

PROCEDURE FOR CHANGING COOLING UNIT IN CARAVAN 95 AND NDR REFRIGERATORS



**Refrigerator
Bulletin R74/6D
March 2002**

The following categories have been established predicated on similarity of design and procedure for replacement of cooling units:

A - CATEGORY #1

RM2193	RM2332	RM2333
RM2452	RM2453	RM2551
RM2552	RM2553	RM2554
RM4223	RM4290	RM4292

B - CATEGORY #2

RM2620	RM2652	RM2820
RM2852	RM3662	RM3663
RM3862	RM3863	NDR1062

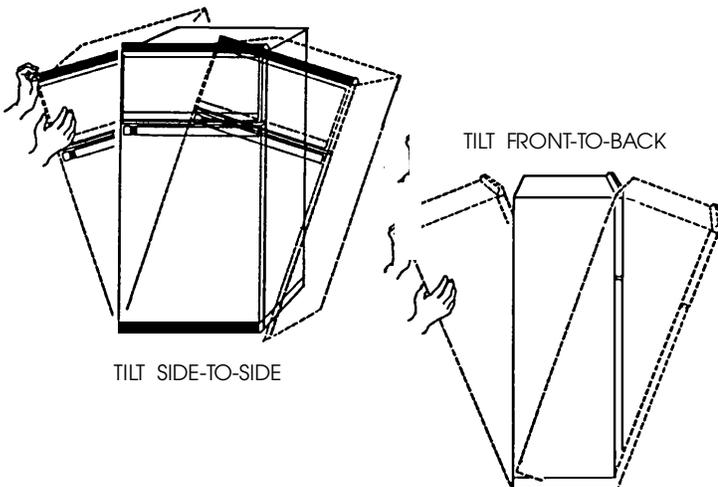
C - CATEGORY #3

RM1272	NDR1282
RM1282	NDR1292
NDR1272	NDR1492

! WARNING

These instructions must be read and understood before installation of this kit. This kit must be installed by a Dometic service center or a qualified service technician. Modification of this product can be extremely hazardous and could result in personal injury or property damage.

Important: After the cooling unit has been installed, the initial start-up time can be shortened by tilting the refrigerator from side-to-side and then from front-to-back before the refrigerator is turned on. Hold in each tilt position for approximately 30 seconds to settle solution to bottom of cooling unit.



Run the refrigerator on a bench for 12 hours after the cooling unit has been installed. The refrigerator should not have food in it during this test.

REVISION

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GENERAL INSTRUCTIONS TO ALL MODELS

1. Disconnect shore power from coach, the positive lead from battery, and **turn propane OFF at the tank.**
2. Through lower vent, unplug refrigerator 120V AC cord(s) from wall receptacle. Disconnect 12V DC wires from terminal block on the refrigerator (if models have 12V DC). Tape or cap ends.
3. Check again to make sure propane is OFF at tank, then remove coach gas line from gas cock on refrigerator and cap coach gas line.
4. **For Models with Ice Maker:** Turn water OFF to appliance. Disconnect coach's water line from water solenoid (cap end).
5. Remove the refrigerator from alcove.

A. Category #1:

RM2193	RM2332	RM2333	RM4223
RM2452	RM2453	RM2551	RM4290
RM2552	RM2553	RM2554	RM4292

STEP 1. REMOVAL OF COOLING UNIT

1. See General Instructions on all models.
2. Loosen screws holding the thermostat bulb to fins. See FIG. A1.

Note: Some models have a plastic thermistor bracket clipped to the fin.

3. Remove the screws from the back wall of the freezer and the fins.

Note: On models RM2452, RM2453, RM2551, RM2552, RM2553 and RM2554, the fins are installed on the cooling unit before it is put in the cabinet. The cooling unit must be out of the cabinet before the fins can be removed.

4. On all other models remove the fins. See FIG. A1.
5. Lay the refrigerator face down on two 2x4's to avoid damaging the refrigerator front.
6. Remove cover from boiler and heating element(s).
7. Remove burner cover and then the burner assembly.

