

**INSTRUCTIONS FOR INSTALLING A WATER BATH LOW SIDE REFRIGERATION  
REPLACEMENT KIT IN A NATIONAL VENDORS<sup>®</sup>, CROWN SEVENTY TWO<sup>®</sup>  
CDM-312 COLD DRINK MERCHANDISER**

**CHECK THE PARTS RECEIVED IN THE KIT WITH THE PARTS LIST IN THESE INSTRUCTIONS. FIGURE 1 SHOWS ALL THE PARTS IN THE KIT. IF ANY PARTS ARE MISSING, CONTACT NATIONAL VENDORS' PARTS DEPARTMENT IMMEDIATELY.**

These instructions cover the procedure for installing a Water Bath Low Side Refrigeration Replacement Kit in a Crown Seventy Two CDM-312 Cold Drink Merchandiser.

Read these instructions carefully and thoroughly before installing the Kit. Retain these instructions for part number and installation information.

Kit, part number 312-8235, contains the following parts:

| Part Number | Description                                       | Quantity |
|-------------|---|----------|
| 312-8228    | Evaporator, Accumulator and Suction Line Assembly | 1        |
| 310-4038    | Drier   | 1        |
| 312-4091    | Refrigerant-12 - 10 oz.                           | 1        |
| 312-4092    | Harness Ring                                      | 1        |
| 404-7095    | No.8-32 x 5/16 PHS T/C W/LW Screw                 | 8        |
| 9900-166    | No.8-32 x 5/16 THS S/T Screw                      | 2        |
| 9900-081    | No.8-32 W/LW Nut                                  | 2        |
| 312-8236    | Installation Instructions<br>* * *                | 1        |

**NOTE**

1. *Installation of this kit requires two people to perform.*
2. *Installation of the kit requires servicing of the Refrigeration System. This should be performed by a qualified refrigeration service engineer following accepted trade practices. Specific instructions concerning refrigeration service will not be given.*
3. *The Harness Ring provided in the Kit for charging the Refrigeration System does not include a Tap Valve. A Tap Valve must be used in conjunction with the Harness Ring.*

**TO INSTALL THE KIT**

**A. PARTS REMOVAL**

1. Close the water supply line Shutoff Valve located behind the Merchandiser.

2. Unlock and open the Cabinet Door.
3. Unlatch and rotate the Cup Dispenser Assembly out of the Cabinet.
4. Rotate the Left Syrup Tank Access Cover upward until it is held by the Magnetic Catch.
5. Pull the Right Syrup Tank Access Cover free of the hinges on the Water Bath Assembly and remove from the Merchandiser. See Figure 2.
6. Lift the Right Hand Door out of the hinges on the Water Bath Assembly and remove from the Merchandiser. See Figure 2.
7. Remove the Syrup from the Syrup Dispensing Tubes as follows:
  - a. Place a clean, empty cup in the Cup Delivery Compartment.
  - b. Remove the Syrup Tank Cover from a Syrup Tank and lift the Syrup Dip Tube out of the syrup.
  - c. Hold the Syrup Pump Priming Switch of the appropriate Syrup Pump in the ON position until syrup ceases to flow from the dispensing spigot.
  - d. Return the dispensed syrup to the appropriate Syrup Tank and replace the Dip Tube and Syrup Tank Cover.
  - e. Repeat Steps 7a through 7d until all Syrup Dispensing Tubes are free of syrup.
8. Remove any Syrup Tanks which are immediately adjacent to the Water Bath Assembly.
9. Move the Main Switch to the OFF position.
10. Remove the Cup Delivery Compartment from the Merchandiser.
11. Remove one attaching Screw and the Water Bath Cover from the Water Bath Assembly.



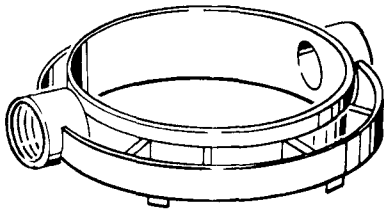
NO. 8-32 X 5/16 THS  
S/T SCREW  
9900-166



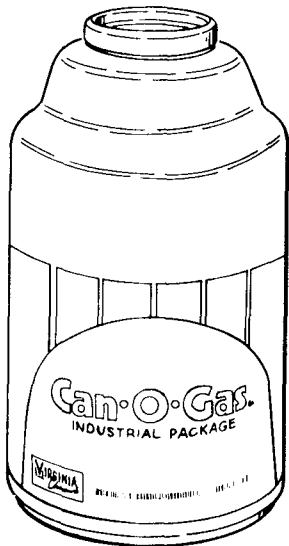
NO. 8-32 X 5/16 PHS  
T/C W/LW SCREW  
404-7095



