

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

Dayton® Natural Gas Radiant Heaters

Description

Dayton Model 1WVL8 heater is a 125,000 BTU/Hr construction heater. This heater uses natural gas for combustion. It is primarily intended for temporary heating of well-ventilated buildings under construction, alteration or repair. This heater should be utilized in sheltered, well-ventilated areas, but never in occupied dwellings.



Figure 1 – Model 1WVL8

Specifications

Model	BTU/Hr	Fuel Consumption Maximum	Minimum Supply Pressure	Manifold Pressure	Ignitor Gap	Weight (Lbs)	Size L x W x H (in.)
1WVL8	50,000 to 125,000	125 CFH	7.0" W.C.	2.7" W.C.	0.15 "	24.5 (heater) 31 (ship)	16.5 x 16.5 x 30.2

Fuel Type – Natural Gas Only

Ignition Type – Piezo

Minimum Operating Temp. – 20°F (-7°C)

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3. Inspect all items for damage that may have occurred during shipment. If there is any damage, promptly inform the local Grainger branch where you purchased your heater.

General Safety Information

Make sure you read and thoroughly understand these safety and operating instructions. Keep these instructions for future reference. They are your guides to safe and proper operation of this heater.

Safety information appears throughout this manual. Pay close attention to them. Below are definitions for the safety information listed throughout this manual.

▲ DANGER Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.

▲ WARNING Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.

▲ CAUTION Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.

▲ WARNING Not for home or recreational vehicle use.

▲ WARNING General Hazard Warning: Failure to comply with the precautions and instructions provided with this heater can result in death, serious bodily injury, and property loss, or damage from hazards of fire, explosion, burn, asphyxiation, carbon monoxide poisoning, and/or electrical shock. Only persons who can understand and follow these instructions should use or service this heater. If you need assistance or heater information such as an instruction manual, labels, etc. contact your local Grainger branch.

Consumer: Retain this manual for future reference.



Dayton® Natural Gas Radiant Heater

General Safety Information (Continued)

▲ WARNING *Fire, burn, inhalation, and explosion hazard. Keep solid combustibles such as building materials, paper, or cardboard, at a safe distance away from heater as recommended by the instructions. Never use the heater in spaces which do or may contain volatile or airborne combustibles or products such as gasoline, solvents, paint thinner, dust particles, or unknown chemicals.*

This heater has been designed as a construction heater in accordance with ANSI Z83.7/CGA2.14. Other standards govern the use of fuel gases and heating products for specific uses. Your local authority can inform you of these. The primary purpose of these construction heaters are to provide temporary heating of building under construction, alteration, or repair. When properly used, the heater provides safe economical heating. Products of combustion are vented into the heated area.

▲ WARNING *Do not operate this heater until you read and thoroughly understand the safety and operating instructions. Not for home or recreational use. Failure to comply with the precautions and instructions provided with this heater can result in death, serious injury, property loss, or damage from fire, explosion, burns, asphyxiation, or carbon monoxide poisoning. Only persons who can understand and follow the instructions should use or service heater. If you need assistance or heater information such as an instruction manual, labels, etc., contact your local Grainger branch.*

▲ WARNING *Combustible by-products produced when using this product contain carbon monoxide, a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.*

▲ WARNING *Not for home or recreational vehicle use.*

▲ WARNING *Proposition 65 Warning Fuels used in gas, wood burning or oil-fired appliances, and the products of combustion of such fuels, contain chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.*

IMPORTANT: Every possible circumstance that might involve a hazard cannot be anticipated. The warnings in this manual on tags or decals affixed to the unit are not all inclusive. If a procedure, work method, or operating technique not specifically recommended by Dayton is used, you must make sure it is safe for you and others. You should also ensure that equipment will not be damaged or be made unsafe by the operating or maintenance method you use.

▲ DANGER *Carbon Monoxide poisoning may lead to death! Some people are more affected by Carbon Monoxide than others. Early signs of carbon monoxide poisoning resemble the flu, with headaches, dizziness, and/or nausea. If you have these signs, the heater may not be operating properly or the area may not be sufficiently ventilated. Get fresh air at once! Have heater serviced.*

▲ WARNING *Carefully install and always use great care when operating this heater. Be sure to research and follow all local ordinances and codes. In the absence of local codes, follow the instructions for handling and safe storage of flammable gasses in the National Fuel Gas Code Handbook NFPA54/ANSI Z223.1 and the Natural Gas Installation Code, CAN/CGA B149.2.*

Natural Gas: Natural gas has a very distinctive odor that will help you detect a leak. However, this odor may fade in time. Natural gas may be present in the area even though no odor is detected.