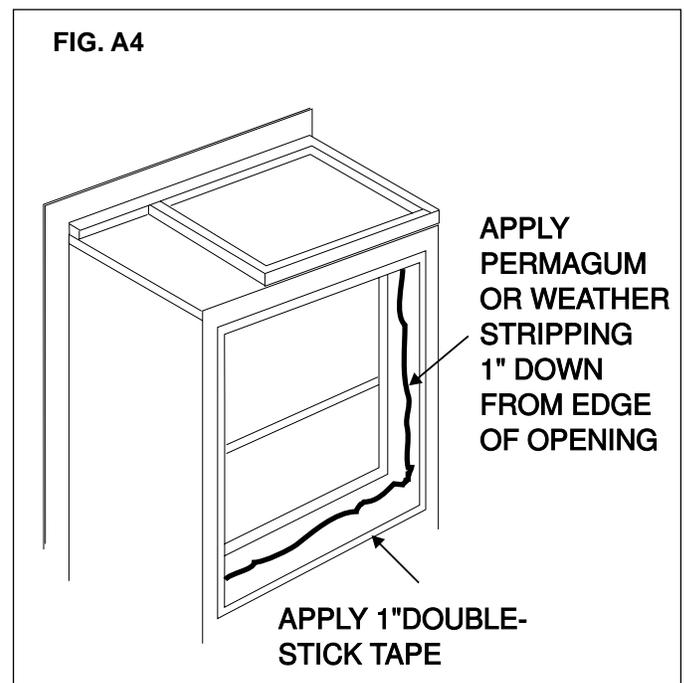
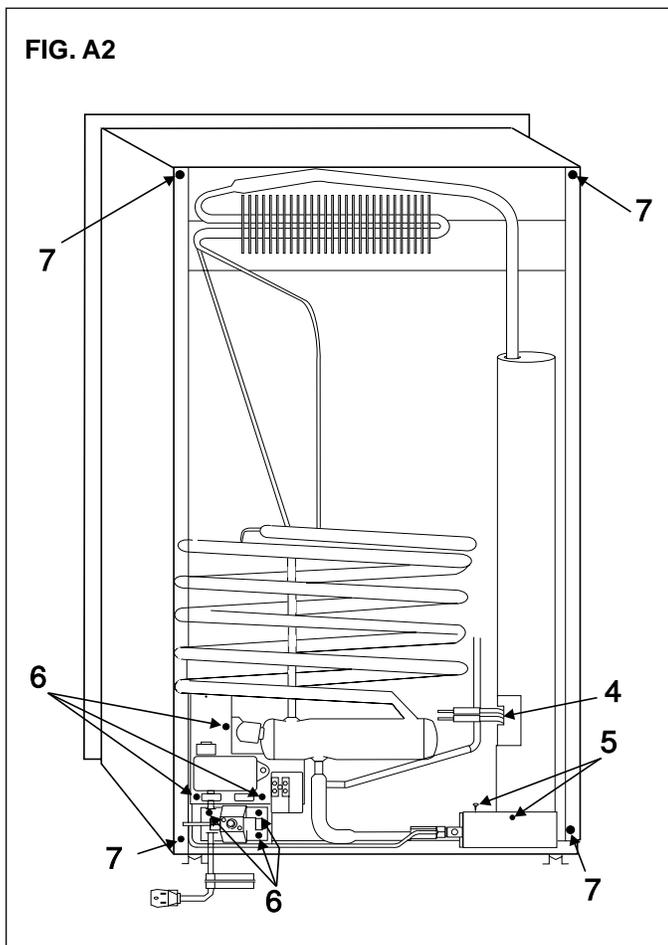
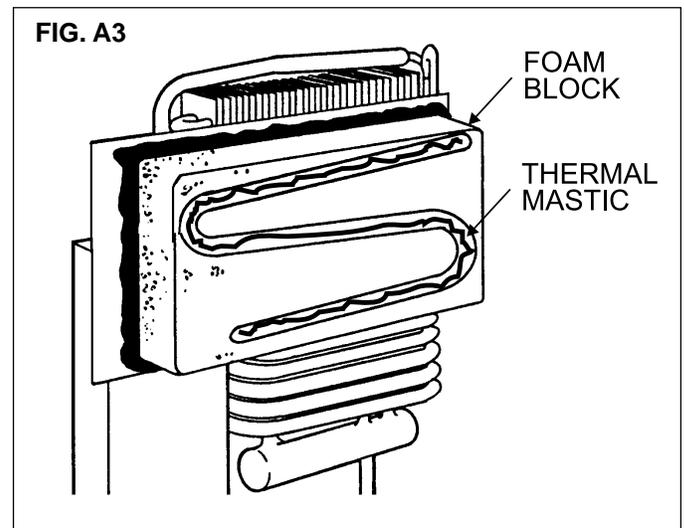
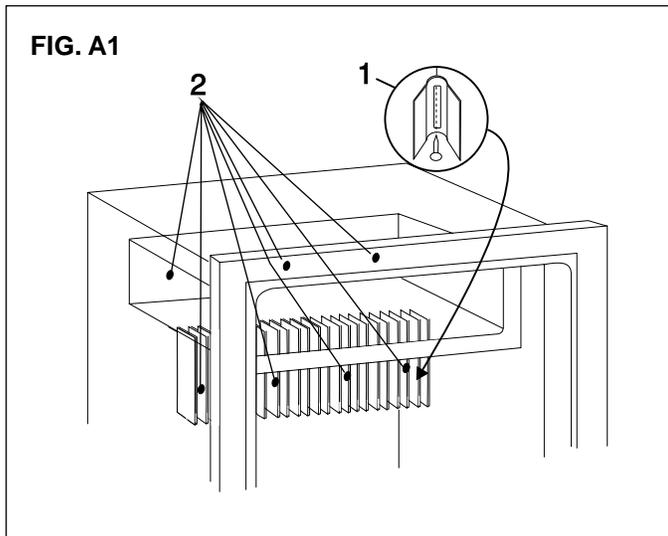
Note: Some models have a bracket that holds the manual gas cock and/or the electric solenoid valve. Remove the screws from these brackets and save to be reinstalled.

