

E-1257  
11-08



# CGHIS1-2, CGHIS3-2, CGHIS4-2

**Self-Contained & Remote Models**

## **INSTALLATION & OPERATION INSTRUCTIONS**



**KEEP THIS MANUAL FOR FUTURE REFERENCE**

Engineering and technical data are subject to change without notice.

**FEDERAL INDUSTRIES**  
Toll Free 1(800) 256-4206

**215 Federal Avenue**  
WI Phone (608) 424-3331

**Belleville, WI 53508**  
Fax: (608) 424-3234

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# INTRODUCTION

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Thank you for purchasing a Federal Industries display case. This manual contains important instructions for installing and servicing the Refrigerated Curved Glass Hi-Style 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 electrical 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:

**CUSTOMER SERVICE DEPARTMENT**  
**Federal Industries**  
**215 Federal Avenue**  
**Belleville WI 53508**  
**Toll Free (800) 356-4206 / WI Phone (608) 424-3331**

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# WARNING LABELS & SAFETY INSTRUCTIONS

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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 practices.



## 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 warnings 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.

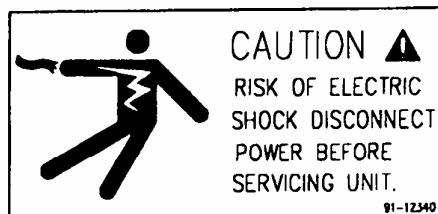
**CAUTION:** Minor injury or damage to your case can occur if you ignore the message.

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

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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.

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

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# INTRODUCTION

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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  
Toll Free (800) 356-4206  
WI Phone (608) 424-3331  
geninfo@federalind.com**

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# PRE-INSTALLATION PROCEDURES

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## **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 or 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.

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# INSTALLATION INSTRUCTIONS


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## **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 is 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 curved 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.**

Move the case as near as possible to the final location before removing it from the shipping skid.

Remove the 4 bolts that secure the case to the skid. The front panel will have to be removed to remove the 2 front bolts.

## **Removing the Packaging Material**

Remove the shipping tags that secure the doors, tilt-out front glass, and drawers. If it is necessary to remove tape residue from plastic materials, use cleaning compounds recommended in the cleaning section of this manual.

## **Leveling the Case**

The case must be level for proper drainage of defrost condensate to the condensate evaporator reservoir.

The case must be level for the front glass and side glass to seal properly. The leveled case can be sealed to the floor using an NSF Listed sealant.

## **Grill Removal**



**DANGER: Electrical 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 light ballasts, thermostat, and compressor service ports. Normally, it is not necessary to remove this panel to install the case.

## **Front Panel & Package Shelf Removal**

The flat front panel attaches to the case using two brackets that fit into pockets on the base front. To remove the panel, slide it upward to get the mounting brackets out of the pockets.

The same procedure is used to remove the front package shelf. The end panels must be on the case before installing either the flat front or package shelf.

## **End Panel Removal**

The flat front or package shelf must be removed before removing the end panels. To remove the end panel used with the flat front, the front mounting bracket has to be removed. Then slide the panel forward and lift it off the case.

To remove the end panel used with the package shelf, slide the panel forward and lift it off the case.

## **Condensate Evaporator**

The condensate drains to a plastic pan under the compressor where it is evaporated. Plumbing connections are not required.

## **Cleaning**

For initial setup, clean the case as outlined in the Weekly Cleaning Section.

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# ELECTRICAL INFORMATION & GROUNDING

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## THIS CASE MUST BE GROUNDED



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

All of the case electrical connections must be performed only by a licensed electrician.

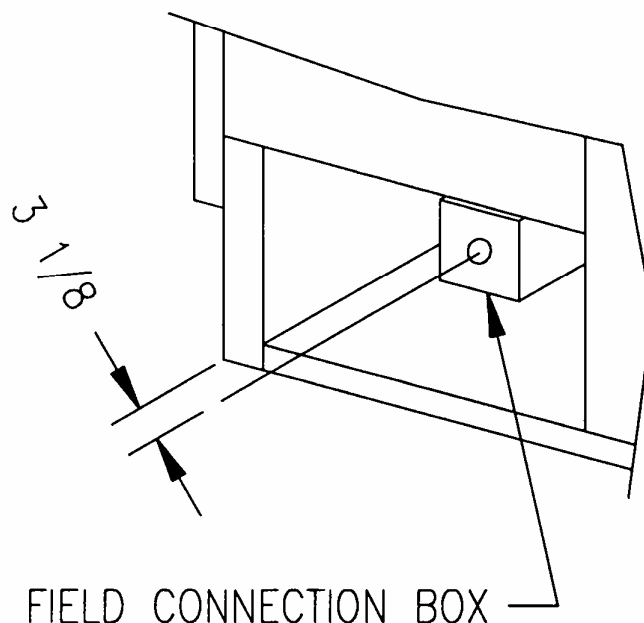
All electrical wiring hookups must be done in accordance with all applicable local, regional, or national standards.

