

Duo-THERM

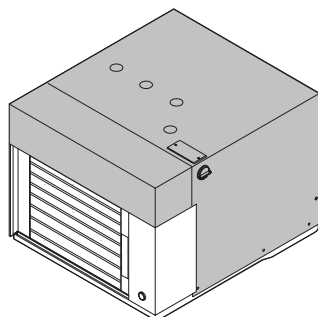
by Dometic

RECORD THIS UNIT INFORMATION FOR FUTURE
REFERENCE:

Model Number _____
Serial Number _____
Date Purchased _____



**SELF-CONTAINED HEAT PUMP FOR TENT
CAMPERS & SMALL TRAVEL TRAILERS**



**ROTARY COMPRESSOR
SYSTEM MODEL
41001.601**

**THIS UNIT IS DESIGNED FOR OEM INSTALLATION
ALL INITIAL INSTALLATIONS MUST BE APPROVED BY THE SALES DEPT.**

CANADA
Dometic Dist.
866 Langs Dr.
Cambridge, Ontario
CANADA N3H 2N7
519-653-4390

For Service Center
Assistance Call:
800-544-4881



CERTIFIED
LR 23565



**UNDERWRITERS
LABORATORIES**

LISTED
637G INC. ®

⚠ WARNING

This Manual should be read and understood before installation, adjustment, service or maintenance is performed. This unit must be installed and serviced by a qualified serviceman. Modification of this appliance can be extremely hazardous and could result in personal injury or property damage.

⚠ AVERTISSEMENT

Lire et comprendre ce manuel avant de procéder à l'installation, à des réglages, de l'entretien ou des réparations. L'installation et l'entretien de cet appareil doivent être effectués par un réparateur qualifié. Toute modification de cet appareil peut être extrêmement dangereuse et entraîner des blessures ou dommages matériels.

INSTALLATION & OPERATING INSTRUCTIONS

MODEL 41001.601

REVISION

Form No. 3107225.025 11/97
(Replaces 3107225.017)
(French 3108628.003)
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LaGrange, IN 46761

INSTALLATION AND OPERATION INSTRUCTIONS FOR MODEL 41001.601 HEAT PUMP AIR CONDITIONER

■ SPECIFICATIONS

MODEL NUMBER	41001.601		
Nominal BTU Cool/Heat	12,000		
Volts/Phase/Hertz	115/1/60		
FLA Comp/Motor	9.5 / 2.5		
LRA Compressor	54		
Wire Size	12 AWG Copper Conductor		
Circuit Protection	20 Amp Time Delay Fuse or 20 Amp HACR Circuit Breaker		
Refrigerant	R-22		
System Refrigerant Charge	24.5 oz.		
Size (Inches)	Width	Height	Depth
	22.00	14.50	20.50
Installed Weight	70 Pounds		

■ PRECAUTIONS

⚠ WARNING

IMPROPER INSTALLATION MAY DAMAGE EQUIPMENT, COULD ENDANGER LIFE, CAUSE SERIOUS INJURY AND/OR PROPERTY DAMAGE.

- A. Read installation and operating instructions carefully before attempting to start your air conditioner.
- B. The Dometic Corporation will not be liable for any damages or injury incurred due to failure in following these instructions.
- C. Installation **must** comply with the National Electrical Code and any State or Local Codes or regulations.
- D. **DO NOT** add any devices or accessories to this air conditioner except those specifically authorized by Dometic.
- E. This equipment must be serviced by qualified personnel and some states require these people to be licensed.

■ GENERAL INFORMATION

Model 41001 Heat Pump Air Conditioner was designed to be installed and used in tent campers and small travel trailers. The 41001 Heat Pump allows the O.E.M. to build and ship a complete unit ready for camping. It also reduces the need for heavy duty lift systems (pop-up) required to lift the weight of a roof mounted air conditioner. With most tent campers being fair-weather used (temperature range 40 degrees and above), installation of a furnace is not required. The 41001 Heat Pump air conditioner will keep you cool during hot weather and warm during cooler weather - **down to 40 degrees outside ambient.**

NOTE: THE 41001 HEAT PUMP IS NOT RECOMMENDED FOR USE BELOW 40 DEGREES OUTSIDE TEMPERATURE.

