

# DesignLine THERMAQUIET™ HEATER

## INSTALLATION INSTRUCTIONS • TYPES DL65-WM, DL145-WM

**ATTENTION: READ THESE INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE, OR SERVICE THE THERMAQUIET HEATERS! RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE.**

**INSPECT THE SHIPMENT IMMEDIATELY WHEN RECEIVED TO DETERMINE IF ANY DAMAGE HAS OCCURRED DURING SHIPMENT.**

**PRIOR TO INSTALLATION, CHECK FOR ANY VISIBLE DAMAGE. MAKE CERTAIN THAT ANY LOOSE PARTICLES ARE REMOVED (ESPECIALLY IN THE BLOWER ASSEMBLY AREA).**

### GENERAL DESCRIPTION

ThermaQuiet heaters are for use with forced hot water in residential heating systems and consist of a copper tube, aluminum finned heating element, with a single phase motor and centrifugal fan design. Their purpose is to deliver a comfortable stream of warmed air, and their construction is extremely compact so minimum space is required for installation. ThermaQuiet is used for vertical mounting, with the air discharged upward through a flush mounted, louvered outer casing.

All types have heating elements with 1/2" nominal copper tube connections, and come with a quick connect that can be quickly and easily removed (the quick connect accepts 1/2" copper or pex tubing). They are also equipped with a 115V electric fan/motor assembly, intertwined with an air and water temperature sensor to prevent operation until hot water is circulating. These units are NOT intended to be used on one or two pipe steam systems.

### THERMAQUIET Q & A FOR INSTALLERS

**Q. How is ThermaQuiet piped?**

ThermaQuiet is piped with 3/4" supply and return pipe. Connections to ThermaQuiet from supply/return in 1/2" (Quick Connect).

**Q. Can I use 1/2" pipe for Supply and Return?**

No, because the ThermaQuiet is designed to have a high resistance to flow so that the influence of pipe runs is minimized.

**Q. What type of pump must I use?**

Any 20 ft head pump (i.e. 0011) should suffice, but a high head pump must be used.

**Q. How many ThermaQuiet's can I put on a 3/4" circuit?**

Depending on the length of run, 2-3 is usually fine. For longer runs use larger diameter pipe.

**Q. How do I know if I have adequate flow?**

There should be 8-10 degrees difference between supply and return. If it is much higher, or if you feel a large difference with your hand, then you have low flow.

Figure A: DL65-WM

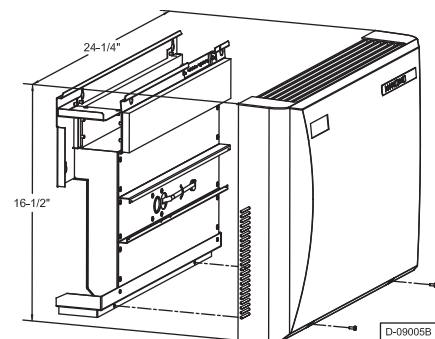
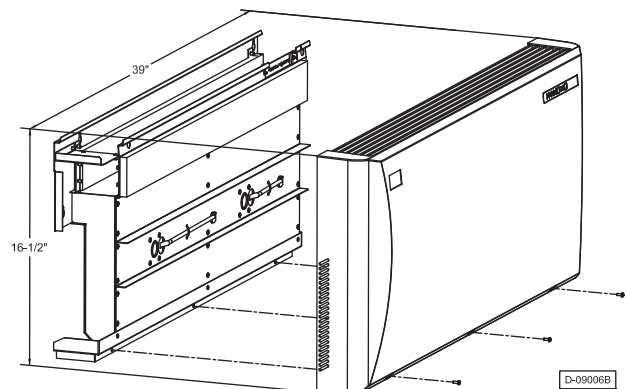



Figure B: DL145-WM



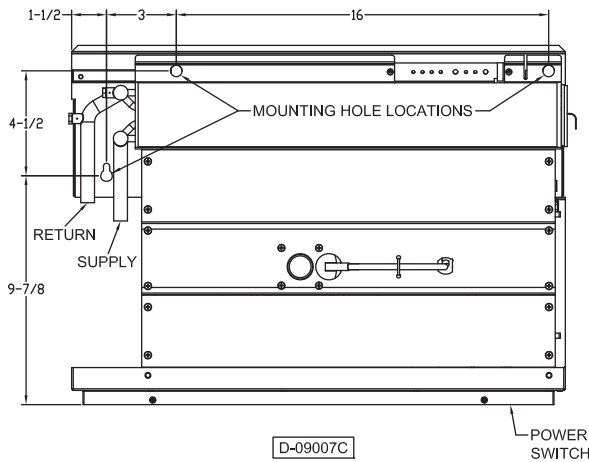
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# INSTALLATION OF THERMAQUIET WALL MODEL TYPE "WM"