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 power source. See the electrical data plate located at next to the temperature control for proper circuit size and wire ampacity.

The electrical connection box is accessible from the rear of the case. See diagram below for location of the field wiring connection box.





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# OPERATING INSTRUCTIONS

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## **Initial Start-Up**

After all the checks outlined in the installation section of this manual have been made, the case is ready to be put into service. On self-contained models, the service valves on the refrigeration system are backseated when the unit leaves the factory.

## **Controls**

### ***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 case temperature by cycling the compressor/condensing unit. It has an "off" position and numbered positions 1 through 9. The coldest setting is 9. Set this control at the smallest number while maintaining desired case temperature.

### ***High Pressure Safety Control***

This is a safety device. It is nonadjustable and will shut off the compressor if system pressure exceeds 385# psig.

## **Light Replacement**

The light fixtures use a spring loaded socket on one end. To remove a light, push the bulb toward the spring-loaded socket until the opposite end drops out of the socket.

The bulbs are furnished with plastic safety light shields. Make certain the light shields are always in place to safeguard against bulb breakage.

When replacing lights, use direct equivalents to the original bulbs.

## **Shelves**

There are three tiers of fixed glass shelves. There are slots in the shelf bracket for locating the rear shelf support bars.

The bottom shelf support bar should be in the back set of shelf bracket slots. The front set of slots is used for Model CGHIS-3 only.

For Model CGHIS-3, the bottom shelf should be moved forward so the front edge is 1/8" to 1/4" away from the front glass. For Model CGHIS-3 there is also a stainless steel cover between the rear shelf support bar and the back wall of the display area. The stainless steel cover sets on the bottom shelf brackets.

Make sure there are four rubber pads on each shelf support and light housing. The glass shelves rest on the rubber pads. There are two glass shelves for each tier.

## **Tilt-Out Front Glass**

The front glass tilts out for easy cleaning of the case interior and inner glass pane. Spring-loaded folding arms assist in opening the glass and holds the glass in the open position.



**CAUTION: Do not push the front glass to close it. Always hold onto the top edge when closing the front glass.**

## **Air Grill Removal**

The front air grill in the display area is removable for cleaning.

To remove the air grill, open the front glass and slide the drawers out at least two inches. Pick up the grill on either end and lift it out of the retainer clip and off of the locating studs.

## **Doors**

The doors can be removed by lifting the door up until the bottom clears the bottom 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.

## **Placing Product into Case**

Do not overhang glass shelves with product or display pans. Overhanging the shelves will block the refrigerated air flow and could cause product loss.

Do not block the slots along the front air grill or along the drawer backs.

When using rear service pullout drawers, do not place excessive downward pressure on drawers. Make sure that drawers slide freely and seal snugly when closed.

Do not open service drawers unnecessarily.

Load case interior with only pre-chilled product.

## **Refrigeration Pull-Out Assembly**

The entire refrigeration system pulls-out of the lower portion of unit for easy service. The assembly side flanges are attached to the base with four screws.



**NOTICE:** If the assembly is pulled out, make sure it is pushed all the way in or the case may not function properly.

The white gasket around the evaporator compartment must be compressed against the display floor underside when the assembly is in properly. If it is not, cooling and air flow problems may occur.

## **Periodic Maintenance**

### *Cleaning Condenser Coil*

Disconnect power to the unit.

Remove the rear grill and vacuum the front surface of the condenser coil. This should be done every one to two months as necessary.

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# CLEANING INSTRUCTIONS

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## 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 temperature control and remove all product from case. Allow sufficient time for the unit to reach room temperature before proceeding with cleaning.

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

1. Clean all foreign materials from the door opening.
2. Wipe complete interior of case using a damp cloth.
3. The glass can be cleaned with common window cleaners. The remaining exterior surface should be wiped down using any ammoniated cleansers or soapy warm water.

Note: Detergents are not recommended.



