

# How to Install and Operate

**Coleman**

## OIL HEATERS

*"Listed by Underwriters' Laboratories, Inc."*

**Be Sure to Save  
These Directions for  
Future Reference**

SOLD BY

Dealer \_\_\_\_\_ Installation Date \_\_\_\_\_

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**The Coleman Company, Inc.**

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FACTORY NOS. 844A, 847A, 849A, 863D, 866, 867, 868

F1222 H

12-46

Printed in U. S. A.

## ***Installation Instructions***

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The following regulations are in conformance with the building code recommended by the National Board of Fire Underwriters which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.

"The heater shall not be placed less than 3 feet from any woodwork or wooden lath and plaster partition, unless woodwork or partition is properly protected by metal shields, in which case the distance shall not be less than 18 inches. Metal shields shall be so attached as to preserve air space behind them.

"The heater must be set upon an incombustible tray or stove board of sufficient size so that it will extend 12 inches back of and from sides of the oil tank.

"The smoke pipe shall not pass through any floor nor through a non-fireproof roof. Smoke pipes shall not be less than 18 inches below any wood lath and plaster or other combustible ceiling unless at least the upper half of such smoke pipe is properly protected by one inch or more of asbestos covering or its equivalent, or by a metal casing spaced two inches from the upper half of the pipe. If so protected, smoke pipes shall not be less than 9 inches from any wood lath and plaster construction, woodwork or other combustible material.

"Where a smoke pipe passes through a wood lath and plaster or other combustible partition or walls, a section of the wall or partition shall be removed and the smoke pipe so placed that no part of it shall be nearer than 6 inches to any remaining combustible part of the partition. The section of the partition or wall so removed shall be replaced by an approved fireproof material only, and an air space of at least 2 inches shall be preserved on all sides of the pipe."

## LOCATION OF HEATER

The proper size and location of the heater in your home is the first important step in satisfactory heating service.

Your Coleman Dealer, no doubt, figured the heat loss or the amount of heat required to heat your room or rooms comfortably under normal winter conditions. He then recommended the size and type of Coleman Oil Heater, the B. T. U.

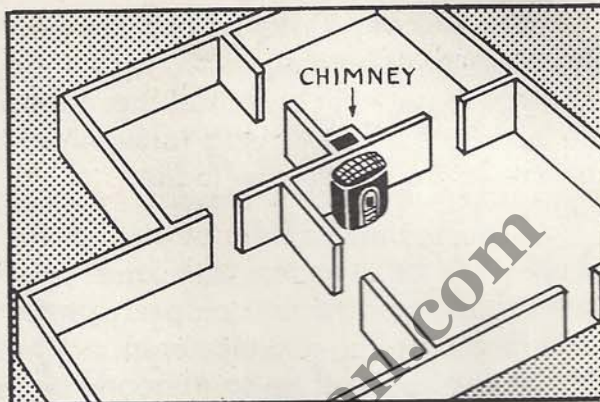


FIG. 1

or heat output of which exceeded the heat losses so as to insure sufficient heat for warmth, health and comfort.

The heater should be located, as nearly as possible, in the center of the space to be heated, so as to secure the best possible warm air circulation. See Fig. 1. This will insure a better distribution of warmth and cut down the excessive use of fuel. Whenever possible, the area in which the occupants spend most of their time should be favored.

Make as short a lateral vent pipe run as possible, even though you have to sacrifice locating the heater in the center of the space to be heated.

The back and sides of the heater should be at least three feet from wall or corner.

## LEVELING THE HEATER

The fuel control valve on your heater is a float regulated device that automatically meters the flow of fuel to the burner. To insure the proper flow of fuel the valve should be level. If it tips one way, the flow of fuel through it will

be increased, while if it tips the opposite way the flow of fuel will be decreased.

To be sure that the fuel control valve is level, place a small level on top of the valve name plate and block up under legs of heater, so that the valve is level in both directions. A level valve insures a full, constant, even flow of fuel for proper regulation and best heating service. See Fig. 2.

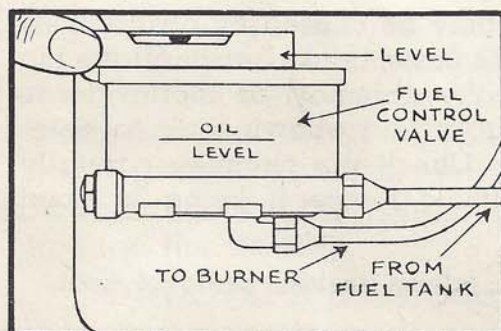


FIG. 2

The valves are adjusted at the factory and need no further adjustment except cleaning the strainer and fuel tubes leading to and from the valve.

