

SECTION 7

COMPONENT ACCESS AND REMOVAL

COMPONENT ACCESS AND REMOVAL

This section explains how to remove components from models IC-27R and IC-27F.

An attempt has been made to arrange these procedures in such a way as to simulate which components would need to be removed first in order to gain access to other components. When following a component removal procedure, it may be necessary to reference another component removal procedure listed earlier in this section.

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IMPORTANT NOTE: Before continuing, please take note of the WARNINGS and CAUTIONS below.

A WARNING

- IF PULLING A UNIT FROM ITS INSTALLATION BEYOND THE ANTI-TIP COMPONENTS, REMEMBER THAT
 IT COULD TIP FORWARD RESULTING IN SERIOUS INJURY OR DEATH. PULLING A UNIT FROM ITS
 INSTALLATION SHOULD ONLY BE PERFORMED BY AN AUTHORIZED SERVICE TECHNICIAN OR
 INSTALLER.
- TO AVOID ELECTRIC SHOCK, POWER TO THE UNIT MUST BE DISCONNECTED WHENEVER ACCESSING AND/OR REMOVING COMPONENTS POWERED BY ELECTRICITY OR COMPONENTS NEAR OTHER ELECTRICAL COMPONENTS. IF THE UNIT IS PLUGGED IN, BUT HAS NOT BEEN SWITCHED ON BY PRESSING THE POWER KEY, LINE VOLTAGE IS STILL PRESENT AT THE MAIN CONTROL BOARD.
- IF REMOVING A DOOR OR DRAWER FROM A UNIT, REMEMBER THAT DOORS AND DRAWERS ARE HEAVY. IF THEY WERE TO FALL, THEY COULD CAUSE SERIOUS PERSONAL INJURY.

A CAUTION

- · If working in the compressor area, remember that compressor and tubing may be hot.
- If working on or around the evaporator or condenser, remember that evaporator and condenser fins are sharp.

IC-27R EXTERIOR COSMETIC AND MECHANICAL COMPONENTS

Kickplate/Grille Removal

The kickplate/grille is attached by four screws passing through the kickplate into adjustable kickplate brackets.

NOTE: Because drawer panels may extend down in front of the kickplate/grille, it may be necessary to remove the bottom drawer to gain access.

To remove kickplate/grille, extract screws (two each side) and pull kickplate/grille forward. (See Figure 7-1)

Side Molding Strip Removal

Side molding strips are held in place by four unit-to-cabinet brackets attached to the sides of the cabinet.

NOTE: Remove drawers first to make this task easier.

To remove the side trim molding strips (See Figure 7-2):

- Place a straight-blade screwdriver in channel at bottom of molding. Gently pull molding forward until face-frame edge of molding is accessible.
- Place another straight-blade screwdriver under face-frame edge and gently work molding away from face-frame, and off of unit-to-cabinet brackets.

Upper Compartment Light Switch & Fan Switch Removal

The upper door compartment light switch and fan switch protrude through the top trim molding, just above the door. Tabs on the switches hold switches in the switch bracket behind the top trim. The bracket is attached to the switch enclosure with screws.

NOTE: The switch with white back is for the lights and the switch with black back is for the evaporator fan.

To access and remove a light and/or fan switch (See Figure 7-3):

- 1. Remove side molding strips.
- 2. Pull top of top molding forward, then lift up.
- Extract screws from switch bracket and pull bracket forward.
- 4. Disconnect electrical leads from switch being removed.
- Depress tabs on side of switch and push switch out of bracket.

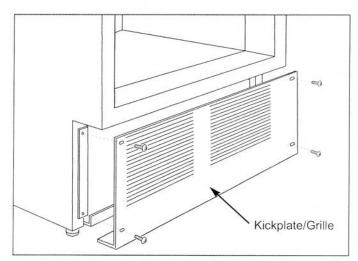


Figure 7-1. Kickplate/Grille Removal

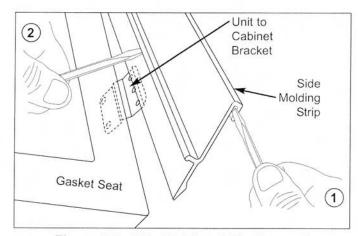


Figure 7-2. Side Molding Strip Removal

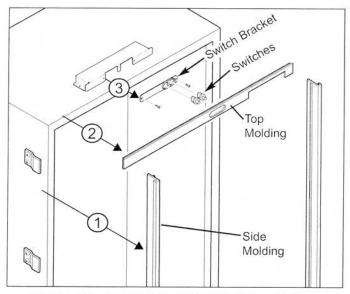


Figure 7-3. Upper Light Switch & Fan Switch



Door Assembly Removal

The door assembly is held in place with Allen-head screws that pass down through the arm of the top hinge assembly and up through the arm of the bottom hinge assembly, then into the door. These mounting screws are concealed by a hinge cover on each hinge arm. The hinge covers are held in place by tabs that fit into notches in the hinge arms.

To remove a door assembly (See Figure 7-4):

- 1. Open door and removing both hinge covers.
- With Allen-head wrench, extract the two inner-most door mounting screws from top and bottom hinge arms, leaving the two outer-most screws in place.
- 3. Close door and extract the outer-most door mounting screws from bottom hinge arm.
- Extract the two outer-most door mounting screws from top hinge arm.
- 5. Lift door from unit.

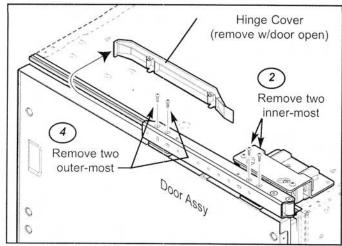


Figure 7-4. Door Assembly Removal

Upper and Lower Hinge Assembly Removal

5/16" hex-head drive #10 bolts hold the hinge assemblies to the top and bottom of the unit.

To remove a hinge assembly (See Figure 5):

- 1. Remove door assembly.
- 2. Pull unit from installation approximately 8" (top hinge only).
- 3. Extract hex-head mounting bolts
- 4. Pull hinge assembly from the unit.

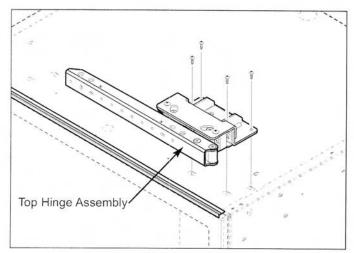


Figure 7-5. Hinge Assembly Removal

IC-27R INTERIOR COSMETIC, MECHANI-CAL AND ELECTRICAL COMPONENTS

Door Gasket

A dart at the back of the door gasket fits into a channel in the inside perimeter of the door.

To remove a door gasket, starting at one corner, pull the gasket dart from the channel. (See Figure 7-6).

Door Shelf and Dairy Compartment Adjustment / Removal

There are "L" shaped grooves in the end caps of the door shelves and dairy compartment, and there are knobs formed in the dikes of the door liner. (See Figure 7-7) The door shelves and dairy compartment are hung on the door by lining up the "L" shaped grooves with the knobs.

Push in and down to <u>install</u> a door shelf. Pull up and out to <u>remove</u> a door shelf.

Non-adjustable Door Shelf

The lower non-adjustable door shelf has hooks at the back sides of its endcaps that fit into notches in the door liner.

To remove the non-Adjustable door shelf lift it up slightly then pull it from the notches in the door liner; to install it push in and down (See Figure 7-8)

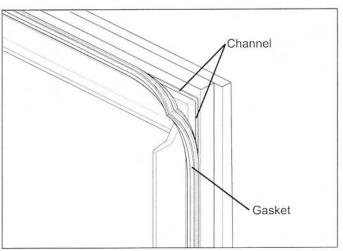


Figure 7-6. Door Gasket Removal

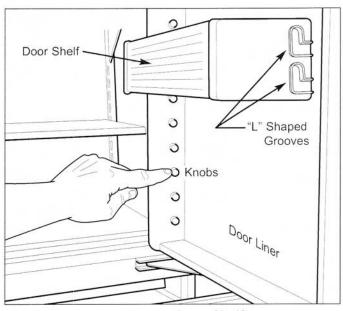


Figure 7-7. Door Shelf

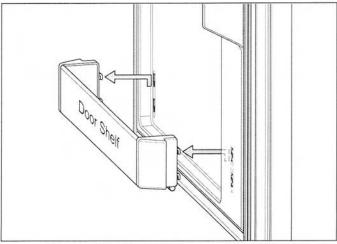


Figure 7-8. Non-Adjustable Door Shelf



Cantilever Shelf Assembly

To adjust and/or remove a refrigerator cantilever shelf assembly (See Figure 7-9):

- 1. Lift front of shelf up slightly.
- 2. Lift back of shelf up to disengage the shelf ladder hooks from the shelf ladders.
- 3. Pull shelf forward and out of the shelf ladders.

Crisper Glass Shelf

The crisper glass shelf rests upon shelf standoffs that are mounted to the refrigerator side walls.

To remove the crisper glass shelf (See Figure 7-10):

- 1. Lift shelf straight up off of the standoffs.
- 2. Pull shelf forward, out of compartment.



