

Introduction

The Scotsman RF33 Compact Refrigerator is a unique product, capable of being built into a cabinet because of its front vented, forced-air cooling system.

It's also designed to be a companion to Scotsman's DC33 Automatic Ice Machine. To prevent door interference when installed to the left of a DC33, the RF33 comes from the factory with the door hinged on the left. The door swing may be reversed to suit the installation.

The RF33 keeps its interior cool by removing heat from the freezing compartment at the top of the storage area and exhausting that heat out the right front grill.

Table of Contents

Specifications	page 2
Installation	page 3
Customizing	page 4
Reversing door swing	page 5
Installation & Operating	page 6
Routine Maintenance	page 7
Problems	page 8
Specialized Service	page 9

This product manual is intended to be a resource for installation, routine maintenance, and service diagnosis.

Although there have been several changes in appearance and components, this manual covers all models of the RF33.

A parts list is located in the center of this manual, printed on colored paper.

Scotsman reserves the right to make design changes and/or improvements at any time. Specifications and design are subject to change without notice.

Note the warning symbol where it appears in this manual, it is an alert that there may be some hazard noted in that section of the manual.



Keep this manual for future reference.

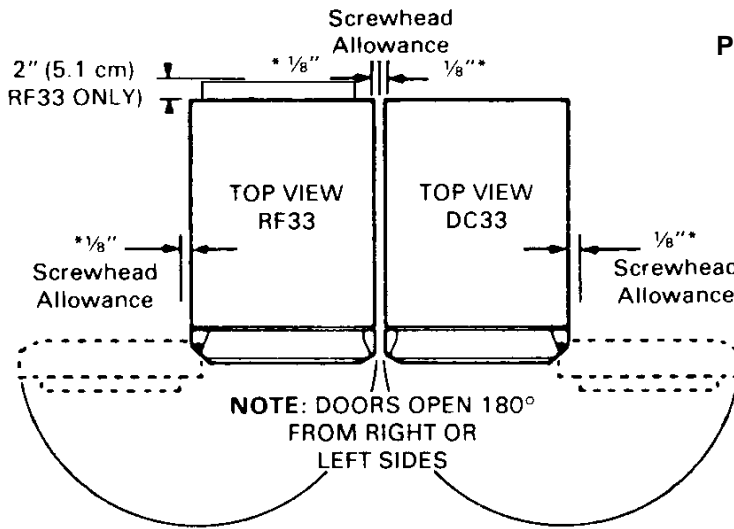
This manual was printed on recycled paper.

