

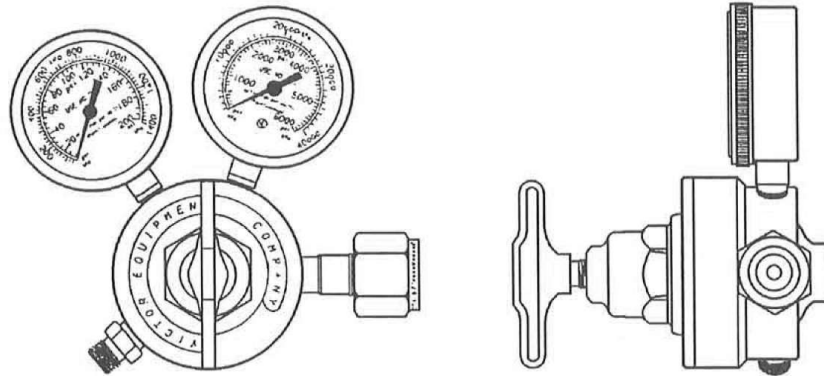
VICTOR®

SR600 Series Regulators

PARTS & SERVICE BULLETIN

FORM NO. 56-1310

EFFECTIVE 6-89



SR600 REGULATOR MODEL INFORMATION

CGA INLET CONNECTION*		
NO.	GAS SERVICE	MAX. INLET PRESSURE
-540 -577 -701	Oxygen	3000 PSIG 4000 PSIG 5500 PSIG
-346 -347	Air (Industrial)	3000 PSIG 5500 PSIG
-320	Carbon Dioxide	3000 PSIG
-580 -680	Nitrogen, Helium, Argon and Other Inert Gasses	3000 PSIG 5500 PSIG
-250 <small>(1/4-18 NPTF)</small>	Air, Oxygen, Carbon Dioxide & Inert Gasses	6000 PSIG

SR600-XXX-XXX	
NO.	DELIVERY PRESSURE
-40	2-40 PSIG
-125	5-125 PSIG
-200	10-200 PSIG
-350	20-350 PSIG
-550	40-550 PSIG

SR600 SERIES PRESSURE REGULATOR

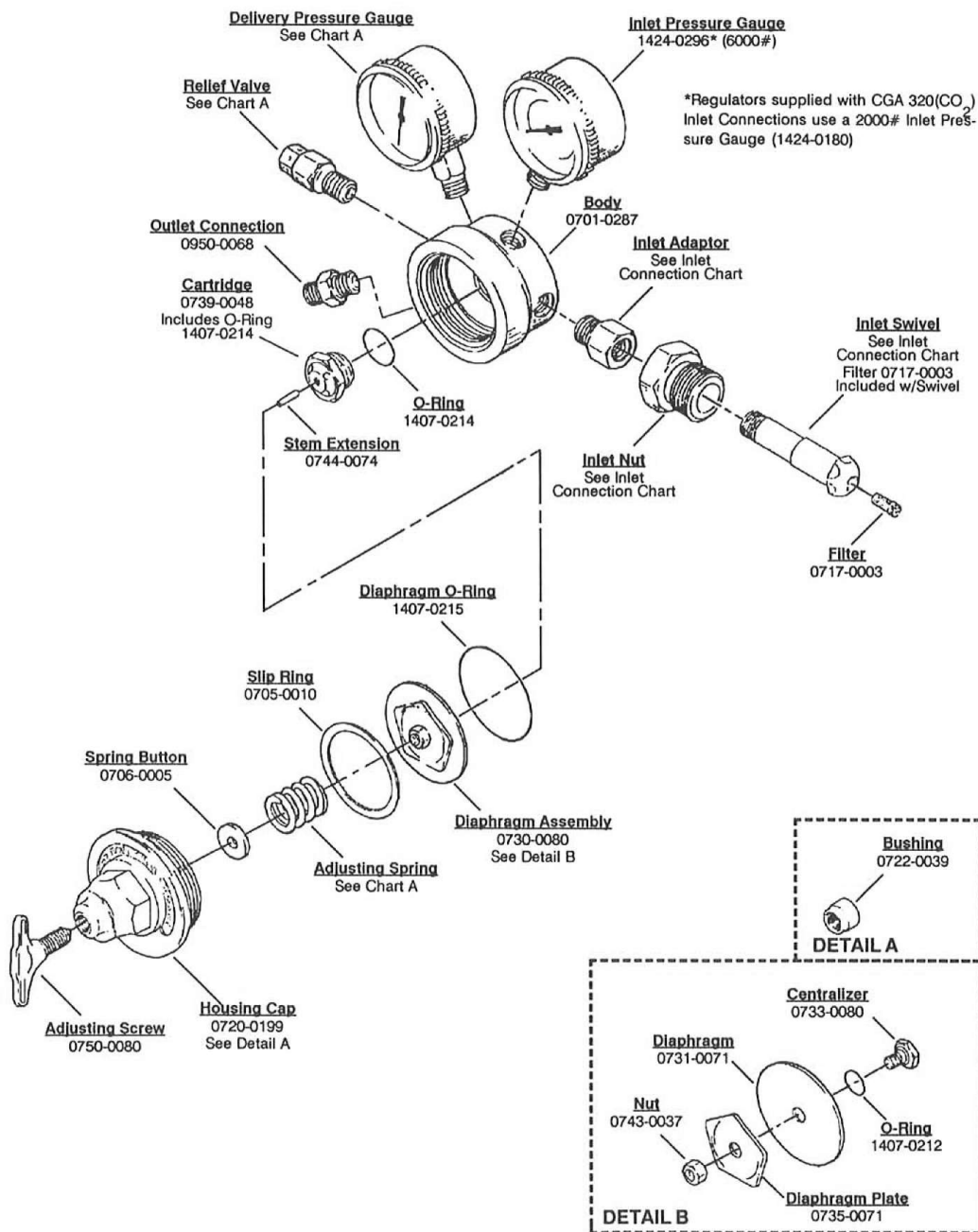
*CGA Inlet Connection determines the maximum recommended inlet pressure

