

INSTALLATION INSTRUCTIONS SUMMER/WINTER SWITCH AND SUBBASE for models – HD, HDB, HDS, HDC, PDP/BDP

! WARNING

1. Disconnect power supply before making wiring connections to prevent electrical shock and equipment damage.
2. All units must be wired strictly in accordance with wiring diagram furnished with the unit. Any wiring different from the wiring diagram could result in a hazard to persons and property.
3. All wiring must be done with a wiring material having a temperature rating of at least 105°C.

IMPORTANT

The use of this manual is specifically intended for a qualified installation and service agency. All installation and service of these units must be performed by a qualified installation and service agency. Modine manuals may contain excerpts from component supplier literature adapted for Modine products. Any accompanying component supplier literature is for general information.

Before proceeding with wiring the accessories described in this bulletin, make sure the unit has been installed, vented, piped and wired according to the Installation/Service Manual and Standard Wiring Diagram furnished with the unit heater.

MODELS HD/HDB, HDS/HDC - TYPICAL SUMMER/WINTER (OR SUBBASE) SWITCH WIRING

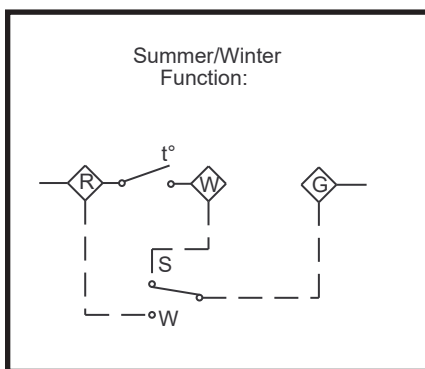


Figure 1.1

Series 104 Typical Wiring - Summer/Winter Switch (Modine #78727)
(24v Thermostat, 115v or 200/230v Summer/Winter Switch)

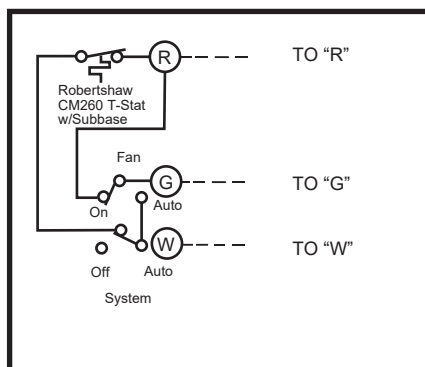


Figure 1.2

HD Series 104, HDS, HDB, HDC Series Alternate wiring using Robertshaw CM260 Thermostat w/ SB-3A-1 Subbase (Modine #79187 and #78785 respectively)

Installation procedures that follow are for units with the corresponding series identity number that may be found in the 5th through the 7th digits of the serial number. For example, a unit with the serial number "30011043619-0981" has the 5th through the 7th digits as 104 as shown underlined above. Match the series ID from the unit serial plate with the series ID listed in the heading of the following directions to determine which Procedure corresponds to your unit.

Installation Procedure (HD Series 104, HDS, HDB, HDC Series)