RF33

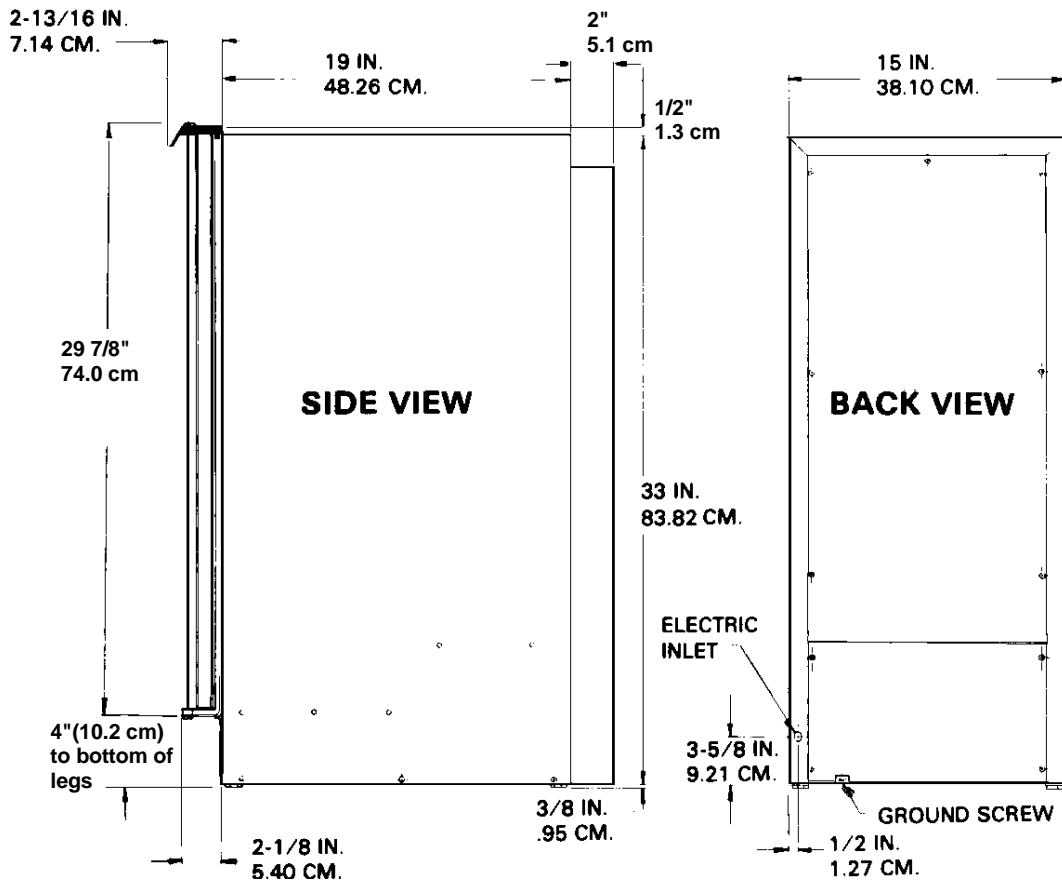
Specifications of RF33A-1WA:

Capacity	Insulation	Compressor	Condenser Type
3 + cubic feet	1" foamed in place polyurethane	1/16 H.P.	Forced Draft

Cabinet dimensions are critical to a built in installation. The diagrams illustrated below show the details of the cabinet construction.



Note: Right and Left Placement of Machines Will Not Affect Performance.



Installation:

After the carton has been removed, check for any concealed damage. Check the unit interior and exterior. After this check, the unit may be installed.

Open the door and remove all packing materials, including warranty packet, tape, and warranty registration. Note: Keep the filler plate for use when reversing door swing.

Wipe the interior of the cabinet with soap and water to remove any manufacturing or shipping residue.

The RF33 will work fine as a free standing refrigerator, minimal attention to leveling, electrical power supply and no obstruction of air flow will provide an adequate environment.

The RF33 is only designed to be operated indoors. Malfunctions due to outdoor operation will not be covered by warranty.

Excessive heat (over 100°F.) will cause poor performance.

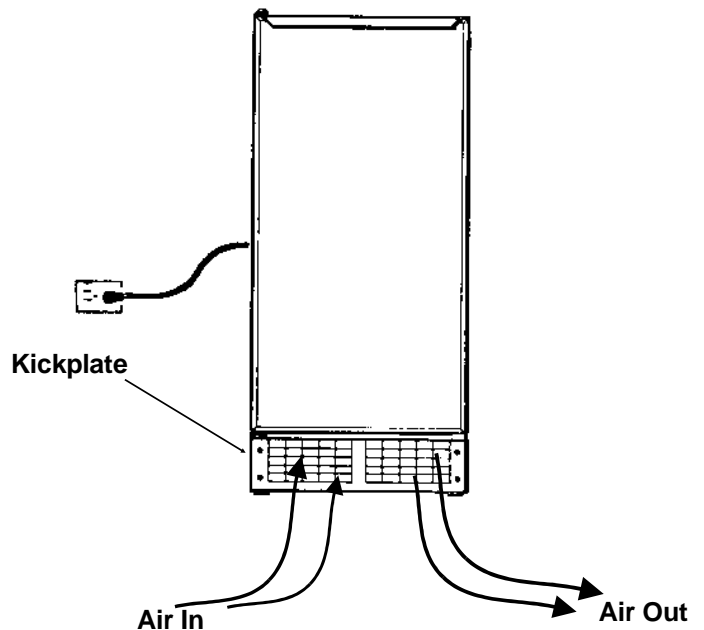
When built in, some precautions must be taken:

Size: The space occupied by the refrigerator is:

- 15 1/4" wide (including screw heads at the base)
- 24" deep to the front edge of the door handle
- 33 3/8" high (33 7/8" to the top of the door hinge).