HELPFUL HINTS TO MAKE YOUR CAMPING MORE ENJOYABLE:

- 1. Do not block air flow with curtains or furniture.
- 2. Keep curtains closed during the sunniest part of the day.
- 3. Keep the return air filter clean.
- 4. Choose a shaded camp site.
- 5. Install a Dometic awning with screen room.

Your heat pump air conditioner provides the following functions to make your camping more comfortable.

- Cools and circulates inside air (**Summer**)
- Lowers humidity by removing excess moisture (**Summer**)
- Filters out dust, dirt and other airborne impurities (**Summer/Winter**)
- Heats and circulates inside air (**Winter**)

The heat pump air conditioner performs these functions by drawing room air through a filter which traps dust and dirt particles. The air then passes over the indoor conditioning coil which cools and removes excess moisture (**Summer**) and heat the air (**Winter**). The same air is then returned to the living space to keep you comfortable. Your heat pump is designed to be easy to operate and to provide plenty of comfort.

NOTE: The drain tube should be left unplugged during heating operation, storage and any time when traveling after the air conditioner has been operating

■ CHOOSING THE PROPER LOCATION FOR THE HEAT PUMP

The heat pump system is intended for installation in a tent camper or small travel trailer where the interior space is essentially one undivided space.

The camper manufacturer Engineering Staff should carefully review each floor plan before starting an installation.

Dometic O.E.M. Sales Staff, Application Department and Product Engineering are available to help answer your questions pertaining to key areas of the installation.

