

RECORD THIS INFORMATION FOR FUTURE REFERENCE <u>BEFORE</u> INSTALLING THE UNIT:

Model Number	
Serial Number	
Date Purchased	
Place of Purchase _	

SELF-CONTAINED AIR CONDITIONER FOR PARK MODEL ROTARY COMPRESSOR SYSTEM MODELS 39025.502 & 39035.601

SERVICE OFFICE The Dometic Corp. 509 So. Poplar St. LaGrange, IN 46761

CANADA

USA

Dometic Dist. 866 Langs Dr. Cambridge, Ontario CANADA N3H 2N7 THIS UNIT IS DESIGNED FOR OEM INSTALLATION ALL INITIAL INSTALLATIONS MUST BE APPROVED BY THE SALES DEPT.

WARNING

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult a qualified installer or service agency.

AVERTISSEMENT

Une mauvaise installation, de mauvais réglages, modifications ou opérations d'entretien peuvent endommager les biens ou même blesser. Se reporter à la notice. Pour obtenir de l'aide ou des reseignements complémentaires, consulter un installateur qualifié ou une agence de service après-vente.

INSTALLATION & OPERATING INSTRUCTIONS

SYSTEM MODELS 39025.502 39035.601

Form No. 3106185.006 10/94 ©1994 The Dometic Corp. LaGrange, IN 46761





INDEX

1. 2.	Specifications, General Information, Location	2 3
	A. Free Area	3
	B. Mounting	3
	C. Service Access	3
3.	Evaporator Section	3
	A. Clearances	3
	B. Inlet Air	3
	C. Outlet Air	4

Electrical Wiring	4
Thermostat Mounting	5
Thermostat Wiring	5
Ducts	5
Maintenance	6
Servicing	6
Wiring Diagram	.6
	Electrical Wiring Thermostat Mounting Thermostat Wiring Ducts Maintenance Servicing Wiring Diagram

1. SPECIFICATIONS, GENERAL INFORMATION & LOCATION SPECIFICATIONS

System Model	3902	25.502	39035	.601
Nominal BTU Capacity (60hz♦50 hz.)	15,000 15,000 12,500			0 ♦ 12,500
Volts/Phase/Hertz	115 / 1 / 60 115/1/60 🔶 100/1/5			/60 🔶 100/1/50
Run Amps Comp/Motor	12.9/4.1 12.1/4.7 ♦ 10.1/3			.7 ♦ 10.1/3.4
LRA Compressor	71 71			
Wire Size	Up to 24 ft Use No. 12 AWG Copper Conductors			
Circuit Protection	20 Amp Time Delay Fuse or 20Amp HACR Circuit Breaker			
Refrigerant	R-22			
System Refrigerant Charge	28.5 oz.			
Size (In Inches)	Width	Height		Depth
	26.25	16.25		19.25
Installed Weight	102 Pounds			
Duct Size	2" x 10" minimum" / 2-1/2" x 14" maximum"			

GENERAL INFORMATION

The **Central Air Conditioning Unit** was designed to allow the coach manufacturer the option of connecting the air conditioning unit to the coach's central furnace duct system. The advantages of the Central Air Conditioning Unit are:

- 1. The unit is not exposed to the elements;
- 2. Easier serviceability;
- 3. Elimination of the air conditioner's roof perch;
- 4. Cleaner roof line.

The 390 Series was designed to be used exclusively with external ductwork for the cold air discharge. A 24 volt control utilizing a standard wall mounted thermostat operates the cooling cycle. There are no provisions for an electric heater to be installed internal to the unit. Heating will be supplied by the central furnace if installed.

The manufacturer should review each floor plan to determine proper duct design and register location.

The Dometic Product Engineering and Applications Departments are available for recommendations and suggestions.

FIG. 1



LOCATION

The system is intended for installation in a Park Model where the interior is essentially one undivided space. When locating the unit, avoid any area where the unit could be damaged when transporting. An area to avoid during mounting is the extreme front and rear of the unit. (See FIG. 1).

2. CONDENSER SECTION

The condenser coil is designed to have a fresh supply of air. If skirting is installed, allow a $15" \times 22"$ opening (330 square inches) for supply air and a $15" \times 22"$ opening (330 square inches) for discharge air. Use the cross flow method for good air circulation.

