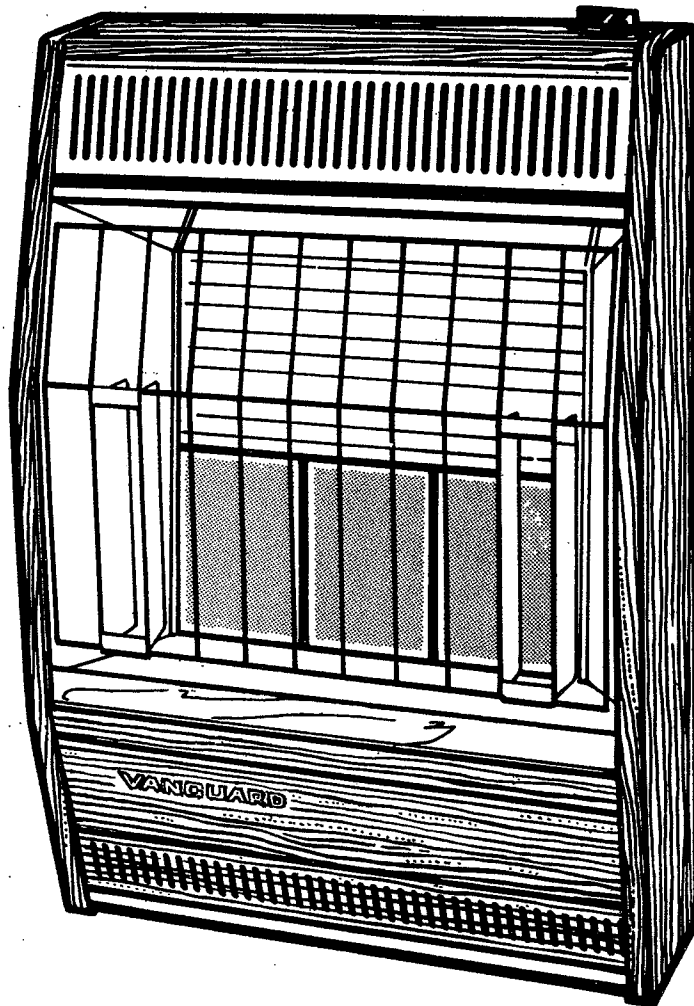


VANGUARD

UNVENTED GAS HEATER

**Model
KV 1800**



This manual is intended for use by qualified (licensed or trained) personnel. The manual should be given to the installer prior to installation and service.

INSTALLATION AND SERVICE MANUAL

PLEASE KEEP FOR FUTURE REFERENCE

INSTALLATION AND SERVICE

INSTALLATION

WARNING

REMOVE THE TWO TWIST TIES SECURING THE GRILL *BEFORE* ATTEMPTING TO LIGHT HEATER.

I. GENERAL

The installation requirements vary with the locality. The installation must conform with local codes. In the absence of local codes, the installation must conform with National Fuel Gas Code ANSI Z223.1.1980, also known as NFPA 54. **Only qualified (licensed or trained) personnel should install the product.**

This heater contains an Oxygen Depletion Safety System. If the normal oxygen content is reduced to 18%, the pilot and main burner will shut off.

This heater also contains a Low Gas Pressure Sensor Unit. If the supply pressure drops below a level suitable for proper burning, the pilot and main burner will shut off.

II. LOCATION

The following safety precautions should be kept in mind when determining the location of the heater. (Residential Application)

1. Do not install this heater in a bedroom, mobile home, trailer or recreational vehicle.
2. Do not install in areas where curtains, drapes, clothing or other inflammable materials are within 12 inches of the sides or 36 inches of top of heater.
3. The heater should be located to give ready accessibility for operating the controls and for servicing.
4. The clearance from the heater to combustible surfaces **MUST NOT** be less than shown in Fig. 1. These are absolute minimum clearances and greater clearances should be allowed wherever possible.

If the heater is installed in a residential garage, the following precautions should be taken.