8. Cut the wire ties along the left side. Remove the thermostat sensor tube (if required) and position the burner assembly and wires so they will not be damaged by pulling the cooling unit.

STEP 2. INSTALLATION OF COOLING UNIT

1. Inspect cooling unit for broken welds or bent frame.
2. Trim the foam block portion of cooling unit if it does not go freely into the refrigerator. Be sure foam does not cover the evaporator tubes where cooling fins attach.
3. Apply thermomastic on evaporator tubes 1/4" to 3/8" bead. Apply more if the tubes are recessed in foam block. (FIG. A3)
4. Apply permagum and double-stick tape to cabinet as shown in FIG. A4.

5. If foam block fits loosely into cabinet (1/4" or more of movement) use 1/2" wide x 3/8" thick closed cell, one-sided adhesive weather stripping. Place in the same location as permagum. Also apply double-stick tape as shown in FIG. A4.
6. Install cooling unit back in the cabinet. Replace screws holding cooling unit to cabinet. Replace components removed in Step 1, 587. (FIG. A2)
7. Stand refrigerator upright. Transfer flue baffle to new cooling unit. Replace the inside parts removed in Step 1, 2-4. (See "Important" on Page 1).
8. Install refrigerator back into coach and leak check all gas fittings. Repair all gas leaks.



B. Category #2

RM2620 RM2652 RM2820 RM2852
 *RM3662 *RM3663 *RM3862 *RM3863
 *NDR1062

* Optional Ice Maker Cycle

STEP 1. REMOVAL OF COOLING UNIT

1. See General Instructions for all models.
2. Remove thermistor bracket and 4 screws from fins (FIG. B1). **DO NOT** remove fins. They are taped to the rear of the cabinet liner.
3. In the freezer, remove shelves and grill covering screws. Pull out center of grill to allow right or left side to pop out of slot (FIG. B1).
4. **Models with Ice Maker:** Remove the cover of cycle and the 2 screws holding cycle to the side wall (FIG. B2).
5. Remove 4 screws holding cycle bracket. Be careful not to drop. Unplug electrical connection and take cycle out of freezer. Remove the remaining screws. (FIG. B2)
6. Lay the refrigerator face down on two 2x4's to protect the face of the appliance.
7. Remove heater cover and heater(s) (FIG. B3 & B4). Also disconnect ice wire harness leads from electrical connections on the refrigerator.

Note: NDR models - pull wire harness out of the cooling unit from the inside of freezer. Pull water fill tube from rear of refrigerator. Disconnect water line from water solenoid valve.