To remove a deli drawer assembly or crisper drawer assembly, open the drawer until it stops, then lift the front of the drawer up slightly off of the drawer slide while continuing to pull the assembly out of the compartment. (See Figure 7-11).

NOTE: If the door is limited to a 90-degree opening, removing the non-adjustable door shelves will assist in this task.

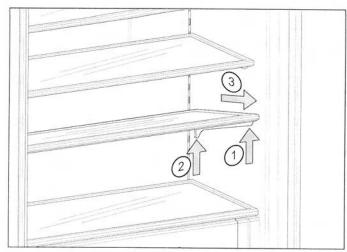


Figure 7-9. Cantilever Shelf Removal

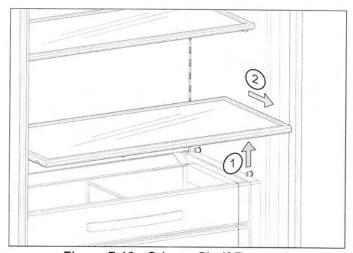


Figure 7-10. Crisper Shelf Removal

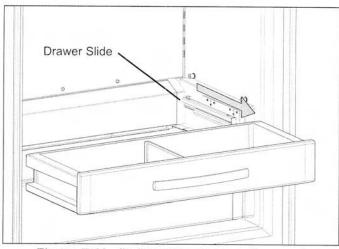


Figure 7-11. Refrigerator Drawer Removal

Glass Crisper Cover Assembly

The glass crisper cover assembly is located between the deli drawer and the top crisper drawer and is held in place by crisper cover supports attached to each side wall.

To remove the glass crisper cover assembly, first remove the deli drawer and the top crisper drawer, then (See Figure 7-12):

- Grasp the assembly at the front edge toward each side.
- 2. Lift the front of the assembly upward and pull it forward to release it from the support retaining clips.

Crisper Cover Support

The crisper cover supports are secured with screws to the compartment side wall and the crisper spacer assembly.

To remove a crisper cover support, the glass crisper cover must be removed first, then extract the support mounting screws and pull the support from the side wall or crisper spacer. (See Figure 7-13)

Refrigerator Drawer Slide

The drawer slides are secured with screws to the compartment side walls and the crisper spacer assembly.

To remove a drawer slide, first remove the drawer assembly, then extract the slide's mounting screws and pull the slide from the side wall or crisper spacer. (See Figure 7-14)

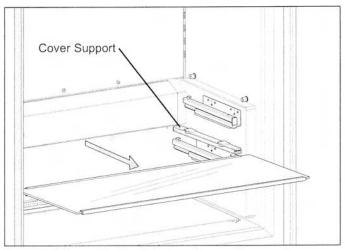


Figure 7-12. Crisper Cover Removal

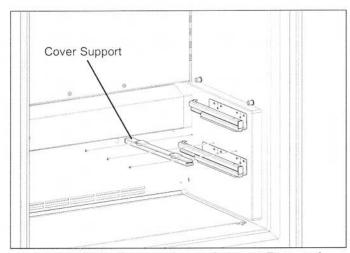


Figure 7-13. Crisper Cover Support Removal

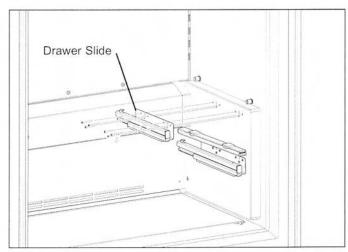


Figure 7-14. Drawer Slide Removal



Glass Crisper Cover Assembly

The glass crisper cover assembly is located between the deli drawer and the top crisper drawer and is held in place by crisper cover supports attached to each side wall.

To remove the glass crisper cover assembly, first remove the deli drawer and the top crisper drawer, then (See Figure 7-15):

- Grasp the assembly at the front edge toward each side.
- Lift the front of the assembly upward and pull it forward to release it from the support retaining clips.



The crisper cover supports are secured with screws to the compartment side wall and the crisper spacer assembly.

To remove a crisper cover support, the glass crisper cover must be removed first, then extract the support mounting screws and pull the support from the side wall or crisper spacer. (See Figure 7-16)

Refrigerator Drawer Slide

The drawer slides are secured with screws to the compartment side walls and the crisper spacer assembly.

To remove a drawer slide, first remove the drawer assembly, then extract the slide's mounting screws and pull the slide from the side wall or crisper spacer. (See Figure 7-17)

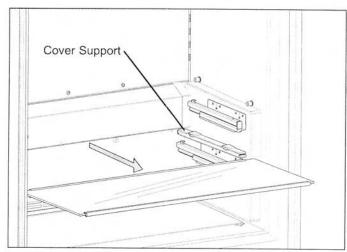


Figure 7-15. Crisper Cover Removal

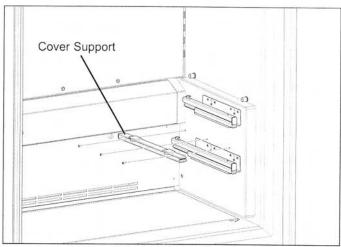


Figure 7-16. Crisper Cover Support Removal

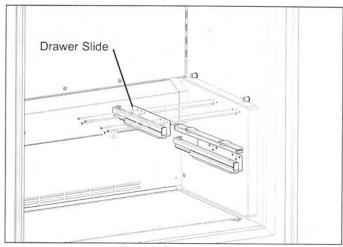


Figure 7-17. Drawer Slide Removal

Crisper Light Cover Assembly

The crisper light cover assembly is secured to the lower refrigerator duct by its upper flange and end caps engaging two crisper light cover supports that are part of the lower duct assembly.

To remove the lower light cover, first remove the crisper glass shelf and deli drawer assembly, then lift the light cover up at each end, disengaging it from the supports. (See Figure 7-18)

Lower Light Bulb

The lower light assembly is located behind the crisper light cover.

To remove the lower light bulb, first remove the crisper glass shelf, deli drawer assembly and light cover, then turn the bulb counterclockwise to remove it from the light socket. (See Figure 7-19)

Crisper Spacer Assembly

The crisper spacer assembly, which also holds the Consumer Use and Care Cards, is attached to the hinge side wall with screws.

To remove the crisper spacer assembly, first remove the crisper glass shelf, the drawer assemblies, the glass crisper cover, hinge-side drawer slides and the crisper light cover. Then, extract the crisper spacer mounting screws and pull the spacer assembly from the wall (See Figure 7-20)

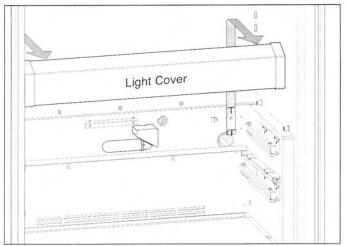


Figure 7-18. Crisper Light Cover Removal

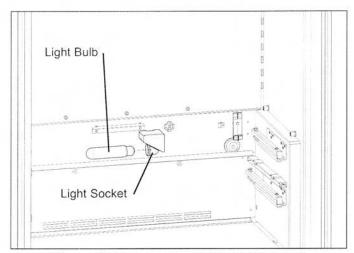


Figure 7-19. Lower Light Bulb Removal

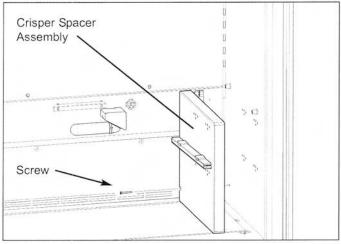


Figure 7-20. Crisper Spacer Assembly Removal

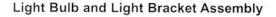


Upper Light Diffuser Removal

The side frames of the upper light diffuser have four inverted "T" shaped slots (two each side) which fit over pegs protruding from the side walls of the upper compartment. Retaining clips at the rear slots secure the diffuser to the rear pegs.

To remove the light diffuser (See Figures 7-21 and 7-22):

- Slide a finger over the top of each retainer clip flange and rotate the retainer clip down and back.
- 2. With clips open, lift the diffuser up and slide it towards the rear of unit until center of the "T" slots line up with the pegs.
- 3. Lower diffuser down and pull forward from the unit.



The lighting assembly is located behind the light diffuser at the top of the compartment.

To remove the light bulb, first remove the top freezer basket and the light diffuser, then turn the bulb counter-clockwise to remove it. (See Figure 7-23)

The light bracket assembly is secured with screws to the compartment ceiling.

To remove a light bracket assembly, first remove the top basket and light diffuser, then (See Figure 7-23):

- 1. Extract bracket mounting screws.
- Lower assembly down and disconnect the lighting wire harness.
- 3. pull ground clip from side of bracket.

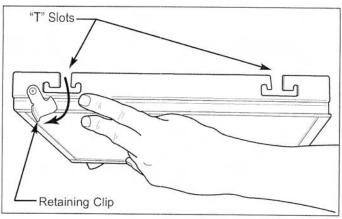


Figure 7-21. Upper Light Diffuser Removal

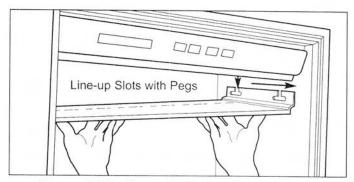


Figure 7-22. Upper Light Diffuser Removal

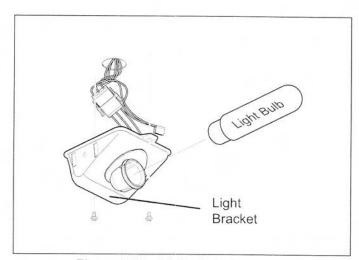


Figure 7-23. Light Bulb Removal

Control Board Removal

The control board is held in position by two sets of tabs behind the left side of the control panel. The two forward tabs position the LCD in the control panel window, while the other two tabs secure the middle of the control board. The control board is then shielded by a control enclosure and concealed by the light diffuser.