1. May be installed at floor level if a door opens to an adjacent ground or driveway level that is at or below the garage floor level. Otherwise, the heater pilot and burners must be at least 18 inches above the floor.
2. Heater must be located or reasonably protected, so as not to be subjected to damage by a moving vehicle.

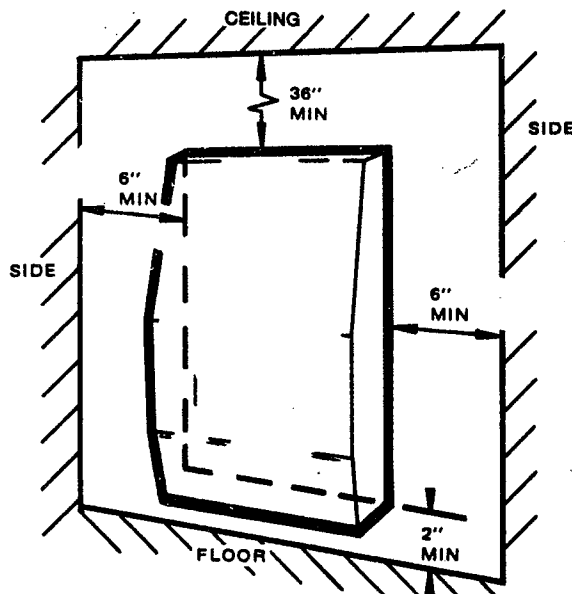


FIG. 1. MINIMUM CLEARANCES—COMBUSTIBLE SURFACES

III. INSTALLING HEATER TO WALL

Step 1. Remove the upper mounting plate on back of heater by removing the two screws which secure it. (Fig. 2A)

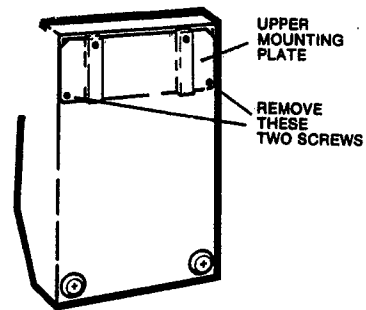


FIG. 2A. REMOVING MOUNTING PLATE

Step 2. Place the upper mounting plate against the wall surface with the raised ribs touching the wall and the bent edge at top. Check that bottom of mounting plate is at least 19½ inches from floor or carpet and that plate is level. Mark the holes for drilling. (Fig. 2B)

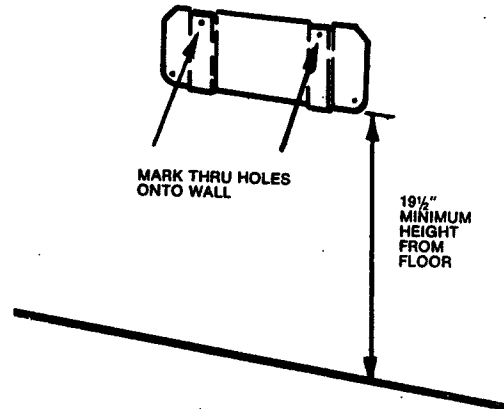
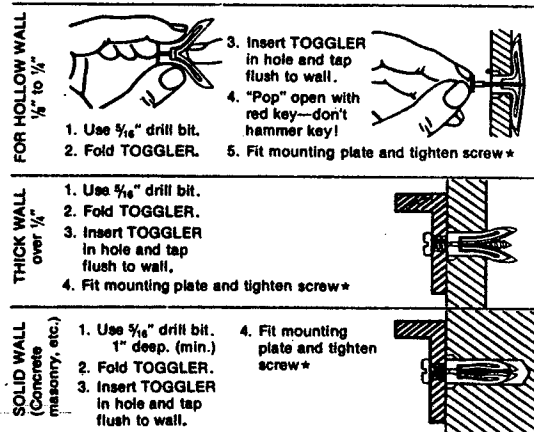


FIG. 2B. LOCATING MOUNTING PLATE

Step 3. Remove the upper mounting plate. Drill at the marked locations, install supplied anchors and secure upper mounting plate to wall with supplied screws as described in Fig. 3.



