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# SERVICE MANUAL FOR MODEL RM-10

# REQUIRED TOOLS



CORDLESS DRILL



COPPER CUTTING TUBE



1/2" OPEN WRENCH



SOLDERING IRON



SCREWDRIVER SET WITH  
9/32" SOCKET



WISE GRIP



PIERCING VALVE



PRECISION FLAT BLADE SLOTTED  
SCREWDRIVER



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# REQUIRED EQUIPMENT



OXY-ACETYLENE  
EQUIPMENT



DRY NITROGEN TANK



VACUUM PUMP WITH GAUGE  
METER WITH AN ACCURACY  
IN MICRONS



MANIFOLD HIGH & LOW  
GAUGE PRESSURE KIT



LEAK DETECTOR



REFRIGERANT RECOVERY  
MACHINE



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- Instructions to replace LED Power Supply.
- Instructions to replace LED strips lights.
- Instructions to replace condenser fan motor.
- Instructions to replace evaporator fan motor.
- Instructions to replace electronic thermostat.
- Instructions to replace thermostat ambient sensor.
- Instructions to replace starting relay, overload protector and starting capacitor.
- Instructions to replace compressor.
- Instructions to replace door.



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# DISCONNECT UNIT FROM POWER SUPPLY BEFORE DOING ANY SERVICE

## Instructions to Replace LED Power Supply.



1. Unscrew the four screws that hold in place the front grill , using a Phillips screwdriver # 2



2. Pull out the front grill .



3. In order to remove the Power Supply, unscrew the two screws that hold it in place using a Phillips screwdriver # 2.



4. Disconnect the Power Supply's electrical connector.



5. To install the new Power Supply reverse the previous steps.



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## Instructions to Replace LED Strips.



1. Use a slotted screwdriver to pull out the LED cover profile.



2. Disconnect the LED electrical connector.



3. Use a slotted screwdriver to pull out the LED strip.



4. To install the new LED strip reverse the previous steps.



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## Instructions to Replace Condenser Fan Motor



1. Unscrew the four screws that hold in place the front grill , using a Phillips screwdriver # 2



2. Pull out the front grill .



3. Disconnect the Tyco electrical connector of condensing unit.



4. Remove the two bolts that hold in place the rails using a 1/2" open wrench. These rails support the condensing unit.



5. Pull out the condensing unit from the base of the cabinet.



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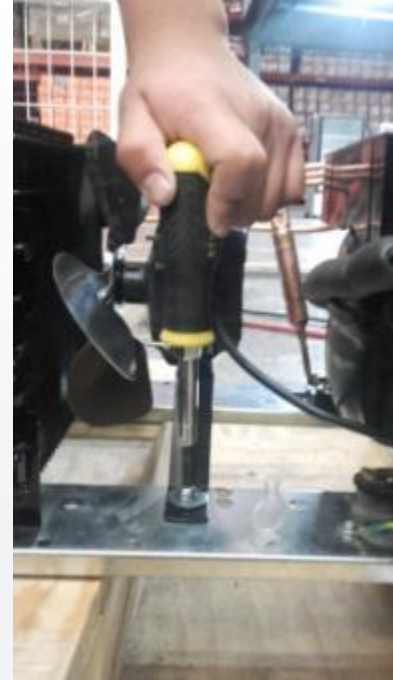
## Instructions to Replace Condenser Fan Motor



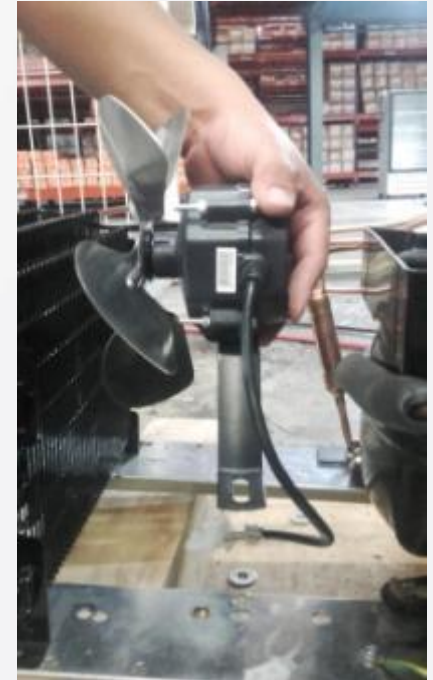
6. The condensing unit can be removed all the way out for easier service.



