

Installation Manual

Self-Watering Floral Fixtures



Questions?
Floraline Service
1.800.239.3722
info@floraline.com

This manual covers the installation and maintenance of Floraline's Self-Watering Floral Cases. These fixtures are built with water filled manifolds that are programmed to drain and fill automatically. They are manufactured as both high profile (SP) and low profile (MP) units. If any questions arise, contact us at:

Floraline Service
1.800.239.3722 or
info@floraline.com

Topics Covered in this Manual

Receiving the Shipment

Proper Location for the Unit
Installation Warnings
Case Leveling

Refrigeration

Expansion Valve Specifications
Adjusting the Superheat
Dehydration of Refrigeration Lines
Defrost Cycle
Temperature Control

Electrical

Electrical Raceway
Electrical Connections
Grounding the Fixture

Self-Watering System

Description
Waste Outlet Specifications and Installation
First Time Activation

Maintenance

Fan Motor Maintenance
Regular Cabinet Cleaning and Maintenance

Addendum

Joining Two or More Similar Units in a Line Up
In-line Water Connections
Electrical Diagrams
Low Profile (MP) Case Wiring
Standard Tall Profile(SP) Case Wiring
Fill/Drain System Wiring

TWELVE MONTH WARRANTY

We warrant to the original purchaser or distributor every new fixture and parts thereof, to be free from defects in material and workmanship under normal use and service, for a period of twelve (12) months from the date of shipment from the factory of the fixture, equipment or part to the original purchaser or distributor. Our obligation hereunder being limited to repairing or replacing, F.O.B. factory, any part or portion thereof, of our manufacture or sold under the Floraline name, which upon examination we judge to be thus defective.

The Warranty stated herein does not include the cost of labor incurred in the handling, removing or installing any equipment or component thereof. The Warranty is expressly in lieu of all other warranties, express or implied and of all other obligations or liabilities on our part. The obligation to repair or replace parts or components judged to be defective in material or workmanship states our entire liability whether based on tort, contract or warranty. We neither assume nor authorize any other person to assume for us any other liability in connection with our products.

We assume no responsibility for spoilage of perishable contents of equipment sold under the Floraline name. The warranty shall apply to parts as specified herein.

Removal of the original Serial Number from any fixture shall be deemed to release us from all obligations hereunder or any other obligations, express or implied.

Warranties embodied herein are not binding upon us if at the time a claim is made the purchaser is delinquent in any payment due under the terms of this contract.

Floraline Display Products
38160 Western Parkway • Willoughby, OH 44094
Phone: 800.239.3722 • 440.975.9449
Fax: 440.918.9043
e-mail: info@floraline.com • web: www.floraline.com



Receiving Your Shipment:

IMMEDIATELY examine the equipment for shipping damage before and during unloading.

If there is any damage, the carrier should be notified and an inspection requested.

Equipment damage MUST be noted on the delivery receipt. Photographic evidence of damage is helpful. Take pictures for documentation.

If damage is of a concealed nature, you must contact the carrier as soon as possible or no later than three (3) days following delivery.