*Tighten so mounting plate is flush with the Toggler and the Toggler flush with the wall plus one half turn more. Do not overtighten.

U.S. Patent No. 3,651,734
and foreign counterparts thereof.

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Pleasantville, New York 10570, U.S.A.

FIG. 3. INSTALLING MOUNTING PLATE

Step 4. Remove the lower front panel of heater by removing the two screws near the bottom corners and pulling the bottom of panel forward. (Fig. 4)

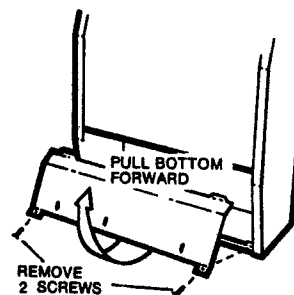


FIG. 4. REMOVING LOWER FRONT PANEL

Step 5. Hang the heater on the upper mounting plate. Make sure the back lip on the heater top is properly located over the top edge of the mounting plate. (Fig. 5)

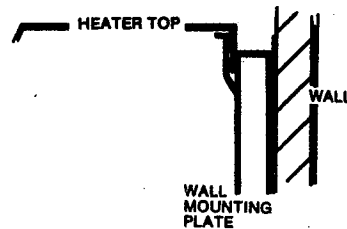


FIG. 5. WALL HANGING

Step 6. Mark the lower holes for drilling as shown in Fig. 6. Remove heater and drill holes and secure anchors. Re-hang the heater and secure by fixing screws through the recessed holes located at the bottom of heater.

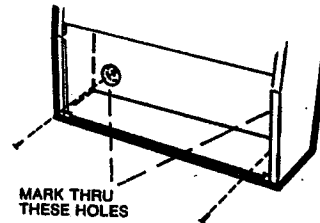


FIG. 6. LOWER FIXINGS

Step 7. Replace the lower front panel after internal gas connections have been made and checked for gas leaks.

IV. GAS CONNECTION (See Fig. 7)

1. We recommend using only new black iron or steel pipe. Copper tubing may be acceptable. CHECK LOCAL CODES.
2. The gas supply line shall be sized and installed to provide a sufficient supply of gas to meet the maximum demand of the heater without undue loss of pressure.
3. The sealant used on the threaded joints of the gas pipe must be a type to resist the action of the gas. (This sealant should be applied lightly to male threads to ensure excess sealant does not enter lines.)
4. The supply system must include manual shutoff valve and union in the line, so the heater can be disconnected for servicing. Unions in gas lines must be of the ground joint type.
5. Include a drip leg (trap) and a plugged $\frac{1}{8}$ " N.P.T. tapping in the line. The tapping should be accessible for test gauge connections upstream of the gas supply connection to the heater.

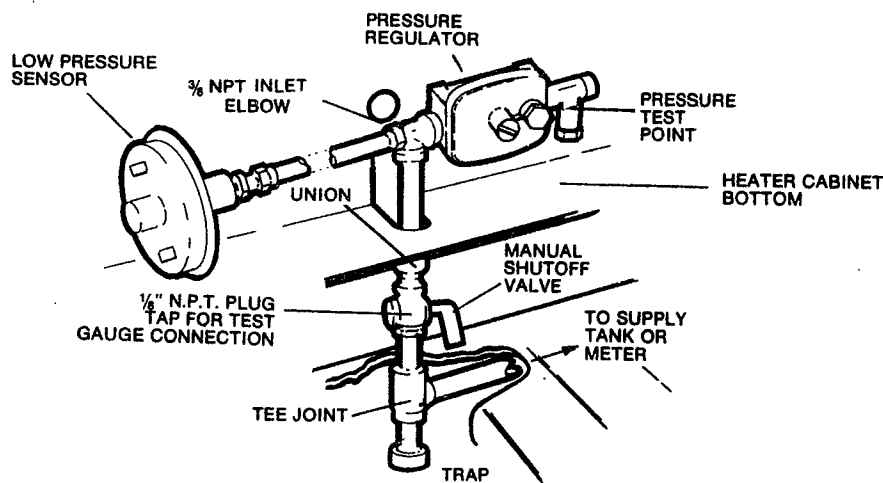


FIG. 7. GAS CONNECTION

V. CHECKS AFTER GAS CONNECTION

WARNING! All gas piping and connections must be tested for leaks after installation or servicing. All leaks must be corrected immediately.

