



The Signature of Quality™

INSTALLATION & OPERATIONS INSTRUCTIONS
*Self-Contained & Remote Refrigerated Models
Including Dual Zone & Cold Deli Models
& Non-Refrigerated Displays*



KEEP THIS MANUAL FOR FUTURE REFERENCE

Engineering and technical data are subject to change without notice.

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INTRODUCTION

Thank you for purchasing a Federal Industries display case. This manual contains important instructions for installing and servicing the Curved Glass and Hi-Volume Refrigerated (including Dual Zone & Cold Deli) and Non-Refrigerated Display Cases. A repair parts list and wiring diagram are also included in the manual. Read all of these documents carefully before installing or servicing your case.



NOTICE

Read this manual before installing your case. Keep this manual and refer to it before doing any service on the equipment. Failure to do so could result in personal injury or damage to the case.



NOTICE

Installation and service of the electrical components in the case must be performed by a licensed electrician.

The portions of this manual covering components contain technical instructions intended only for persons qualified to perform electrical work.



DANGER

Improper or faulty hookup of electrical components in the case can result in severe injury or death.

All electrical wiring hookups must be done in accordance with all applicable local, regional, or national standards.

SERIAL NUMBER

Record the model and serial numbers of the case for easy reference. Always refer to both model and serial numbers in your correspondence regarding the case.

Case Model _____ Serial Number _____
Condensing Unit Model _____ Serial Number _____

This manual cannot cover every installation, use, or service situation. If you need additional information, call or write us:

WARRANTY/TECHNICAL SERVICE DEPARTMENT

**Federal Industries
215 Federal Avenue
Belleville, WI 53508**

Toll Free (800) 356-4206 / WI Phone (608) 424-3331

WARNING LABELS & SAFETY INSTRUCTIONS



This is the safety-alert symbol. When you see this symbol on your case or in the manual, be alert to the potential for personal injury or damage to your equipment.

Be sure you understand all safety messages and always follow recommended precautions and safe operating procedures.



NOTICE TO EMPLOYERS

You must make sure that everyone who installs, uses, or services your case is thoroughly familiar with all safety information and procedures.

Important safety information is presented in this section and throughout the manual. The following signal words are used in the warning and safety messages:

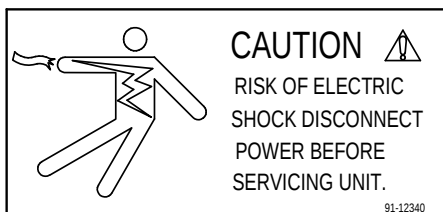
DANGER: Severe injury or death will occur if you ignore the message.

WARNING: Severe injury or death can occur if you ignore the message.

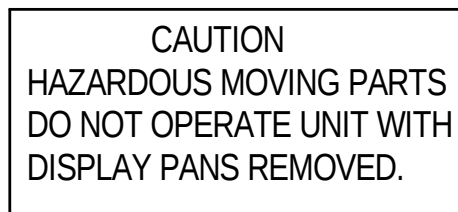
CAUTION: Minor injury or damage to your case can occur if you ignore the message.

NOTICE: This is important installation, operation, or service information. If you ignore the message, you may damage your case.

The warning and safety labels shown throughout this manual are placed on your Federal Industries case at the factory. Follow all warning label instructions. If any warning or safety labels become lost or damaged, call our customer service department at 1(800) 356-4206 for replacements.



This label is located on the back of the display case.



This label is located below the display pan.

PRE-INSTALLATION PROCEDURES

Inspection for Shipping Damage

You are responsible for filing all freight claims with the delivering truck line. Inspect all cartons and crates for damage as soon as they arrive. If damage is noted to shipping crates, cartons, or if a shortage is found, note this on the bill of lading (all copies) prior to signing.

If damage is discovered when the case is uncrated, immediately call the delivering truck line and follow up the call with a written report indicating concealed damage to your shipment. Ask for an immediate inspection of your concealed damage item. Crating material must be retained to show the inspector from the truck line.

INSTALLATION INSTRUCTIONS

Locating the Display Case

The case should be located where it is not subjected to the direct rays of the sun, heating ducts, grills, radiator, or ceiling fans, nor should it be located near open doors or main door entrances. Also, avoid locations where there are excessive air movement or air disturbances.

The condenser air inlet is located at the rear of the case. Do not block this inlet and do not locate the air inlet near a source of heat.

Removing Case From Shipping Skid



CAUTION: Do not push against the top glass, front glass, end glass, doors or door frames when removing the case from the skid or moving the case. Case damage or glass breakage could result.

1. Remove crate top and sides and note missing or damaged items as explained in the pre-installation procedures outlined above.
2. Move the case as near as possible to the final location and before removing it from the shipping skid.
3. If your case is supplied with plastic end panels, remove them by lifting them in an upward direction. Set these end panels aside to be reinstalled after case is placed in proper position.
4. Remove the (4) brackets that secure the case to the shipping skid.

5. Use the lifting handles located in each end of the case and lift case off of skid and into required position.
6. Level and square the case as needed by adjusting the leg leveler in each corner of base. (Use the wrench provided.) (The case must be level for proper drainage of defrost condensate to the condensate evaporator and allow for proper alignment of front glass.) The 50", 59", & 77" cases also have a set of leg levelers in the center. These must be adjusted so the base is flat.
7. The leveled case must be sealed to the floor using a NSF Listed Sealant.
8. If plastic end panels are required reinstall them on to case. Hook the key slot located on the inside of the end panel down over screws located on each end of case.

Grill Removal (Refrigerated Units)

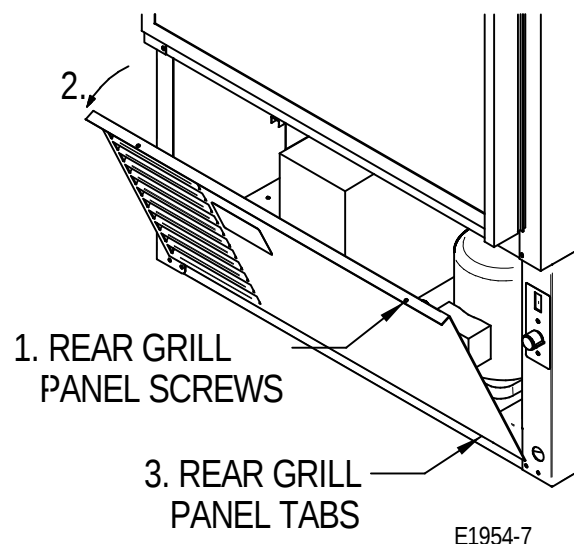


DANGER: Electric shock hazard. Do not operate unit with panels removed.

There is a removable slotted panel at the rear of the case. The panel allows access to the condensing unit, the light ballast, the condensate pan, and the field wiring connection box. Remove this panel to make field wiring connections. See electrical information and grounding section of this manual before wiring case.

Note: If electrical connection has been performed, disconnect power to case before removing grill panel.

1. Remove the rear grill panel screws from top of rear grill.
2. Tilt the top of rear grill panel outward as shown in illustration on the right.
3. Pull rear grill panel tabs up and out of slots in base of case.



Condensate Evaporator (Refrigerated Units)

This case is furnished with an electrical condensate evaporator. Plumbing connections are not required.

The condensate evaporator is located toward the front of the machine compartment and is accessible from the rear of the case. After removal of rear grill panel, make sure that the drain line has not been dislodged during shipment and that the drain trap is located properly over the water reservoir of the condensate evaporator pan.

Cleaning

For initial setup, clean the case as outlined in the weekly cleaning section of this manual.

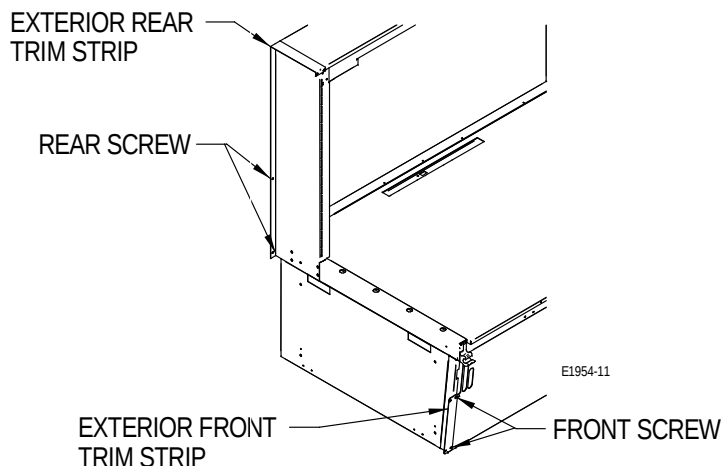
Trim Kits Installation

Follow the “Case Installation” procedures in this manual for each display case that is going to be adjoined in a lined up. Additional cases must be place directly next to the adjoining end of the first case. Push cases together as close as possible keeping the front of the cases in alignment. Once adjoining case is in proper position complete all of the procedures outlined in the “Case Installation” section in this manual before installing the trim kit as outlined below.

Note: The Laminated plastic end panels and end panel screws are not used on the adjoining ends of the cases that are to be butted together.

Exterior Trim

1. Remove the (3) 8-32 screws located on rear corner of each case and set aside (If preinstalled). These screws will be used to attach rear exterior trim strip to case. Note: For units with rear packing shelf , These screws hold the package shelf standard to the case. The packing shelf and packing shelf standard must be temporarily removed for installation of rear exterior trim.



2. Remove the adhesive liner from the inside of the rear exterior trim strip and firmly place it over the top and down the back of case. Be sure to center rear exterior trim strip over seam between cases and to align slots with holes in case rear (If holes are provided)

3. Fasten rear exterior trim strip to each case with the (3) 8-32 screws previously removed. If no holes are provided to fasten trim strip, use the (3) #8 self-drilling screws provided. Note: For units with rear packing shelf, Reattach rear packing shelf standard over the top of rear exterior trim strip using the existing holes in case. Place packing shelf back on to case in desired standard slot.
4. Use a NSF approved silicone to seal rear exterior trim strip along the top surface of case.
5. Remove the (2) screw located on the front corner of each case and set aside. These screws will be used to attach front exterior trim strip to case. Note: For units with front package shelf, these screws hold the package shelf to the case. The package shelf must be temporarily removed for installation of front exterior trim.
6. Fasten front exterior trim strip to each case with the (2) 8-32 screws previously removed. Note: For units with front package shelf, Reattach front package shelf over the top of front exterior trim strip case with the (2) 8-32 screws previously removed.

Interior Trim

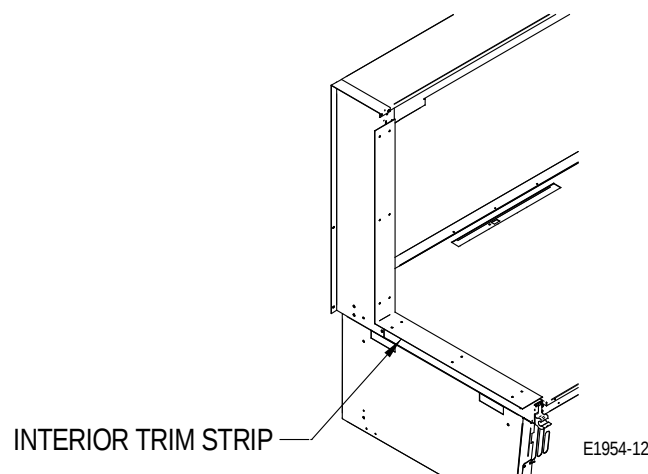
The interior trim kit is used when adjoining cases have one glass panel or no glass panel between them.

1. On units with sliding rear doors, remove both rear doors from track by lifting doors upward until the bottom edge of door clears the lower track. Swing the bottom of door outward and down out of top track.

On units with rear swing doors completely open doors to allow access to interior of case.

2. **Cases with no glass panels:** Remove the adhesive liner from the inside of the interior trim strip and firmly place it over the center gap between the case interiors.

Cases with one glass panel: The interior glass trim is placed in the adjoining case that does not have an end glass panel. Remove the adhesive liner from the inside of the interior trim strip and firmly place it against the glass trim of adjoining case with the end glass panel.



3. Fasten interior glass trim with the stainless steel self drilling screws supplied with interior trim kit

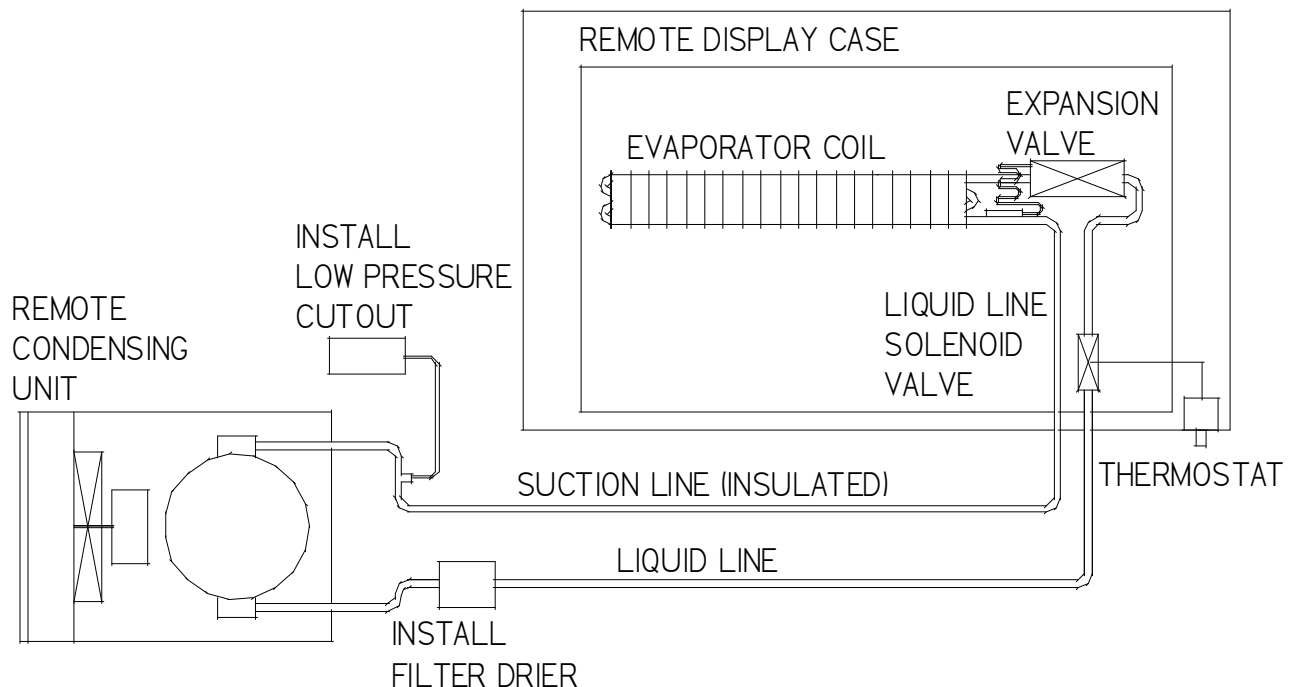
Refrigeration Installation (Refrigerated units)

Self Contained Models

The self-contained models are shipped from the factory with a completely operational 134A refrigeration system and require no modifications or adjustments upon installation.

Remote Models

The remote models are designed to use 134A refrigerant and shipped from the factory with the evaporator coil, expansion valve, refrigerant solenoid valve and thermostat. The thermostat senses interior case temperatures and opens and closes the refrigerant solenoid valve as needed to maintain proper case temperatures. The condensing unit is optionally supplied from the factory for remote location installation.



1. Mount condensing unit indoors as close to the remote display case as practical. The refrigeration line should be as short as possible.
2. All refrigeration and/or electrical materials between the condensing unit and display case are to be supplied by installing contractor.
3. Route properly sized and designed refrigeration lines from the condensing unit to the cabinet. Horizontal suction lines should be pitched downward towards the condensing unit at least $\frac{1}{2}$ " per 10' run to aid the oil drainage. A "P" trap must be installed in the suction line at the foot of every riser to insure oil return. Dry nitrogen should be used to flow through tubing while brazing refrigeration lines.
4. Suction line must be insulated the entire length with armaflex (or equivalent). Do not run liquid line inside insulation with suction line.

5. The filter drier, sightglass, and low-pressure control are not furnished with remote display case models. The recommended low pressure setting for R134a refrigerant is 32# cut in and 0# cutout.
6. Leak check condensing unit, cabinet, and all connecting tubing. Cabinet and condensing unit tubing should be checked to insure no leaks occurred during shipping or from rough handling. Make certain all refrigeration valves are opened and evacuate system to 500 microns. Charge the system with refrigerant type specified on the data plates.

ELECTRICAL INFORMATION & GROUNDING

This Case Must Be Grounded



DANGER: Improper or faulty hookup of electrical components in the display case can result in severe injury or death.

Only a licensed electrician must perform all case electrical connections.

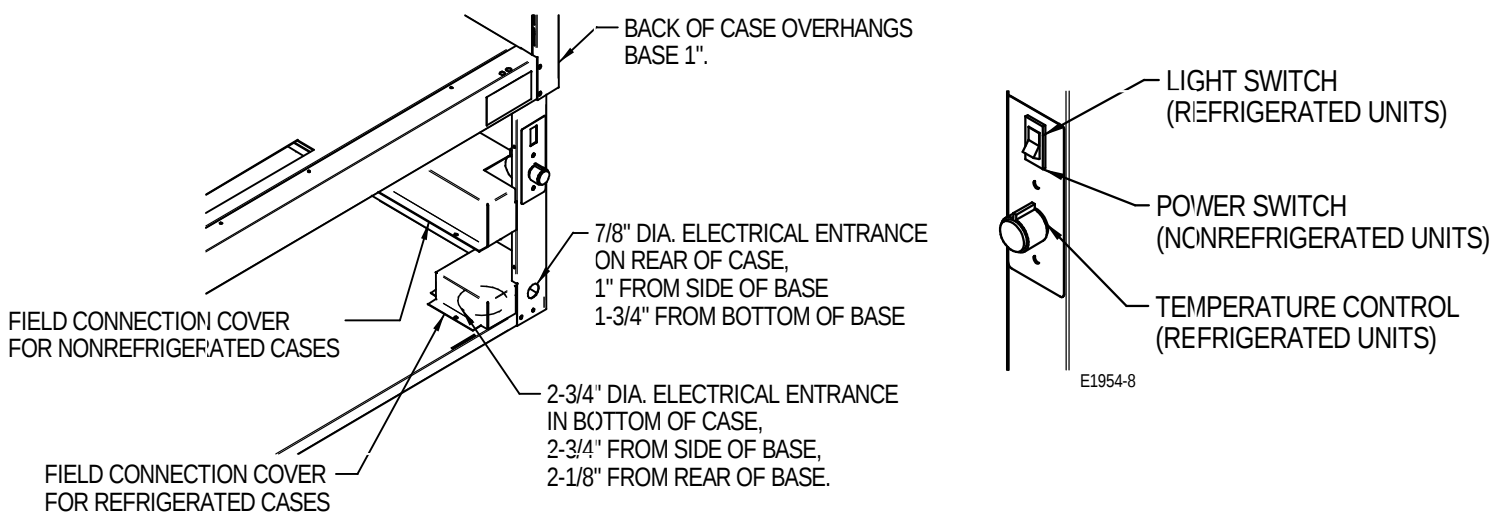
All electrical wiring hookups must be done in accordance with all applicable local, regional, or national electrical standards.