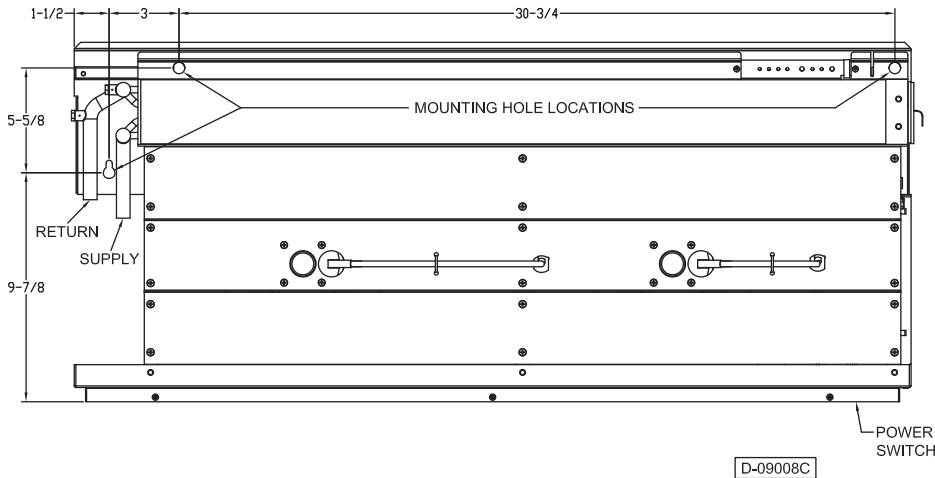
**Figure C: DL65-WM Mounting Hole Locations**



## Installing ThermaQuiet Type DL65-WM & DL145-WM

1. Determine the area on the wall in which the ThermaQuiet unit will be installed. Reference Figure C for the DL65-WM or Figure D for the DL145-WM and drill three 7/16" holes in the marked locations at least 3-4" above finished floor.
2. Insert three supplied hollow wall expansion anchors into the three newly drilled holes.
3. Screw the ThermaQuiet to framed opening at both sides using 1/4" screws.
4. If quick connect is not used, solder the 15mm heating element from the unit to a 3/4" connection.
5. Electrical connections for the wall units are to be made as shown on page 3.
6. Make final piping and electrical connections (see page 3) to the system. Turn the power switch on, purge of air, check blower operation, and check for any possible leaks in the piping.

**Figure D: DL145-WM Mounting Hole Locations**



## DATA AND RATINGS

	GPM	Fan Speed	Entering Water Temperature						
			120°F	130°F	140°F	150°F	160°F	170°F	180°F
DL65-WM	1	Low	1402	1926	2487	2971	3296	3550	3858
		Normal	2049	2628	3158	3756	4057	4333	4609
		Boost	2876	3358	3922	4644	5144	5693	6487
DL65-WM	4	Low	1584	2176	2810	3357	3724	4012	4360
		Normal	2315	2970	3569	4244	4584	4896	5208
		Boost	3250	3795	4432	5248	5813	6433	7330
DL145-WM	1	Low	3152	3877	4501	5463	6855	7654	8195
		Normal	4923	5388	6845	8536	9192	10258	11609
		Boost	5805	6215	8352	10243	11865	12951	14340
DL145-WM	4	Low	3562	4381	5086	6173	7746	8649	9260
		Normal	5563	6088	7735	9646	10387	11592	13118
		Boost	6560	7023	9438	11575	13407	14635	16204

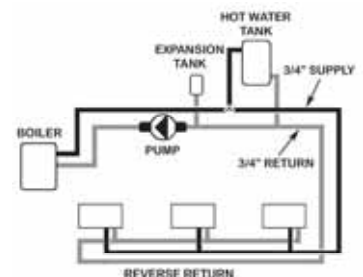
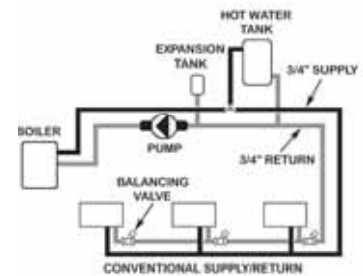
BTU/hr Output based on 65°F entering air

	DL65-WM			DL145-WM		
	Low	Medium	Boost	Low	Medium	Boost
CFM	29	36	48	59	91	118
Voltage	115			115		
Max HP	.03			.06		
dBa	22	33	49	22	34	50
Velocity (ft/sec)	1.31	1.74	2.3	1.48	2.23	2.66
Dimensions	16.14H x 24W x 4.25D			16.14H x 38.78W x 4.25D		

## PIPING SCHEMATIC

Shown is the piping schematic for ThermaQuiet WM-65 and WM-145.