Step 1. Make sure the control of the heater is in the "OFF" position.

Step 2. Open the manual shutoff valve. Test for leaks by applying a liquid detergent to all joints. **CAUTION: NEVER USE AN OPEN FLAME TO CHECK FOR LEAKS.**

Step 3. Correct any leak detected at once. (Bubbles forming indicate a gas leak.)

VI. PRESSURE TESTING SUPPLY LINE

1. The heater and its individual manual shutoff valve must be disconnected from the gas supply piping system and capped during any pressure testing of that system at pressures in excess of $\frac{1}{2}$ p.s.i.g.
2. The heater must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at pressures equal to or less than $\frac{1}{2}$ p.s.i.g.

SERVICE SECTION

I. SPECIFICATION

MAX. BTU/HR	18,000
TYPE OF GAS	NATURAL
PRESSURE REGULATOR SETTING	3.5"
ORIFICE DRILL SIZE	55
NO. OF RADIANTS	3
INLET GAS PRESSURE (Inches of water)	
MAX.	7"
MIN.	5"

II. SERVICE HINTS

PROBLEM	REASON	SOLUTION
Heater will not ignite	<ol style="list-style-type: none">1. Low gas pressure2. Air in gas line3. Obstruction between electrode and pilot4. Broken electrode wire5. Defective electrode6. Low pressure sensor in operation	<ol style="list-style-type: none">1. Check pressure2. Bleed system3. Clean or clear obstructions4. Replace*5. Replace*6. Check pressure
Pilot flame goes out when knob is released	<ol style="list-style-type: none">1. Loose thermocouple connection2. Defective thermocouple	<ol style="list-style-type: none">1. Tighten2. Replace*
Pilot is on—burner won't light	<ol style="list-style-type: none">1. Gas valve passage blocked or defective	<ol style="list-style-type: none">1. Replace*
Burner is noisy	<ol style="list-style-type: none">1. Gas input amount is incorrect2. Gas pressure is incorrect3. Burner unit damaged	<ol style="list-style-type: none">1. Check orifice size2. Check pressure3. Replace*
Radiants do not glow bright	<ol style="list-style-type: none">1. Low gas pressure2. Orifices and/or radiants blocked or damaged	<ol style="list-style-type: none">1. Check pressure2. Clean or replace*

***NOTE:** If for any reason the heater needs replacement parts, the following procedure should be followed:

- A. The pilot orifice requires no adjustments and must remain with the bracket assembly.
- B. The radiants are not field serviceable. The entire burner unit must be replaced even if only one radiant is defective.