A separate circuit for each display case is recommended to prevent other appliances on the same circuit from overloading the circuit and causing malfunction.

The electrical service must be grounded upon installation.

This unit is designed for permanent connection to a power source. See the electrical data plate located at the rear of the case for proper circuit size and wire ampacity.

The electrical connection box is accessible from the rear of the case. Remove rear grill on refrigerated models. (See “Grill Removal” in the installation section of this manual.) See diagram below for location of the field wiring connection box.



OPERATING INSTRUCTIONS

Controls (Refrigerated Units)

Light Switch

This switch controls the power to the lighting circuit. The switch rocker is red in the “on” position, black in the “off” position.

Temperature Control

This controls the refrigerated side by cycling the compressor/condensing unit. It has an “off” position and the coldest setting when the knob is set all the way in the clockwise position. Set this control at the lowest setting possible, while maintaining desired case temperature.

Controls (Non-Refrigerated Units)

Power Switch

This switch controls the power to the lighting circuit and to the optional interior fan if supplied. The switch rocker is red in the “on” position and black in the “off” position.

Shelves

Each display is furnished with shelves that are adjustable up and down and can be tilted in three angular positions. See “Shelving Installation & Removal” section of this manual for proper installation, adjustment and removal of shelving.

Rear Package Shelf (standard on Deli, optional on all other models)

The rear package shelf is removable and adjustable up and down. It can be removed or adjusted by lifting rear package shelf up and out until the bracket is disengaged from shelf standard. It can then be moved to desired height location and reattached.

Sliding Rear Doors

The doors can be easily removed by lifting doors upward until the bottom edge of door clears the lower track. Swing the bottom of door outward and down out of top track.

Clean the door track frequently for easy door operation. A Very light film of lubricant, such as PAM, will help the doors slide easily.

Swing Rear Doors

The Swing doors are not easily removable for cleaning and require no lubrication.

Placing Product into Case

After completing shelving installation as outlined in “Shelving Installation and Removal” section of this manual you may begin placing product into the display case.

- Do not exceed 150 pounds of weight per shelf. Heavy product should be distributed evenly across the entire shelving area.
- Determine desired shelving location and angle before placing product in case. Product must be removed to readjust shelf location and angle.

(Refrigerated Models)

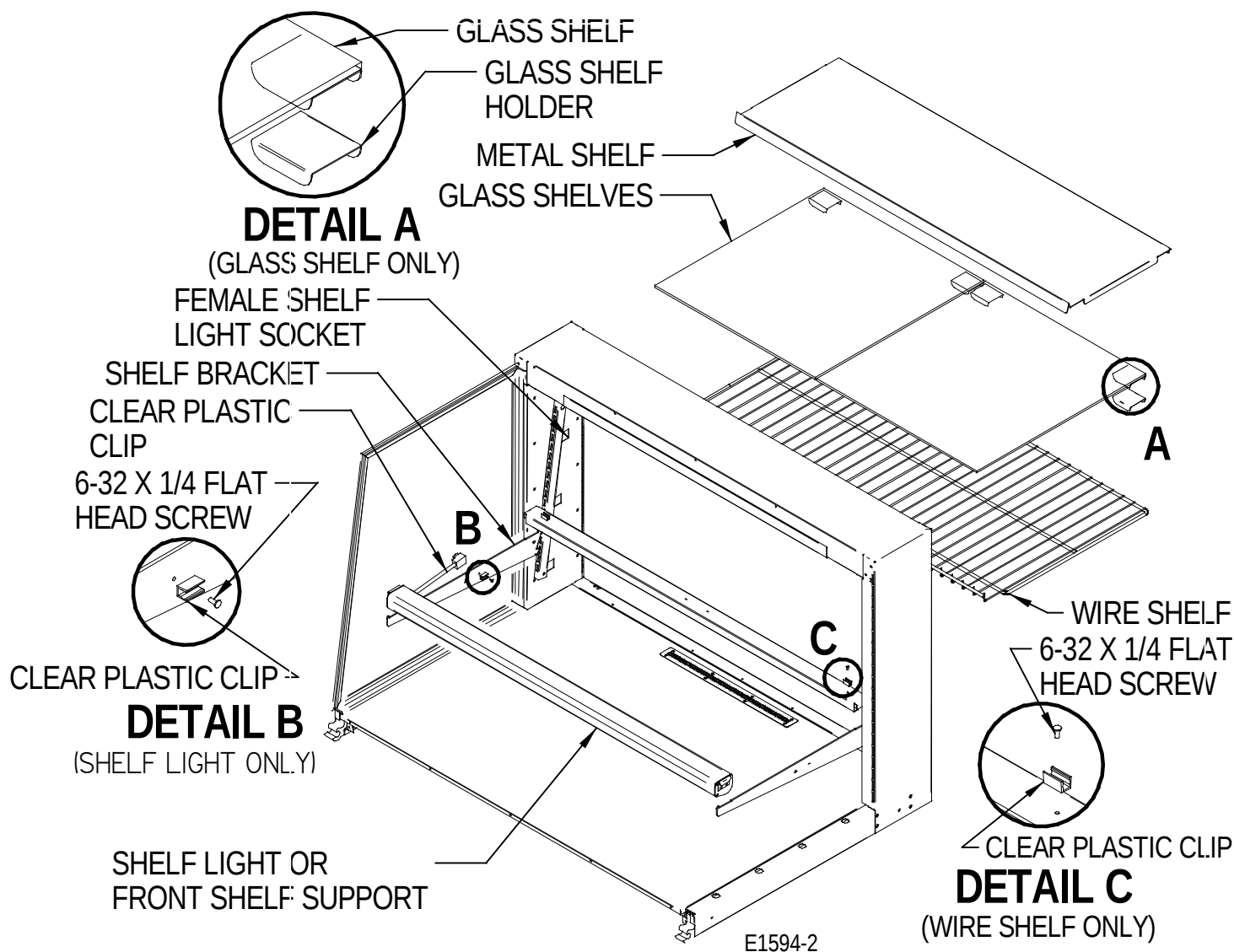
- Do not overhang the front of wire shelves with product. Product may overhang rear of shelf, but allow a minimum of 1-1/2” between product and rear door. Improper clearance in front and rear of shelf will block the refrigerated airflow and could cause product loss.
- Do not block the slots along the front or rear of the case display pan. Covering these slots will block the refrigerated airflow and could cause product loss.
- The display pan is removable for cleaning and can become dislodged in shipment. To ensure proper airflow and performance of the case, make sure that the display pan is pushed completely down into evaporation tub. Check that the pan is installed properly before placing product the display pans.
- Allow refrigerated models to run for at least two hours before placing pre chilled product into unit. Turn temperature control to the lowest possible position that maintains required interior cabinet temperature.

-CASE SHOULD BE STOCKED WITH PRE-CHILLED PRODUCT ONLY.

ATTENTION:

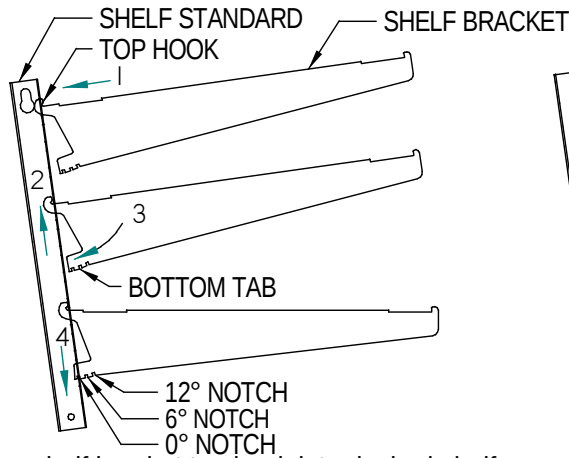
- Federal refrigerated display cases are designed to operate in a maximum environment of 75 DEG. F and 55% relative humidity. Exceeding these limits could cause poor case performance and sweating of glass panels.

SHELVING INSTALLATION & REMOVAL



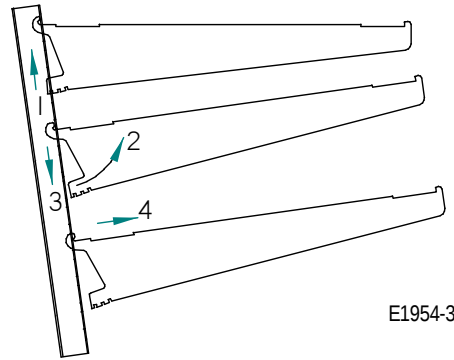
1. Turn the light switch to the off position. On units with sliding rear doors, remove both rear doors from track by lifting doors upward until the bottom edge of door clears the lower track. Swing the bottom of door outward and down out of top track. On units with rear swing doors completely open doors to allow access to interior of case.
2. Insert a shelf bracket in the desired shelf standard slot on one side of case. Follow the instruction in the illustration below. Place an additional shelf bracket in the same shelf standard slot on the opposite end of case. Repeat for additional shelf tiers. For first time installation it may be necessary to attach the clear plastic clips to only the shelf brackets located on the side of the shelf light cord. Use the 6-32 x 1/4 flat head screws supplied with unit to attach clear plastic clips to the 1/8 hole on the inside of the shelf brackets. This step may have already been performed at the factory for you. NOTE: Do not allow shelf bracket to hit side glass

INSTALLATION



- A.. Place shelf bracket top hook into desired shelf standard slot.
- B. Lift shelf bracket top hook to allow shelf bracket bottom tab to clear shelf standard slot.
- C. Swing shelf bracket bottom tab into shelf standard slot.
- D. Place the desired shelf bracket notch of 0, 6, or 12 degrees onto bottom of shelf standard slot.

REMOVAL



- A. Lift shelf bracket up to allow shelf bracket notch to clear the bottom of shelf standard slot.
- B. Swing shelf bracket bottom tab out of shelf standard slot.
- C. Drop shelf bracket down to allow shelf bracket top hook to clear top of shelf standard slot.
- D. remove shelf bracket top from shelf standard slot.

- 3. Hang one end of shelf light housing on the front notch of a shelf bracket and then the other end of shelf light housing on the notch of the shelf bracket on the opposite end. Repeat for each additional shelf tiers. NOTE: On models without shelf lights, use a shelf support instead of a shelf light housing.
- 4. Push shelf light cords into clear plastic clip located on inside of shelf brackets.
- 5. Remove the cap from the appropriate female light sockets. If socket is not being used for a shelf light, the cap must be plugged into socket for entire light system to operate. NOTE: Grip each side of cap firmly and wiggle and pull cap straight out of socket. Do not roll cap during removal.
- 6. Plug in each shelf light by aligning the male pins on the appropriate shelf light cord plugs with the female light sockets and push together. NOTE: Do not roll plug during insertion.
- 7. Hang one end of the shelf support on to the rear notch of one shelf bracket and then on the rear notch of the shelf bracket on the opposite side. Repeat for additional shelf tiers.
- 8. Place supplied shelving onto shelf supports as outlined in the appropriate "Shelf Installation" section of this manual.
- 9. On units with sliding rear doors, re-install both rear doors by lifting top of door into top track and swinging bottom of door onto bottom track. Install door labeled "inner door" first on inner track and door labeled "outer door" second on outer track.

Shelves and shelf light quantity

It is not required that all shelves and shelf lights supplied with each case are used. The quantity of shelves and shelf lights can be tailored to your specific needs. If the supplied quantity of shelves and shelf lights are not required, cap unused female socket located in interior of the case mullion with caps supplied. Failure to do so will prevent entire lighting system from operating.

SHELF INSTALLATION

Wire Shelves

1. For first time installation, it may be necessary to attach the clear plastic clips to each end of the rear shelf supports. Use the 6-32 x ¼ flat head screws supplied with unit to attach clear plastic clips to the 1/8 hole on each side of shelf support. This step may have already been performed at the factory for you. Repeat for each rear shelf support tier. (See illustration E1594-2 Detail C) NOTE: On 73" long shelf supports, attach (2) additional clear plastic clips into 1/8 holes near the center of rear shelf supports.
2. With rear sliding doors removed or rear swing door open, place front of wire shelf onto front shelf light. (On front shelf support for models without shelf lights)
3. Snap the rear of shelf into the clear plastic clips on rear shelf support.
4. Repeat 2 & 3 for each tier.

NOTE: Units with 73" long rear shelf supports uses (2) wire shelves per tier. All other units use (1) wire shelf per tier.

Glass Shelves

1. For first time installation attach (2) glass shelf holders to each glass shelf. Remove backing from tape located on flat side of glass shelf holder. Position the glass shelf holders in the (2) far corners of glass. (See illustration E1594-2 Detail A.) Repeat for each glass shelf. This step may have already been performed at the factory for you
NOTE: Clean area of glass where glass shelf holder is to be located with rubbing alcohol and let air dry before installing shelf glass holder.
2. With rear sliding doors removed or rear swing doors open, place front of glass shelf onto front shelf light. (On front shelf support for models without shelf lights.)
3. Let the rear of the glass shelf onto the rear shelf support so that the glass shelf holder straddles the rear shelf support. If clear plastic clips were factory-installed on top of rear shelf support, remove and discard clear plastic clips.
4. Repeat steps 2 & 3 for each tier.

NOTE: Units with 46" or longer rear shelf supports use (2) glass shelves per tier. All other units use (1) glass shelf per tier.

Metal Shelves

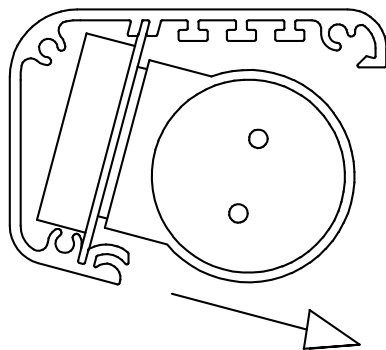
1. With rear sliding door removed, or rear swing door open, place front of metal shelf on to front shelf light. (On front shelf support on models without shelf lights.)
2. Set the rear of the metal shelf on to the rear shelf support so that the notch at each end of metal shelf straddles the rear shelf support. If clear plastic clips were factory-installed on top of rear shelf support, remove and discard clear plastic clips.
3. Repeat steps 2 & 3 for each tier if supplied with more than (1) tier of shelving.

MAINTENANCE

Shelf Light Replacement

1. On units with sliding rear doors, remove both rear doors from track by lifting doors upward until the bottom edge of door clears the lower track. Swing the bottom of door outward and down out of top track. On units with rear swing doors completely open doors to allow access to interior of case.
2. Remove shelving from unit through rear door opening.
3. Unplug appropriate light housing cord from socket and remove light housing from unit through rear door opening.
4. Starting at the end opposite the light cord, remove plastic lens from the aluminum housing. Push in on the top side of plastic lens until the plastic lens hook clears the aluminum-housing hook. Roll plastic lens outward to peel its hook away from the aluminum housing hook. Once the top corner is unhooked, continue to peel plastic lens hook from aluminum housing along entire length. Once the lens is completely unhooked, rotate lens to disengage the half moon lock located at the bottom of the plastic lens.
5. To remove bulb from aluminum housing grip the bulb receptacle end caps at each end of bulb. Pull the bulb receptacle end caps straight outward away from light housing. Once bulb and bulb receptacle end caps are removed from light housing remove the bulb receptacle end caps from end of bulb. (Note: 50" dual zone models do not have end caps.)

BULB REMOVAL

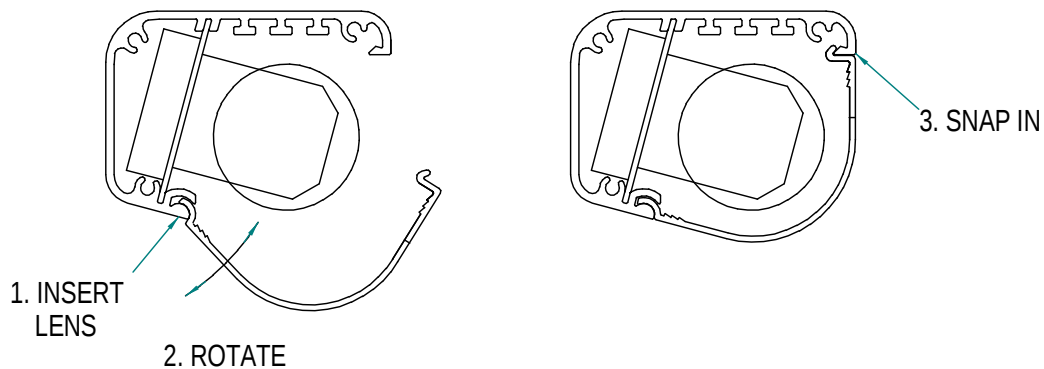


6. Reinstall new bulb in the same manner as described in the Bulb Removal Procedure. Be sure bulb is secure in bulb receptacles.

Note: Be sure to use a direct equivalent to the original bulb.

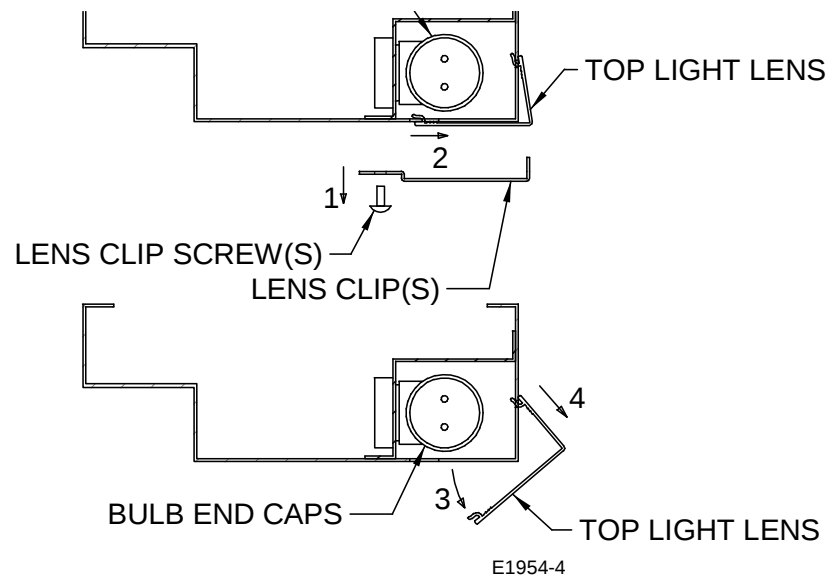
7. Reinstall plastic lens into aluminum housing.
 - A. Lay the aluminum housing on a flat surface with the bulb facing up. Slide the half moon lock of the plastic housing into the half moon lock in the aluminum housing. **Note: Be sure the plastic half moon lock is completely inserted along the entire length of aluminum housing.**
 - B. Rotate plastic lens upward until the plastic lens hook touches the aluminum housing hook.
 - C. Starting at the light cord end, push the plastic lens hook behind the aluminum-housing hook until they begin to engage. Continue to snap hooks together along the entire length of aluminum housing.

