

# INSTALLATION and OPERATING INSTRUCTIONS

## MODEL SLO / SFLO OIL FIRED FURNACES

Save these instructions for reference

### GENERAL

INSTALLATION OF OIL FIRED HEATING UNITS SHALL BE IN ACCORDANCE WITH THE REGULATIONS OF AUTHORITIES HAVING JURISDICTION AND THE CSA B139 INSTALLATION CODE FOR OIL BURNING EQUIPMENT.

THE UNITS ARE APPROVED FOR FUEL NOT HEAVIER THAN # 2 (FURNACE) OIL. DO NOT USE GASOLINE, CRANKCASE OIL, OR ANY OIL CONTAINING GASOLINE.

### DRAFT AND CHIMNEY REQUIREMENTS

The chimney must be capable of producing a draft of 0.03 inches of water at the furnace flue pipe when the unit is firing. The chimney should have a minimum height of 20 feet and have nominal flue area dimensions of 8 x 8 inches. The chimney top should be at least 3 feet above the point where it comes through the roof and must extend 2 feet higher than any roof point within 10 feet. In the case of a chimney which has been used previously it is necessary to clean the flue before installing another furnace.

**NOTE:** THE SLO/SFLO 115 FURNACES ARE CERTIFIED TO BE INSTALLED USING "L" VENT

### OIL TANK AND PIPING

Maximum capacity of individual tanks used shall be 250 gallons and must be located at least 7 feet from the burner. Local codes will govern the size of vents and filters as well as the type of caps used. 1 1/4 inches IPS and 2 inches IPS are generally accepted as minimum sizes for vent and fill pipes respectively. The burner oil line shall not be less than 3/8 inch O. D. copper tubing for runs 50 feet or less and 1/2 inch O.D. copper tubing for longer runs. A manual shut off valve and an oil filter shall follow in sequence from tank to burner. Be sure that the oil line is clean before connecting to the burner. The oil line should be buried and protected by cement to eliminate any possible damage. Installations having the fuel oil tank below the burner level must employ a two pipe fuel supply system with an appropriate fuel oil pump.

### INSTALLATION OF THE FURNACE

#### 1. LOCATION

Locate the furnace as closely as possible to the chimney, providing ample clearance to permit easy accessibility for cleaning the inside of the furnace, the removal of filters, blower, motors, controls and flue connections, SLO not to be installed on combustible floor; SFLO may be installed on combustible floor.

**IT IS THE USERS RESPONSIBILITY TO KEEP  
THE AREA AROUND THE VENT TERMINAL  
FREE OF ICE, SNOW AND DEBRIS**

**POWER SIDEWALL VENTING  
SEE SPECIAL INSTRUCTIONS IN  
INSTRUCTION MANUAL  
& FURNACE LABEL**

#### 2. COMBUSTION AIR

In installations where the furnace is located in a small room at least one square foot of air opening per gallon per hour of oil burner capacity must be provided at both the top and the bottom of the furnace room door. These openings ensure an adequate supply of combustion air to the burner.

#### 3. POSITIONING THE UNIT

The furnace must be level in both directions for safe, quiet operation. Support each vee runner equally for uniform weight distribution.

#### 4. FLUE CONNECTIONS AND DRAFT REGULATOR

The connecting pipe from the furnace to the chimney should be short and as straight as possible. The draft regulator supplied with the unit must be installed in a straight length of pipe no more than 18 inches from the furnace flue exit pipe.

#### 5. WIRING

All wiring from the service panel to this furnace shall be made in accordance with the Canadian Electrical Code and must also comply with all local ordinances.

#### 6. FILTERS

The furnace should never be operated without filters. This is especially true when temporary heat is required during construction. In addition to permitting circulation of dust and other suspended particles there is a possibility of bearing failure resulting from these foreign materials in the blower and motor housings. Clean or replace filters once each heating season.

**NOTE:** A dirty air filter causes inefficiency and higher operating costs.

Model	Quantity Required	Size of Filter
SLO 115		
SFLO 115	1	20" X 20" X 1"
SLO 140	1	20" X 25" X 1"

### FOR SERVICE CALL

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

TELEPHONE \_\_\_\_\_

## 7. BURNER INSTALLATION

Install the burner to the pouch plate with the gasket provided. No adjustment may be made in the burner mounting position.

## 8. FAN CONTROL

The setting of the fan control will depend upon the particular house and heating installation. The "fan off" setting is factory set at 100 degrees F. This setting should provide satisfactory operation for most installations. The "Fan-on" temperature is determined by the built in deferential setting of the control.

