INSTRUCTIONS FOR MODELS SG6190 & SG6191 GLASS ENCASED, LOW PRESSURE, HIGH PURITY, MOISTURE PURIFIERS

IMPORTANT

These instructions are for experienced operators who know the general principles and safety precautions to be observed in handling specialty gases and operating gas handling equipment. If you are not certain you fully understand the safety precautions for handling gases, we urge you to obtain and read the Material Safety Data Sheet (MSDS) for each gas being used.

Do not permit untrained persons to install, operate, or maintain this equipment. Do not attempt to install or operate this equipment until you have read and fully understand these instructions. If you do not fully understand these instructions, contact your Advanced Specialty Gas Equipment Distributor.

Be sure this information reaches the operator. Your supplier has extra copies.

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SAFETY PRECAUTIONS

Protect yourself and others. Read and understand the following instructions before attempting to use this equipment. Failure to understand and follow these instructions could result in serious personal injury and/or damage to equipment.

- Know and understand the physical and chemical properties of the gas being used.
- Observe general precautions for the use of gases.
- Observe safety precautions for the gas being used.
- Read and follow precautions on cylinder labels.
- Never use these purifiers with gases not compatible with the materials of construction. The use of gases not compatible with the materials of construction may cause damage to equipment or injury to personnel.
- If flammable gases are used with these purifiers, do not locate them near open flames or any other source of ignition.
- If toxic or flammable gases are used with these purifiers, emergency equipment applicable to the gases in use should be available in the operating area.
- Many gases can cause asphyxiation by displacing oxygen in the atmosphere. Make certain the area where this equipment is operated is well ventilated. Provide a device to warn personnel of oxygen depletion in the work area.
- Do not release toxic or flammable gases in the vicinity of personnel. Use this equipment only in well ventilated areas. Vent gases to the outside atmosphere, and in an area away from personnel. Be sure that venting and disposal methods are in accordance with Federal, State and local requirements. Locate and construct vent lines to prevent condensation or gas accumulation. Be sure the vent outlet cannot be obstructed by rain, snow, ice, insects, birds, etc. Do not interconnect vent lines; if more than one vent is needed, use separate lines.
- Relief devices should be installed and properly vented in all gas handling systems to protect against overpressurization.
- Never use oil or grease on these purifiers. Oil and grease are easily ignited and may combine violently with some gases under pressure.
- Never connect this equipment to a supply source having a pressure greater than 125 psig.

DESCRIPTION

Models SG6190 and SG6191 purifiers are designed to remove moisture from a gas stream while the chemically-inert glass tube eliminates potential contamination from outgassing or diffusion (a phenomenon commonly associated with plastic purifiers). The glass tube is enclosed in a clear plastic outer shell to provide protection against glass breakage while still allowing for a visual indication of the trap's condition.

These purifiers are filled with Type 13X molecular sieve and Type 4A indicating molecular sieve. The Type 4A indicating sieve will undergo a color change (from blue to buff) to alert when the adsorbent requires replacement. They can be used at pressures up to 125 psig and are compatible with most noncorrosive gases.

OPTIONAL EQUIPMENT

Adsorbent Refill Kit (SG6195) – A kit containing enough adsorbent to refill three SG6190 purifiers, or two SG6191 purifiers.

Compression Tube Reducer (202–3027) – An adaptor used to convert ¼ in. to ⅛ in. compression inlet/outlet fittings. (Note: two reducers are required to convert both inlet and outlet fittings on each purifier.)

Mounting Clip with Screws (MC-3) – A clip used to mount the purifier to a wall or other flat surface. (Note: two clips are required to provide adequate support for each purifier.)

INSTALLATION

WARNING: Before attempting to install and operate these purifiers, read and fully understand the safety precautions on page 3 in this booklet. Failure to follow the safety precautions may result in serious personal injury and/or damage to equipment.

1. Inspect the purifier carefully for any evidence of damage that might have occurred in shipment.
2. Mount the purifier in the vertical position to prevent channeling. Avoid potential mishaps by employing two mounting clips (MC-3) for convenient placement.
3. Remove the protective plugs from the nickel plated unions.
4. Insert the process tubing through the fitting nut and ferrule assembly. The metal tubing should be pre-plumbed and aligned to minimize strain on the glass connections. Ensure that the tubing rests firmly against the shoulder of the union body.
5. Tighten finger tight.
6. Using a back-up wrench, tighten the nut ½ turn. Do not over tighten.
7. Repeat steps 4 through 6 for the other end of the purifier.
8. Once installed, pressurize the purifier with the process gas to the desired operating pressure and leak check the end fittings with either a soap solution, such as Snoop® or a gas leak detector. Do not exceed 125 psig during the leak test procedure. Vent all pressure from the system and repair any leaks before proceeding.

OPERATION

WARNING: DO NOT exceed pressure and temperature specifications during operation. Injury or death to personnel and/or damage to equipment may result. DO NOT operate the purifier under any circumstances if it leaking or otherwise malfunctioning.

1. The purifier is ready for operation after it has been installed in the flow system and connections have been tested for leaks.
2. Gradually introduce gas into the purifier to prevent a pressure surge or thermal shock to the purifier.

REPLACEMENT OF ADSORBENT

Note: Replacement of the adsorbent material is required when the indicator sieve changes from blue to buff or when breakthrough of molecules being adsorbed is detected by testing.