8. Remove burner cover (1 screw) and screw holding the burner to flue tube. Pull burner down and off tube (FIG. B4).
9. Remove 2 screws holding control panel to runner and 2 screws holding gas solenoid valve to cooling unit (FIG. B4).
10. Take out screws (1 on each side) where runner fastens to the rear of cabinet. Swing runners out to the side to clear cabinet (FIG. B3).
11. Cut wire ties holding cables and thermistor to frame of cooling unit.
12. Disconnect climate control and interior (red wires) from J2 on circuit board and black wires from ground.
13. Cut red and black wires from interior light. Strip back 3/8" to reconnect using butt connectors after cooling unit has been installed.
14. Remove 4 screws holding cooling unit to cabinet (2 on top and 2 on bottom). (FIG. B3). Lift cooling unit out of cabinet.

STEP 2. INSTALLATION OF COOLING UNIT

1. Refer to Step 2, Category A, 1-5.
2. Install cooling unit back in cabinet. Replace screw holding unit.
3. Replace the components removed in Step 1, 2-14.
4. Stand refrigerator upright. Transfer the flue baffle to new cooling unit. Replace inside parts removed in Step 1, 2-5.
5. Check for proper cooling before installing refrigerator back into the coach. (See "Important" on Page 1).
6. Install refrigerator back into coach and leak check all gas fittings. Repair all gas leaks.

FIG. B1

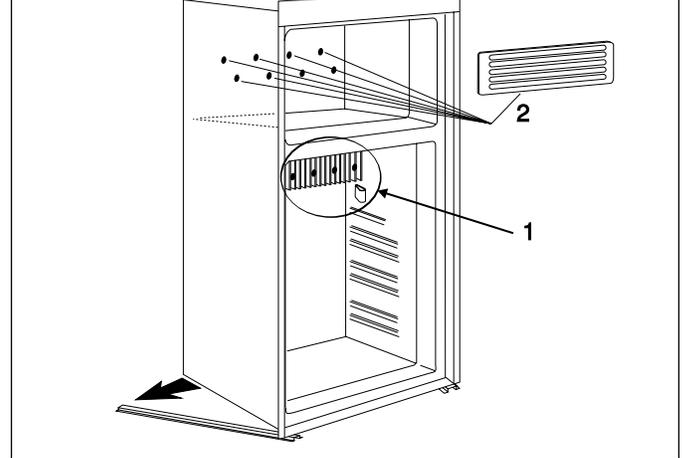


FIG. B2

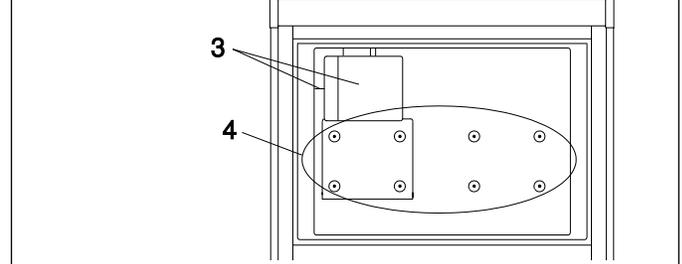


FIG. B3

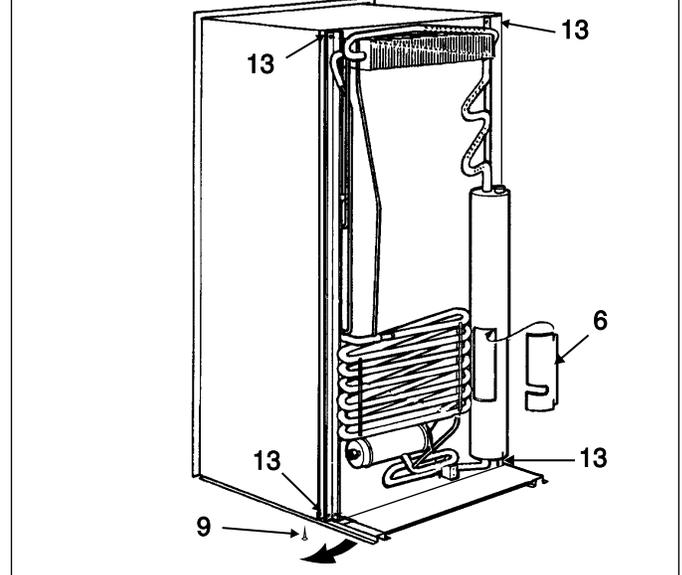
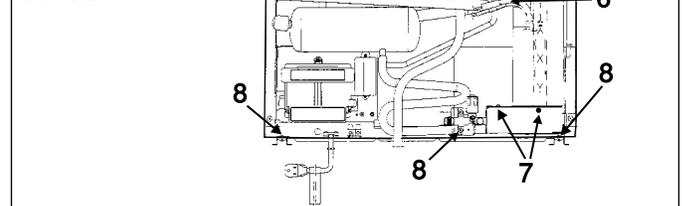