7. Disconnect the Tyco electrical connector of the condenser fan motor.



8. Unscrew the two screws that hold in place the base motor to the rails using a Phillips screwdriver # 2



9. Remove the condenser fan motor by pulling it out



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## Instructions to Replace Condenser Fan Motor



10. Remove the bolt that hold in place the fan blade to the fan motor using a 9/32" socket screwdriver.



11. Unscrew the two screws that hold in place the base motor to the fan motor using a 9/32" socket screwdriver.



12. To install the new condenser fan motor reverse the previous steps.



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# DISCONNECT UNIT FROM POWER SUPPLY BEFORE DOING ANY SERVICE

## Instructions to Replace the Evaporator Fan Motor.



1. Unscrew the four screws that hold in place the fan guard on the air baffle using a Phillips screwdriver # 2.



2. Remove the bolt that holds in place the fan blade to the fan motor using a 9/32" socket screwdriver.



3. Unscrew the four screws that hold in place the support base motor to the top of cabinet using a Phillips screwdriver # 2.



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## Instructions to Replace the Evaporator Fan Motor.



4. Disconnect the Tyco electrical connector of the evaporator fan motor located in the top of cabinet.

5. Unscrew the three screws that hold in place the support base motor to the fan motor chassis using a 9/32" socket screwdriver .

6. To install the new evaporator fan motor reverse the previous steps.



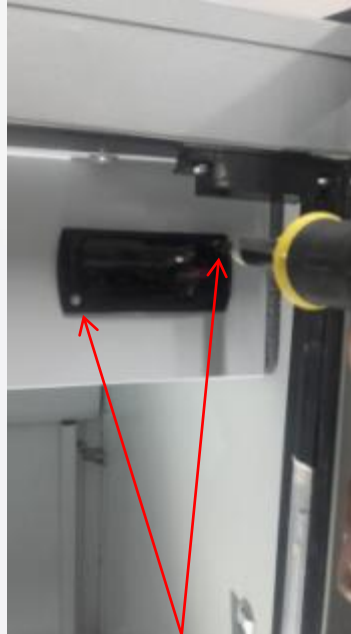
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## Instructions to Replace The Electronic Thermostat.



1. Remove the front frame of the thermostat using your fingers.



2. Turn 90° both screws to loosen their cams and the front panel will detach. Then, proceed to remove the thermostat from the panel, by keeping it horizontally.



3. Disconnect the connectors located in the back of thermostat. .



4. To install the new electronic thermostat reverse the previous steps.



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## Instructions to replace Ambient Sensor.



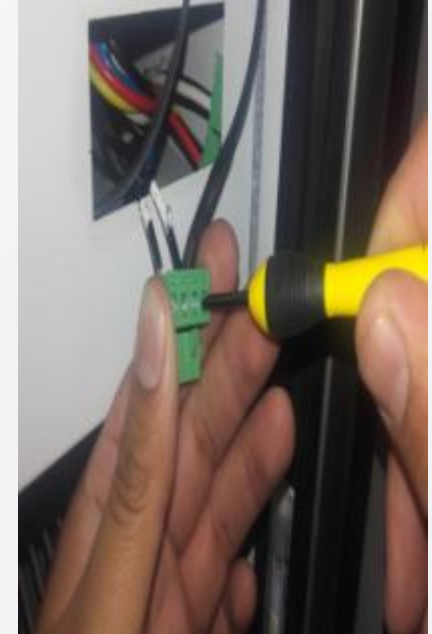
1. Remove the front frame of the thermostat using your fingers.



2. Turn 90° both screws to loosen their cams and the front panel will detach. Then, proceed to remove the thermostat from the panel, by keeping it horizontally.



