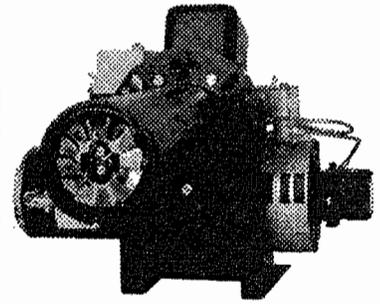




801 GLASGOW AVE.  
FORT WAYNE, IN 46803

# MODEL FH OIL BURNERS

Manual 21827-001  
Publication Date 12/28/2010 Revision 8



## **WARNING**

### **ELECTRIC SHOCK HAZARD**

HIGH VOLTAGES ARE PRESENT IN THIS EQUIPMENT. FOLLOW THESE RULES TO AVOID ELECTRIC SHOCK.

- ▲ Use only a properly grounded circuit. A ground fault interrupter is recommended.
- ▲ Do not spray water directly on burner.
- ▲ Turn off power before servicing.
- ▲ Read the owner's manual before using.



## **WARNING**

### **OVERHEATING HAZARD**

SHOULD OVERHEATING OCCUR:

- ▲ Shut off the manual oil valve to the appliance.
- ▲ Do not shut off the control switch to the pump or blower.

## **WARNING**

NEVER ATTEMPT TO USE GASOLINE AS A FUEL FOR THIS BURNER, AS IT IS MORE COMBUSTIBLE AND COULD RESULT IN A SERIOUS EXPLOSION.

# SPECIFICATIONS

## **FOR YOUR SAFETY**

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

## **FUELS**

Use No. 1 or No. 2 heating oil (ASTM D-396) only.

- \* NEVER burn garbage or refuse in the heating unit.
- \* NEVER try to ignite oil by tossing burning paper or other material into the heating unit
- \* NEVER burn waste or crankcase oil in the heating unit.

## **FIRING CAPACITIES - MODEL FH**

4.00 to 13.00 GALLONS PER HOUR  
560,000 TO 1,820,000 BTU/HR INPUT

## **DIMENSIONS (STANDARD)**

HEIGHT .....16"  
WIDTH .....22 1/2"  
DEPTH .....12"  
CENTER LINE  
OF TUBE TO FLOOR .....9 1/2"

## **FUEL UNIT**

Suntec

## **MOUNTING**

Adjustable Flange or Base Mount

## **ELECTRICAL**

Power Supply .....115V / 60HZ / 1 PH  
Motor .....3450 RPM, N.E.M.A. Flange, Manual Reset Overload Protection  
Ignition.....10,000V / 23MA secondary, Continuous Duty-Shielded Interrupted

## **INSTALLATION OF BURNER**

INSTALLATION OF THE BURNER MUST BE DONE BY A QUALIFIED INSTALLER IN ACCORDANCE WITH REGULATIONS OF THE NATIONAL FIRE PROTECTION STANDARD FOR OIL-BURNING EQUIPMENT, NFPA NO. 31, AND IN COMPLETE ACCORDANCE WITH ALL LOCAL CODES AND AUTHORITIES HAVING JURISDICTION.

A QUALIFIED INSTALLER IS THE PERSON WHO IS RESPONSIBLE FOR THE INSTALLATION AND ADJUSTMENT OF THE EQUIPMENT AND WHO IS LICENSED TO INSTALL OIL-BURNING EQUIPMENT IN ACCORDANCE WITH ALL CODES AND ORDINANCES.

**THESE INSTRUCTIONS SHOULD BE AFFIXED TO THE BURNER  
OR ADJACENT TO THE HEATING APPLIANCE.**

## **TO THE HOMEOWNER**

Since 1928, Wayne has supplied the Homeowners of the world with oil burners. You are obtaining a quality burner unsurpassed in engineering design and product development. It will provide you with many years of efficient, trouble-free operation, if properly installed and serviced. Please read this manual carefully.

Wayne warrants its burners specifically to those who have purchased it for resale, including your dealer. If, in any case, you have a problem with your burner, or its installation, you should contact your dealer for assistance.

## **APPROVALS**

This burner complies with ANSI/UL Standard 296 and is for use with No. 1 or No. 2 fuel oil and is U/L listed for use with Group I or Group II primary safety controls. State and local approvals are shown on burner rating label. All burners should be installed in accordance with the National Fire Protection Association, and in complete accordance with all local codes and authorities having jurisdiction. Regulation of these authorities take precedent over the general instructions provided in this manual.

