

OS7 SERIES UNITS

I-INTRODUCTION

OS7 horizontal stowaway furnaces use OHP30C series oil burners. Table 1 lists the model oil burner used in each size furnace. The unit is factory assembled with a two stage oil pump. Detailed operation, maintenance and service procedures for the OHP30C oil burner are included in the "Oil Heat" section.

Units are shipped with standard nozzle sizes. Maximum nozzle sizes must be ordered extra. The "Nozzle Information" lists nozzle capacities.

Units are sent standard for a single line sytem, but the oil

pump can be converted for two line operation. Simply install the by-pass plug provided in attached bag according to accompanying instructions. Never operate the pump with a single line when by-pass is installed. This will blow oil bearing seal and damage pump.

Figure 1 shows a cutaway of units.

TABLE 1

Unit Model No.	Burner Model Number
OS7-105	OHP30C-8
OS7-140	OHP31C-10

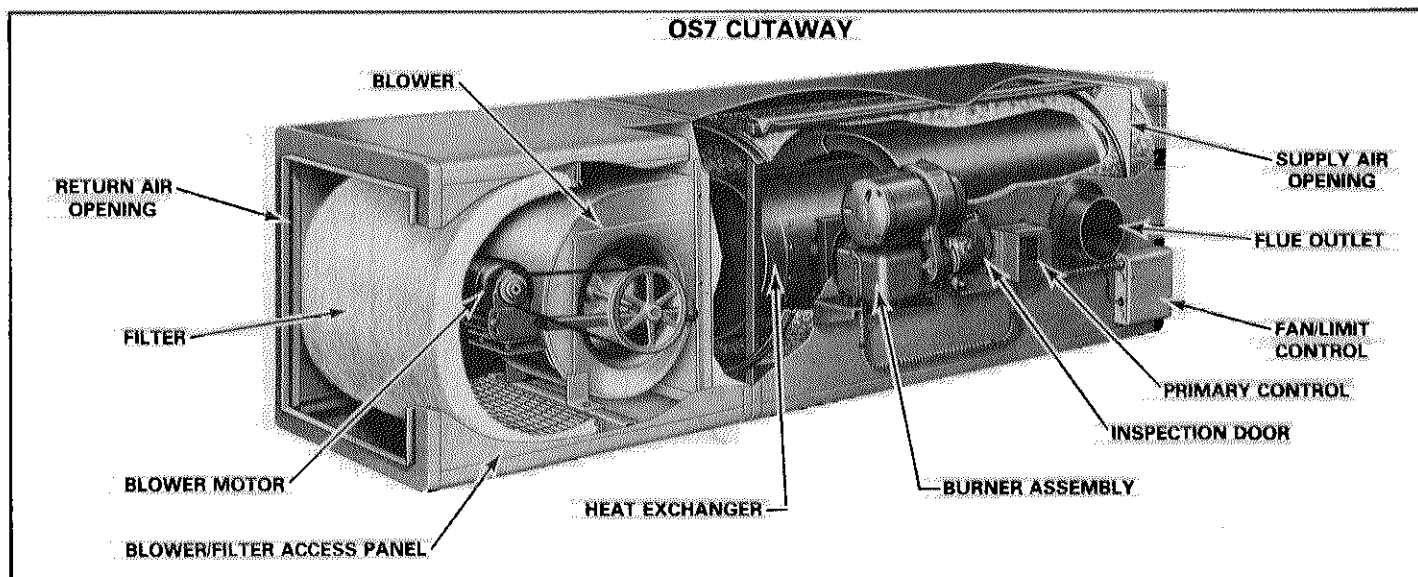


FIGURE 1

II - UNIT INFORMATION

A - Specifications

Model No.	OS7-105	OS7-140
Btuh input (maximum U.L. listing)	105,000	140,000
Btuh input (nozzle furnished)	91,000	119,000
Btuh input (minimum)	91,000	105,000
Btuh output @ bonnet (maximum U.L. listing)	84,000	112,000
Btuh output @ bonnet (nozzle furnished)	73,000	95,000
Btuh output @ bonnet (minimum)	73,000	84,000
Nozzle range (gph)	0.65—0.75	0.75—1.00
Nozzle furnished (gph)	0.65	0.85
Vent size (in. round)	6	7
Oil burner used (2-stage)	OHP30C-8	OHP31C-10
Blower wheel nominal diam. x width (in.)	10 x 8	12 x 9
Blower pulley bore x diam. (in.)	3/4 x 7—0	1 x 7—A
Blower motor horsepower	See Drive	See Drive
Blower drives (shipped separate)	Kit Table	Kit Table
Free filter area (sq. ft.) and cut size (in.)	3.66 (22 x 26)	5.55 (26 x 34)
Tons of cooling that can be added	2, 2-1/2	3, 3-1/2, 4
Shipping weight (lbs.)	Complete unit	464
	Furnace section	286
	Blower section	108
*No. of packages in shipment	3	4
Electrical characteristics	115 volts—60 cycles—single phase	

