

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® Portable Oil-Fired Heaters

Description

Dayton Models 3VE48A, 3VE49A, 3VE50A, 3VE51A and 3VE52A heaters are 45,000 to 215,000 BTU/Hr heaters. These heaters use 1-K Kerosene (see Operation section for alternative fuels) for combustion, and electricity to run the fan. It is primarily intended for temporary heating of well ventilated buildings under construction, alteration, or repair. This heater may be used in agricultural, industrial and commercial environments.

Specifications

ELECTRICAL SPECIFICATIONS

Model	Electrical Input	Amperage	Fuse	Spark Plug Gap
3VE48A	120V, 60 Hz	1.4	125V/8 amp	.140" (3.5mm)
3VE49A	120V, 60 Hz	1.5	125V/8 amp	.140" (3.5mm)
3VE50A	120V, 60 Hz	2.3	125V/8 amp	.140" (3.5mm)
3VE51A	120V, 60 Hz	2.7	125V/8 amp	.140" (3.5mm)
3VE52A	120V, 60 Hz	2.8	125V/8 amp	.140" (3.5mm)

GENERAL SPECIFICATIONS

Model	Type of Fuel	Input Rating	Pump Pressure	Fuel Tank Capacity	Fuel Consumption	Size L x W x H (Inches)	Weight Lbs. (kg)
3VE48A	1-K Kerosene	45,000 BTU/Hr	3.0 PSI	5.0 Gallons	.35 Gal/Hr	30 x 12 x 15	32 (14.5)
3VE49A	1-K Kerosene	70,000 BTU/Hr	4.0 PSI	5.0 Gallons	.50 Gal/Hr	30 x 12 x 15	32 (14.5)
3VE50A	1-K Kerosene	125,000 BTU/Hr	5.0 PSI	10.0 Gallons	.90 Gal/Hr	38 x 22 x 25	60 (27.5)
3VE51A	1-K Kerosene	175,000 BTU/Hr	7.5 PSI	13.0 Gallons	1.3 Gal/Hr	43 x 24 x 26	67 (30.5)
3VE52A	1-K Kerosene	215,000 BTU/Hr	9.0 PSI	13.0 Gallons	1.6 Gal/Hr	43 x 24 x 26	72 (33)

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Introduction

Please read this USER'S MANUAL carefully. It will show you how to assemble, maintain and operate this heater safely and efficiently to obtain the full benefits of its many features.

Consumer: Retain these instructions for future reference.



Figure 1 – Models 3VE48A and 3VE49A



Figure 2 – Models 3VE50A, 3VE51A and 3VE52A

Unpacking

1. Remove all packing items applied to heater for shipment.
2. Remove all items from carton.
3. Check all items for shipping damage. If heater is damaged, promptly inform dealer where you purchased heater.



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Dimensions

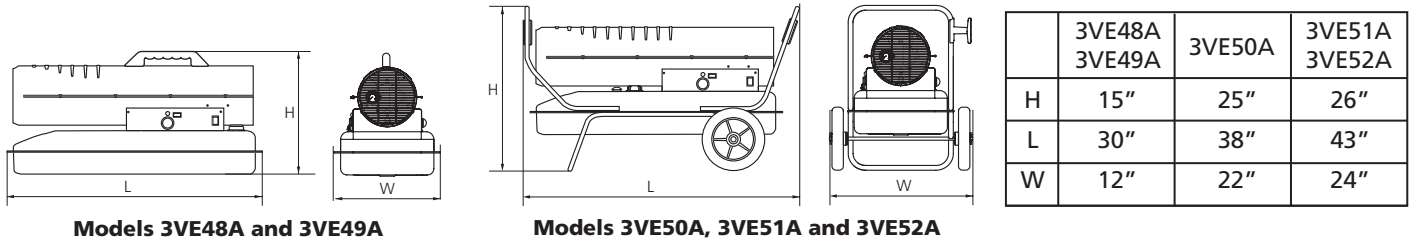


Figure 3 – Heater Dimensions

Product Features

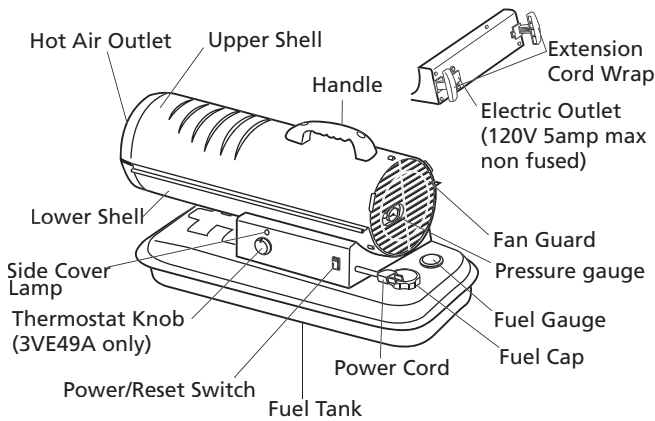


Figure 4 – Models 3VE48A and 3VE49A Features

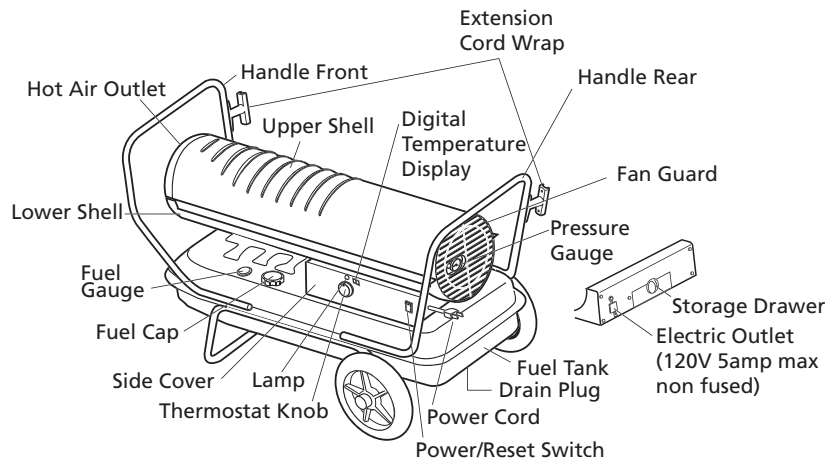


Figure 5 – Models 3VE50A, 3VE51A and 3VE52A Features

General Safety Information

⚠ 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 Before using this heater, please read this **USER'S MANUAL** very carefully. This **USER'S MANUAL** has been designed to instruct you as to the proper manner in which to assemble, maintain, store, and most importantly, how to operate the heater in a safe and efficient manner.

⚠ WARNING Never leave the heater unattended while burning!

⚠ DANGER Improper use of this heater can result in serious injury or death from burns, fire, explosion, electrical shock, and/or carbon monoxide poisoning.

For optimal performance of this heater, it is strongly suggested that 1-K kerosene be used. 1-K kerosene has been refined to virtually eliminate contaminants, such as sulfur, which can cause a rotten egg odor during the operation of the heater.

Models 3VE48A, 3VE49A, 3VE50A, 3VE51A and 3VE52A

General Safety Information (Continued)

However, #1 or #2 fuel oil (diesel fuel) may also be used if 1-K kerosene is not available. Be advised that these fuels do not burn as clean as 1-K kerosene, and care should be taken to provide more fresh air ventilation to accommodate any added contaminants that may be added to the heated space. Use of #1 or #2 fuel oil may result in more periodic maintenance.

