



CR330 Owner's Manual

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This is the safety alert symbol . When you see this symbol on the CR330 and in the instruction manuals be alert to the potential for personal injury. Understand the signal word DANGER, WARNING and CAUTION. These words are used to identify levels of the seriousness of the hazard.

DANGER Failure to comply will result in death or severe personal injury and/or property damage.

WARNING Failure to comply could result in death or severe personal injury and/or property damage.

CAUTION Failure to comply could result in minor personal injury and/or property damage.

IMPORTANT is used to point out helpful suggestions that will result in improved installation, reliability or operation.

CAUTION

Certain components will run at fairly high temperatures. Exercise care in working around operating equipment. Do not touch operating machinery without the aid of qualified personnel, as referred to above.

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Chapter 1 - Overview

The Marvair CR330 removes the condensate water produced during the cooling cycle of your Marvair reverse cycle air conditioner and discharges the condensate into the air conditioner's outlet water line. The condensate is pumped overboard any time the air conditioner's circulation pump is working and sufficient condensate is in the condensate pan of your Marvair unit. By operating on the Venturi effect, a separate condensate pump is not required.

A water filter/strainer, a reducer and a check valve are also provided and must be installed with the CR330. The filter prevents debris from entering the CR330 and obstructing the water flow. The check valve allows the condensate to flow in only one direction.

DANGER

- The flow rate of the pump for the Marvair unit must be at least 1.00 GPM (3.79 LPM). If the flow rate is less than this, the CR330 may not remove the condensate.
- The seacock or ball valve in the air conditioner's discharge water line must be closed when installing the CR330. Failure to close the seacock or ball valve may result in the flooding or sinking of the boat.
- A check valve (supplied) **MUST** be installed in the condensate line as described in the instructions. Failure to close the check valve may result in the flooding or sinking of the boat.

Chapter 2 - Installing the CR330

CAUTION

Before installing the CR330, turn the circuit breaker off to the air conditioner and to the water pump, if the pump has a separate breaker. If the pump turns on while the seacock or ball valve is closed, damage to the pump may occur

The CR330 is installed into the outlet water line of the Marvair air conditioner. The discharge water flows through the CR330 to the overboard thru hull fitting. Condensate from the drain pan flows into the CR330 and is pulled overboard by the discharge water from the air conditioner. See Figure No. 1.

Included in the installation materials are 1/2" clear tubing and 5/8" clear tubing. Various lengths of this tubing must be cut to connect the components. To optimize the performance of the system, be sure to follow the recommendations for the lengths of tubing. See Figure 1.

Locate the outlet (discharge) water line on your Marvair air conditioner. Follow the water line, looking for a suitable place to install the CR330.

- The CR330 must be secured to a bulkhead to prevent movement while the boat is underway.
- The CR330 does not have to be level, but the minimizing of bends in the tubing will improve the performance of the CR330.
- The filter/strainer must be checked and cleaned regularly. Put the filter/strainer in an easily accessible place.
- Use pipe dope to seal all threaded connections.

1. Cut the water outlet line between the air conditioner and the thru hull fitting where the CR330 is to be installed.
2. The discharge water from the Marvair unit MUST flow through the CR330 in the proper direction. See figure 1.
 - a. Screw the 5/8" barb x 1/2" MPT fitting into the inlet, the end with the FEMALE threads of the CR330, as shown in figure 1. Slip the 5/8" discharge water line from the Marvair unit over the barbs and secure the water line with 5/8" stainless steel hose clamps. To prevent the CR330 from moving while underway, secure the water line with two hold down clamps. If the CR330 moves, the lines may loosen and leak, causing the boat to flood.
 - b. Screw the 1/2' x 1/2" coupling onto the end of the CR330 with the MALE threads. Screw the 5/8" barb x 1/2" FPT fitting into the coupling. Use pipe dope to seal all threaded connections. Slip the 5/8" water line from the thru hull over the barbs and secure the water line with 5/8" stainless steel hose clamps. To prevent the CR330 from moving while underway, secure the water line with two hold down clamps. If the CR330 moves, the lines may loosen and leak, causing the boat to flood.