! CAUTION

DO NOT TOTALLY ENCLOSE THE UNDERSIDE OF THE UNIT. AIR CIRCULATION PREVENTS HEAT FROM BUILDING UNDER UNIT AND YOUR SYSTEM WILL PERFORM AS DESIGNED.

The condenser section is a "blow-through" type. When the face of the coil is positioned behind a louvered or other type of restrictive opening, the FREE AREA of the opening must be **at least 330 square inches**.

A. FREE AREA — is the opening that remains in a grill or louvered panel after the restrictions are taken away. For example, an opening of 10 x 20 inches has 200 square inches. When this opening is covered with a grill that is 56 percent open, the FREE AREA is (200 x .56), 112 square inches.



EXAMPLE OF HOW TO DETERMINE FREE AREA OR % OPEN AREA:

1/2	TOTAL AREA	=	8 X 8	=	64
2 	FREE AREA	= =	2 X 2 X 36	9 op	enings
<u>1/2</u>	% OPEN AREA	=	<u>36</u> 64	=	56%

Expanded and perforated metal grills in general vary from 30 percent to 60 percent open. Be certain that **294 square inches** of FREE AREA is available to the face of the condenser.

NOTE: Service access must always be supplied either as clearance or as a defined access panel.

B. MOUNTING

Vibration eliminators should be used at the unit's surface contact points to prevent the transmittance of vibration into the living area. Use a rubber or ethafoam pad to absorb any unit vibration that may occur.

The air conditioning unit may be attached to rails beneath the vehicle, attached to the frame, or mounted directly to the floor of some vehicles.

Unit should be mounted with a tilt toward the rear (condenser) a half-bubble using a level. Unit rear should be 1/4" lower than the front.

Some manufacturers may prefer to mount unit with belly bands of their own design.

C. SERVICE ACCESS

Be sure **NOT** to block the inlet or discharge air, or service access, when mounting. See FIG. 2C.



3. EVAPORATOR SECTION

A. CLEARANCES (See FIG. 3)

The minimum clearances to the evaporator are zero inches to the bottom, top, left and right sides. Access to the electrical connections and drain connection must be provided when making the installation.



Be sure to allow sufficient room to service the electrical components.

B. INLET AIR

The evaporator section must have free access to room air. A minimum of 204 square inches of FREE AREA opening is required. Where the return air must be provided through louvers or mesh screen, the FREE AREA percentage of the material used shall be taken into consideration when making this determination. An example of how to determine FREE AREA is included under "2. CONDENSER SECTION".

GRILLS AND REGISTERS:

NOTE: The return air grill must have the same square surface as the coil face (12"H x 17"L).

For each air conditioning system, there must be a return grill to bring cabin air back into the unit. There must also be at least four discharge grills per unit.

If floor duct system is used, a maximum duct size of $2.5" \times 14"$ (with $2" \times 10"$ floor registers) is recommended for good air conditioning performance.

Return air grills must be located in a high wall area (next to the ceiling) for good air circulation. Each return air grille must be filtered and accessible for cleaning or replacement.

C. OUTLET AIR:

The central air conditioning unit is designed to use a $2.5" \times 14"$ discharge air duct at a static pressure of .10 to .25 inches water column. This duct size is necessary to maintain proper air flow without loss of static pressure and provide good air circulation.

All air handling ducts must be properly insulated to prevent condensation forming on their surface during operation. A vapor barrier must also be supplied on the outer surface of the insulation to prevent moisture from traveling through the insulation and condensing on the cold ductwork.

NOTE: If the air conditioning unit is attached to the central furnace, a damper must be installed at the furnace outlet to prevent cold air from circulating through the furnace heat exchanger.

4. ELECTRICAL WIRING

See FIG. 4.

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

A. GENERAL

- 1. All 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 second opening at the right of the evaporator section electrical box.