WARNING!

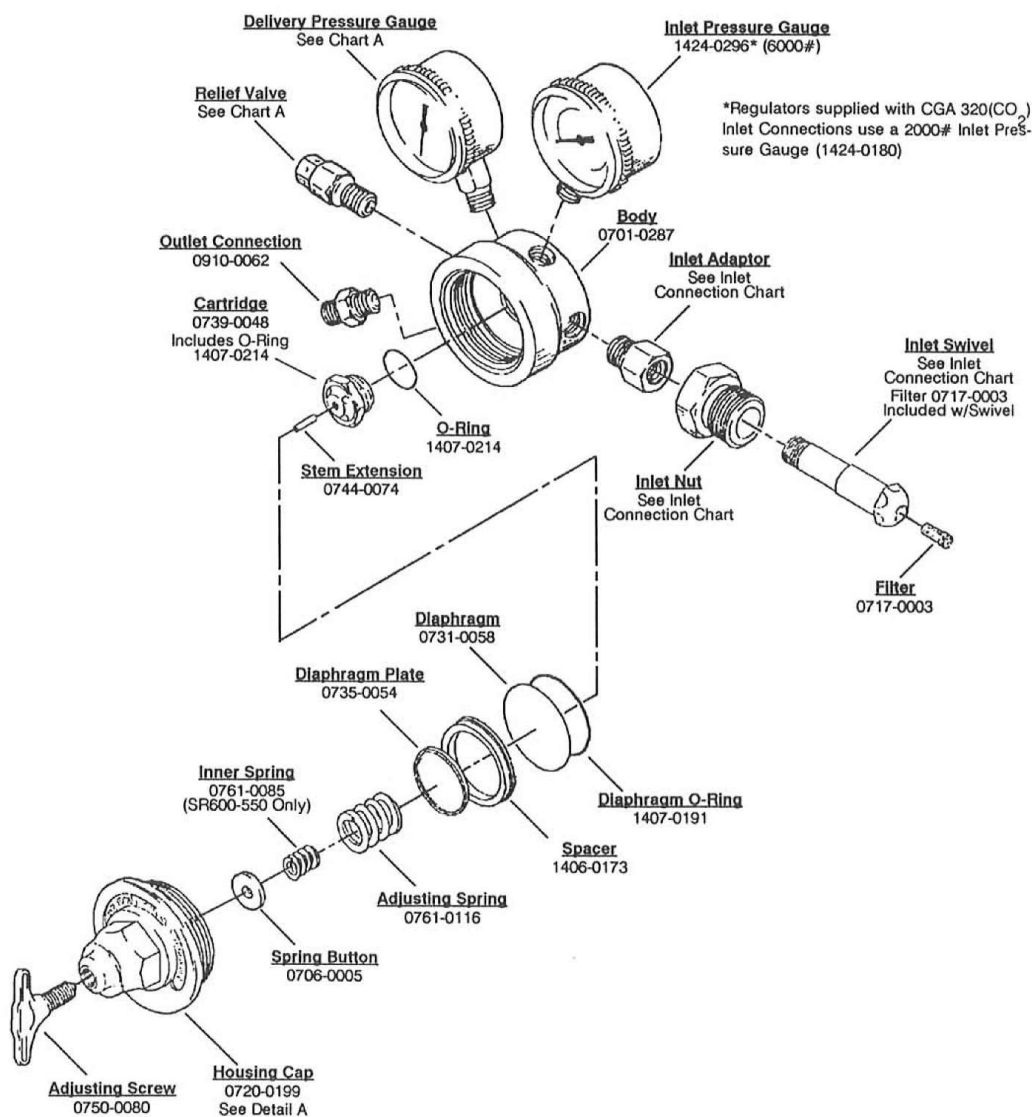
Welding apparatus improperly operated, maintained or repaired can be dangerous. Some parts and accessories manufactured by others may fit VICTOR apparatus but not conform to VICTOR's exacting standards. For your own protection, specify and use ONLY VICTOR-made parts and accessories with your VICTOR apparatus.