▲ WARNING *Risk of Indoor Air Pollution!*

- Use this heater only in well ventilated areas! Provide at least a three square foot (2,800 sq cm) opening of outside air for every 100,000 BTU/hr of heater rating.
- People with breathing problems should consult a physician before using the heater.
- Carbon Monoxide Poisoning: Early signs of carbon monoxide poisoning resemble flu-like symptoms such as headaches, dizziness, and/or nausea. If you have these symptoms, your heater may not be working properly.
- Get fresh air at once! Have the heater serviced. Some people are more affected by carbon monoxide than others. These include pregnant women, those with heart or lung problems, anemia, or those under the influence of alcohol, or at high altitudes.
- Never use this heater in living or sleeping areas.

▲ WARNING *Risk of Burns! Fire! Explosion!*

- NEVER use fuels such as gasoline, benzene, paint thinners, or other oil compounds in this heater (RISK OF FIRE OR EXPLOSION).
- NEVER use this heater where flammable vapors may be present.
- NEVER refill the heater's fuel tank while heater is operating or still hot. This heater is EXTREMELY HOT while in operation.
- Keep all combustible materials away from this heater.

Minimum Clearances

Outlet 8 feet (250 cm)
Sides, Top and Rear 4 feet (125 cm)

- NEVER block air inlet (rear) or air outlet (front) of heater.
- NEVER use duct work in front or at rear of heater.
- NEVER move or handle heater while still hot.
- NEVER transport heater with fuel in its tank.

When used with optional thermostat or if equipped with a thermostat, the heater may start at any time.

- ALWAYS locate heater on a stable and level surface.
- ALWAYS keep children and animals away from heater.
- Use 1-K kerosene in this heater. #1 fuel oil is a suitable substitute.
- Bulk fuel storage should be a minimum of 25 ft. from heaters, torches, portable generators, or other sources of ignition. All fuel storage should be in accordance with federal, state, or local authorities having jurisdiction.

▲ WARNING *Risk of Electric Shock!*

- Use only the electrical power (voltage and frequency) specified on the model plate of the heater. Use only a three-prong, grounded outlet and extension cord.
- ALWAYS install the heater so that it is not directly exposed to water spray, rain, dripping water, or wind.
- ALWAYS unplug the heater when not in use.

CALIFORNIA RESIDENTS:

This heater produces carbon monoxide, which is listed by the State of California as a reproductive toxin under Proposition 65.

MASSACHUSETTS RESIDENTS:

Massachusetts state law prohibits the use of this heater in any building which is used in whole or in part for human habitation. Use of this heating device in Massachusetts requires local fire dept. permit (M.E.L.C. 148, Section 10A).

CANADIAN RESIDENTS:

Use of this heater shall be in accordance with authorities having jurisdiction and CSA Standard B139.

NEW YORK CITY RESIDENTS:

For use only at construction sites in accordance with applicable NYC codes. Contact Dayton customer service for NYCFD certificate of approval numbers.

Dayton® Portable Oil-Fired Heaters

Assembly

Model	3VE48A, 3VE49A	3VE50A	3VE51A	3VE52A
Wheel Support Frame	No	Yes	Yes	Yes
Wheels	No	Yes	Yes	Yes
Cap-wheel	No	Yes	Yes	Yes
Front-Handle	No	Yes	Yes	Yes
Rear-Handle	No	Yes	Yes	Yes
Axle	No	Yes	Yes	Yes </td
Handle	Yes	No	No	No
Screws	Yes	No	No	No
Screws and Nuts	No	Yes	Yes	Yes
Cotter Pin and Washer	No	Yes	Yes	Yes

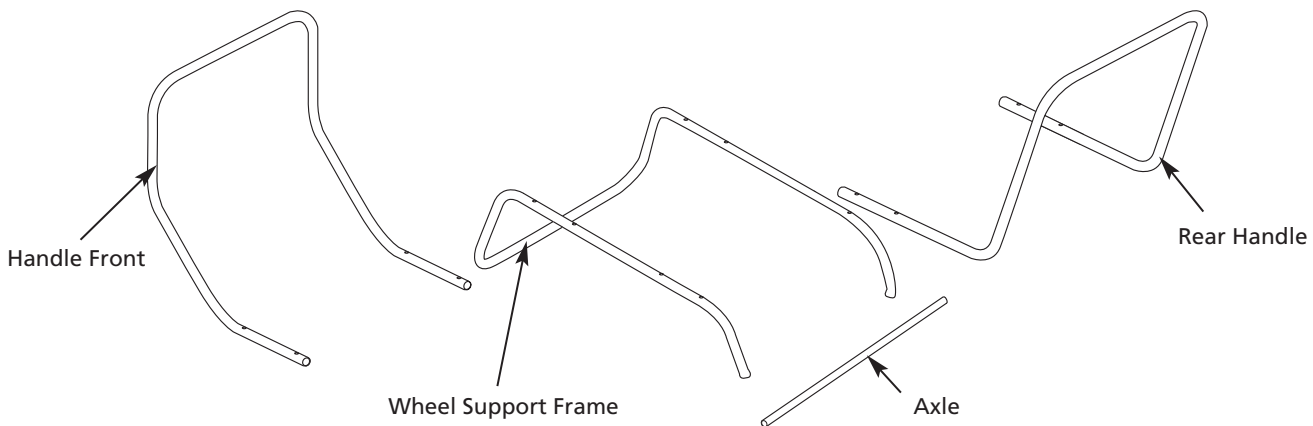
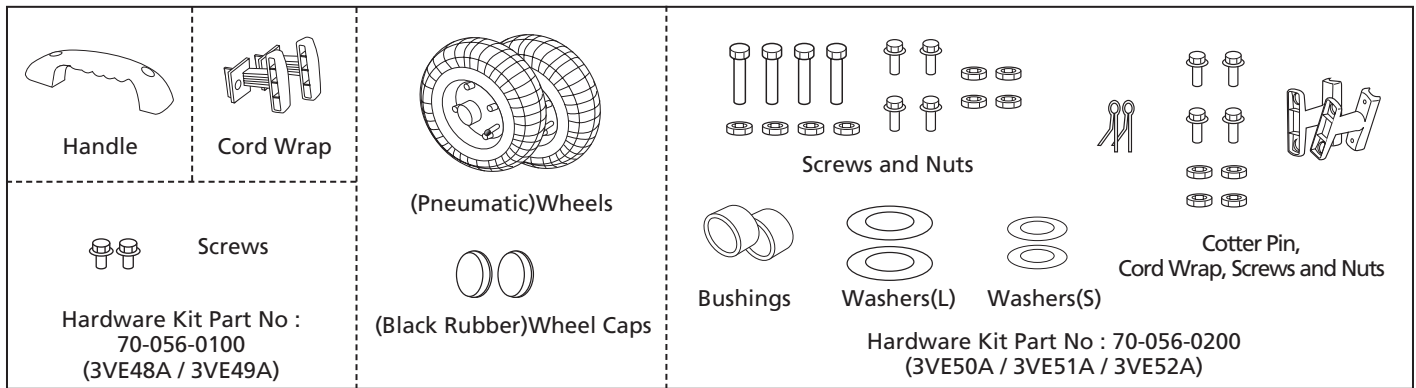


Figure 6 – Component Identification

Models 3VE48A, 3VE49A, 3VE50A, 3VE51A and 3VE52A

Assembly (Continued)

FOR MODELS 3VE48A AND 3VE49A ONLY

TOOLS REQUIRED

- Medium Phillips screwdriver (size #1, #2, #3).

1. Align the holes in the upper housing with the two mounting holes on the handle as shown in Figure 7.
2. Secure handle through holes provided.

FOR MODELS 3VE50A, 3VE51A, AND 3VE52A

These models are furnished with wheels and handles. Wheels, handles and mounting hardware are found in shipping carton.