- Use only natural gas. Do not attempt to use propane gas. Use only factory preset regulator provided on heater.
- Provide adequate ventilation. Before using heater, provide at least a 3 square foot opening of fresh, outside air for every 100,000 BTU/Hr rating.
- This heater produces Carbon Monoxide, which is listed by the State of California as a reproductive toxin under Proposition 65.
- This heater should be utilized in sheltered, well-ventilated areas, but never in occupied dwellings.
- Do not use heater in occupied dwellings, in living or sleeping areas.
- Do not use heater in basement or below ground levels. If a leak occurs, gas may accumulate to hazardous amounts.

Model 1WVL8

General Safety Information (Continued)

- Keep appliance clear and free from combustible materials, gasoline, paint thinner, and other flammable vapors and liquids. Dust is combustible. Do not use heaters in areas with high dust content.
- Check heater for damage before each use. Do not use damaged heater.

Minimum heater clearance from combustibles:

Sides: 6 feet. Top: 5 feet.

- Check hose before each use of heater. Do not use if hose is cut or damaged. Replace with hose specified by manufacturer.
- Always be sure to place the heater on a stable and level surface while the heater is in operation.
- The heater is not intended for use on finished floors. Warping or other damage may occur.
- Place heater away from any breezes or drafts. Keep away from dripping water or rain.
- Keep small children and animals away from the heater.

- Never handle, move or service a hot or operating heater. Wait 20 minutes after turning heater off before touching the heater. Severe burns can result.
- Always wear gloves when handling the heater to prevent injury.
- Never attach ductwork to heater.
- Do not alter heater. Keep heater in its original state.
- Do not use heater if altered.
- Turn off gas supply to heater when not in use.
- Use only original replacement parts. This heater must use design specific parts. Do not substitute or use generic parts. Improper replacement parts could cause serious or fatal injury.



Figure 2 – Pipe and Valve Inlet

Assembly MODEL 1WVL8

1. Provide natural gas supply system.
2. Install plumbing to a low pressure natural gas source to heater. The source must be regulated to 1/2 PSI, maximum 3/4 inch I.D. pipe or flexible connector, not longer than 10 feet.
3. Be sure to use thread sealing compound when connecting the hose to the heater at the 1/2 NPT fitting at the regulator inlet. Tighten all fittings with a wrench.
4. Open natural gas supply valve SLOWLY.
5. Check all connections for leaks.
6. Close natural gas supply valve.

⚠ WARNING *Never use an open flame to check for a leak. Apply 50/50 mixture of liquid soap and water to all joints. Bubbles forming show a leak. Correct all leaks at once.*

Dayton® Natural Gas Radiant Heater

Assembly (Continued)

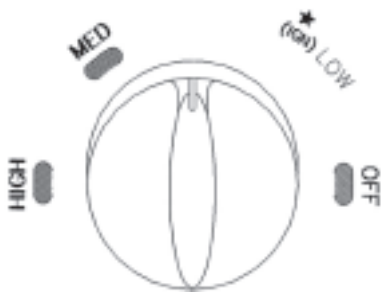


Figure 3 – Heater Control Knob

⚠ WARNING *Hot while in operation. Do not touch. Keep children, clothing, furniture, gasoline, and other liquids having flammable vapors away.*

Operation

The gas supply attaches to the heater by a minimum 3/8 inch I.D. pipe or flexible connector. User must supply pipe or flexible connector. The length should be no more than 10 feet. The natural gas moves through the regulator and out the nozzle.

Ignition System: The piezo ignitor initiates a spark which ignites the gas from the main burner.

Automatic Control System: This system causes the heater to turn off if the flame is extinguished.

TO START HEATER

1. Follow all of the safety, ventilation and installation instructions previously noted in this manual.
2. Always be sure to place the heater on a stable and level surface while the heater is in operation. Be sure that no strong winds blow into the ends of the heater.
3. Turn control knob clockwise to OFF position.
4. Turn natural gas supply valve on.
5. Depress heater control knob and turn counterclockwise to (IGN) LOW position to light burner (see Figure 3).
6. If burner does not light, turn heater control knob to OFF position and repeat step 5. Keep control knob depressed for approximately 10 to 15 seconds, then release control knob.
7. If burner flame goes out, repeat steps 5 and 6.
8. With burner operating, the control knob may be turned counterclockwise to desired heating level between LOW, MED, and HIGH.