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

SR600-40, SR600-125 and SR600-200 Series Regulators



SR600-350 and SR600-550 Series Regulators



Inlet Connection Chart

CGA Designation	Swivel	Nut	Inlet Adaptor	
250 (1/4-18 NPTF)	(Plastic Plug)	N/A	N/A	
320	0985-0004	0985-0030	0912-0094	1408-0065 Washer
346	0972-0010	0972-0015	0912-0094	
347	0978-0001 (Ass'y.)	(Included)	(Included)	
540	0967-0038	0967-0044	0912-0094	1406-0130 Retainer
577	0977-0001	0977-0003	N/A	1406-0131 Retainer
580	0970-0005	0973-0003	0912-0094	
680	0958-0001	0958-0003	N/A	
701	0988-0001	0988-0003	N/A	1406-0131 Retainer

Chart A

Regulator Model	Del. Pressure Gauge	Relief Valve	Adjusting Spring
SR600-40	1424-0035 (60#)	0600-0005 (60#)	0761-0114
SR600-125	1424-0039 (200#)	0600-0014 (200#)	0761-0115
SR600-200	1424-0046 (400#)	0600-0018 (400#)	0761-0116
SR600-350	1424-0048 (600#)	0600-0025 (600#)	0761-0116
SR600-550	1424-0049 (1000#)	0600-0109(1000#)	0761-0116

SERVICE INSTRUCTIONS

Recommended Tools and Supplies:

Adjustable Open-End Wrench
Bench Vise
Body Wrench RT-164 (1420-0257)
Cap Wrench RT-13 (1420-0025)
Holding Fixture RT-165 (1420-0258)
Inlet Swivel Ass'y Plug RT-81 (1420-0127) - CGA 320
Inlet Swivel Ass'y Plug RT-145 (1420-0220) - CGA 346
Inlet Swivel Ass'y Plug RT-166 (1420-0260) - CGA 347
Inlet Swivel Ass'y Plug RT-4 (1420-0014) - CGA 540
Inlet Swivel Ass'y Plug RT-167 (1420-0261) - CGA 577
Inlet Swivel Ass'y Plug RT-85 (1420-0134) - CGA 580
Inlet Swivel Ass'y Plug RT-168 (1420-0262) - CGA 680
Inlet Swivel Ass'y Plug RT-169 (1420-0263) - CGA 701
Socket Wrench
9/16", 3/4", 11/16" Sockets
Torque Wrench
KRYTOX® #240 AC Lubricant (0034-0016)
LOCTITE® #79 (0028-0056)
LOCTITE® #271 (0028-0057)
TEFLON® Tape (0028-0028)

Disassembly Procedure

1. Clamp the Holding Fixture in the Bench Vise. Insert the Regulator with the Gauges face up.
2. Remove the Adjusting Screw from the Housing Cap.
3. Remove the Housing Cap from the Body with the Cap Wrench.
4. **Models SR600-40, SR600-125 & SR600-200:**
Remove the Spring Button, Adjusting Spring, Slip Ring, Diaphragm Assembly and Diaphragm O-Ring

from the Body. Discard the Slip Ring and the O-Ring.