## **GENERAL INFORMATION**

When installing the appliance and/or burner be sure to provide adequate space for easy service and maintenance. Prior to installation of the oil burner, the heating system should be carefully inspected for defects and cleanliness. The flue passages and heat absorbing surfaces must be clean to assure maximum heat transfer, soot acts as an insulator retarding the transfer of heat. The combustion chamber, flue gas passages, and all doors and openings must be sealed tight to eliminate air infiltration. Excess air, decreases CO<sub>2</sub> levels and thus lowers efficiency. Inspect the flue and chimney for leaks and obstructions, be sure the chimney is of adequate size and height. Install a draft regulator the same size as the flue pipe (see paragraph under Draft Regulators).

## **COMBUSTION CHAMBER**

The purpose of a combustion chamber is to maintain a high flame temperature, by reflecting the heat back into the flame. A high temperature assures greater combustion efficiency and lower stack losses. An insulating refractory or a Fiber Fax type chamber can be used with this burner. It is important to select and install, if necessary, the correct size chamber on a conversion job. On the Flamelock conversion burners the atomized oil burns just off the Flamelock. On all oil burners the atomized oil must not touch the sides or bottom of chamber, or smoke will result. To eliminate the smoke, excess air will be required, resulting in high stack temperature and lower combustion efficiency. Install burner so the face of air cone of burner is set 1/4" behind the inside front wall of the chamber (See Figure 3, page 6). Caution on installing Flamelock burners in stainless steel chambers should be taken, because of the higher temperature levels produced by high performance flame retention burners. The temperature may exceed the temperature ratings of the stainless steel chamber and can result in chamber burn outs. When you are replacing a standard burner with a flame retention burner, take the following precautions: (1) use pliable Ceramic Liner to line the inside of chamber, (2) adjust burner (See column under "Final Adjustments").

## **FUEL PUMPS AND OIL LINES**

The Model FH oil burner is provided with a two stage 3450 RPM fuel pumps with the by-pass plug removed for a single pipe installation. This is satisfactory where the fuel supply is on the same level, or above burner, permitting gravity flow of oil. Never exceed 3 PSI pressure to the suction side of fuel pump. A pressure over 3 PSI may cause damage to the shaft seal and allow it to leak oil. When it is necessary to lift the oil to the burner, a return line should be run between fuel pump and oil supply. (If lift exceeds 10 feet, a two stage fuel pump must be used with a return line.) When a two line installation is made, the by-pass plug must be installed. This is supplied with the burner attached to fuel pump, along with an information pump data sheet in a plastic bag. When oil lines are continuous runs of heavy wall copper tubing is recommended. Be sure that all connections are absolutely air-tight. Check all connections and joints. Flared fittings are recommended. Do not use compression fittings. Avoid running tubing against the appliance and across ceiling or floor joist; if possible install under floor. Avoid using fittings in inaccessible locations. If possible, avoid running oil lines overhead. Specific information on piping, connections, lift capabilities and tank installations is provided in the instruction sheet of the fuel pump manufacturer. Use an oil filter of adequate size for all installations. Install inside the building between the tank shutoff valve and the burner. Install shutoff valve in oil supply line in accessible locations, one close to the tank, another close to the oil burner but ahead of the filter. NOTE: If the maximum burner firing rate exceeds the integral fuel pump strainer rating, an external U/L listed filter/strainer must be placed in the fuel line between the fuel tank and burner fuel pump.

## **TANKS AND PIPING**

Local codes and regulations must be followed regarding tank and burner installation. Check existing tanks for water and sludge accumulation, clean if necessary. Also clean or replace existing piping.

## **WIRING**

All wiring must comply with the National Electric Code and local ordinances. Refer to diagram supplied with burner or controls, making sure the burner and controls are wired correctly and that the line switch is properly connected to a 20 amp fused service.

## **AIR SUPPLY FOR COMBUSTION**

A burner shall not be installed in an area where facilities for normal air circulation or infiltration are so limited as to interfere with ready obtainment of all air necessary for proper combustion and venting. When the heating appliance is installed in a confined space, two permanent openings shall be provided. One near the top of the enclosure and one near the bottom. Each opening shall have a free area of not less than one square inch per 1000 BTU per hour (140 square inch per gph) of the total input rating of all the appliances in the enclosure. When the house is of unusually tight construction, has a kitchen ventilating system, exhaust fans, clothes dryer or vented fireplaces, it is recommended that combustion air be supplied through two permanent openings. The openings shall communicate directly, or by means of ducts, with outdoors or to such spaces (attic or crawl) that freely communicate with outdoors. For additional information, refer to ANSI standard NFPA 31.

## **CHIMNEY**

Follow the recommendations of the appliance manufacturer. A chimney shall be capable of producing a draft as required by the appliance and as recommended by the appliance manufacturer. It must be properly designed, of adequate size, and should be above the surrounding objects, tile-lined, with no obstructions, and be in good state of repair. The smoke pipe should set flush with the inside of tile and be cemented in place. All cleanout doors should be sealed. A draft inducer may be used to overcome inadequate draft conditions. If a draft inducer is used, provisions must be made to insure the burner does not operate if the draft inducer fails.