There is a kick plate at the bottom front of the cabinet, the louvers in that kick plate allow air to flow through the cooling mechanism, and those louvers must not be blocked at any time.

Air Flow of RF33



The cabinet legs should be flush with the floor, so that the refrigerator may be pulled out without damage to the floor.

The electrical supply must be near enough so that an extension cord is not used. The power requirements are 115 volts AC, 60 cycle, single phase (normal U.S. house current). Scotsman recommends that the refrigerator not be connected to a circuit with high amperage equipment already on it. Check with a licensed electrician for recommendations. Be sure to follow all applicable electrical codes.

The RF33 is UL listed, meaning it has met certain requirements for electrical safety. Any modification or substitution of components may violate those requirements, and Scotsman will not be responsible for any RF33 so modified. Always use Scotsman replacement parts.

RF33

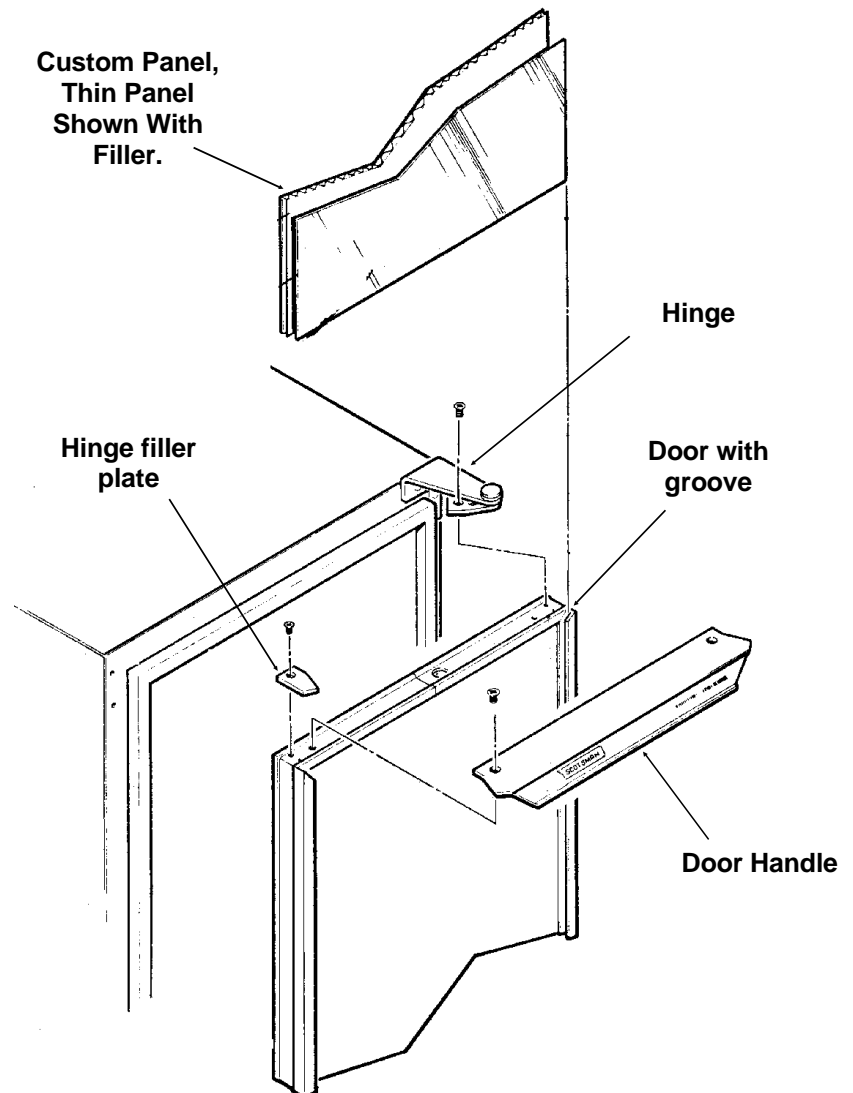
Customizing Door Panel:

A custom door panel may be installed in front of the standard one. Any panel 14 $\frac{3}{4}$ " wide, 28 $\frac{15}{16}$ " high and $\frac{1}{4}$ " thick or less at the edges may be used as a decorator panel. Examples of decorator panels include wood to match the adjacent cabinets; metal of different colors to match nearby appliances; or just about any material that will fit. Scotsman has a stainless steel panel available to fit this machine, the kit number is SS33. If the material is less than $\frac{1}{4}$ " thick, the space between the new panel and the original may be filled with cardboard.

1. Remove single screw and the left hand hinge filler plate from the top of the door.
2. Remove two screws from the top of the door and lift off the door handle.
3. Open the door slightly, about one-third or so; then, remove the front screw holding the hinge to the door.
4. Loosen the rear screw of the hinge just enough to allow the door to sag or move forward. This will allow access to the top of the channels at the right and left edges of the door.
5. From the top of the door, insert the decorator panel (pre-cut) evenly into the channels; carefully slide the panel all the way down until the panel is fully into the bottom channel.
6. Check that the panel is in all the way and does not protrude past the top edge of the door.
7. Push the top hinge corner of the door IN to align screw hole in the hinge with the screw hole in the door. Install the screw previously removed. Tighten the other screw.
8. Replace the door handle and filler plate; secure with screws previously removed.

**Note: These Two Kits Are Currently Available to Change Panel Color:
TP33 contains 2 sandalwood panels.
WP33 contains 2 white panels.**

Parts Involved in Customizing Door Panel

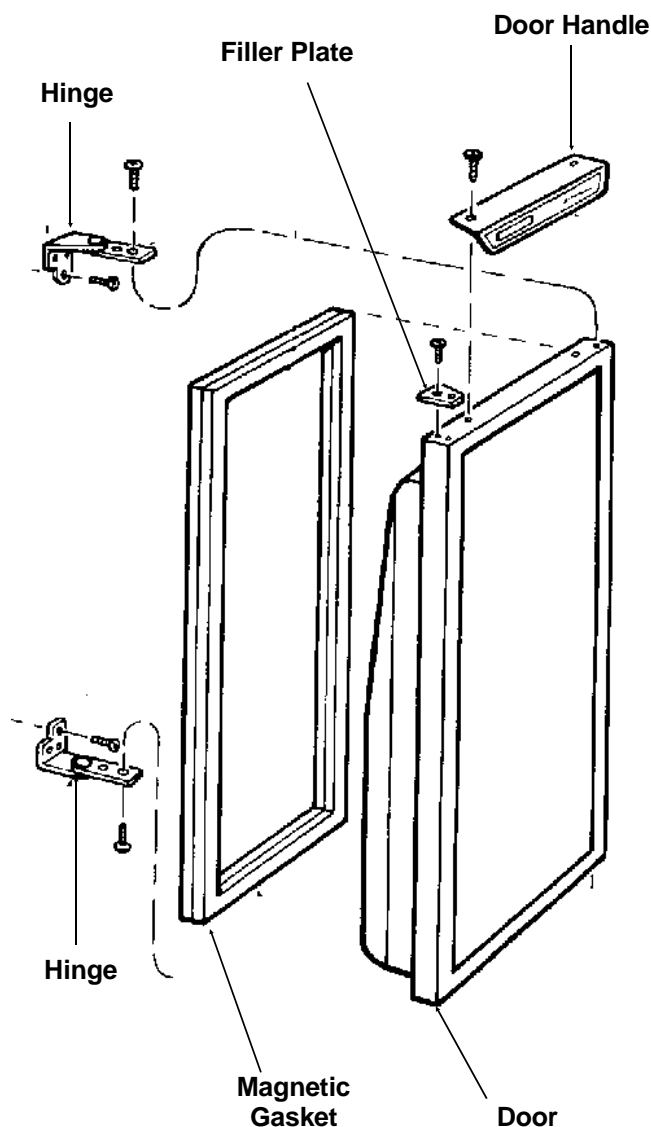


Reversing Door Swing:

The RF33 was shipped with the door hinged at the left. The door and hinges are designed for placing the hinges on either the right or the left side of the cabinet. Moving the hinges to the right allows the door to pivot from the right side.

Note: There is a part, packed with the machine, that is required for this procedure.

1. Open the door and remove the three screws holding the lower hinge to the cabinet.
2. With the door open enough to see both screws at the top door hinge, remove the two screws. The door is now free of the cabinet.
3. Remove the single screw and the hinge filler plate from the top of the door.
4. Install the other filler plate (shipped inside refrigerator compartment) onto the top corner of the door where the hinge was.
5. Remove the three plastic plugs from the top front corner where the hinge will mount.
6. Remove the three plastic plugs from the lower front corner where that hinge will mount.
7. Remove the three screws holding the top hinge to the cabinet. Remove that hinge from the top and, flipping it upside down, install it onto the bottom of the door, on the opposite side using the original screws.
8. Remove the hinge assembly from the bottom of the door, and flip it upside down; secure it to the cabinet at the opposite side top position with the original screws.
9. Hold the door up to the cabinet. Secure the door to the top hinge with the original screws.
10. Secure the bottom hinge to the cabinet with the original screws.
11. Place the plastic plugs removed earlier into the empty holes.
12. Check operation of the door by opening and closing it.



Reverse Hinges From Top to Bottom and Left to Right To Reverse Door Swing

RF33

Installation

The machine should not be installed in a room that falls below 50°F.

Level the cabinet by turning the leveling legs at the base of the refrigerator.

Plug the refrigerator into the electrical power supply.

Do not slide into place until the unit has been started.

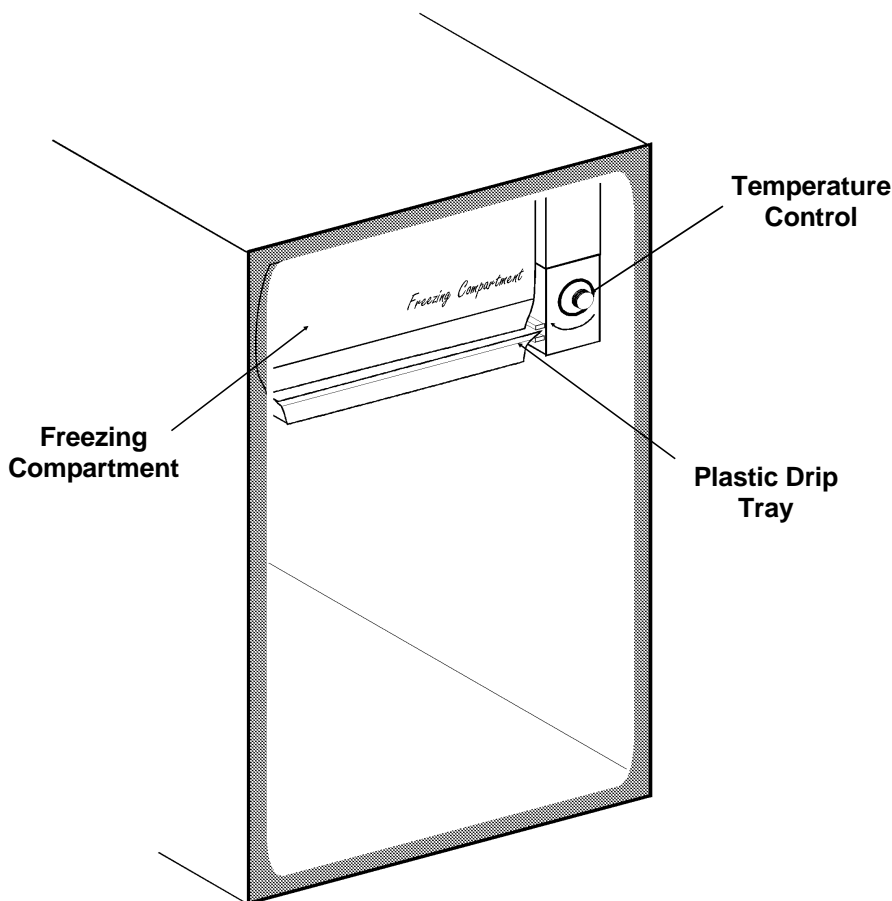
Operation:

To begin operation: Open the door, locate the temperature control knob in the upper right portion of the interior and rotate that knob clockwise until it is about at the mid position.

The compressor and fan motor should both be operating, unless the refrigerator is below 35°F. Check that air is flowing out the right side of the grill.

The metal portion of the freezing compartment will soon feel cold. That is the signal that the refrigerator is functioning and the cabinet may now be placed in its installed position.

Location of Temperature Control



The refrigerator will require some time to cool the air and cabinet interior. If desired, a thermometer may be placed in the interior and the temperature checked. The RF33 should maintain approximately 40°F. interior temperature.

Note: As warm products are placed in the refrigerator, the refrigerator will likely operate for some time to cool them. When the refrigerator is empty, it will switch on and off frequently because there's only air inside, and the temperature of the air changes quickly.

The temperature of the Refrigerator may be adjusted by rotating the temperature control knob: Turn the knob clockwise for colder and counterclockwise for warmer.

Placing ice trays in the freezing compartment will reduce refrigerating capacity.

Use: The refrigerator is permanently lubricated, no oiling is required. There are two things that do require periodic maintenance: The air cooled condenser and the build up of frost on the freezing compartment.

Routine Maintenance & Cleaning

General recommendations are to keep the interior clean by occasionally washing it out, and if anything should spill inside, wiping up the spill immediately.

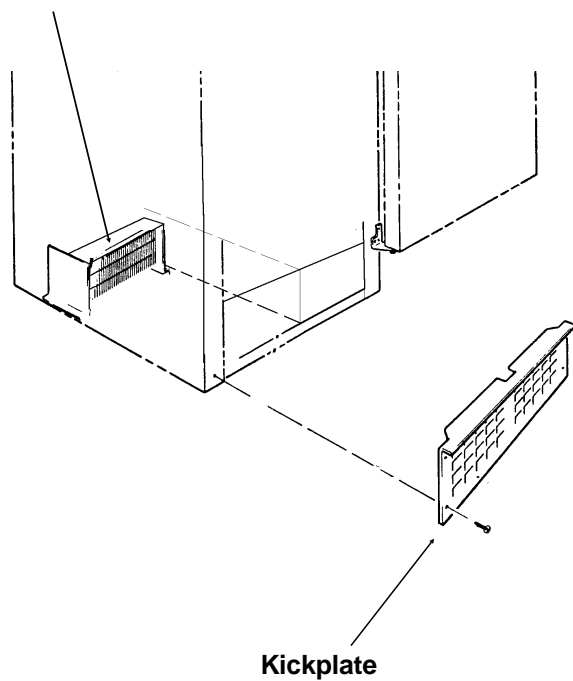
The condenser is a coil at the bottom of the machine where air flows through to exhaust the heat from the cabinet. The condenser should be cleaned at least twice a year. The freezing compartment should be defrosted whenever $\frac{1}{4}$ " of frost has built up on it.

1. Condenser cleaning: The cleaner the condenser is the less time the refrigerator will have to operate to keep the interior at the correct temperature.