Models SR600-350 & SR600-550:

Remove the Spring Button, Adjusting Spring(s), Spacer, Diaphragm Plate, Diaphragm and Diaphragm O-Ring from the Body. Discard the Diaphragm O-Ring.

5. Remove the Cartridge and the Cartridge O-Ring from the Body. Discard the Cartridge and the O-Ring.
 6. Secure the Body in the Body Wrench. Clamp the Body Wrench handle in the Bench Vise. Remove the Outlet Connection, Relief Valve, and Gauges from the Body.
 7. **CGA 540, 577 and 701 ONLY:**
Remove the Retaining Ring from the Inlet Swivel.
 8. Clamp the Inlet Swivel Assembly Plug in the Bench Vise. Attach the Inlet Swivel to the Inlet Swivel Assembly Plug. Remove the Body from the Inlet Swivel or Inlet Adaptor (if applicable) with the Body Wrench.
 9. Remove the Inlet Adaptor (if applicable) and the Inlet Nut. Remove the Filter from the Inlet Swivel. Discard the Filter.
 10. Inspect the Body for signs of damage or wear. Replace the Body if the threads are damaged.
- CAUTION:** Discard the Slip Ring, O-Rings, Cartridge and Filter. 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 manufacturer's instructions. **WARNING: DO NOT** allow nonmetal 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.

NOTE: For additional information, refer to Apparatus Service and Testing Procedures (Form No. 56-886) and Apparatus Repair Tools Manual (Form No. 56-121).

Assembly Procedure

1. Install the new Filter into the Inlet Swivel.
2. Clamp the Inlet Swivel Assembly Plug in the Bench Vise. Slide the Inlet Nut onto the Inlet Swivel and install in the Inlet Swivel Assembly Plug.
2. Secure the Body in the Body Wrench.
3. **CGA 347, 577, 680 and 701:**
Apply two or three drops of LOCTITE® #79 (no TEFLON® tape) to the second and third threads of the Inlet Swivel. Install the Body onto the Inlet Swivel and tighten to a torque of 20 to 25 ft.-lbs.
- CGA 320, 346, 540 and 580:**
Apply two or three drops of LOCTITE® #79 (no TEFLON® tape) to the second and third threads of the Inlet Swivel. Install the Inlet Adaptor onto the Inlet Swivel and tighten to a torque of 14 to 18 ft.-lbs.
Apply two or three drops of LOCTITE® #271 (no TEFLON® tape) to the second and third threads of the Inlet Adaptor. Install the Body onto the Inlet Adaptor and tighten to a torque of 20 to 25 ft.-lbs.
NOTE: It may be necessary to back up the Inlet Adaptor when tightening the Body onto it.
4. **CGA 540, 577 and 701 Only:**
Install the Retaining Ring into the groove on the Inlet Swivel.
5. Remove the Regulator from the Inlet Swivel Assembly Plug. Clamp the Body Wrench in the Bench Vise and install the Body.
6. Apply two or three drops of LOCTITE® #79 and/or two or three layers of TEFLON® tape around the second and third Relief Valve threads. Install the Relief Valve in the Body and tighten to 14-18 ft.-lbs. of torque.
7. Apply two or three drops of LOCTITE® #79 and/or two or three layers of TEFLON® tape around the second and third Inlet Pressure Gauge and Delivery Pressure Gauge threads. Install the Gauges in the Body and tighten each to 10 ft.-lbs. of torque minimum.
8. 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.
9. Clamp the Holding Fixture in the Bench Vise. Insert the Regulator with the Gauges face up.
10. Lubricate the new Cartridge O-Ring with KRYTOX® #240 and install on the Cartridge.
11. Install the Cartridge in the Body and tighten to 15-20 ft.-lbs. of torque.
12. Install the Diaphragm O-Ring in the Body.
13. **Models SR600-40, SR600-125 & SR600-200:**
Place the Diaphragm Assembly and a new Slip Ring in the Body.
Models SR600-350 & SR600-550:
Place the Diaphragm, Spacer and Diaphragm Plate in the Body.
14. Install the Adjusting Spring(s) in the Body. Place the Spring Button (raised side toward the Adjusting Spring) on the Adjusting Spring.
15. Carefully place the Housing Cap over the Adjusting Spring and screw it into the Body. Tighten the Housing Cap to a torque of 50-60 ft.-lbs.
16. Apply a small amount of KRYTOX® #240 to the end and first few threads of the Adjusting Screw. Start the Adjusting Screw in the Housing Cap.