## **DRAFT REGULATORS**

A draft regulator shall be provided unless otherwise specified by the appliance manufacturer. The draft regulator shall be installed in accordance with local codes and regulations or in the absence of local codes, with the American National Standard NFPA31. Refer to appliance manufacturer's instructions for recommended overfire and stack draft.

## **NOZZLE AND AIR CONE SELECTION**

The FH oil burner typically fires well with a solid or semi-solid nozzle with a spray angle of 80, 70 or 60 degrees. In most upgrading or conversion installations, the use of an 80 degree solid nozzle is the best way to start with. Always use the proper nozzle size, spray cone type and spray angle the appliance manufacturer recommends. Should this information not be available, your own good judgement will prevail. Under no circumstances attempt to fire the FH oil burner under its 4.00 gph minimum or over its 13.00 gph maximum input ratings.

FH oil burners are built with a 4.00 to 11.00 GPH H-1 rating as standard. To convert to the 11.00 to 13.00 GPH H-2 rating:

1. Change the 4-3/16" I.D. cast iron cone (P/N 13127) installed to the 4-3/8" I.D. cast iron air cone (P/N 13128) supplied.
2. To change air cones, remove the phillips head counter sunk 8-32 screw securing the existing air cone in the air tube end, remove the air cone.
3. Install the larger air cone.

Once the proper cast air cone has been installed the nozzles can be installed from the air tube end into the Flamelock/nozzle adaptor. Thread each nozzle into the adaptor finger tight then tighten securely with a nozzle wrench. CAUTION: DO NOT OVER TIGHTEN. At this time position the Flamelock flush with the cast iron air cone face. To position the Flamelock gun assembly forward, loosen the gun assembly 3/8-24 hex lock nut and 5/16" hex slotted slot cover screw. Once in the the required position, retighten the hex lock nut and slot cover screw.

To remove the Flamelock gun assembly once the burner has been installed on the appliance, remove the copper oil line where it attaches with the gun assembly oil line adaptor fitting and remove the 9/16" hex gun assembly locknut. Next, remove the ignition transformer hold down the clip and swing open the ignition transformer to the left. Now grasp the rear of the gun assembly where the oil line fitting adaptor exits thru the housing and pull the oil line adaptor to the right out of the housing slot and slot cover. Gently lift, do not force, the rear of the gun assembly, rotating the oil line fitting adaptor up at 45 degrees pulling the entire gun assembly out of the housing opening.

Remove and install nozzles finger tight in the regular or Flamelock™ nozzle adaptor, then securely tighten nozzles with a nozzle wrench. Check electrodes for proper position (see Figure 1, page 6). Reinstall the Flamelock gun assembly into the burner by repeating the above steps for removal in reverse order. Once reinstalled, securely tighten the 3/8-24 hex gun assembly lock nut and the 7/16" hex oil line flare nut to the oil line fitting adaptor.

CAUTION: Close the ignition transformer and assure there is positive spring contact with the brass buss bars. Take care not to pinch the ignition transformer lead wires between the housing and cover plate. Reinstall the ignition transformer hold down clip and tighten the clip screw securely.



## **CAUTION**

Care should be taken when closing the transformer not to pinch the lead wires between the housing and cover plate.

# **STARTING PROCEDURE**

## **STARTING BURNER**

Be sure main switch is in "OFF" position, thermostat is substantially above room temperature, the oil tank is filled, all valves are open, and controls set for operation. Adjust air supply on burner by loosening screw on interlocking air bands, and open partially. Open the inspection door and turn on switch. Prime pump according to the pump manufacturer's recommendations and check pressure. If safety lockout occurs, reset after one or two minutes. Do not run fuel unit dry for more than five minutes or damage to the pump may result. When flame is established make a temporary air adjustment for a clean combustion flame, reduce air supply until flame tips appear slightly smoky, then readjust so flame tips are clean looking. Leave inspection door open until chamber is dry. When normal temperature are reached, close inspection door. (See paragraph under "Draft Regulators").

## **FINAL ADJUSTMENTS**

At this point a final adjustment should be made by the use of a COMBUSTION TEST KIT. After operating ten minutes to warm up unit, a smoke tester should be used to take a smoke reading. Smoke test should read no greater than #1 (Shell Bacarach scale), and less than a #1 smoke is desired. At times, a new heating unit requires more time than this to burn clean due to the oil film on the new heater unit surfaces. Recheck draft and take a CO<sub>2</sub> reading over the fire and in the stack. If a large differential between CO<sub>2</sub> readings is noted, air leakage is the most common cause. CO<sub>2</sub> readings must be taken ahead of draft control, if used. The CO<sub>2</sub> measured in the stack should be at least 10% for oil rates over 1.00GPH. Units should be started and stopped several times to assure good operation. Open inspection door, turn off valve, and check out safety timing of combustion control. Check operation of limit controls and thermostat. Check for oil leaks. NOTE: ALL NEW INSTALLATIONS SHOULD BE REINSPECTED AFTER ONE OR TWO WEEKS OF NORMAL OPERATION.