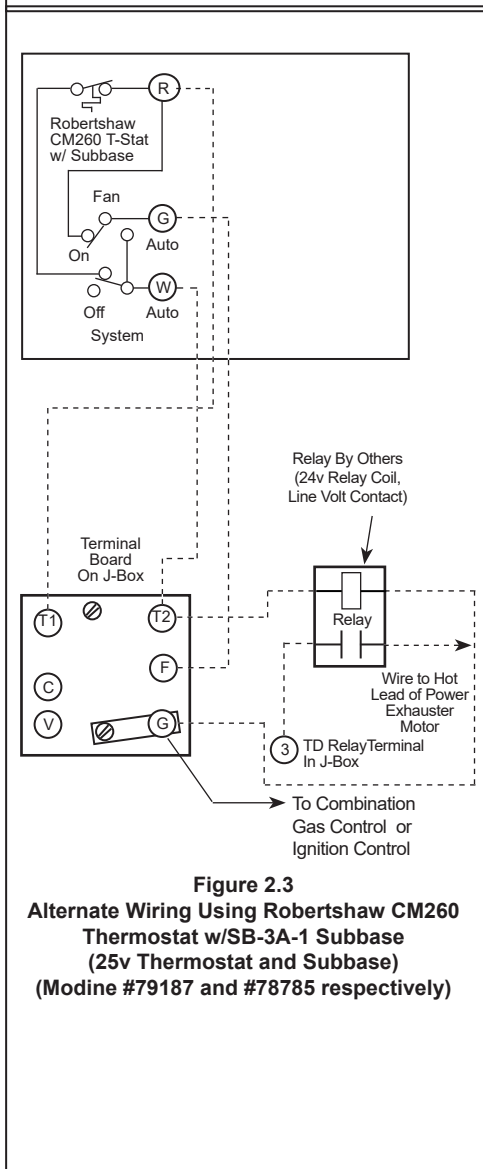
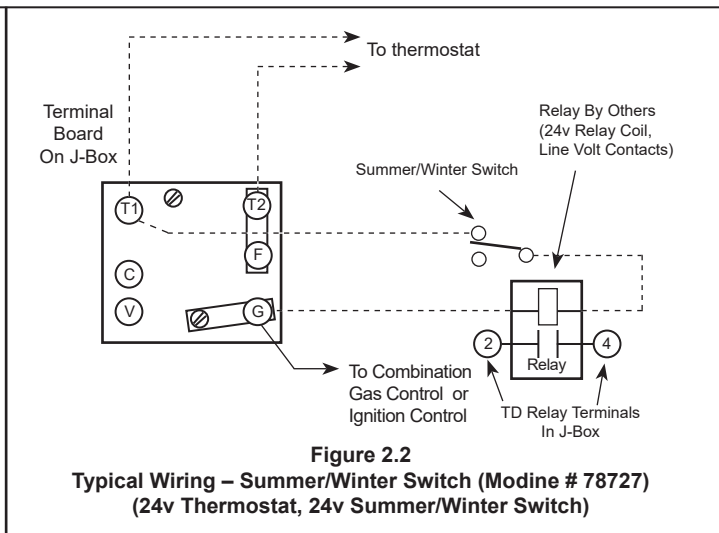
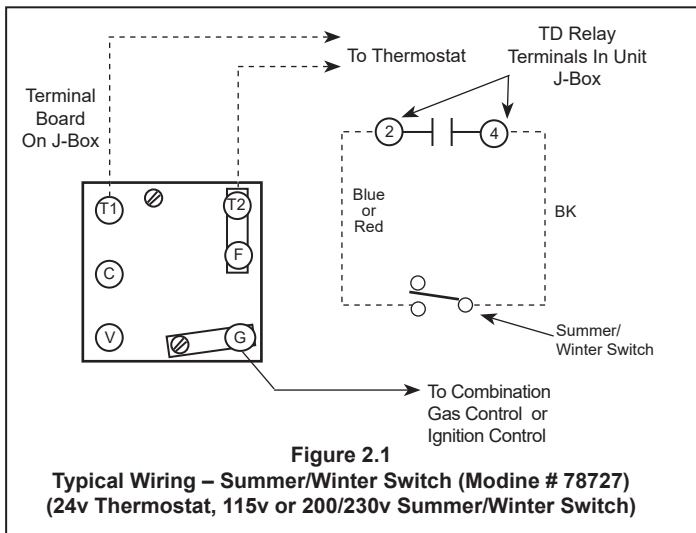
1. Turn off gas and power supply to the unit.
2. Connect the common of the summer/winter switch to the "G" terminal of the circuit board.
4. Connect the normally open terminal of the summer/winter switch to the "R" terminal of the circuit board.
5. Connect the normally closed terminal of the summer/winter switch to the "W" terminal of the circuit board.
6. Connect the thermostat between the "R" and the "W" terminal on the circuit board.

