

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® Electric Utility Heaters

Description

Dayton electric utility heaters are designed to meet a variety of heating requirements by switching a few wires located in the base of the unit. Heat output ranges from 6,396 to 17,065 BTU per hour. Features horizontal and vertical flow (horizontal air throw approximately 18 ft.), built-in thermostat, and high limit thermal cutout.

Specifications

3UG73D (Can be operated at 208V) See Table 1 for ratings)	Amps		CFM	Rise 60°F	BTU/hour	
	240V	208V			240V	208V
*5000 W @ 240/208V - 1 - 60	20.9	18.0	270		17,065	12,799
4165 W @ 240/208V - 1 - 60	17.4	15.0	270		14,215	10,659
3332 W @ 240/208V - 1 - 60	13.9	12.0	270		11,365	8,533
2500 W @ 240/208V - 1 - 60	10.4	9.0	270		8,533	6,393
3UG74D						
*5000 W @ 208V - 1 - 60	-	24.0	270	60°F	-	17,065
4165 W @ 208V - 1 - 60	-	20.0	270		-	14,215
3332 W @ 208V - 1 - 60	-	16.0	270		-	11,365
2500 W @ 208V - 1 - 60	-	12.0	270		-	8,533

(*) Heater is shipped from factory wired for these wattages. Heater can be field adjusted to the other wattages (Refer to "Adjusting the Heat Output" on page 4).

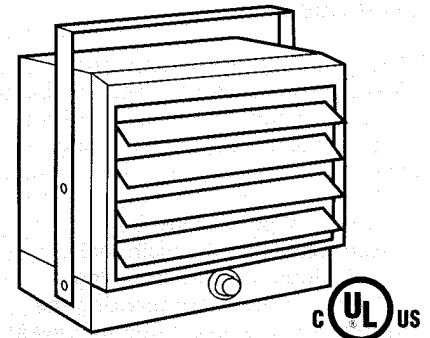


Figure 1

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Unpacking

Remove the heater from box and inspect for any damage. If it appears to be damaged, immediately return.

Check the contents of the box to make sure it contains one heating unit and one mounting bracket.

General Safety Information

⚠ WARNING Read and understand installation and operation instructions and observe all safety instructions.

1. Use only copper wire rated at least 60°C.
2. Heater air flow must be directed parallel to, or away from, adjacent walls.
3. Observe wall, floor, and ceiling clearance requirements.
4. All wiring must conform to national and local electrical codes in the United States and the heater must be grounded as a precaution against possible electrical shock. Heater circuit must be protected with proper fuses (See Table 1 page 4).

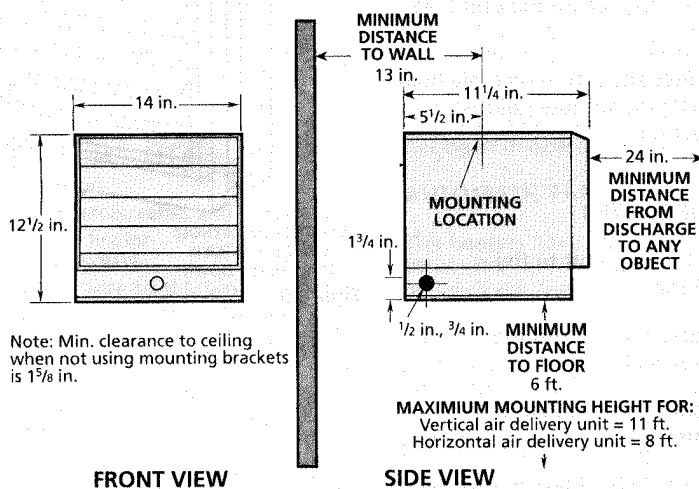


Figure 2 - Dimensions

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General Safety Information (Continued)

5. The mounting structure and the anchoring hardware must be capable of reliably supporting the weight of the heater and, if used, the mounting bracket.
6. All electrical power must be disconnected and the main service box must be locked before installing, inspection, cleaning or servicing the heater. This is a precaution to prevent serious electrical shock.
7. This heater is not suitable for use in hazardous locations as defined by the National Fire Protection Association (NFPA) in the United States. This heater has hot and arcing (sparking) parts inside. Do not use in areas where gasoline, paint, or flammable liquids are used or stored.
8. This heater is not suitable for use in corrosive atmospheres such as marine, greenhouses or chemical storage areas.
9. This heater must be mounted at least 6 feet off the floor.