**CAUTION**—If you use an outside fuel tank be sure to install a shutoff valve ahead of the Fuel Control Valve.

## CHIMNEY REQUIREMENTS

Most important factor in the successful operation of your heater is the chimney. If the draft is incorrect, difficulty will be experienced in the operation of the heater with a resulting waste of fuel.

The efficiency of your Coleman Oil Heater depends, to a great extent, upon proper chimney draft. The draft or pull up the chimney draws air for combustion through the holes in side of fire pot. There must be the correct

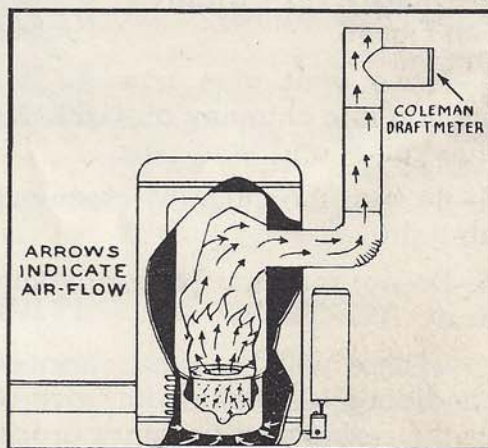


FIG. 3

amount of air mixed with the proper amount of fuel for correct combustion. See Fig. 3.

### DRAFT CONDITIONS

There are three poor draft conditions to cope with. Once they are understood, their correction will insure good operation and saving of fuel. The chimney should be checked for the following conditions: Insufficient Draft, Too Much Draft, Down Draft.

**INSUFFICIENT DRAFT** may be caused by obstructions in the chimney, such as bird's nests, bricks blown off the top and lodged crossways in the chimney or mortar loose between bricks forming cracks and allowing air to enter the chimney. See Fig. 4A. Check the chimney carefully against the following points to insure it being in good condition:

- 1—Remove all obstructions, clean inside walls of soot.
- 2—Repair all cracks and replace broken bricks in the chimney. See Fig. 4A.
- 3—If the chimney has offset, remove any pocket of soot at the point of offset, especially if coal-burning equipment has been used previously on chimney. See Fig. 4B.
- 4—Make vent pipe connection into chimney air-tight. If necessary, cement around flue collar and vent pipe.
- 5—Be sure the chimney clean-out door is closed and made air-tight.
- 6—Do not put vent pipe into chimney too far to restrict the draft.

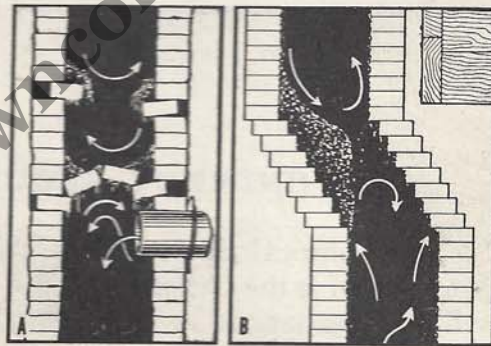


FIG. 4

There will be some variation of draft due to weather conditions. A decided improvement in draft will be noticed as the outside temperature drops with the advent of winter weather.

TOO MUCH DRAFT causes oil to be consumed faster than necessary, heat is pulled out the chimney. This results in waste of heat and fuel. These conditions are usually corrected by adjusting the draft meter.

Too much draft sometimes causes the heater to roar. It does not give off much heat, because most of the heat is pulled up the chimney and wasted. If the flame will not come out of burner and seems to boil in burner, too much draft is indicated.

It is the purpose of the DRAFT METER to prevent excessive draft, but there are rare instances where the draft is so strong that one DRAFT METER cannot completely handle it. In such cases, install an extra DRAFT METER. For vertical pipe use Coleman Draft Meter No. 848-688 and for horizontal pipe use No. 882-688.

DOWN DRAFTS also impair the efficiency of your heater and cause unnecessary loss of heat and fuel.



FIG. 5

Downdrafts usually occur when the chimney is lower than the gable of the house or nearby buildings, or when tall trees are close by. The wind blowing from the direction of the trees will eddy over the tops and cause a downdraft. To correct, extend the chimney 24

inches above the highest point of the house or place an Artis Vacuum Cap on top of chimney. See Fig. 5.