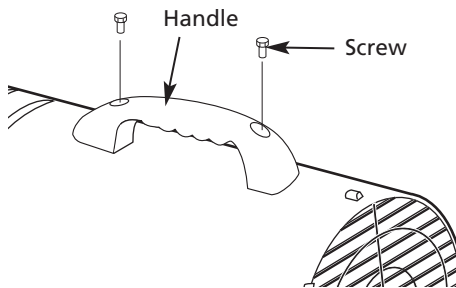


Figure 7 – Handle Installation 3VE48A and 3VE49A only

TOOLS REQUIRED

- Medium Phillips screwdriver. (2.75inch)
- M5 open, or adjustable wrench.
- Long nose pliers

1. Slide axle through wheel support frame. Install wheels on axle, pointing extended hub of wheel toward wheel support frame (See Figure 8).
2. Place flat washers and cotter pin on axle ends and bend cotter pin with long nose pliers to secure.

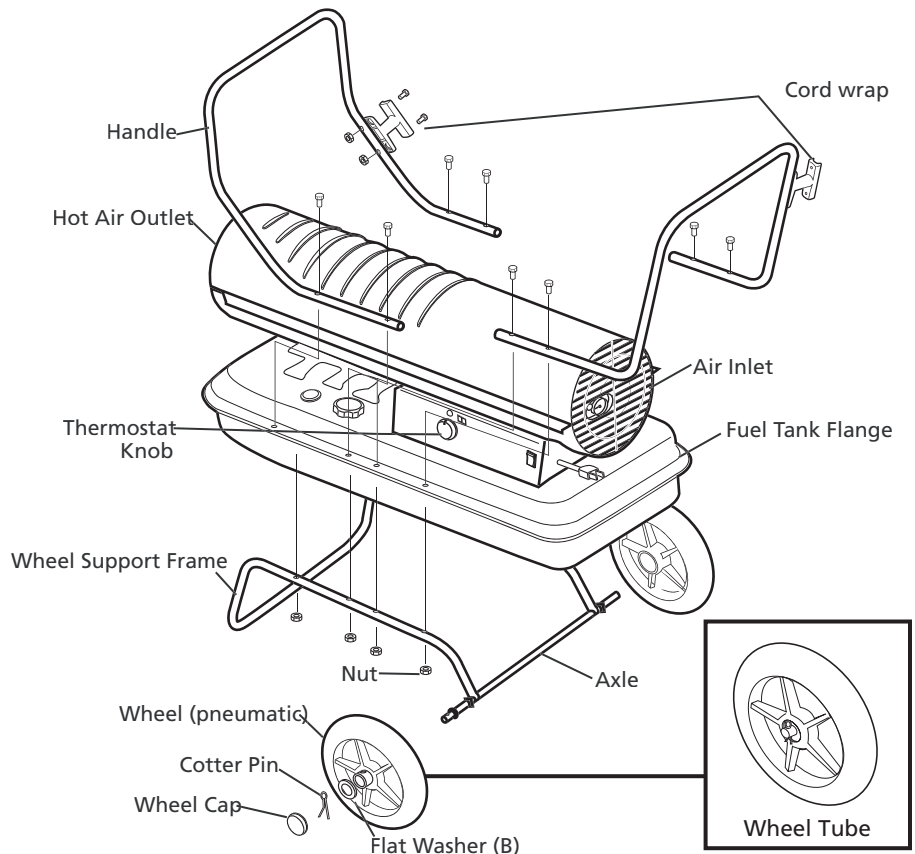


Figure 8 – Models 3VE50A, 3VE51A and 3VE52A Assembly

3. Place heater on wheel support frame. Make sure air inlet end (rear) of heater is over wheels. Align the holes on fuel tank flange with holes on support frame.
4. Position handle on top of fuel tank flange. Insert screws through handles, fuel tank flange and wheel support frames as shown in Figure 8, and attach nuts finger tight after each screw is inserted.
5. After all screws are inserted, firmly tighten all nuts.

CAUTION Do not operate heater without support frame fully assembled to tank.

Operation KEROSENE (1-K)

For optimal performance of this heater, it is strongly suggested that 1-K kerosene be used. 1-K kerosene has been refined to virtually eliminate contaminants, such as sulfur, which can cause a rotten egg odor during the operation of the heater. However, #1 or #2 fuel oil (diesel fuel) may also be used if 1-K kerosene is not available. Be advised

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Operation (Continued)

that these fuels do not burn as clean as 1-K kerosene, and care should be taken to provide more fresh air ventilation to accommodate any added contaminants that may be added to the heated space.

NOTE: Kerosene should only be stored in a blue container that is clearly marked "kerosene". Never store kerosene in a red container. Red is associated with gasoline.

- NEVER store kerosene in the living space. Kerosene should be stored in a well ventilated area outside the living area.
- NEVER use fuel such as gasoline, benzene, alcohol, white gas, camp stove fuel, paint thinners, or other oil compounds in this heater (THESE ARE VOLATILE FUELS THAT CAN CAUSE A FIRE OR EXPLOSION).
- NEVER store kerosene in direct sunlight or near a source of heat.
- NEVER use kerosene that has been stored from one season to the next. Kerosene deteriorates over time. OLD KEROSENE WILL NOT BURN PROPERLY IN THIS HEATER.
- Use 1-K kerosene in this heater. #1 fuel is a suitable substitute.

OVERVIEW OF HEATER DESIGN

Fuel System: This heater is equipped with an electric air pump that forces air through the air line connected to the fuel intake, and then through a nozzle in the burner head. When air passes in front of the fuel intake, it causes fuel to rise from the tank and into the burner nozzle.

This fuel and air mixture is then sprayed into the combustion chamber in a fine mist.

SureFire Ignition: The electronic ignitor sends voltage to a specially designed spark plug. The spark plug ignites the fuel and air mixture described above.

The Air System: The heavy duty motor turns a fan that forces air into and around the combustion chamber. Here, the air is heated and then forced out the front of the heater.

THE SAFETY SYSTEM

Temperature Limit Control: This heater is equipped with a Temperature Limit Control designed to turn the heater off should the internal temperature rise to an unsafe level. If this device activates and turns your heater off, it may require service.

Once the temperature falls below the reset temperature, you will be able to start your heater.

Electrical System Protection: This heater's electrical system is protected by a fuse mounted to the PCB Assembly that protects it and other electrical

components from damage. If your heater fails to operate, check this fuse first and replace as needed. Refer to Specification chart on page 1.

Flame-Out Sensor: Utilizes a photocell to monitor the flame in burn chamber during normal operation. It will cause the heater to shut off should the burner flame extinguish.

FUELING YOUR HEATER

Never fill the heater fuel tank in the living space: fill the tank outdoors.

Do not overfill your heater and be sure heater is level.

⚠ WARNING *Never refill fuel tank when heater is operating or still hot.*

IMPORTANT: REGARDING FIRST IGNITION OF HEATER. The first time you light the heater, it should be done OUTDOORS. This allows the oils, etc., used in manufacturing heater to be burned off outside.

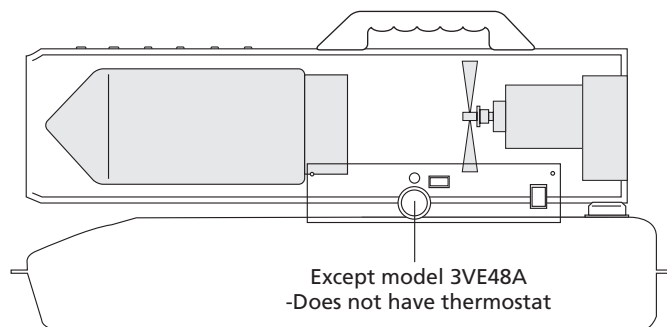


Figure 9 – Overview of Heater Design

MODELS	Internal Shut-Off Temp. +/-10 Degrees	Reset Temp. +/-10 Degrees
3VE50A/3VE51A	176°F/80°C	122°F/50°C
3VE48A/3VE49A	176°F/80°C	122°F/50°C
3VE52A	194°F/90°C	140°F/60°C

Models 3VE48A, 3VE49A, 3VE50A, 3VE51A and 3VE52A

Operation (Continued)

VENTILATION

CAUTION Risk of indoor air pollution. Use heater only in well ventilated areas.