CAUTION *Improper installation or failure to follow the procedures outlined in this instruction manual can result in serious electrical shock.*

LOCATING HEATER

Install heater out of traffic areas maintaining clearances stated in Figure 2. The direction of air flow should not be restricted (ie: by columns or machinery) and the air flow should wipe exposed walls, rather than blowing directly at them. When more than one heater is used in an area, the heaters should be arranged so that the air discharge of each heater supports the air flow of the others to provide best circulation of warm air, as indicated in Figure 3.

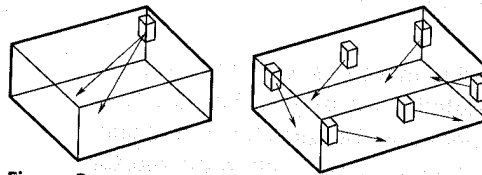


Figure 3

Installation MOUNTING THE BRACKET

Refer to Figures 4a and 4b.

1. Locate a stud in the ceiling joist.
2. Remove the mounting bracket from the heating unit by loosening bracket screws with a wrench and slipping the handle off over the screw heads.
3. Place a washer on screws before inserting through the holes in the mounting bracket, and screw them securely into a ceiling joist.

NOTE: If you want to swivel the heater either to the right or left, adding a washer to both sides of the bracket is recommended. A longer lag bolt may be required to properly secure the unit (See 4a).

4. Tighten screws enough to securely hold heating unit with air flow pointed in proper direction.

HANGING THE HEATER

1. Attach the heating unit to the mounting bracket.
2. Lift the heater up and into the mounting bracket.
3. Align the bracket screws with the keyhole slots in the mounting brackets.
4. If the heater is to be tilted, it must be positioned in the keyhole slots (See Figure 5).

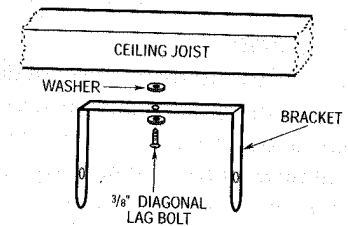


Figure 4a - Single-Screw Mounting

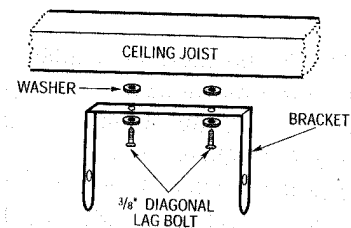


Figure 4b - Double-Screw Mounting

5. Tighten the bracket screws with a wrench so the unit is securely suspended at desired horizontal or vertical level.

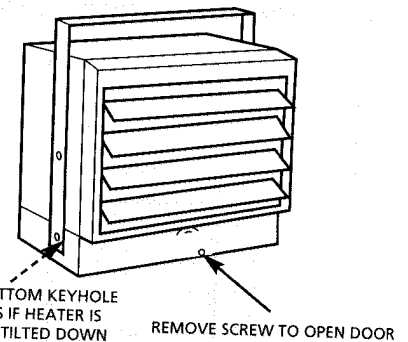


Figure 5

Models 3UG73D and 3UG74D

Installation (Continued) CONNECTING THE POWER

1. Remove the screw from the front of the unit to connect the power to the heater.
2. Attach the cable connectors to the unit (See Figure 6) and slide the 10 gauge wire through the cable connector.

NOTE: For certain applications, conduit may be required (See Figure 6). Check local electrical codes. If you run the wiring in conduit and wish to be able to turn the heater be sure to purchase enough flexible conduit to allow the heater to be turned.