3. Disconnect the connector of the ambient sensor located on the back of the thermostat, shown in the picture.



4. Unscrew the two screws that hold the wires in place of the ambient sensor using a precision flat blade slotted screwdriver.



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## Instructions to replace Ambient Sensor.



5. Unscrew the two screws that hold in place the light switch support plate on the baffle using a Phillips screwdriver # 2 .



6. Pull out the ambient sensor from its plastic clip support.



7. To install the new ambient sensor reverse the previous steps.



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# DISCONNECT UNIT FROM POWER SUPPLY BEFORE DOING ANY SERVICE

Instruction to Replace Starting Relay, Overload Protector and Starting Capacitor.



1. Unscrew the four screws that hold in place the front grill using a Phillips screwdriver # 2

2. Pull out the front grill.

3. Disconnect the Tyco electrical connector of the condensing unit.

4. . Remove the two bolts that hold in place the rails using a 1/2" open wrench. These rails support the condensing unit.

5 Pull out the condensing unit from the base of the cabinet.



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# DISCONNECT UNIT FROM POWER SUPPLY BEFORE DOING ANY SERVICE

Instruction to Replace Relay, Overload Protector and Starting Capacitor.



6. The condensing unit can be removed all the way out for easier service.



7. Insert a flat screwdriver in the slot of the plastic electrical box to remove it from the compressor. Use the flat screwdriver as a pry bar to push the box downward.



8. At the same time that the plastic electric box is being pushed downward with the slotted screwdriver, hold the box with the other hand and pull it out downward.



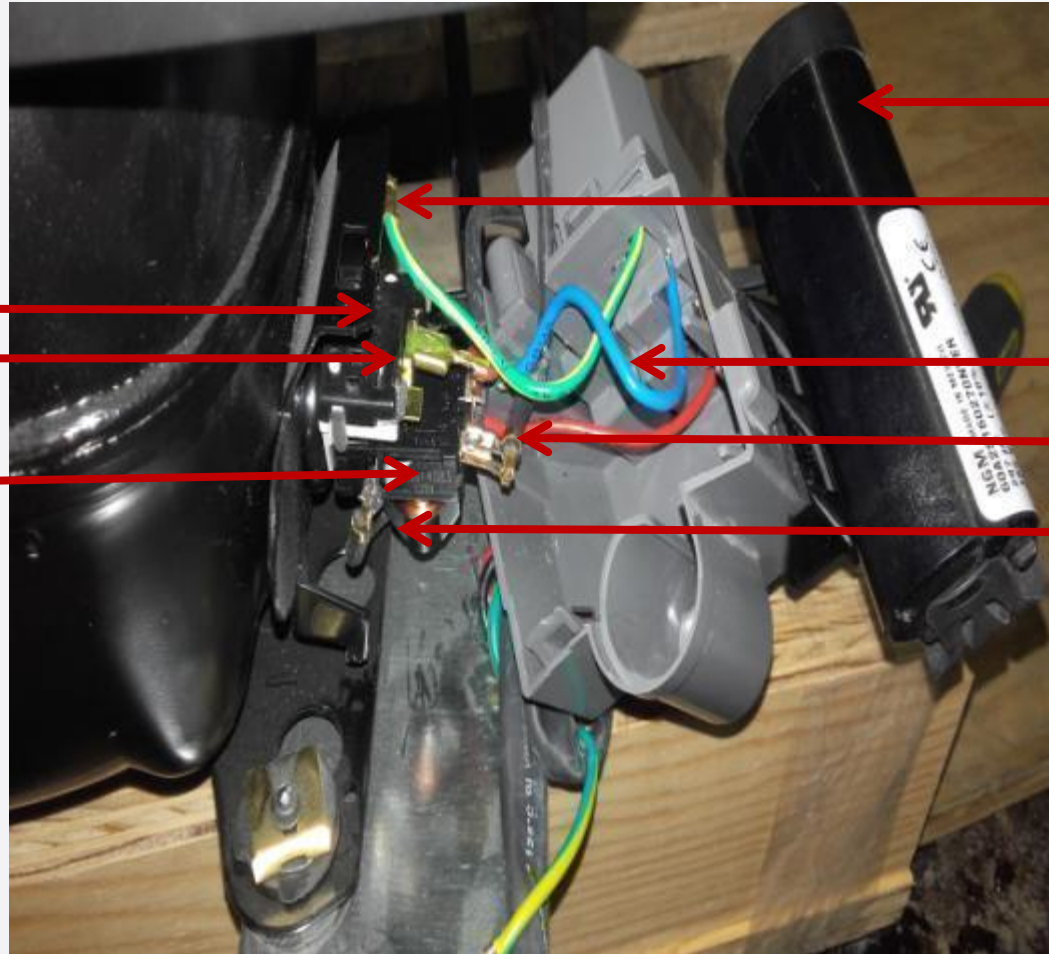
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# DISCONNECT UNIT FROM POWER SUPPLY BEFORE DOING ANY SERVICE