FIG. B4



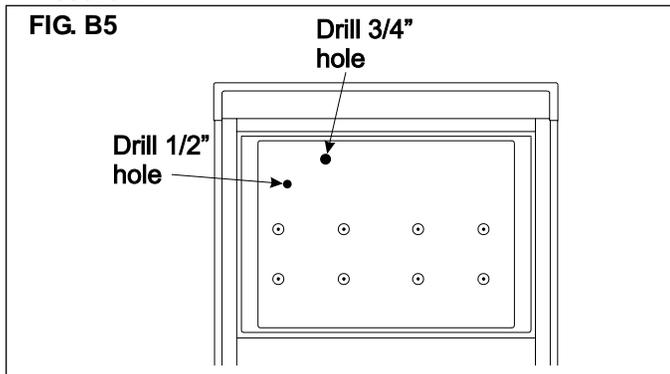
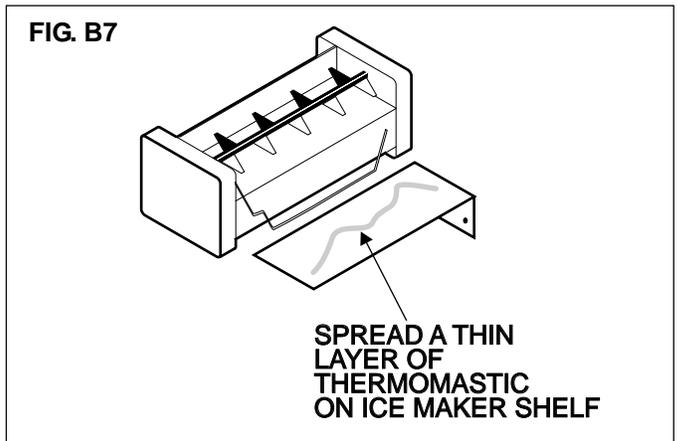
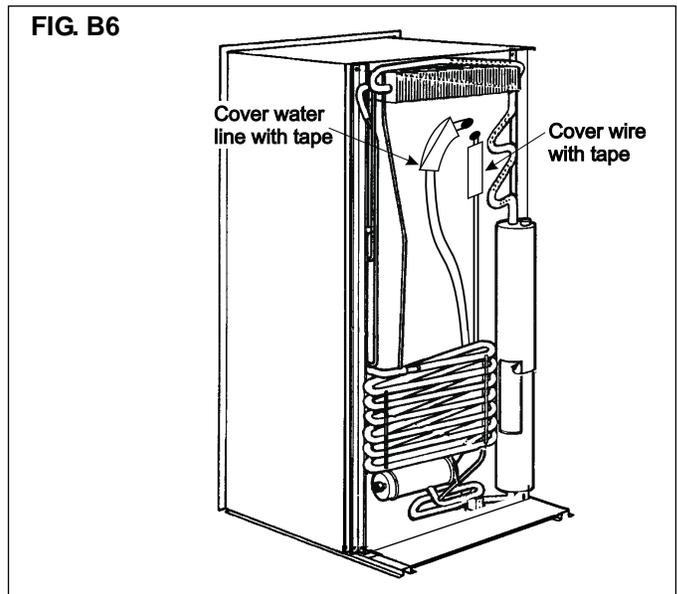


! WARNING
**Do not use a flame
 to check for gas leaks.**

STEP 3. PREPARING THE COOLING UNIT FOR THE ICE MAKER (For only models with ice maker)

Note: Models that have the water fill for the ice maker entering through the top do not require drilling of cooling unit (RM3652, RM3653, RM3862, and RM3863). The cooling unit has been installed in the refrigerator, proceed to number 2.