To access and remove control board, the light diffuser must be removed first, then (See Figures 7-24 & 7-25):

- Extract screws securing control enclosure to ceiling of the compartment. Lower the back of enclosure while pulling it toward rear of unit.
- 2. Disconnect all electrical leads from control board.
- Expand the two tabs at middle of control board outward while pulling the back of board down slightly.
 Then, expand the two forward tabs that hold the LCD in position outward. Now, pull control board down and toward rear of unit.

Control Panel Assembly Removal

The control panel is held in place with two rows of screws. The front row of screws go through spacers that fit into key-hole slots at the front of the panel. The rear screws secure the assembly to the ceiling.

To access and remove the control panel, the light diffuser and control enclosure must be removed first, then (see Figure 7-26):

NOTE: It is recommended but not necessary to disconnect the control board from the control panel in order to remove the control panel. If leaving the control board secured to the control panel, all electrical leads attached to the control board must be disconnected.

- 1. Extract rear mounting screws from control panel.
- Push panel toward rear of unit to release the front screws from key-hole slots, then lower panel down and pull out of unit.

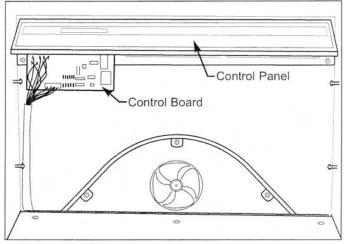


Figure 7-24. Control Board And Control Panel

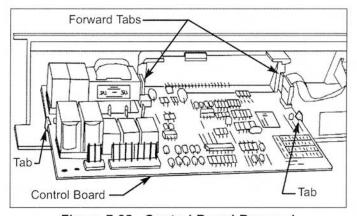


Figure 7-25. Control Board Removal

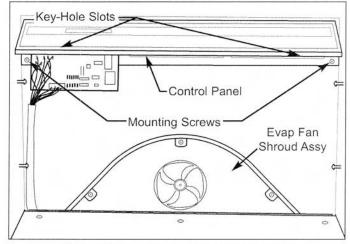


Figure 7-26. Control Panel Removal



Upper Duct Assembly

The refrigerator upper duct assembly uses screws at the both bottom corners as well as screws at the top of the duct to secure it to the back wall of the compartment; at the bottom there are also plastic rivets that hold it tight to the top flange of the lower duct assembly.

To remove the upper duct assembly, first remove all cantilever shelves, the crisper glass shelf and the upper light diffuser, then (See Figure 7-27):

- At bottom of duct assembly extract plastic rivet center posts using a fingernail, putty knife, or similar device, then pull rivets out.'
- At bottom of duct assembly extract screws from each corner.
- Disconnect ground wire clip from top of duct assembly.
- Extract screws from top of upper duct and pull duct assembly from compartment.



Shelf ladders are held to the side walls with screws.

To remove a shelf ladder, first remove all cantilever shelves, the crisper glass shelf, upper light diffuser and upper duct assembly, then (See Figure 7-28):

- 1. Extract shelf ladder mounting screws.
- 2. Pull shelf ladder from side wall.

Evaporator Fan Shroud Assembly

The evaporator fan shroud is secured with screws to the compartment ceiling.

To remove the evaporator fan shroud assembly, first remove all cantilever shelves, the crisper glass shelf, upper light diffuser and upper duct assembly, then (See Figure 7-29):

- 1. Disconnect evaporator fan electrical leads.
- 2. Extract screws securing fan shroud to compartment ceiling and pull assembly from the compartment.

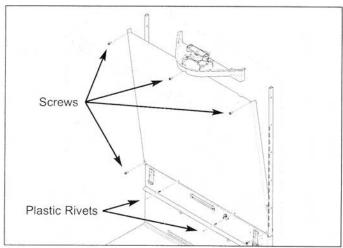


Figure 7-27. Upper Duct Assembly Removal

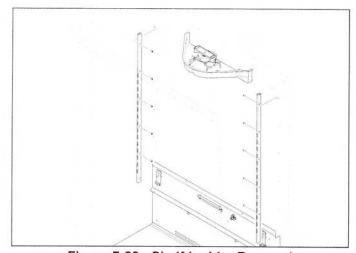


Figure 7-28. Shelf Ladder Removal

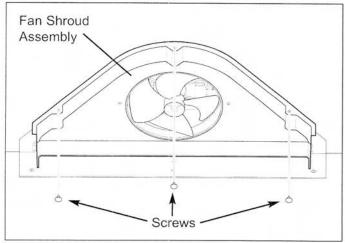


Figure 7-29. Evaporator Fan Shroud Assembly

Evaporator Fan Motor

The evaporator fan motor sits on top of the evaporator fan shroud bracing with its shaft passing through a hole in the brace; the motor is then held in place by a fan bracket snapping together with the bracing over the back side of the motor.

To remove the evaporator fan motor, first remove all cantilever shelves, the crisper glass shelf, upper light diffuser, upper duct assembly and evaporator fan assembly, then (See Figure 7-30):

- 1. Pull fan blade from fan motor shaft.
- Using a flat-bladed screwdriver, pry fan bracket clips off of the tabs at each side of shroud bracing.
- 3. Lift fan motor off of fan shroud.

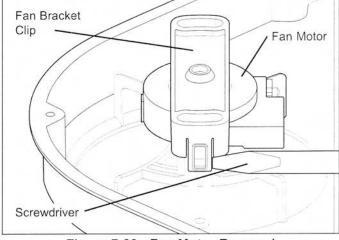


Figure 7-30. Fan Motor Removal

Refrigerator Compartment Thermistor

The refrigerator compartment thermistor is inserted into a thermistor clamp behind the upper duct assembly.

To remove the compartment thermistor, first remove all cantilever shelves, the crisper glass shelf, upper light diffuser and upper duct assembly, then (See Figure 7-31):

- 1. Pull thermistor from clamp.
- Cut thermistor's wire leads six (6) to twelve (12) inches from the back wall, then pull thermistor from compartment.

Lower Duct Assembly

The lower duct assembly is held in place with screws passing through it into standoff screw grommets that are fastened to the compartment back wall.

To remove the lower duct assembly, first remove all cantilever shelves, the upper light diffuser, crisper glass shelf, upper duct assembly, drawer assemblies, glass crisper cover, hinge-side drawer slides, crisper light cover, and the crisper spacer, then (See Figure 7-32):

- Extract lower duct mounting screws.
- Lean top of duct forward and remove all panel mount electrical connections from duct, then remove duct from the unit.

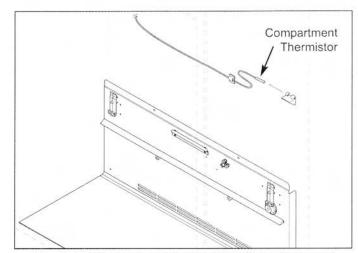


Figure 7-31. Compartment Thermistor Removal

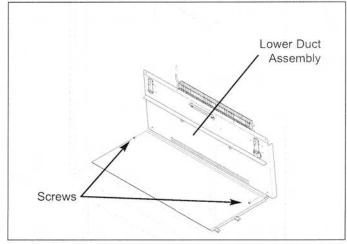


Figure 7-32. Lower Duct Assembly Removal

Refrigerator Evaporator Thermistor

The refrigerator evaporator thermistor is inserted six to ten inches into the opening below the third elbow on the right side of the evaporator.

To remove the evaporator thermistor, first remove all cantilever shelves, the upper light diffuser, crisper glass shelf, upper duct assembly, drawer assemblies, glass crisper cover, hinge-side drawer slides, crisper light cover, crisper spacer and lower duct assembly, then (See Figure 7-33):

- 1. Pull thermistor from evaporator.
- 2. Cut thermistor's wire leads six (6) to twelve (12) inches from the back wall, then pull thermistor from compartment.

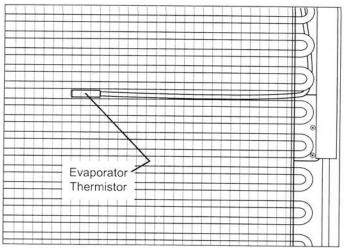


Figure 7-33. Evaporator Thermistor

IC-27R COMPRESSOR AREA MECHANICAL COMPONENTS

Condenser Fan Assembly

The condenser fan assembly is located on the hinge side of a IC-27 unit tray, behind the condenser, attached to the condenser fan shroud.