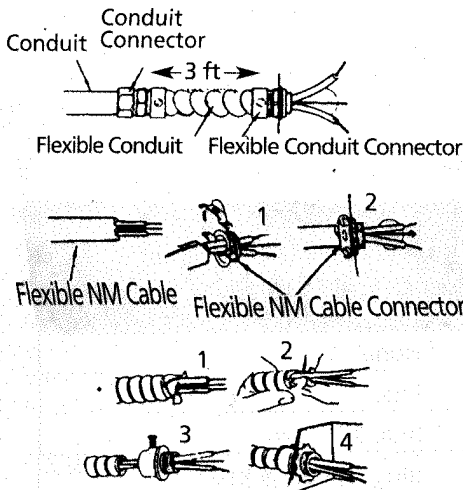


Figure 6 - Connectors, cable, and hardware used to wire the heater

4. Connect the wire to the power block located in the base of the heater (See Figure 7).

NOTE: To decrease the heat output of the heating unit, see Table 1 and Figure 9.

5. Turn on the power at the main service.

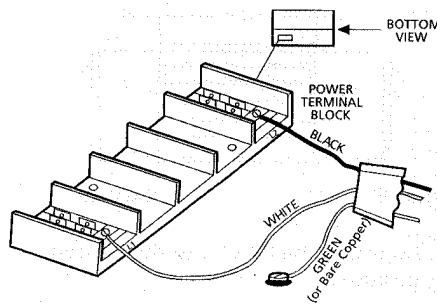


Figure 7

Operation

SETTING THE THERMOSTAT

1. Rotate thermostat knob clockwise to high position.
2. After room reaches desired comfort level, rotate thermostat knob counter-clockwise until the thermostat clicks off. (Note that the fan delay will keep the fan running until the elements cool.)

NOTE: Heater will cycle on and off to maintain room temperature.

NOTE: The first time you operate the unit, it may smoke slightly. This is due to the residual cleaning agents used to clean the element when the heater is manufactured. This is normal and does not indicate a problem with the unit. This condition will stop after the heater has been in operation for a few minutes.

AUTOMATIC FAN DELAY

The heaters have an automatic fan delay. When the thermostat calls for heat, fan action is delayed momentarily until the heating element warms. This prevents the circulation of cold air. When the heater raises the temperature of the room to the thermostat set point, the heating element is turned off but the fan will continue to run until the heating element cools down. This prevents exposing the unit to residual heat, provides a higher comfort level and prolonged element life.

THERMAL CUTOUT

The heaters are equipped with a thermal cutout which will automatically shut off the heater in the event of overheating. The heater will turn on when the abnormal temperature returns to normal. Should the unit overheat and cause the thermal cutout to cycle, the cause of the overheating should be determined and corrective action taken before further operation.

NOTE: If the unit is installed in an area where the temperature is below 50° F, the fan may cycle on and off until the temperature in the room rises above 50° F, this is normal and does not indicate a problem with the unit. As soon as the heater warms the air in the room above 50°, the unit will operate normally.

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Operation (Continued)

ADJUSTING AIR FLOW DIRECTION

1. Turning the Unit - If the unit has been installed with a single lag bolt, as shown in the Figure 4a, simply turn the entire unit as needed to adjust air flow.
2. Tilting the unit - Loosen the bracket screws, tilt the heater to the desired position, and re-tighten the bracket screws (See Figure 5).

NOTE: To tilt the heater it must be mounted in bottom keyhole slots of mounting brackets to maintain adequate clearance and prevent possible overheating.

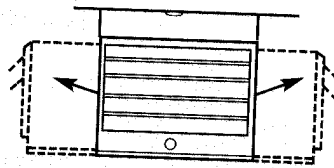


Figure 8

Rotate

3. Adjusting the louvers to the desired position.

NOTE: The louvers are designed so they can not be completely closed. Do not attempt to defeat this feature, damage to the unit can result.

ADJUSTING HEAT OUTPUT

Increase or decrease heat output by switching wires at the wattage change terminal board. The heaters are factory wired to deliver a heat output of 17,065 BTU per hour. Should your particular application require less heat output, refer to Table 1 and change the wires at the wattage change terminal board as shown in Wiring Diagram (See Figure 9).

⚠ WARNING To prevent possible electric shock, disconnect power to the heater at the main service box before attempting to adjust the heat output of this unit.