Instruction to Replace Relay, Overload Protector and Starting Capacitor.

## LOCATION OF ELECTRICAL CONNECTIONS



Overload protector

Overload protector  
wires connection

Start Relay

Starting Capacitor

Ground wire .

Start Relay wire  
connections

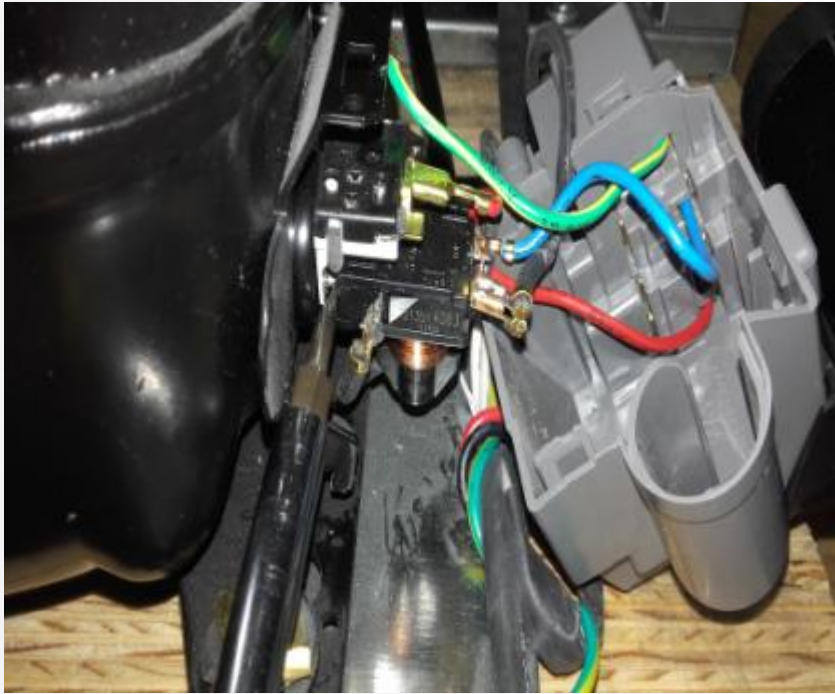
Starting capacitor wires  
connections



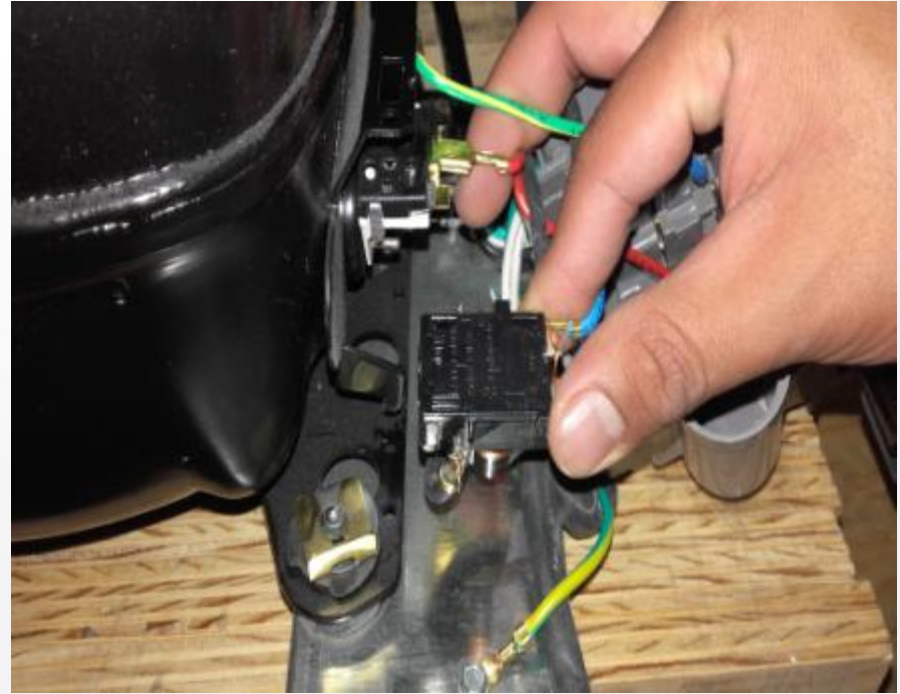
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## Instruction to Replace Start Relay, Overload Protector



9. First disconnect the two black wires connecting the starting capacitor and the blue color wire of the start relay. Then use a slotted screwdriver as a pry bar to pull out the relay / overload protector assembly from the compressor shell.