To access and remove the condenser fan assembly, the kickplate/grille will need to be removed first and the unit tray will need to be slid out. To slide the unit tray out and remove the fan, (See Figure 7-34 and 7-35):

- Extract two screws, one each front corner, that secure unit tray to unit.
- Extract air guard mounting screws, then lift front of air guard up to disengage slots at rear of air guard from flanges at top of condenser fan shroud. Pull air guard forward.
- Extract condenser fan shroud mounting screws from center right and left center brackets on each side of the condenser.
- 4. Lean top of condenser fan shroud back and pull unit tray forward.
- 5. Disconnect condenser fan motor electrical leads.
- Remove condenser fan from shroud by extracting the screws securing motor to brackets. The brackets will unhook from the grommeted holes in condenser fan shroud after the screws are removed.
- To remove fan blade from the fan motor, grab blade and motor while turning the nut counterclockwise.
 Then pull the blade from motor shaft.

Drain Pan

The drain pan is adhered to the back of the unit tray with double-stick tape.

To access and remove the drain pan, the kickplate/grille will need to be removed first and the unit tray will need to be slid out. To slide the unit tray out and remove the fan, (See Figure 7-34 and 7-36):

- Follow steps 1 4 above, under Condenser Fan Assembly removal procedures.
- 2. Lift drain pan heater loop and brackets from drain pan.
- 3. Pull/pry drain pan from unit tray.

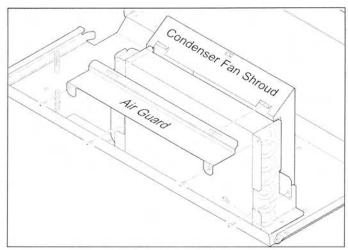


Figure 7-34. Unit Tray Removal

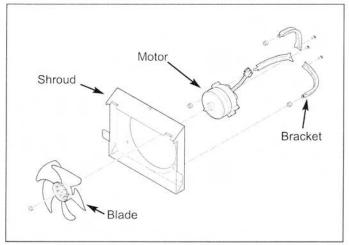


Figure 7-35. Condenser Fan Removal

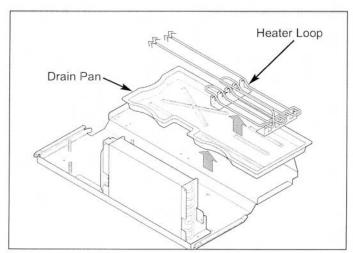


Figure 7-36. Drain Pan Removal



IC-27R SEALED SYSTEM COMPONENTS

Evaporator Removal

The evaporator is attached to the back wall with screws.

NOTE: Before attempting to remove the evaporator, evacuate the refrigerant from the sealed system.

To access the evaporator, first remove all cantilever shelves, the upper light diffuser, crisper glass shelf, upper duct assembly, drawer assemblies, glass crisper cover, hinge-side drawer slides, crisper light cover, crisper spacer and the lower duct assembly, then (See Figure 7-37):

- 1. Extract screws securing evaporator to back wall.
- With a tube cutter, cut the inlet tube approximately one inch from the end and cut the outlet tube approximately two inches from the end.

NOTE: Sweating the joints apart is not recommended as this may induce moisture into the sealed system and could cause a solder restriction in the capillary tube.

NOTE: If reusing the existing defrost heater, defrost terminator and evaporator thermistor, they can be removed from the evaporator after it is removed from the unit.

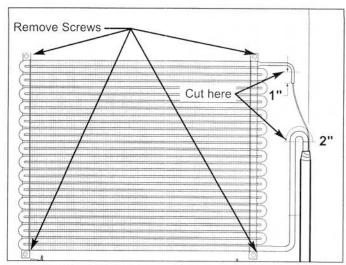


Figure 7-37. Lower Evaporator Removal

High-Side Filter-Drier Removal

The high-side filter-drier is behind the condenser and attached to the drier bracket with a cable tie.

NOTE: Before attempting to remove a filter drier, evacuate the refrigerant from the sealed system.

To access and remove a high-side filter-drier, the kick-plate/grille will need to be removed first and the unit tray will need to be slid out. To slide the unit tray out and remove the drier, (See Figure 7-38 and 7-39):

- Extract two screws, one each front corner, that secure unit tray to unit.
- Extract air guard mounting screws, then lift front of air guard up to disengage slots at rear of air guard from flanges at top of condenser fan shroud. Pull air guard forward.
- Extract condenser fan shroud mounting screws from center right and left center brackets on each side of the condenser.
- Lean top of condenser fan shroud back and pull unit tray forward.
- 5. Cut cable tie holding drier to bracket.
- 6. With file edge, score a line around capillary tube approximately one inch from filter-drier outlet, then fatigue capillary tube at this line until it separates.
- 7. With a tube cutter, cut the inlet tube approximately one inch from filter-drier.

NOTE: Sweating the joints apart is not recommended as this may induce moisture into the sealed system and could cause a solder restriction in the capillary tube.

NOTE: Check the end of the remaining capillary tube for internal burrs. If burrs exist, re-score a line around the capillary tube (approximately one inch from the end) and fatigue the capillary tube at this new line until it separates.

NOTE: When installing the replacement filter-drier, insert the capillary tube until it touches the screen, then pull the capillary tube approximately 3/8" (10 mm) away from the screen before brazing. (See Figure 7-40) When installing a new filter-drier, be sure to thoroughly clean the tubing before brazing.

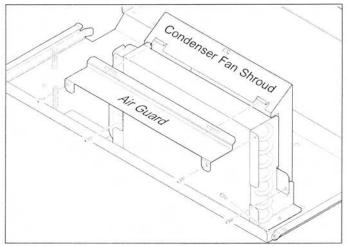


Figure 7-38. Unit Tray Removal

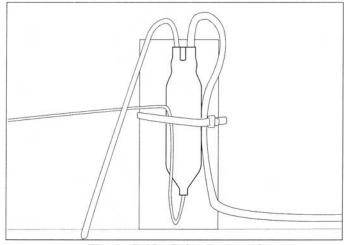


Figure 7-39. Drier Removal

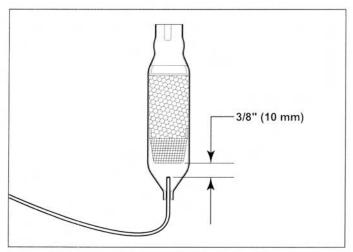


Figure 7-40. Filter-Drier Cut-Away View



Compressor Removal

The compressor has four rubber compressor grommets inserted into its base. Four cylindrical metal spacers are placed over threaded studs protruding up from the unit tray. The compressor grommets fit over the spacers and a washer sets on top of each grommet and spacer. A nut is then installed onto threaded studs and tightened down.

NOTE: Before attempting to remove a compressor, evacuate the refrigerant from the sealed system.

To access and remove a compressor, the kickplate/grille will need to be removed first and the unit tray will need to be slid out. To slide the unit tray out and remove the compressor, (See Figure 7-41 and 7-42):

- 1. Extract two screws, one each front corner, that secure unit tray to unit.
- Extract air guard mounting screws, then lift front of air guard up to disengage slots at rear of air guard from flanges at top of condenser fan shroud. Pull air guard forward.
- 3. Extract condenser fan shroud mounting screws from center right and left center brackets on each side of the condenser.
- 4. Lean top of condenser fan shroud back and pull unit tray forward.
- Disconnect wire leads from compressor electricals.
- 6. Using a tube cutter, cut suction and discharge tubes approximately 1" from compressor stubs.

NOTE: Do not sweat tubing apart. Doing so will induce moisture into the sealed system.

Extract compressor mounting nuts, then lift compressor off of unit tray.

NOTE: After replacing the compressor, take care to not kink tubing as the unit tray is slid back into position.

NOTE: Sweating the joints apart is not recommended as this may induce moisture into the sealed system and could cause a solder restriction in the capillary tube.

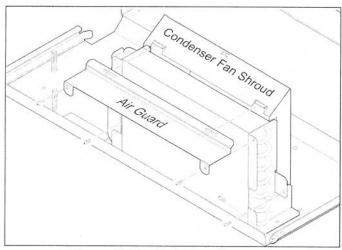


Figure 7-41. Unit Tray Removal

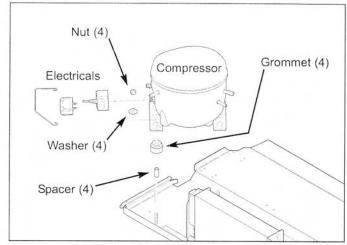


Figure 7-42. Unit Tray Removal

Condenser Removal

The condenser is secured to the unit tray with rivets that pass up through the unit tray into the condenser bottom side brackets.

NOTE: Before attempting to remove a condenser, evacuate the refrigerant from the sealed system.

To access and remove a condenser, the kickplate/grille will need to be removed first and the unit tray will need to be slid out. To slide the unit tray out and remove the condenser, (See Figure 7-43 and 7-44):

- Extract two screws, one each front corner, that secure unit tray to unit.
- Extract air guard mounting screws, then lift front of air guard up to disengage slots at rear of air guard from flanges at top of condenser fan shroud. Pull air guard forward.
- 3. Extract condenser fan shroud mounting screws from center right and left center brackets on each side of the condenser.
- Lean top of condenser fan shroud back and pull unit tray forward.
- Lift front of unit tray up to expose condenser mounting rivets, then drill out the rivets and pull condenser from unit tray.

