEST/SLOW SHUT-OFF TEST

a. With the Cylinder Valve or Test Manifold and Test Gun open adjust the Regulator to deliver the appropriate pressure listed below.

AF 150: 20 PSIG (16 SCFH)
 AFP 150: 15 PSIG
 CF 153: 20 PSIG (14 SCFH)
 CFP 153: 17 PSIG

b. Close the Test Gun and observe the L.P. Gauge for five (5) minutes. During the first (1) minute, slow shut-off (delivery rise due to the Seat not closing promptly) should not exceed the appropriate pressure listed below.

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