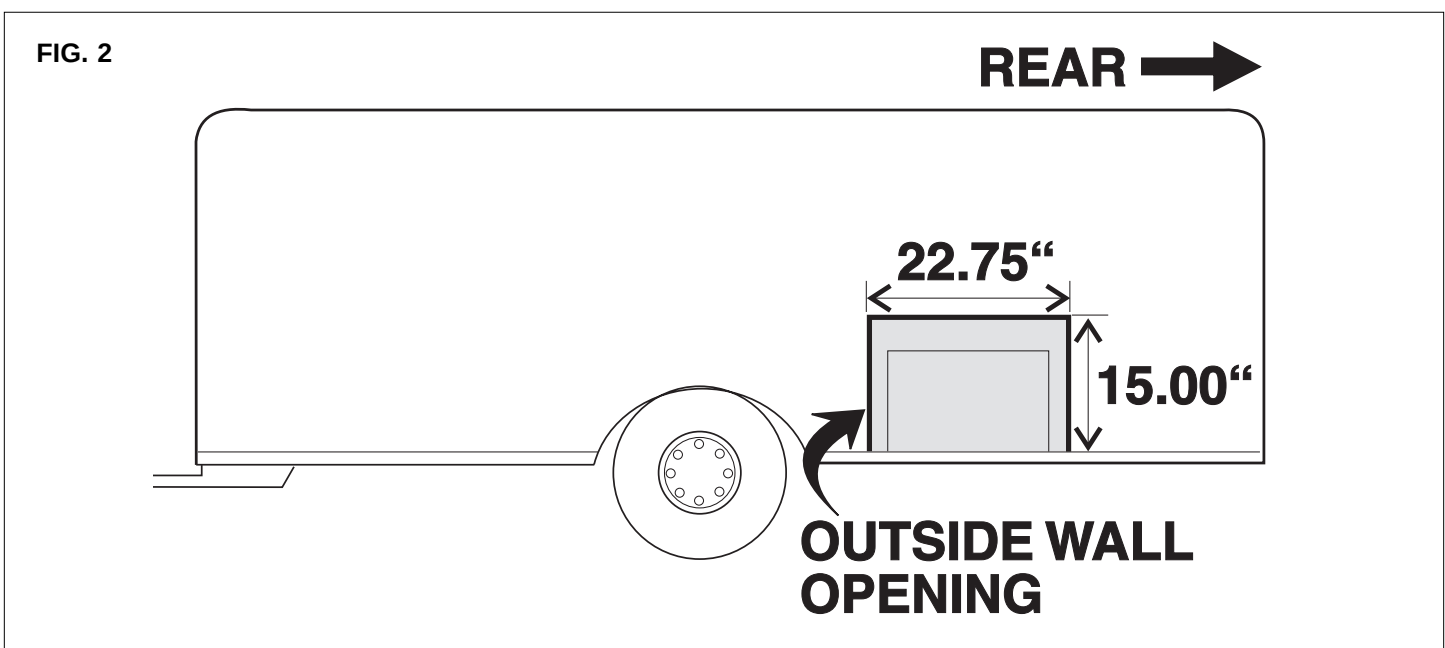
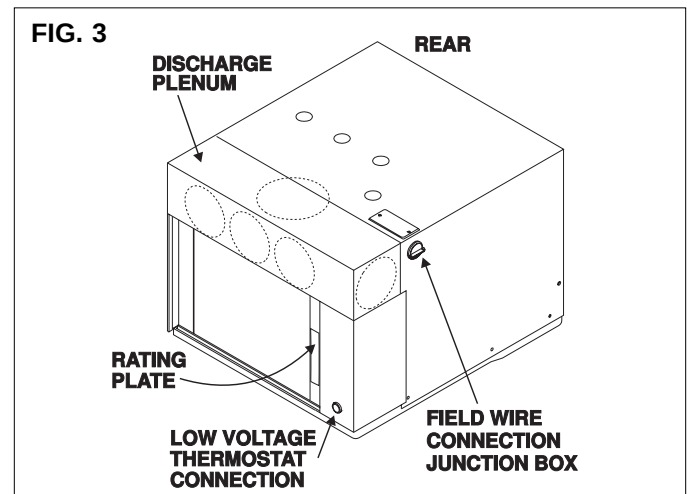
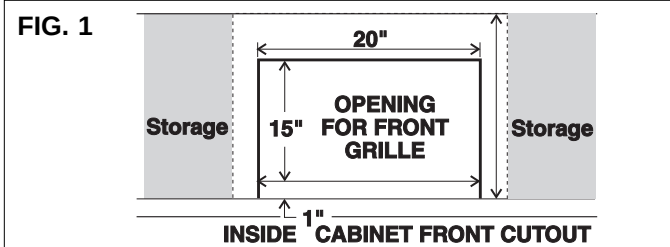
INSTALLATION INSTRUCTIONS

NOTE: An under-counter compartment **MUST BE** provided for the heat pump installation. This compartment **SHOULD ONLY BE USED FOR INSTALLING THE HEAT PUMP.**

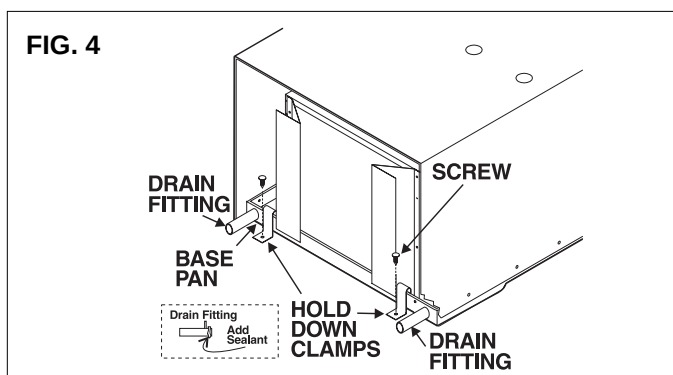
1. Before starting the installation, items that must be checked are:
 - A. Electrical wires in the wall
 - B. Water lines
 - C. LP gas line
2. Required tools for installation:
 - A. Jigsaw
 - B. Drill and drill bits
 - C. Screw drivers; Phillips and slotted
 - D. Silicone sealant
 - E. Socket set
 - F. Utility knife
 - G. Measuring tape
3. Once the floor plan has been reviewed and the compartment has been selected for heat pump installation, a 22.75 inch wide by 15.00 inch high opening through the sidewall or outside panel is required. The interior compartment must be at least 20 inches deep. (See FIG. 1 and FIG. 2). **NOTE: When using the minimum cabinet depth of 20.0 inches, the standard Rotaire Register must be cut to avoid restricting the air flow.**