It is desirable to have the "fan off" setting low enough for extended blower operation. However, a "fan-off" setting too low will circulate cool air. To alter the "fan off" setting rotate the indicator to the desired position on the temperature scale.

Adjustment of all controls should only be made by a competent serviceman. Control settings and blower speed should be in accordance with the recommendations of the National Warm Air Heating and Air Conditioning Association.

## 9. SUMMER FAN OPERATION

During the summer, continuous air circulation can be obtained by turning the manual fan switch from the "auto" position to the "on" position.

## 10. DUAL AIR OPERATION

Furnaces equipped with a dual speed blower system enable partial air circulation at all times. When the thermostat calls for heat, the burner starts and the high speed phase quickly distributes warmed air throughout the house. When the high speed phase ceases, the low speed continues circulating the air to even temperatures throughout the dwelling.

## 10-A DUAL AIR OPERATION - DIRECT DRIVE

If your SLO115 or SFLO115 furnace is equipped with a DIRECT DRIVE blower assembly.

The burner starts and the "high" speed phase quickly distributes warmed air throughout the house. When the "high" speed phase ceases, the "low" speed phase continues, circulating the air to even temperature throughout the house. If the "low speed" feature is not required, operate the small "rocker" switch located on the power junction box. ("Low" speed with not operate).

## 11. HIGH LIMIT CONTROL

The high limit control may be of a single switch type or a combination type in conjunction with the fan control. A replacement limit control must be identical to that supplied as original equipment.

## 12. COMBUSTION SAFETY CONTROL

Operation and checking of the primary control is outlined in detail with the enclosed manufacturer literature.

## 13. COMBUSTION ADJUSTMENT AND TESTING

The burner is to be adjusted so that the smoke density is no greater than # 1 in the Shell-Bacharach test scale. The flue gases should contain 9 1/2% to 12% CO<sub>2</sub> when tested with combustion test equipment.

## 14. ELECTRODE SETTING

Correct electrode positioning is important for efficient ignition of the oil spray. See figure 2 for correct settings.

## 15. CLEANING UNIT

The furnace must be serviced and cleaned at least once a year by a qualified serviceman and where required by law, a licensed technician.

### CAUTION

Do not use any commercially available soot remover. Use extreme care when servicing since the combustion chamber is fragile. Routine cleaning of the flue passages does not require cleaning of the combustion chamber. If for some reason it is necessary to work in the area of the chamber do not touch or alter the chamber position. Before cleaning, shut off electrical power supply to the furnace.

### SLO:

Remove cleanout panel and cap from the front panel. Loosen soot from the radiator with a cleaning tool or brush. The tool should bend allowing cleaning around the curved surfaces of the heat exchanger.

To clean the rear of the radiator remove the chimney flue pipe from the furnace flue pipe.

Remove the flue baffle from the flue pipe. Loosen the soot from the rear of the heat exchanger, flue pipe and baffle.

### SFLO:

Remove one of the cleanout panels and caps located on the side panels. It is only necessary to remove one of the cleanouts. Also remove the chimney flue pipe from the furnace flue pipe. Loosen soot from the radiator with a cleaning tool or brush. The tool should bend allowing cleaning around the curved surfaces of the heat exchanger.

Remove all loose soot with a vacuum cleaner. Inspect passages to check for missed areas. When installing the cleanout cap be sure the gasket is in place.

To clean the burner remove screw and swing ignition transformer to the open position. Remove the electrode assembly and wipe clean. The electrodes should be checked and gapped to specifications. See figure 2. Scrape off dust accumulation on the blower wheel blades. Clean out the blast tube then reinstall electrode assembly and replace transformer.

## 16. REPLACEMENT COMBUSTION CHAMBER

Should replacing of chamber become necessary a special replacement chamber is available.

**IMPORTANT:** When ordering replacement combustion chamber specify furnace model number.

### CAUTION

**Never burn garbage refuse or paper in the heating unit. Never leave combustible materials around the unit.**

## MINIMUM INSTALLATION CLEARANCES FROM COMBUSTIBLE MATERIALS

MODEL	115	140
Plenum - Top & Sides	3"	3"
Flue Pipe	9"	9"
Sides - One side	6"	6"
- Other Side	18"	18"
Front - From Burner	24"	24"
Rear	24"	24"

**START UP**

1. Check Burner for firing rate.
2. Bleed air from line between tank and burner (see instructions in burner package for bleeding port).
3. Set draft regulator for proper draft over the fire of 0.02" water column.
4. Adjust burner with combustion instruments.
5. Set blower adjustable pulley so that blower R.P.M. gives an 85° temperature rise through the furnace.
6. Balance air distribution system by adjusting dampers in duct runs to give balanced supply to each run
7. Check temperature rise through unit after balancing and adjust if necessary.