1. Be sure that the gas supply is shut off and all pressure has been released from that portion of the system containing the purifier.
2. Remove the purifier from the line and cap the line connections.
3. Remove the glass inner tube end connection from the protective plastic outer shell by gently but firmly applying pressure to the outer shell while the glass tube end connection is held in a vertical position against a flat surface.
4. Remove one end fitting from the glass tube by using a 13⁄16 in. wrench on the end fitting and a 7⁄8 in. wrench as a back-up on the fitting nut.

   Note: Be careful not to drop or lose the end fitting nut or ferrule when removing the spent adsorbent.
5. Remove and discard the spent adsorbent.
6. Refill the purifier with fresh adsorbent from the refill absorbent kit (SG6195).

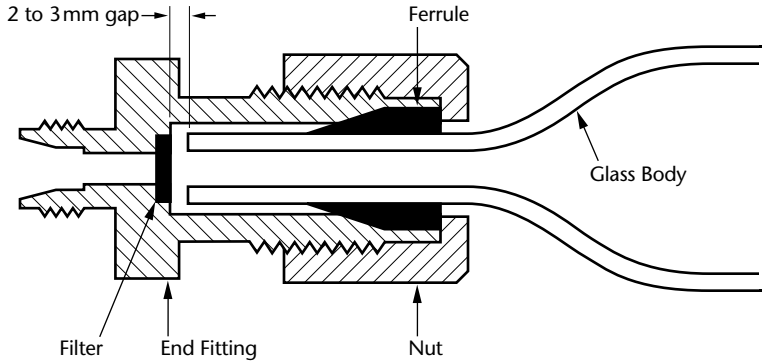

Figure 1 – End Fitting Assembly Models SG6190 and SG6191 Purifiers

7. Replace the end fitting over the end of the glass by seating the shoulder of the fitting on the glass and carefully moving the fitting about 2 to 3 millimeters away from the glass neck of the filter (see figure 1).

   CAUTION: If the fitting is tightened with the shoulder resting on the glass neck of the purifier, it will pull the fitting into the glass neck and break it.

   Use two wrenches to re-tighten the fitting.
8. Re-install the protective plastic outer shell over the glass tube.
9. Remove the caps from the line and re-install the purifier.
10. Once installed, pressurize the purifier with the process gas to the desired operating pressure and leak check the end fittings with either a soap solution, such as Snoop® or a gas leak detector. Do not exceed 125 psig during the leak test procedure. Vent all pressure from the system and repair any leaks before proceeding.

SPECIFICATIONS

Maximum Operating Pressure	125 psig
Maximum Operating Temperature	212°F
Efficiency	To <50 ppb Water with inlet levels of 30 ppm or less
Water Capacity	
Model SG6190	11 grams
Model SG6191	16 grams
Maximum Flow Capacity	32 slpm at 125 psi
Inlet and Outlet Connections	¼ in. compression
Dimensions	
Model SG6190	1 ½ in. dia. x 10 in. long
Model SG6191	1 ½ in. dia. x 12 ½ in. long
Weight (approx.)	2 lbs.

MATERIALS OF CONSTRUCTION

Housing	
Inner Tube	Silanized Borosilicate Glass
Outer Tube	Polycarbonate Plastic
Seals	Zytel-A® Nylon Resin
Fittings	Nickel-Plated Brass
Filters (40 micron)	Type 316 Stainless Steel
Adsorbent Material	Type 13X Molecular Sieve and 4A Indicating Molecular Sieve

WARRANTY

Advanced Specialty Gas Equipment Corp.,(the Company), warrants to the initial purchaser of each purifier described herein, that such equipment will be free from defects in material and workmanship which result in breakdown or failure under normal use during a period of 12 months from date of shipment by the Company if used and maintained according to Advanced Specialty Gas Equipment written instructions. This warranty does not cover damage or malfunction due to corrosion. Purchaser is aware that this equipment is designed for specific applications and that using this equipment with the wrong or improperly purged gas or at the wrong pressure may damage or corrode the unit and cause personal injury. Purchaser must confirm that this equipment is compatible with the gas being passed through it. If there is any doubt about compatibility, consult your Advanced Specialty Gas Equipment Corp. distributor.

The Company's liability under this warranty shall be limited to the repair, or at its option, replacement or refund of the purchase price, of such equipment which proves to be defective, provided; however, that this warranty shall only apply if the purchaser (1) gives the Company written notice within ten (10) days after discovery of such defect, (2) immediately on discovery of the claimed defect, discontinues all use of such equipment, and (3) returns such equipment freight prepaid to plant of manufacture.

THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE SPECIFIED HEREIN. NO WARRANTIES ADVANCED SPECIALTY GAS EQUIPMENT CORP.(OTHER THAN WARRANTY OF TITLE AS PROVIDED IN THE UNIFORM COMMERCIAL CODE) SHALL BE IMPLIED OR OTHERWISE CREATED UNDER ANY APPLICABLE LAW, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY AND WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. No claim against the Company of any kind, whether as to equipment delivery or for nondelivery of equipment and whether or not based on contract, warranty, negligence, strict liability in tort or otherwise, shall be greater in amount than the purchase price of the equipment in respect of which such claim is made. Without limiting the generality of the foregoing, Advanced Specialty Gas Equipment Corp. shall not be liable for any special, indirect, or consequential damage, such as failure of parts resulting from corrosion.

If it is determined by Advanced Specialty Gas Equipment Corp. that the equipment is to be repaired or replaced under the terms of this warranty, the cost of returning said equipment to the initial purchaser will be paid by the Company. If, however, equipment returned to the Company in connection with a claim under this warranty is found by the Company not to be defective hereunder, then such equipment will be returned to the initial purchaser, shipping charges collect, and additionally, a service charge will be paid by the purchaser to the Company to cover the cost of handling and testing such equipment.

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