Table 1 - Heat Output Adjustments

BTU/HR	Volts	Watts	Max Fuse Size	Heater Amps	Move Jumpers From C-D To A-B
17065	240	5000	30	20.9	None
14215	240	4165	25	17.4	Blue
11365	240	3332	20	13.9	Blue & Yellow
8533	240	2500	15	10.4	Blue, Yellow & Red
12799	208	3750	25	18.0	None
10659	208	3123	20	15.0	Blue
8533	208	2500	15	12.0	Blue & Yellow
6393	208	1874	15	9.0	Blue, Yellow & Red
17065	208	5000	30	24.0	None
14215	208	4165	25	20.0	Blue
11365	208	3332	20	16.0	Blue & Yellow
8533	208	2500	15	12.0	Blue, Yellow & Red

3UG73D

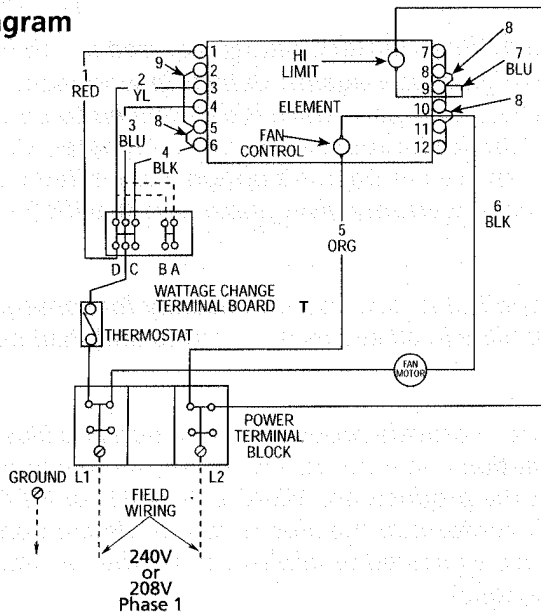
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Operation (Continued) Wiring Diagram

Figure 9



NOTE:

1. Do not move blue wire at L1. Above table refers to blue wire at terminal T.
2. It is recommended that #10 AWG wire be used in all installations to provide for possible future reconnection at the higher wattage (Refer to NEC (National Electrical Code) for maximum run length to minimize voltage drop to 3% max. Circuit runs exceeding 100ft may require larger conductor size).
3. Wires #2, #3, & #4 should be routed through indicated element jumper wire eliminating use of wire tie.

Maintenance

Because of its rugged design, superior engineering, and high-quality craftsmanship, the heater requires little maintenance. With proper care, your electric heater should last a lifetime, but seasonal cleaning is recommended to maintain the efficiency of the heater.

⚠ WARNING To prevent possible electric shock, all power must be shut off at the main service before inspecting or cleaning.

CLEANING THE HEATING ELEMENT

To clean the heating element, loosen (but do not remove) the four Phillips head screws located behind the louvers in the corners of the louver housing (See Figure 10). Grasp the louver housing on both sides, lift up, and pull out. This provides access to the heating element. Remove dust or lint with a soft brush or a vacuum cleaner. Replace the louver housing and tighten the Phillips head screws.

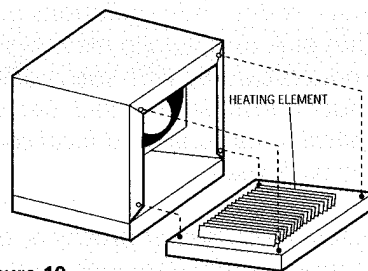


Figure 10

⚠ WARNING Use care to prevent damage to internal heater wiring when cleaning element. Make sure all connections remain tight and all wiring is routed away from element fins when reassembling the unit. Allowing wiring to touch the element fins could result in a fire hazard.

CLEANING THE FAN AND MOTOR

Remove the protective grille from the rear of the heater. This provides access to the fan and motor. Wipe off the fan and motor with a soft cloth or brush. The fan motor does not require lubrication. Replace protective grille (See Figure 11).

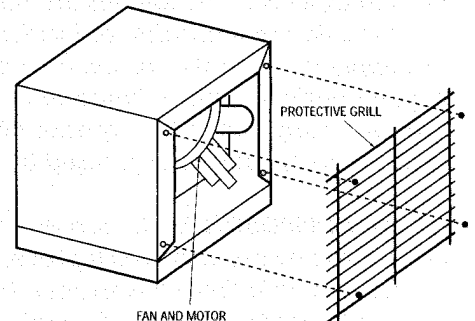


Figure 11

Dayton® Electric Utility Heaters

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LIMITED WARRANTY

DAYTON ONE-YEAR LIMITED WARRANTY. Dayton Electric Utility 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, consequently 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.