## **SETTING COMBUSTION EFFICIENCY**

(A) Selecting firing rate desired. (B) Install proper nozzles for appliance (see paragraph under "Nozzle and Air Cone Selection"). (C) Fire burner, adjust interlocking air bands for yellow tips above combustion chamber. (D) Record CO<sub>2</sub> and smoke. If CO<sub>2</sub> is low, adjust gun setting back 1/32" and repeat CO<sub>2</sub> and smoke test. Continue this adjustment until desired CO<sub>2</sub> and smoke is obtained. Record stack temperature. (E) Check lighting with cold and hot chamber. (F) Lock all adjustment screws.

## **FINAL CHECKS**

Be sure all screws are locked, and the controls on heating unit are adjusted in accordance with the heater and control manufacturer's instruction sheets.

## **MAINTENANCE**

**OILING MOTOR** – Proper lubrication of the motor will prolong its service life. Oil sleeve bearing motors with 6 drops of SAE 20 oil once a year. DO NOT OVER OIL. Ball-bearing motors do not require oiling under normal service conditions. The bearing type is printed on the motor nameplate.

**FILTER** – The oil filter cartridge should be replaced once a year so the fuel oil will not become contaminated and plug up fuel pump and nozzle of oil burner.

**NOZZLES** – The nozzles should be changed at least once a year before the start-up of the heating season. Replace with proper nozzles.

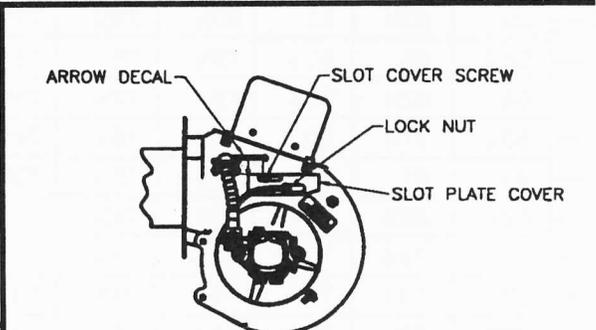
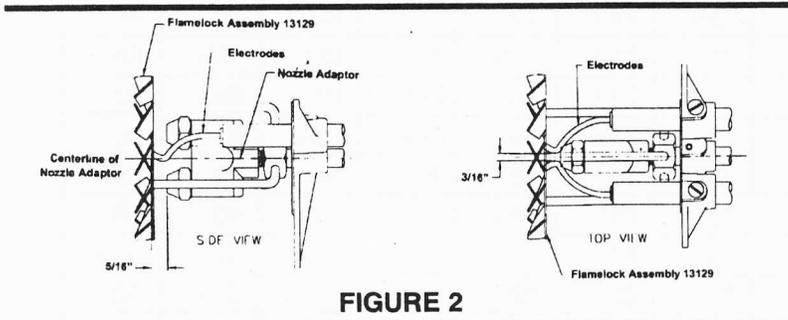
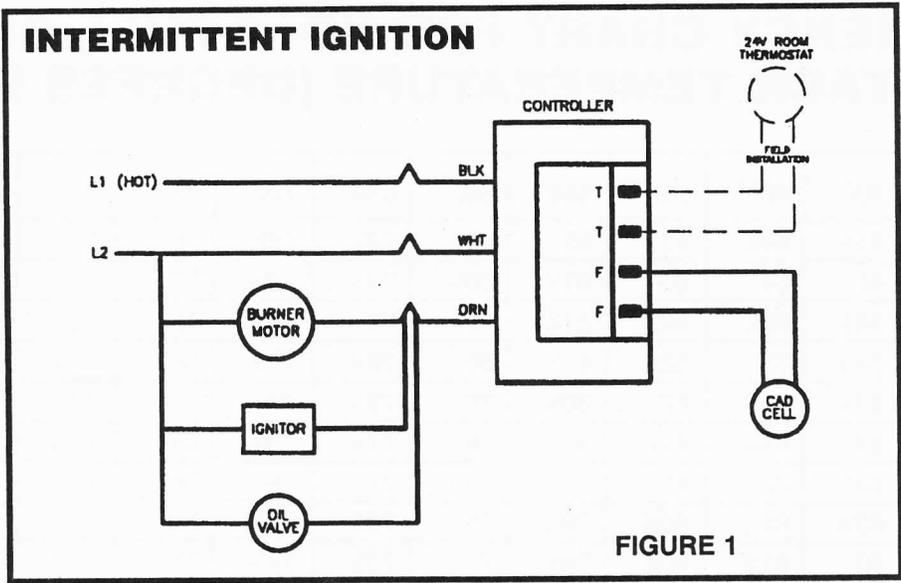
**COMPONENTS** – If for any reason any of the burner parts have to be replaced, always use parts recommended by the manufacturer. Specify part numbers and description when ordering. (IN ALL COMMUNICATIONS STATE BURNER MODEL, SPECIFICATION NUMBER, SERIAL NUMBERS AND APPLIANCE MANUFACTURERS AND APPLIANCE MODEL DESIGNATION).