B - Nozzle Information

UNIT		NOZZLE SIZE		INPUT RATING		OUTPUT RATING		SPRAY ANGLE (Hollow Cone)
		Gal/hr	Kg/hr	Btuh	Kcal/hr	Btuh	Kcal/hr	
OS7-105	Stand.	.65	2,10	91,000	22 930	73,000	18 396	70°
	Max.	.75	2,42	105,000	26 460	84,000	21 168	
OS7-140	Stand.	.85	2,75	119,000	30 000	95,000	23 940	80°
	Max.	1.00	3,23	140,000	35 280	112,000	28 224	

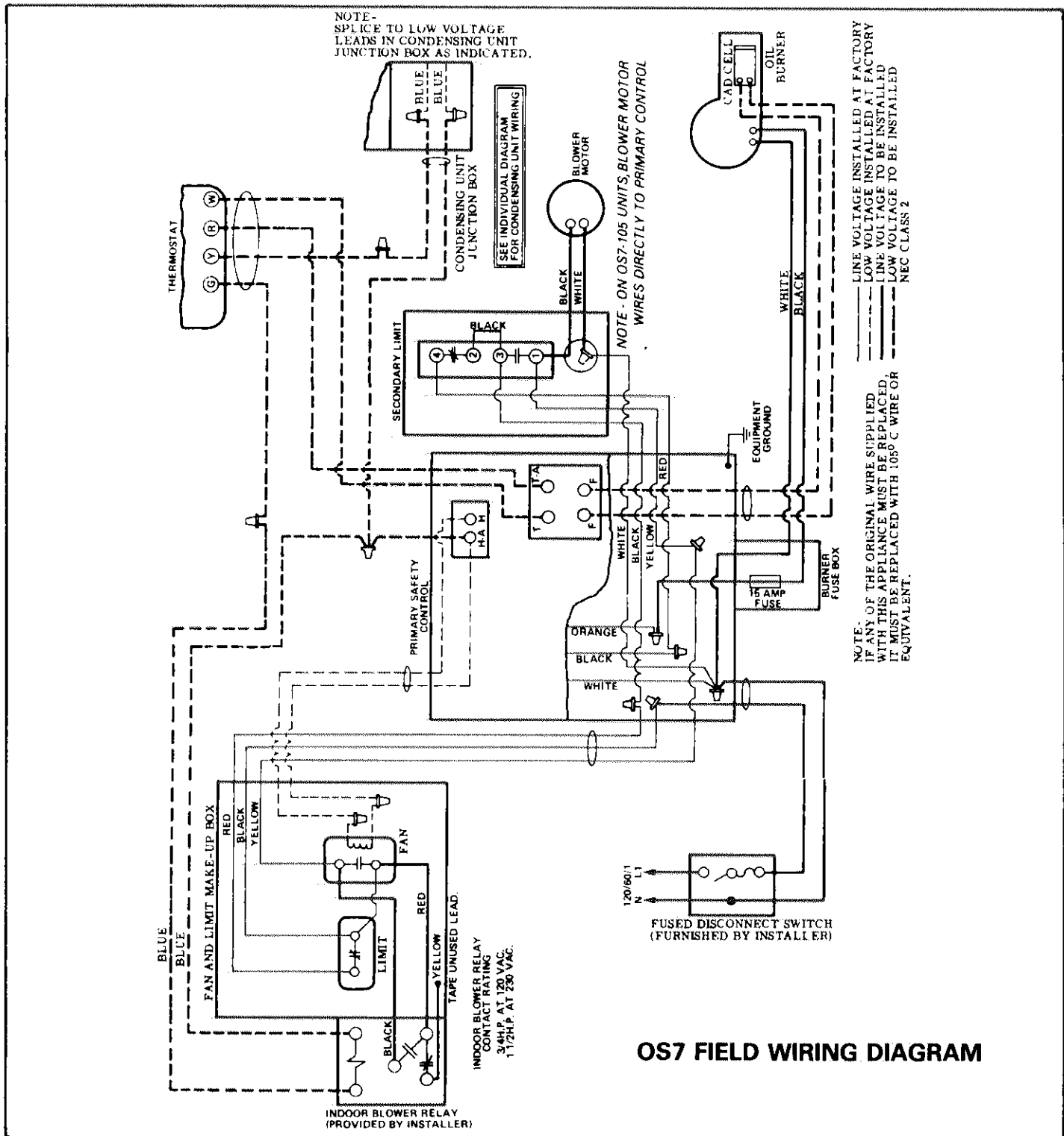


FIGURE 2

C - Field Wiring (Figure 2)

The "R" and "W" thermostat leads wire directly to primary control. An indoor blower relay must be field provided for cooling applications.

