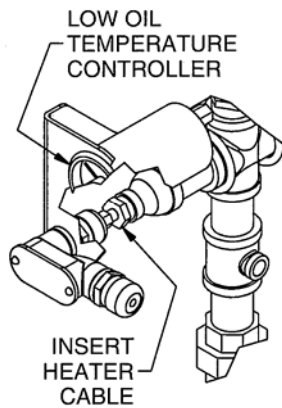
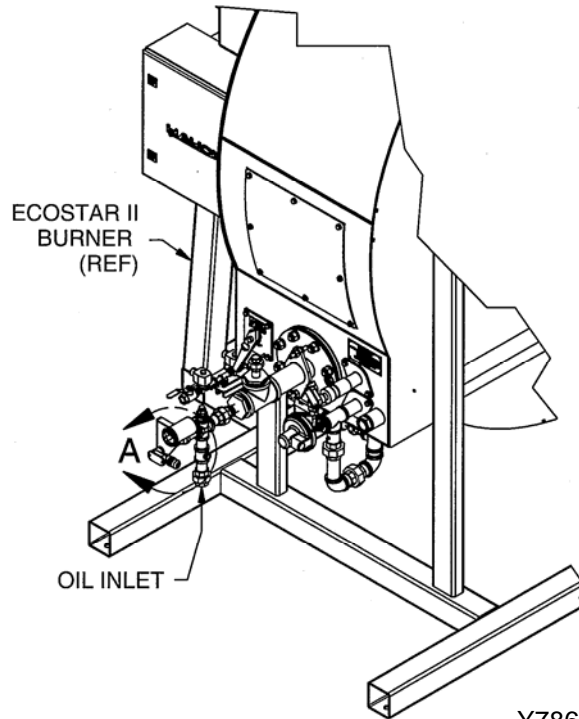




# ECO-STARI<sup>II</sup>™ HEAVY OIL INSERT HEATER KIT FACTORY INSTALLED & FIELD RETROFIT



DETAIL A



Y7867  
(NOT TO SCALE)

Factory Installed Heavy Oil Insert Heater



**WARNING**

These instructions are intended for use only by experienced, qualified combustion start-up personnel. Adjustment of this equipment and its components by unqualified personnel can result in fire, explosion, severe personal injury, or even death.

**TABLE OF CONTENTS**

	<u>Subject</u>	<u>Page</u>
A.	General Information .....	2
B.	Receiving and Inspection .....	2
C.	Installation.....	3
D.	Operation .....	6
E.	Maintenance .....	6
F.	Recommended Spare Parts.....	6

These instructions are intended to serve as guidelines covering the installation, operation, and maintenance of Hauck equipment. While every attempt has been made to ensure completeness, unforeseen or unspecified applications, details, and variations may preclude covering every possible contingency. **WARNING: TO PREVENT THE POSSIBILITY OF SERIOUS BODILY INJURY, DO NOT USE OR OPERATE ANY EQUIPMENT OR COMPONENT WITH ANY PARTS REMOVED OR ANY PARTS NOT APPROVED BY THE MANUFACTURER.** Should further information be required or desired or should particular problems arise which are not covered sufficiently for the purchaser's purpose, contact Hauck Mfg. Co.



**WARNING**

This equipment is potentially dangerous with the possibility of serious personal injury and property damage. Hauck Manufacturing Company recommends the use of flame supervisory equipment and fuel safety shutoff valves. Furthermore, Hauck urges rigid adherence to National Fire Protection Association (NFPA) standards and insurance underwriter's requirements. Operation and regular preventative maintenance of this equipment should be performed only by properly trained and qualified personnel. Annual review and upgrading of safety equipment is recommended.

**A. GENERAL INFORMATION**

Heavy, waste, or recycled fuel oils require some means of viscosity control. The Hauck Heavy Oil Insert Heater Kit installed in the burner nozzle supply line is a perfect solution to the viscosity control problem and reliable main flame ignition of the burner at cold temperatures. The heavy oil insert heater cable, in conjunction with the oil temperature indicating controller, will maintain an optimum oil temperature in the oil tube to insure a reliable burner main flame ignition after an extended shutdown of the burner.

**B. RECEIVING & INSPECTION**

Upon receipt, check each item on the bill of lading and/or invoice to determine that all equipment has been received. A careful examination of all parts should be made to ascertain if there has been any damage in shipment.