4. Remove the heat pump from its carton. Inspect for shipping damage.
5. Locate the discharge air plenum. (FIG. 3). Using the template, cut the require hole or holes for your installation either front discharge, side or top discharge.

NOTE: In a travel trailer installation, cabinet or in ceiling, ducting may be required.
6. Access openings should be prepared as shown. (See FIG. 1). Cabinet front opening must be 20 inches wide by 15 inches high to provide an opening for the discharge and return air grille. A discharge and return air grille with register option is available to speed up the installation. An electrical service opening is provided by removing the return air grille.



7. Now that your compartment is heat pump ready with all holes cut, carefully slide the heat pump into position. Using the hold-down clamps supplied, clip the clamps over the base pan flange as shown and secure in place with screws supplied. (See FIG. 4)
8. Next, install the drain fittings to the base pan. Sealant must be added around the drain fitting end that is screwed into the base pan. Drain Tube is 3.0 in. long. Your installation may require the tube to be cut so only 1/2" extends beyond the outside grille.
9. Install the rain shield. **NOTE:** The rain shield must have sealant applied to the short flange surfaces to seal out rainwater.
10. Seal along the heat pump bottom to rain shield.
11. Install the hold down clamps (see Fig. 4)
12. Install the plastic tubes on the drain fittings.
13. Install the outside grille. The drain tubes should extend through the grille frame holes.



The outside work is complete.

If your cabinet space is 20"-23.5" deep, the metal duct extension is not needed.

Attach the registers to the heat pump unit knock out openings. In some installations the register will need to be cut to fit the cabinet space.

After the register has been installed, install the inside grille to the cabinet front.

See drawing for the order of installation and installation kit component parts list.

For all wiring refer to the Installation and Operating Instructions.

■ GRILLES AND REGISTERS

For inside conditioned air supply, Dometic's discharge air kit must be used.

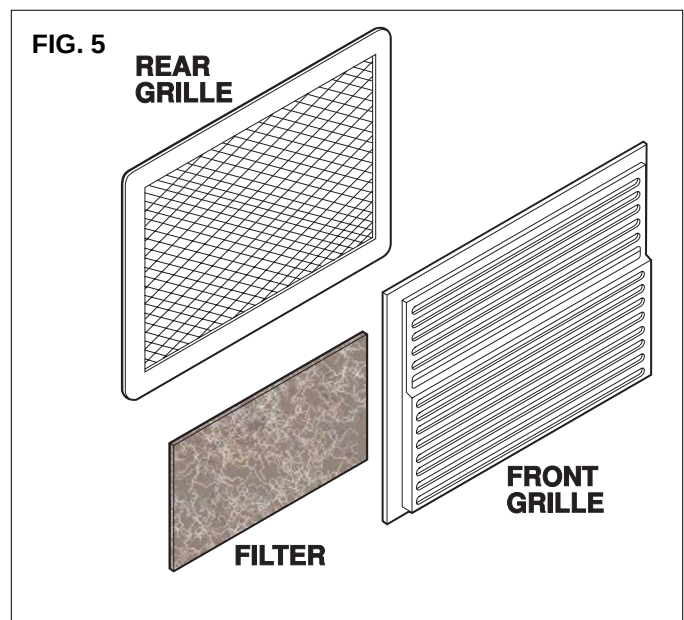
DISCHARGE AIR KIT, Part No. 3107251.XXX:

1. A return air grille and filter are required for front discharge.
2. An outside grille kit in Nutra White is available to dress up your installation.