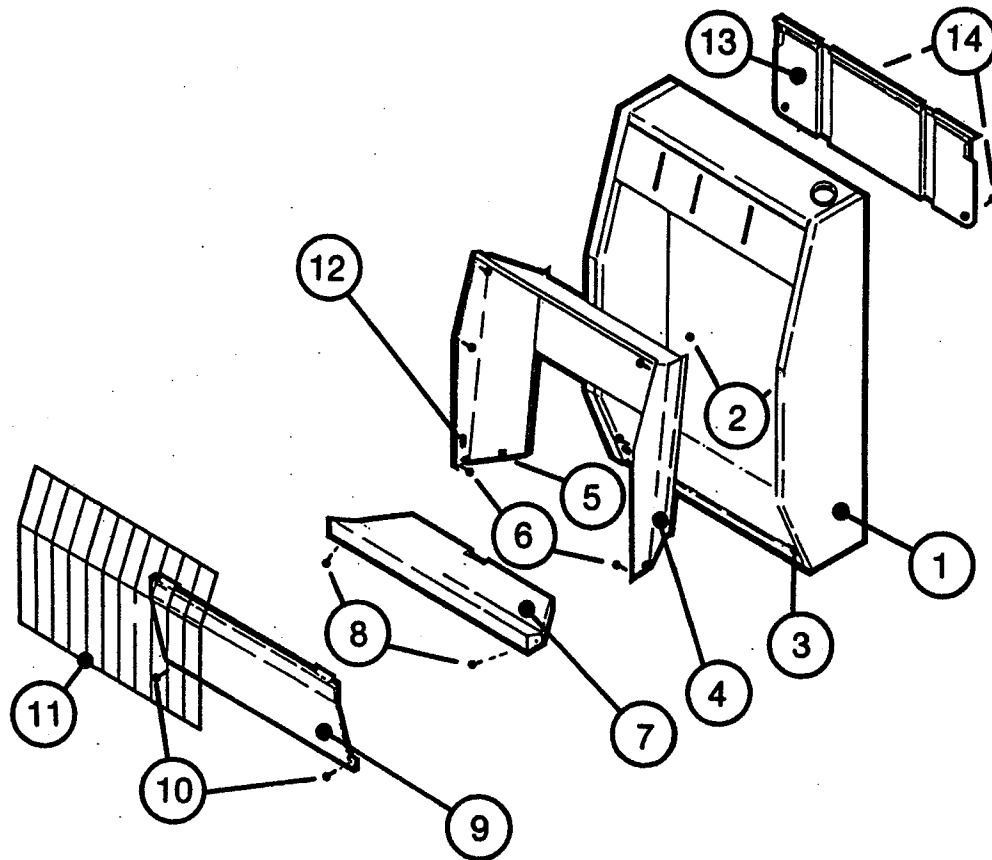
WARNING: Never use wire, needle or similar object to clean the pilot. This can damage the pilot unit.

III. REPLACEMENT PARTS

NOTE: In order for your customer to receive credit for parts replaced under warranty, only original replacement parts must be used.

- A. **In Warranty**—Contact authorised dealers of this product. If they are unable to supply original replacement part(s), call AMCA International at 1-800-323-5190. Be prepared to indicate name, address, model number, how heater was malfunctioning, type of gas used and purchase date. In most cases, the defective part will be requested to be returned to the factory.
- B. **Non-warranty**—Contact authorised dealers of this product. If they are unable to supply original replacement part(s), call AMCA International at 1-502-781-9300. Be prepared to indicate model number and replacement part number.