Do not attempt to start the burner when excess oil has accumulated, when the furnace is full of vapour, or when the combustion chamber is very hot. Do not start the burner unless the blower access door is secured in place.

**CO-VENTING  
POWER SIDEWALL VENTING  
SLO 115**

Model SLO 115 is certified to be installed with an AERO model CF 32T/W water heater and vented through a common Tjernlund model SS1-C power sidewall ventor.

Water heater must be fired at .75 G.P.H. input, a delayed oil valve must be used on the SLO 115 burner unit for this application.

A RESTRICTOR plate supplied with each CF 32T/A water heater must be installed in the flue pipe as shown on attached instruction sheet. **INSTALL DOWNSTREAM**

**GENERAL INFORMATION FOR SERVICING  
YOUR SUMMERAIRE FURNACE**

This furnace is to be installed by a qualified, and where required by law, a licensed technician.

This furnace is to be serviced and cleaned by a qualified, and where required by law, licensed technician only.

If your furnace is to be put out of service for an extended period of time, shut off "Oil Burner" switch and oil valve located at oil tank.

When restarting your furnace after an extended down period, reverse procedure noted in previous paragraph. This work is to be performed by a qualified, and where required by law, a licensed technician.

Do not tamper with the unit or controls - call your serviceman. Never burn garbage or paper in the heating system, and never leave paper or rags around unit.

FROM DRAFT REGULATOR. Only above noted component combination and firing rate may be used.

A Guardian Model 1308 - 4C Interlock relay supplied with the water heater must be used for this application.

The 6" galvanized tee required to interconnect these 2 appliances must have smooth interior surfaces and joints to prevent turbulence in the flow of flue gases.

**POWER SIDE WALL VENTING SLO 115**

Model SLO 115 is C.S.A. certified for use with Tjernlund SS1-C power side wall venter.

A delayed oil valve - supplied with SS1-C venter must be used for this application.

When SLO 115 is installed with SS1-C Sidewall Power Venter use 20 AMP circuit protection.

**SPECIFICATIONS FOR AERO BURNERS**

MODEL	SLO115 / SFLO115 / SLO115DD / SFLO115DD				SLO140	
BURNER	AERO F - AFC - 2			AERO F-AFC - 3	AERO F - AFC - 3	
BONNET CAPACITY B.T.U./HR	72000	82000	93000	112000	125000	140000
MAXIMUM FIRING RATE U.S.G.P.H.	.65	.75	.85	1.00	1.10	1.10
NOZZLE	80 DEG. DELAVAN W				1.10 U.S.G.P.H.	80 DEG. SS HAGO

FACTORY SUPPLIED .75 80 DEG. DELAVAN W

**SPECIFICATIONS FOR BECKETT BURNERS**

MODEL	SLO115 / SFLO115 / SLO115DD / SFLO115DD				SLO140	
BURNER	BECKETT AF				AVAILABLE AERO F-AFC-3 ONLY	
BONNET CAPACITY B.T.U./HR	76000	87000	98000	114000	125000	140000
MAXIMUM FIRING RATE U.S.G.P.H.	.65	.75	.85	1.00	1.10	1.25
NOZZLE	70 DEG. DELAVAN A - OR - 70 DEG. DANFOSS AH				1.10	80 DEG. SS HAGO

FACTORY SUPPLIED .75 DEG. A DELAVAN

ALSO CERTIFIED WITH CAS-2B FIELD CONTROLS AIRBOOT (R.W. BECKETT #51747)