B. EVAPORATOR SECTION-Line Voltage

(See FIG. 4)

- 1. Remove electrical box cover.
- 2. Route the supply wire through the connector and tighten lock nut to ensure against twisting of the wires.
- 3. Connect the white wire in the junction box and the white (neutral) wire from the supply line using an appropriate wire connector.
- 4. Connect the black wire in the junction box to black (hot) wire from the supply line using an appropriate wire connector.
- 5. Connect the ground wire from the supply line to the unit ground screw.



WARNING

FAILURE TO CORRECTLY WIRE THE UNIT WILL CAUSE PRODUCT DAMAGE AND MAY CAUSE PER-SONAL INJURY.



5. THERMOSTAT MOUNTING

Contact The Dometic Corporation for the proper thermostat kit. The proper location of the thermostat is very important to ensure that it will provide a comfortable temperature. Observe the following general rules when selecting a location.

- A. Locate thermostat about 5 feet above the floor;
- B. Install thermostat on a partition, not on an outside wall;
- C. NEVER expose it to direct heat from lamps, sun or other heat producing items;
- D. Avoid locations close to doors that lead outside, windows or adjoining outside walls;
- E. Avoid locations close to supply registers and the air from them;
- F. Never locate thermostat in a room that is warmer or cooler than the rest of the coach such as the kitchen;
- F. The major living area is normally a good location.

6. THERMOSTAT WIRING

A three-conductor cable 18 to 22 AWG is to be used for low voltage connections. Route low voltage cable from thermostat to unit electrical box. Use .50 dia. snap-bushing for routing cable into electrical box.

Connect "R" from thermostat to red wire in control compartment. Connect "G" or "F" from thermostat to blue wire in control box. Connect "Y" from thermostat to yellow wire in control box. Use wire nuts to ensure good connections.

OPERATION

This unit functions like a residential air conditioner. A. Set the **System Switch** to COOL.

- B. Set the Temperature Lever to your comfort level.
- C. Set the Fan Switch to:
 - 1) "AUTO": The fan cycles off and on with the compressor.
 - 2) "**ON**": The fan will run continuously. The compressor will turn off when the room temperature is low enough to satisfy the thermostat setting.

Air Circulation Without Cooling:

- A. Set the system switch to "OFF";
- B. Set the fan switch to "**ON**". The fan will run continuously, circulating air.

FURNACE TO THERMOSTAT WIRING

When connecting a gas furnace to Dometic's **Heat/Cool** thermostat, the "**W**" and "**R**" terminals are used. This means there will be two wires on the "R" terminal (one wire from the furnace and one wire from the air conditioner).

FURNACE OPERATION

- A. Set the fan switch to "AUTO"
- B. Set the system switch to "HEAT"
- C. Set the temperature lever to your comfort level.

The furnace will come on and heat your coach as required. The furnace and blower will cycle ON and OFF as needed to maintain your comfort.

7. DUCTS

NOTE: Streamlining of the air duct system means less resistance to air flow. Sharp angles and turns are to be avoided.

A. Pressure losses increase as the diameter of the duct is reduced. When installing your ductwork on long runs, increase the duct diameter avoid sharp turns.



- B. The final evaluation of air distribution in a space is determined by the occupants' comfort.
- C. When building around duct runs or placement of duct material, **DO NOT** kink or crush tubing. If turns are required, maintain largest radii possible to decrease pressure loss.

8. MAINTENANCE

- **A. AIR FILTER:** Your air conditioner will operate more efficiently with a clean filter. Replace the filter with a new one every three months.
- **B**. To maintain efficient operation, the exposed CON-DENSER COIL should be cleaned as often as necessary to keep it free of dirt and debris. Be careful not to damage the coil fins when cleaning.

9. SERVICING

If service work is needed, contact your dealer or the nearest authorized service center. When requesting service, always give complete model and serial numbers. These numbers are located on the left side of the condenser bulkhead.

BEFORE YOU CONTACT A SERVICEMAN

There are several built-in features that may automatically shut off the unit under abnormal operating conditions. If your unit should shut off, here are some things you should check before you contact a service center.

- A. Wait 15 to 30 minutes to see if unit will resume operation.
- B. Check thermostat to see if it is properly set.
- C. Check fuses on electrical supply in the vehicle.
- D. Check the filter (indoor section) to see if it is clean.
- E. Check the condenser coil to be sure it is clean.



WIRING DIAGRAM