Model 1WVL8

ENGLISH

Operation (Continued) TO SHUT DOWN HEATER

1. Shut off the main burner valve, being sure to wear a glove for protection. Turn the control knob to the OFF position
2. Firmly close the natural gas supply valve.

TO RESTART HEATER

1. Wait five minutes for heater to cool.
2. Follow steps in TO START HEATER section.

▲WARNING *Running heater below specified gas pressure may cause flashback. During flashback, the burner flame is mostly yellow. The flame will burn inside the burner tube causing a roaring noise. If flashback occurs, turn heater off. After burner tube cools off, restart heater.*

NATURAL GAS SUPPLY

You must provide the natural gas supply along with all pipe and fittings. The gas supply must be regulated down to a maximum of 1/2 PSI, and to a minimum of 6 inches water column. The supply system must supply 125 CFM (1WVL8) for each heater connected to the system.

Check with your local gas supplier to properly size all of your supply lines. Be sure to follow all local codes, or refer to the Natural Fuel Gas Code Handbook – NFPA54/ANSI Z223.1, or the Natural Gas Installation Code – CAN/CGA B149.2.

VENTILATION

▲WARNING *A three square foot opening of fresh outside air for each 100,000 BTU/Hr of heater output must be provided to operate each heater safely. If the proper ventilation air is not provided, carbon monoxide poisoning can occur. Always be sure that the proper ventilation is being provided before starting this heater.*

FRESH OUTSIDE AIR OPENING REQUIREMENTS

Heater size	Square foot opening
125,000 BTU	3.5

▲WARNING *Read and understand all of the warnings in the General Safety Information pages of this manual. They are essential to the safe operation of this heater. Be sure to follow all local codes when operating this heater.*

▲WARNING *Be sure to leak test all fittings and pipe connections after installation or repairs. Use a 50/50 mixture of liquid dish soap and water. Bubbles forming reveal a leak. You must repair all leaks at once!*

Maintenance

▲WARNING *Never attempt to service heater while it is connected to propane supply, operating, or hot. Severe burns can occur.*

1. Always keep heater clean.
2. Inspect heater before each use. Check connections for leaks. Apply a 50/50 solution of dish soap and water. Bubbles forming show a leak that must be corrected. Correct leaks at once.

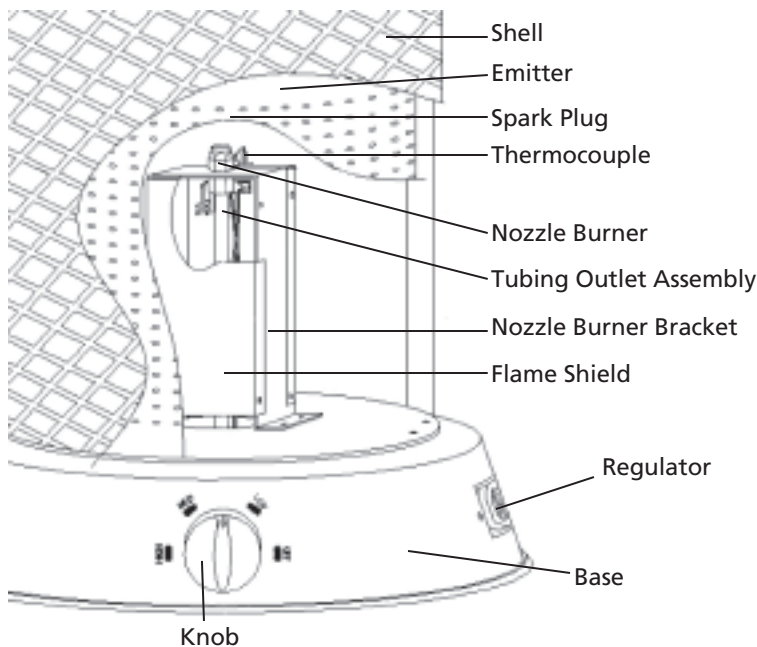


Figure 4 – 1WVL8 Part Identification

Dayton® Natural Gas Radiant Heater

Maintenance (Continued)

3. Inspect regulator hose assembly before each use. If hose is highly worn or cut, replace with hose specified by manufacturer.
4. Keep appliance area clear and free from combustible materials, gasoline, and other flammable vapors and liquids.
5. Have heater inspected yearly by a qualified service person.