Provide a fresh air opening of at least three (3) square feet (2,800 sq. cm) for each 100,000 BTU/Hr. rating. Provide extra fresh air if more heaters are being used.

Example: A 3VE52A heater requires one of the following :

1. A two-car garage door raised six inches (15.24 cm).
2. A single-car garage door raised nine inches (22.86 cm).
3. Two, thirty inch (76.20 cm) windows raised fifteen inches (38.1 cm).

TO START HEATER

1. Fill fuel tank with kerosene or No. 1 fuel oil.
 2. Attach fuel cap.
 3. Plug power cord into three prong, grounded extension cord. Extension cord must be at least six feet long.
- Extension Cord Wire Size Requirements:
- 6 to 10 feet (1.8 to 3 meters) long, use 18 AWG conductor.

- 11 to 100 feet (3.4 to 30.53 meters) long, use 16 AWG conductor.
- 101 to 200 feet (30.8 to 61 meters) long, use 14 AWG conductor.

4. Turn THERMOSTAT CONTROL KNOB to desired setting and push power switch to "ON" position. Power indicator lamp will light and heater will start. (For the 3VE48A just activating the power switch will start the Heater.)

If heater does not start, the thermostat setting may be too low. Turn THERMOSTAT CONTROL KNOB to higher position to start heater. If heater still does not start, turn power switch to OFF and then to ON position. See Troubleshooting Chart on Page 15.

NOTE: The major electrical components of this heater are protected by a safety fuse mounted to the PCB board. If your heater fails to start, check this fuse first and replace as necessary. You should also check your power source to insure that proper voltage and frequency are being supplied to the heater.

TO SHUT DOWN HEATER

Turn power switch to "OFF" and unplug power cord.

TO RESTART HEATER

1. Wait 10 seconds after stopping heater.
2. Repeat steps under, "TO START HEATER."

ELECTRICAL OUTLET

WARNING Shock Hazard!

- Never plug in an appliance with more than a 5amp rating into this outlet.
- Always keep outlet covered when not in use.
- 120V 5amp max(non fused).

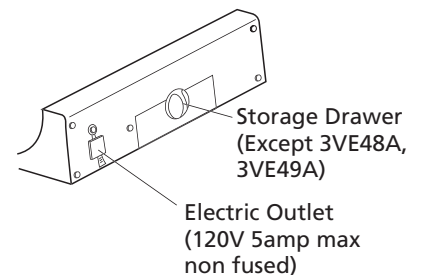


Figure 11 – Electrical outlet

LONG-TERM STORAGE OF YOUR HEATER

FUEL TANK DRAIN

1. Remove drain plug from rear bottom side of fuel tank by pulling plug grip downward and drain. See Figure 12.

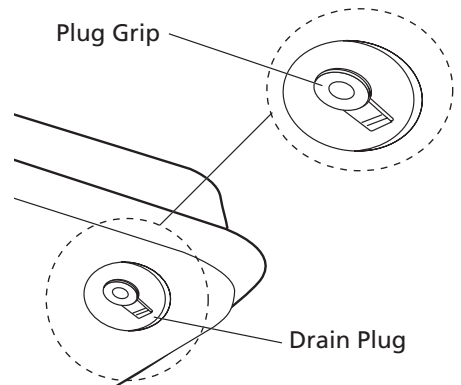
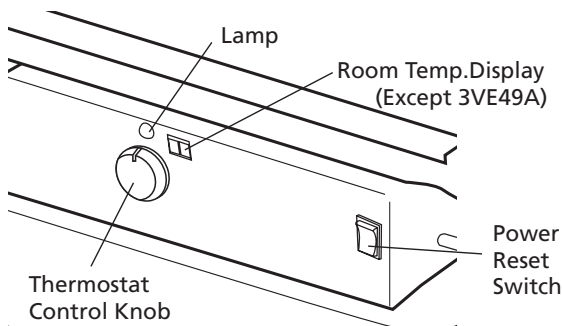
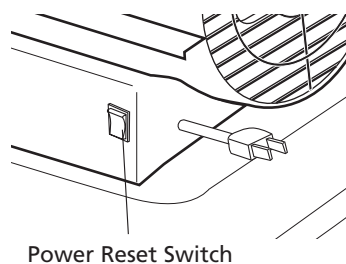


Figure 12 – Drain Plug Removal



Models 3VE49A, 3VE50A, 3VE51A and 3VE52A
Figure 10 – Controls for All Models



Models 3VE48A

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Operation (Continued)

2. Using a small amount of kerosene, swirl and rinse the inside of the tank. NEVER MIX WATER WITH KEROSENE, as it will cause rust inside the tank. Pour the kerosene out, making sure that you remove it all.

IMPORTANT: Do not store kerosene over summer for use during next heating season. Using old fuel may damage heater.

3. Reinstall drain plug as follows.

- Insert plug's seal head fully into drain hole so that flange is flush to tank's bottom. See Figure 13.
- Insert seal cap fully into head hole so that cap flange is flush to head flange. See Figure 13.

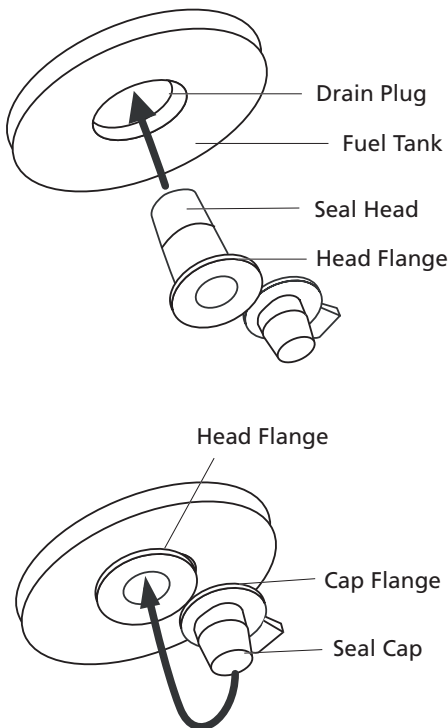


Figure 13 – Drain Plug Reinstall

IMPORTANT: Reinstall plug fully into hole in tank; otherwise it will not seal completely.

- Make sure storage place is free of dust and corrosive fumes.
- Store the heater in the original box with the original packing material and keep USER'S MANUAL with heater.

Maintenance

⚠ WARNING *Never service heater while it is plugged in or while hot!*

USE ORIGINAL EQUIPMENT REPLACEMENT PARTS. Use of third-party or other alternate components will void warranty and may cause unsafe operating conditions.

FUEL TANK

Flush every 200 hours of operation or as needed (See Storage, page 7).

AIR INTAKE FILTER

WASH AND DRY WITH SOAP AND WATER EVERY 500 HOURS OF OPERATION, OR AS NEEDED.

- Remove screws along side of heater using medium Phillips screwdriver.
- Lift off upper shell.
- Remove fan guard.
- Wash or replace air intake filter.
- Reinstall fan guard and upper shell.