### CONNECTING HEATER TO CHIMNEY

Use six inch stove pipe when installing heater and avoid elbows except where absolutely necessary as they reduce the draft. The Draft Meter should be installed one length of pipe above the outlet on heater. See Fig. 3.

Due to the necessity of swinging back the lid to light and to clean the Model R327 Heater, an elbow cannot be connected directly to the flue outlet. Therefore, a section of 6 inch pipe, not less than 6 inches long, should be placed between the flue outlet of the heater and the elbow when the heater is connected to the chimney.

Use the shortest possible run of pipe from heater to flue; eight feet or less is recommended.

When two appliances are vented to the same chimney, the longest lateral vent pipe should enter at the top with a tooth pick connection as shown in Fig. 6.

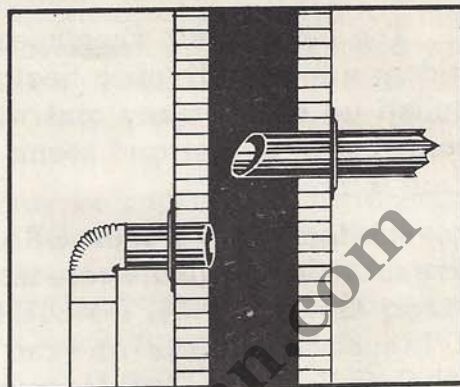


FIG. 6

All pipe should incline upward toward the chimney at least  $\frac{1}{2}$ " for each foot of pipe. This incline will improve the draft.

Caution should be exercised when inserting pipe into chimney so pipe will not pass beyond the inner wall of the chimney.

**NEVER USE A DAMPER OTHER THAN DRAFT METER FURNISHED WITH HEATER.**

### **ALWAYS USE THE RIGHT KIND OF FUEL**

Consult your dealer as to his recommendation of the most suitable oil available in your community.

Coleman Oil Burning Heaters are designed to operate on "STRAIGHT RUN" 38-40 gravity fuel oil – known as No. 1 distillate as recommended by the Vaporizing Oil Burner Industry.

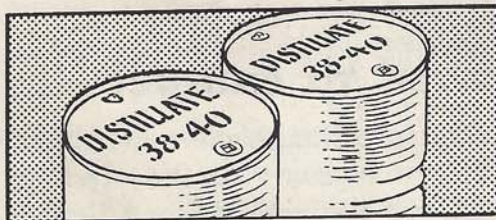


FIG. 7

The use of No. 2 distillate is not advisable. However, in some communities No. 2 distillate may be a clean, straight run fuel

which will burn without a great deal of difficulty, but the specifications for No. 2 distillate are so broad that they also include some fuels which will cause frequent cleaning of the burner.

Catalytic cracked fuels are not advisable for use in vaporizing burners. "Cracked" fuel oil will cause very frequent cleaning of the burner.

**NEVER USE GASOLINE, OIL CONTAINING GASOLINE, CRANK CASE OIL, OR NAPHTHA.**

Water in the fuel causes difficulty in burning and should be avoided.

### **HOW TO ADJUST COMPENSATOR**

The fuel control valve is equipped with a compensator. The compensator is a simple screw adjustment provided for the purpose of setting the oil control for heavy, medium or light oils. The factory setting will be found to give best results for most installations and no adjustments need to be made.

The fuel compensator is set at the factory for No. 1 fuel oil (38-40 gravity). If heavier oil, such as No. 2 is used, the compensator screw should be turned clockwise toward "H", to increase the flow of oil.

When light oil, such as Range oil or Kerosene is used, turn fuel compensator screw counter-clockwise so indicator points to "L". (See Fig. 8). Remember, Valves are set at Factory with compensator indicator pointing to "M", for No. 1 Fuel Oil, the recommended fuel for Coleman Heaters, for best results.

## **Operating Instructions**

Your heater is equipped with an approved FUEL CONTROL VALVE containing a built-in safety device which automatically shuts off and prevents the burner from overflowing in the event the metering valve is left open when there is no fire in the burner.

### **FILLING**

Fill the tank with clean water-free "Straight Run" 38-40 gravity oil.

## LIGHTING

Proper lighting is important in the operation of any heater. Incorrect lighting causes waste of oil and necessitates cleaning of the burner. Correct lighting procedure will insure a saving in fuel and less cleaning.

Following is the correct lighting procedure.