III - COMPONENTS

1 - Combination Fan/Limit Control

The limit de-energizes the entire unit at excessive temperatures. Do not alter setting. Refer to Figure 3 to determine type of control used and correct fan setting. A sure start fan control is used. The fan control heater is activated through the primary control with a thermostat demand. The fan contacts close after a short delay.

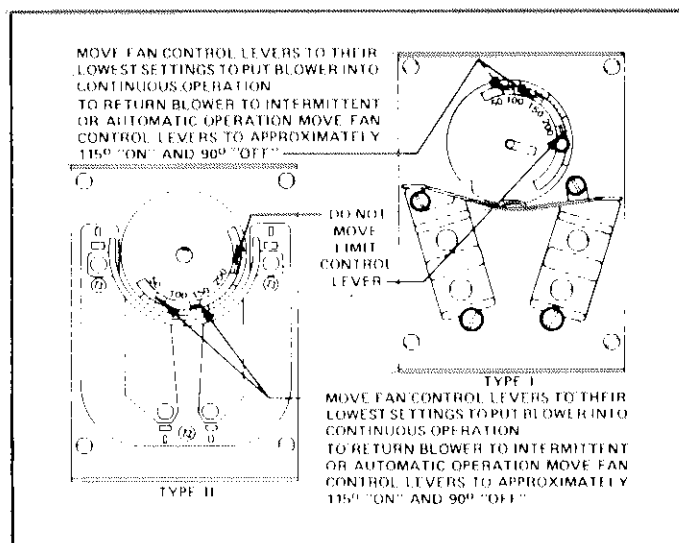


FIGURE 3

2 - Secondary Limit Control

OS7 units have a secondary limit control in addition to the other limit. At excessive temperatures this control de-energizes the primary control, but still allows blower motor operation.

3 - Primary Control

A White Rodger primary control is used. OS7-105 uses style 668-440 with a 20 VA transformer while OS7-140 uses style 668-453 with a 40 VA transformer. It provides

complete unit shutdown in case of flame failure. If the control locks out, push reset button to recycle unit.

4 - Oil Burner

OS7 uses the OHP30C series oil burner. Fuse box and 15 amp fuse are furnished for sub-fusing of burner. The burner motor has thermal cutout protection. In the event of motor lockout, push reset button after motor has had sufficient time to cool. Refer to oil burner section for additional information.

5 - Heat Exchanger

The heat exchanger has a twin vent pass wrap around radiator. Cleanout access is through the vent opening and the inspection tube. The inspection tube is also used for flame observation. The fiber combustion chamber provides a high temperature zone for clean, quiet and efficient combustion. Replacement combustion chamber kits are available. See Table 2.

TABLE 2

Unit Model No.	Combustion Chamber Replacement Kit
OS7-105	LB-35903BA
OS7-140	LB-35903BB

IV - TEMPERATURE RISE

To measure temperature rise, place plenum thermometers in warm air and return air plenums. Locate thermometer in warm air plenum where thermometer will not "see" heat exchanger, thus picking up radiant heat. Turn up thermostat as high as possible to start unit. After plenum thermometers have reached their highest and steadiest readings, subtract the readings. The difference should be approximately 80°F. If this temperature is low, decrease blower speed; if temperature is high, increase blower speed.

See Table 3 for available drive kits. Blower speed is regulated by means of an adjustable motor pulley. Open pulley to decrease speed and close pulley to increase speed. Adjust belt tension as loose as possible without allowing slippage.

V - SCHEMATIC WIRING DIAGRAM

OPERATING SEQUENCE

Figure 4 illustrates a typical OS7.

TABLE 3

Heating Drive Kits							
Furnace Model No.	Drive Kit Model No.	Motor hp	Motor Pulley (in.) & Groove	* Motor Pulley (in.) & Groove	*Rpm Range	Belt	Shipping Weight (lbs.) 1 Package
OS7-105	DK-2038 (LB-19849CA)	1/4	1/2 x 3-3/4—O	3/4 x 7—O	567—764	3L420	15
OS7-140	DK-2003 (BM-7455)	1/4	1/2 x 3-1/4—A	1 x 7—A	470—715	4L450	15
Cooling Drive Kits							
Furnace Model No.	Drive Kit Model No.	Motor hp	Motor Pulley (in.) & Groove	* Blower Pulley (in.) & Groove	*Rpm Range	Belt	Shipping Weight (lbs.) 1 Package
OS7-105 2 & 2 1/2 Tons	DK-2040 (LB 19849CC)	1/3	1/2 x 4 1/8—O	3/4 x 7—O	665-865	3L430	18
OS7-140 3 Tons	DK 2041 (LB 19849CD)	1/3	1/2 x 4 1/8—A	1 x 7—A	690—935	4L470	18
OS7-140 3 1/2 & 4 Tons	DK 2044 (LB 19849CG)	1/2	5/8 x 4 1/8—A	1 x 7—A	690—935	4L470	21

*At 1725 rpm motor speed

**Factory installed in furnace packaged and not included in drive kit.

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