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

Please provide the 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.

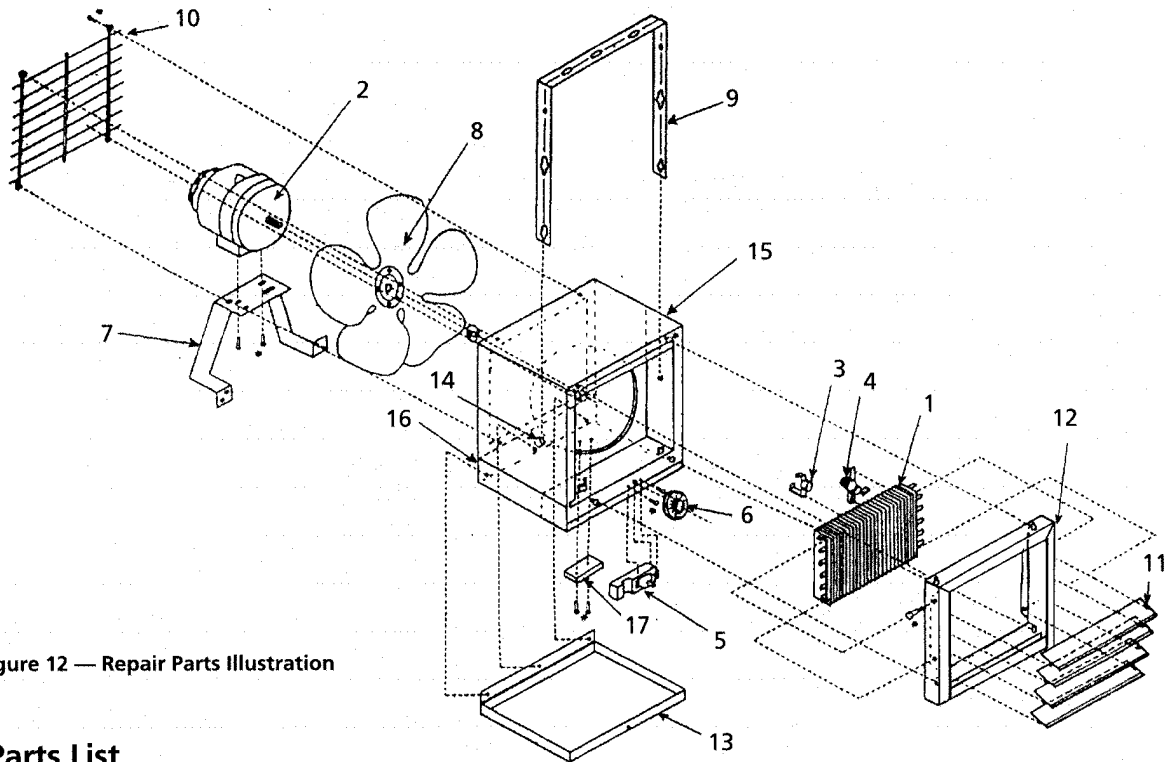


Figure 12 — Repair Parts Illustration

Repair Parts List

Reference Number	Description	Part Number for Models: 3UG73D and 3UG74D	Quantity
1	Element for 3UG73D	302006807	1
	Element for 3UG74D	302006847	1
2	Motor	3900-2008-000	1
3	Fan Delay Control	410148000	1
4	High Temperature Limit Control	410027000	1
5	Thermostat	5813-2050-000	1
6	Thermostat Knob	3301-2014-006	1
7	Motor Mount	310914001	1
8	Fan Blade	1210-2017-000	1
9	Ceiling Bracket	310876002	1
10	Wire Guard	312056802	1
11	Louver	310850007	4
12	Bezel Assembly	1219-0414-000	1
13	Cover (Access Door)	310104902	1
14	Bracket Screw	402029008	2
15	Cover Wrap Assembly	200193902	1
16	Control Box Assembly	200161902	1
17	Power Terminal Block	5823-0004-005	1