**IMPORTANT**

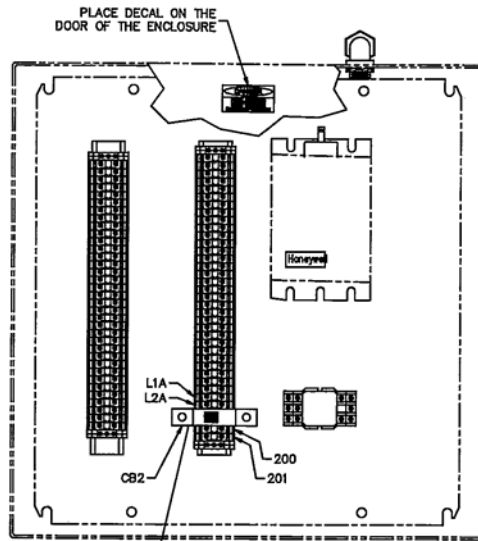
If the installation is delayed and the equipment is stored outside, provide adequate protection as dictated by climate and period of exposure. Special care should be given to all motors and bearings, if applicable, to protect them from rain or excessive moisture.

**C. INSTALLATION**

**NOTE**  
120V/60Hz power for the heavy oil insert heater must be supplied separately by the customer and wired into the appropriate junction box.

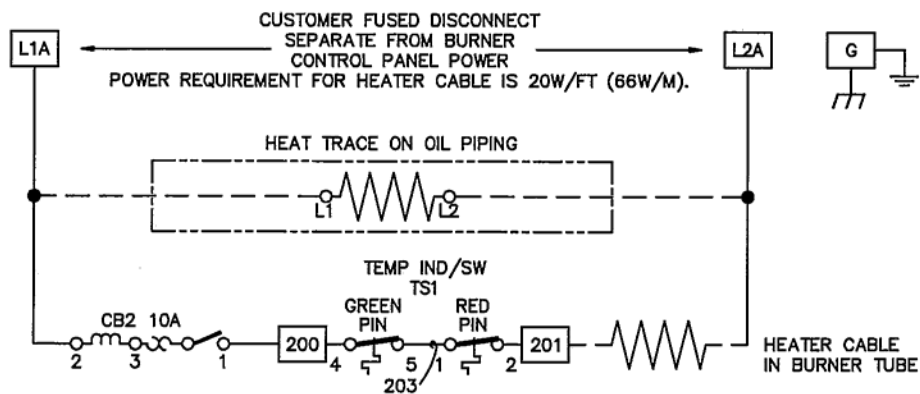
**FACTORY INSTALLED INSERT HEATER**

After the customer supplied power source is wired to the factory installed insert heater, no further mechanical or electrical installation is required. Adjust the temperature indicating controller to the desired temperature and proceed to Section D. Operation. The junction box and wiring diagram are shown in Figure 1 for reference.



Breaker

BURNER JUNCTION BOX



WIRING DIAGRAM

Y7632  
(NOT TO SCALE)

NOTE:  
1. 120V/60HZ POWER MUST BE SUPPLIED SEPARATELY BY CUSTOMER TO THE INSERT HEATER JUNCTION BOX (ITEM 1).  
2. L1A, 200, 203 WIRES TO BE #16 AWG RED, USE #18 AWG 2 CONDUCTOR CABLE TO CONNECT THE CONTROLLER AND HEATER CABLE TO THE JUNCTION BOX.