STORAGE

▲ CAUTION *Disconnect heater from natural gas supply.*

1. Place plastic cover over brass fitting on inlet connector.
2. Store in a dry, clean, safe place.
3. When taking the heater out of storage, always check inside the heater. Small animals or insects may place foreign objects in the heater. Keep heater free from foreign objects and combustible materials.

Model 1WVL8

Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
Burner fails to light	<ol style="list-style-type: none"> 1. More warm-up time needed 2. Gas pressure is low 3. Thermocouple loose or in need of replacement 4. Automatic control valve in need of replacement 	<ol style="list-style-type: none"> 1. Relight, holding control valve button in for 45 seconds 2. Inspect natural gas supply 3. Tighten, reconnect or replace thermocouple 4. Replace automatic control valve
Burner lights but goes out when automatic control valve button is released	<ol style="list-style-type: none"> 1. Main burner valve not completely open 2. Clogged gas orifice 3. Low gas pressure 4. Low gas supply 	<ol style="list-style-type: none"> 1. Completely open main burner valve by turning control knob to HIGH position 2. Replace gas orifice 3. Check gas supply, regulator function 4. Contact gas supplier
Burn rate is low, emitter does not glow	<ol style="list-style-type: none"> 1. Main burner valve not fully open 2. Plugged gas orifices 3. Low gas pressure 4. Low fuel supply 	<ol style="list-style-type: none"> 1. Fully open main burner valve by turning control knob towards HIGH position until it stops 2. Replace gas orifice 3. Check gas supply, regulator output 4. Consult gas supplier
Flames are extremely high and coming from emitter	Unit has been connected to a propane gas supply instead of natural gas	Check gas source and replace with natural gas supply

For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

Address parts correspondence to:

Grainger Parts
P.O. Box 3074
1657 Shermer Road
Northbrook, IL 60065-3074 U.S.A.

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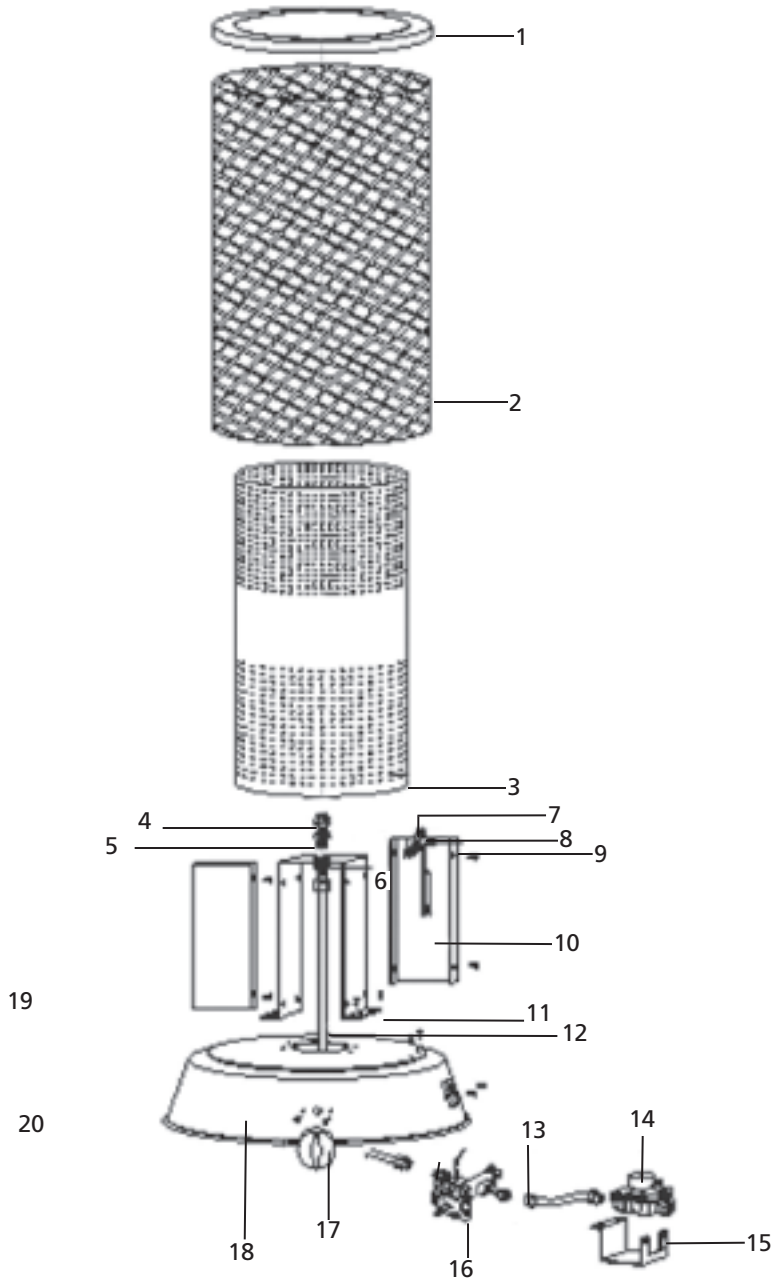