NOTE: Sweating the joints apart is not recommended as this may induce moisture into the sealed system and could cause a solder restriction in the capillary tube.

NOTE: To reattach the condenser to the unit tray, use #10-24 X 3/8" bolts (#6200020) passing up through the unit tray and condenser brackets with #10-24 Hex nuts (#6150030) tightened down on top.

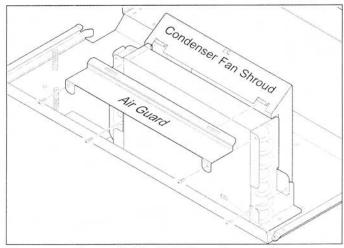


Figure 7-43. Unit Tray Removal

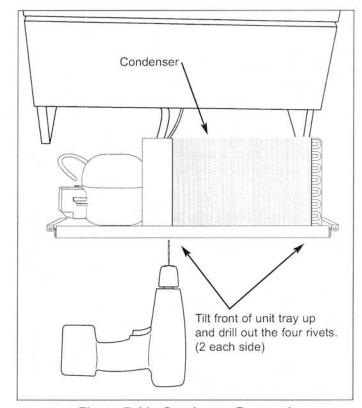


Figure 7-44. Condenser Removal



IC-27F EXTERIOR COSMETIC AND MECHANICAL COMPONENTS

Kickplate/Grille Removal

The kickplate/grille is attached by four screws passing through the kickplate into adjustable kickplate brackets.

NOTE: Because drawer panels may extend down in front of the kickplate/grille, it may be necessary to remove the bottom drawer to gain access.

To remove kickplate/grille, extract screws (two each side) and pull kickplate/grille forward. (See Figure 7-45)

Side Molding Strip Removal

Side molding strips are held in place by four unit-to-cabinet brackets attached to the sides of the cabinet.

NOTE: Remove drawers first to make this task easier.

To remove the side trim molding strips (See Figure 7-46):

- Place a straight-blade screwdriver in channel at bottom of molding. Gently pull molding forward until face-frame edge of molding is accessible.
- Place another straight-blade screwdriver under face-frame edge and gently work molding away from face-frame, and off of unit-to-cabinet brackets.

Upper Compartment Light Switch & Fan Switch Removal

The upper door compartment light switch and fan switch protrude through the top trim molding, just above the door. Tabs on the switches hold switches in the switch bracket behind the top trim. The bracket is attached to the switch enclosure with screws.

NOTE: The switch with white back is for the lights and the switch with black back is for the evaporator fan.

To access and remove a light and/or fan switch (See Figure 7-47):

- 1. Remove side molding strips.
- 2. Pull top of top molding forward, then lift up.
- Extract screws from switch bracket and pull bracket forward.
- Disconnect electrical leads from switch being removed.
- Depress tabs on side of switch and push switch out of bracket.

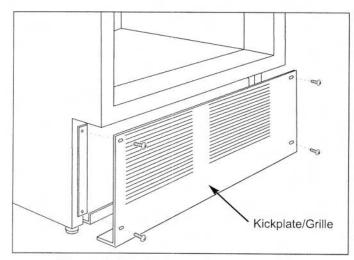


Figure 7-45. Kickplate/Grille Removal

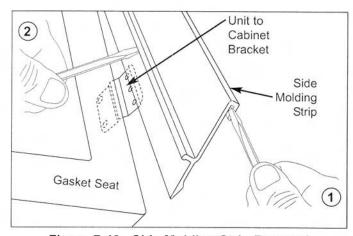


Figure 7-46. Side Molding Strip Removal

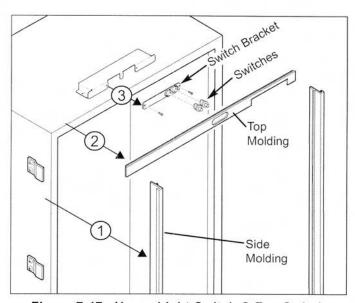


Figure 7-47. Upper Light Switch & Fan Switch

Installation Information

Door Assembly Removal

The door assembly is held in place with Allen-head screws that pass down through the arm of the top hinge assembly and up through the arm of the bottom hinge assembly, then into the door. These mounting screws are concealed by a hinge cover on each hinge arm. The hinge covers are held in place by tabs that fit into notches in the hinge arms.

To remove a door assembly (See Figure 7-48):

- 1. Open door and removing both hinge covers.
- With Allen-head wrench, extract the two inner-most door mounting screws from top and bottom hinge arms, leaving the two outer-most screws in place.
- 3. Close door and extract the outer-most door mounting screws from bottom hinge arm.
- 4. Extract the two outer-most door mounting screws from top hinge arm.
- 5. Lift door from unit.

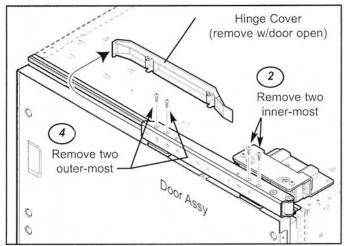


Figure 7-48. Door Assembly Removal

Upper and Lower Hinge Assembly Removal

5/16" hex-head drive #10 bolts hold the hinge assemblies to the top and bottom of the unit.

To remove a hinge assembly (See Figure 49):

- 1. Remove door assembly.
- 2. Pull unit from installation approximately 8" (top hinge only).
- 3. Extract hex-head mounting bolts
- 4. Pull hinge assembly from the unit.

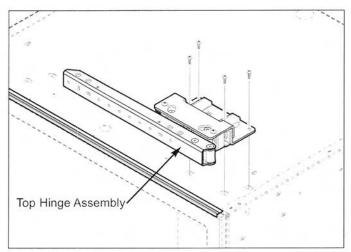


Figure 7-49. Hinge Assembly Removal

IC-27F INTERIOR COSMETIC, MECHANI-CAL AND ELECTRICAL COMPONENTS

Door Gasket

A dart at the back of the door gasket fits into a channel in the inside perimeter of the door.

To remove a door gasket, starting at one corner, pull the gasket dart from the channel. (See Figure 7-50).

Door Shelf and Dairy Compartment Adjustment / Removal

There are "L" shaped grooves in the end caps of the door shelves and dairy compartment, and there are knobs formed in the dikes of the door liner. (See Figure 7-51) The door shelves and dairy compartment are hung on the door by lining up the "L" shaped grooves with the knobs.

Push in and down to <u>install</u> a door shelf. Pull up and out to remove a door shelf.

Compartment Shelf Adjustment / Removal

Compartment shelf side rails have hooks at the back that allow the shelves to be hung from shelf ladders.

To remove a compartment shelf, tilt the front of the shelf up, then lift the back of the shelf up to disengage the hooks from the shelf ladders and pull the shelf from the unit. (See Figure 7-52)

To reinstall a compartment shelf, tilt the front of the shelf up and align the hooks with the slots the in shelf ladders, then insert the hooks into slots and lower the front of the shelf.

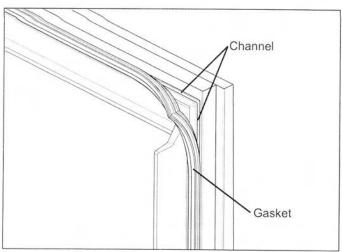


Figure 7-50. Door Gasket Removal

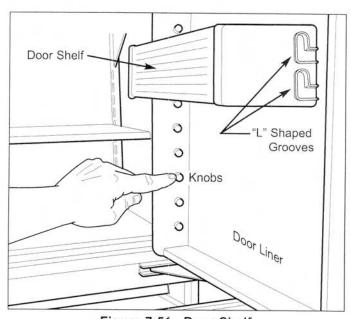


Figure 7-51. Door Shelf

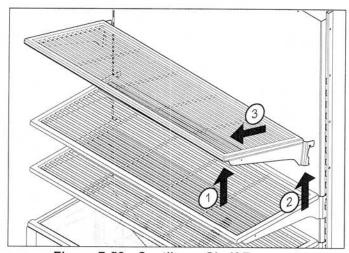


Figure 7-52. Cantilever Shelf Removal

Fixed Glass Shelf Assembly

The freezer fixed glass shelf rests upon shelf standoffs that are mounted to the freezer side walls.

To remove the freezer fixed glass shelf (See Figure 7-53):

- 1. Lift shelf straight up off of the standoffs.
- 2. Pull shelf forward, out of compartment.

Ice Bin

To remove the ice bin, open the top freezer basket and lift the ice bin out of the basket (Not Shown)

Freezer Basket Assembly

To remove a freezer basket assembly (See Figure 7-54):

- 1. Pull basket open until it stops.
- 2. Remove basket contents.
- Simultaneously depress both locking tabs under bottom front corners of basket assembly, then pull basket forward and lift up to ninety degrees.
- 4. With basket front straight up, place bottom corner of basket on hinge side into gap between door and face frame, then pivot other end of basket assembly out of the compartment.