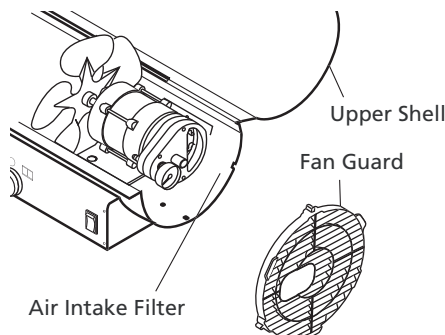


Figure 14 – Air Filter Access

AIR OUTPUT FILTER, LINT FILTER

REPLACE EVERY 500 HOURS OF OPERATION OR ONCE A YEAR

- Remove upper shell and fan guard (See Air Intake Filter Figure 14).
- Remove end filter cover screws using medium Phillips screwdriver.
- Remove end filter cover.
- Replace air output and lint filter.
- Reinstall end filter cover.
- Reinstall fan guard and upper shell.

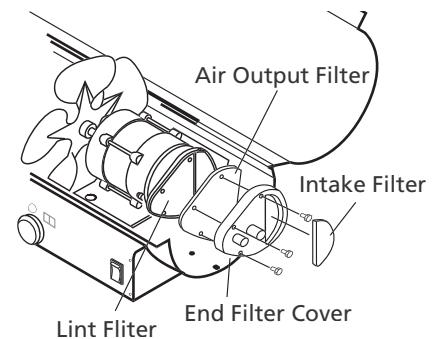


Figure 15 – Filter Assembly

FAN BLADES

CLEAN EVERY SEASON OR AS NEEDED

- Remove upper shell (See Air Intake Filter).
- Use M6 Allen wrench to loosen set screw which holds fan blade to motor shaft.
- Slip fan blade off motor shaft.
- Clean fan blade using soft cloth moistened with kerosene or solvent.
- Dry fan blade thoroughly.
- Reinstall fan blade to motor shaft.
- Place fan blade hub flush with end of motor shaft.
- Place set screw on flat of shaft.

Models 3VE48A, 3VE49A, 3VE50A, 3VE51A and 3VE52A

Maintenance (Continued)

- Tighten screw firmly (40-50 inch-pounds/4.5-5.6 N-m). Reinstall upper shell.

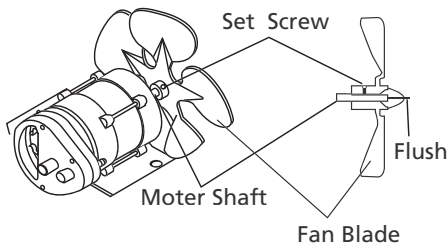


Figure 16 – Fan Assembly

NOZZLE

CLEAN NOZZLE AS NEEDED

(For Models 3VE48A, 3VE49A, 3VE50A, 3VE51A and 3VE52A)

- Open upper shell (See Air Intake Filter, page 8).
- Remove fan blade (See Fan Blades).
- Remove fuel and air line hoses from burner head.
- Remove ignitor wire from spark plug.
- Remove three screws using medium Phillips screwdriver and remove burner head from combustion chamber.
- Remove spark plug from burner head using medium Phillips screwdriver.
- Carefully remove nozzle from burner head using 5/8" socket wrench.
- Blow compressed air through face of nozzle (This will remove any dirt).
- Reinstall nozzle into burner head and tighten firmly (80-100 inch-pounds).
- Reinstall spark plug into burner head.
- Attach burner head to combustion chamber.

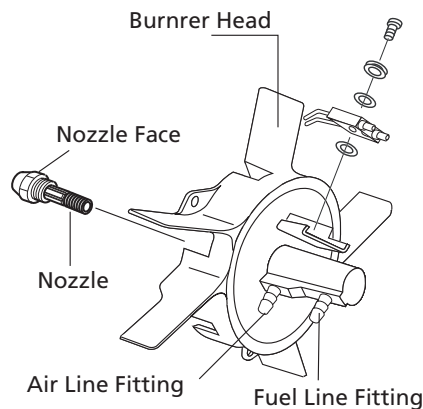
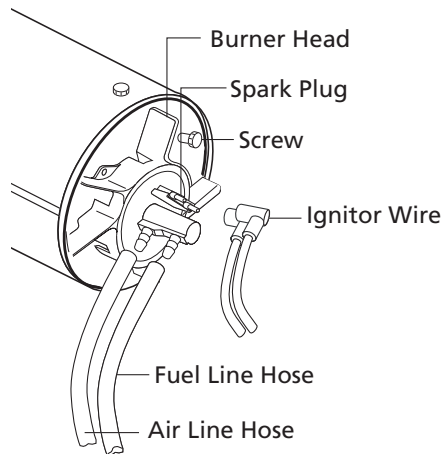


Figure 17 – Nozzle Replacement

- Attach ignitor wire to spark plug.
- Attach fuel and air line hoses to burner head.
- Reinstall fan blade and upper shell.

SPARK PLUG

CLEAN AND REGAP EVERY 600 HOURS OF OPERATION OR REPLACE AS NEEDED.

(For Models 3VE48A, 3VE49A, 3VE50A, 3VE51A and 3VE52A)

- Remove upper shell (See Air Intake

Filter, page 8).

- Remove fan (See Fan Blades).
- Remove ignitor wire from spark plug.
- Remove spark plug from burner head using medium Phillips screwdriver.
- Clean and regap spark plug electrodes to .140" (3.5 mm) gap.
- Reinstall spark plug into burner head.
- Attach ignitor wire to spark plug.
- Reinstall fan and upper shell.

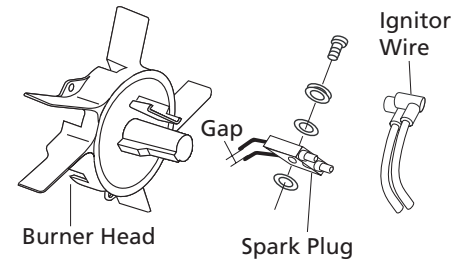


Figure 18 – Spark Plug Replacement

PHOTOCELL

CLEAN PHOTOCELL ANNUALLY OR AS NEEDED.

(For Models 3VE48A, 3VE49A only)

- Remove upper shell (See Air Intake Filter, page 8).
- Remove fan (See Fan Blades).
- Remove photocell from its mounting bracket.
- Clean photocell lens with cotton swab.
- TO REPLACE: Remove side cover near power switch.
- Disconnect wires from circuit board and remove photocell.
- Install new photocell and attach wires to circuit board.
- Reinstall fan and upper shell.
- (For Models 3VE50A, 3VE51A, 3VE52A only)

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Maintenance (Continued)

- Remove upper shell (See Air Intake Filter, page 8).
- Remove fan (See Fan Blades).
- Remove photocell from its mounting bracket.
- Clean photocell lens with cotton swab.
- TO REPLACE: Remove side cover near power switch.
- Disconnect wires from power switch and remove side cover.
- Disconnect wires from circuit board and remove photocell.
- Install new photocell and attach wires to circuit board.
- Replace switch wires to power switch and side cover.
- Replace fan and upper shell.