Test Procedure

Recommended Tools and Supplies:

Test Gun (quick-opening on/off valve) with
#55(0.0520) Restricting Orifice
3500 ±300 PSI Source of Oil-Free Air or Dry Nitrogen (for CGA 320, 346, 540, and 580)
5000 ±300 PSI Source of Oil-Free Air or Dry Nitrogen (for CGA 250, 347, 577, 680 and 701)

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 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. See "Recommended Tools and Supplies" (above) for proper gas pressures.
3. Back out the Adjusting Screw until there is no pressure on the Adjusting Spring.
4. Attach the Test Gun (with #55 orifice) to the Outlet Connection.
5. **CREEP TEST/SLOW SHUT-OFF TEST**
 - a. Slowly open the Cylinder Valve or Manifold Valve to pressurize the Regulator. Close the Test Gun and adjust the Regulator to deliver the appropriate pressure listed below.
 - SR600-40: 5 PSIG
 - SR600-125: 20 PSIG
 - SR600-200: 50 PSIG
 - SR600-350: 100 PSIG
 - SR600-550: 200 PSIG
 - b. Open and close the Test Gun several times to stabilize the Regulator. Close the Test Gun.
 - c. Observe the Delivery Pressure Gauge for five (5) minutes. During the first minute, slow shut-off (delivery pressure rise due to slow valve seating) must not exceed the following:
 - SR600-40: 2 PSIG
 - SR600-125: 2 PSIG
 - SR600-200: 2 PSIG
 - SR600-350: 5 PSIG
 - SR600-550: 10 PSIG

During the next four (4) minutes, no creep (0 PSIG increase) is allowed.
6. **DROP TEST**
 - a. Close the Test Gun and adjust the Regulator to deliver the appropriate pressure listed below.
 - SR600-40: 5 PSIG
 - SR600-125: 20 PSIG
 - SR600-200: 50 PSIG
 - SR600-350: 100 PSIG
 - SR600-550: 200 PSIG

- b. Open the Test Gun and observe the Delivery Pressure Gauge. Drop (the difference in delivery from no-flow to flowing) should not exceed the appropriate pressure listed below.

SR600-40: 2 PSIG
SR600-125: 5 PSIG
SR600-200: 6 PSIG
SR600-350: 20 PSIG
SR600-550: 40 PSIG

7. LEAK TEST

- a. Close the Test Gun and adjust the Regulator to deliver the maximum rated delivery pressure:

SR600-40: 40 PSIG
SR600-125: 125 PSIG
SR600-200: 200 PSIG
SR600-350: 350 PSIG
SR600-550: 550 PSIG

- b. Close the Cylinder or Manifold Valve. Observe the Gauges for five (5) minutes. If the Inlet Pressure Gauge

reading drops, a leak exists in the Cylinder Valve, Inlet fitting or High Pressure Gauge. If the Delivery Pressure Gauge reading drops, a leak exists in the down stream equipment, Outlet fitting or Low Pressure Gauge. If the Inlet Pressure Gauge reading drops while the Low Pressure Gauge reading increases, a leak exists across the Regulator Seat.

8. If a leak is discovered or the Regulator does not perform properly, disassemble the Regulator. Replace any suspect or damaged parts. Reassemble and retest the Regulator.
9. Close the Cylinder or Manifold Valve. Open the Test Gun to drain all pressure from the Regulator. Turn the Adjusting Screw counter-clockwise until there is no pressure on the Adjusting Spring.
10. Remove the Test Gun from the Regulator. Remove the Regulator from the Cylinder valve or Test Manifold.

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