LENS INSTALLATION



Top Light Replacement

1. On units with sliding rear doors, remove both rear doors from track by lifting doors upward until the bottom edge of door clears the lower track. Swing the bottom of door outward and down out of top track. On units with rear swing doors completely open doors to allow access to interior of case.
2. Remove all shelves, shelf supports and Shelf lights from unit through rear door opening. (See "Shelving Installation and Removal" section of this manual for instruction if needed)
3. Remove top light lens clip screw(s), lens clip(s), and top light lens as illustrated below.
4. To remove bulb from top light housing, grip the bulb receptacle end caps at each end of bulb. Pull the bulb receptacle end caps straight outward toward front of case. Once bulb and bulb receptacle end caps are removed from top light housing remove the bulb receptacle end caps from end of bulb. (Note: 50" dual zone models do not have end caps.)
5. Reinstall new bulb in the same manner as described in the Bulb Removal Procedure. Be sure bulb is secure in bulb receptacles. **Note: Be sure to use a direct equivalent to the original bulb.**
6. Reinstall top light lens, lens clips, and lens clip screws in reverse order as shown in illustration below.



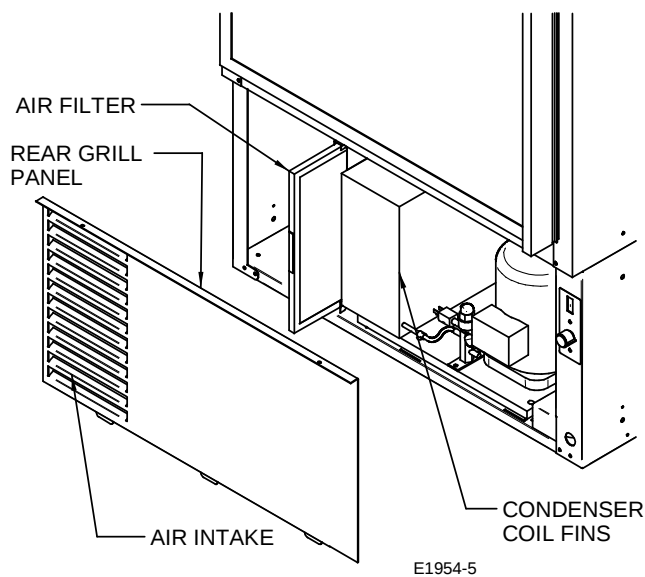
PERIODIC MAINTENANCE

Cleaning Condenser Coil Filter (Self Contained Refrigerated Units Only)

This refrigerated case is equipped with a reusable condenser coil filter, which filters large dust particles from the air before air enters the condenser coil fins. It is very important that this filter be cleaned on a monthly basis to insure proper refrigeration performance and to prevent compressor failure.

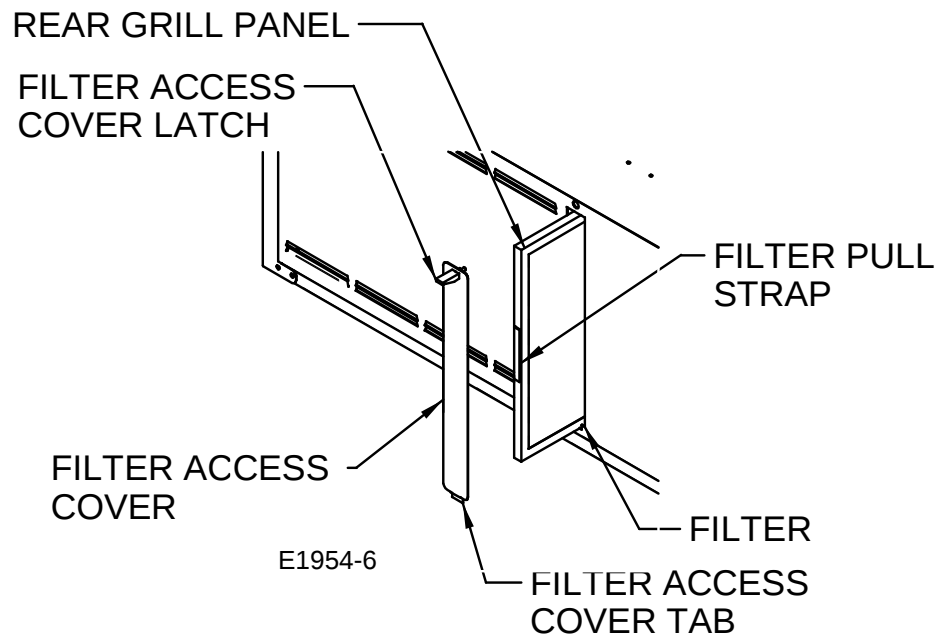
For 31" & 36" long units without rear access cover:

1. Disconnect power to the unit.
2. Remove rear grill as described in the installation instruction section of this manual.
3. Slide filter out toward rear of case using the filter pull strap on filter.
4. Wash Using warm soapy water, wash filter, rinse, and let dry.
5. Apply a generous coat of filter coat adhesive to both sides of filter.
(Filter coat adhesive is available through any restaurant supply distributor.)
NOTE: Failure to coat filter with a fresh coat of filter adhesive after cleaning will prevent filter from working properly. Failure to do so will allow the condenser coil to plug, which will effect refrigeration performance and could cause compressor failure.
6. Reinstall filter (filter pull-tab facing outward) and rear grill panel in reverse order.



For 50", 59" & 77" long units with filter access cover:

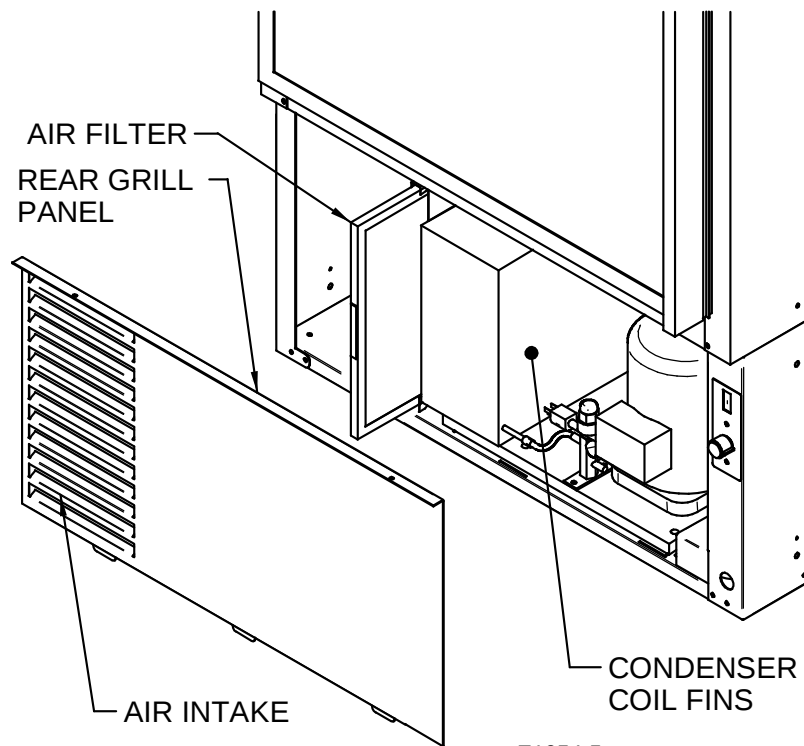
1. Lift filter access cover latch so the latch stays in a horizontal position.
2. Tilt filter access cover outward and pull filter access cover tab out of notch in rear grill panel.
3. Slide filter out toward rear of case using the filter pull strap on filter.
4. Wash filter using warm soapy water, rinse, and let dry.
5. Apply a generous coat of filter coat adhesive to both sides of filter.
(Filter coat adhesive is available through any restaurant supply distributor.)
NOTE: Failure to coat filter with a fresh coat of filter adhesive after cleaning will prevent filter from working properly. Failure to do so will allow the condenser coil to plug, which will effect refrigeration performance and could cause compressor failure.
6. Reinstall filter (filter pull-tab facing outward) and filter access cover in reverse order.



Cleaning Condenser Coil (All Self Contained Refrigerated Cases)

Even though your refrigerated display case is provided with a reusable condenser air filter, the condenser coil must be checked and cleaned at least every 6 months or as necessary.

1. Disconnect power to the unit.
2. Remove rear grill as described in the installation instruction section of this manual.
3. Slide filter out toward rear of case using the filter pull strap on filter.
4. Wash filter as described in cleaning condenser coil filter in this section of this manual.
5. Vacuum the front surface of the condenser coil.
6. Reinstall filter (filter pull-tab facing outward) and rear grill in the reverse order.



E1954-5

CLEANING INSTRUCTIONS

Daily Cleaning

The case should be cleaned thoroughly, as described in the weekly cleaning section, before it is used for the first time.



NOTICE: Avoid splashing or soaking any electrical components with water to prevent electrical damage to the case.



NOTICE: Shut off lights and power switches and remove all product from case. Allow sufficient time for the unit to reach room temperature before proceeding with cleaning.

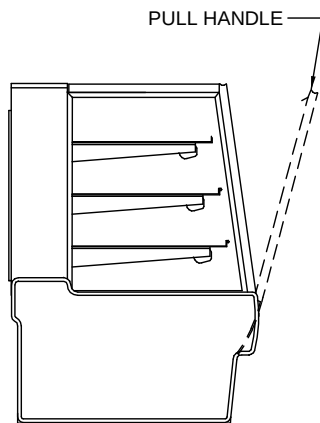


NOTICE: Remove all product from case before proceeding with cleaning procedure.

Note: For major spills or foreign material buildup use complete weekly cleaning instructions.

1. Clean all foreign materials from the door opening.
2. Wipe complete interior of case using a damp cloth.
3. Tilt the front glass forward as described in the illustrations below. This will allow easier access to clean interior front and side glass. The glass can then be cleaned with common window cleaners.

NOTE: On models that the front glass does not tilt out, the inside of glass must be cleaned through the rear door access.



OPEN FRONT GLASS:

1. Stand in front of unit and grab the pull handle with finger tips. It may be necessary to push on front glass from inside of case.
2. Pull front glass outward until the glass rests on front glass stops.

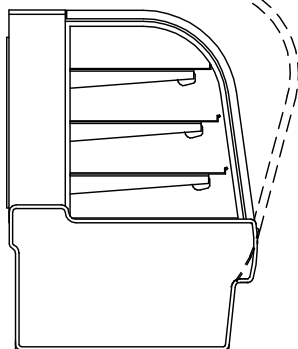
CLOSE FRONT GLASS:

1. Stand in front of unit and push on front of front glass with both hands.
2. Firmly push front glass towards rear of unit until front glass handle is against top glass front.

STRAIGHT GLASS

E1954-10

PULL HANDLE



OPEN FRONT GLASS:

1. Stand in front of unit and grab the pull handle with both hands.
2. Pull front glass outward until the glass rests on front glass stops.

CLOSE FRONT GLASS:

1. Stand in front of unit and push on front of pull handle with both hands.
2. Firmly push glass towards rear of unit until front glass rests in closed position

CURVED GLASS

4. The remaining exterior surface should be wiped down using any ammoniated cleaners or soapy warm water.

Note: Detergents are **not** recommended and do not use abrasive cleaners or pads to prevent scratching of surfaces.

Weekly Cleaning

This procedure is recommended on a weekly basis. It may need to be performed more often if necessary to maintain a clean, sanitary case. The case should be cleaned to this procedure before using the first time.



NOTICE:

Avoid splashing or soaking any electrical components with water to prevent electrical damage to the case.



NOTICE:

Shut off light and power switches and remove all product from case. Allow sufficient time for the unit to reach room temperature before proceeding with cleaning.

Interior Cleaning

1. Remove all interior shelving as described in the shelving installation and removal section of this manual.
2. Remove both shelf standards from interior of case. First remove thumbscrew at bottom of shelf standard and then slide shelf standard up to allow top key slot to clear.

Steps 3 & 4 on refrigerated only.

3. Lift the display pan up and out of evaporator tub. Remove display pan through rear opening.

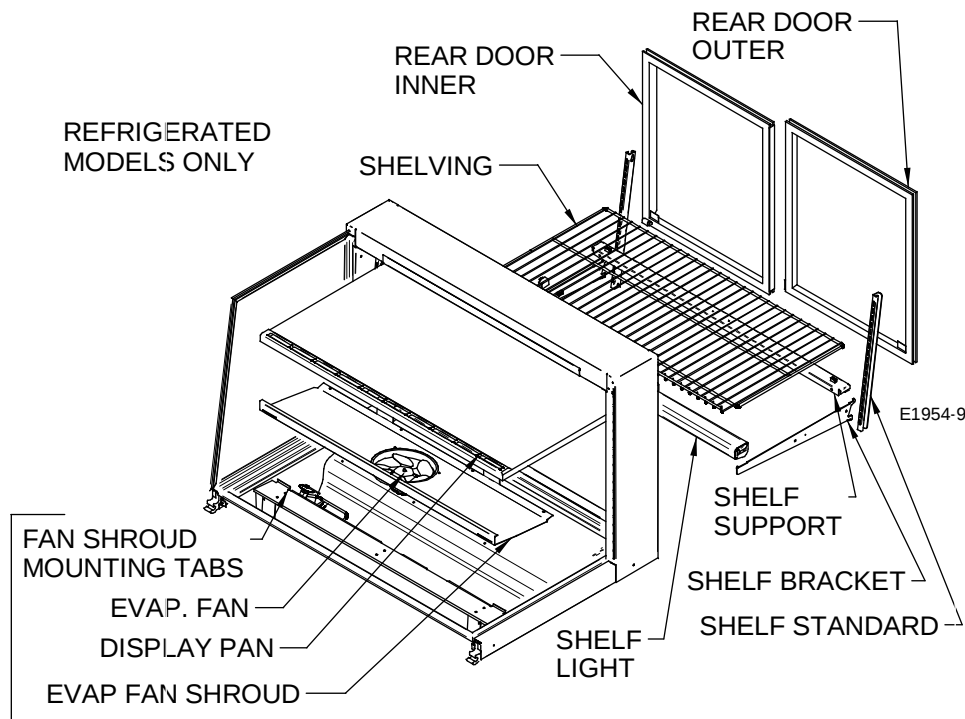
4. Remove the evaporator fan shroud. First remove the thumbscrews along the backside of evaporator fan shroud. Lift the rear of the evaporator fan shroud allowing the front to hinge on fan shroud mounting tabs. Reach in and unplug the evaporator fan motor cord. Continue to lift the evaporator fan shroud while at the same time pulling it to the door opening of case until the slots in the evaporator fan shroud can clear the fan shroud mounting tabs. Remove evaporator fan shroud through rear opening.
5. Clean the entire interior of the case using warm soapy water. Wipe off all soapy water with a damp cloth and allow to dry.

NOTE: Depending on the amount of usage and spillage of foreign material, some fasteners may have to be removed and parts disassembled to allow proper cleaning of the unit.

6. Clean all shelves, shelf support bars, shelf light housings, shelf light housings, shelf brackets, and display pans using warm soapy water and a brush. Rinse thoroughly and allow to dry.
7. Clean all foreign material from inner and outer rear door tracks using warm soapy water and a brush. Apply a light film of lubricant such as PAM to make the doors operate smoother.
8. Clean both sides of the doors and interior of the front glass using any common window cleaner.

NOTE: Front glass can be tilted forward to simplify front glass cleaning. See "Daily Cleaning" section for glass tilting operation.

9. Reassemble the case in reverse order starting with Step 6.



Exterior Cleaning

1. Clean the front glass using any common window cleaner.
2. The exterior surfaces should be wiped down using any ammoniated cleansers or warm soapy water.

NOTE: For major spills or foreign material build-up use complete weekly cleaning instruction.

SERVICE INFORMATION

CAUTION
RISK OF ELECTRIC SHOCK

DISCONNECT POWER
BEFORE SERVICING UNIT

Before any service work is performed on the case, make sure all power is disconnected to the case.

Service problems or request for repair parts from authorized service agencies, trained service personnel, or owners should be referred to:

WARRANTY/TECHNICAL SERVICE DEPARTMENT
Federal Industries
215 Federal Avenue
Belleville, WI 53508
Toll Free: (800) 356-4206 / WI Phone (608) 424-3331
Fax: (608) 424-3234

Pre-Service Checklist

You may avoid the cost and inconvenience of an unnecessary service call by first reviewing this checklist of frequently encountered situations that can cause unsatisfactory case performance.



CAUTION: Before servicing case turn off power at the main breaker of fuse box.

Pre-Service Checklist

Case Does Not Operate

Check for disconnected power supply.

Check for tripped breaker or blown fuse.

Check that the thermostat is not “off”.

Lights Do Not Operate

Check that light switch is on.

Be sure light is properly seated in the sockets.

Check that light cord(s) are tight in the sockets.

Plug unused light sockets with socket cap provided with socket.

Case Temperature Too Warm

Check that the cold air inlet and outlet slots are not blocked.

Be sure that the rear doors are closed and tightly sealed.

Check for a blocked or dirty condenser coil filter or condenser coil fins.

Check cold airflow. Lack of adequate cold airflow could be a defective evaporator fan or blocked evaporator coil. Check that paper or foreign material is not blocking evaporator. If the evaporator coil is blocked due to excessive frost, turn the thermostat knob to the “off” position for approximately one hour to defrost. Excessive frost will buildup if the case is operated with the door open or ajar.

Check that the display pans are installed properly.

Glass Fogging

Check room ambient – Case is designed to operate in an environment not to exceed 75°F and 55% relative humidity.

Check case temperature – Case is designed to operate between 38°F and 42°F.

Check that nothing is placed on the top of the case glass.

Special Service Situations

There are rare occasions when the refrigerant charge must be evacuated from a case in order to perform service work. In those situations, Federal Industries recommends that the refrigerant charge be evacuated into a recovery system to prevent the possibility of hydrofluorocarbons (HFC's) from being released into the atmosphere.