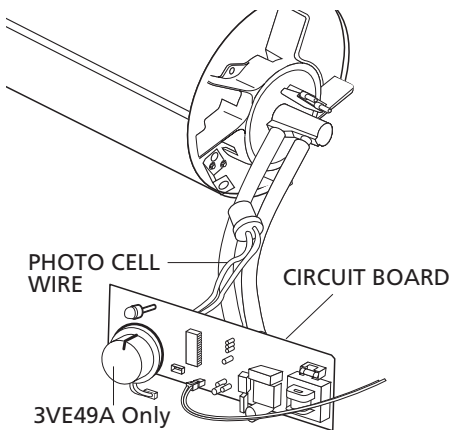


Figure 19 – Photocell Replacement for 3VE48A, 3VE49A

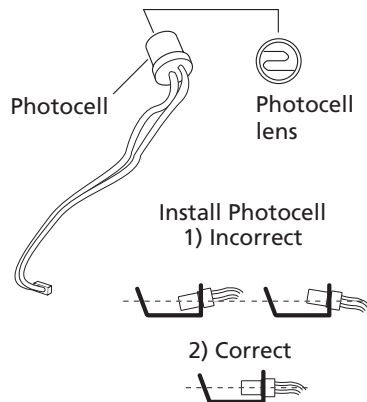
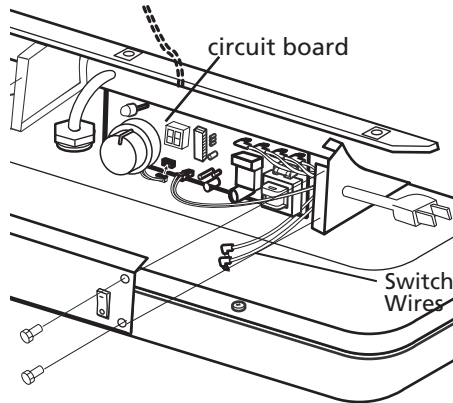


Figure 20 – Photocell Replacement for 3VE50A, 3VE51A, 3VE52A

FUEL FILTER

CLEAN OR REPLACE TWICE PER HEATING SEASON OR AS NEEDED.

(For Models 3VE48A, 3VE49A only)

- Remove side cover screws using medium Phillips screwdriver.
- Remove side cover.
- Pull fuel line off fuel filter neck.
- Turn fuel filter counterclockwise 90 degrees, pull, and remove.
- Wash fuel filter with clean fuel and

replace in tank.

- Attach fuel line to fuel filter neck.
- Reinstall side cover.

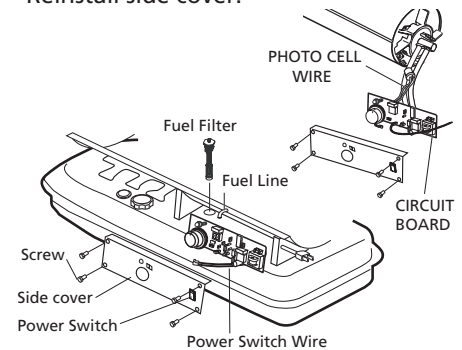


Figure 21 – Fuel Filter Replacement

(For Models 3VE50A, 3VE51A and 3VE52A)

- Open side cover screws using medium Phillips screwdriver.
- Disconnect switch wires from power switch and remove side cover.
- Pull fuel line off fuel filter neck.
- Pull fuel line.
- Turn fuel filter clockwise 90 degrees and pull to remove.
- Wash fuel filter with clean fuel and replace in tank.

PUMP PRESSURE ADJUSTMENT

- If model is not equipped with a built-in air pressure gauge, remove pressure gauge plug from end of filter cover.
- If model is not equipped with a built-in air pressure gauge, install accessory pressure gauge.
- Start heater (See OPERATION, page 7).
- Allow motor to reach full speed.
- Adjust pressure (Using flat blade screwdriver).

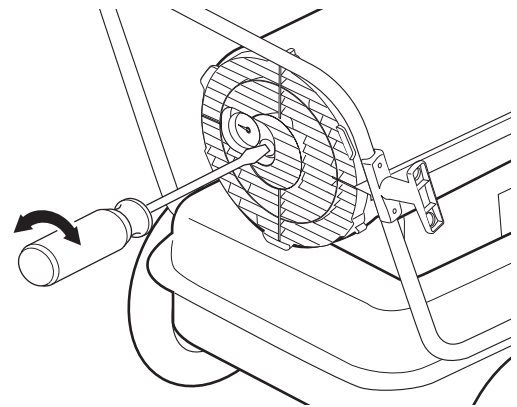
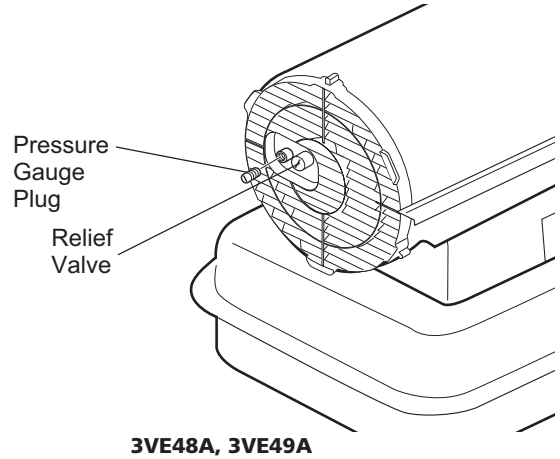
Models 3VE48A, 3VE49A, 3VE50A, 3VE51A and 3VE52A

- Turn relief valve clockwise to increase pressure.
- Turn relief valve counterclockwise to decrease pressure.
- Set pump pressure to correct pressure for each model.

Model	Pump Pressure
3VE48A	3.0PSI
3VE49A	4.0PSI
3VE50A	5.0PSI
3VE51A	7.5PSI
3VE52A	9.0PSI

- Stop heater (See OPERATION, page 7).
- If accessory pressure gauge is being used, remove pressure gauge.
- Replace pressure gauge, and plug in end of filter cover.

NOTE: USE ONLY ORIGINAL EQUIPMENT REPLACEMENT PARTS. Use of alternate or third party components will void warranty and may cause an unsafe operating condition.