Lower Light Bulb

To remove the lower light bulb, first remove the middle and middle freezer basket assemblies, then reach behind the lower light shield and turn the bulb counterclockwise to remove it. (See Figure 7-55)

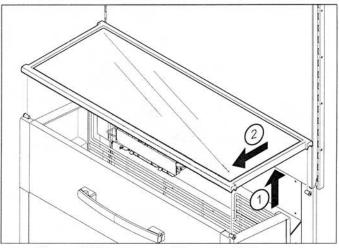


Figure 7-53. Freezer Glass Shelf Removal

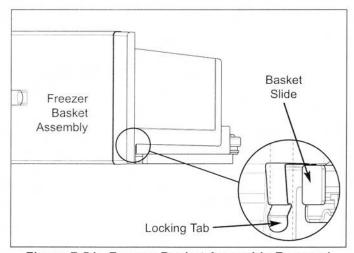


Figure 7-54. Freezer Basket Assembly Removal

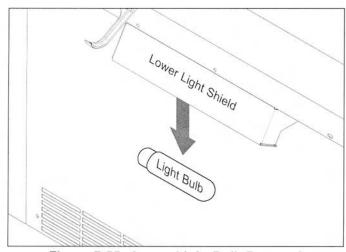


Figure 7-55. Lower Light Bulb Removal



Icemaker Assembly

The icemaker assembly is attached to the middle duct assembly with screws.

To remove ice maker, first remove the fixed glass shelf assembly and the upper freezer basket assembly, then (See Figure 7-56):

- Use a small flat-blade screwdriver to pry latches of male electrical connector from tabs of female connector, then disconnect icemaker electrical leads.
- Extract icemaker mounting screws (two at top, one at bottom), then pull icemaker assembly from compartment.

Freezer Basket Slide

The basket slides are secured with screws to the compartment side walls.

To remove a basket slide, first remove the basket assembly, then extract the slide's mounting screws and pull the slide from the side wall. (See Figure 7-57)

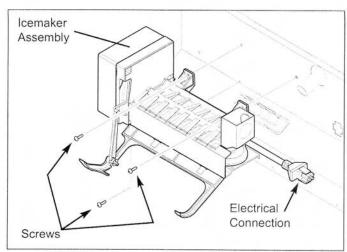


Figure 7-56. Icemaker Assembly Removal

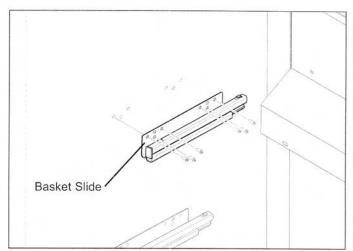


Figure 7-57. Freezer Basket Slide Removal

Upper Light Diffuser Removal

The side frames of the upper light diffuser have four inverted "T" shaped slots (two each side) which fit over pegs protruding from the side walls of the upper compartment. Retaining clips at the rear slots secure the diffuser to the rear pegs.

To remove the light diffuser (See Figure 7-58):

- Slide a finger over the top of each retainer clip flange and rotate the retainer clip down and back.
- 2. With clips open, lift the diffuser up and slide it towards the rear of unit until center of the "T" slots line up with the pegs.
- Lower diffuser down and pull forward from the unit. (See Figure 7-59)

Light Bulb and Light Bracket Assembly

The lighting assembly is located behind the light diffuser at the top of the compartment.

To remove the light bulb, first remove the top freezer basket and the light diffuser, then turn the bulb counterclockwise to remove it. (See Figure 7-11)

The light bracket assembly is secured with screws to the compartment ceiling.

To remove a light bracket assembly, first remove the top basket and light diffuser, then (See Figure 7-60):

- 1. Extract bracket mounting screws.
- Lower assembly down and disconnect the lighting wire harness.
- 3. pull ground clip from side of bracket.

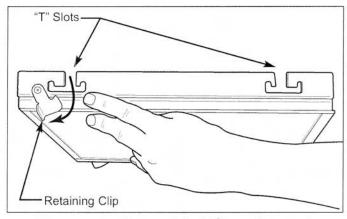


Figure 7-58. Upper Light Diffuser Removal

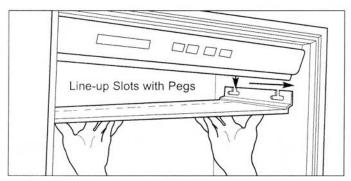


Figure 7-59. Upper Light Diffuser Removal

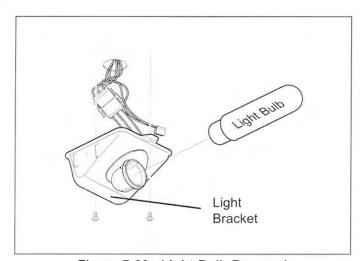


Figure 7-60. Light Bulb Removal

Control Board Removal

The control board is held in position by two sets of tabs behind the left side of the control panel. The two forward tabs position the LCD in the control panel window, while the other two tabs secure the middle of the control board. The control board is then shielded by a control enclosure and concealed by the light diffuser.

To access and remove control board, the light diffuser must be removed first, then (See Figures 7-61 & 7-62):

- Extract screws securing control enclosure to ceiling of the compartment. Lower the back of enclosure while pulling it toward rear of unit.
- 2. Disconnect all electrical leads from control board.
- Expand the two tabs at middle of control board outward while pulling the back of board down slightly.
 Then, expand the two forward tabs that hold the LCD in position outward. Now, pull control board down and toward rear of unit.

Control Panel Assembly Removal

The control panel is held in place with two rows of screws. The front row of screws go through spacers that fit into key-hole slots at the front of the panel. The rear screws secure the assembly to the ceiling.

To access and remove the control panel, the light diffuser and control enclosure must be removed first.

NOTE: It is recommended but not necessary to remove the control board in order to remove the control panel. If leaving the control board secured to the control panel, all electrical leads attached to the control board must be disconnected.

- 1. Extract rear mounting screws from control panel.
- Push panel toward rear of unit to release the front screws from key-hole slots, then lower panel down and pull out of unit. (See Figure 7-63)

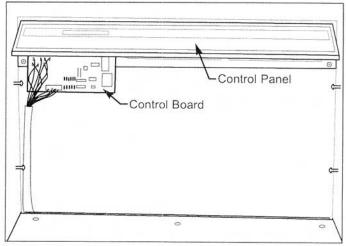


Figure 7-61. Control Board And Control Panel

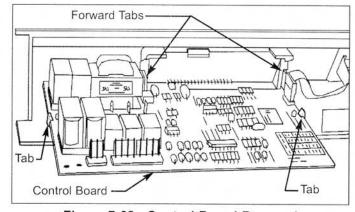


Figure 7-62. Control Board Removal

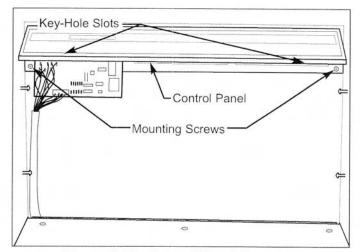


Figure 7-63. Control Panel Removal



Upper Duct Assembly

The upper freezer duct assembly has screws at the bottom and at the top of the duct to secure it to the back wall of the compartment.

To remove the upper duct assembly, first remove all cantilever shelves, the fixed glass shelf and the upper light diffuser assembly, then (See Figure 7-64):

- 1. Extract screws from bottom of upper duct.
- 1. Extract screws from top of upper duct.
- 2. Pull top of duct forward, about 45 degrees from vertical, then lift the duct up and out.

Shelf Ladder

Shelf ladders are held to the side walls with screws.

To remove a shelf ladder, first remove all cantilever shelves, the fixed glass shelf, upper light diffuser and upper duct assembly, then (See Figure 7-65):

- 1. Extract shelf ladder mounting screws.
- 2. Pull shelf ladder from side wall.

Compartment Thermistor

The compartment thermistor is inserted into a thermistor clamp behind the upper duct assembly.

To remove the compartment thermistor, first remove all cantilever shelves, the fixed glass shelf, upper light diffuser and upper duct assembly, then (See Figure 7-66):

- 1. Pull thermistor from clamp.
- Cut thermistor's wire leads six (6) to twelve (12) inches from the back wall, then pull thermistor from compartment.

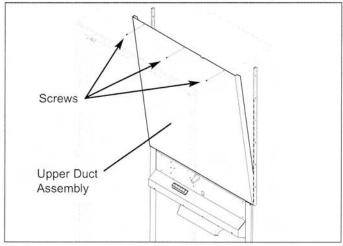


Figure 7-64. Upper Duct Assembly Removal

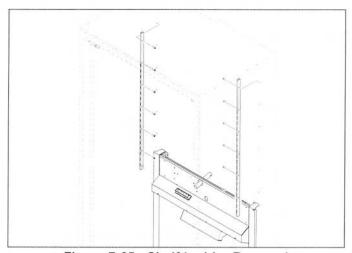


Figure 7-65. Shelf Ladder Removal

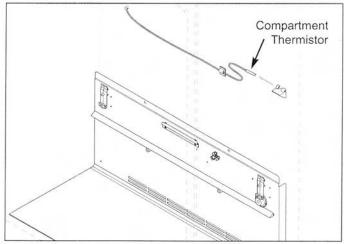


Figure 7-66. Compartment Thermistor Removal



Middle Duct Assembly

The middle duct assembly is secured to the compartment back wall, lower duct assembly and the evaporator fan assembly with screws.