Condensate line assembly. Refer to Figure 1.

3. Install the 5/8" hose barb x 5/8" fitting into the inlet side of the filter/strainer. Install the 1/2" MPT x 1/4" barb fitting into the discharge end of the filter/strainer. Use pipe dope to seal each threaded connection.
4. Cut a 12" (30.5 cm) piece of 5/8" tubing. Connect one end of the clear 5/8" tubing to the condensate fitting on the drain pan of the Marvair air conditioner. Secure this connection with a 5/8" screw type stainless steel screw type hose clamp. Install hold down clamps to prevent the line from moving.

 **CAUTION**

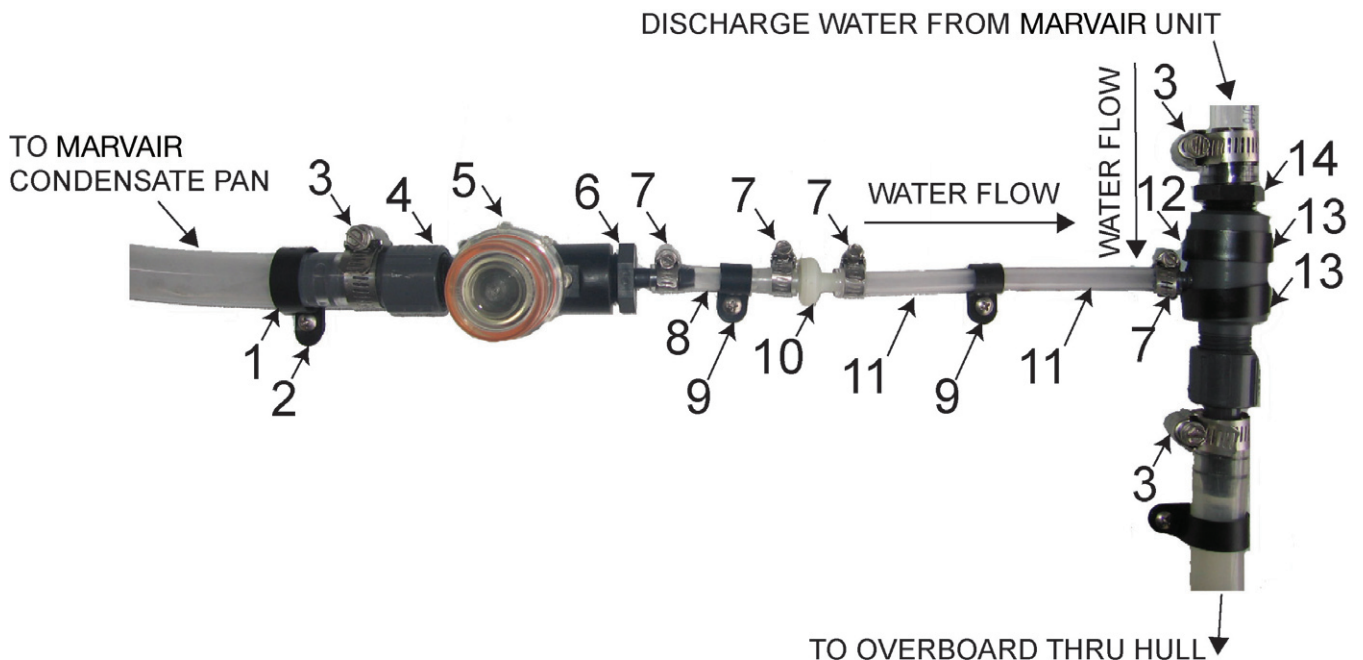
Water must flow in the proper direction through the filter strainer. On the side of the strainer is an arrow that indicates the correct direction. Make sure the water flow is aligned with the arrow.

5. Connect the other end of this 5/8" tubing to the inlet side of the filter/strainer. Secure this connection with a 5/8" stainless steel screw type hose clamp.
6. Cut a 2-1/2" (6 cm) piece 1/4" clear tubing and connect it to the 1/4" end to the filter/strainer. Secure with a 1/4" stainless steel screw type clamp. Connect the other end of the 1/4" tubing to the check valve and secure with 1/4" stainless steel screw type hose clamp. Install hold down clamps to prevent the line from moving.