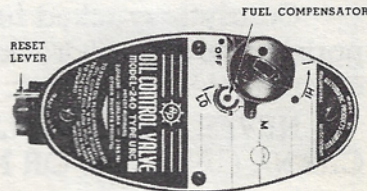


FIG. 8

Open the tank shut-off valve. Turn to left. This operation allows the oil to flow from the tank to the oil control valve. Press reset lever on oil control valve down. See Fig 8. It is not necessary to hold lever down. This operation allows the oil to flow into the oil control valve.

Turn indicator for oil control valve to position No. 1 on the dial. This operation allows oil to flow from oil control valve into the burner of the heater.

It perhaps will take a little time for the oil to flow from the tank through the fuel tubes and control valve, but as soon as oil appears on the bottom of the burner, ignite a small piece of cloth about 1 1/2 in. by 6 in. and drop into the oil at the bottom of the burner.

Allow heater to burn on Position No. 1 for at least five minutes so that it will become thoroughly heated, thus producing correct combustion. THIS IS IMPORTANT because if the burner is not hot, excess oil in the burner pot may cause the stove to roar and vibrate.

To increase flame to any desired point, turn indicator for oil control valve to position No. 2, then No. 3, No. 4, No. 5 and No. 6, on the dial, allowing sufficient time between each position for heater to become adjusted to increased flow of fuel to produce correct combustion.

When heater has been in use for a period of time on a low flame and it is desired to increase to a higher or highest flame obtainable, use the same procedure.

When heater has been in use for a period of time on a high flame and it is desired to decrease to a lower or lowest flame obtainable, this can be done in one operation.

## DRAFT METER

Assemble Draft Meter in a vertical position with the crimped edge up as indicated in diagram. Use one joint of stove pipe between the heater and Draft Meter.

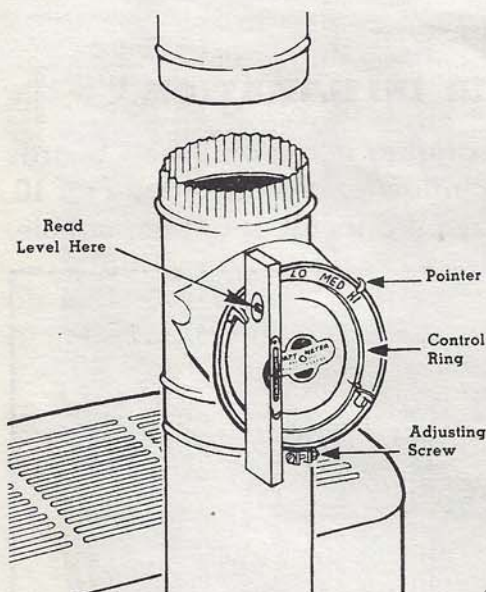


FIG. 9

For shipping purposes the Control Ring is held firmly in place with Adjusting Screw and with Control Ring set at "Hi" opposite Pointer. (See illustration.)

**IMPORTANT:** The Coleman Draft Meter is designed to maintain the correct draft. For efficient operation, the face of the draft meter must be perpendicular. After installation, it may be made perpendicular by placing a carpenter's level across the face, as illustrated.

The Draft Meter when set on "Hi" position takes care of practically all chimneys, when heater is burning on "Hi." However, in rare instances of exceptionally high draft, an additional Draft Meter may be needed to reduce the chimney draft.

**ADJUSTMENT** – Loosen Adjusting Screw so that Control Ring can be revolved.

For the most economical operation with the heater operating at "Lo" dial setting set the Draft Meter Pointer also at "Lo." As the oil flow is increased to 3 change the Draft Meter to "Med" and likewise change to "Hi" on the Draft Meter for "Hi" or 6 on the Oil Control Dial.

**IMPORTANT:** Each time oil adjustment is made, readjust Draft Meter to correspond to Oil Control Knob setting.

If smoke issues from the chimney when the Control Knob is set at No. 6 or "Hi" on the dial, it is an indication of insufficient chimney draft or Draft Meter is not set at "Hi."

# How to **SAVE OIL** and have a **BETTER HEATED HOME**

## **STOP COLD AIR INFILTRATION**

Loose-fitting windows, sagging floors and mop boards give access to an excessive inflow of cold air. See Fig. 10. This cold air infiltration makes it difficult, if not impossible, for any good oil heater to do a proper heating job, because the cold air comes in faster than the heater can warm it. This prevents the proper circulation of warm air. The result is cold floors, discomfort and an unhealthy condition.

