

---

# INSTRUCTIONS FOR MODEL SG6140 HIGH PRESSURE PURIFIERS

---

THIS BOOKLET CONTAINS PROPRIETARY INFORMATION OF  
ADVANCED SPECIALTY GAS EQUIPMENT CORP. AND IS PROVIDED  
TO THE PURCHASER SOLELY FOR USE IN CONJUNCTION WITH  
MODEL SG6140 PURIFIERS.



SG6140 Purifier

## 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.**



## **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 3000 psig.

## **MANUFACTURER STATEMENT**

---

The information contained in this instruction booklet has been compiled by Advanced Specialty Gas Equipment Corp., (the Company), from what it believes are authoritative sources and is offered solely as a convenience to its customers. While the Company believes that this information is accurate and factual as of the date printed, the information including design specifications is subject to change without prior notice.

## **DESCRIPTION**

---

The Model SG6140 purifier is designed to remove water and/or oil from gas or liquid streams. The purifier may be used with noncorrosive gases compatible with brass and Viton® at pressures up to 3000 psig.

A purifier element must be installed before using the purifier. Three different purifying elements are available:

1. Type 13X Molecular Sieve for removing oil and water vapor.
2. Type 4A Molecular Sieve for removing water vapor.
3. Activated Charcoal for removing oil and heavy hydrocarbons.

The element can be replaced without removing the purifier from the process line.

## **INSTALLATION**

---

**WARNING: Before attempting to install and operate these purifiers, read and fully understand the safety precautions on page 2 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. The purifier may be mounted in any position and supported by the system piping or bolted to a bracket by using the two ¼-20 UNC threaded holes in the top of the body. (Refer to Fig.1, pg.5)
3. Be sure that the flow through the purifier is in the direction marked on the body of the purifier. Use Teflon® tape on pipe threads to prevent galling.
4. Install the purifier element. Refer to "Installing or Replacing the Element" (page 4).
5. Once the purifier is installed, pressurize the purifier with the process gas (if it is nonhazardous) to the desired operating pressure and leak check the end fittings and the seal between the body and the cap with either a soap solution, such as Snoop® or a gas leak detector. If the process gas is hazardous (flammable and/or toxic) use clean dry nitrogen to leak test the purifier. Do not exceed 3000 psig during the leak test procedure. Vent all pressure from the system and repair any leaks before proceeding.

## **OPERATION**

---

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

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

## **INSTALLING OR REPLACING THE ELEMENT**

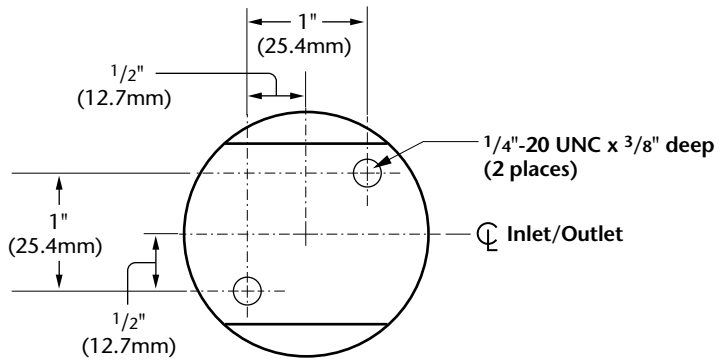
---

**Note:** Replacement of the element is required when tests or process operations indicate that the material being adsorbed is breaking through the purifier.

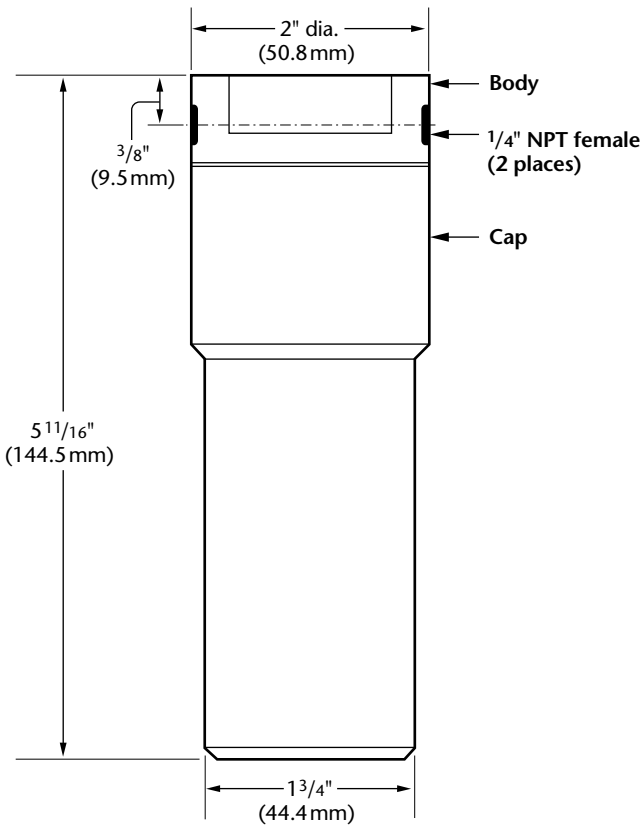
1. Be sure that the gas supply is shut off and all pressure has been released from the purifier.