**CAUTION:** Do not use alcohol based or solvent cleaners on the front or side glass.

## 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 temperature control and remove all product from case. Allow sufficient time for the unit to reach room temperature before proceeding with cleaning.

## **Interior Cleaning**

1. Remove rear doors from track by lifting door upward until the bottom of the door clears the lower door track and then outward. Remove the inner door in the same manner.
2. Remove all shelves from the case by sliding them rearward and through the door opening.
3. Remove the shelf support bars by lifting one end and then the other off the shelf hanger then through the door opening.
4. Slide the rear service drawers to the open position.
5. Open the tilt-out front glass.
6. Remove the front air grill by picking up one end and lifting the grill out of the retainer strip and off the locating studs.
7. 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.*

8. Clean all shelves, shelf support bars, and the front air grill using warm soapy water and a brush. Rinse thoroughly and allow to dry.
9. 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.
10. Clean both sides of the doors, end glass, and interior of the front glass using any common window cleaner.



**CAUTION:** Do not use alcohol based or solvent cleaners on the front or side glass.

## **Exterior Cleaning**

1. Clean the front glass using any common window cleaner.



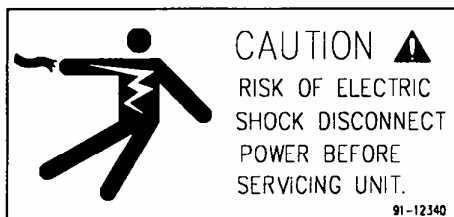
**CAUTION:** Do not use alcohol based or solvent cleaners on the front or side glass.

2. The exterior surfaces should be wiped down using any ammoniated cleansers or warm soapy water.

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# SERVICE INFORMATION

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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**  
**Toll Free (800) 356-4206**  
**WI Phone (608) 424-3331**  
**geninfo@federalind.com**

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## **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 (cont'd)**

### ***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(s) are properly seated in sockets.

### ***Case Temperature Too Warm***

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

Be sure front glass is closed tightly and back doors are closed.

Be sure rear service drawers are sealed and are not ajar.

Check for blocked or dirty condenser coil.

Check cold air flow. Lack of adequate cold air flow 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 build up if the case is operated with the door open or service drawers ajar.

Check that there is a tight seal between the refrigeration system pullout assembly and the display floor underside.

### ***Glass Fogging***

Check ambient - Case is designed to operate in a maximum environment of 75°F and 55% relative humidity conditions.

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

## **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 in order to reduce the possibility of hydrochlorofluorocarbons (HCFC's) from being released into the atmosphere. The release of HCFC's into the atmosphere is a potential source of ozone depletion.

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.

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## **SALE & DISPOSAL**

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### **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 reduce the possibility of HCFC's from being released into the atmosphere. The release of HCFC's into the atmosphere is a potential source of ozone depletion.



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# REFRIGERATION & ELECTRICAL DATA

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	CGHIS1-2	CGHIS3-2	CGHIS4-2
Refrigerant (R-134A)	20 oz.	20 oz.	20 oz.

ALL MODELS ARE 115 VOLTS, 1 PHASE, 60 HERTZ

	AMPS	AMPS	AMPS
Compressor			
RLA	8.8	8.8	8.8
LRA	58.8	58.8	58.8
Condenser Fan Motor	0.6	0.6	0.6
Evaporator	.3 ea.	.3 ea.	.3 ea.
Lights	.6	.6	.6
Condensate Evaporator	1.3	1.3	1.3

Refer to the data plate attached to the rear of the case for Maximum Fuse Size and Minimum Circuit Ampacity.

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# REFRIGERATION & ELECTRICAL DATA

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	CGHIS-1R	CGHIS-3R	CGHIS-4R
Refrigerant	R-134A	R-134A	R-134A

ALL MODELS ARE 115 VOLTS, 1 PHASE, 60 HERTZ

	AMPS	AMPS	AMPS
Evaporator Fan Motor (2)	.3 ea.	.3 ea.	.3 ea.
Lamp Circuit	0.6	0.6	0.6
Condensate Evaporator	1.3	1.3	1.3

Refer to the data plate attached to the rear of the case for Maximum Fuse Size and Minimum Circuit Ampacity.