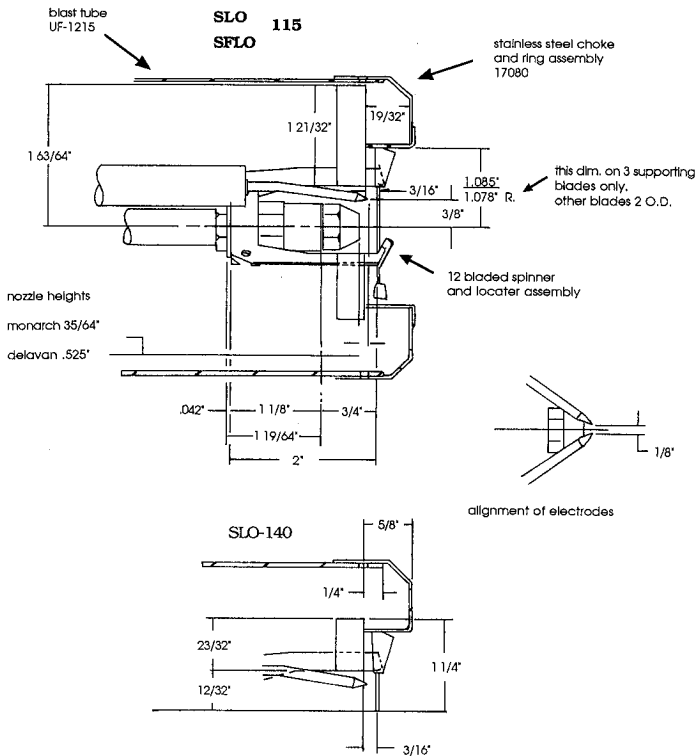
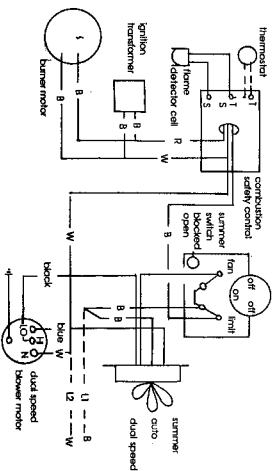
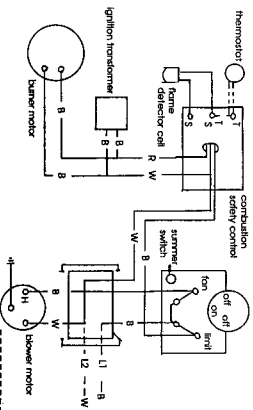


FIG. 2

### FOR USE WITH HONEYWELL COMBINATION FAN AND LIMIT CONTROL



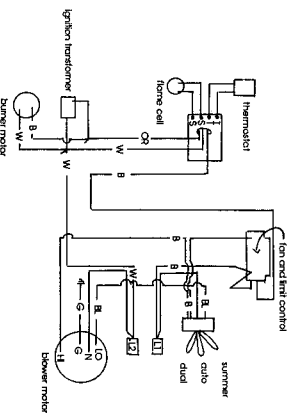
dual speed of furnace



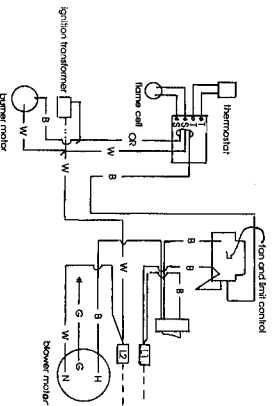
single speed of furnace

Indicates wiring by frosteker

### FOR USE WITH THERMODISC COMBINATION FAN AND LIMIT CONTROL



dual speed of furnace



single speed of furnace

### SLO OIL FURNACE-BLOWER DRIVE COMBINATIONS

MODEL	FIRING RATE USG/HR	TEMP. RISE (F°) AND C. F. M.	EXTERNAL STATIC INCHES WC	DRIVE PULLEY SIZE		INT. MOTOR H. P.	BLOWER IDENTITY
				MOTOR	BLOWER		
115	1.00	85 at 1220	.20	3 1/4"	6"	1/3	DELHI G-10 OR LAU A10-10 ACE
			.25	3 1/4"	6"	1/3	
			.50	3 1/4"	6"	1/2	
	.85	85 at 1015	.20	3 1/4"	7"	1/3	
			.25	3 1/4"	7"	1/3	
			.50	3 1/4"	6"	1/3	
	.75	85 at 890	.20	3 1/4"	7"	1/3	
			.25	3 1/4"	7"	1/3	
			.50	3 1/2"	7"	1/3	
	.65	85 at 785	.20	3 1/4"	9"	1/3	
			.25	3 1/4"	9"	1/3	
			.50	3 1/2"	7"	1/3	
140	1.25	85 at 1560	.20	3 1/4"	8"	1/3**	A12-9 ACE OR G-12-9
			.30	3 1/4"	8"	1/3**	
			.50	3 1/4"	7"	1/2	
	1.10	85 at 1360	.20	3 1/4"	8"	1/3**	
			.30	3 1/4"	8"	1/3**	
			.50	3 1/4"	7"	1/2	