1. Before the shelves and other interior parts are placed into the cabinet, the opening for the ice maker water lines and power cords must be made through the foam block of the cooling unit. Look at the defective cooling unit to determine the approximate location and angle to drill the hole in the new cooling unit. The two holes are drilled from the interior of the cabinet out through the rear of the refrigerator. Use a 1/2" and 3/4" by 8" long drill bit to make the two holes. Be careful not to drill into any refrigerant lines, causing a leak. See FIG. B5.
2. The wire harness is routed from the inside of the freezer compartment through the 1/2" hole. Pull the wire harness through the back wall of the freezer compartment. Leave sufficient length of wires (approx. 8") to connect to the cycle. Follow the same path that was used before by the wire harness and reconnect it to the solenoid and power cord.
3. Route the water line from the water solenoid up the rear of the refrigerator. Insert the fill tube from the rear through the 3/4" hole. Use permagum to make an air tight seal around the wire harness and water fill tube. If water line is not attached to the fill tube it should be connected now. Make sure that the same routing is followed between the water solenoid and fill tube. If the water line has heat tape, be sure it is in place. Use aluminum foil tape to cover and seal the water line and wire harness to the back of the cabinet. See FIG. B6.
4. Spread a thin layer of thermomastic on ice maker shelf. See FIG. B7. Plug the wire harness to the ice cycle. Install the cycle using the screws removed. Make sure the end of the water fill tube will allow water to enter the cycle inlet, and is free from touching the sides or bottom. This will allow the water to drain completely out of the fill tube and prevent freezing.
5. Return to Step 2 (Installation of cooling unit), #3 of this section.



C. Category #3

NDR1272 **NDR1282 NDR1292

NDR1492 RM1272 **RM1282

** (Ice Maker Cycle/Compressor Operated)

STEP 1. REMOVAL OF COOLING UNIT

1. See General Instructions for all models.
 2. Remove the two top shelves and drip tray. Disconnect interior light from side of refrigerator. Remove thermistor with bracket from fins (FIG. C1).
 3. Remove cooling fins - right side first (6 screws). Pull out drain cup and remove tube (FIG. C1).
 4. **Models with Ice Maker:** Remove cycle from shelf plate (3 screws) (FIG. C2). Lift cycle off shelf. Unplug the cable and move out of cabinet until you are ready to reinstall. Disconnect the electrical cable from back of refrigerator and pull out from inside.
 5. **All Models:** Follow Steps 5 – 11.
 6. Remove freezer plates (FIG. C3).
 - A. Two screws with nuts (hexagon)
 - B. Two screws (side)
 - C. Two screws (top)
 - D. Two screws (side)
 7. After freezer plates are removed, take out 4 screws holding the cooling unit to circulation tube (FIG. C3). Remove plastic cover plate on the back of freezer.
 8. Lay refrigerator face down on two 2x4's to protect handles and frame from damage.
 9. Removal of controls at rear of refrigerator (FIG. C4)
 - A. Two screws (plate protections)
 - B. Two screws (mounting plate circuit board - (not shown))
 - C. Three screws (gas valve bracket)
 - D. Three screws (burner assembly - not shown)
 10. Remove heater cover, heaters (2) and any other parts that interfere with the removal of cooling unit.
- Note:** Before cooling unit is placed in the refrigerator cabinet, check the tapped screw holes. See FIG C3 #6. Paint can fill the holes and make replacement of screws impossible. See FIG. C4.
11. Remove screws holding cooling unit to the cabinet (5).
 12. Apply leverage as shown and pull out (FIG. C4).
 13. Remove the ground wire (white) from bottom of old cooling unit and place on new one.

STEP 2. INSTALLATION OF COOLING UNIT

1. Refer to section A Category #1, Step 2, 1–5.
2. Place cooling unit in cabinet and replace screws.
3. Replace components removed in Step 1, 9–11, FIG. C4.
4. Stand refrigerator upright. Transfer flue baffle to the new cooling unit. Replace inside parts removed in Step 1, 2–4.
5. Check for proper cooling before installing refrigerator back into coach. (See "Important" on Page 1).
6. Install refrigerator back into coach and leak check all gas fittings. Repair all gas leaks.



WARNING

Do not use a flame to check for gas leaks.