An eighth-inch air leak around a door is about the equivalent of an opening four inches square, and you would, of course, close such an opening as this in your home.

Weather stripping should be used around doors and windows to prevent cold-air infiltration. Other repairs as needed on floors, around base boards and mop boards will help make it possible for your oil heater to do a better heating job. Such repairs will save heat, give better warm-air circulation, cut down on the amount of fuel used and save money.

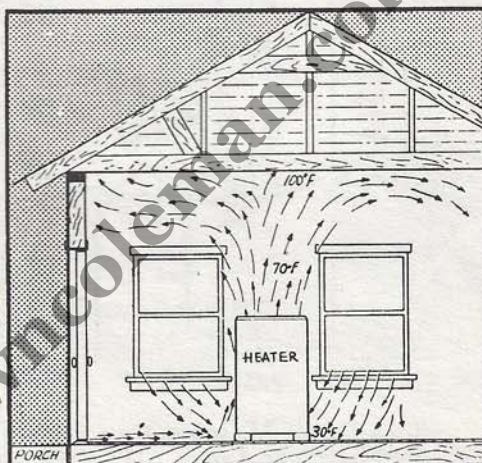


FIG. 10

## **KEEP YOUR HEATER CLEAN**

**CLEAN THE BURNER POT OCCASIONALLY** — at least two or three times during the season the heater is in use.

That is because there is a natural accumulation of soot and carbon in the fire pot. An excessive accumulation of carbon, which necessitates frequent cleaning, is caused by:

- (1) too much draft;
- (2) use of dirty or too heavy fuel;
- (3) not enough draft.



FIG. 11

With a wire brush dislodge the carbon from the walls of the fire pot so that the holes in the side of the fire pot are open and unobstructed. Scrape or scoop the carbon from the bottom of the fire pot with a small piece of tin or cardboard, or an old vacuum cleaner can easily be adapted, with a hose for taking up all the carbon you have freed.

If the stove pipe is partially filled with soot, clean it and also clean the chimney.

Soot acts as an insulator and causes a waste of heat up the chimney instead of passing into the home for your warmth and comfort. Keep the burner pot and stove pipe clean of soot. That will cut down heat waste and you will get the heat you need from a less amount of fuel and save money.

## CLEAN FEED TUBE AND STRAINER

Water that is permitted to accumulate in the tank and fuel line, forms a milk-like substance that often restricts the



FIG. 12

flow of oil. The fuel lines and filtering strainer in the fuel control valve should be cleaned at least once a year.

### HOW TO CLEAN STRAINER

**CAUTION:** Before removing strainer, be sure the oil supply to the valve is shut off at the tank and the fire extinguished.

Place a pan under the valve to catch oil and to prevent oil from staining the floor.

**1**—Unscrew strainer nut located at the bottom and end of valve. This plug has strainer attached to it.

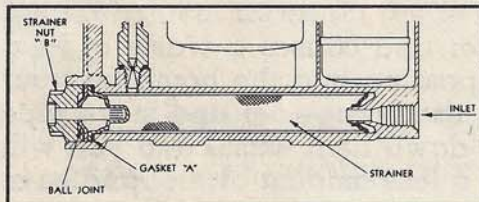


FIG. 13

**2**—Brush inside and outside of strainer with small, soft-wire brush.

**3**—Wash strainer in Kerosene or clean fuel oil.

**4**—Clean strainer chamber before replacing the strainer.

**5**—Be sure gasket on strainer plug is in good condition to prevent oil leaks.

### **CLEAN BEFORE STORING FOR SUMMER**

If water gets in the oil or fuel tank it combines with the sulphur in the oil and forms sulphuric acid. If allowed to stand, the acid eats pinholes in the tank and causes leaks.

The fuel tanks of Coleman Oil Heaters are easily removed for emptying and cleaning. See Fig. 14.

Go over the combustion chamber with a rag that has been dipped in fuel oil. This will prevent rust and add to the life of your heater. See Fig. 15.

Loosen and remove carbon from burner and combustion chamber. See instructions on pages 12 and 13.



FIG. 14

**EMPTY THE FUEL TANK**



FIG. 15 CLEAN THE COMBUSTION CHAMBER

### SERVICE HINTS

If the following conditions are present:

**A.**

- 1 — Deposits of Soft Carbon in Heater, or
- 2 — Lazy, Hazy Flame and No Heat, or
- 3 — Smoke and Soot In The House

INSUFFICIENT DRAFT — Causes the above difficulties, see page 6.