\*THESE UNITS HAVE BEEN APPROVED FOR NON INTERCHANGEABLE MOTORS AS FOLLOW

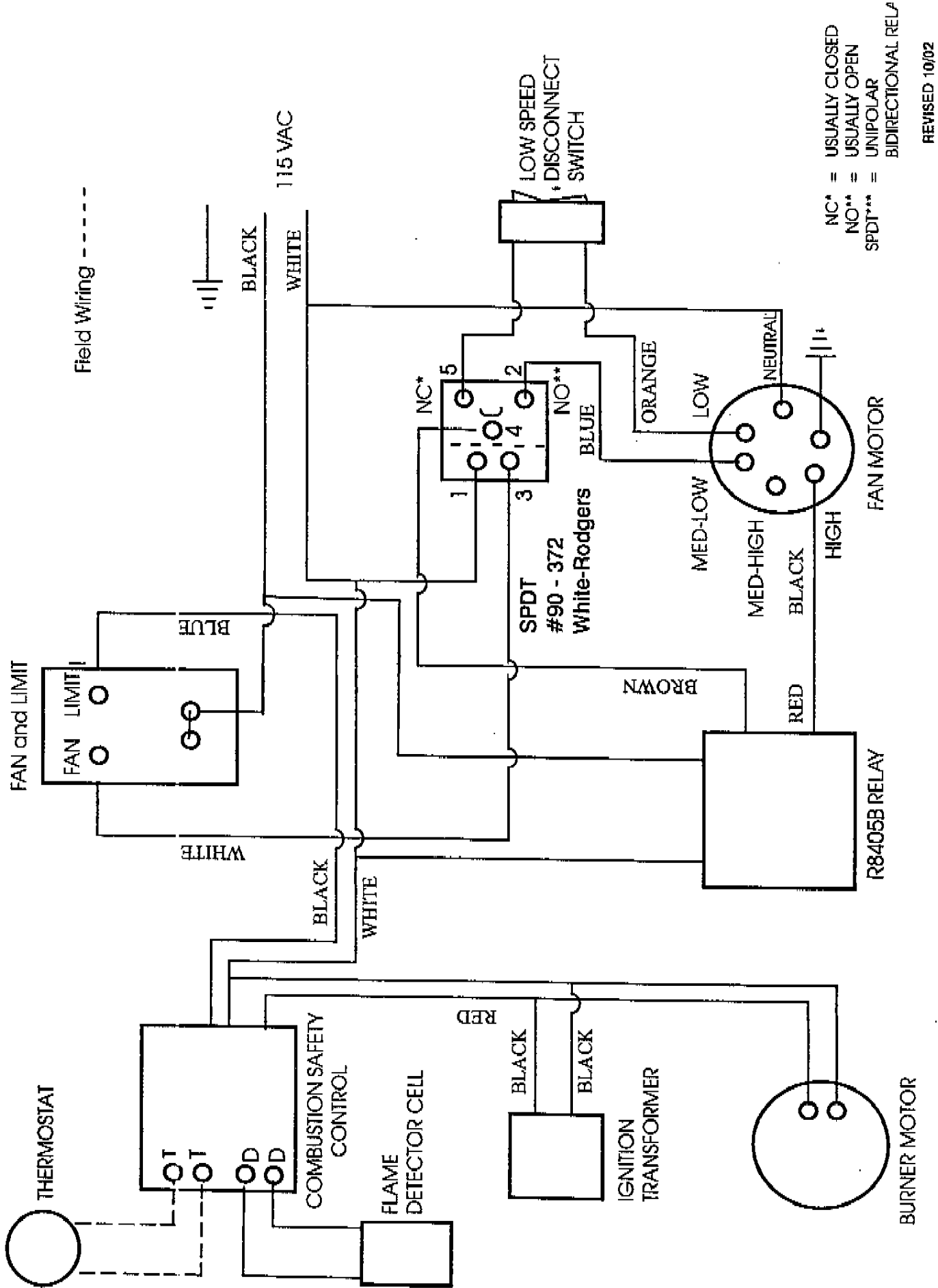
\*\*1/3 H.P. C.G.E.