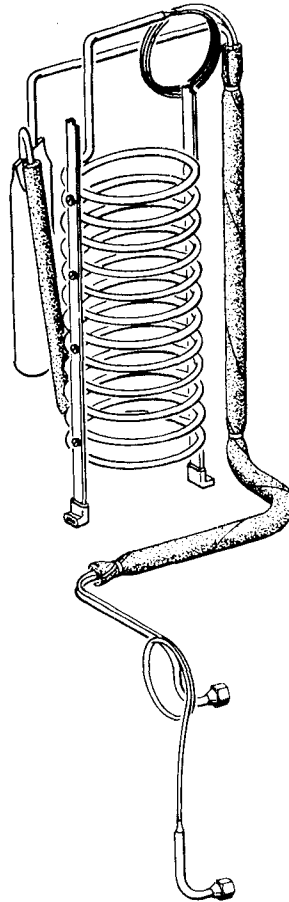
NO. 8-32 W/LW  
9900-081



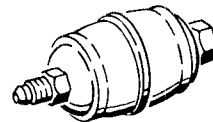
HARNES RING  
312-4092



REFRIGERANT-12, 10 OZ.  
312-4091



EVAPORATOR - ACCUMULATOR  
AND SUCTION LINE ASSEMBLY  
312-8228



DRIER  
310-4038

FIGURE 1

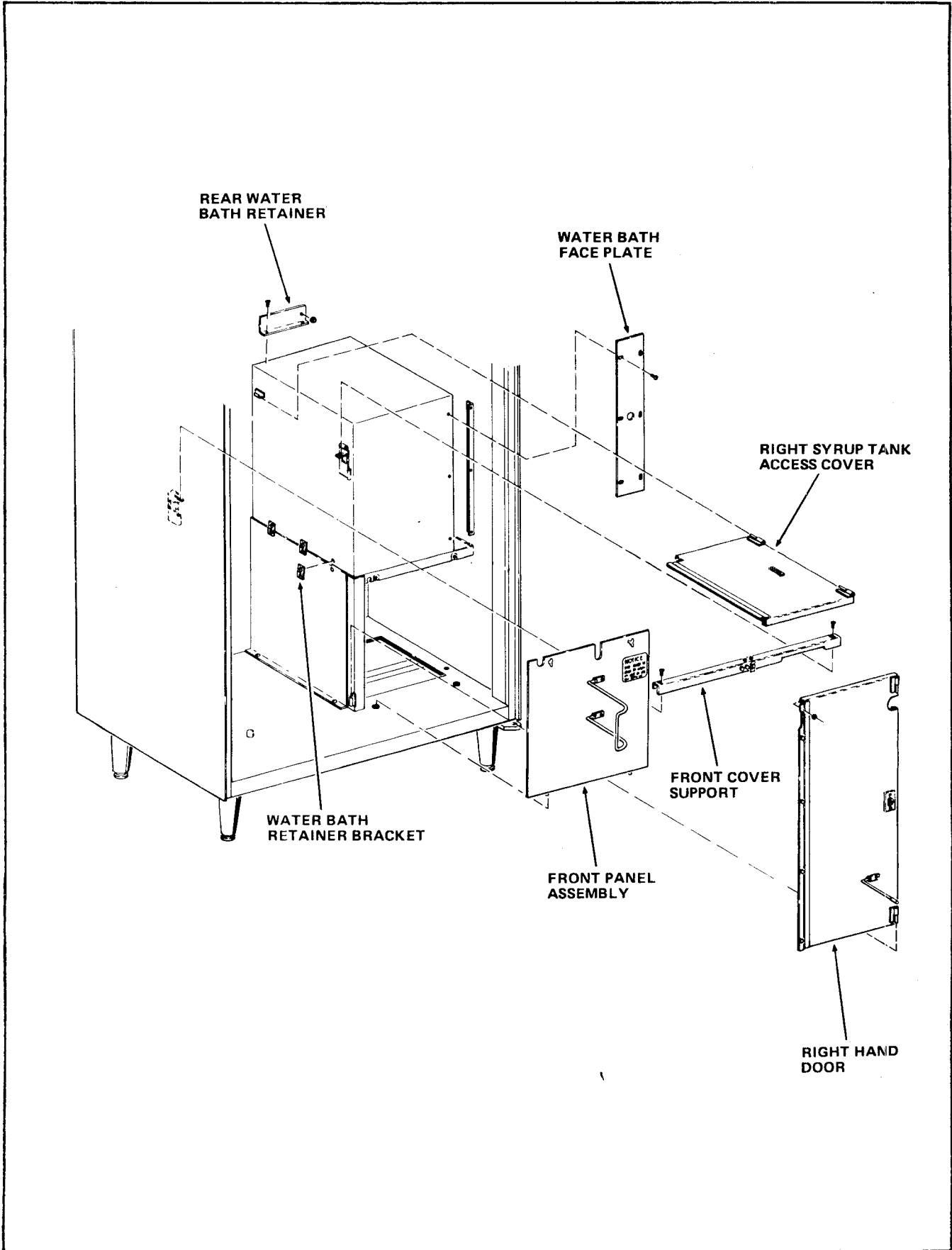


FIGURE 2

12. Close the CO<sub>2</sub> Cylinder Valve.
13. Disconnect the red CO<sub>2</sub> Hose from the Carbonator in the Water Bath Assembly.
14. Remove the CO<sub>2</sub> Cylinder and Regulator from the Merchandiser.
15. Rotate the two 1/4 Turn Fasteners and remove the Front Panel Assembly from the Merchandiser. See Figure 2.
16. Remove six attaching Screws and three Water Bath Retainer Brackets from the Merchandiser. See Figure 2.
17. Remove four attaching Screws and the Front Cover Support from the Merchandiser. See Figure 2.
18. Remove six attaching Screws and the Water Bath Face Plate from the Merchandiser. See Figure 2.
19. Drain the Water Bath as follows:
  - a. Empty the Waste Bucket and place in front of the Merchandiser.
  - b. Unclip the plastic Water Bath Drain Tube from the metal Overflow Tube and place in the Waste Bucket.
20. After the Water Bath is empty, loosen the attaching Clamp and disconnect the Water Bath Drain Tube from the Drain Spout located at the bottom of the Water Bath Assembly.
21. Disconnect the Inlet and Outlet Water Lines from the Water Filter Head Assembly.