REASON — Obstruction in chimney restricting natural elimination of smoke and soot; loose mortar between bricks allowing outside air to counteract and hamper upward draft.

CORRECTION — Remove obstructions. Repair outside of chimney with fresh mortar. Make all vent pipe connections into chimney air tight. See page 6.

**B.**

- 1 — The Heater not Heating, or
- 2 — Excessive Oil Consumption and No Heat, or
- 3 — The Heater Roars and Rumbles, or
- 4 — The Heater Becomes Red Hot and There is No Heat Given Off, or
- 5 — No Change in the Size of Flame No Matter What Position the Valve Control Knob Is Set

TOO MUCH DRAFT — Causes the above difficulties, see page 7.

REASON — Very large chimney or too tall a chimney, or a strong wind.

CORRECTION — Installation of additional Coleman Draft Meter directly above the one already on the heater; set the Draft Meter on "Hi".

**C.**

- 1 — Gas Smell or Oil Odor, or
- 2 — The Heater "Puffs" and then "Roars", or
- 3 — Deposits of "Soft" Carbon in Heater

DOWN DRAFT — Causes the above difficulties, see page 7.

REASON — Chimney lower than some part of the house or surrounding objects, such as a tree or taller building in the vicinity.

CORRECTION — Install a chimney extension, extending the chimney at least 2 ft. above the highest point of the house; or, placing an Artis Vacuum Cap on chimney; or, using both.

ALWAYS Check lateral vent pipe, from heater to chimney, for:

- 1 — Proper installation, or 2 — Obstructions

A correctly installed Coleman Oil Heater, burning the recommended fuel, will have a clear butter color flame. However, when the valve is on "Lo" or No. 1 position, the proper low fire has a yellow flame laced with blue tongues.

### **SEE YOUR LOCAL COLEMAN HEATER DEALER**

If you have some difficulty in the use of your oil heater that you cannot correct by observing the points covered in this booklet, see your local Coleman Oil Heater Dealer. He will be glad to be of any service possible to help you correct the difficulty for a nominal charge. Most Coleman Heater Dealers can give you expert service and help, because of the special training and information they have received on the construction, operation and performance of oil heaters.

## Notice to User

1. USE ONLY "STRAIGHT RUN" 38-40 Gravity oil — known as No. 1 Distillate. NEVER use GASOLINE, OIL CONTAINING GASOLINE, CRANK CASE OIL, or NAPHTHA.
2. BE SURE Heater and Oil Control Valve are level.
3. Before pouring oil into tank when heater is not burning be sure Fuel Valves are closed. Close Tank Shut-off Valve, turn to RIGHT. PULL lever on Oil Control Valve to the LEFT with a slight UPWARD pressure and TURN indicator for Oil Control Valve to position "OFF".
4. When lighting BE SURE tank Shut-off Valve is open, turn to LEFT. PUSH lever on Oil Control Valve DOWN, and turn indicator for Oil Control Valve to position No. 1. After lighting allow heater to burn about five minutes to become thoroughly heated up, then turn indicator for Oil Control Valve to position No. 2, then No. 3, No. 4, No. 5, and No. 6, allowing sufficient time between each position for heater to become adjusted to increased flow of oil to produce correct combustion. Use same procedure when heater is in use on a low flame and it is desired to increase to a higher flame.
5. BE SURE Draft Meter is properly adjusted.
6. To shut off — turn indicator for Oil Control Valve to position "OFF", pull lever on Oil Control Valve to the LEFT with a slight UPWARD pressure and CLOSE tank Shut-off Valve, turn to RIGHT.
7. When the flame is out and the metal of the burner is hot or even warm, should any oil come in contact with this metal the Oil will vaporize forming a Gas. Under such conditions BE SURE valves are CLOSED preventing further flow of oil to the Burner. Allow sufficient time for accumulated gas to pass UP the chimney and for the burner to become COOL before attempting to inspect the heater with lighted match or open flame or relight the heater.
8. DO NOT light heater when burner is flooded with oil — drain oil by removing plug from Fuel Pipe at the rear of burner before lighting.
9. If an oil leak occurs at any point, shut heater off. Determine place and cause of leak. Repair, replace parts or service heater eliminating leak. NEVER attempt to do this while heater is burning.
10. Drain oil out of both tank and Oil Control Valve when heater is not in use for period of time or in storage. See page 15.
11. READ, STUDY, and FOLLOW printed instructions.

**Coleman**

[www.oldtowncoleman.com](http://www.oldtowncoleman.com)

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