The reverse-return piping is self balancing and is preferable. Add balancing valves to the conventional piping arrangement to insure proper balance.



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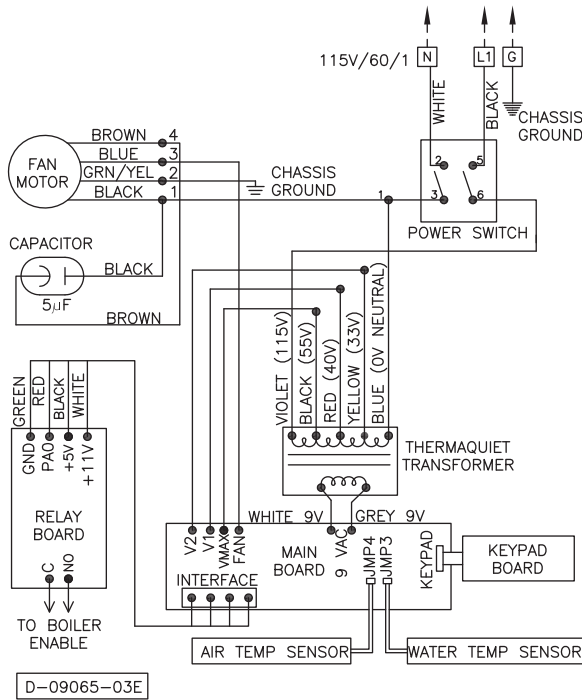
# ELECTRICAL CONNECTIONS

All electrical connections must conform to local and national codes.

**CAUTION!** For Supply Connections, use wires suitable for at least 194°F (90°C).

A single phase motor is used to drive the ThermaQuiet blower on 115 – 120 V, 60 Hz. Since current drain is very small, wiring codes for short circuit protection only will apply. The motor is connected to a circuit board that has sensors for both air and water temperature. The relay board can be used to connect directly to the boiler.

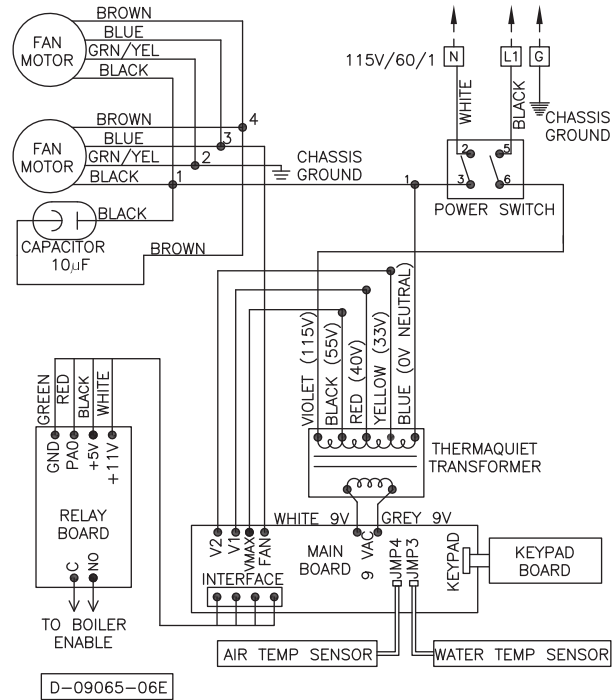
**Diagram 1: Single Fan Motor - DL65-WM**



Electrical Connections are to be made to all units following the diagrams below. Choose the diagram that best suits your application.

Since the blower runs on all ThermaQuiet models only when the system circulator pumps hot water through the unit, simply connect it to the 115V line. If water temperature sensor reads adequate temperature (greater than 79°F) the blower then starts after a short warm-up and stops a few minutes after the circulator shuts off.

**Diagram 2: Double Fan Motor - DL145-WM**



## USER ACCESS

### On/Off

When on/off button is pressed and held for more than one second, if water temperature is greater than 79°F, and if room temperature is below the comfort setting, ThermaQuiet begins operation.

### Comfort Setting

When the unit is on, if the on/off button is depressed less than half a second the selected setting is incremented upwards by approximately 3°F. Repeated pressing will increment to the highest setting and will scroll back to lowest again, etc.

### LED Indicators

The setting LED's from left to right represent 65, 68, 72, 75°F respectively target temperatures.