If moisture or liquid is observed around or under a Federal Industries case, an immediate investigation should be made by qualified personnel to determine the source of the moisture or liquid. The investigation made should determine if the case is malfunctioning or if there is a simple housekeeping problem.

Moisture or liquid around or under a case is a potential slip/fall hazard for persons walking by or working in the general area of the case. Any case malfunction or housekeeping problem that creates a slip/fall hazard around or under a case should be corrected immediately.

SALE & DISPOSAL

Owner Responsibility

If you sell or give away your Federal Industries case you must make sure that all safety labels and the Installation-Service Manual are included with it. If you need replacement labels or manuals, Federal Industries will provide them free of charge. Contact the customer service department at Federal Industries at (800) 356-4206.

The customer service department at Federal Industries should be contacted at the time of sale or disposal of your case so records may be kept of its new location.

If you sell or give away your Federal Industries case and you evacuate the refrigerant charge before shipment. Federal Industries recommends that the charge be evacuated into a recovery system to prevent the possibility of HFC's from being released into the atmosphere.

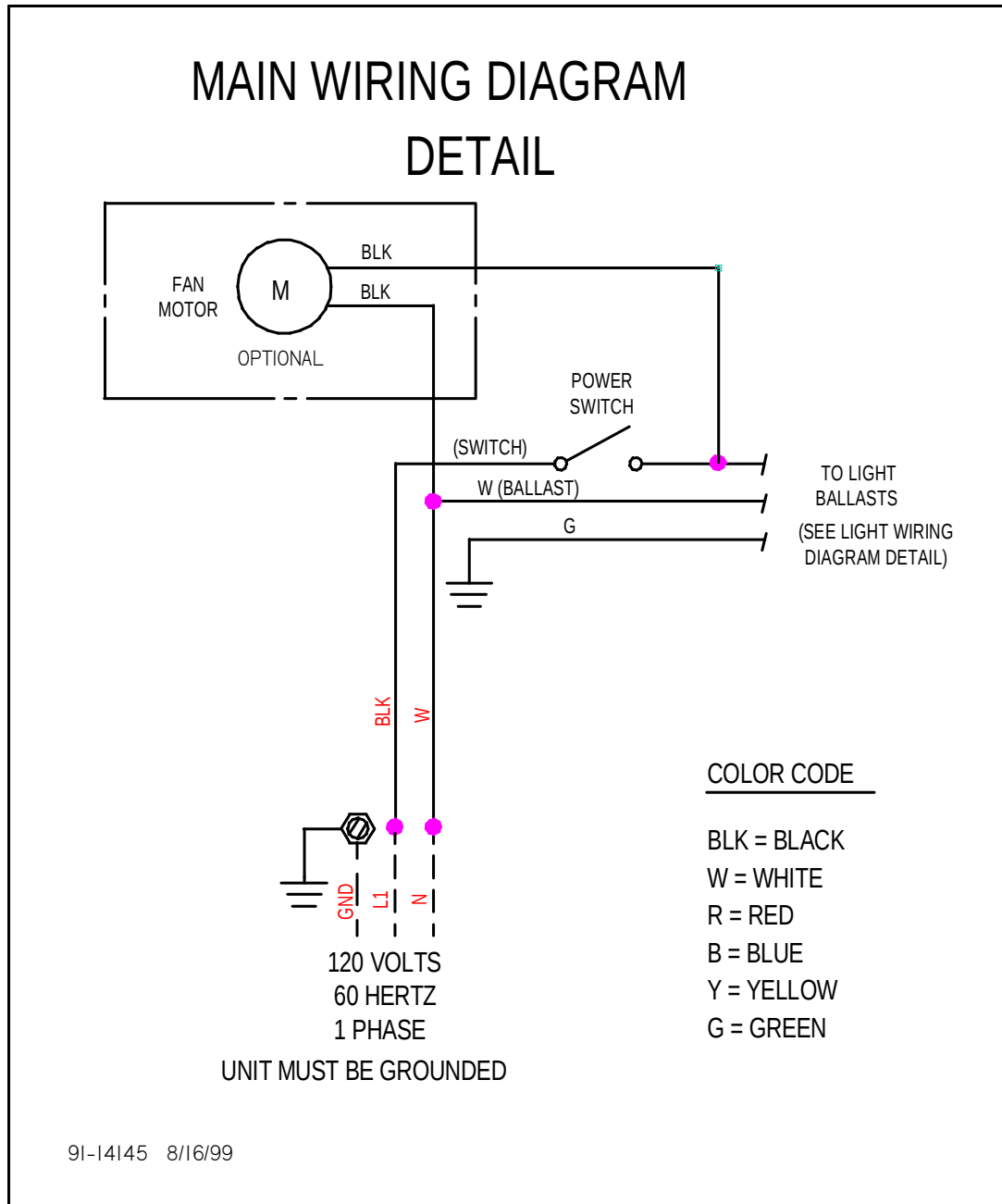
REFRIGERATION & ELECTRICAL DATA

REFRIGERATION & ELECTRICAL DATA		REFRIGERANT R-134 (OZ)	LIGHTS	EVAPORATOR FAN MOTOR	CONDENSATE PAN HEATER	COMPRESSOR RLA LRA		TOTAL AMPS
NON REFRIGERATED								
CGD3148	SGD3148	N/A	0.5	N/A	N/A	N/A	N/A	1.5
CGD3642	SGD3642	N/A	0.7	N/A	N/A	N/A	N/A	1.5
CGD3648	SGD3648	N/A	0.7	N/A	N/A	N/A	N/A	1.5
CGD5042	SGD5042	N/A	0.7	N/A	N/A	N/A	N/A	1.5
CGD5048	SGD5048	N/A	0.7	N/A	N/A	N/A	N/A	1.5
CGD5942	SGD5942	N/A	0.9	N/A	N/A	N/A	N/A	1.5
CGD5948	SGD5948	N/A	0.9	N/A	N/A	N/A	N/A	1.5
CGD7742	SGD7742	N/A	1.3	N/A	N/A	N/A	N/A	1.5
CGD7748	SGD7748	N/A	1.3	N/A	N/A	N/A	N/A	1.5
REFRIGERATED SELF CONTAINED								
CGR3148	SGR3148	26	0.5	0.4	1.2	7.2	32.7	8
CGR3642	SGR3642	26	0.7	0.4	1.2	8.1	40	9
CGR3648	SGR3648	26	0.7	0.4	1.2	8.1	40	9
CGR5042	SGR5042	28	0.7	0.4	1.2	8.8	58.8	10.5
CGR5048	SGR5048	28	0.7	0.4	1.2	8.8	58.8	10.5
CGR5942	SGR5942	32	0.9	0.4	1.2	8.8	58.8	11.6
CGR5948	SGR5948	32	0.9	0.4	1.2	8.8	58.8	11.6
CGR7742	SGR7742	36	1.3	0.8	1.2	10.1	68	14.2
CGR7748	SGR7748	36	1.3	0.8	1.2	10.1	68	14.2
CGR5042DZ	SGR5042DZ	26	0.5	0.4	1.2	7.2	32.7	8
CGR5048DZ	SGR5048DZ	26	0.5	0.4	1.2	7.2	32.7	8
CGR5942DZ	SGR5942DZ	26	0.7	0.4	1.2	8.1	40	9
CGR5948DZ	SGR5948DZ	26	0.7	0.4	1.2	8.1	40	9
CGR7742DZ	SGR7742DZ	26	0.7	0.4	1.2	8.1	40	9
CGR7748DZ	SGR7748DZ	26	0.7	0.4	1.2	8.1	40	9
CGR5048CD	SGR5048CD	28	0.7	0.4	1.2	8.8	58.8	10.5
CGR5948CD	SGR5948CD	32	0.9	0.4	1.2	8.8	58.8	11.6
CGR7748CD	SGR7748CD	36	1.3	0.8	1.2	10.1	68	14.2
CGR3660DZH		26	0.7	0.4	1.2	8.1	40	9
CGR5060DZH		28	0.7	0.4	1.2	8.8	58.8	10.5
CGR5960DZH		32	0.9	0.4	1.2	8.8	58.8	11.6
CGR7760DZH		36	1.3	0.8	1.2	10.1	68	14.2
Refer to the data plate attached to rear of the case for maximum fuse size and minimum circuit ampacity.								

REFRIGERATION & ELECTRICAL DATA		REFRIGERANT R-134 (OZ)	LIGHTS	EVAPORATOR FAN MOTOR	CONDENSATE PAN HEATER	COMPRESSOR RLA LRA		TOTAL AMPS
REFRIGERATED REMOTE								
CGR3148R	SGR3148R	N/A	0.5	0.4	1.2	N/A	N/A	2.1
CGR3642R	SGR3642R	N/A	0.7	0.4	1.2	N/A	N/A	2.3
CGR3648R	SGR3648R	N/A	0.7	0.4	1.2	N/A	N/A	2.3
CGR5042R	SGR5042R	N/A	0.7	0.4	1.2	N/A	N/A	2.3
CGR5048R	SGR5048R	N/A	0.7	0.4	1.2	N/A	N/A	2.3
CGR5942R	SGR5942R	N/A	0.9	0.4	1.2	N/A	N/A	2.5
CGR5948R	SGR5948R	N/A	0.9	0.4	1.2	N/A	N/A	2.5
CGR7742R	SGR7742R	N/A	1.3	0.8	1.2	N/A	N/A	3.3
CGR7748R	SGR7748R	N/A	1.3	0.8	1.2	N/A	N/A	3.3
CGR5042DZR	SGR5042DZR	N/A	0.5	0.4	1.2	N/A	N/A	2.1
CGR5048DZR	SGR5048DZR	N/A	0.5	0.4	1.2	N/A	N/A	2.1
CGR5942DZR	SGR5942DZR	N/A	0.7	0.4	1.2	N/A	N/A	2.3
CGR5948DZR	SGR5948DZR	N/A	0.7	0.4	1.2	N/A	N/A	2.3
CGR7742DZR	SGR7742DZR	N/A	0.7	0.4	1.2	N/A	N/A	2.3
CGR7748DZR	SGR7748DZR	N/A	0.7	0.4	1.2	N/A	N/A	2.3
CGR5048CD	SGR5048CD	N/A	0.7	0.4	1.2	N/A	N/A	2.3
CGR5948CD	SGR5948CD	N/A	0.9	0.4	1.2	N/A	N/A	2.5
CGR7748CD	SGR7748CD	N/A	1.3	0.8	1.2	N/A	N/A	3.3
CGR3650DZHR		N/A	0.7	0.4	1.2	N/A	N/A	2.3
CGR5060DZHR		N/A	0.7	0.4	1.2	N/A	N/A	2.3
CGR5960DZHR		N/A	0.9	0.4	1.2	N/A	N/A	2.5
CGR7760DZH48R		N/A	1.3	0.8	1.2	N/A	N/A	3.3
Refer to the data plate attached to rear of the case for maximum fuse size and minimum circuit ampacity.								