10. To install the new relay / overload protector assembly reverse the previous steps.

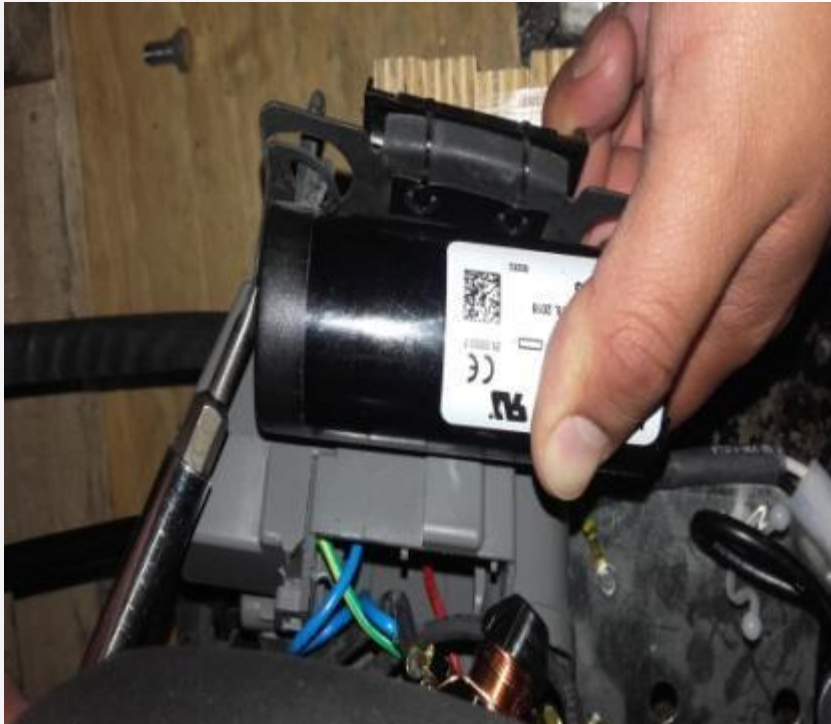


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## Instruction to Replace Starting Capacitor.



11. Use a slotted screwdriver as a pry bar to remove the starting capacitor from its base: The base of the capacitor is attached to the top of the electrical plastic box.



12. Unsolder the terminals of the starting capacitor using a soldering iron. To install the new starting capacitor reverse the previous steps.