22. Remove the Water Filter Cartridge from the Water Filter Head Assembly.
23. Remove the two plastic Drain Tubes from the Drain Tube Retainer at the front of the Water Bath Assembly.
24. Disconnect the Switch Receptacle of the Carb-Waste-Inlet Harness from the Switch of the Overflow Switch Assembly. See Figure 3.
25. Remove one attaching Screw and the Cable Clamp which attaches the Carb-Waste-Inlet Harness to the front of the Water Bath Assembly. See Figure 3.

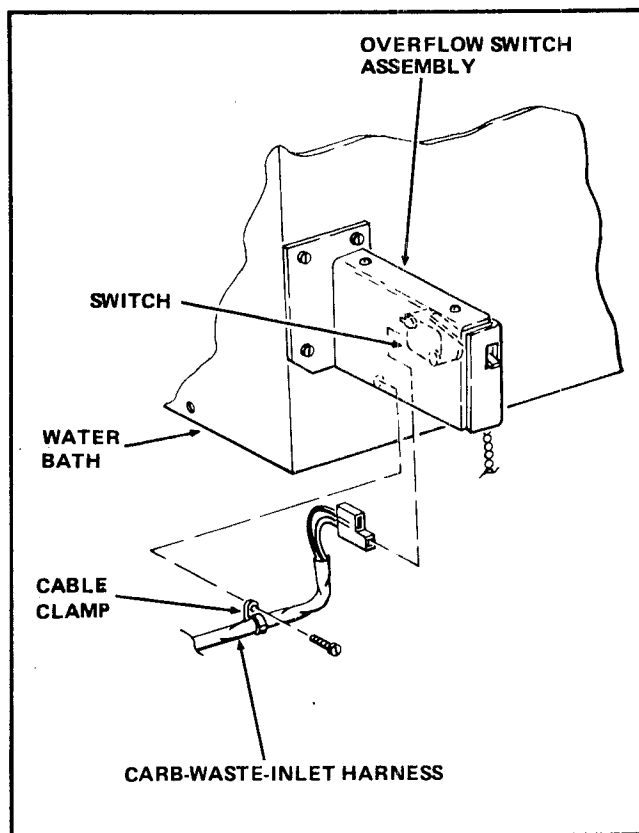


FIGURE 3

**WARNING**

1. **DO NOT** discharge the Refrigeration System when an open flame exists in the area. Refrigerant-12 and an open flame produce a toxic gas.
  2. If the Merchandiser is located in a confined area, attach an extender hose to the Charging Hose and discharge the Refrigerant out of doors.
26. Attach a Refrigeration Gauge Set to the Suction and Liquid Service Valves of the Water Bath Compressor and purge the Water Bath Refrigeration System of all Refrigerant-12.
  27. Disconnect the Refrigeration Capillary Line from the Evaporator Coil Assembly in the Water Bath Assembly. See Figure 4.
  28. Disconnect the Refrigeration Suction Line from the Evaporator Coil Assembly. See Figure 4.
  29. If the Merchandiser is equipped with the TEA option, disconnect the Tea Water Valve-to-Mixing Bowl Tube from the Tea Water Valve of the Water Bath Assembly.

