
INSTRUCTIONS FOR MODEL AG6170 LOW PRESSURE, HIGH FLOW 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 AG6170 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 specialty gas 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. The AG6170 is not suitable for use with Acetylene.
- 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 350 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 AG6170 purifier is designed to protect sensitive instruments from water and/or oil contamination. This purifier (capable of removing up to 20 times more water than our Model SG6140), may be used with noncorrosive gases compatible with aluminum, brass and neoprene at pressures up to 350 psig.

The Model AG6170 purifier features a cartridge-type replaceable element mounted in the purifier housing. A flange-type cover provides easy access for element replacement. A purifier element must be installed before using the purifier. Three different purifying elements are available:

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

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. If it is damaged or contaminated, contact your Advanced Specialty Gas Equipment Distributor to arrange for repair or replacement.

CAUTION: Oil or grease in the presence of high pressure oxygen is explosive.

2. Mount the Model AG6170 Purifier in a vertical position (see fig. 1, page 9). Install Teflon® tape on pipe threads to prevent galling. Using a back-up wrench on the stainless steel female adapters, carefully install female process connections.

CAUTION: Failure to use a back-up wrench may create excess stress on the aluminum ports and may lead to failure due to cracking or leakage.

NOTE: Flow through the Model AG6170 Purifier may be in either direction.

3. Install the purifier element. Refer to “Installing or Replacing the Element” (see page 6).
4. 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 cover plate 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 350 psig during the leak test procedure. Vent all pressure from the system and repair any leaks before proceeding.

OPERATION

WARNING: DO NOT exceed pressure specifications 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 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. Remove the cover plate from the purifier body by unscrewing the six (6) hex head bolts from the cover flange assembly. If necessary, disconnect the inlet and/or outlet connection(s) for access to the flange bolts and purifier element.
5. Remove the spring, filter screen assembly and spent element from the purifier housing. Remove the cover plate and element gaskets. Discard the used element and gaskets.
6. Inspect the purifier body and cover plate for dirt or damage that might prevent proper sealing.
7. Open the box containing the new sealed replacement element and two neoprene gaskets.
8. Open both ends of the replacement element by following the directions marked on the pull tab ends of the element.
9. Insert the small diameter element gasket, element, filter screen and spring into the purifier body following the sequence shown in Fig. 1 (see pg. 9).
10. Insert the large diameter gasket into the groove located on the inside of the cover plate. Install cover plate with gasket onto the purifier body and insert the six (6) hex head bolts in the cover flange assembly. Tighten bolts in an alternating pattern that will assure that all bolts are equally tight without cocking the cover plate. Avoid excessive torque that could damage the unit or cause leakage.
11. Reattach the purifier inlet and/or outlet connection(s) if necessary.
12. Once the element is properly installed and the purifier connected to the process line, 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 cover plate 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 350 psig during the leak test procedure. Vent all pressure from the system and repair any leaks before proceeding.

SPECIFICATIONS

Maximum Operating Pressure	350 psig
Operating Temperature Range	-40°F to +200°F
Maximum Flow Capacity	280 slpm for short periods 85 slpm for continuous service
Pressure Drop	0.12 psi at 85 slpm Air 1 psi at 226 slpm Air
Water Capacity	
Type 4A M.S. Element	134 grams
Type 13X M.S. Element	126 grams
Dew Point Obtainable (4A and 13X Molecular Sieve)	-100°F
Inlet and Outlet Connections	1/4 in. NPT male
Dimensions	See Figure 1 (page 9)
Weight (approx.)	7 lbs.

MATERIALS OF CONSTRUCTION

Purifier	
Shell and Flange	Anodized Black Aluminum
Seals	Neoprene
Inlet/Outlet Connections	Type 316 Stainless Steel
Purifier Element	
Housing	Electrolytic Tin-Plated Cold-Rolled Steel
Retainer	Polyester Felt Backed by Type 316 Stainless Steel Screen
Desiccant	4A, 13X or Activated Charcoal as Ordered

Table 1, AG6170 Purifiers

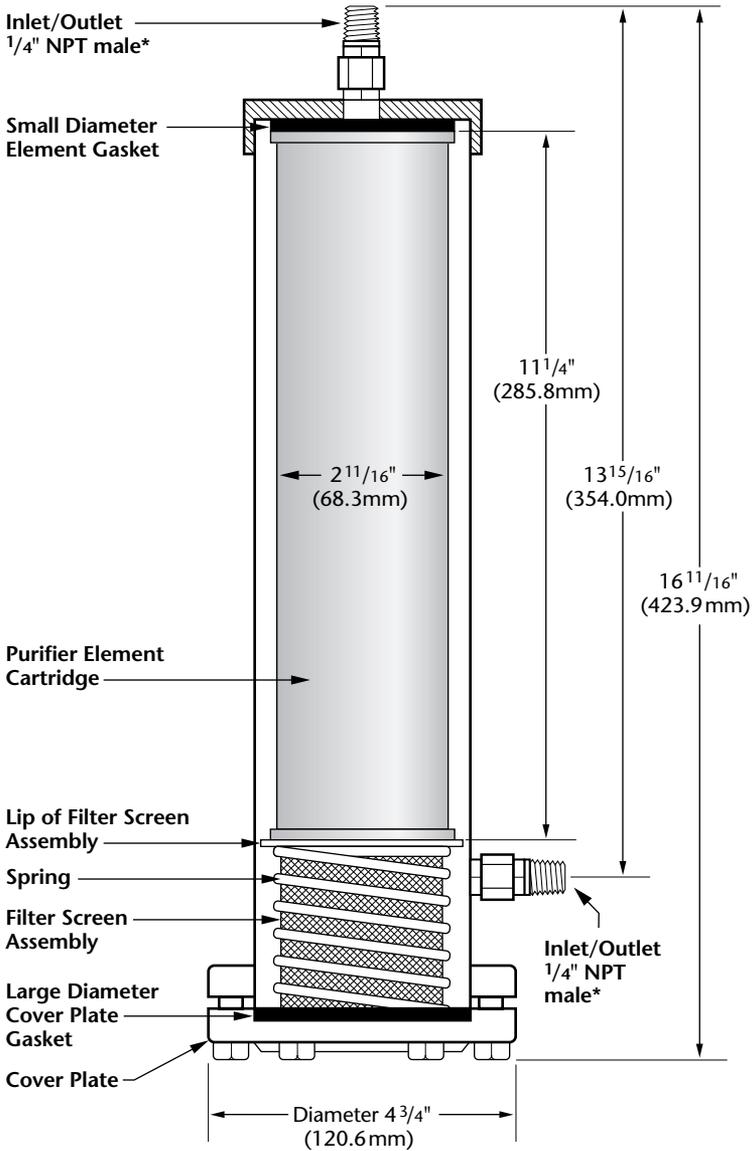
Part Number	Element Type
AG6170	None
AG6170-1	Type 4A Molecular Sieve
AG6170-2	Type 13X Molecular Sieve
AG6170-3	Activated Charcoal

REPLACEMENT PARTS

Replacement Element (includes one set of replacement gaskets)

Type 4A Molecular Sieve Element	Part No. SG6171
Type 13X Molecular Sieve Element	Part No. SG6172
Activated Charcoal	Part No. SG6173

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



*Flow through the purifier may be in either direction

Figure 1 – Model AG6170
Purifier Cutaway with Dimensions

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 for the wrong application may damage or corrode the unit and cause personal injury. If there is any doubt about application, 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 (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 will be paid by the purchaser to the Company to cover the cost of handling and testing such equipment.

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