Please note that these levels are actually compensated levels, and for instance if 68°F is selected, this is compared to the compensated temperature measured at low level which is the predicted temperature at occupant level. The selected LED will flash slowly while the temperature is being raised. When the temperature reaches setpoint, the LED will turn solid.

### Boost

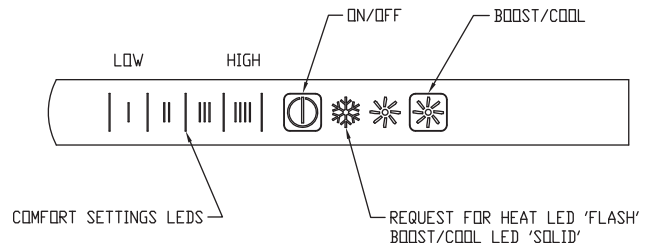
Momentary pressing boost/cool will result in temperature control being abandoned for 20 minutes and will enable a higher output setting not normally accessed in comfort settings. Note, this also depends on water temperature being high enough. System will revert to temperature control after this time.

### Summer Cooling

In summer, it is desirable to initiate air movement in warm conditions. If the On/Off AND the Boost/Cooling buttons are depressed simultaneously for more than one second, then the water temperature will be ignored, and the airflow will ramp up to boost levels until the ThermaQuiet is switched off.

### Request for Heat LED

This will flash Blue if heating is requested and the water temperature is less than 79°F.



## REPLACEMENT PARTS LIST

Description	65	145	Part No.
Insulation Foam, adhesive 1/2 x 2-3/4 x 18	X		H06R08833-03
Insulation Foam, adhesive 1/2 x 2-3/4 x 32		X	H06R08833-06
Insulation Foam, 1/2 x 2-3/4 x 18	X		H06R08834-03
Insulation Foam, 1/2 x 2-3/4 x 32		X	H06R08834-06
Plastic Cover Assy	X		H10R08871-03
		X	H10R08871-06
Grille	X		H10R08819-03
		X	H10R08819-06
Wire Harness	X		J09R08806-01
		X	J09R08806-02
Wire Harness, Ground Wire	X	X	J09R08806-03
Ribbon Cable	X	X	J09R08822
Capacitor 5uf	X		J09R08826
Capacitor 10uf		X	J09R08939
On/Off Switch	X	X	J11R08807
Sensor - Water	X	X	J11R08814
Sensor - Air	X	X	J11R08815
Control/Relay Board	X	X	J11R08816
Keypad Board	X	X	J11R08821
Transformer	X	X	J14R08803
Coil	X		J60R08790-03
		X	J60R08790-06
Wall Anchor Kit	X	X	J20R08869
Fan	X	X	J35R08800
<b>ACCESSORIES</b>			
Quick Connect Adapters	X	X	J40-09114

## LIMITED WARRANTY

### ThermaQuiet Heaters

The "Manufacturer" warrants to the original owner at the original installation site that the ThermaQuiet Heaters (the "Product") will be free from defects in material or workmanship for five (5) years from the date of shipment from the factory. If upon examination by the Manufacturer the Product is shown to have a defect in material or workmanship during the warranty period, the Manufacturer will repair or replace, at its option, that part of the Product which is shown to be defective.

This limited warranty does not apply:

- if the Product has been subjected to misuse or neglect, has been accidentally or intentionally damaged, has not been installed, maintained or operated in accordance with the furnished written instructions, or has been altered or modified in any way.
- to any expenses, including labor or material, incurred during removal or reinstallation of the defective Product or parts thereof.
- to any workmanship of any installer of the Product.

This limited warranty is conditional upon:

- shipment, to the Manufacturer, of that part of the Product thought to be defective. Goods can only be returned with prior written approval from the Manufacturer. All returns must be freight prepaid.
- determination, in the reasonable opinion of the Manufacturer, that there exists a defect in material or workmanship.

Repair or replacement of any part under this Limited Warranty shall not extend the duration of the warranty with respect to such repaired or replaced part beyond the stated warranty period.

**THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, AND ALL SUCH OTHER WARRANTIES, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED AND EXCLUDED FROM THIS LIMITED WARRANTY. IN NO EVENT SHALL THE MANUFACTURER BE LIABLE IN ANY WAY FOR ANY CONSEQUENTIAL, SPECIAL, OR INCIDENTAL DAMAGES OF ANY NATURE WHATSOEVER, OR FOR ANY AMOUNTS IN EXCESS OF THE SELLING PRICE OF THE PRODUCT OR ANY PARTS THEREOF FOUND TO BE DEFECTIVE. THIS LIMITED WARRANTY GIVES THE ORIGINAL OWNER OF THE PRODUCT SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY BY EACH JURISDICTION.**

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