MAIN WIRING DIAGRAMS

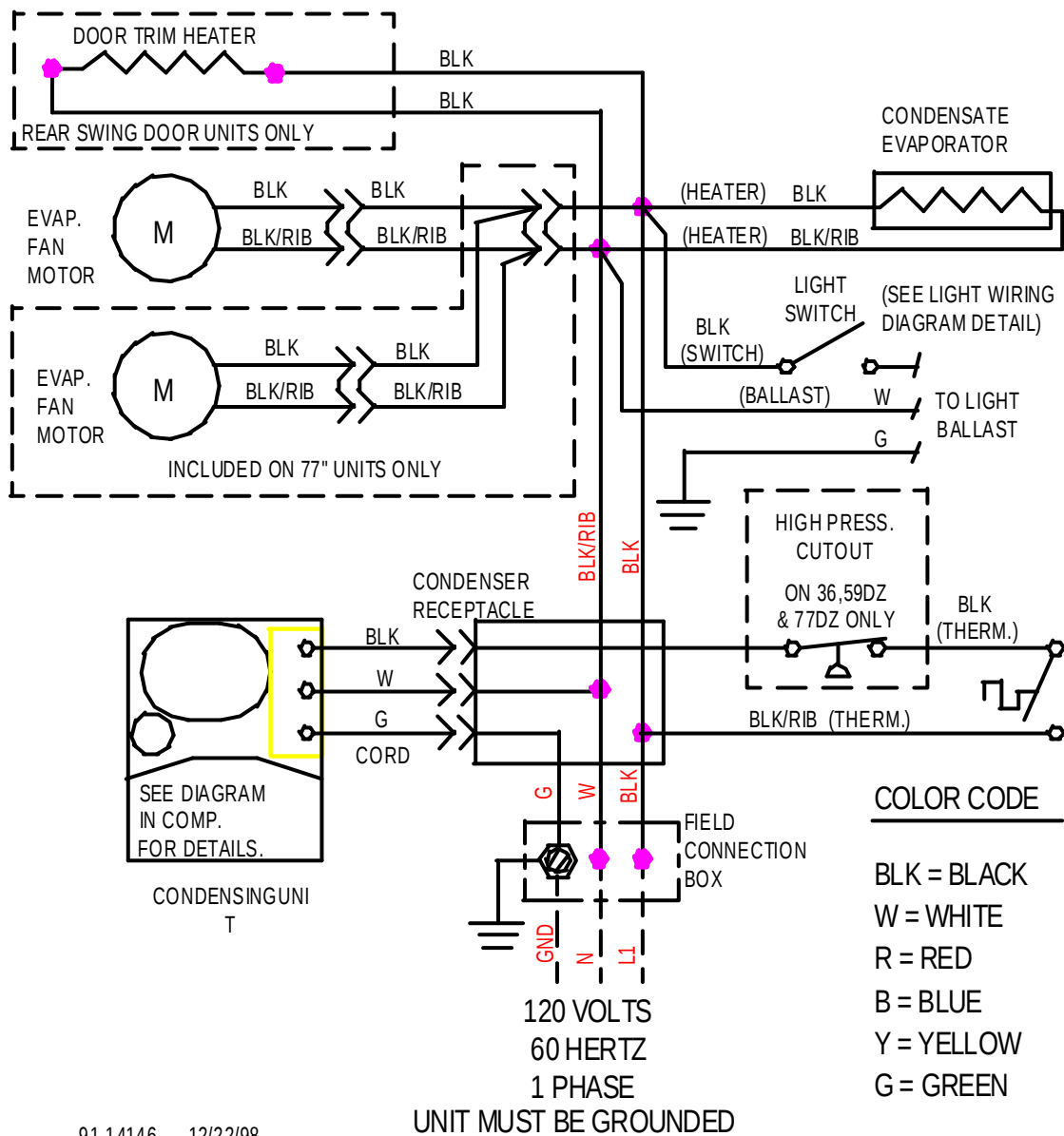
120 VOLT DRY



120 VOLT REFRIGERATED SELF CONTAINED

MAIN WIRING DIAGRAM

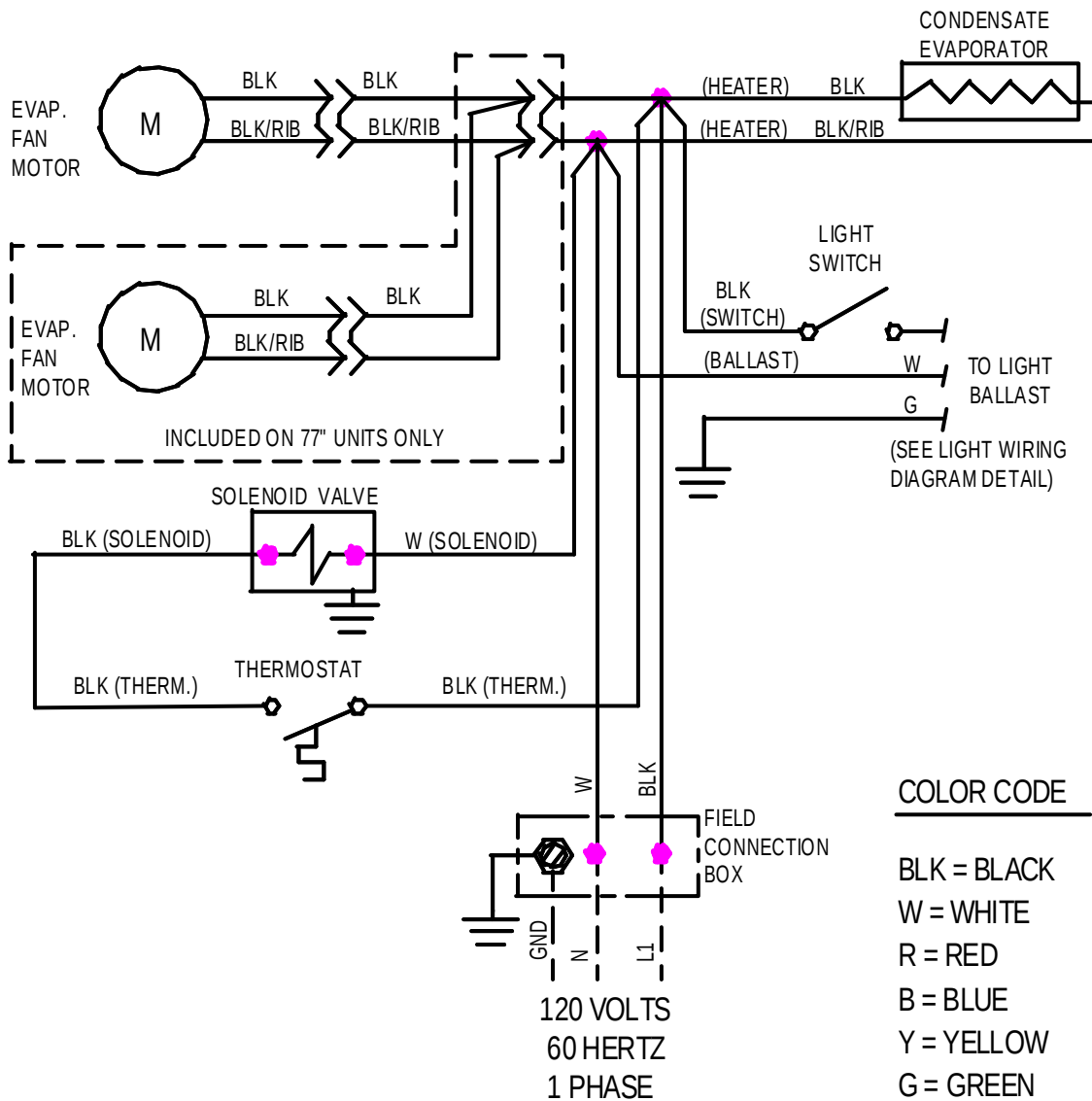
DETAIL



91-14146 12/22/98

120 VOLT REFRIGERATED REMOTE

MAIN WIRING DIAGRAM DETAIL

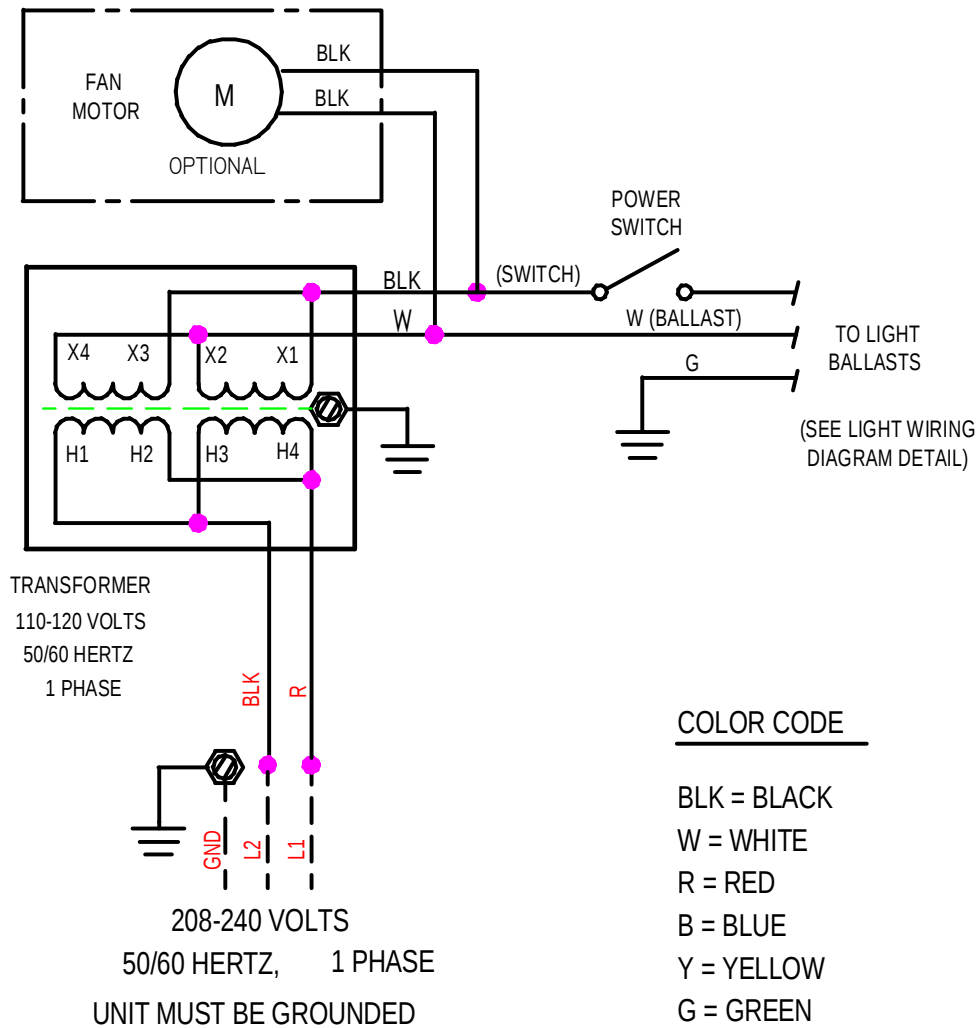


91-14147 8/4/99

UNIT MUST BE GROUNDED

240 VOLT DRY

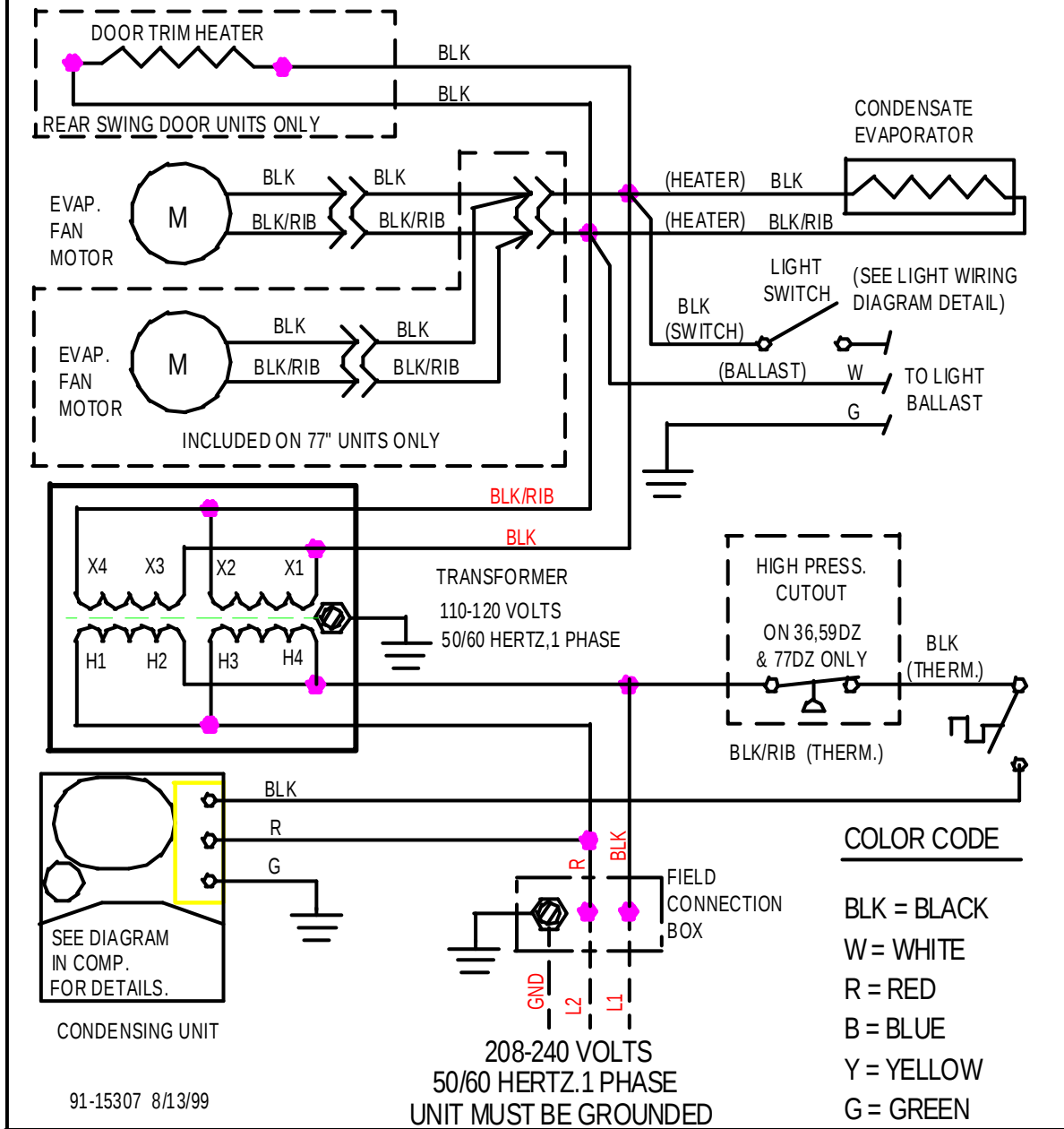
MAIN WIRING DIAGRAM DETAIL 208-240 VOLT



9I-I5306 8/10/99

240 VOLT REFRIGERATED SELF CONTAINED

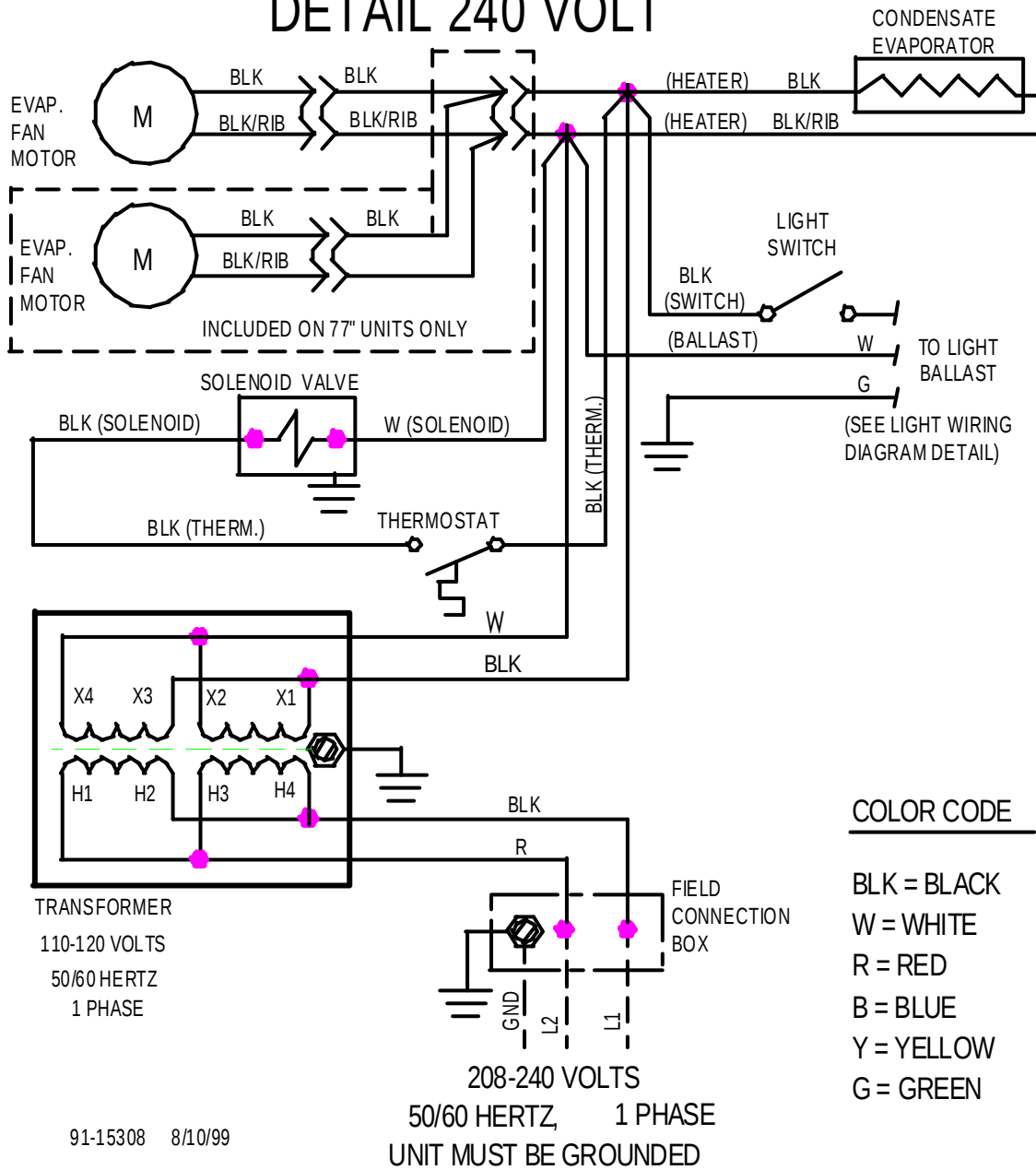
MAIN WIRING DIAGRAM DETAIL 240 VOLT



240 VOLT REFRIGERATED REMOTE

MAIN WIRING DIAGRAM

DETAIL 240 VOLT

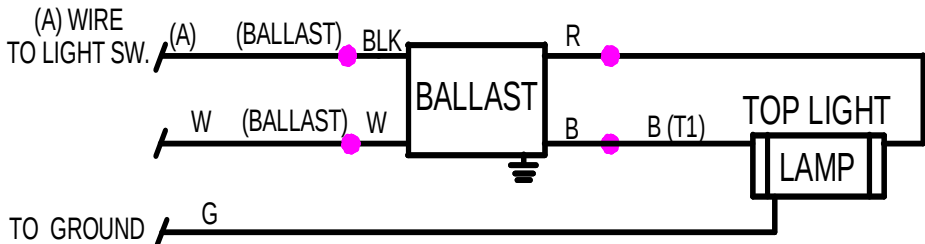


LIGHT WIRING DIAGRAMS

All 3142, 3148, 3642, 3648, 5042, 5048, 5942, 5948, 7742, 7748, 3642CD, 3648CD, 5042CD, 5048CD, 5942CD, 5948CD, 7742CD, & 7748CD models with optional no shelf light.

LIGHT WIRING DIAGRAM DETAIL

(1) F017T8, F025T8, F032T8, F040T8



(SEE MAIN WIRING DIAGRAM DETAIL)

COLOR CODE:

BLK = BLACK B = BLUE

W = WHITE Y = YELLOW

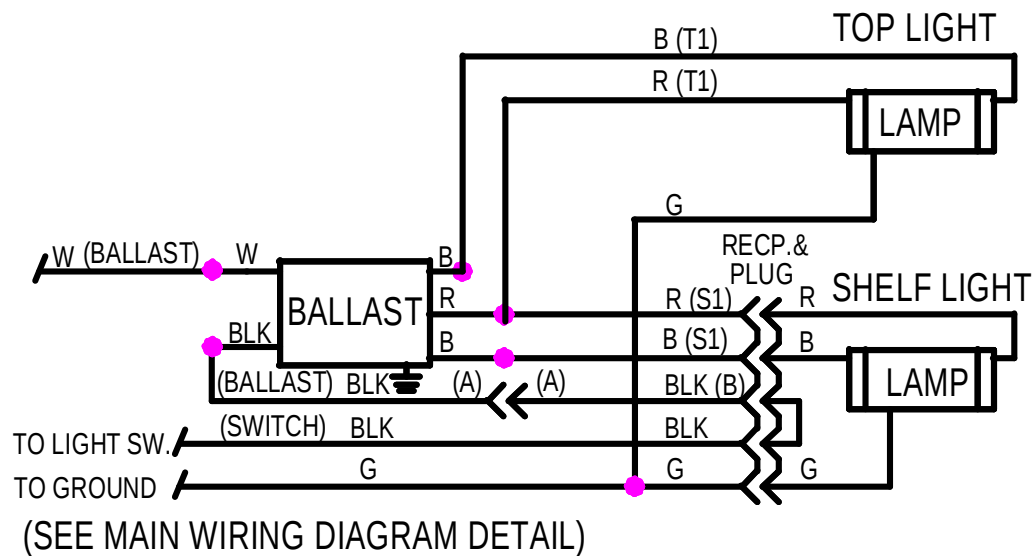
R = RED G = GREEN

91-13923 04/16/01

All 3642CD, 3648CD, 5042CD, 5048CD, 5942CD, 5948CD, 7742CD, & 7748CD models with standard shelf light.

LIGHT WIRING DIAGRAM DETAIL

(2) F017T8, F025T8, F032T8, F040T8



COLOR CODE:

BLK = BLACK

W = WHITE

R = RED

B = BLUE

Y = YELLOW

G = GREEN

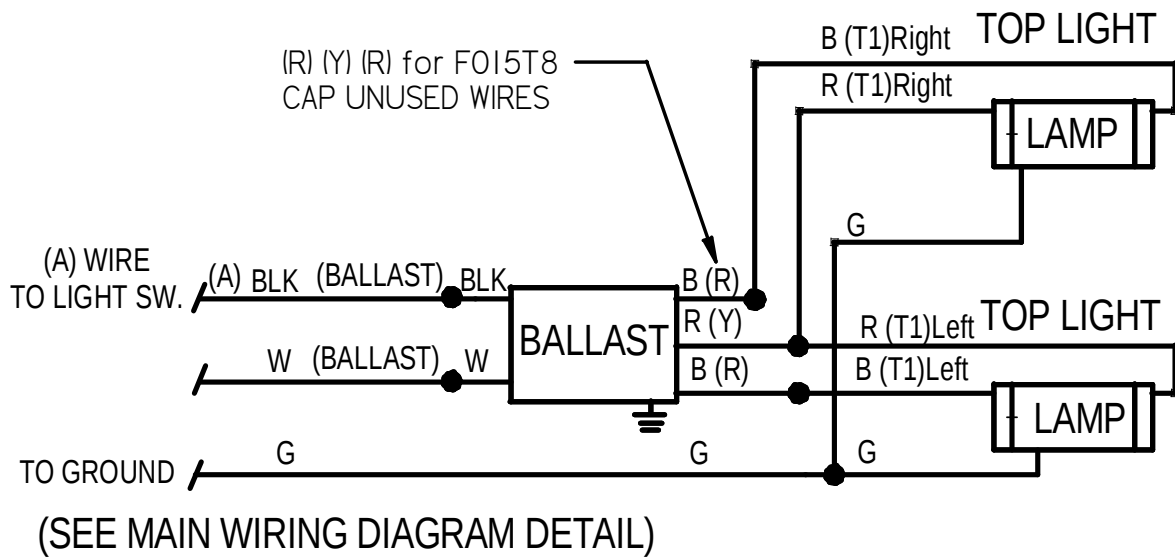
91-13924

04/16/01

All 5942DZ, 5948DZ, 7742DZ, 7748DZ models with optional NO shelf lights.

LIGHT WIRING DIAGRAM DETAIL

(2) FO15T8, FO17T8, FO25T8, FO32T8, FO40T8



COLOR CODE:

BLK = BLACK

B = BLUE

W = WHITE

Y = YELLOW

R = RED

G = GREEN

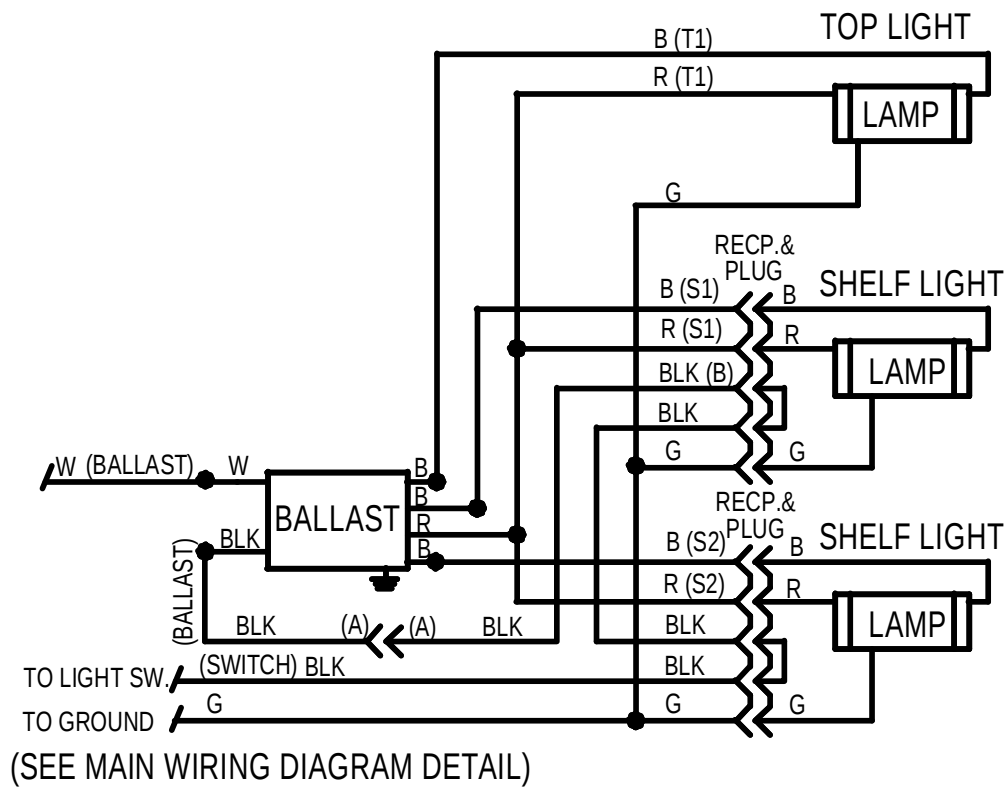
91-14292

05/7/08

All 3142, 3642, 5042, 5942, 5942DZ, & 7742DZ models with standard shelf lights.