■ ELECTRICAL WIRING

NOTE: All wiring must comply with the National Electrical Code or CSA Standard C22.1, Canadian Electrical Code, Part 1; and local codes.

NOTE: ONLY KITS SUPPLIED BY, OR APPROVED BY DOMETIC SHOULD BE USED.



GENERAL

1. All 120 volt AC wiring must be at least **12 AWG**.
2. Two conductors plus a ground must be provided from a supply circuit protected by a **20 amp** slow-blow fuse or a 20 amp HACR type circuit breaker to the heat pump junction box.

LINE VOLTAGE WIRING

1. Remove the junction box cover.
2. Route supply wires through the connector and tighten lock nut and clamp screws to ensure against twisting of the wires.
3. Connect the **white** wire in the junction box to the **white (neutral)** wire from the supply line using an appropriate wire connector.
4. Connect the **black** wire in the junction box to the **black (hot)** wire from the supply line using an appropriate wire connector.
5. Connect the ground wire from the supply line to the ground lead in the junction box and secure with an appropriate wire connector.
6. Install junction box cover.

LOW VOLTAGE WIRING

1. Route a four (4) conductor thermostat cable from the electrical box to the thermostat location.

HEAT PUMP LOW VOLTAGE WIRES AND THERMOSTAT CONNECTIONS		
HEAT PUMP LEADS		THERMOSTAT TERMINALS
RED	RC (12V DC)	R
YELLOW	COOL	Y
BLUE	FAN	G
VIOLET	HEAT PUMP	W

The **low voltage connection** can be made without removing the electrical box cover. The low voltage leads must be tucked back inside of the electrical box.

Connect the low voltage wires as shown above. **Turn the 120 volt AC power on to the heat pump.**

■ THERMOSTAT LOCATION

Locate the thermostat in a mainstream location. The thermostat should be in a location where it will not be damaged and where it will provide the most comfort.

■ THERMOSTAT OPERATION

Cooling:

1. Set the system switch to COOL.
2. Set the temperature lever to your comfort level.
3. Set the FAN switch to:
 - A. AUTO: The fan cycles OFF and ON with the compressor.
 - B. ON: The fan will run continuously. The compressor will turn ON and OFF to maintain set temperature.

Heat Pump Heating:

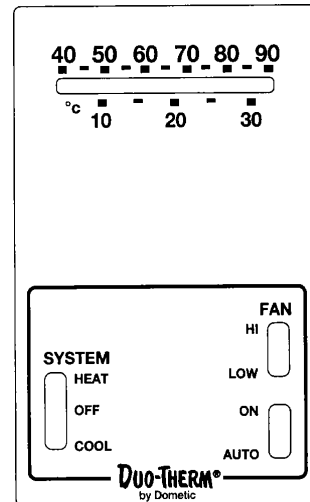
1. Set the system switch to HEAT PUMP.
2. Set the temperature lever to your comfort level.
3. Set the FAN switch to:
 - A. AUTO: The fan cycles OFF and ON with the compressor.
 - B. ON: The fan will run continuously. The compressor will turn ON and OFF to maintain set temperature.

Fan:

1. To circulate air without cooling or heating:
 - A. Set the system switch to OFF.
 - B. Set the fan switch to ON.

NOTE: Heat Pump Model 41001 is a single-speed unit and has only one fan speed.

THERMOSTAT FACE PLATE



■ DRAIN PLUG AND FROST PREVENTION

Heat pumps have a tendency to frost during operation when the outside temperature is below 40 degrees with moderate humidity conditions. To help your heat pump maintain peak performance during heating and reduce frosting, **the drain tube should be left unplugged during heating operation, storage and any time when traveling after the air conditioner has been operating.**

■ MAINTENANCE

AIR FILTER: Periodically remove the return air filter. Wash the filter with soap and warm water, let air dry and then reinstall as required.