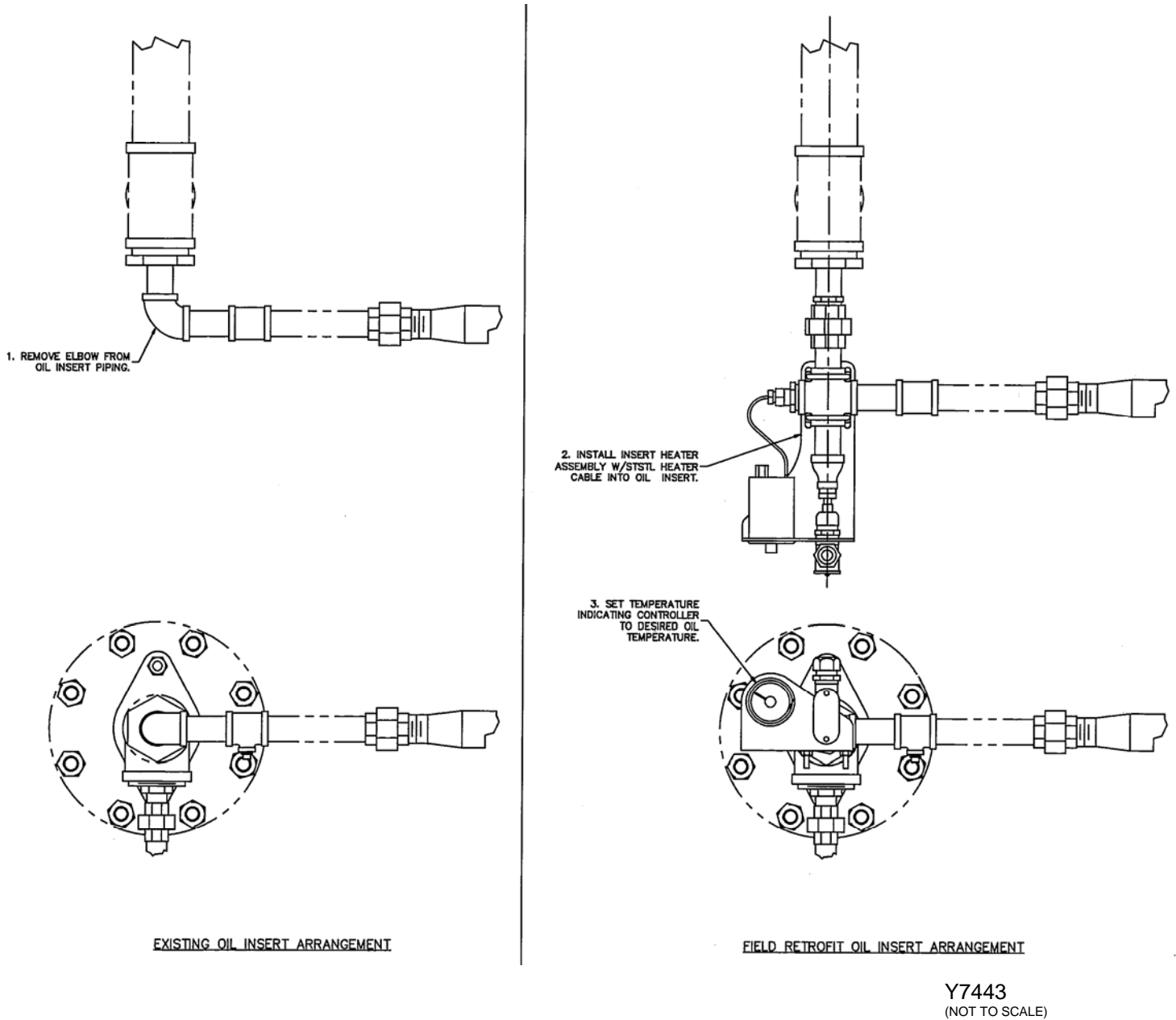
**Figure 1. Factory Installed Heavy Oil Insert Heater Electrical Drawings**

### **C. INSTALLATION (Continued)**

#### **FIELD RETROFIT INSERT HEATER**

Minor mechanical and electrical installation is required for the field retrofit insert heater as follows:

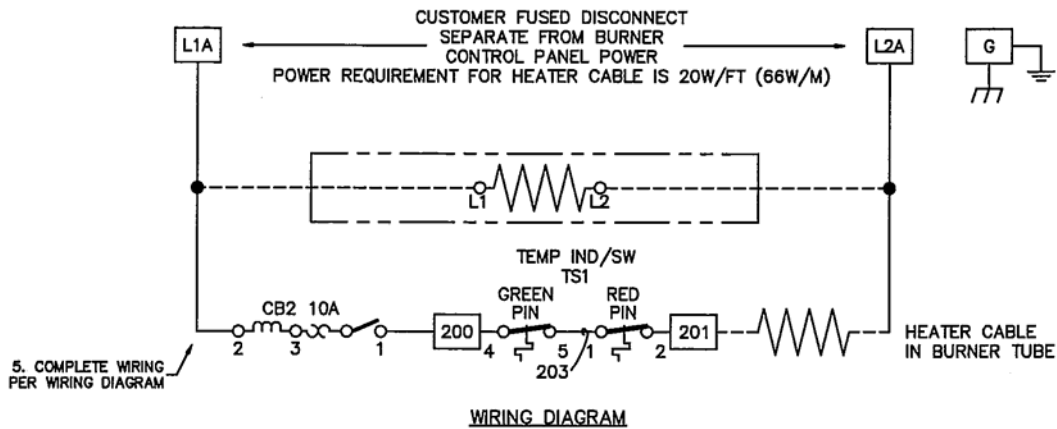
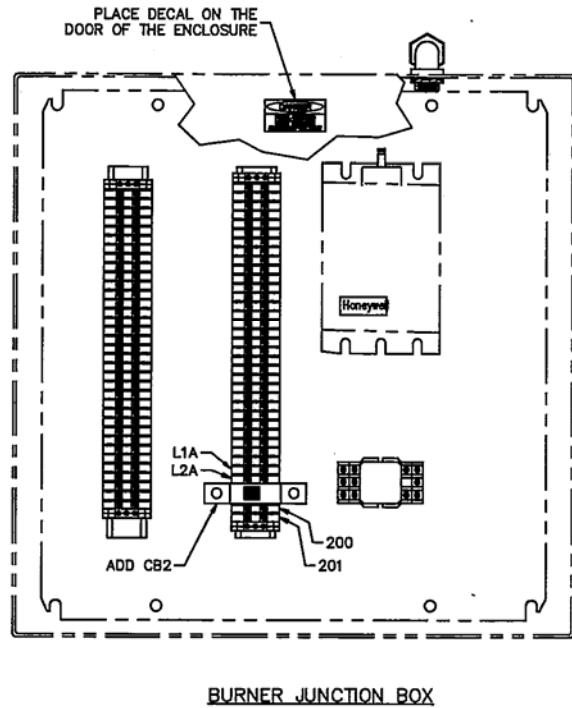
1. Remove the existing elbow from the oil insert piping per Figure 2.



**Figure 2. Field Retrofit Heavy Oil Insert Heater Mechanical Installation**

2. Install the heating sub-assembly into the oil insert pipe and reconnect the oil supply piping to the cross pipe.
3. Adjust the temperature indicating controller to the desired oil temperature.

**C. INSTALLATION (Continued)**



- NOTE:
1. 120V/60HZ POWER MUST BE SUPPLIED SEPARATELY BY CUSTOMER TO THE BURNER JUNCTION BOX.
  2. L1A, 200, 203 WIRES TO BE #16 AWG RED, USE #18 AWG 2 CONDUCTOR CABLE TO CONNECT THE CONTROLLER AND HEATER CABLE TO THE JUNCTION BOX

Y7443  
(NOT TO SCALE)

**Figure 3. Field Retrofit Heavy Oil Insert Heater Electrical Installation**

4. Wire the components as indicated on the wiring diagram.
5. Wire the customer supplied power source to the field retrofit insert heater in the burner junction box.

**D. OPERATION**

**NOTE**

Adjusting the trip setpoint above the required temperature, as determined by fuel oil viscosity testing, may result in coking of the fuel oil in the oil insert assembly piping.

1. Supply power to the heater cable circuit.
2. When the oil temperature exceeds the setpoint on the temperature indicating controller, the temperature indicating controller switch contact will open and power to the heater element is removed.
3. When the oil temperature drops below the setpoint on the temperature indicating controller, the temperature indicating controller switch contact will close and the heater element will energize.

**E. MAINTENANCE**

The Hauck Heavy Oil Insert Heater Assembly is fully automatic and will require very little maintenance. Refer to the burner instruction manual for a proper maintenance schedule to ensure optimum burner performance.

To replace a heater cable, remove the cover from the wiring box, disconnect wiring to the old heater cable and slowly slide out from the oil insert tube. Install new heater cable by slowly sliding into the oil insert tube. Reconnect wiring to new heater cable and replace the cover to the wiring box.

Keeping the strainers (located upstream of the burner) clean will help maintain proper oil flow and also help keep the fuel system clean. Periodically checking and tightening of any loose electrical connections will assure years of trouble free control panel operation.

**F. RECOMMENDED SPARE PARTS LIST**

Item	Qty.	Part Number	Description
1*	1	300974	Cable, Heater, Mineral Insulated, 9ft L
		300999	Cable, Heater, Mineral Insulated, 18ft L
		301000	Cable, Heater, Mineral Insulated, 22ft L
		301759	Cable, Heater, Mineral Insulated, 28ft L
		301684	Cable, Heater, Mineral Insulated, 30ft L
2	1	300047	Temperature Controller

\* As Required Per Order