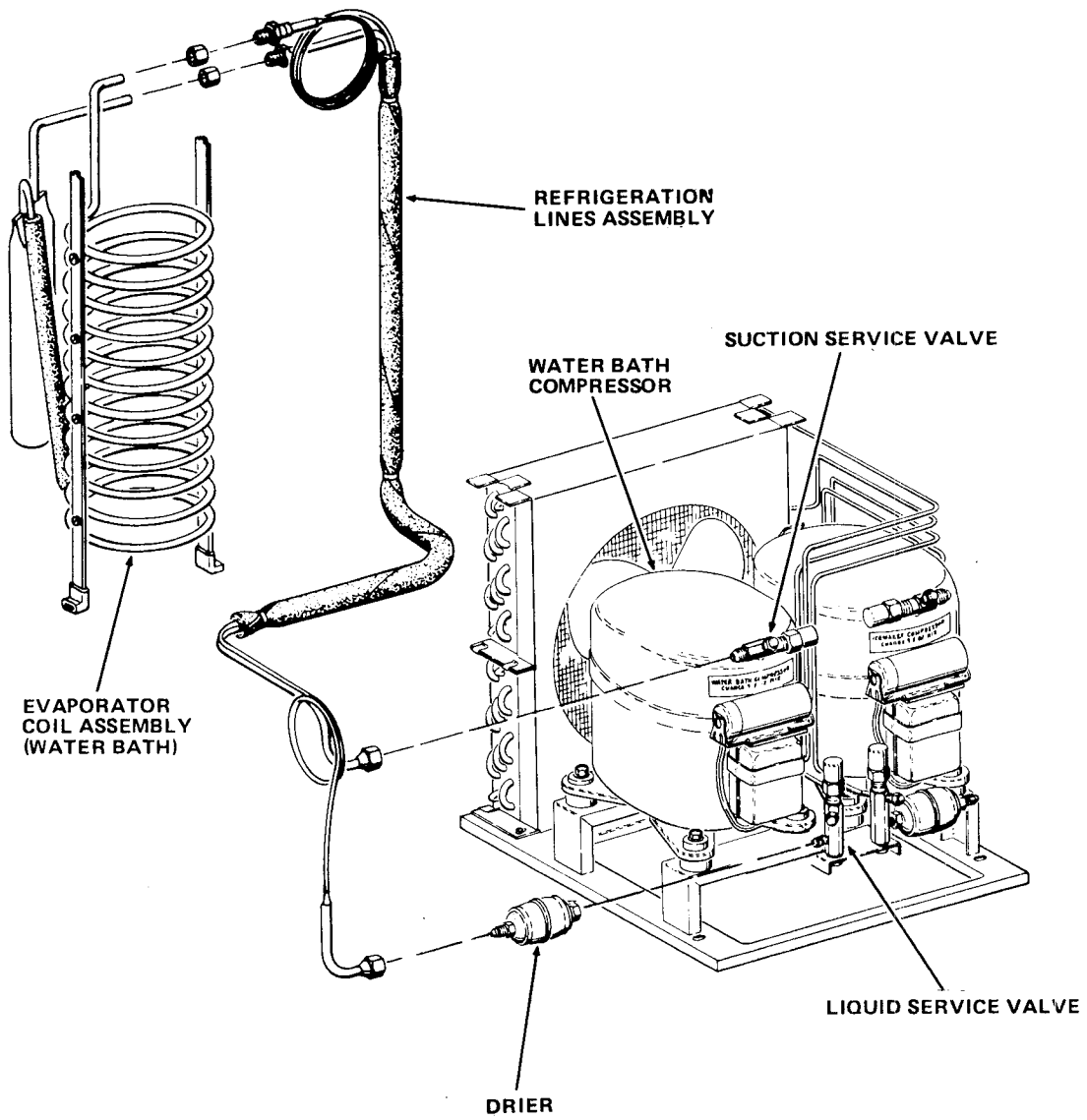


FIGURE 4

**NOTE**

*Step A-30 applies only to Merchandisers equipped with the COOL-SAN option.*

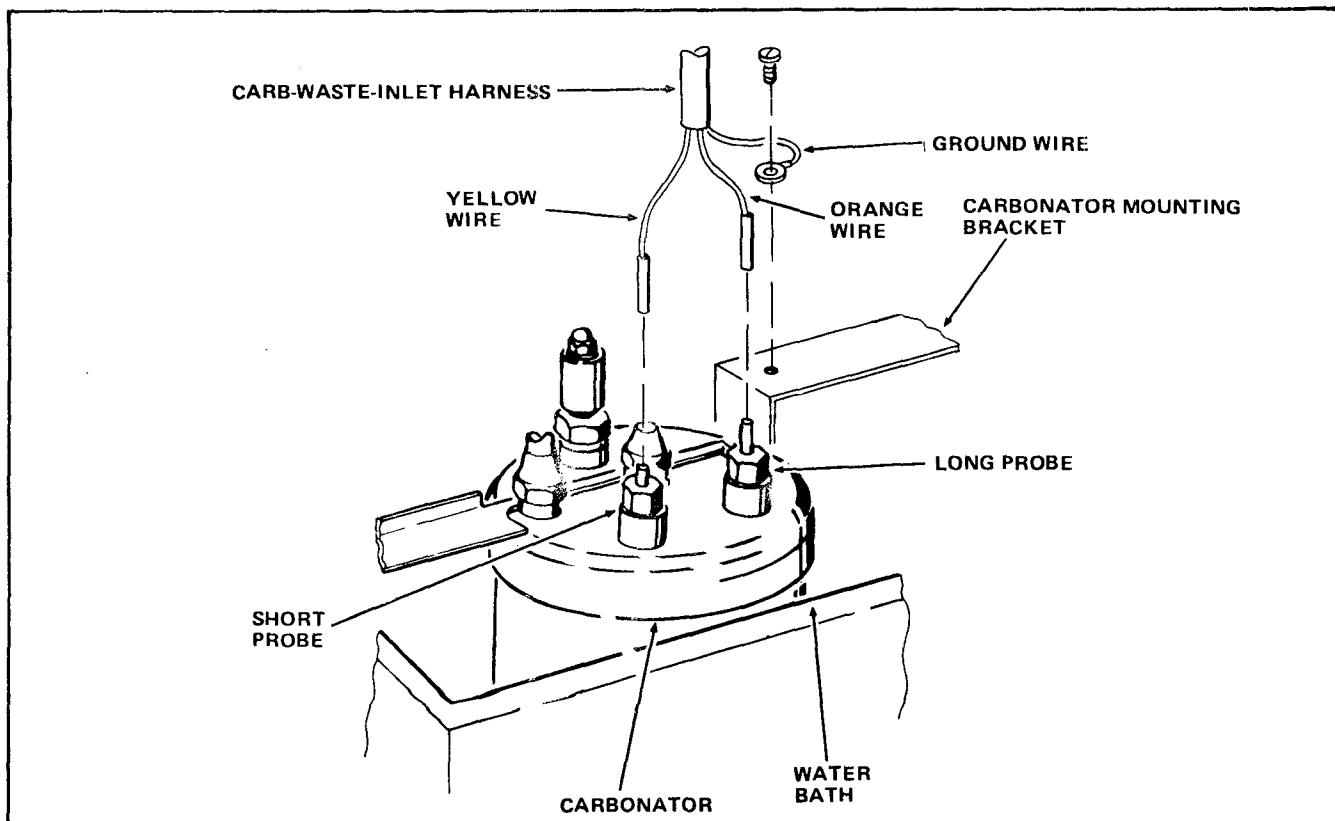
30. Disconnect the Water Cooling Coil from the COOL-SAN Module Assembly.