LIGHT WIRING DIAGRAM DETAIL

(3) F017T8, F025T8, F032T8



COLOR CODE:

BLK = BLACK B = BLUE

W = WHITE Y = YELLOW

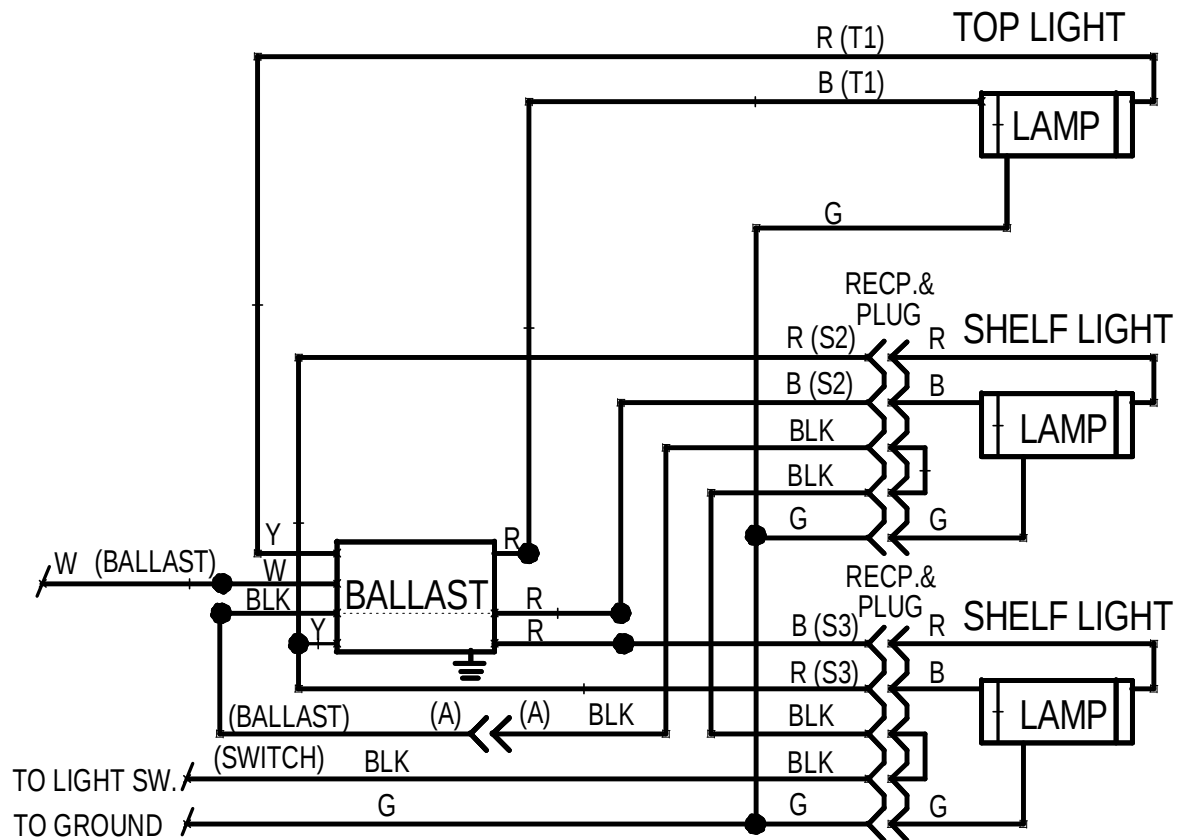
R = RED G = GREEN

91-13925 04/16/01

5042DZ models with standard shelf lights.

LIGHT WIRING DIAGRAM DETAIL

(3) F15T8



(SEE MAIN WIRING DIAGRAM DETAIL)

COLOR CODE:

BLK = BLACK B = BLUE
W = WHITE Y = YELLOW
R = RED G = GREEN

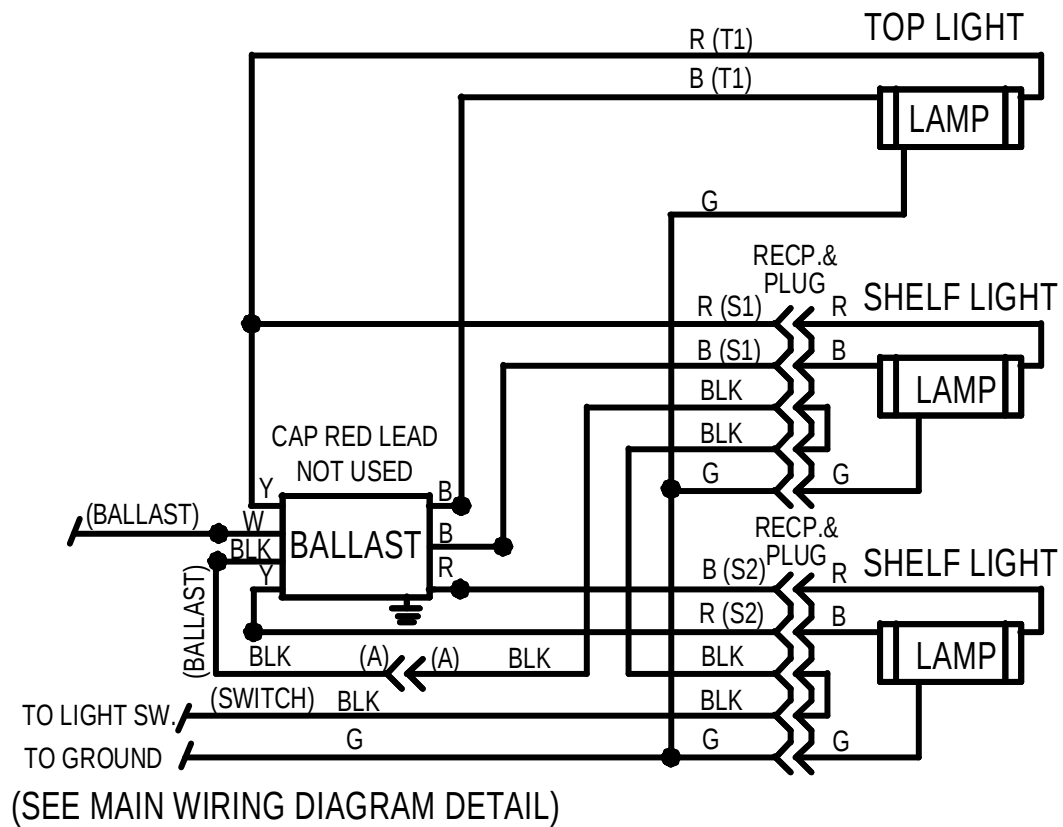
91-18638

11/06/07

All 7742 models with standard shelf lights.

LIGHT WIRING DIAGRAM DETAIL

(3) F040T8



COLOR CODE:

BLK = BLACK B = BLUE

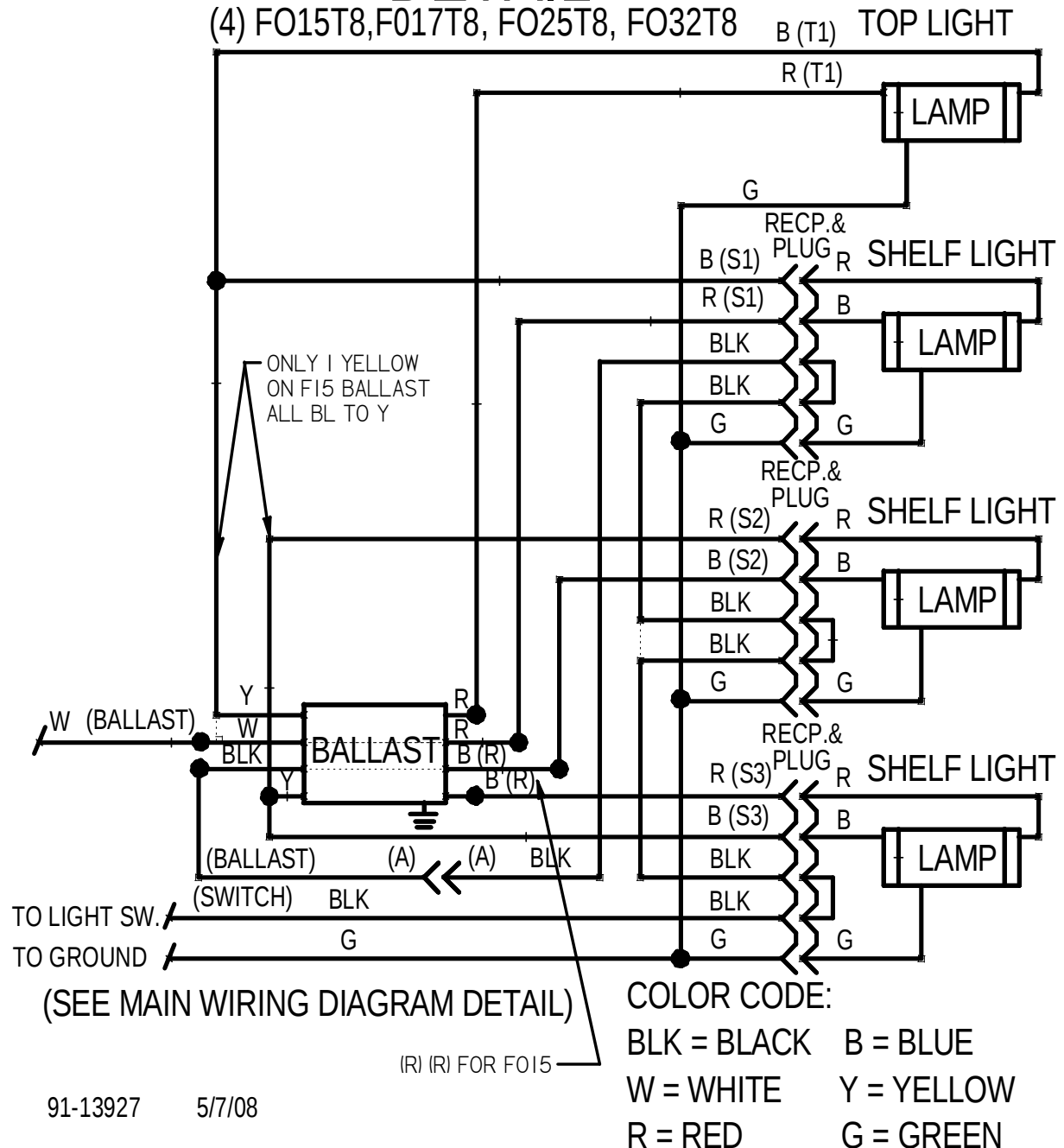
W = WHITE Y = YELLOW

R = RED G = GREEN

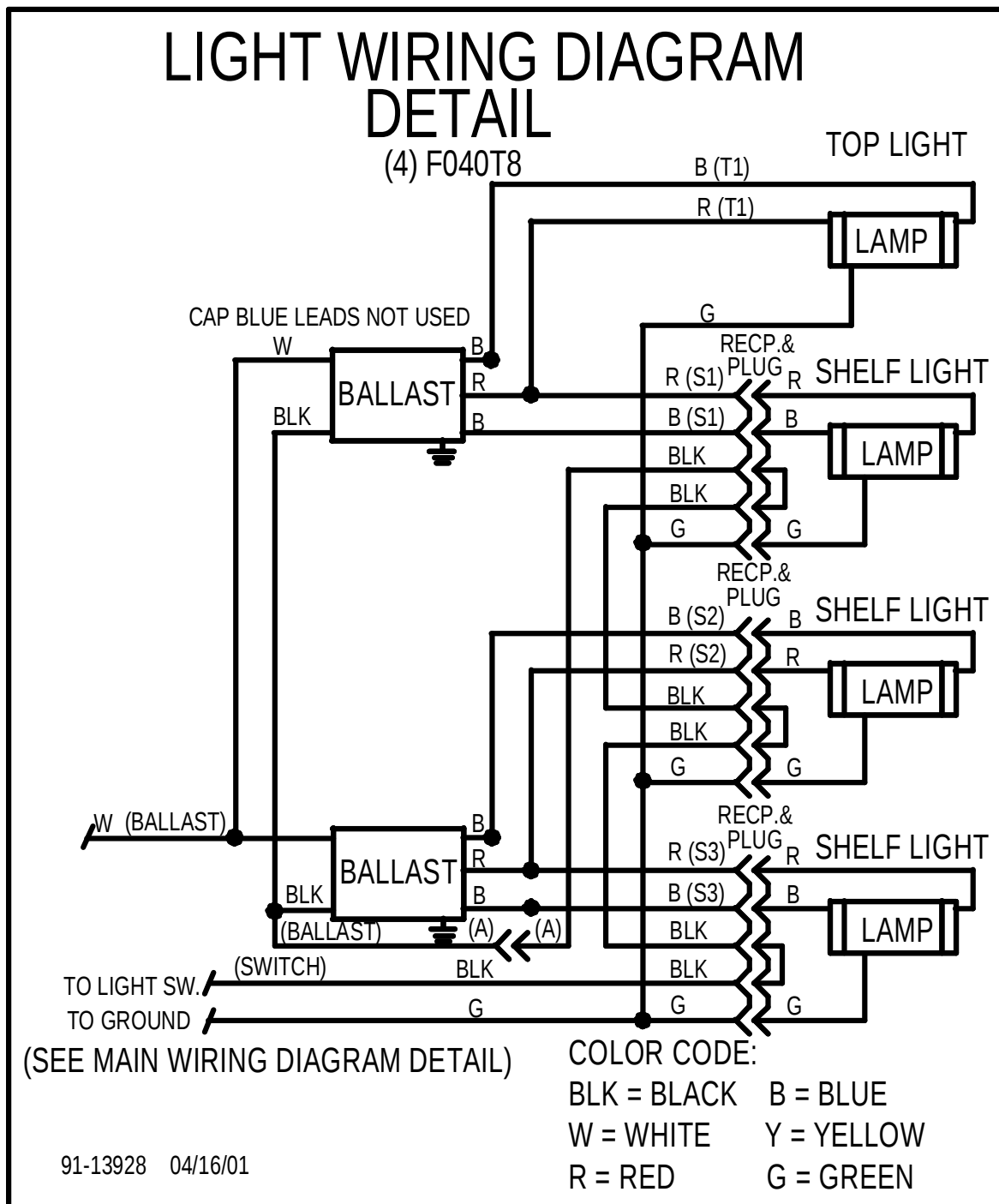
91-13926 04/16/01

All 3148, 3648, 5048, 5948, 5048DZ, 5948DZ, & 7748DZ models with standard shelf lights.

LIGHT WIRING DIAGRAM DETAIL



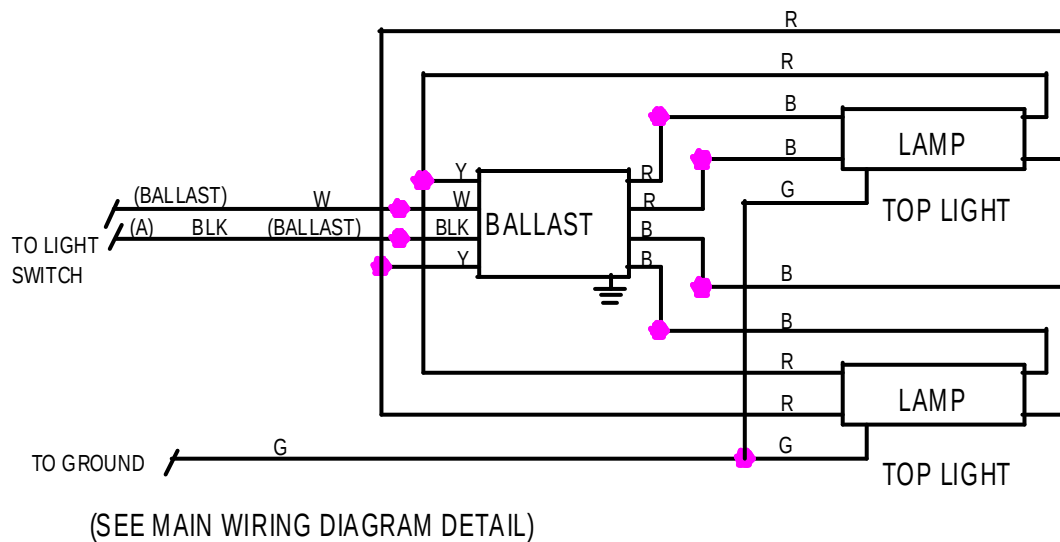
All 7748 models with standard shelf lights.