A. Remove screws and the kickplate at the bottom of the cabinet.

B. Locate condenser on the left side, earlier models had the condenser near the front, current models have it near the back. Use a vacuum cleaner with an attachment that can reach the condenser. Vacuum up all lint and dust visible on the condensers fins.

Condenser



Location of Condenser

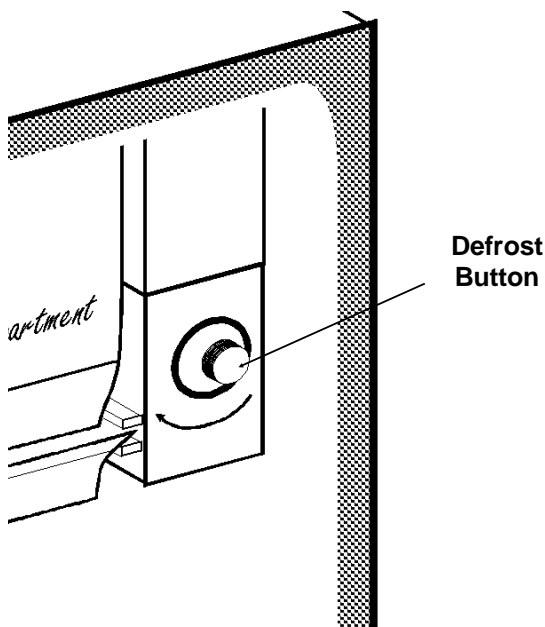
2. Defrosting: Frost will build up on the freezing compartment, this is normal. The frost must be periodically allowed to melt off or the refrigerator will become ineffective and operate for very long periods to try to maintain the set temperature.

A. Open the door and remove all items stored in the refrigerator.

B. Remove any ice tray (if used) from the freezing compartment.

C. Check that the plastic tray below the freezing compartment is in place and empty.

D. Push the button located in the center of the cold control IN.



This starts the Defrost cycle. If there is substantial frost build up the tray under the freezing compartment will not hold all the water, and must be emptied; check the defrost every few hours. The RF33 will automatically return to the refrigeration cycle when defrost has been completed. Note: This may take up to 24 hours, so alternate storage of perishables is required.

Caution: Do not scrape or pry ice/frost off the freezing compartment. It is very vulnerable to penetration by sharp objects and if pierced, the refrigerator will lose its refrigerant and will require extensive service.

The most convenient time to clean the interior is after defrosting the freezing compartment.

RF33

Before Calling For Service:

The refrigerator is a very simple machine. Normal use should not require technical service. If there is a problem with the refrigerator, refer to this chart before calling for service.

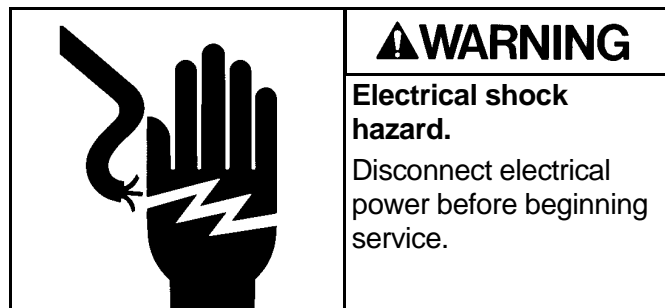
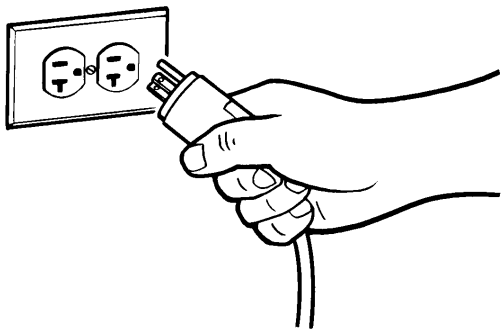
Problem	Possible Cause	Probable Solution
Refrigerator will not operate	Not plugged in	Plug in
	Breaker tripped/fuse blown	Reset breaker, replace fuse check operation. If breaker trips or fuse blows again, unplug refrigerator and reset breaker or replace fuse. If circuit does not fail again, call local Scotsman Service.
	Thermostat not turned cold enough	Rotate knob until unit starts. If unit does not start, call local Scotsman service.
Interior does not get cold enough.	Thermostat set too high	Rotate to colder position.
	Dirty condenser	Clean condenser
	Frosted freezing compartment	Defrost freezing compartment
	Door gasket worn	Replace door gasket
	Cabinet in very warm space	Relocate or remove excess heat. If none of the above will correct the problem, call local Scotsman service.
Gets too cold inside	Thermostat set too low	Rotate knob counterclockwise
	Thermostat defective	Call local Scotsman service.
Will not defrost.	Faulty thermostat	Call for local Scotsman Service
Makes excessive noise	Fan motor worn	Call for local Scotsman service