**NOTE**

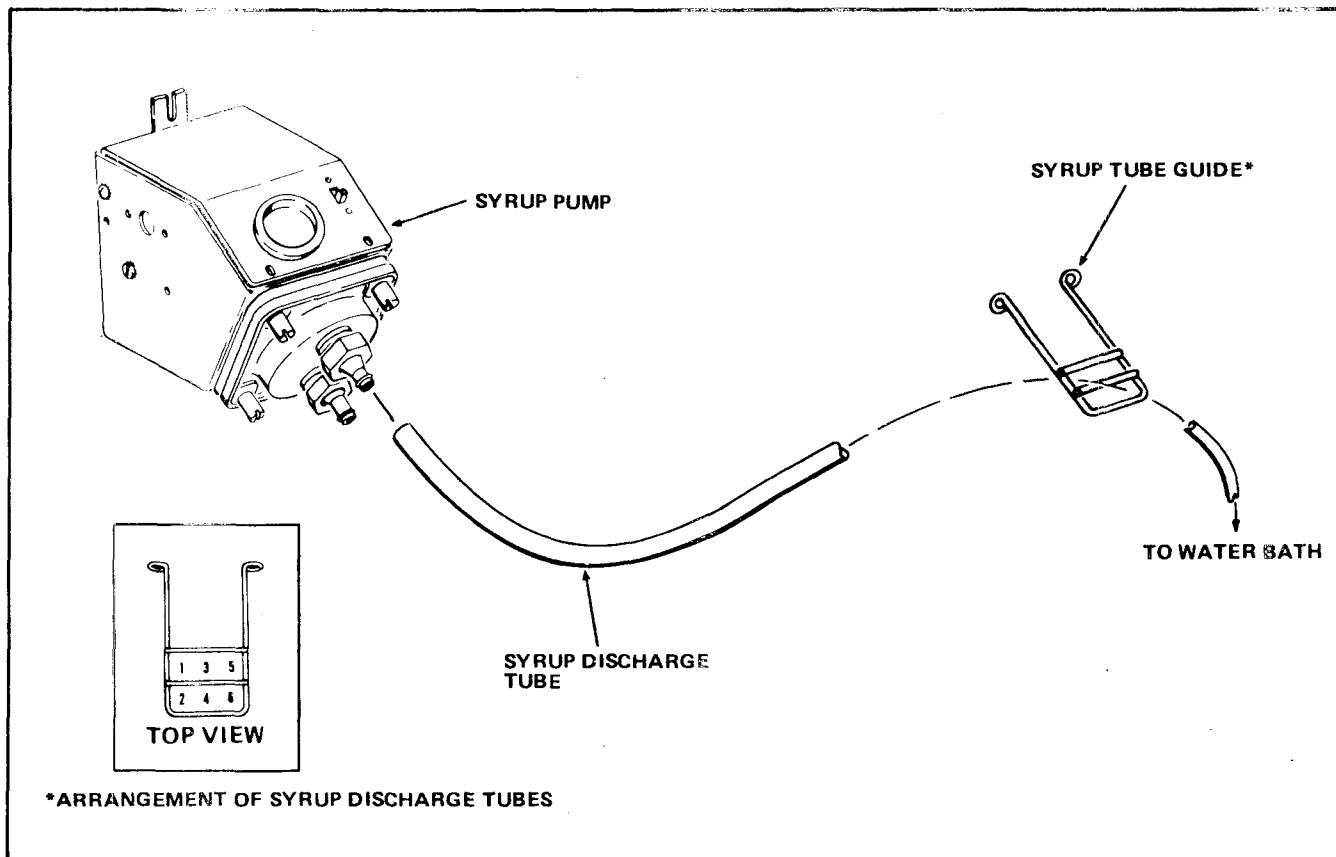
*Step A-31 applies only to Merchandisers NOT equipped with the COOL-SAN option.*