To remove the middle duct assembly, first remove all cantilever shelves, the fixed glass shelf, upper freezer basket, icemaker assembly, upper light diffuser and upper duct assembly, then (See Figure 7-67):

- Extract middle duct assembly mounting screws and pull duct forward slightly.
- Disconnect icemaker wire harness panel mount electrical plug from the duct. Then pull the duct assembly from the compartment.



The lower duct assembly is held in place with screws at the top and bottom.

To remove the lower duct assembly, first remove all cantilever shelves, the fixed glass shelf, all freezer baskets, icemaker assembly, upper light diffuser, upper duct assembly and middle duct assembly, then (See Figure 7-68):

- Extract mounting screws a bottom of lower duct assembly.
- Pull duct assembly forward slightly until the wire leads for the lower light assembly are visible, then disconnect wire leads from light fixture.
- 3. Pull lower duct assembly from unit.

Evaporator Fan Motor

The freezer evaporator fan motor sits on top of the evaporator fan shroud bracing with its shaft passing through a hole in the brace; the motor is then held in place by a fan bracket snapping together with the bracing over the back side of the motor.

To remove the evaporator fan motor, first remove all cantilever shelves, the fixed glass shelf, all freezer baskets, icemaker assembly, upper light diffuser, upper duct assembly, middle duct assembly an lower duct assembly, then (See Figure 7-69):

- 1. Pull fan blade from fan motor shaft.
- 2. Using a flat-bladed screwdriver, pry fan bracket clips off of the tabs at each side of shroud bracing.
- 3. Lift fan motor off of fan shroud.

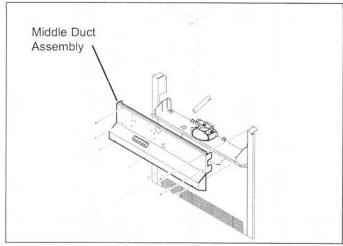


Figure 7-67. Middle Duct Assembly Removal

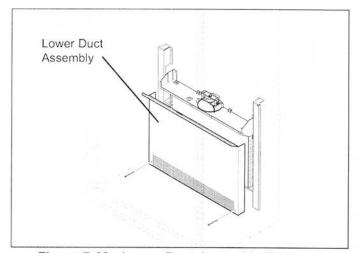


Figure 7-68. Lower Duct Assembly Removal

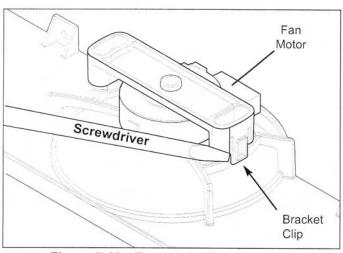


Figure 7-69. Evaporator Fan Removal

Evaporator Defrost Heater

The evaporator defrost heater is held in place at the bottom of the evaporator with defrost heater clips.

To remove the defrost heater, first remove all cantilever shelves, the fixed glass shelf, all freezer baskets, ice-maker assembly, upper light diffuser, upper duct assembly, middle duct assembly an lower duct assembly, then (See Figure 7-70):

- 1. Disconnect heater electrical leads.
- Using a small needle-nose pliers, detach heater clips by pulling end tab of clips away from evaporator, then remove heater from compartment.

Freezer Defrost Terminator

The freezer defrost terminator is attached to the evaporator outlet.

To remove the defrost terminator, first remove all cantilever shelves, the fixed glass shelf, all freezer baskets, icemaker assembly, upper light diffuser, upper duct assembly, middle duct assembly an lower duct assembly, then (See Figure 7-71):

- Extract the left wire cover mounting screws and pull wire cover from compartment.
- 2. Disconnect terminator electrical leads.
- 3. Pull terminator off of evaporator outlet tube.

NOTE: When replacing the terminator be sure to attach the new terminator in the same location that the defective terminator was removed from.

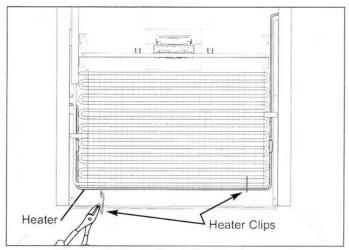


Figure 7-70. Defrost Heater Removal

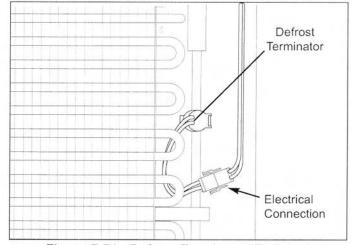


Figure 7-71. Defrost Terminator Removal

INTEGRATED COLUMNS SERIES



Freezer Evaporator Thermistor

The freezer evaporator thermistor is secured with a cable tie to an evaporator return bend on the right side of the evaporator.

To remove the evaporator thermistor, first remove all cantilever shelves, the fixed glass shelf, all freezer baskets, icemaker assembly, upper light diffuser, upper duct assembly, middle duct assembly an lower duct assembly, then (See Figure 7-72):

- Extract the right wire cover mounting screws and pull wire cover from compartment.
- 2. Cut cable tie securing thermistor to evaporator.
- Cut thermistor's wire leads six (6) to twelve (12) inches from the back wall, then pull thermistor from compartment.

NOTE: When replacing the thermistor be sure to attach the new thermistor to the same return elbow that the defective thermistor was removed from. At this writing, the thermistor is attached to the third elbow from the top in the front row of elbows on the right side.

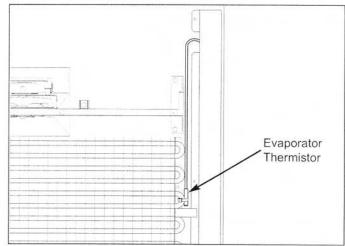


Figure 7-72. Evaporator Thermistor Removal



IC-27F COMPRESSOR AREA MECHANICAL COMPONENTS

Condenser Fan Assembly

The condenser fan assembly is located on the hinge side of a IC-27 unit tray, behind the condenser, attached to the condenser fan shroud.

To access and remove the condenser fan assembly, the kickplate/grille will need to be removed first and the unit tray will need to be slid out. To slide the unit tray out and remove the fan, (See Figure 7-73 and 7-74):

- 1. Extract two screws, one each front corner, that secure unit tray to unit.
- Extract air guard mounting screws, then lift front of air guard up to disengage slots at rear of air guard from flanges at top of condenser fan shroud. Pull air guard forward.
- Extract condenser fan shroud mounting screws from center right and left center brackets on each side of the condenser.
- Lean top of condenser fan shroud back and pull unit tray forward.
- 5. Disconnect condenser fan motor electrical leads.
- Remove condenser fan from shroud by extracting the screws securing motor to brackets. The brackets will unhook from the grommeted holes in condenser fan shroud after the screws are removed.
- 7. To remove fan blade from the fan motor, grab blade and motor while turning the nut counterclockwise. Then pull the blade from motor shaft.

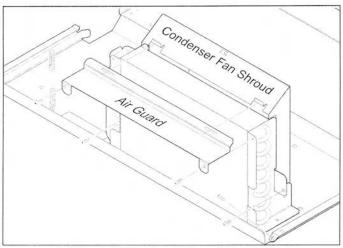


Figure 7-73. Unit Tray Removal

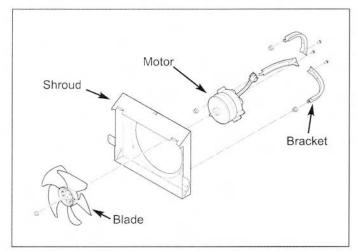


Figure 7-74. Condenser Fan Removal



Drain Pan

The drain pan is adhered to the back of the unit tray with double-stick tape.

To access and remove the drain pan, the kickplate/grille will need to be removed first and the unit tray will need to be slid out. To slide the unit tray out and remove the fan, (See Figure 7-75 and 7-76):

- 1. Extract two screws, one each front corner, that secure unit tray to unit.
- Extract air guard mounting screws, then lift front of air guard up to disengage slots at rear of air guard from flanges at top of condenser fan shroud. Pull air guard forward.
- 3. Extract condenser fan shroud mounting screws from center right and left center brackets on each side of the condenser.
- 4. Lean top of condenser fan shroud back and pull unit tray forward.
- 5. Lift drain pan heater loop and brackets from drain pan.
- 6. Pull/pry drain pan from unit tray.

Water Valve Assembly

The water valve is located to the right on the unit tray and is attached to the valve bracket with screws.

NOTE: Before attempting to remove the water valve assembly, switch the water supply to the unit off.

To To access and remove the water valve assembly, the kickplate/grille will need to be removed first and the unit tray will need to be slid out. To slide the unit tray out and remove the fan. (See Figure 7-75 and 7-77):

- Extract two screws, one each front corner, that secure unit tray to unit.
- Extract air guard mounting screws, then lift front of air guard up to disengage slots at rear of air guard from flanges at top of condenser fan shroud. Pull air guard forward.
- Extract condenser fan shroud mounting screws from center right and left center brackets on each side of the condenser.
- Lean top of condenser fan shroud back and pull unit tray forward.
- Disconnect inlet and outlet water tubes from valve by pushing the collar around the tubes toward the valve, while pulling the tubes away from the valve.