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# REPLACEMENT PARTS

## MODEL CGHIS-1, CGHIS-3, CGHIS-4

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Part Description	Part Number
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### Refrigeration System

Condensing Unit (Self-Contained Only)	30-15704
Compressor (Replacement)	30-15036
Evaporator Coil	33-50050
Expansion Valve	32-12625
Evaporator Fan Motor	41-11628
Evaporator Fan Blade	72-11932
Filter Drier	32-12626
Thermostat	32-15495
Thermostat Knob	72-11113
High Pressure Safety Cut-Out Switch	32-11670

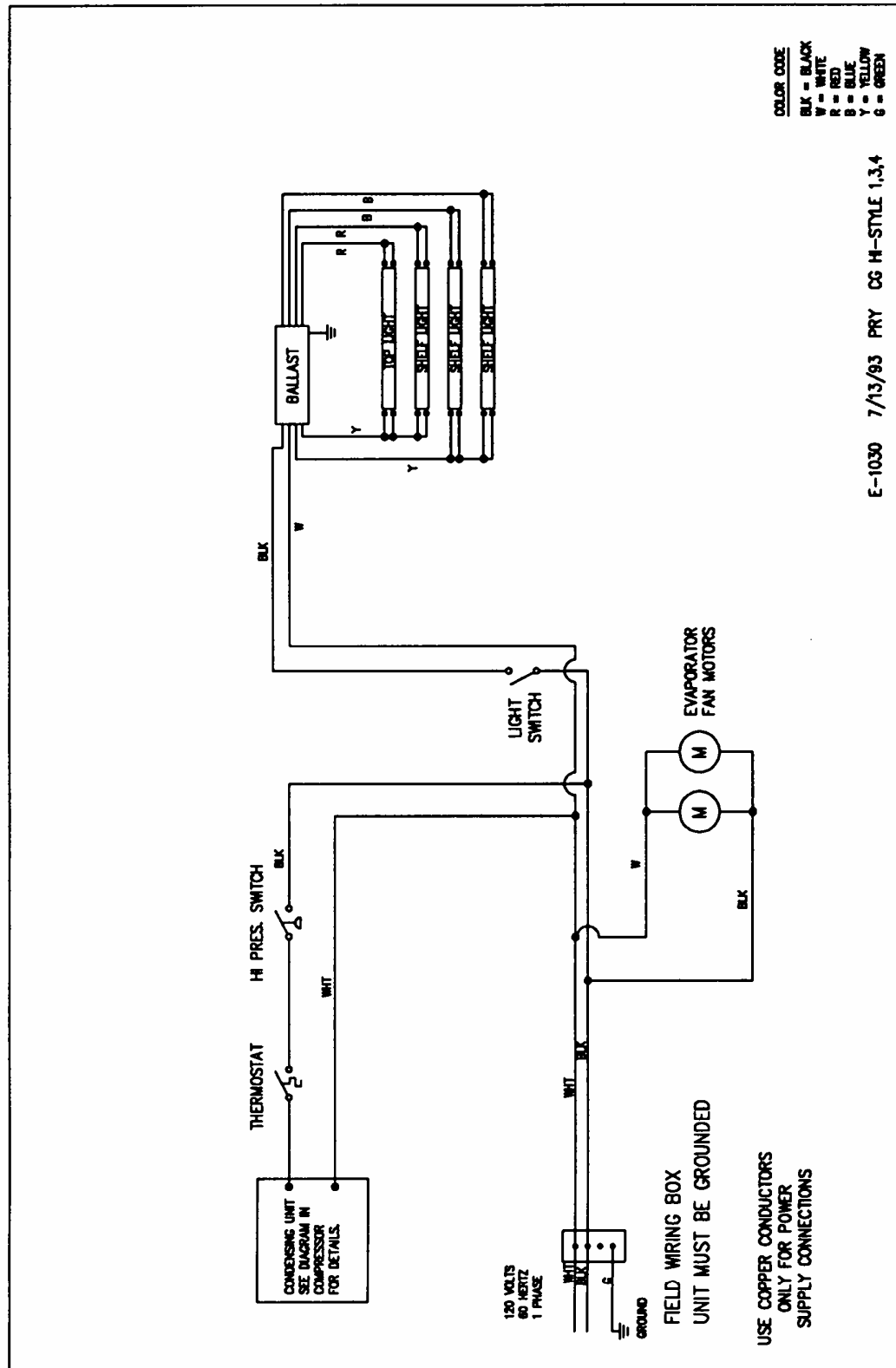
### Electrical Components

Light Switch	41-11066
Ballast	39-12904
Light Bulb	42-11070
Light Socket (Spring Loaded)	42-10833
Light Socket (Fixed)	41-11628