115 DD	1.00	85 at 1230	.50	SPEED TAP MED-HI	1/2**	DELHI G10-DD
	.85	85 at 1020	.50	SPEED TAP MED-HI	1/2**	
	.75	85 at 900	.50	SPEED TAP MED-LOW	1/2**	
	.65	85 at 790	.50	SPEED TAP MED-LOW	1/2**	
**1/2 HP 4 speed Magnetek						

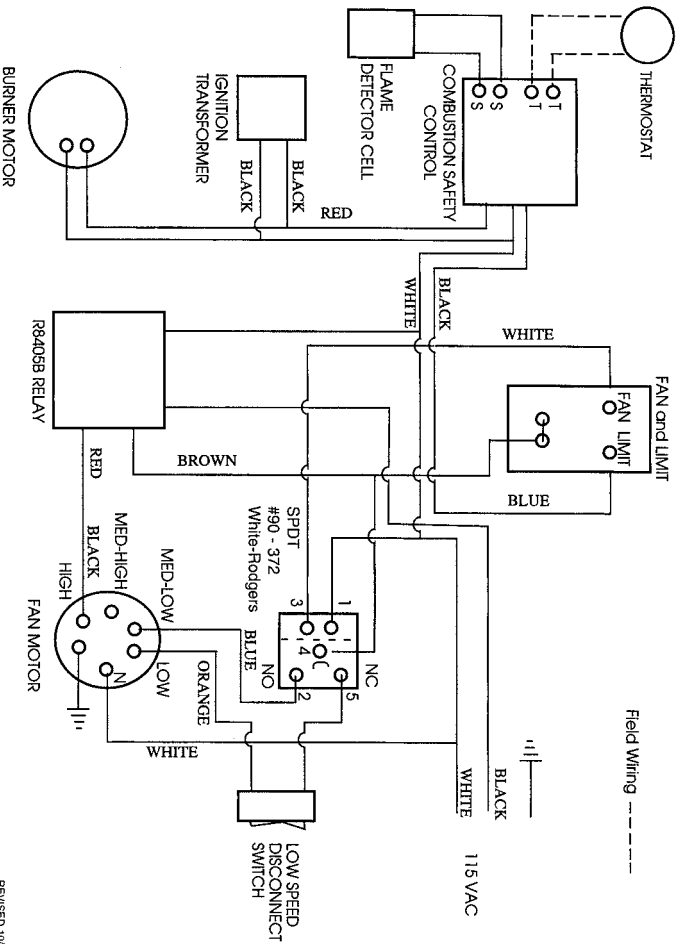
### SFLO OIL FURNACE-BLOWER DRIVE COMBINATIONS

MODEL	FIRING RATE USG/HR	TEMP. RISE (F°) AND C. F. M.	EXTERNAL STATIC INCHES WC	DRIVE PULLEY SIZE		INT. MOTOR H. P.	BLOWER IDENTITY
				MOTOR	BLOWER		
115	1.00	85 at 1220	.20	3 1/4"	7"	1/3	DELHI G-10 OR LAU A10-10 ACE
			.50	4"	7"	1/2	
	.85	85 at 1015	.20	3 1/4"	7"	1/3	
			.50	3 1/2"	7"	1/3	
	.75	85 at 890	.20	3 1/4"	7"	1/3	
			.50	3 1/2"	7"	1/3	
	.65	85 at 785	.20	3 1/4"	7"	1/3	

# FOR USE WITH HONEYWELL COMBINATION FAN AND LIMIT CONTROL DIRECT DRIVE SLO 115DD / SFLO 115 DD



FOR USE WITH HONEYWELL COMBINATION FAN AND LIMIT CONTROL  
 DIRECT DRIVE  
 SLO 115DD / SFLO 115 DD





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# INSTALLATION INSTRUCTIONS

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It is the users responsibility to keep the area around the vent terminal free of ice, snow and debris.

## CO-VENTING POWER SIDEWALL VENTING SL0115

Model SL0115 is certified to be installed with an AERO model CF32T/W water heater and vented through a common Tjernlund model SS1-C power sidewall ventor.

Water heater must be fired at .75 G.P.H. input.

A delayed oil valve must be used on the SL0115 burner unit for this application.

A RESTRICTOR plate supplied with each CF32T/AW water heater must be installed in the flue pipe as shown on attached instruction sheet. INSTALL DOWNSTREAM FROM DRAFT REGULATOR.

Only above noted component combination and firing rate may be used.

A Guardian Model 138Ø - 4C Interlock relay supplied with the water heater must be used for this application. The 6' galvanized tee required to interconnect these 2 appliances must have smooth interior surfaces and joints to prevent turbulence in the flow of flue gases.