**ELECTRODE SETTINGS** – This is very important for reliable ignition of the oil; check these once a year in accordance with the instructions provided in this manual. Replace electrodes if worn excessively or if porcelain insulator is oil soaked or cracked.

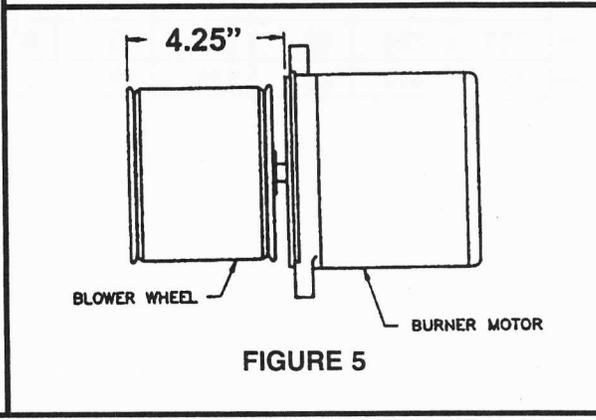
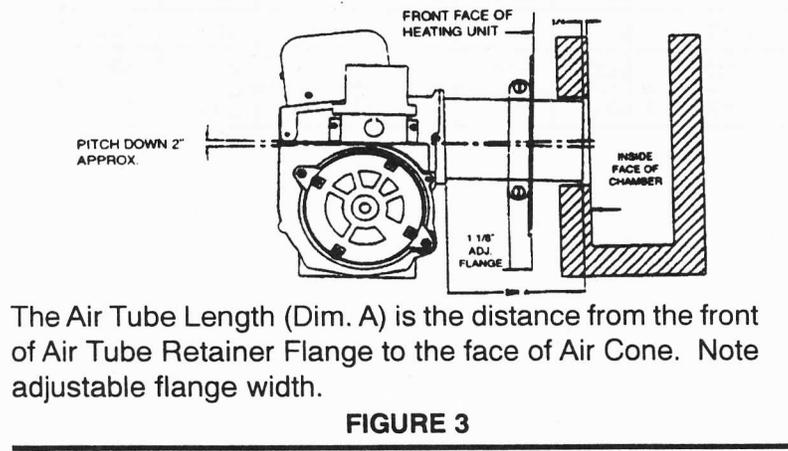
**FAN & BLOWER HOUSING** – This must be kept clean, free of dirt and lint; open transformer to check fan blades from above. CAUTION: Be sure the electric power is off on burner when the transformer is opened up for this inspection.