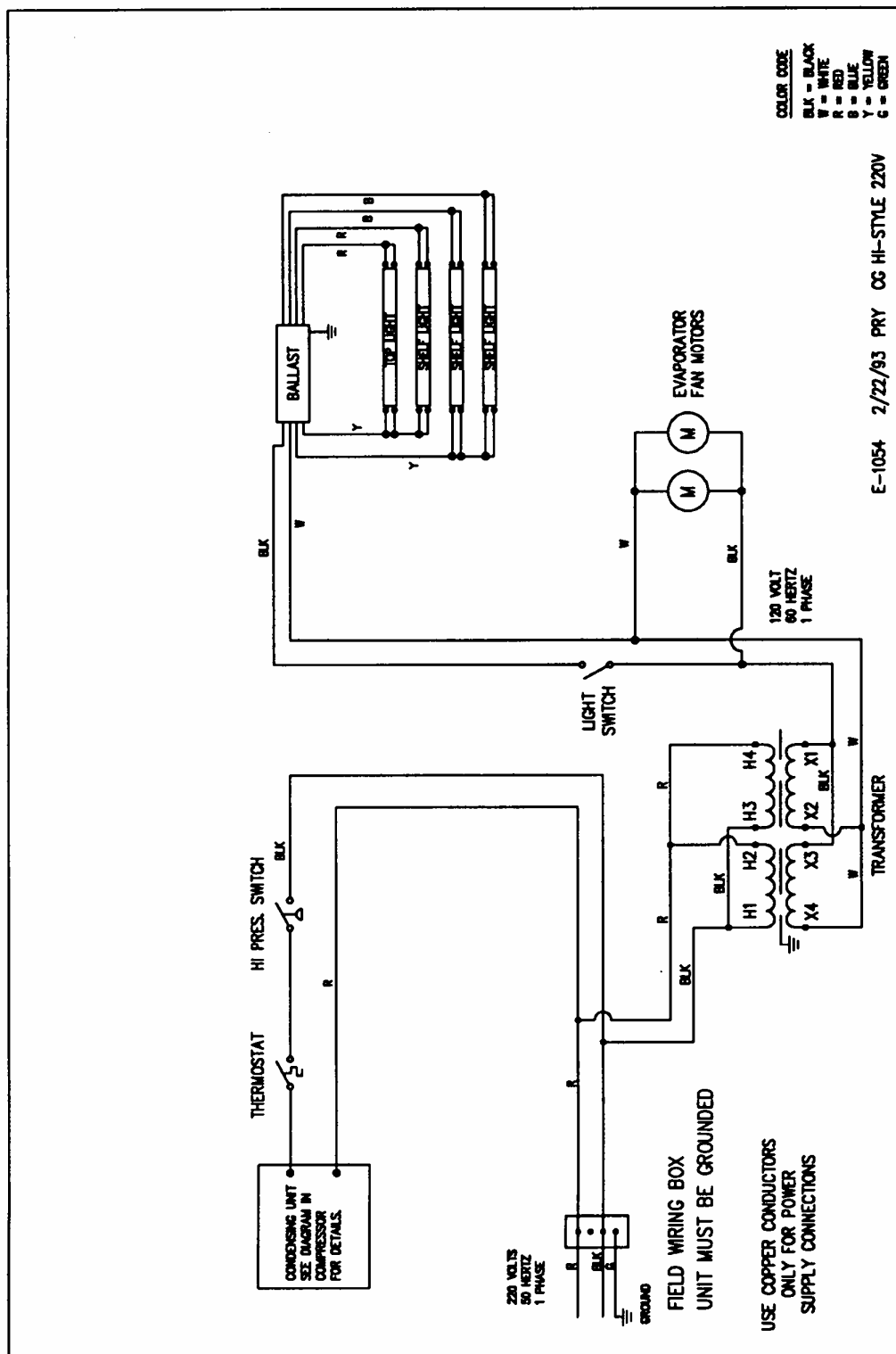
### Misc. Components

Thermometer	41-34006
Glass Shelf Top	56-12282
Glass Shelf Middle	52-12283
Glass Shelf Bottom	52-12284
Light Shield	42-30212
Glass End Clear	50-18429
Reflective End R.H.	55-18459-R
Reflective End L.H.	55-18459-L
Front Glass	SA4622
Door L.H. Clear	SA-0228-2
Door R.H. Clear	SA-0228-1
Door L.H. Reflective	SA-1571
Door R.H. Reflective	SA-1570
Decal – Electrical Hazard	91-10743
Decal – Slip Hazard	91-11175
Drawer Seal	56-11967
Front Glass Spring L.H.	66-12394
Front Glass Spring R.H.	66-12393