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## Instructions to Replace Compressor



1. Unscrew the four screws that hold in place the front grill using a Phillips screwdriver # 2

2. Pull out the front grill.

3. Disconnect the Tyco electrical connector of the condensing unit.

4. Remove the two bolts that hold in place the rails using a 1/2" open wrench. These rails support the condensing unit.

5. Pull out the condensing unit from the base of the cabinet.



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# DISCONNECT UNIT FROM POWER SUPPLY BEFORE DOING ANY SERVICE

## Instructions to Replace Compressor.



6. The condensing unit can be removed all the way out for easier service



7. Use a flat head screwdriver to unscrew the terminals of the power cord and electrical harness from the plastic electrical box.



8. Please review the slides 15 through 19 to remove the relay, overload protector and starting capacitor.

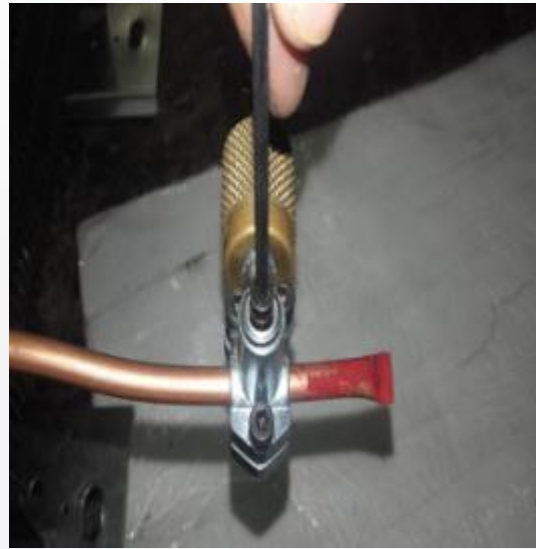


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## Instructions to Replace Compressor.



9. The first step is to recover all refrigerant from the system by installing a piercing valve in the compressor service tube.

10. Attach the hose of the recovery machine to the service tubing. Use an Allen Key Wrench to close the piercing valve for piercing the tube and open it to release the refrigerant.

11. Open Manifold Gauge Pressure valves and turn on the recovery machine to recover all the refrigerant.



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## Instructions to Replace Compressor.



12. Separate the discharge tubing from the compressor evaporation tray.



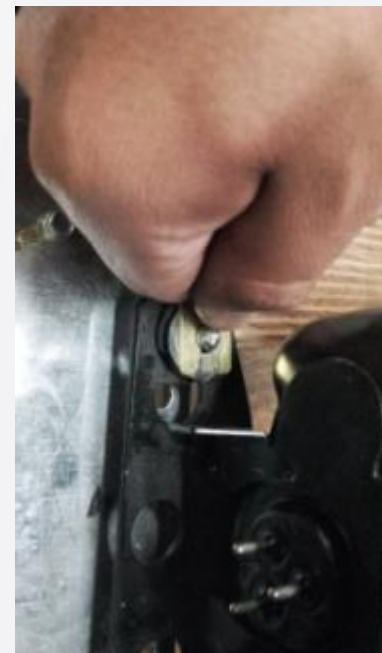
13. Use a knife to cut the double sided tape that holds in place the evaporator tray pan on the compressor.



14. Warm the brazing of the discharge and suction tubes in order to unsolder them from the compressor.



15. To remove the filter dryer, slowly warm up the joint of the capillary tubing with the filter dryer and pull them apart by using pliers.



16. Remove the four clips, pins and washers that secure the compressor to the base rails.



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## Instructions to Replace Compressor.



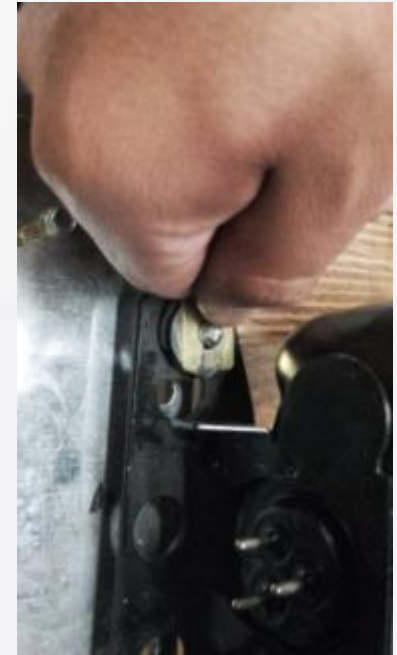
17. Remove the compressor from the base rails.