All 5042DZ & 5048DZ with optional no shelf lights. (Built before 5/08)

LIGHT WIRING DIAGRAM DETAIL

(2) F15T8, F18T8



COLOR CODE:

BLK = BLACK B = BLUE
W = WHITE Y = YELLOW
R = RED G = GREEN

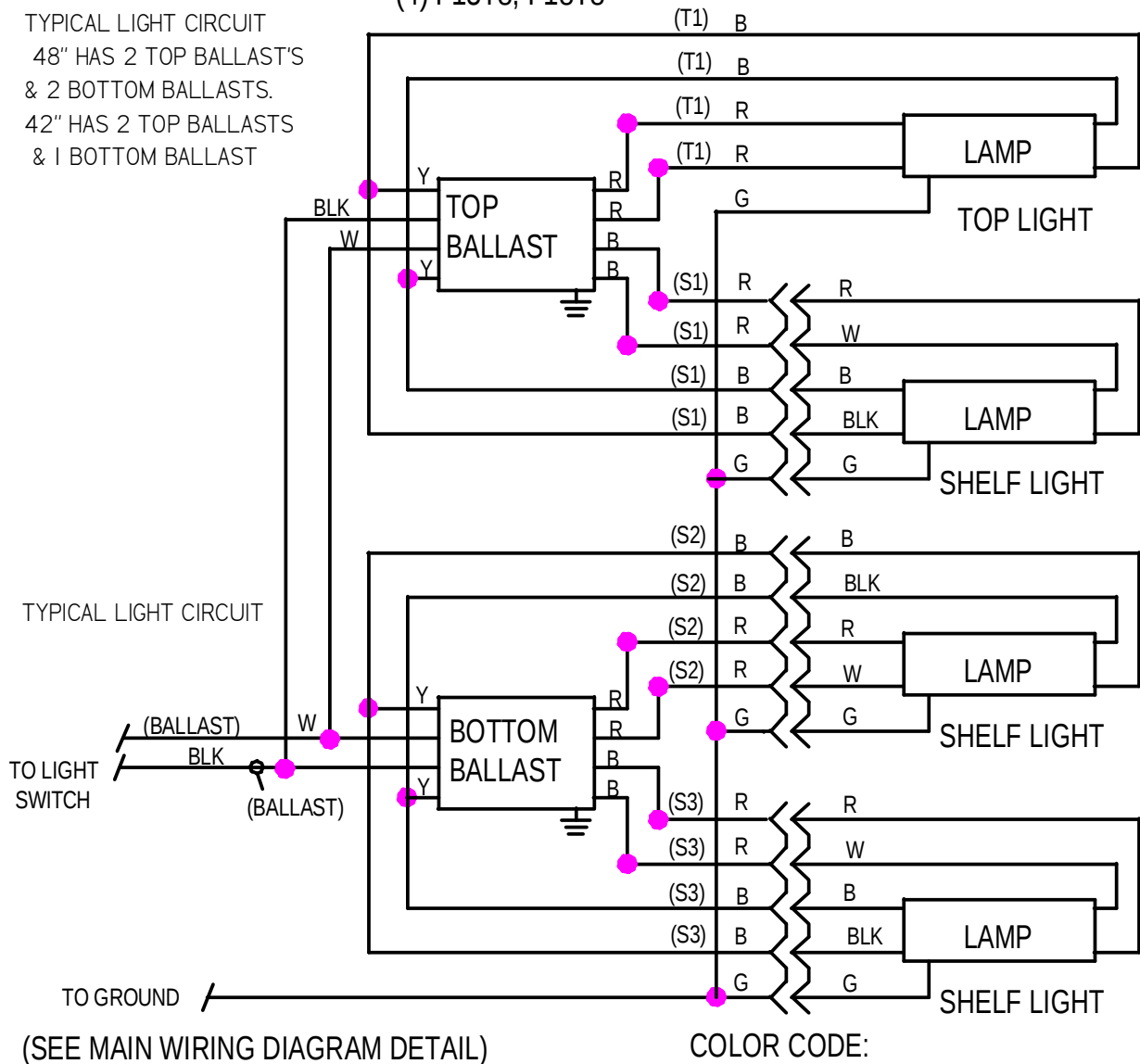
91-13929 07/1/98

All 5042DZ, & 5048DZ models with standard shelf lights. (Built before 5/08)

LIGHT WIRING DIAGRAM DETAIL

(4) F15T8, F18T8

TYPICAL LIGHT CIRCUIT
48" HAS 2 TOP BALLAST'S
& 2 BOTTOM BALLASTS.
42" HAS 2 TOP BALLASTS
& 1 BOTTOM BALLAST

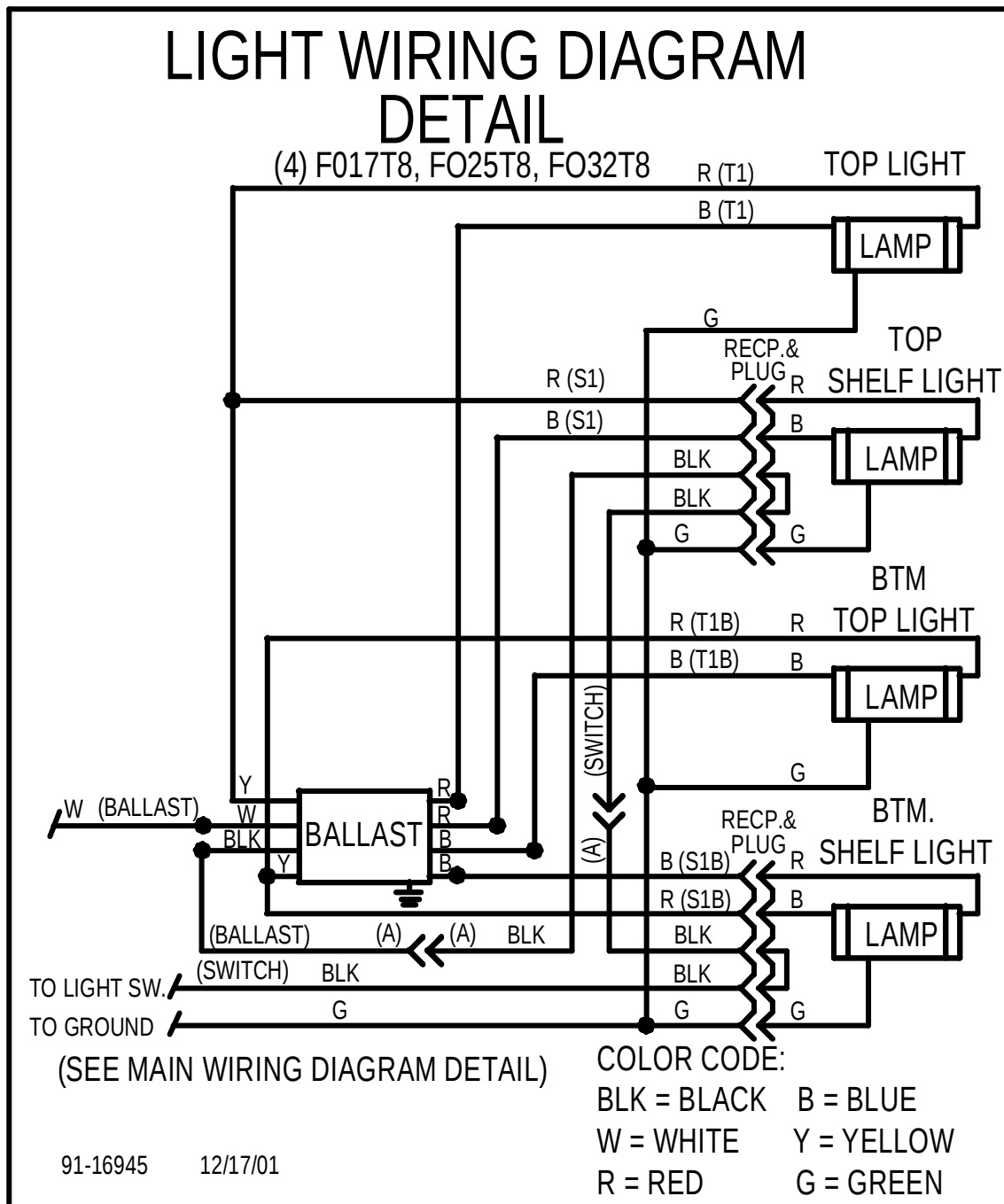


COLOR CODE:

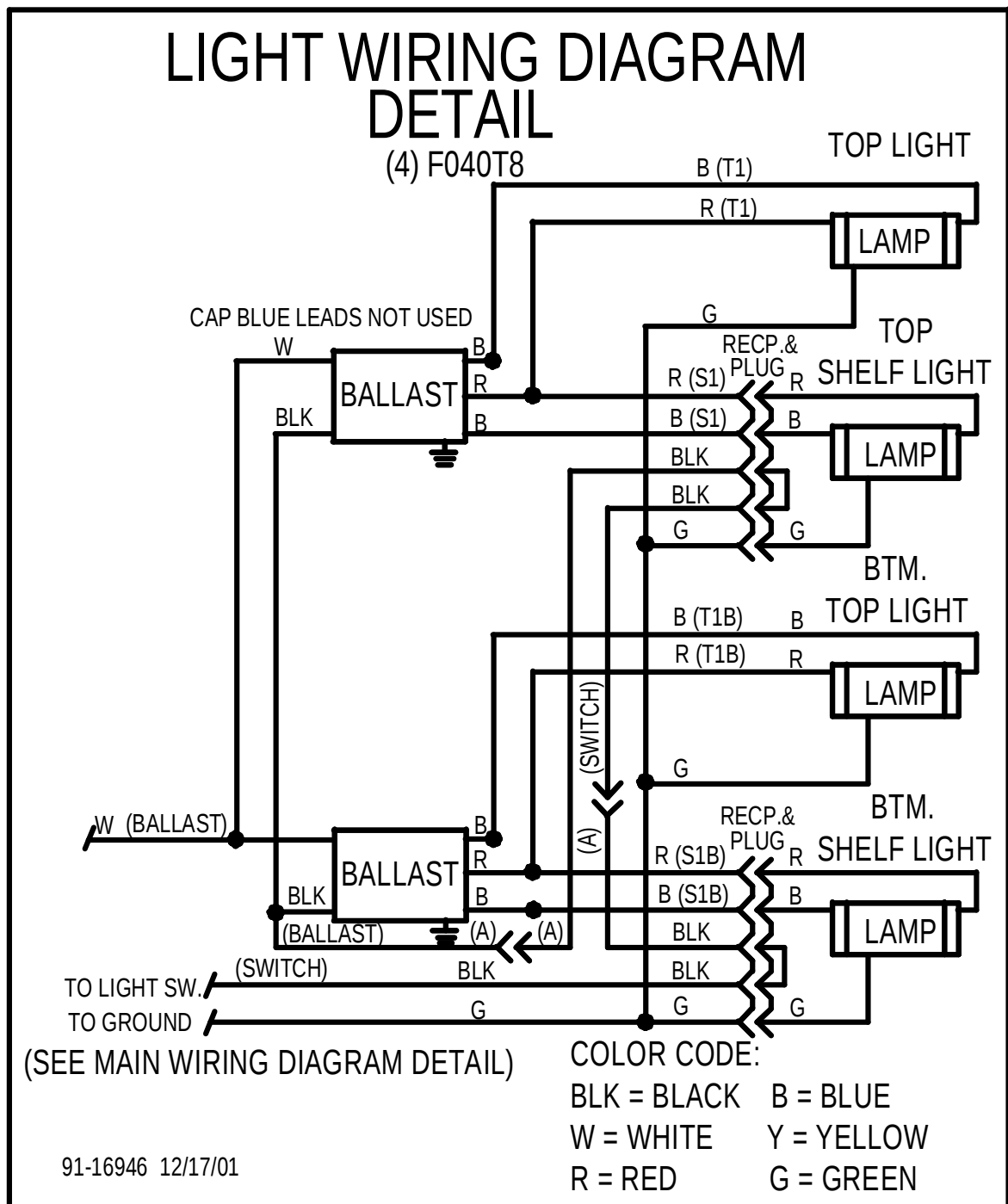
BLK = BLACK B = BLUE
W = WHITE Y = YELLOW
R = RED G = GREEN

91-13930 07/1/98

All 3660DZH, 5060DZH, & 5960DZH models with standard shelf lights.



All 7760DZH models with standard shelf lights.



REPLACEMENT PARTS

SELF CONTAINED REFRIGERATION SYSTEM (REFRIGERATED CASES ONLY)

REFRIGERATED MODELS		CONDENSING UNIT (ISC) 120V (ISC) 240V		EVAPORATOR COIL	EXPANSION VALVE	EVAPORATOR FAN MOTOR W/BLADE	EVAPORATOR FAN BLADE	FILTER DRIER	THERMOSTAT	HIGH PRESSURE CONTROL	CONDENSATE PAN ASSY	CONDENSATE HEATER	CONDENSER AIR FILTER
CGR3148	SGR3148	30-14406	30-15327	33-13355	32-12625	41-13363	72-12254	32-12626	32-15495	NA	SA-2134	40-13362	16-13647
CGR3642	SGR3642	30-14217	30-15327	33-13356	32-12625	41-13363	72-12254	32-12626	32-15495	32-11670	SA-2134	40-13362	16-13647
CGR3648	SGR3648	30-14217	30-15327	33-13356	32-12625	41-13363	72-12254	32-12626	32-15495	32-11670	SA-2134	40-13362	16-13647
CGR5042	SGR5042	30-14218	30-15328	33-13357	32-12625	41-13363	72-12254	32-12391	32-15495	NA	SA-2134	40-13362	16-13647
CGR5048	SGR5048	30-14218	30-15328	33-13357	32-12625	41-13363	72-12254	32-12391	32-15495	NA	SA-2134	40-13362	16-13647
CGR5942	SGR5942	30-14218	30-15328	33-13358	32-12625	41-13363	72-12254	32-12391	32-15495	NA	SA-2134	40-13362	16-13647
CGR5948	SGR5948	30-14218	30-15328	33-13358	32-12625	41-13363	72-12254	32-12391	32-15495	NA	SA-2134	40-13362	16-13647
CGR7742	SGR7742	30-14219	30-15329	33-13359	32-12625	41-13363	72-12254	32-12391	32-15495	NA	SA-2134	40-13362	16-13647
CGR7748	SGR7748	30-14219	30-15329	33-13359	32-12625	41-13363	72-12254	32-12391	32-15495	NA	SA-2134	40-13362	16-13647
CGR5042DZ	SGR5042DZ	30-14406	30-15327	33-13354	32-12625	41-13363	72-12254	32-12626	32-15495	NA	SA-2134	40-13362	16-13647
CGR5048DZ	SGR5048DZ	30-14406	30-15327	33-13354	32-12625	41-13363	72-12254	32-12626	32-15495	NA	SA-2134	40-13362	16-13647
CGR5942DZ	SGR5942DZ	30-14217	30-15327	33-13355	32-12625	41-13363	72-12254	32-12626	32-15495	32-11670	SA-2134	40-13362	16-13647
CGR5948DZ	SGR5948DZ	30-14217	30-15327	33-13355	32-12625	41-13363	72-12254	32-12626	32-15495	32-11670	SA-2134	40-13362	16-13647
CGR7742DZ	SGR7742DZ	30-14217	30-15327	33-13356	32-12625	41-13363	72-12254	32-12626	32-15495	32-11670	SA-2134	40-13362	16-13647
CGR7748DZ	SGR7748DZ	30-14217	30-15327	33-13356	32-12625	41-13363	72-12254	32-12626	32-15495	32-11670	SA-2134	40-13362	16-13647
CGR5048CD	SGR5048CD	30-14218	30-15328	33-13357	32-12625	41-13363	72-12254	32-12391	32-15495	NA	SA-2134	40-13362	16-13647
CGR5948CD	SGR5948CD	30-14218	30-15328	33-13358	32-12625	41-13363	72-12254	32-12391	32-15495	NA	SA-2134	40-13362	16-13647
CGR7748CD	SGR7748CD	30-14219	30-15329	33-13358	32-12625	41-13363	72-12254	32-12391	32-15495	NA	SA-2134	40-13362	16-13647
CGR3660DZH		30-14217	30-15327	33-13356	32-12625	41-13363	72-12254	32-12626	32-15495	32-11670	SA-2134	40-13362	16-13647
CGR5060DZH		30-14218	30-15328	33-13357	32-12625	41-13363	72-12254	32-12391	32-15495	NA	SA-2134	40-13362	16-13647
CGR5960DZH		30-14218	30-15328	33-13358	32-12625	41-13363	72-12254	32-12391	32-15495	NA	SA-2134	40-13362	16-13647
CGR7760DZH		30-14219	30-15329	33-13359	32-12625	41-13363	72-12254	32-12391	32-15495	NA	SA-2134	40-13362	16-13647

REMOTE REFRIGERATION SYSTEM (REFRIGERATED CASES ONLY)

REMOTE REFRIGERATED MODELS		EVAPORATOR COIL	EXPANSION VALVE	EVAPORATOR MOTOR W/BLADE	EVAPORATOR FAN BLADE	THERMO- STAT	CONDENSATE PAN ASS'Y	CONDENSATE HEATER	LIQUID LINE SOLENOID
CGR3148R	SGR3148R	33-13355	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR3642R	SGR3642R	33-13356	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR3648R	SGR3648R	33-13356	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR5042R	SGR5042R	33-13357	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR5048R	SGR5048R	33-13357	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR5942R	SGR5942R	33-13358	32-12625	41-13363	72-12254	32-15495	SA2134-I	40-13362	32-30141
CGR5948R	SGR5948R	33-13358	32-12625	41-13363	72-12254	32-15495	SA2134-I	40-13362	32-30141
CGR7742R	SGR7742R	33-13359	32-12625	41-13363	72-12254	32-15495	SA2134-I	40-13362	32-30141
CGR7748R	SGR7748R	33-13359	32-12625	41-13363	72-12254	32-15495	SA2134-I	40-13362	32-30141
CGR5042DZR	SGR5042DZR	33-13354	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR5048DZR	SGR5048DZR	33-13354	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR5942DZR	SGR5942DZR	33-13355	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR5948DZR	SGR5948DZR	33-13355	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR7742DZR	SGR7742DZR	33-13356	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR7748DZR	SGR7748DZR	33-13356	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR5048CDR	SGR5048CDR	33-13357	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR5948CDR	SGR5948CDR	33-13358	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR7748CDR	SGR7748CDR	33-13358	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR3660DZHR		33-13356	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR5060DZHR		33-13357	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR5960DZHR		33-13358	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141
CGR7760DZHR		33-13359	32-12625	41-13363	72-12254	32-15495	SA2134	40-13362	32-30141