Check-Out Procedure

With the gas and power supply turned off, set the thermostat to its lowest setting and place the summer/winter switch (or thermostat fan control) in the "winter" (or "auto") position. After making these adjustments proceed as follows.

1. Turn on the gas supply.
2. Turn on the power supply to the unit. Nothing should happen.
3. Place the summer/winter switch (or thermostat fan control) in the "summer" (or "on") position. Fan motor should start.
4. While the summer/winter switch (or thermostat fan control) is still in the "summer" (or "on") position, and with the fan motor running, turn the thermostat up to call for heat. The power exhauster should start and after approximately 30 seconds the burner should fire.
5. Turn the thermostat down again. The burner should shut off and the fan motor should continue to run. During this step, allow the fan to run at least 1 ½ minutes to make sure it will continue to run. Hot Dawg units are equipped with a time delay feature that allows the fan to run for a short period of time to cool the heat exchanger after a call for heat.
6. After insuring that the fan motor will continue to run in the "summer" (or "on") position, set the thermostat to its lowest setting. Place the summer/winter switch (or thermostat fan control) in the "winter" (or "auto") position and the fan motor should shut off.
7. After the fan motor has stopped, and with the summer/winter switch (or thermostat fan control) in the "winter" (or "auto") position, turn the thermostat up to call for heat. The power exhauster should start, the burner should light in approximately 30 seconds and after a delay of approximately 60 seconds, the fan should start.

MODELS PDP/BDP – TYPICAL SUMMER/WINTER SWITCH WIRING



1. Turn off gas and power supply to unit.
2. Determine which method of summer/winter control is desired, Figure 2.1, 2.2 or 2.3.
3. Wire unit according to the method selected. **Note: If the method selected is as described in Figure 2.3, the factory supplied buss bar between terminals "T2" and "F" must be removed** prior to wiring in thermostat and subbase.
4. Check wiring using the Check-Out Procedure.

Check-Out Procedure

With the power and gas supply turned off, set the thermostat to its lowest setting and place the summer/winter switch to the winter position. After making these adjustments proceed as follows:

1. Turn on gas and power supply to the unit. Nothing should happen.
2. Place the summer/winter switch in the summer position. The fan motor should start, except when wired as shown in Figure 4.3. In that case, after a delay of 30 to 90 seconds, the fan motor should start.
3. While the summer/winter switch is still in the summer position, and with the fan motor running, turn the thermostat up to call for heat. The power exhaustor motor should come on, the pressure switch should close, and the main burner should fire. Allow burner to fire for 1 to 2 minutes.
4. Turn the thermostat down again. The main burner should shut off and the fan motor should continue to run. During this step, allow the fan to run at least 90 seconds to make sure it will continue running. Modine units are equipped with a time delay relay and the motor will run 30 to 90 seconds after the time delay relay has been de-energized.
5. After insuring that the fan motor will continue to run in the summer position, and with the thermostat set to its lowest setting, place the summer/winter switch in the winter position and wait for the time delay relay to turn the fan motor off.
6. After the fan motor has stopped, and with the summer/winter switch in the winter position, turn the thermostat up to call for heat. The power exhaustor motor should come on, the pressure switch should close, the main burner should fire and after a delay of 30 to 90 seconds, the fan motor should run.

If the above sequence of operation does not occur, recheck all wiring until the necessary correction to the wiring is found and corrected. Set the thermostat to the desired set point and place summer/winter switch in desired position. Unit is now ready for use.

INFORMATION INSTRUCTIONS — LOW VOLTAGE RELAY

Electrical Data

Coil — 24V 50/60 Hz

Contact — Rated at 1 hp @ 125V, 2 hp @ 250V

Relay contains one pair of normally open (NO) contacts for load switching.

Physical Data

Dimensions — 3" H x 2-5/8" W x 2-1/2" L (See Figure 5.1)

Enclosure — General Purpose with 1/2" conduit connector

Application

Low voltage relays can be used for controlling multiple units off of one thermostat, isolation of power exhauster motors when summer fan switches are used, or as unit interlocks between the unit and other mechanical equipment.