**Figure 22 – Adjusting Pump Pressure
3VE50A, 3VE51A, 3VE52A**

Dayton® Portable Oil-Fired Heaters

Wiring Diagrams

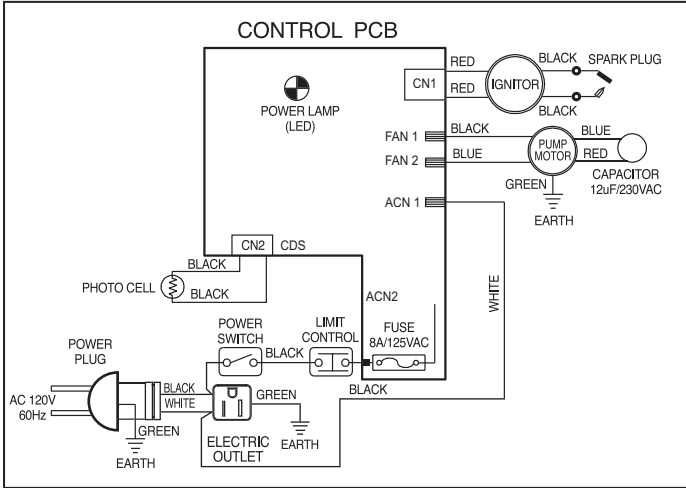


Figure 23 – Wiring Diagram Model 3VE48A

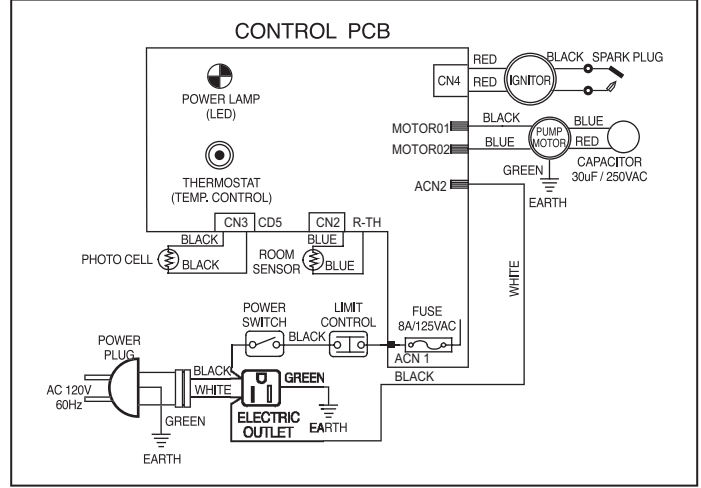


Figure 24 – Wiring Diagram Model 3VE49A

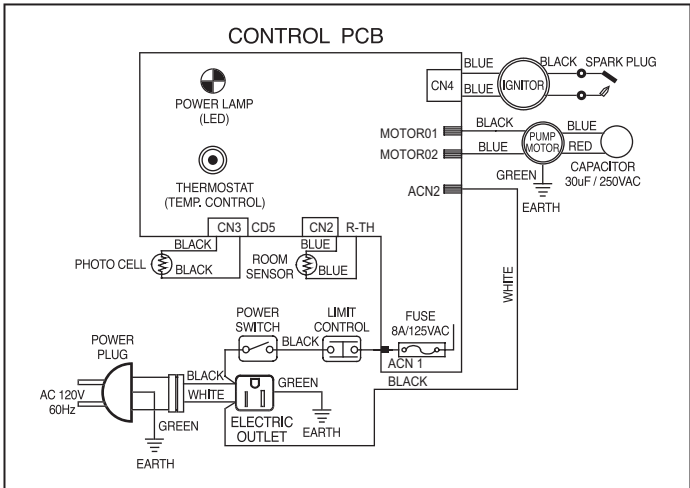


Figure 25 – Wiring Diagram Models 3VE50A, 3VE51A and 3VE52A

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.

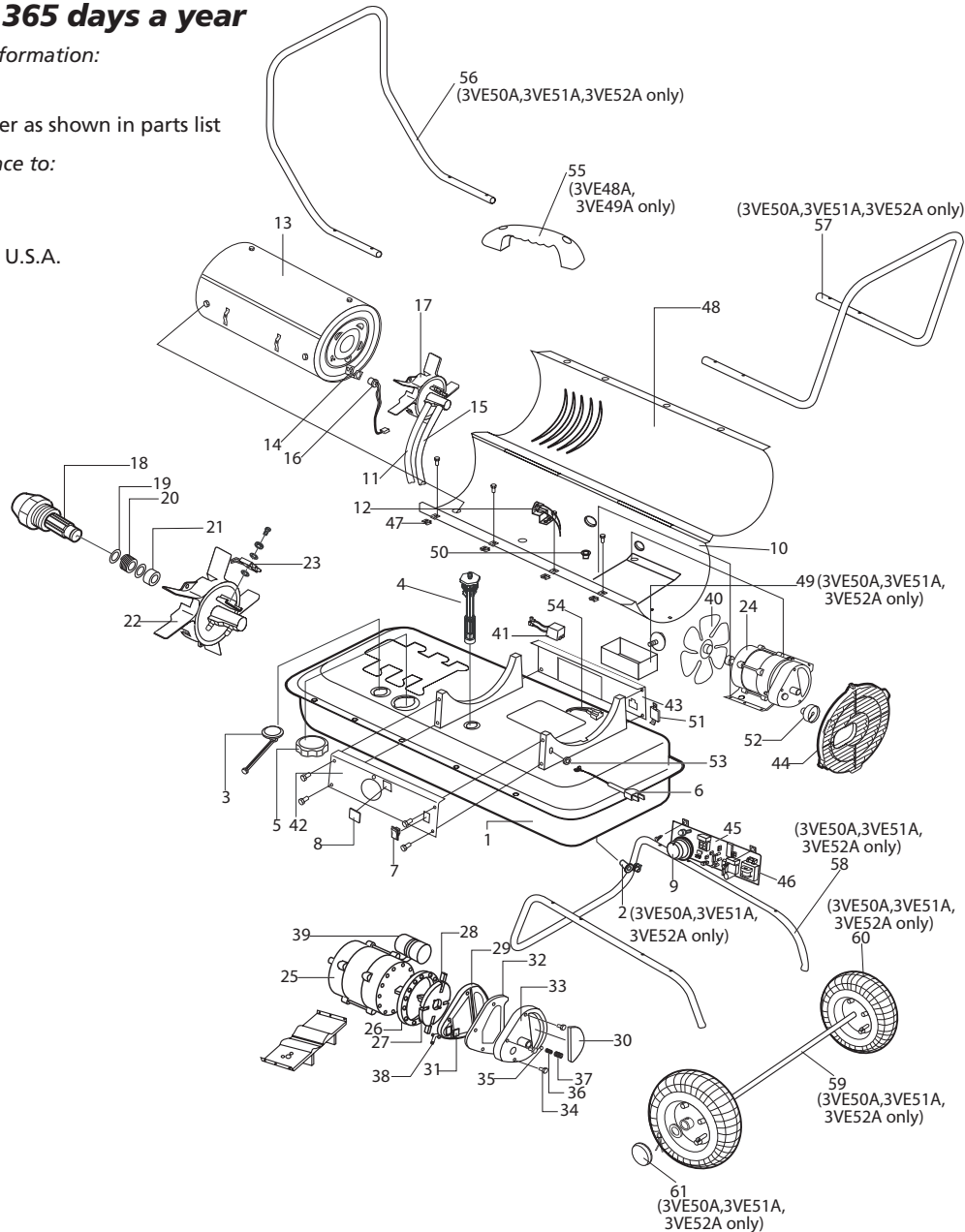


Figure 26 – Repair Parts Illustration for Models 3VE48A, 3VE49A, 3VE50A , 3VE51A and 3VE52A

Repair Parts List for Portable Oil-Fired Heaters

KEY No.	DESCRIPTION	3VE48A	3VE49A	PART No. 3VE50A	3VE51A	3VE52A
1	Fuel Tank Assembly	70-002-0100	70-002-0100	70-002-0200	70-002-0300	70-002-0300
2	Drain Plug	-	-	70-002-0105	70-002-0105	70-002-0105
3	Fuel Gauge Assembly	70-007-0100	70-007-0100	70-007-0200	70-007-0200	70-007-0200
4	Fuel Filter Assembly	70-003-0100	70-003-0100	70-003-0200	70-003-0200	70-003-0200
5	Fuel Cap	70-006-0100	70-006-0100	70-006-0100	70-006-0100	70-006-0100
6	Power Cord	70-034-0100	70-034-0100	70-034-0200	70-034-0200	70-034-0200
7	Power Switch	70-038-0100	70-038-0100	70-038-0100	70-038-0100	70-038-0100
8	Window Display	-	-	70-040-0100	70-040-0100	70-040-0100
9	Thermostat Control Knob	-	70-031-0100	70-031-0100	70-031-0100	70-031-0100
10	Lower Shell	70-001-0102	70-001-0102	70-001-0202	70-002-0302	70-002-0402

Dayton® Portable Oil-Fired Heaters

Repair Parts List for Portable Oil-Fired Heaters (Continued)