**WARNING: Hazardous gases must be discharged into a safety vent. Be sure to use a venting procedure that is environmentally acceptable and complies with Federal, State and local requirements.**

2. If the process gas is hazardous, purge the system with clean dry nitrogen gas until the hazardous gas level in the system is below the TLV for the gas.
3. Reduce the pressure in the system to zero psig.
4. Hold the body securely using the flats milled on the body. Remove the cap by hand or with a strap wrench by turning it clockwise.
5. Remove the spent element by turning it clockwise and discard it.
6. Inspect the cap and the body O-Ring seal for dirt or damage that might prevent proper sealing. Replace the O-Ring seal when necessary to ensure proper sealing.
7. Open the sealed can containing the replacement element.
8. Install the new element into the purifier body by turning it counterclockwise until it is fully seated.
9. Check that the O-Ring seal is properly positioned in the groove at the top of the threads on the body.
10. Screw the cap on to the body. Tighten firmly by hand or with a strap wrench; do not use tools which could damage the purifier.
11. Once the body, element and cap are installed, pressurize the purifier with the process gas (if it is nonhazardous) to the desired operating pressure and leak check the end fittings and the seal between the body and the cap with either a soap solution, such as Snoop<sup>®</sup> or a gas leak detector. If the process gas is hazardous (flammable and/or toxic) use clean dry nitrogen to leak test the purifier. Do not exceed 3000 psig during the leak test procedure. Vent all pressure from the system and repair any leaks before proceeding.



**TOP VIEW**



**SIDE VIEW**

*Figure 1– Model SG6140  
High Pressure Purifier Dimensions*

## SPECIFICATIONS

---

Maximum Operating Pressure	3000 psig
Pressure Drop	1.0 psi at 56 slpm Air 2.4 psi at 85 slpm Air
Water Capacity (56 slpm at 80°F)	
Type 13X M.S. Element	5.5 grams
Type 4A M.S. Element	6.0 grams
Dew Point Obtainable (13X and 4A Molecular Sieve)	-100°F
Inlet and Outlet Connections	¼ in. NPT female
Dimensions	See Figure 1 (page 5)
Weight (approx.)	3 lbs.

## MATERIALS OF CONSTRUCTION

---

Purifier	
Body and Cap	Nickel-Plated Brass
O-Ring Seal	Viton®
Purifier Element	
Housing	Electroless Tin-Plated Cold-Rolled Steel
Retainer	Polyester Felt Backed by Type 316 Stn. Stl. Screen
Desiccant	4A, 13X or Activated Charcoal as Ordered

**Table 1, SG6140 Purifiers**

---

Part Number	Element Type
SG6140	None
SG6140-1	Type 13X Molecular Sieve
SG6140-2	Type 4A Molecular Sieve
SG6140-3	Activated Charcoal

## REPLACEMENT PARTS

---

Replacement Element	
Type 13X Molecular Sieve Element	Part No. SG6141
Type 4A Molecular Sieve Element	Part No. SG6142
Activated Charcoal Element	Part No. SG6143

**Note:** Elements are shipped in individually packed, hermetically sealed cans to prevent deterioration.

Viton O-Ring Seal	Part No. 2023268
-------------------	------------------

## **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 BY 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.



*241 Lackland Drive, Middlesex, NJ 08846*  
*Phone: 732-271-9300 Fax: 732-271-1630 [www.asge-online.com](http://www.asge-online.com)*

---

Printed In U.S.A.

Copyright ©2004 Advanced Specialty Gas Equipment Corporation

Teflon and Viton are registered trademark of E.I. Du Pont de Nemours & Co.

Snoop is a registered trademark of Nupro Co.

AI 2050R

3/04