Installation

Modine low voltage relays are shipped separately for field mounting and wiring.

When this low voltage relay is to be used to isolate the power exhauster on PDP/BDP models during the summer, or when a summer/winter switch or thermostat sub-base is used, it may be desirable to mount the relay directly to the unit heater junction box. This can be accomplished with the use of a 1/2", Rigid to Box Pulling Elbow and mounting the relay as shown. (See Figure 3.2)

Figure 3.1
Low Voltage Relay

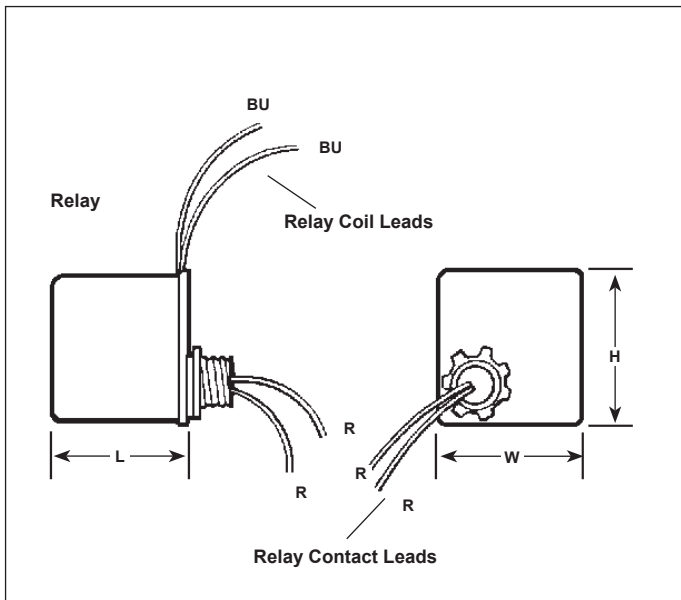


Figure 3.2
Mounting of Low Voltage Relay

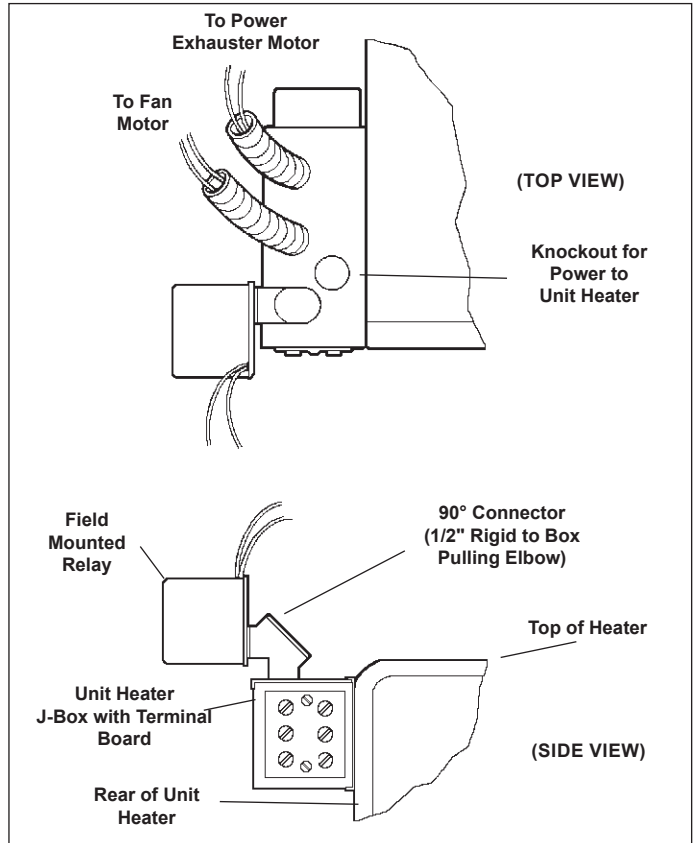


Figure 3.3
Illustration of Summer/Winter Toggle Switch