Specialized Service:

The following procedures are for the qualified service technician only.

Thermostat

1. Unplug refrigerator from electrical power.



2. Open the door and pull the plastic tray out from under the freezing compartment.
3. Lift the freezing compartment door and locate the hinge wire behind the right side of that door. Carefully push the hinge wire toward the center of the door until the end of the wire has been pulled out of the hole in the upper left wall of the thermostat housing. Do not loose the plastic spacer.
4. Remove the left hinge wire and spacer from the left wall of the refrigerator liner.
5. Remove any ice trays that may be in the freezing compartment.
6. Remove the screw and bulb holder clip to free the end of the thermostat capillary tube from the rear of the evaporator.
7. Remove the knob from the thermostat (pull forward).
8. Remove two screws (retain spacers) and separate the thermostat housing from the freezing compartment (evaporator).

9. Remove two screws attaching the top left flange of the thermostat housing to the inner ceiling of the refrigerator liner.

10. Remove two screws holding the lower right flange of the thermostat housing to the right side refrigerator liner. The capillary tube should be free for removal. Lower the housing until the wire connections to the thermostat can be seen.

11. Remove the two screws from the front of the thermostat housing and separate the housing from the thermostat. Remove it from the unit.

12. Remove the single screw from the bottom of the electric baffle base and cover and remove the cover.

13. Note the position of the wires, and disconnect the three electrical wires from the thermostat.

14. Remove the thermostat housing and thermostat from the cabinet.

15. Separate the thermostat from the electric baffle, pull the capillary tube out through the hole in the rear of the left wall of the thermostat housing.

16. Reverse the above to replace.

Fan Motor

Note: Machine must be pulled out from the installed position, and the back panel removed to gain access to the fan motor or compressor.

1. Unplug machine from electrical power.
2. Disconnect electrical leads from fan motor at connections.
3. Lift the cabinet up to gain access to the screws under the base, and remove the two screws holding the fan motor bracket to the base.
4. Lower the cabinet, and remove the fan motor and bracket from the base.
5. Replace fan motor or blade as required. Reverse to reassemble.

RF33

Refrigeration:

Only qualified service technicians should work on the refrigeration system. Recovery techniques should be used where required for the amount of refrigerant in the system. Refrigeration ports are not part of factory construction. A suction side port must be added to service the refrigeration system. The compressor process tube is a good place to add the port. Do not add a discharge side port, as the minimal charge will be affected by the added space.

Note: prior models use an aluminum condenser with copper stubs, very careful heat sinks are required to braze at those connections. An example could be a flare block clamped over the aluminum tubing of the condenser. Current models use copper tube condensers.

The evaporators are also aluminum.

Always use a new drier whenever the sealed refrigeration system has been opened.

Check the parts list for the correct compressor, fan motor, blade and condenser.

Replacement of the compressor or condenser is best done by removing the cabinet from the base. This requires that the tubing connections to the evaporator be cut. Removal of the screws at the side of the base will allow the cabinet to be lifted up and off the base.

Refrigerant charge for RF33A-1A is 1.75 ounces of R-12.

Refrigerant charge for RF33A-1WA-1A is 2 ounces of R-12.