KEY No.	DESCRIPTION	3VE48A	3VE49A	PART No. 3VE50A	3VE51A	3VE52A
11	Air Line	70-035-0100	70-035-0200	70-035-0300	70-035-0400	70-035-0500
12	Thermostat Limit Control	70-019-0100	70-019-0100	70-019-0100	70-019-0100	70-019-0200
13	Combustion Chamber	70-010-0100	70-010-0200	70-010-0300	70-010-0400	70-010-0500
14	Photocell Bracket	70-010-0101	70-010-0101	70-010-0101	70-010-0101	70-010-0101
15	Fuel Line	70-036-0100	70-036-0200	70-036-0300	70-036-0400	70-036-0500
16	Photocell Assembly	70-016-0100	70-016-0100	70-016-0100	70-016-0100	70-016-0100
17	Burner Head Assembly	70-014-0100	70-014-0200	70-014-0300	70-014-0400	70-014-0500
18	Nozzle	70-015-0100	70-015-0200	70-015-0300	70-015-0400	70-015-0500
19	Nozzle Seal Washer	70-015-0101	70-015-0101	70-015-0101	70-015-0101	70-015-0101
20	Nozzle Seal Spring	70-015-0102	70-015-0102	70-015-0102	70-015-0102	70-015-0102
21	Nozzle Sleeve	70-015-0103	70-015-0103	70-015-0103	70-015-0103	70-015-0103
22	Burner Head	70-014-0101	70-014-0101	70-014-0301	70-014-0401	70-014-0401
23	Spak Plug	70-052-0100	70-052-0100	70-052-0200	70-052-0200	70-052-0200
24	Motor and Pump Assembly	70-020-0100	70-020-0100	70-020-0300	70-020-0400	70-020-0500
25	Motor	70-021-0100	70-021-0100	70-021-0200	70-021-0300	70-021-0400
26	Pump Body	70-020-0101	70-020-0101	70-020-0101	70-020-0101	70-020-0401
27	Rotor Kit	70-022-0100	70-022-0100	70-022-0100	70-022-0100	70-022-0200
28	Blade	70-022-0102	70-022-0102	70-022-0102	70-022-0102	70-022-0202
29	End Pump Cover	70-020-0102	70-020-0102	70-020-0102	70-020-0102	70-020-0102
30	Filter Kit	70-054-0100	70-054-0100	70-054-0100	70-054-0100	70-054-0100
31	Lint Filter	70-054-0102	70-054-0102	70-054-0102	70-054-0102	70-054-0102
32	Output Filter	70-023-0100	70-023-0100	70-023-0100	70-023-0100	70-023-0100
33	End Filter Cover	70-020-0103	70-020-0103	70-020-0103	70-020-0103	70-020-0103
34	Plug/Pump Adj.Kit	70-055-0100	70-055-0100	70-055-0100	70-055-0100	70-055-0100
35	Ball	70-020-0104	70-020-0104	70-020-0104	70-020-0104	70-020-0104
36	Spring	70-020-0105	70-020-0105	70-020-0105	70-020-0105	70-020-0105
37	Adjust Screw	70-020-0106	70-020-0106	70-020-0106	70-020-0106	70-020-0106
38	Nipple	70-014-0104	70-014-0104	70-014-0104	70-014-0104	70-014-0104
39	Capacitor	70-020-0107	70-020-0107	70-020-0201	70-020-0201	70-020-0201
40	Fan Assembly	70-024-0100	70-024-0200	70-024-0300	70-024-0400	70-024-0400
41	Ignitor	70-037-0100	70-037-0200	70-037-0300	70-037-0400	70-037-0500
42	Right Side Cover	70-008-0100	70-008-0200	70-008-0300	70-008-0400	70-008-0400
43	Left Side Cover	70-009-0100	70-009-0100	70-009-0200	70-009-0300	70-009-0300
44	Fan Guard	70-016-0100	70-016-0100	70-016-0200	70-016-0200	70-016-0200
45	Main PCB Assembly	70-027-0100	70-027-0200	70-027-0300	70-027-0300	70-027-0300
46	Fuse	70-027-0101	70-027-0101	70-027-0101	70-027-0101	70-027-0101
47	Clip Nut	70-001-0105	70-001-0105	70-001-0105	70-001-0105	70-001-0105
48	Upper Shell	70-001-0101	70-001-0101	70-001-0201	70-001-0301	70-001-0301
49	Storage Box	-	-	70-053-0100	70-053-0100	70-053-0100
50	Bushing Gromment	70-017-0100	70-017-0100	70-017-0100	70-017-0100	70-017-0100
51	Socket Cover	70-030-0100	70-030-0100	70-030-0100	70-030-0100	70-030-0100
52	Air Pressure Gauge	70-025-0100	70-025-0100	70-025-0100	70-025-0100	70-025-0100
53	Cord Bushing	70-033-0100	70-033-0100	70-033-0200	70-033-0200	70-033-0200
54	Electric Outlet	70-029-0100	70-029-0100	70-029-0100	70-029-0100	70-029-0100
55	Handle	70-001-0103	70-001-0103	-	-	-
56	Front Handle	-	-	70-042-0100	70-042-0200	70-042-0200
57	Rear Handle	-	-	70-043-0100	70-043-0200	70-043-0200
58	Wheel Support Frame	-	-	70-041-0101	70-041-0201	70-041-0201
59	Wheel Axle	-	-	70-041-0103	70-041-0203	70-041-0203
60	Wheel	-	-	70-041-0102	70-041-0102	70-041-0102
61	Wheel Cap	-	-	70-041-0104	70-041-0104	70-041-0104
62	Hardware Kit	70-056-0100	70-056-0100	70-056-0200	70-056-0200	70-056-0200

Models 3VE48A, 3VE49A, 3VE50A and 3VE51A

Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
Heater ignites but Main PCB Assembly shuts heater off after a short period of time (Lamp is flickering)	<ol style="list-style-type: none"> 1. Wrong pump pressure 2. Dirty Air Output, Air Intake or Lint Filter 3. Dirty Fuel Filter 4. Dirt in Nozzle 5. Dirty Photocell Lens 6. Photocell Assembly not properly installed (not seeing flame) 7. Bad electrical connection between photocell and Main PCB Assembly 8. Bad Photocell 	<ol style="list-style-type: none"> 1. See Pump Pressure Adjustment, Page 12 2. See Air Output, Air Intake and Lint Filters, Page 8 3. See Fuel Filter, Pages 10 and 11 4. See Nozzle, Page 9 5. Clean Photocell Lens, Page 10 6. Make sure Photocell Boot is properly seated in bracket, Page 10 7. Check electrical components (See wiring diagrams, Page 13) 8. Replace Photocell, Page 10
E1		
Heater will not ignite, but motor runs for a short period of time (Lamp is flickering)	<ol style="list-style-type: none"> 1. No fuel in tank 2. Wrong pump pressure 3. Carbon deposits on Spark Plug and/or improper gap 4. Dirty Fuel Filter 5. Dirt in Nozzle 6. Water in Fuel Tank 7. Poor electrical connection between ignitor and Main PCB Assembly 8. Ignitor Wire not attached to Spark Plug 9. Defective Ignitor 	<ol style="list-style-type: none"> 1. Fill tank with kerosene 2. See Pump Pressure Adjustment, Page 12 3. See Spark Plug, Pages 9 and 10 4. See Fuel Filter, Pages 10 and 11 5. See Nozzle, Page 9 6. Flush Fuel Tank with clean kerosene 7. Check electrical connections (See wiring diagrams, Page 13) 8. Attach Ignitor Wire to Spark Plug. See Spark Plug, Pages 9 and 10 9. Replace Ignitor
E1		
Fan does not turn when heater is plugged in and Power Switch is in the ON position (Lamp is on or flickering)	<ol style="list-style-type: none"> 1. Thermostat setting too low 2. Poor electrical connection between Motor and Main PCB Assembly 	<ol style="list-style-type: none"> 1. Turn Thermostat Control Knob to a higher setting 2. Check electrical connections (See wiring diagrams, Page 13)
E1 or E2		
E3	Switch Failure	Replace Switch
Other Problems	<ol style="list-style-type: none"> 1. Poor Combustion <ul style="list-style-type: none"> - Flames extending beyond heater - Low heat out 2. Power failure <ul style="list-style-type: none"> - No power supply to heater 	<ol style="list-style-type: none"> 1. Poor Combustion <ul style="list-style-type: none"> - Decrease pump pressure - Increase pump pressure 2. Power failure <ul style="list-style-type: none"> - Check / Replace fuse

Dayton® Portable Oil-Fired Heaters

LIMITED WARRANTY

DAYTON ONE-YEAR LIMITED WARRANTY. Dayton® Portable Oil-Fired 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.

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

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