# EFFICIENCY CHART FOR NO. 2 FUEL OIL NET STACK TEMPERATURE (DEGREES F°)

	300°	350°	400°	450°	500°	550°	600°	650°	700°	750°	800°	850°	900°
15	87½	86½	85¼	84¼	83¼	82	81	79¾	78¾	77½	76½	75½	74¼
	87½	86¼	85	84	83	81¾	80¾	79¾	78½	77¼	76	75	73¾
14	87¼	86	84¾	82¾	82¾	81½	80¼	79	78	76¾	75½	74½	73
	87	85¾	84½	83½	82½	81¼	80	78¾	77½	76¼	75¼	74	72¾
13	86¾	85½	84¼	83¼	82	80¾	79½	78¾	77	75¾	74½	73½	71¾
	86½	85¼	84	83¼	81½	80¾	79	77¾	76½	75¼	73¾	72¾	71
12	86¼	85	83¾	82½	81¼	79¾	78½	77¼	75¾	74½	73	71½	70¼
	86	84¾	83½	82	80¾	79¾	78	76½	75¼	73¾	72¼	70¾	69½
11	85¾	84½	83	81½	80¾	78¾	77¼	75¾	74½	73	71½	70	68½
	85½	84	82½	81	79½	78	76½	75	73¾	72	70½	69	67½
10	85	83½	82	80½	78¾	77¼	75¾	74¼	72¾	71	69½	68	66¼
	84½	83	81½	79¾	78	76½	75	73¾	71¾	70	68¾	66¾	65
9	84	82¼	80¾	79	77¼	75¾	74	72¼	70¾	68¾	67	65¼	63½
	83½	81¾	80	78¾	76½	74¾	73	71¼	69½	67½	65½	63¾	62
8	83	81	79¾	77½	75½	73¾	71¾	70	68	66	64	62	60
	82¼	80¾	78½	76½	74¾	72½	70¾	68½	66½	64¼	62¼	60	58
7	81½	79½	77¼	75¼	73¾	71	69	67	64¾	62½	60¾	57¾	55½
	80¾	78½	76¼	74	71¾	69½	67¼	65	62¾	60¾	57¾	55½	53
6	79¾	77¼	75	72½	70	67¾	65¼	62¾	60¾	57½	55½	52½	50
	78½	76	73½	71	68	65½	63	60¾	57½	54½	51¾	49	46½
5	77¼	74½	71¾	69	65¾	63	60	57	54	51	48	45½	42½
	75½	72½	69	66¼	63	60	56¾	53½	50¾	47	43½	40¾	36¾
4	73¼	69¾	66¼	62¾	59¾	55¾	52	48½	45	41¼	37½	33¾	30



### TO DETERMINE THE AIR TUBE LENGTH



## STANDARD MODEL FH OIL BURNER PARTS LIST

DESCRIPTION	PART NO.
MOTOR, 1/2HP - 120V/60HZ, 3450RPM	21819-002
MOTOR MOUNTING SCREWS	12701
FAN	21702-002
COUPLING	13142-002
PUMP-SUNTEC B2TB8261	101201-001
PUMP MOUNTING SCREWS	12701
VALVE-HONEYWELL V4046A1009	13135
VALVE MOUNTING NIPPLE	13384
VALVE MOUNTING NIPPLE LOCKNUT	12910
PUMP AND VALVE ELBOW	12091
OIL LINE ASSEMBLY-9 3/4"	13153
TRANSFORMER KIT (120V/60HZ)	23101-FH
TRANSFORMER HINGE SCREW	13036
TRANSFORMER COVER SCREW	16156
CONTROL-15 SECOND	101266-001
CAD CELL-HONEYWELL C554A1216	13666
HOUSING ASSEMBLY (INCL J-BOX)	31141-001
J-BOX ONLY	20369
J-BOX CHASE NIPPLE	12909
J-BOX LOCKNUT	12901
J-BOX ATTACHMENT SCREW	16156
WIRE CLIPS	12651
WIRE CLIP SCREWS	16156
WIRE CLIP NUTS	100601-001
OIL LINE SLOT COVER	14995
OIL LINE SLOT COVER SCREW	12697
OIL LINE LOCKNUT	12342
AIR BAND-INNER	2669-002

DESCRIPTION	PART NO.
AIR BAND-OUTER	2668-002
AIR BAND SCREW	12701
AIR TUBE/FLANGE-STD 10" BURNER	31143-012
AIR TUBE/FLANGE-STD 15" BURNER	31145-012
AIR CONE-4 3/8" ID (4.00-11.00GPH)	14203
AIR CONE- 4 13/16" ID (OVER 11 GPH)	13127
AIR CONE MOUNTING SCREW	12699
GUN ASSEMBLY-STD 10" UNIT	30728-002
GUN ASSEMBLY-STD 15" UNIT	30728-008
NOZZLES (AS SPECIFIED/REQUIRED)	VARIES
DUAL NOZZLE ADAPTER	12573
FLAMELOCK ASSEMBLY	13129
TRIPOD ELECTRODE SUPPORT	12596
ELECTRODE SUPPORT BUSHINGS	12408
ELECTRODE SUPPORT SET SCREWS	12693
ELECTRODE LOCKING SCREWS	12694
DISC-2 1/2" SOLID	13409
DISC MOUNTING SCREW	100603-028
CAD CELL MOUNTING BRACKET	13078
ELECTRODE STEM-RIGHT HAND	13149
ELECTRODE STEM-LEFT HAND	13150
ELECTRODE INSULATOR	100005-002
ELECTRODE ASSEMBLY NUTS	13110
BUSS BAR	100004-036
BUSS BAR SUPPORT	13276-002
ADJUSTABLE FLANGE W/GASKET	20471-SER
FLANGE GASKET ONLY	20529
BASE ASSEMBLY	20095