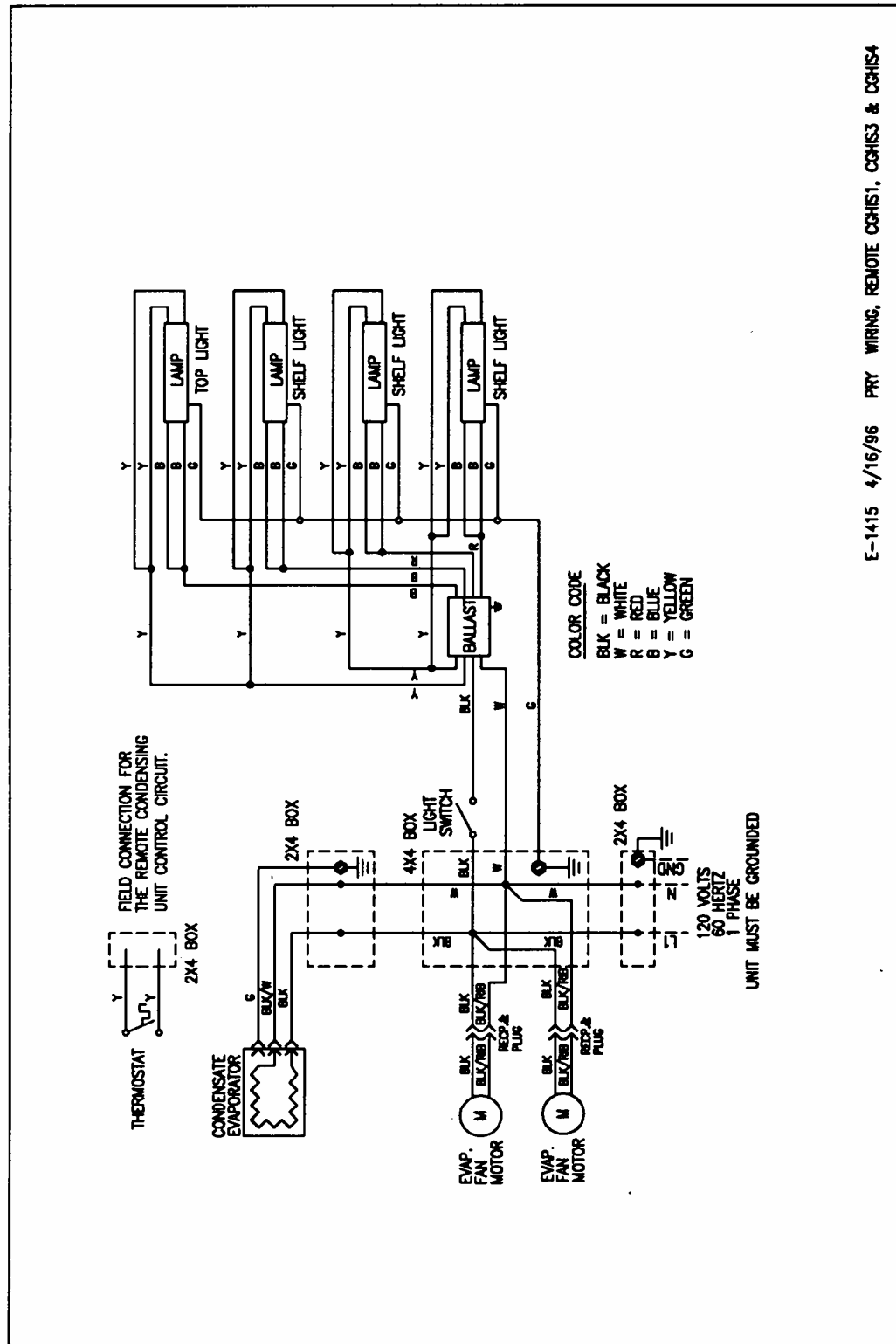
# WIRING DIAGRAM



# WIRING DIAGRAM



# WIRING DIAGRAM



E-1415 4/16/96 PRY WIRING, REMOTE CCHIS1, CCHIS3 & CCHIS4