31. Disconnect the Water Cooling Coil from the Water Cooling Coil-to-Water Pump Tube.
32. Disconnect the two terminals of the Carb-Waste-Inlet Harness from the Long and Short Probes of the Carbonator. See Figure 5.
33. Remove one attaching Screw and the Ground Wire of the Carb-Waste-Inlet Harness from the Carbonator Mounting Bracket. See Figure 5.
34. Disconnect the Harness Plugs of the Agitator Motor, Hi-Carb Water Valve and Non-Carb Water Valve from the receptacles on the rear wall of the Cabinet.
35. Disconnect the Harness plug of the Tea Water Valve from the receptacle, if the Merchandiser is so equipped.

36. Disconnect the Syrup Discharge Tubes from the outlets of the Syrup Pumps. See Figure 6.
37. Loosen two Screws attaching the Syrup Tube Guide to the rear wall of the Cabinet and remove from the Merchandiser, pulling the Guide free of the syrup Discharge Tubes. See Figure 6.
38. Disconnect the Thermostatic Control Harness from the receptacle on the rear Cabinet wall and lift upward and pull forward to remove the Thermostatic Control Assembly from the Cabinet Wall.
39. Remove two Nuts attaching the Rear Water Bath Retainer to the Cabinet. See Figure 2.
40. Remove two attaching Screws and the Rear Water Bath Retainer from the Water Bath Assembly. See Figure 2.
41. Lifting upward, move the Water Bath Assembly first to the left and then forward to remove from the Merchandiser.
42. Disconnect the Refrigeration Suction Line from the Suction Service Valve on the Water Bath Compressor. See Figure 4.
43. Disconnect the Refrigeration Capillary Line from the Drier and remove the Water Bath Refrigeration Lines Assembly from the Merchandiser. See Figure 4.



**FIGURE 5**



**FIGURE 6**

44. Disconnect the Drier from the Liquid Service Valve on the base of the Water Bath Compressor and remove the Drier from the Merchandiser.
45. Remove three Screws attaching the Agitator Mounting Plate to the Water Bath Assembly. See Figure 7.
46. Lift the Agitator Mounting Plate so that the Evaporator Coil Mounting Legs are free of the two slots in the Plate and, holding the Agitator Mounting Plate out of the way, pull the Evaporator Coil Assembly out of the Water Bath. See Figure 7.