## WAYNE COMBUSTION SYSTEMS

801 GLASGOW AVE.  
FORT WAYNE, IN 48803

# LIMITED WARRANTIES FOR OIL AND GAS BURNERS, MADE BY WAYNE AND USED IN RESIDENTIAL INSTALLATIONS

WAYNE COMBUSTION SYSTEMS ("WAYNE") warrants to those who purchase its **Oil Burner Models** for resale or for incorporation into a product of resale, that its burner is free from defects in material and workmanship under normal use and service for thirty-six (36) months from the date of manufacture. **ALL GAS BURNERS** manufactured by "WAYNE" will be similarly warranted for eighteen(18) months from date of manufacture except where original manufacture offers a greater warranty. (Reference #6 below) THESE LIMITED WARRANTIES DO NOT APPLY UNLESS THE BURNER COVERED BY IT IS **PROPERLY INSTALLED BY A QUALIFIED, COMPETENT TECHNICIAN**, WHO IS LICENSED WHERE STATE AND/OR LOCAL CODES PREVAIL, AND **WHO IS EXPERIENCED IN MAKING SUCH INSTALLATIONS**, IN ACCORDANCE WITH NFPA #31 OF THE NATIONAL FIRE PROTECTION ASSOCIATION AND IN ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES.

Any **IN-WARRANTY** burner component which is defective in material or workmanship will be either repaired or replaced as follows:

1. Fuel units, motors, transformers, gas valves, and controls should be returned to an authorized service station or distributor of WAYNE for determination of applicability of this LIMITED WARRANTY as to either repair or replacement, where said service station or distributor is reasonably available in the customer's locality. The manufacturers of burner components regularly publish and distribute listings showing the locations of their network of service stations. Where such local service is NOT available for the burner components described above or other burner parts are involved, these items should be returned, freight prepaid, to WAYNE Service Department, 801 Glasgow Ave, Fort Wayne, Indiana 46803.
2. Burners and/or component(s) determined to be covered under this LIMITED WARRANTY by WAYNE shall be repaired or replaced at WAYNE's sole option.
3. WAYNE is not responsible for any labor cost for the removal and replacement of said burner or burner components and equipment associated therewith.
4. A burner so repaired will then carry the LIMITED WARRANTY equal to the unexpired portion of the original burner LIMITED WARRANTY.
5. If inspection by WAYNE does **NOT** disclose any defect covered by this LIMITED WARRANTY, the burner or burner component(s) will be either repaired or replaced at the expense of the customer and WAYNE's regular charges will apply.
6. If the original manufacturer of a burner component offers a warranty greater than either of our LIMITED WARRANTIES described above, then this portion will be added to our LIMITED WARRANTY.

This LIMITED WARRANTY does **NOT** cover products which have been damaged as the result of accident, abuse, misuse, neglect, improper installations, improper maintenance or failure to operate in accordance with WAYNE's written instructions.

These LIMITED WARRANTIES do not extend to anyone except the first purchaser at retail and only when the burner is in the original installation site.

**IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE SHALL BE LIMITED TO THE DURATION OF THE LIMITED EXPRESS WARRANTIES CONTAINED HEREIN. WAYNE EXPRESSLY DISCLAIMS AND EXCLUDES ANY LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY NATURE FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY.**

Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you. Also, some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. WAYNE neither assumes or authorizes any person to assume for WAYNE any other liability or obligation in connection with the sale of these products. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



# OIL BURNER CERTIFICATE

## AS REQUIRED BY COMMERCIAL STANDARD CS75-56

The \_\_\_\_\_ Oil Burner Model No. \_\_\_\_\_, Serial No. \_\_\_\_\_, installed at \_\_\_\_\_  
(Make) (Address of Installation)

has a label evidencing compliance with commercial Standard CS75-56, and has been installed in accordance with the instructions in the manufacturer's installation manual and in conformity with local regulations, codes, and ordinances.

The boiler ( ), furnace ( ), is a \_\_\_\_\_ No. \_\_\_\_\_, and the heating load consists of:

1. \_\_\_\_\_ Btu, or \_\_\_\_\_ square feet steam ( ), hot water ( ), radiation; and
2. \_\_\_\_\_ Btu, or \_\_\_\_\_ square feet of equivalent steam ( ), hot water ( ), radiation in domestic hot water load; or
3. \_\_\_\_\_ Btu, or \_\_\_\_\_ square inches of cross-sectional area of warm air supply pipes measured at the furnace take off; or
4. \_\_\_\_\_ Btu, or \_\_\_\_\_ square feet of equivalent steam ( ), hot water ( ), radiation in the following special load:

All necessary permits have been secured, and the installation has been tested in accordance with the test procedure of Commercial Standard CS75-56 and the following reading taken:

CO	Over Fire _____		
	At Breaching _____	Stack Temperatures at breeching _____ °F	
Draft	Over Fire _____	Firing Rating _____	Gals/hr.
	At Breaching _____		

All controls and limiting devices have been checked for proper operation \_\_\_\_\_

