
INSTRUCTIONS FOR MODEL SG6500 GAS HEATERS

THIS BOOKLET CONTAINS PROPRIETARY INFORMATION OF
ADVANCED SPECIALTY GAS EQUIPMENT CORP. AND IS PROVIDED
TO THE PURCHASER SOLELY FOR USE IN CONJUNCTION WITH
MODEL SG6500 GAS HEATERS.



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.



SAFETY PRECAUTIONS

Protect yourself and others. Read and understand the following instructions before attempting to use these gas heaters. 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 gas heaters with gases other than nitrous oxide or carbon dioxide. The use with other gases may cause damage to equipment or injury to personnel.
- 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.
- Never use oil or grease on these heaters. Oil and grease are easily ignited and may combine violently with some gases under pressure.
- Make sure that the components and materials used in the gas handling system are compatible with the gas and have the proper pressure rating. All associated equipment used with nitrous oxide should be cleaned as for oxygen service.
- Never connect the heater to a supply source having a pressure greater than 3000 psig.
- Use a three-wire (grounded) extension cord such as a U.L. rated 10 amp (or more) line cord to connect heater to a grounded 110 Vac outlet. Wiring must comply with local codes and ordinances.
- Always unplug heater from electrical outlet when not in use.
- To protect against electrical shock hazards, do not immerse heater in water or other liquids
- Heater connections and regulator will be hot during use! Care must be taken as burns can occur from touching hot parts.

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 SG6500 Carbon Dioxide and Nitrous Oxide Heaters are designed to prevent freeze-up and subsequent malfunctioning of cylinder regulators caused by using these gases under high flow conditions. The Model SG6500 will handle these gases at flow rates up to 160 scfh without freeze-up.

The gas heater is thermostatically controlled at 160°F to prevent the overheating of the gas. The heating element is encapsulated which results in all of the heat working towards preventing interruption of the gas flow. The outer jacket of the heater provides insulation to allow the operator to install or remove the heater under warm conditions.

INSTALLATION

WARNING: Before attempting to install and use the heater, 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 heater for signs of physical damage or contamination. Do not connect the heater if you detect oil, grease or damaged parts. If the heater is contaminated or damaged contact your Advanced Specialty Gas Equipment Distributor to have it properly cleaned or repaired. Contact your gas supplier if the cylinder valve is damaged or contaminated.

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

2. Secure cylinder in place using a suitable restraining device recommended by your gas supplier (such as a Model SG6202 bench clamp, or Model SG6203 wall clamp).
3. Connect the inlet of the heater directly to the cylinder valve. Use the supplied washer when connecting the 320 CGA connection. Connect a regulator to the heater outlet using a back-up wrench to prevent the CGA adapter from turning. Securely tighten connections.

Note: The Model SG6500-320 is equipped with a CGA 320 inlet fitting which is designed to directly mount on a carbon dioxide cylinder. While the Model SG6500-326, with a CGA 326, is designed for nitrous oxide service.

4. Use the process gas to leak test and purge the heater, regulator and gas delivery system.
5. Leak check all connections with either a soap solution, such as Snoop® or a gas leak detector.
6. Purge entire system of air if the process is sensitive to atmospheric contaminants.
7. Vent system to atmospheric pressure.

OPERATION

WARNING: Never operate the heater or regulator under any circumstances if leaking or otherwise malfunctioning. DO NOT repair any leaks while system is under pressure. Damage to equipment and/or injury to personnel may result.

1. Using a three-wire (grounded) extension cord such as a UL Rated 10 amp (or more) line cord, plug heater into grounded 110 Vac electrical outlet.

CAUTION: Heater connections and regulator will be hot! Care must be taken as burns can occur from touching hot parts.

2. Allow heater to warm-up for 5 to 10 minutes before use.
3. Ensure that cylinder regulator and outlet valve are closed.
4. Slowly open cylinder valve to admit process gas to regulator.
5. Slowly open regulator until desired delivery pressure is indicated on delivery gauge.
6. Slowly open outlet valve and adjust the delivery pressure if necessary.

SHUTDOWN

1. Close cylinder valve. Always keep cylinder valve closed whenever system is not in use.
2. Unplug heater from power outlet.
3. Vent system until pressure is reduced to 0 psig.
4. Close regulator and outlet valve.

CAUTION: Heater connections and regulator will be hot after use! Avoid possible burns, allow sufficient time for unit to cool before removing unit from cylinder.

5. Remove regulator and heater from cylinder.

REPAIRS

If a gas heater leaks or malfunctions, take it out of service immediately. Do not attempt to repair these heaters. Repairs should be made by Advanced Specialty Gas Equipment Corp. who has the special tools, test equipment and trained personnel required to make a safe repair. Tampering with the heater voids the warranty. Contact your Advanced Specialty Gas Equipment Distributor to arrange for repair. Repairs to heaters done after the initial warranty period has expired are chargeable to the customer. Upon receipt at the factory, the heater will be inspected and you will be contacted with a repair cost estimate. No item will be repaired until approval is received. There will be an evaluation charge assessed for equipment not repaired. All repairs should be arranged through your Advanced Specialty Gas Equipment Distributor.

SPECIFICATIONS

Maximum Operating Pressure	3,000 psi
Thermostat Setting	160°F ±5°F (71°C ±3°C)
Voltage	110 Vac
Power	120 watts, 1 amp.
Maximum Flow Rate	160 scfh (CO ₂)
Inlet/Outlet Connection	
Model SG6500-320	320 CGA/320 CGA male
Model SG6500-326	326 CGA/326 CGA male
Weight (approx.)	2 lb.

MATERIALS OF CONSTRUCTION

Inlet and Outlet Connections	Brass
Other Metal Parts Exposed to Gas	Brass
Body	Epoxy, Polymer

WARRANTY

Advanced Specialty Gas Equipment Corp., (the Company), warrants to the initial purchaser of each gas heater 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 local 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.



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