 **CAUTION**

The check valve allows water to flow in one direction—from the condensate drain pan into the CR330. To determine the proper orientation of the check valve, blow into one end of the check valve. If air passes freely through the valve, this is the correct direction for the water flow.

7. Cut a 7 ft. (210 cm) piece of the 1/4" tubing. Connect one end to the check valve and the other end to the CR330. Secure both connections with 1/4" stainless steel screw type hose clamps.
8. Open the seacock or ball valve.
9. Turn the circuit breaker for the air conditioner to the on position. If the water pump has a separate breaker, turn this breaker on.
10. Lower the temperature set point of the air conditioner so that it is below room temperature and the air conditioner begins operation and cool air is being produced.
11. With the air conditioner running, pour 2-3 cups (1/2 liter) of clean water into the condensate drain pan of the air conditioner. The condensate water should begin to immediately flow from the drain pan through the clear hose and into the CR330.
12. Check all connections to make sure that they are tight and secure.
13. Make sure all lines and tubing are free of kinks.



- | | |
|-----------------------------------------------|-------------------------------------------|
| 1. 1 ft. (30.5 cm) of 5/8" ID clear tubing | 8. 2 1/2 inch (6 cm) of 1/4" clear tubing |
| 2. Hold down clamp for 5/8" tubing | 9. 1/4" hold down clamp |
| 3. 5/8" stainless steel screw type hose clamp | 10. Check valve |
| 4. 1/2" FPT x 5/8" hose barb adapter | 11. 7 ft. (213 cm) of 1/4" tubing |
| 5. Filter/strainer | 12. CR330 |
| 6. 1/2" MPT x 5/8" hose barb adapter | 13. Hold down strap for the CR330 |
| 7. 1/4" stainless steel screw type hose clamp | 14. 5/8" barb x 1/2" MPT fitting |

NOTE: TOTAL LENGTH FROM MARVAIR UNIT TO CR330 MUST NOT EXCEED 10 FEET (3 METERS).

Figure 1.

Chapter 3 - Maintenance of the CR330

Even though the CR330 condensate removal system has no moving parts, regular maintenance and inspection of the system is essential for proper operation. The most important task is to check the filter/strainer and to make sure it is clean and not obstructed.

WARNING

Failure to clean the filter/strainer may cause the condensate to overflow the condensate drain pan causing damage to or flooding of the boat.

1. The condensate pan must be kept clean of mold and debris that could clog the filter/strainer. Inspect the drain pan regularly to make sure it is clean.
2. If the condensate is not being removed from the condensate pan and there are no kinks or obstructions in the lines or tubing, the filter/strainer should be cleaned.
3. To clean the strainer:
 - a. Unscrew the plastic bulb on the strainer,
 - b. Take out the wire mesh strainer,
 - c. Spray off the wire mesh with water or using a wire brush, gently remove debris from the screen.
 - d. Reassemble the components.
4. Cleaning of the CR330. Should the CR330 become clogged, it can be cleaned with pressurized water. Alternately, a small probe, e.g., a paper clip, can be used to remove obstructions from the orifice.

Chapter 4 - Replacement Parts List

PART NUMBER	NUMBER ON DRAWING	DESCRIPTION
90169	12	CR330 condensate remover
92006	5	Strainer/filter with ½" FPT connections
20371	10	1/4" x 1/4" Check valve
90168	4	5/8" Barb x 1/2" FPT coupling
90632	3	Stainless Steel screw type hose clamp for 5/8" tubing
90758	7	Stainless Steel screw type hose clamp for 1/4" tubing
81216	8, 11	1/4" ID clear tubing
20327	1	5/8" ID clear tubing
40450	6	1/4" barb x 1/2" MPT adapter
01568	2	Hold down clamp for 5/8" tubing
01567	9	Hold down strap for 1/2" tubing
01569	13	Hold down strap for the CR330
90398	14	5/8" barb x 1/2" MPT fitting