NOTE: Never operate the heat pump air conditioner without the return air filter in place. This may plug the unit evaporator coil with dirt and may substantially affect the performance of the unit.

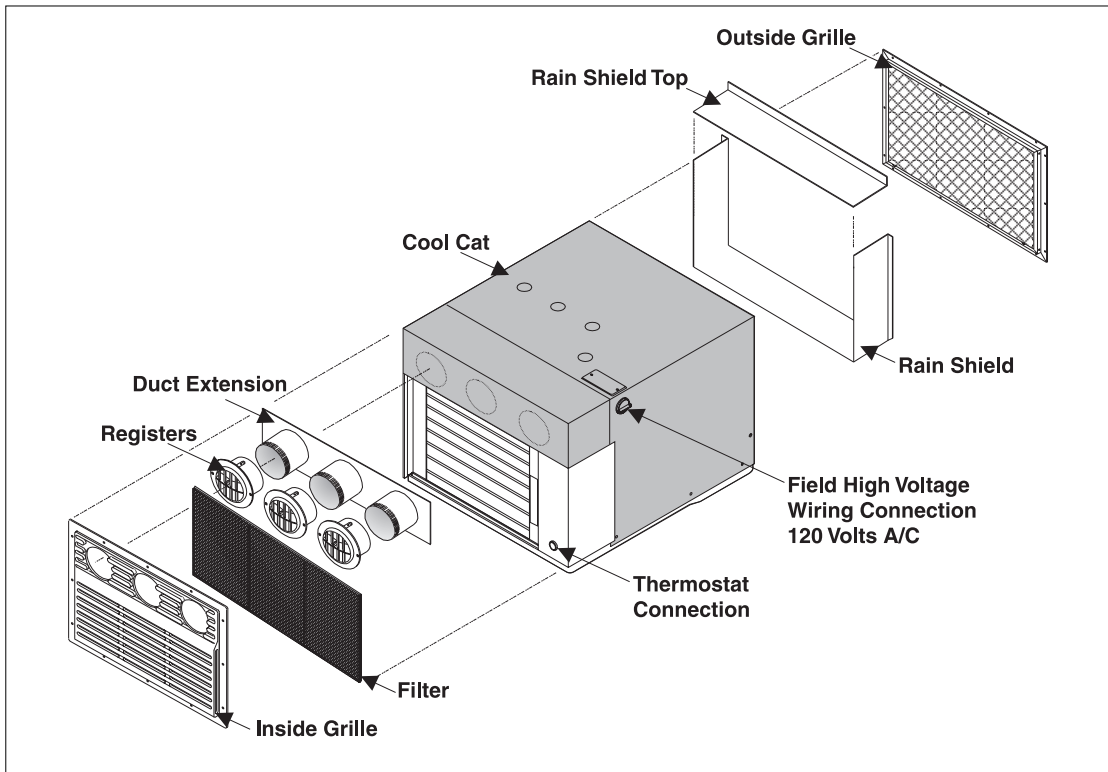
■ SERVICE

Unit Does Not Operate:

If your unit fails to operate or operates improperly, check the following before calling your service center:

1. If your camper is connected to a motor generator, check to be sure motor generator is running and producing power.
2. If camper is connected to power supplied by land line, check to be sure line is sized properly to run the heat pump load and it is plugged into power supply.
3. Check your fuse or circuit breaker to see if it is open.
4. Check to be sure your thermostat is turned on.
5. After the above checks, call your local service center for further help. This unit must be serviced by qualified service personnel only.

When calling for service, always give the heat pump model number and serial number. This information can be found on the unit rating plate located behind the filter, next to the electrical box.



WIRING DIAGRAM