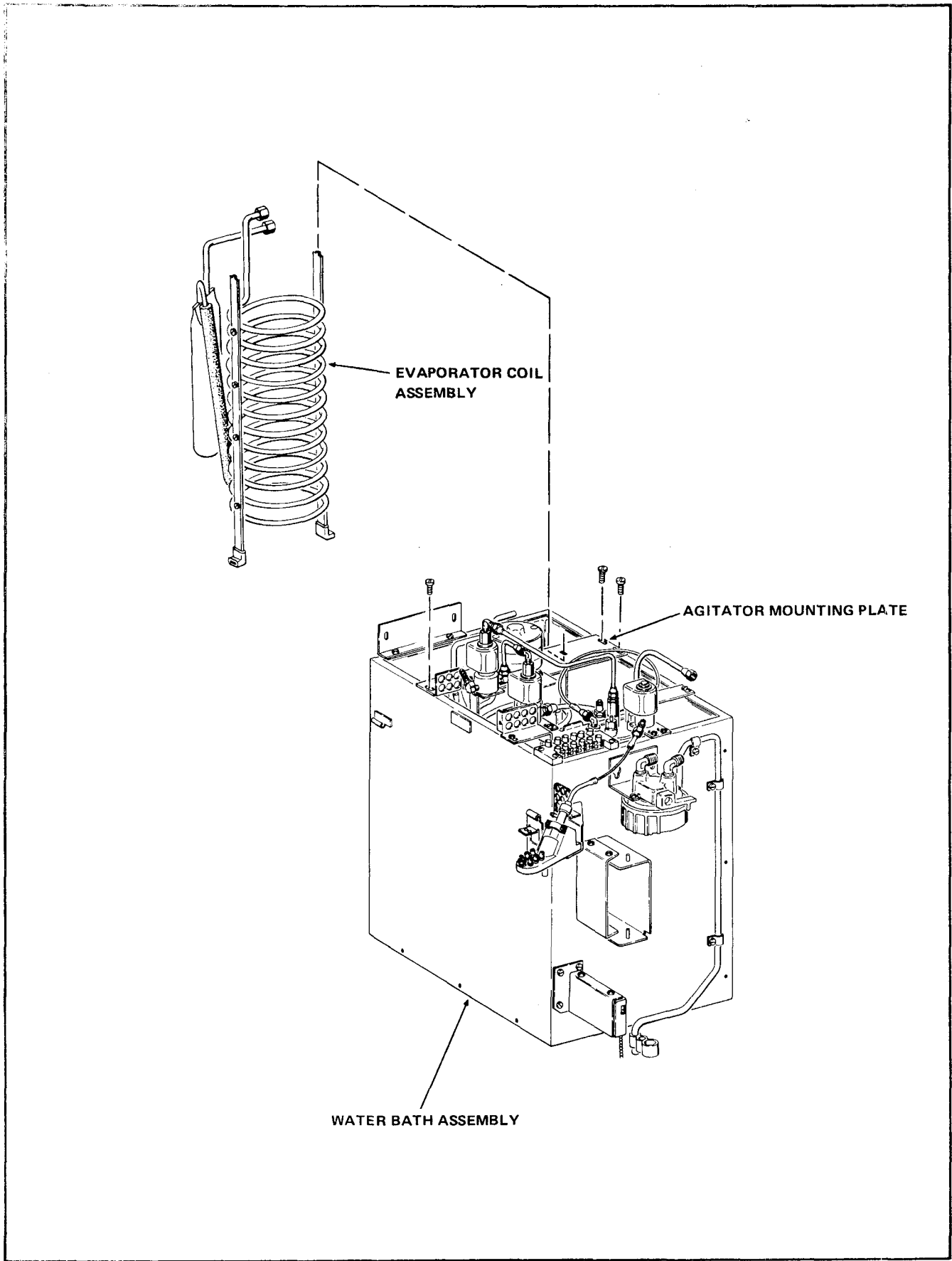
**B. INSTALLATION OF THE KIT**

**NOTE**

*Ten Screws, part numbers 404-7095 and 9900-166, and two Nuts, part number 9900-081, are included in the kit to replace any Screws or Nuts lost during removal of the Water Bath Assembly.*

1. Position the Evaporator, Accumulator and Suction Line Assembly included in the kit, part number 312-8228, inside of the Water Bath so that the Evaporator Coil Mounting Legs are inserted through the two slots in the Agitator Mounting Plate as shown in Figure 8.

2. Install the three Screws removed in Step A-45 attaching the Agitator Mounting Plate to the Water Bath Assembly. See Figure 8.
3. Place the Water Bath Assembly in the Merchandiser, guiding the Refrigeration Lines into position for attachment to the Water Bath Compressor.
4. Attach the Drier included in the kit, part number 310-4038, to the Liquid Service Valve on the base of the Water Bath Compressor.
5. Connect the Capillary Line of the Evaporator, Accumulator and Suction Line Assembly to the Drier. See Figure 8.
6. Connect the Suction Line of the Evaporator, Accumulator and Suction Line Assembly to the Suction Service Valve on the Water Bath Compressor. See Figure 8.
7. Reverse the removal procedures given in Section A of these instructions to connect components of the Water Bath Assembly to the Merchandiser.