18. Not all compressor removal requires cleaning the low and high sides of the system. However, if you suspect that there are high levels of contamination, sweep the system using dry nitrogen at 250 psig.



19. Place the new compressor on the base rails



20. Insert the four clips, pins and washers in the base of the compressor to hold it in place to the base rails.



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## Instructions to Replace Compressor.



21. Proceed to braze the service, discharge and suction tubing.



22. Place double sided tape in the compressor evaporation tray pan and fix it over the compressor applying slight pressure. Accommodate the discharge tubing into the evaporation tray pan.



23. Follow slides # 15 through #19 to install the relay, overload protector and starting capacitor.



24. Braze the filter to the condenser discharge line and to the capillary tubing. Do not over heat the body of the filter and take great care not to block the capillary tubes with solder material. The filter dryer must be installed in a vertical position with the capillary tube inlet at the bottom of the filter.



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## Instructions to Replace Compressor – Vacuum & Charging the System.



25. Use the Piercing Valve already installed in the service tube of the compressor. Proceed with the evacuation and charging process of the system.

26. Attach the hoses of the manifold gauge to the vacuum pumps

27. Turn on the vacuum pump to start evacuating the system. This should take up to 20 minutes for the micron gauge to reach 200 microns or less. Once this level has been reached, continue to vacuum for an additional 10 minutes to assure that non-condensable gases have been removed. Then, close the manifold gauge valves.



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## Instructions to Replace Compressor – Vacuum & Charging the System.



28. After the vacuum process has been finished, close the valves of the manifold gauges and proceed to connect the hose from the refrigerant tank to the service line of the manifold. Open the low pressure valve as well as the tank valve to charge the refrigerant. Inject the amount specified in the serial name plate of R-134a refrigerant into the refrigeration system.

Wait until the pressure readings of the system have equalized and then turn on the cooler.



29. Unplug the cooler. Pinch the service tubes using a vise pinch and proceed to remove the manifold gauges and piercing valve. Check for refrigerant leaks using a leak detector.

NOTE: To avoid leaks that may originate from Schrader Valves when installed for service in the future, proceed to pinch off the tubing using a vise grip and braze it with oxyacetylene welding. Check for refrigerant leaks using a leak detector in all the soldered joints.



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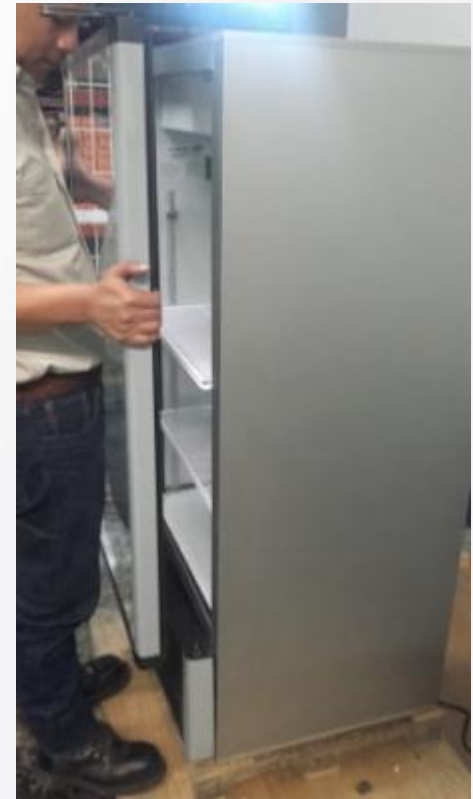
## Instructions to Replace Door.



1. Use a cordless drill drive with a Phillips bit # 3 to remove the three bolts that hold in place the upper hinge .



2. To remove the door, pull it upward form the bottom hinge.



3. To install the new door reverse the previous steps..



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