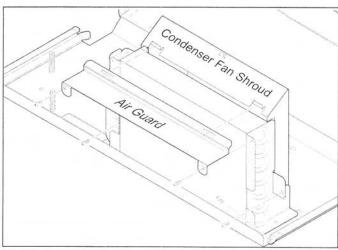


Figure 7-75. Unit Tray Removal

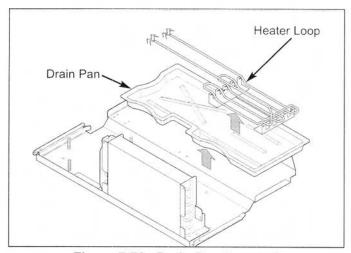


Figure 7-76. Drain Pan Removal

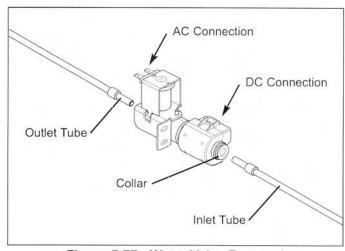


Figure 7-77. Water Valve Removal

IC-27F SEALED SYSTEM COMPONENTS

Evaporator Removal

The evaporator is attached to the back wall with screws.

NOTE: Before attempting to remove the evaporator, evacuate the refrigerant from the sealed system.

To access and remove the evaporator, first remove all cantilever shelves, the fixed glass shelf, all freezer baskets, icemaker assembly, upper light diffuser, upper duct assembly, middle duct assembly an lower duct assembly, then (See Figure 7-78):

- 1. Extract screws securing evaporator to back wall.
- With a tube cutter, cut the inlet tube approximately one inch from the end and cut the outlet tube approximately two inches from the end.

NOTE: Sweating the joints apart is not recommended as this may induce moisture into the sealed system and could cause a solder restriction in the capillary tube.

NOTE: If reusing the existing defrost heater, defrost terminator and evaporator thermistor, they can be removed from the evaporator after it is removed from the unit.

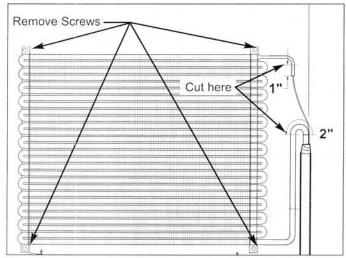


Figure 7-78. Lower Evaporator Removal

High-Side Filter-Drier Removal

The high-side filter-drier is behind the condenser and attached to the drier bracket with a cable tie.

NOTE: Before attempting to remove a filter drier, evacuate the refrigerant from the sealed system.

To access and remove a high-side filter-drier, the kick-plate/grille will need to be removed first and the unit tray will need to be slid out. To slide the unit tray out and remove the drier, (See Figure 7-79 and 7-80):

- Extract two screws, one each front corner, that secure unit tray to unit.
- Extract air guard mounting screws, then lift front of air guard up to disengage slots at rear of air guard from flanges at top of condenser fan shroud. Pull air guard forward.
- 3. Extract condenser fan shroud mounting screws from center right and left center brackets on each side of the condenser.
- Lean top of condenser fan shroud back and pull unit tray forward.
- 5. Cut cable tie holding drier to bracket.
- With file edge, score a line around capillary tube approximately one inch from filter-drier outlet, then fatigue capillary tube at this line until it separates.
- 7. With a tube cutter, cut the inlet tube approximately one inch from filter-drier.

NOTE: Sweating the joints apart is not recommended as this may induce moisture into the sealed system and could cause a solder restriction in the capillary tube.

NOTE: Check the end of the remaining capillary tube for internal burrs. If burrs exist, re-score a line around the capillary tube (approximately one inch from the end) and fatigue the capillary tube at this new line until it separates.

NOTE: When installing the replacement filter-drier, insert the capillary tube until it touches the screen, then pull the capillary tube approximately 3/8" (10 mm) away from the screen before brazing. (See Figure 7-81) When installing a new filter-drier, be sure to thoroughly clean the tubing before brazing.

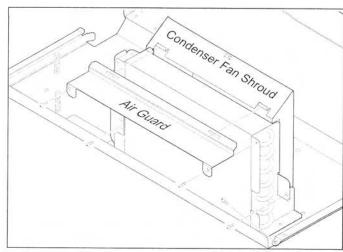


Figure 7-79. Unit Tray Removal

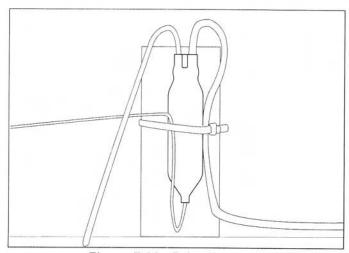


Figure 7-80. Drier Removal

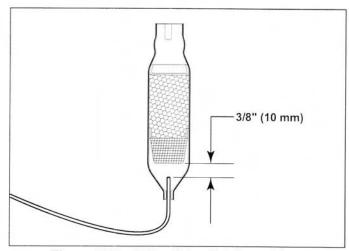


Figure 7-81. Filter-Drier Cut-Away View

Compressor Removal

The compressor has four rubber compressor grommets inserted into its base. Four cylindrical metal spacers are placed over threaded studs protruding up from the unit tray. The compressor grommets fit over the spacers and a washer sets on top of each grommet and spacer. A nut is then installed onto threaded studs and tightened down.

NOTE: Before attempting to remove a compressor, evacuate the refrigerant from the sealed system.

To access and remove a compressor, the kickplate/grille will need to be removed first and the unit tray will need to be slid out. To slide the unit tray out and remove the compressor, (See Figure 7-82 and 7-83):

- Extract two screws, one each front corner, that secure unit tray to unit.
- Extract air guard mounting screws, then lift front of air guard up to disengage slots at rear of air guard from flanges at top of condenser fan shroud. Pull air guard forward.
- 3. Extract condenser fan shroud mounting screws from center right and left center brackets on each side of the condenser.
- Lean top of condenser fan shroud back and pull unit tray forward.
- 5. Disconnect wire leads from compressor electricals.
- 6. Using a tube cutter, cut suction and discharge tubes approximately 1" from compressor stubs.

NOTE: Do not sweat tubing apart. Doing so will induce moisture into the sealed system.

Extract compressor mounting nuts, then lift compressor off of unit tray.

NOTE: After replacing the compressor, take care to not kink tubing as the unit tray is slid back into position.

NOTE: Sweating the joints apart is not recommended as this may induce moisture into the sealed system and could cause a solder restriction in the capillary tube.

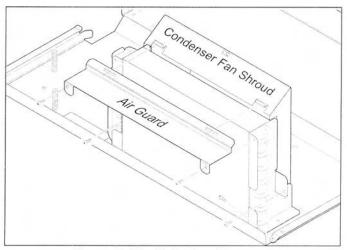


Figure 7-82. Unit Tray Removal

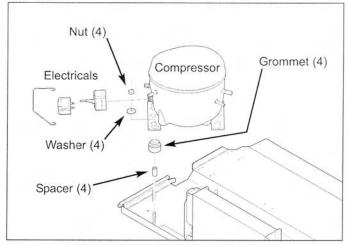


Figure 7-83. Unit Tray Removal



Condenser Removal

The condenser is secured to the unit tray with rivets that pass up through the unit tray into the condenser bottom side brackets.

NOTE: Before attempting to remove a condenser, evacuate the refrigerant from the sealed system.

To access and remove a condenser, the kickplate/grille will need to be removed first and the unit tray will need to be slid out. To slide the unit tray out and remove the condenser, (See Figure 7-84 and 7-85):

- Extract two screws, one each front corner, that secure unit tray to unit.
- Extract air guard mounting screws, then lift front of air guard up to disengage slots at rear of air guard from flanges at top of condenser fan shroud. Pull air guard forward.
- Extract condenser fan shroud mounting screws from center right and left center brackets on each side of the condenser.
- 4. Lean top of condenser fan shroud back and pull unit tray forward.
- Lift front of unit tray up to expose condenser mounting rivets, then drill out the rivets and pull condenser from unit tray.

NOTE: Sweating the joints apart is not recommended as this may induce moisture into the sealed system and could cause a solder restriction in the capillary tube.

NOTE: To reattach the condenser to the unit tray, use #10-24 X 3/8" bolts (#6200020) passing up through the unit tray and condenser brackets with #10-24 Hex nuts (#6150030) tightened down on top.

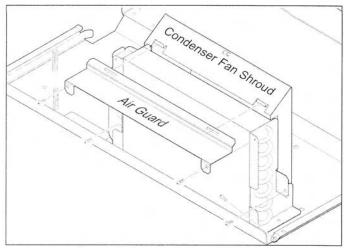


Figure 7-84. Unit Tray Removal

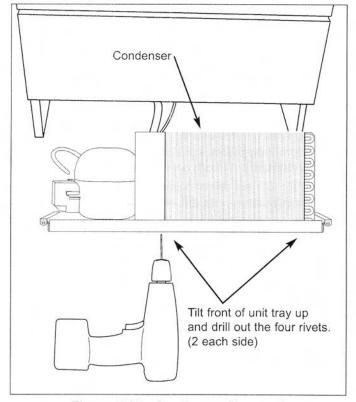


Figure 7-85. Condenser Removal