Figure 5 – Repair Parts Illustration for Natural Gas Radiant Heater

Repair Parts List for Natural Gas Radiant Heater

Reference Number	Description	Part Number for Model: 1WVL8	Quantity
1	Top Cover	HV260010100G	1
2	Emitter	HV260010200G	1
3	Shell	HV260010300G	1
4	Nozzle Burner	HV260020120G	1
5	Nozzle Holder	HV260020130G	1
6	Nozzle Nut	HV260020140G	1
7	Spark Plug	HV260020300G	1
8	Thermocouple	HV260020400G	1
9	Thermocouple Bracket	HV260020410G	1
10	Flame Shield	HV260050200G	1
11	Nozzle Bracket	HV260020110G	1
12	Tubing Outlet Assembly	HV260020200G	1
13	Tubing Inlet Assembly	HV260030200G	1
14	Regulator	HV260030100G	1
15	Regulator Bracket	HV260030110G	1
16	Control Valve	HV260040100G	1
17	Valve Knob	HV500130200G	1
18	Base Assembly	HV260010400G	1

Dayton® Natural Gas Radiant Heater

LIMITED WARRANTY

DAYTON ONE-YEAR LIMITED WARRANTY. Dayton® Natural Gas Radiant Heaters, Models covered in this manual, are warranted by Dayton Electric Mfg. Co. (Dayton) to the original user against defects in workmanship or materials under normal use for one year after date of purchase. Any part which is determined to be defective in material or workmanship and returned to an authorized service location, as Dayton designates, shipping costs prepaid, will be, as the exclusive remedy, repaired or replaced at Dayton's option. For limited warranty claim procedures, see PROMPT DISPOSITION below. This limited warranty gives purchasers specific legal rights which vary from jurisdiction to jurisdiction.

LIMITATION OF LIABILITY. To the extent allowable under applicable law, Dayton's liability for consequential and incidental damages is expressly disclaimed. Dayton's liability in all events is limited to and shall not exceed the purchase price paid.

WARRANTY DISCLAIMER. Dayton has made a diligent effort to provide product information and illustrate the products in this literature accurately; however, such information and illustrations are for the sole purpose of identification, and do not express or imply a warranty that the products are MERCHANTABLE, or FIT FOR A PARTICULAR PURPOSE, or that the products will necessarily conform to the illustrations or descriptions. Except as provided below, no warranty or affirmation of fact, expressed or implied, other than as stated in the "LIMITED WARRANTY" above is made or authorized by Dayton.

PRODUCT SUITABILITY. Many jurisdictions have codes and regulations governing sales, construction, installation, and/or use of products for certain purposes, which may vary from those in neighboring areas. While Dayton attempts to assure that its products comply with such codes, it cannot guarantee compliance, and cannot be responsible for how the product is installed or used. Before purchase and use of a product, review the product applications, and all applicable national and local codes and regulations, and be sure that the product, installation, and use will comply with them.

Certain aspects of disclaimers are not applicable to consumer products; e.g., (a) some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you; (b) also, some jurisdictions do not allow a limitation on how long an implied warranty lasts, consequentially the above limitation may not apply to you; and (c) by law, during the period of this Limited Warranty, any implied warranties of implied merchantability or fitness for a particular purpose applicable to consumer products purchased by consumers, may not be excluded or otherwise disclaimed.

PROMPT DISPOSITION. Dayton will make a good faith effort for prompt correction or other adjustment with respect to any product which proves to be defective within limited warranty. For any product believed to be defective within limited warranty, first write or call dealer from whom the product was purchased. Dealer will give additional directions. If unable to resolve satisfactorily, write to Dayton at address below, giving dealer's name, address, date, and number of dealer's invoice, and describing the nature of the defect. Title and risk of loss pass to buyer on delivery to common carrier. If product was damaged in transit to you, file claim with carrier.

Manufactured for Dayton Electric Mfg. Co., 5959 W. Howard St., Niles, Illinois 60714 U.S.A.