FIG. C1

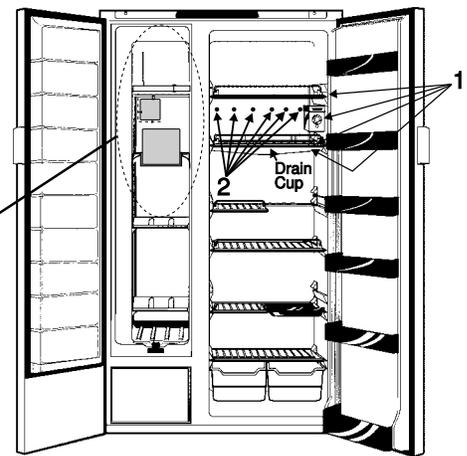


FIG. C3

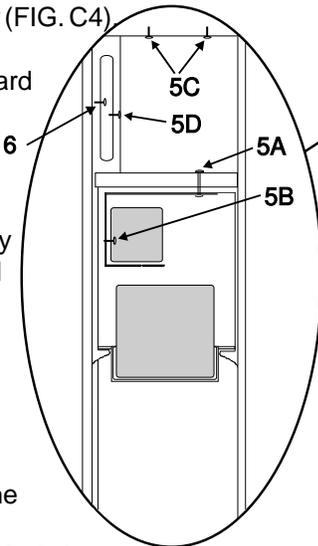


FIG. C4

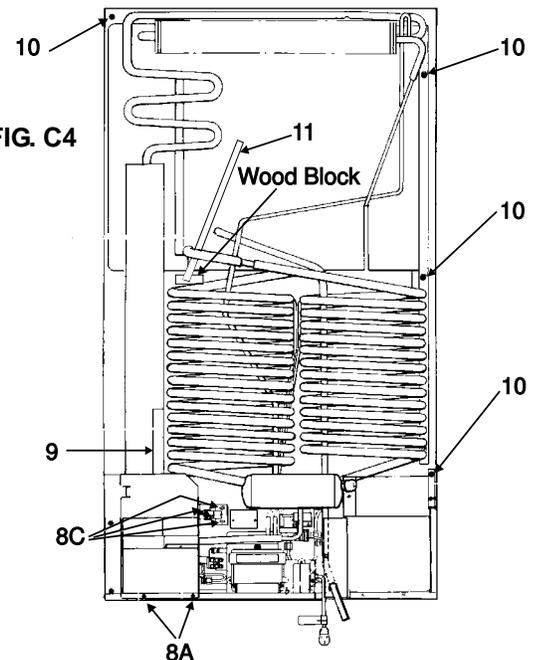
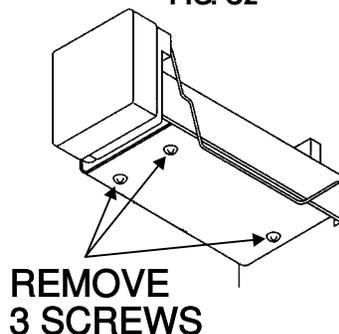


FIG. C2



STEP 3. PREPARING THE COOLING UNIT FOR THE ICE MAKER (Models with ice makers)

1. **Models with compressor assist ice making**, require a groove to be cut in the foam block to allow a path for the refrigerant line and wire harness. This groove needs to be present before the cooling unit can be fitted into the cabinet. Models without the compressor should proceed to number 6.
2. The cooling unit frame is manufactured with a notch cut into it. This notch is where the refrigerant line and wire harness will pass through once the foam block is cut away. Use a hacksaw and make the groove on the right hand side of the foam block. The groove should be the same dimensions as the notch in the frame. See FIG. C5 & C7.
3. The cooling unit can be installed into the refrigerator. See Section A, Category #1, Step 2, 1-5.
4. Before the shelves and other interior parts are placed into the cabinet, the opening for the ice maker water line must be made through the foam block of the cooling unit. Look at the defective cooling unit to determine the approximate location and angle to drill the hole in the new cooling unit. The hole is drilled from the interior of the cabinet out through the rear of the refrigerator. Use a 3/4" by 8" long drill bit to make the hole. Be careful not to drill into any refrigerant lines, causing a leak. See FIG. C6.
5. Proceed to number 8.
6. **Models without compressor**, the cooling unit can be installed into the refrigerator. Before the shelves and other interior parts are placed into the cabinet, the opening for the ice maker water lines and power cords must be made through the foam block of the cooling unit. Look at the defective cooling unit to determine the approximate location and angle to drill the hole in the new cooling unit. The two holes are drilled from the interior of the cabinet out through the rear of the refrigerator. Use a 1/2" and 3/4" by 8" long drill bit to make the two holes. Be careful not to drill into any refrigerant lines, causing a leak. See FIG. C6.
7. The wire harness is routed from the inside of the freezer compartment through the 1/2" hole. Pull the wire harness through the back wall of the freezer compartment. Leave sufficient length of wires (about 8") to connect to the cycle. Follow the same path that was used before by the wire harness and reconnect it to the solenoid and power cord.
8. Route the water line from the water solenoid up the rear of the refrigerator. Insert the fill tube from the rear through the 3/4" hole. Use permagum to make an air tight seal around the wire harness and water fill tube. Seal both the outside and inside. If the water line is not attached to the fill tube it should be connected now. Make sure that the same routing is followed between the water solenoid and fill tube. If the water line has heat tape, be sure it is in place. Use aluminum foil tape to cover and seal the water line and wire harness to the back of the cabinet. See FIG. C7.