**FIGURE 7**



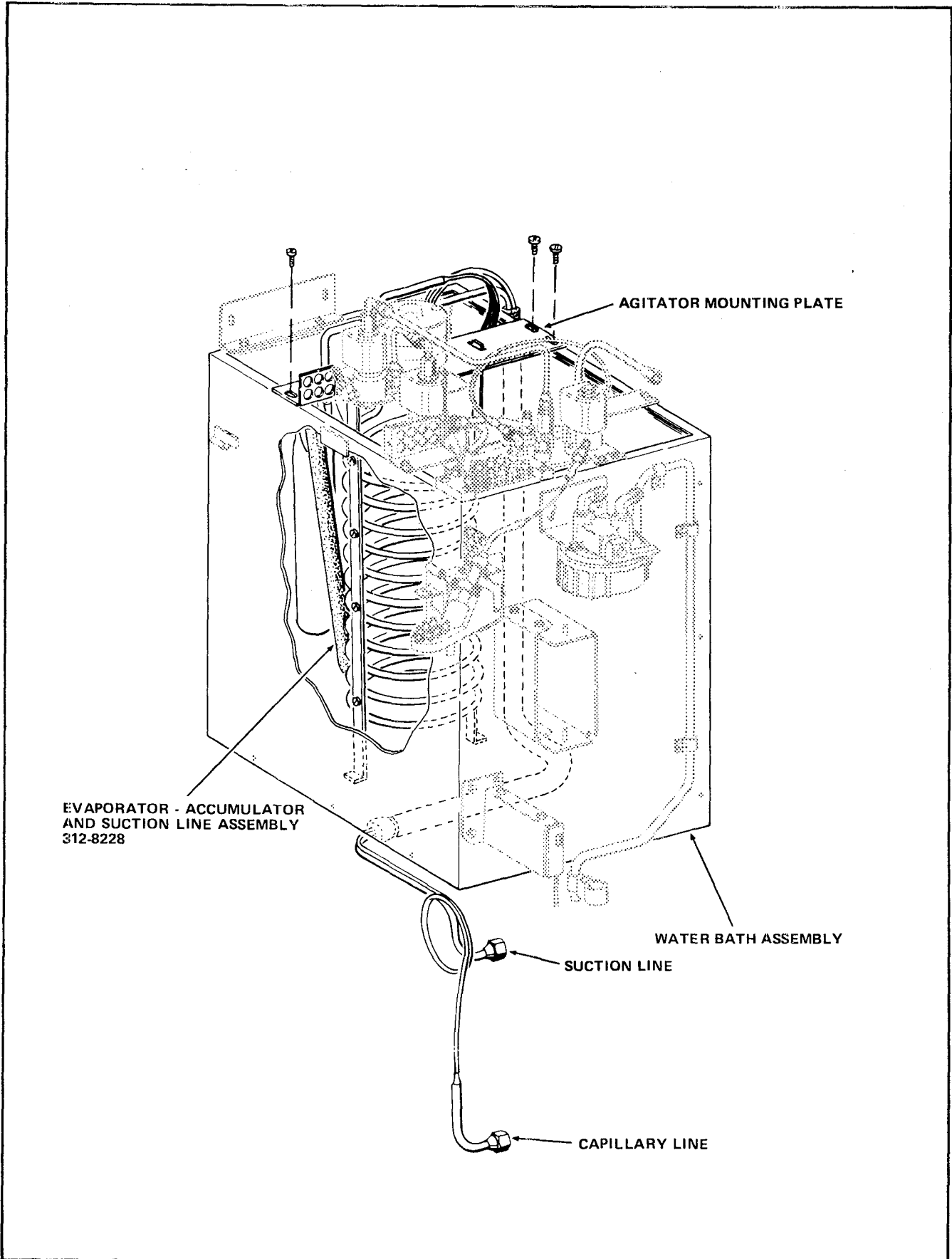


FIGURE 8

#### NOTE

Make sure that the two terminals of the Carb-Waste-Inlet Harness are connected to the Carbonator correctly with the yellow wire connected to the Short Probe and the orange wire connected to the Long Probe as shown in Figure 5.

8. Open the Water Supply Line Shutoff Valve located behind the Merchandiser.
9. Fill the Water Bath as follows:
  - a. Insert the Flush Valve Drain Tube into the Water Bath Tank.

#### NOTE

If the Merchandiser is to be started under conditions of high ambient temperature or high water temperature, pour a bag of ice into the Water Bath Tank before filling the tank with water. This method greatly reduces the load on the refrigeration unit, especially when the unit is started after being inoperative for a prolonged period.

- b. Open the Convenience Water Valve to fill the Water Bath Tank.
  - c. When water begins to drip from the Overflow Tube into the Waste Bucket, close the Convenience Water Valve.
  - d. Insert the Flush Valve Drain Tube into the Tube Retainer.
10. The Water Bath Refrigeration System must now be evacuated and recharged. Use the 10 oz. can of Refrigerant-12, part number 312-4091 and the Harness Ring, part number 312-4092, provided in the kit to recharge the Refrigeration System.
11. Move the Main Switch to the ON position, allowing the Water Feeder Cup, Water Cooling Coil and Carbonator to fill.
12. Place the CO<sub>2</sub> Cylinder and Regulator in the Merchandiser.
13. Attach the Red CO<sub>2</sub> Hose to the Carbonator.

14. Open the Valve on the CO<sub>2</sub> Cylinder.
15. Using the blade of a screwdriver, lift the Relief Valve located on top of the Carbonator as shown in Figure 9.
16. Prime the Syrup System as follows:
  - a. Place a clean empty cup in the Cup Delivery Compartment.
  - b. Move a Syrup Pump Priming Switch to the ON position. Air present in the syrup line will be forced out the Syrup Dispensing Spigot.
  - c. When a continuous flow of syrup, free of air bubbles, is coming from the Syrup Dispensing Spigot, move the Syrup Pump Priming Switch to the OFF position.
  - d. Return the dispensed syrup to the appropriate Syrup Tank.
  - e. Repeat Steps 16A through 16d for each Syrup Pump.
17. Rotate the Cup Dispenser Assembly into the Cabinet.
18. Close and lock the Cabinet Door.

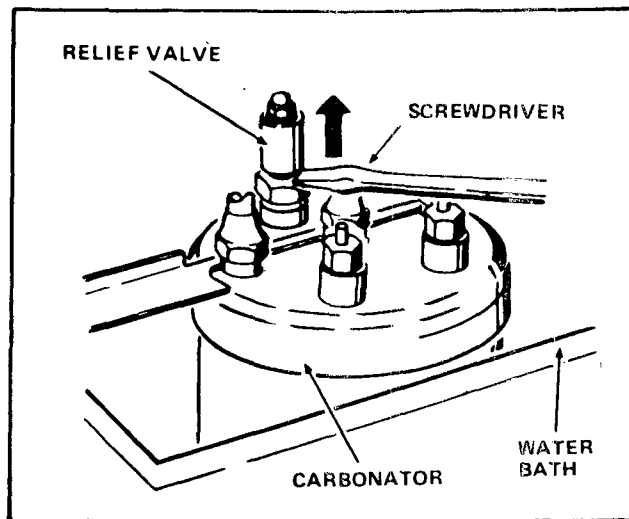


FIGURE 9