ELECTRICAL COMPONENTS

MODELS (INCLUDING REMOTES)		LIGHT SWITCH	LIGHT BALLAST	LIGHT BULB	LIGHT BULB CAP	SHELF LIGHT CORD	SHELF LIGHT RECEPT. HARNESS	SHELF LENS LENS	TOP LIGHT WIRE HARNESS	TOP LIGHT LENSE	LIGHT WIRING DIAGRAM	SC MAIN WIRING DIAGRAM	REM. MAIN WIRING DIAGRAM
CGD3148	SGD3148	41-11066	39-12904	42-11519	42-15441	43-15888	43-13920	42-14138	43-15889	42-13642	91-13927	91-14145	N/A
CGR3148	SGR3148	41-11066	39-12904	42-11519	42-15441	43-15888	43-13920	42-14138	43-15889	42-13642	91-13927	91-14146	91-14147
CGD3642	SGD3642	41-11066	39-12903	42-11519	42-15441	43-15888	43-13921	42-14139	43-15889	42-13642	91-13925	91-14145	N/A
CGR3642	SGR3642	41-11066	39-12903	42-11519	42-15441	43-15888	43-13921	42-14139	43-15889	42-13642	91-13925	91-14146	91-14147
CGD3648	SGD3648	41-11066	39-12904	42-11519	42-15441	43-15888	43-13920	42-14139	43-15889	42-13642	91-13927	91-14145	N/A
CGR3648	SGR3648	41-11066	39-12904	42-11519	42-15441	43-15888	43-13920	42-14139	43-15889	42-13642	91-13927	91-14146	91-14147
CGR3660DZH		41-11066	39-12904	42-11519	42-15441	43-15888	43-13922	42-14139	43-15889	42-13642	91-16945	91-14146	91-14147
CGD5042	SGD5042	41-11066	39-12903	42-11069	42-15441	43-15888	43-13921	42-14141	43-15889	42-13643	91-13925	91-14145	N/A
CGR5042	SGR5042	41-11066	39-12903	42-11069	42-15441	43-15888	43-13921	42-14141	43-15889	42-13643	91-13925	91-14146	91-14147
CGR5042DZ	SGR5042DZ	41-11066	39-18568	42-30201	42-15441	43-15888	43-13921	42-14173	43-15889	42-13642	91-18638	91-14146	91-14147
CGR5042DZ	SGR5042DZ	before 5/08	39-30002	42-30201	42-15441	43-14259	43-13921	42-14163	43-14505	42-13641	91-13930	91-14146	91-14147
CGD5048	SGD5048	41-11066	39-12904	42-11069	42-15441	43-15888	43-13920	42-14141	43-15889	42-13643	91-13927	91-14145	N/A
CGR5048	SGR5048	41-11066	39-12904	42-11069	42-15441	43-15888	43-13920	42-14141	43-15889	42-13643	91-13927	91-14146	91-14147
CGR5048CD	SGR5048CD	41-11066	39-12902	42-11069	42-15441	43-15888	43-13922	42-14141	43-15889	42-13643	91-13924	91-14146	91-14147
CGR5048DZ	SGR5048DZ	41-11066	39-18568	42-30201	42-15441	43-15888	43-13920	42-14173	43-15889	42-13643	91-13927	91-14146	91-14147
CGR5048DZ	SGR5048DZ	before 5/08	39-30002	42-30201	42-15441	43-14259	43-13920	42-14163	43-14505	42-13641	91-13930	91-14146	91-14147
CGR5060DZH		41-11066	39-30002	42-30201	42-15441	43-14259	43-13922	42-14163	43-14505	42-13641	91-16945	91-14146	91-14147
CGD5942	SGD5942	41-11066	39-12903	42-11070	42-15441	43-15888	43-13921	42-14142	43-15889	42-13644	91-13925	91-14145	N/A
CGR5942	SGR5942	41-11066	39-12903	42-11070	42-15441	43-15888	43-13921	42-14142	43-15889	42-13644	91-13925	91-14146	91-14147
CGR5942DZ	SGR5942DZ	41-11066	39-12903	42-11519	42-15441	43-15888	43-13921	42-14173	43-15889	42-13642	91-13925	91-14146	91-14147
CGD5948	SGD5948	41-11066	39-12904	42-11070	42-15441	43-15888	43-13920	42-14142	43-15889	42-13644	91-13927	91-14145	N/A
CGR5948	SGR5948	41-11066	39-12904	42-11070	42-15441	43-15888	43-13920	42-14142	43-15889	42-13644	91-13927	91-14146	91-14147
CGR5948CD	SGR5948CD	41-11066	39-12902	42-11070	42-15441	43-15888	43-13922	42-14142	43-15889	42-13644	91-13924	91-14146	91-14147
CGR5948DZ	SGR5948DZ	41-11066	39-12904	42-11519	42-15441	43-15888	43-13920	42-14173	43-15889	42-13643	91-13927	91-14146	91-14147
CGR5960DZH		41-11066	39-12904	42-11519	42-15441	43-15888	43-13922	42-14173	43-15889	42-13643	91-16945	91-14146	91-14147
CGD7742	SGD7742	41-11066	39-12904	42-11071	42-15441	43-15888	43-13921	42-14164	43-15889	42-13645	91-13926	91-14145	N/A
CGR7742	SGR7742	41-11066	39-12904	42-11071	42-15441	43-15888	43-13921	42-14164	43-15889	42-13645	91-13926	91-14146	91-14147
CGR7742DZ	SGR7742DZ	41-11066	39-12903	42-11069	42-15441	43-15888	43-13921	42-14140	43-15889	42-13643	91-13925	91-14146	91-14147
CGD7748	SGD7748	41-11066	39-12903	42-11071	42-15441	43-15888	43-13920	42-14164	43-15889	42-13645	91-13928	91-14145	N/A
CGR7748	SGR7748	41-11066	39-12903	42-11071	42-15441	43-15888	43-13920	42-14164	43-15889	42-13645	91-13928	91-14146	91-14147
CGR7748CD	SGR7748CD	41-11066	39-12903	42-11071	42-15441	43-15888	43-13922	42-14164	43-15889	42-13645	91-13924	91-14146	91-14147
CGR7748DZ	SGR7748DZ	41-11066	39-12904	42-11069	42-15441	43-15888	43-13920	42-14140	43-15889	42-13643	91-13927	91-14146	91-14147
CGR7760DZH		41-11066	39-12904	42-11069	42-15441	43-15888	43-13922	42-14140	43-15889	42-13643	91-16946	91-14146	91-14147

GLASS COMPONENTS:

MODELS ALL	CURVED FRONT GLASS	END GLASS CLEAR	END GLASS REFL. L.H.	END GLASS REFL. R.H.	DZ CENTER MIRROR	MODELS ALL	FRONT GLASS	TOP GLASS	END GLASS CLEAR	END GLASS REFL. L.H.	END GLASS REFL. R.H.	DZ CENTER CLEAR	DZ CENTER MIRROR
CGD3148	50-I3396	5I-I3473	5I-I4404-L	5I-I4404-R	N/A	SGD3148	5I-I3427	5I-I3428	5I-I3444	5I-I4408-L	5I-I4408-R	N/A	N/A
CGR3148	50-I3386	5I-I3471	5I-I4402-L	5I-I4402-R	N/A	SGR3148	5I-I3405	5I-I3406	5I-I3422	5I-I3402-L	5I-I3402-R	N/A	N/A
CGD3642	50-I3392	5I-I3472	5I-I4403-L	5I-I4403-R	N/A	SGD3642	5I-I3425	5I-I3426	5I-I3443	5I-I4407-L	5I-I4407-R	N/A	N/A
CGR3642	50-I3382	5I-I3470	5I-I4401-L	5I-I4401-R	N/A	SGR3642	5I-I3403	5I-I3404	5I-I3421	5I-I3401-L	5I-I3401-R	N/A	N/A
CGD3648	50-I3397	5I-I3473	5I-I4404-L	5I-I4404-R	N/A	SGD3648	5I-I3429	5I-I3430	5I-I3444	5I-I4408-L	5I-I4408-R	N/A	N/A
CGR3648	50-I3387	5I-I3471	5I-I4402-L	5I-I4402-R	N/A	SGR3648	5I-I3407	5I-I3408	5I-I3422	5I-I3402-L	5I-I3402-R	N/A	N/A
CGD5042	50-I3393	5I-I3472	5I-I4403-L	5I-I4403-R	N/A	SGD5042	5I-I3431	5I-I3432	5I-I3443	5I-I4407-L	5I-I4407-R	N/A	N/A
CGR5042	50-I3383	5I-I3470	5I-I4401-L	5I-I4401-R	N/A	SGR5042	5I-I3409	5I-I3410	5I-I3421	5I-I3401-L	5I-I3401-R	N/A	N/A
CGR5042DZ	50-I3383	5I-I3470	5I-I4401-L	5I-I4401-R	5I-I3423	SGR5042DZ	5I-I3409	5I-I3410	5I-I3421	5I-I3401-L	5I-I3401-R	5I-I4287	5I-I4289
CGD5048	50-I3398	5I-I3473	5I-I4404-L	5I-I4404-R	N/A	SGD5048	5I-I3433	5I-I3434	5I-I3444	5I-I4408-L	5I-I4408-R	N/A	N/A
CGR5048	50-I3388	5I-I3471	5I-I4402-L	5I-I4402-R	N/A	SGR5048	5I-I3411	5I-I3412	5I-I3422	5I-I3402-L	5I-I3402-R	N/A	N/A
CGR5048CD	50-I3388	5I-I3471	5I-I4402-L	5I-I4402-R	N/A	SGR5048CD	5I-I3411	5I-I3412	5I-I3422	5I-I3402-L	5I-I3402-R	N/A	N/A
CGR5048DZ	50-I3388	5I-I3471	5I-I4402-L	5I-I4402-R	5I-I3424	SGR5048DZ	5I-I3411	5I-I3412	5I-I3422	5I-I3402-L	5I-I3402-R	5I-I4288	5I-I4290
CGD5942	50-I3394	5I-I3472	5I-I4403-L	5I-I4403-R	N/A	SGD5942	5I-I3435	5I-I3436	5I-I3443	5I-I4407-L	5I-I4407-R	N/A	N/A
CGR5942	50-I3384	5I-I3470	5I-I4401-L	5I-I4401-R	N/A	SGR5942	5I-I3413	5I-I3414	5I-I3421	5I-I3401-L	5I-I3401-R	N/A	N/A
CGR5942DZ	50-I3384	5I-I3470	5I-I4401-L	5I-I4401-R	5I-I3423	SGR5942DZ	5I-I3413	5I-I3414	5I-I3421	5I-I3401-L	5I-I3401-R	5I-I4287	5I-I4289
CGD5948	50-I3399	5I-I3473	5I-I4404-L	5I-I4404-R	N/A	SGD5948	5I-I3437	5I-I3438	5I-I3444	5I-I4408-L	5I-I4408-R	N/A	N/A
CGR5948	50-I3389	5I-I3471	5I-I4402-L	5I-I4402-R	N/A	SGR5948	5I-I3415	5I-I3416	5I-I3422	5I-I3402-L	5I-I3402-R	N/A	N/A
CGR5948CD	50-I3389	5I-I3471	5I-I4402-L	5I-I4402-R	N/A	SGR5948CD	5I-I3415	5I-I3416	5I-I3422	5I-I3402-L	5I-I3402-R	N/A	N/A
CGR5948DZ	50-I3389	5I-I3471	5I-I4402-L	5I-I4402-R	5I-I3424	SGR5948DZ	5I-I3415	5I-I3416	5I-I3422	5I-I3402-L	5I-I3402-R	5I-I4288	5I-I4290
CGD7742	50-I3395	5I-I3472	5I-I4403-L	5I-I4403-R	N/A	SGD7742	5I-I3439	5I-I3440	5I-I3443	5I-I4407-L	5I-I4407-R	N/A	N/A
CGR7742	50-I3385	5I-I3470	5I-I4401-L	5I-I4401-R	N/A	SGR7742	5I-I3417	5I-I3418	5I-I3421	5I-I3401-L	5I-I3401-R	N/A	N/A
CGR7742DZ	50-I3385	5I-I3470	5I-I4401-L	5I-I4401-R	5I-I3423	SGR7742DZ	5I-I3417	5I-I3418	5I-I3421	5I-I3401-L	5I-I3401-R	5I-I4287	5I-I4289
CGD7748	50-I3400	5I-I3473	5I-I4404-L	5I-I4404-R	N/A	SGD7748	5I-I3441	5I-I3442	5I-I3444	5I-I4408-L	5I-I4408-R	N/A	N/A
CGR7748	50-I3390	5I-I3471	5I-I4402-L	5I-I4402-R	N/A	SGR7748	5I-I3419	5I-I3420	5I-I3422	5I-I3402-L	5I-I3402-R	N/A	N/A
CGR7748CD	50-I3390	5I-I3471	5I-I4402-L	5I-I4402-R	N/A	SGR7748CD	5I-I3419	5I-I3420	5I-I3422	5I-I3402-L	5I-I3402-R	N/A	N/A
CGR7748DZ	50-I3390	5I-I3471	5I-I4402-L	5I-I4402-R	5I-I3424	SGR7748DZ	5I-I3419	5I-I3420	5I-I3422	5I-I3402-L	5I-I3402-R	5I-I4288	5I-I4290
CGR3660DZH	50-I6927	5I-I6927	5I-I6952-L	5I-I6952-R	N/A	BOTTOM	5I-I6920	N/A	5I-I6948	5I-I6953-L	5I-I6953-R	N/A	N/A
CGR5060DZH	50-I6928	5I-I6927	5I-I6952-L	5I-I6952-R	N/A	BOTTOM	5I-I6921	N/A	5I-I6948	5I-I6953-L	5I-I6953-R	N/A	N/A
CGR5660DZH	50-I6929	5I-I6927	5I-I6952-L	5I-I6952-R	N/A	BOTTOM	5I-I6922	N/A	5I-I6948	5I-I6953-L	5I-I6953-R	N/A	N/A
CGR7760DZH	50-I6930	5I-I6927	5I-I6952-L	5I-I6952-R	N/A	BOTTOM	5I-I6923	N/A	5I-I6948	5I-I6953-L	5I-I6953-R	N/A	N/A

DOOR & SHELF COMPONENTS:

MODELS (INCLUDING REMOTE)		DOOR LEFT CLEAR	DOOR RIGHT CLEAR	DOOR LEFT REFLECTIVE	DOOR RIGHT REFLECTIVE	WIRE SHELF WHITE	WIRE SHELF ZINC	WIRE SHELF CLIP	GLASS SHELF	GLASS SHELF HOLDER	STAINLESS SHELF	SHELF BRACKET
CGD3148	SGD3148	51-14477	51-14477	51-14478	51-14478	63-13812	63-14303	81-30618	52-14900	SA2414	N/A	SA2964-I
CGR3148	SGR3148	53-14521	SAME	53-14522	SAME	63-13812	63-14303	81-30618	52-14900	SA2414	N/A	SA2964-I
CGD3642	SGD3642	51-14479	51-14479	51-14480	51-14480	63-13813	63-14304	81-30618	52-14902	SA2414	N/A	SA2964-I
CGR3642	SGR3642	53-13666	53-13667	53-13682	53-13683	63-13813	63-14304	81-30618	52-14902	SA2414	N/A	SA2964-I
CGD3648	SGD3648	51-14481	51-14481	51-14482	51-14482	63-13813	63-14304	81-30618	52-14902	SA2414	N/A	SA2964-I
CGR3648	SGR3648	53-13674	53-13675	53-13690	53-13691	63-13813	63-14304	81-30618	52-14902	SA2414	N/A	SA2964-I
CGD5042	SGD5042	53-13668	53-13669	53-13684	53-13685	63-13815	63-14606	81-30618	52-14899	SA2414	N/A	SA2964-I
CGR5042	SGR5042	53-13668	53-13669	53-13684	53-13685	63-13815	63-14606	81-30618	52-14899	SA2414	N/A	SA2964-I
CGR5042DZ	SGR5042DZ	53-13668	53-13669	53-13684	53-13685	63-13811	63-14302	81-30618	52-14898	SA2414	N/A	SA2964-I
CGD5048	SGD5048	53-13676	53-13677	53-13692	53-13693	63-13815	63-14606	81-30618	52-14899	SA2414	N/A	SA2964-I
CGR5048	SGR5048	53-13676	53-13677	53-13692	53-13693	63-13815	63-14606	81-30618	52-14899	SA2414	N/A	SA2964-I
CGR5048CD	SGR5048CD	53-13676	53-13677	53-13692	53-13693	N/A	N/A	N/A	N/A	N/A	MII558-I	67-14293
CGR5048DZ	SGR5048DZ	53-13676	53-13677	53-13692	53-13693	63-13811	63-14302	81-30618	52-14898	SA2414	N/A	SA2964-I
CGD5942	SGD5942	53-13670	53-13671	53-13686	53-13687	63-13816	63-14307	81-30618	52-14901	SA2414	N/A	SA2964-I
CGR5942	SGR5942	53-13670	53-13671	53-13686	53-13687	63-13816	63-14307	81-30618	52-14901	SA2414	N/A	SA2964-I
CGR5942DZ	SGR5942DZ	53-13670	53-13671	53-13686	53-13687	63-13812	63-14303	81-30618	52-14900	SA2414	N/A	SA2964-I
CGD5948	SGD5948	53-13678	53-13679	53-13694	53-13695	63-13816	63-14307	81-30618	52-14901	SA2414	N/A	SA2964-I
CGR5948	SGR5948	53-13678	53-13679	53-13694	53-13695	63-13816	63-14307	81-30618	52-14901	SA2414	N/A	SA2964-I
CGR5948CD	SGR5948CD	53-13678	53-13679	53-13694	53-13695	N/A	N/A	N/A	N/A	N/A	MII558-2	67-14293
CGR5948DZ	SGR5948DZ	53-13678	53-13679	53-13694	53-13695	63-13812	63-14303	81-30618	52-14900	SA2414	N/A	SA2964-I
CGD7742	SGD7742	53-13672	53-13673	53-13688	53-13689	63-13817	63-14308	81-30618	52-14904	SA2414	N/A	SA2964-I
CGR7742	SGR7742	53-13672	53-13673	53-13688	53-13689	63-13817	63-14308	81-30618	52-14904	SA2414	N/A	SA2964-I
CGR7742DZ	SGR7742DZ	53-13672	53-13673	53-13688	53-13689	63-13814	63-14305	81-30618	52-14903	SA2414	N/A	SA2964-I
CGD7748	SGD7748	53-13680	53-13681	53-13696	53-13697	63-13817	63-14308	81-30618	52-14904	SA2414	N/A	SA2964-I
CGR7748	SGR7748	53-13680	53-13681	53-13696	53-13697	63-13817	63-14308	81-30618	52-14904	SA2414	N/A	SA2964-I
CGR7748CD	SGR7748CD	53-13680	53-13681	53-13696	53-13697	N/A	N/A	N/A	N/A	N/A	MII558-3	67-14293
CGR7748DZ	SGR7748DZ	53-13680	53-13681	53-13696	53-13697	63-13814	63-14305	81-30618	52-14903	SA2414	N/A	SA2964-I
CGR3660DZH		53-16934	53-16938	53-16946	53-16950	63-13813	63-14304	81-30618	52-14902	SA2414	N/A	SA2964-I
CGR5060DZH		53-16935	53-16939	53-16947	53-16951	63-13815	63-14606	81-30618	52-14899	SA2414	N/A	SA2964-I
CGR5960DZH		53-16936	53-16940	53-16948	53-16952	63-13816	63-14307	81-30618	52-14901	SA2414	N/A	SA2964-I
CGR7760DZH		53-16937	53-16941	53-16949	53-16953	63-13817	63-14308	81-30618	52-14904	SA2414	N/A	SA2964-I