9. Spread a thin layer of thermomastic on top of the ice maker shelf. See FIG. C8. Plug the wire harness to the ice cycle. Install the cycle using the screws removed. Make sure the end of the water fill tube will allow water to enter the cycle inlet, and is free from touching the sides or bottom. This will allow the water to drain completely out of the fill tube and prevent freezing.
10. Return to Section C, Category #3, Step 2, #3.

FIG. C5

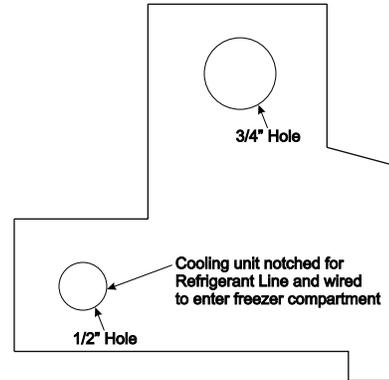


FIG. C6

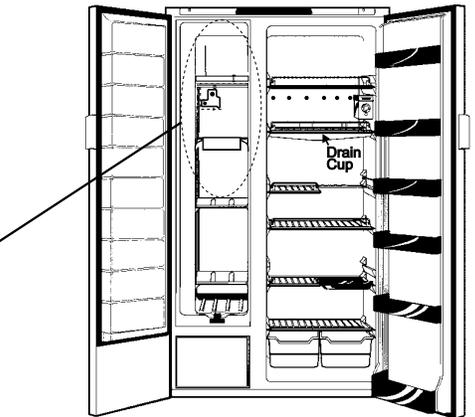
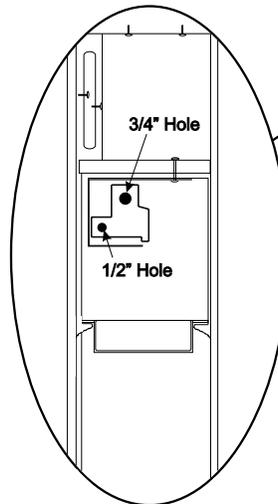


FIG. C7

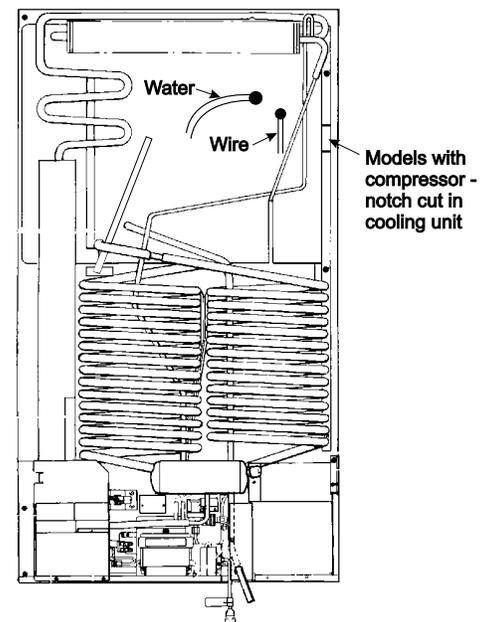
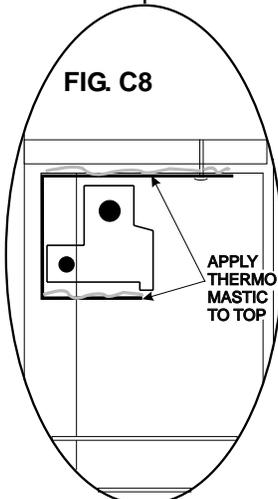


FIG. C8



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I hope this resource makes your RV repairs easier, as it has mine, but please be careful and follow proper safety practices when attempting to repair your own RV.

If in doubt, please consult with a professional RV technician!



DARREN KOEPP - OWNER, MY RV WORKS, INC.

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