Fuel used, Grade No. \_\_\_\_\_ of Commercial Standard CS12-48. Field service equipment smoke scale reading \_\_\_\_\_

The above test results are certified to be true: \_\_\_\_\_  
(Name of Company making installation)

For Service Call:

(Name)	Per _____ (Signature)
(Address)	(Address)
(Telephone)	(Telephone)

### DIRECTIONS FOR THE OPERATION AND CARE OF OIL BURNER

**Read Instructions Carefully and Hang This Card Near Burner for Future Reference**

**(A) TO START BURNER:**

1. Check for oil in the storage tank.
2. Fuses in the main switch must be good.
3. Have oil burner switch open.
4. Set room thermostat about 10 degrees higher than room temperature to make sure the thermostat contacts are made. Limit control must be set high enough to make contact also.
5. Oil valve at the tank should be open and the check valve in return line properly installed so oil can return to tank.
6. Be sure nozzle of proper size for heater is in the adapter and tightly screwed down, and that the electrodes are properly spaced (See Manual). With heating plant door open, close the burner switch; and if wiring is properly done and all controls properly installed and adjusted, the burner should start. If not, check primary relay first to be sure it is properly set; and if burner does not start, recheck wiring and all controls thoroughly.
7. If burner is installed with a single oil line, the fuel unit will have to be purged of the entrapped air in the oil lines and fuel unit before the oil will flow to the nozzle (See fuel unit instruction sheet for this operation). If a return line is used, purging will not be necessary, although this will speed the starting of the burner if done. If this is done, the pump should pick up its oil in less than a minute (which is the setting for the lockout switch in the primary control). If ignition does not take place during this time, check the nozzle and electrodes.

**STARTING BURNER AFTER IGNITION FAILURE.**

1. Do not attempt to restart burner when excess oil has accumulated, when heating unit is full of vapors, or when the combustion chamber is very hot.
2. Press reset button on primary control and burner should start. Do not attempt this more than twice. If burner fails to operate call serviceman.

**(B) FUEL OIL SPECIFICATIONS:**

1. This burner is approved for oil not heavier than No. 2. The Commercial standards for this oil are: Flash 110° minimum or legal; Maximum 230°F; Pour point 20°F; Water and sediment not more than 0.1%; Distillation temperature 600°F minimum and 675°F maximum at 90% of recovery. Viscosity at 100°F Saybolt Universal of 40 seconds maximum.

**CAUTION**

1. Check the gauge in oil storage tank periodically. Keep tank filled.
2. Don't attempt to burn garbage or reuse in your heating unit.
3. Don't fill storage tank while burner is operating.
4. Don't start burner if there is oil or vapor in the hating unit.
5. Don't attempt to burn crankcase drainings or crude oil.

**6. DON'T TAMPER WITH BURNER OR CONTROLS - CALL YOUR SERVICEMAN. DO NOT USE GASOLINE, CRANKCASE OIL, OR ANY OIL CONTAINING GASOLINE.**

**(C) LUBRICATION:**

1. The two oil cups on the oil burner motor should be lubricated every three months with a few drops of good grade light motor oil, No. 10 or 20 S.A.E.

**(D) AT THE END OF THE HEATING SEASON:**

1. Shut off electric current to burner at oil burner switch.
2. If oil strainer has not been cleaned recently, it should be removed and cleaned (consult instructions card furnished with fuel unit).
3. Oil storage tank should be kept filled to prevent water vapor from collecting. It is suggested the valve in the suction line be closed and oil burner switch opened. Oil storage tank should be cleaned every 2 or 3 years to remove any sediment or water that has collected in the tank. Your Fuel Oil Dealer has the equipment to do this.

**(E). AT THE START OF THE HEATING SEASON:**

1. It is advisable to have the Dealer inspect and service your burner for the coming heating season.
2. Heating plant, smoke pipe and chimney should be cleaned and checked for repairs.
3. Lubricate burner as directed under "C" above.
4. It is advisable to have the entire electrical system inspected before putting the burner into operation after it has been standing idle for the summer months. This should include primary relay, limit control, thermostat (clean dust from contact points), and check the electrodes for carbon and cracks in insulators, and corrosion on all terminals of the electrodes and transformer.

**(F) EMERGENCY STOPS:**

1. CUT OFF ALL CURRENT TO THE BURNER BY MOVING LEVER ON THE OIL BURNER ELECTRIC SWITCH TO THE "OFF" POSITION.

DEALER

Burner Serial No. \_\_\_\_\_

Day Phone \_\_\_\_\_

Night Phone \_\_\_\_\_

Date Installed \_\_\_\_\_

**BE SURE TO GIVE US SERIAL NUMBER OF BURNER WHEN ORDERING REPAIR PARTS**