REPAIR PARTS—CABINET UNIT

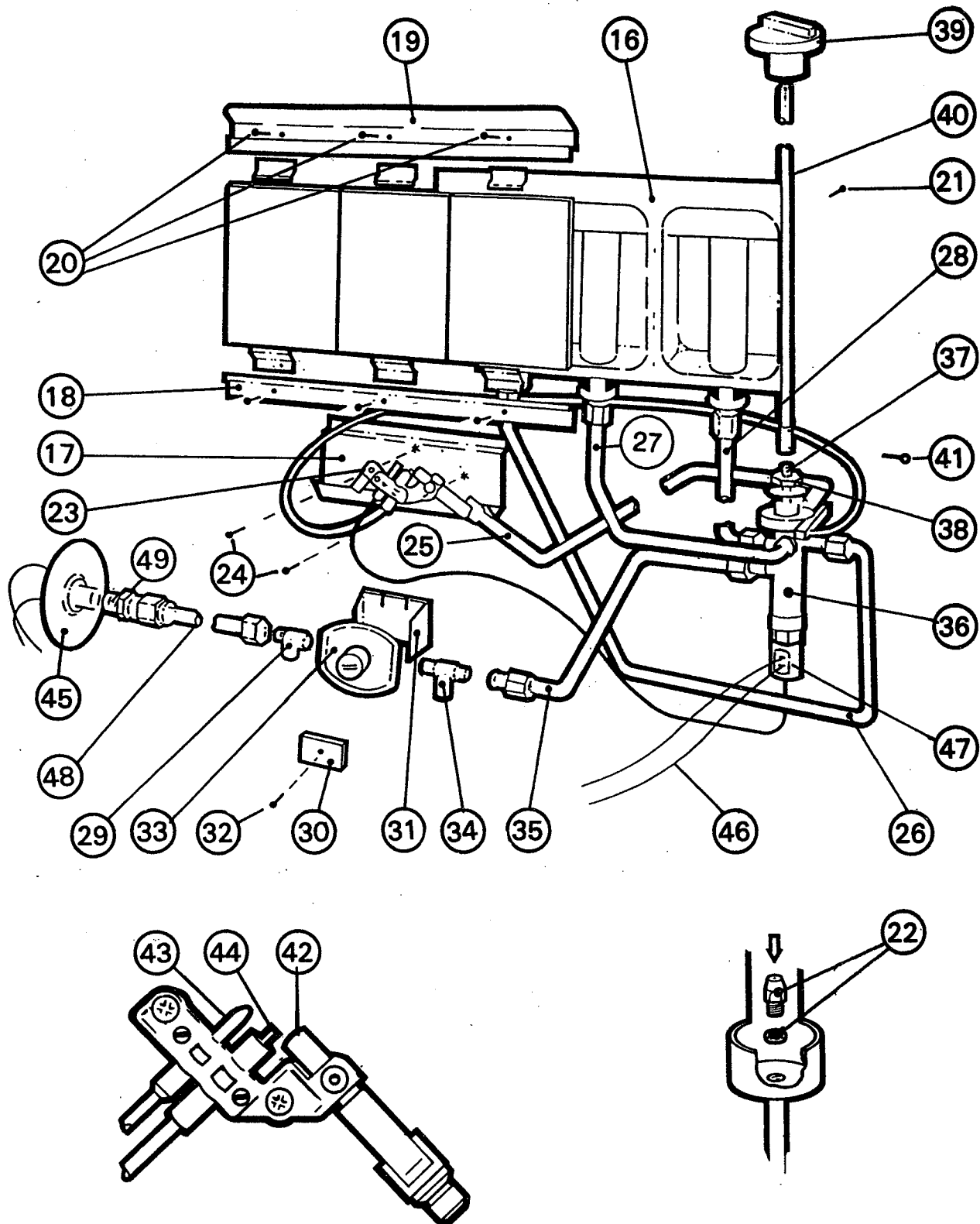


**When replacing parts, use only original
AMCA replacement parts to maintain
the safety standards of the heater.**

REPAIR PARTS—CABINET UNIT

KEY NO.	PART NO.	DESCRIPTION	NO. REQUIRED
1	503109	Cabinet (Includes Keys 2 & 3)	1
2	502519	Nut (Push-Type) M5 Black	3
3	511329	Fastener ('U' Nut)	2
4	502529	Reflector Unit (Includes Key 5)	1
5	547649	Nut (Push-Type) M5 Bright	4
6	502539	Screw No 6 × 1/4"	6
7	502549	Burner Apron	1
8	533329	Screw M5 × 10 mm Bright	4
9	503119	Lower Front Panel	1
10	516449	Screw No 8 × 3/8"	2
11	503129	Safety Guard Unit	1
12	502579	Clip—Safety Guard	2
13	502589	Upper Back Plate	1
14	516449	Screw No 8 × 3/8"	2

FOR BURNER AND CONTROL PARTS SEE FOLLOWING PAGES



When replacing parts, use only original AMCA replacement parts to maintain the safety standards of the heater.

REPAIR PARTS—BURNER AND CONTROL UNITS

KEY NO.	PART NO.	DESCRIPTION	NO. REQUIRED
15	503209	Burner Unit Assembly (Includes Keys 16-20)	1
16	503219	Burner Case, Radiant Plaque and Jet Unit (Includes Key 22)	1
17	502049	Mounting Bracket for Pilot Unit	1
18	502619	Lower Burner Trim	1
19	502629	Upper Burner Deflector	1
20	547299	Screw M3 × 6mm	6
21	502649	Screw M5 × 10mm Black	3
22	503249	Radiant Jet and Washer	3
23	502299	Pilot and Ignition Unit (Includes Keys 42-44)	1
24	536119	Screw No. 8 × 1/2"	2
25	502669	Pipe Assembly - Pilot to Valve	1
26	502679	Pipe Assembly - Left Side Radiant to Valve	1
27	502689	Pipe Assembly - Center Radiant to Valve	1
28	502699	Pipe Assembly - Right Hand Radiant to Valve	1
29	503259	Gas Inlet Connection Elbow	1
30	502719	Regulator Fixing Plate	1
31	502159	Regulator Mounting Bracket	1
32	516449	Screw No. 8 × 3/8"	1
33	502809	Pressure Regulator	1
34	502179	Pressure Tap Fitting	1
35	502889	Pipe Assembly - Pressure Tap Fitting to Valve	1
36	502349	Gas Control Valve	1
37	502739	Locknut	1
38	502749	Washer	1
39	502759	Control Knob	1
40	502769	Control Shaft Unit	1
41	528389	Split Fixing Pin	1
42	502819	Pilot and Bracket Sub Assembly	1
43	502829	Thermocouple	1
44	502839	Ignitor Electrode	1
45	502849	Low Pressure Sensor 720K659	1
46	502859	Leads—Low Pressure Sensor to Interruptor 508259	2
47	502869	Interruptor Unit	1
48	503269	Pipe Assembly—Gas Inlet Elbow to Low Pressure Sensor	1
49	503279	Coupling—Low Pressure Sensor to Pipe	1
PARTS NOT ILLUSTRATED			
—	079102-11	Installation/service manual	1
—	079102-08	Owners manual	1
—	502789	Kit-Wall Fixing Screws and Anchors	1

LIMITED WARRANTY VANGUARD GAS HEATERS

Atomaster, a unit of AMCA International Corporation, Consumer & Automotive Products Division ("Atomaster") warrants this product to be free from defects in materials and components for one (1) year from the date of first purchase, provided that the product has been properly installed, operated and maintained in accordance with all applicable instructions. To make a claim under this warranty the Bill of Sale or cancelled check must be presented.

This warranty is extended only to the original retail purchaser. This warranty covers only the cost of part(s) required to restore this heater to proper operating condition. Warranty part(s) **MUST** be obtained through authorized dealers of this product and/or Atomaster who will provide original factory replacement parts. Failure to use original factory replacement parts voids this warranty. This heater **MUST** be installed by a qualified installer in accordance with all local codes and instructions furnished with the unit.

This warranty does not apply to parts that are not in original condition because of normal wear and tear, or parts that fail or become damaged as a result of misuse, accidents, lack of proper maintenance or defects caused by improper installation. Travel, diagnostic cost, labor, transportation and any and all such other costs related to repairing a defective heater will be the responsibility of the owner.

TO THE FULL EXTENT ALLOWED BY THE LAW OF THE JURISDICTION THAT GOVERNS THE SALE OF THE PRODUCT; THIS EXPRESS WARRANTY EXCLUDES ANY AND ALL OTHER EXPRESSED WARRANTIES AND LIMITS THE DURATION OF ANY AND ALL IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE TO ONE (1) YEAR FROM THE DATE OF FIRST PURCHASE; AND ATOMASTER'S LIABILITY IS HEREBY LIMITED TO THE PURCHASE PRICE OF THE PRODUCT AND ATOMASTER SHALL NOT BE LIABLE FOR ANY OTHER DAMAGES WHATSOEVER INCLUDING INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some states do not allow a limitation on how long an implied warranty lasts or an exclusion or limitation of incidental or consequential damages, so the above limitation on implied warranties, or exclusion or limitation on damages may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

For information about this warranty write:

Atomaster
AMCA International
Consumer & Automotive Products Division
P.O. Box 719
Bowling Green, KY 42101
Attn: CUSTOMER SERVICE DEPARTMENT