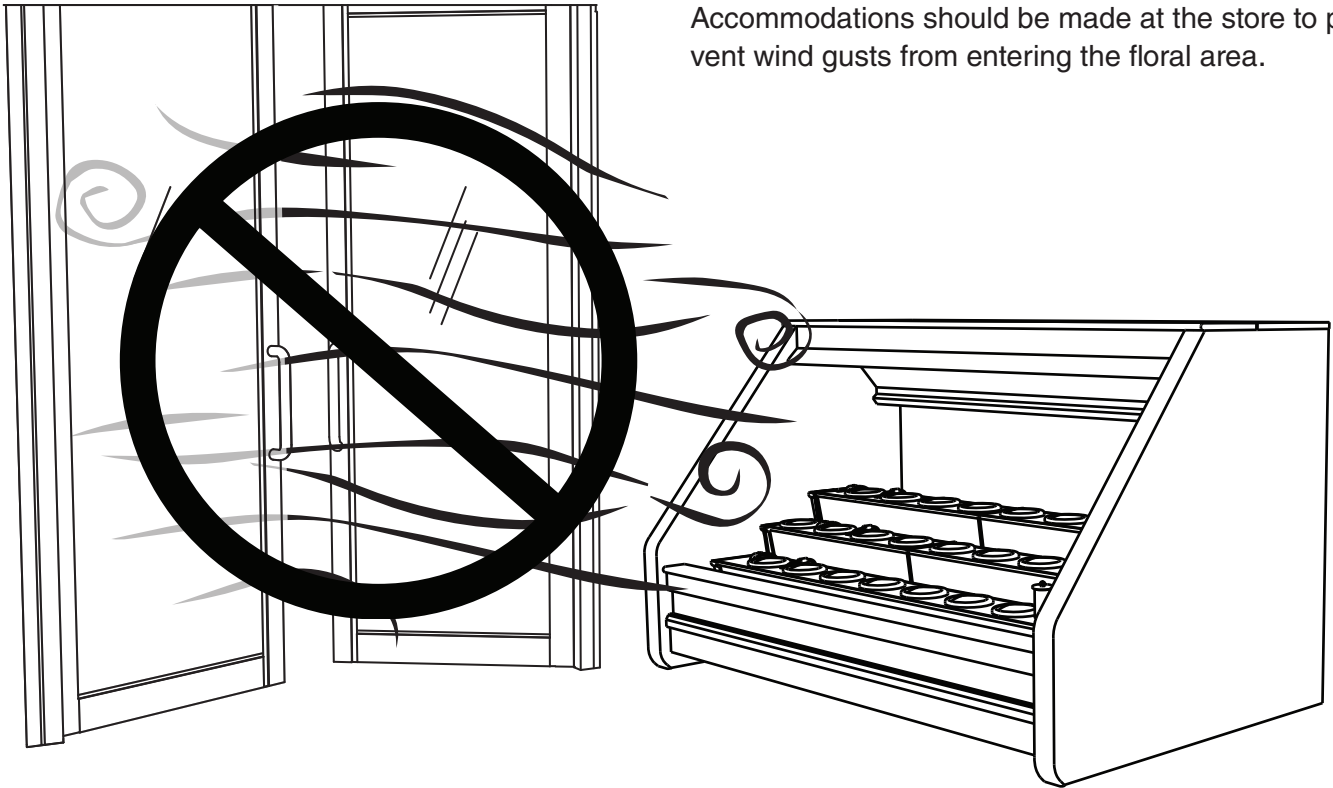
It is the responsibility of the consignee to file a claim with the carrier for all damages.

Preparation for Installation

Move the floral fixture to the permanent install location before removing shipping braces, skids or rollers.

Location Set Up

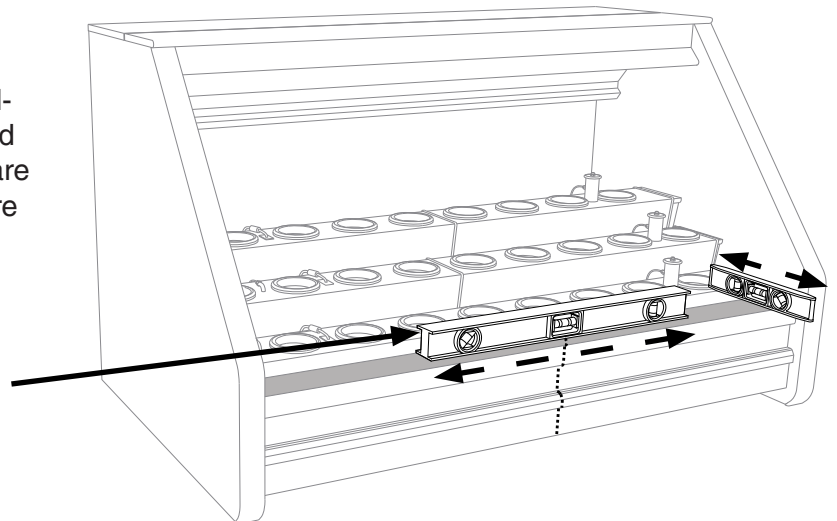
Floraline fixtures are designed to operate in an indoor controlled environment at a temperature of approximately 75°F and relative humidity of 55%. Case operation will be degraded by excessively high ambient temperatures and / or high humidity. These case models are also affected by any wind gusts that may result from enter and exit doors opening near the case front. The floral envelope within the case has been designed to provide an optimal environment for your flowers; disrupting this controlled space will result in diminished performance. Accommodations should be made at the store to prevent wind gusts from entering the floral area.



Prevent wind gusts from entering the floral area and disrupting the floral envelope.

Flooring and Leveling of the Fixture

The fixture must be located on a firmly based floor and leveled to within +/- 1/16". All fixtures must be leveled from front-to-back and from end-to-end. End-to-end leveling should be done from the mark placed on the middle of the lower sill. All Floraline fixtures are properly set up and tested before shipment to ensure optimal performance in the field.

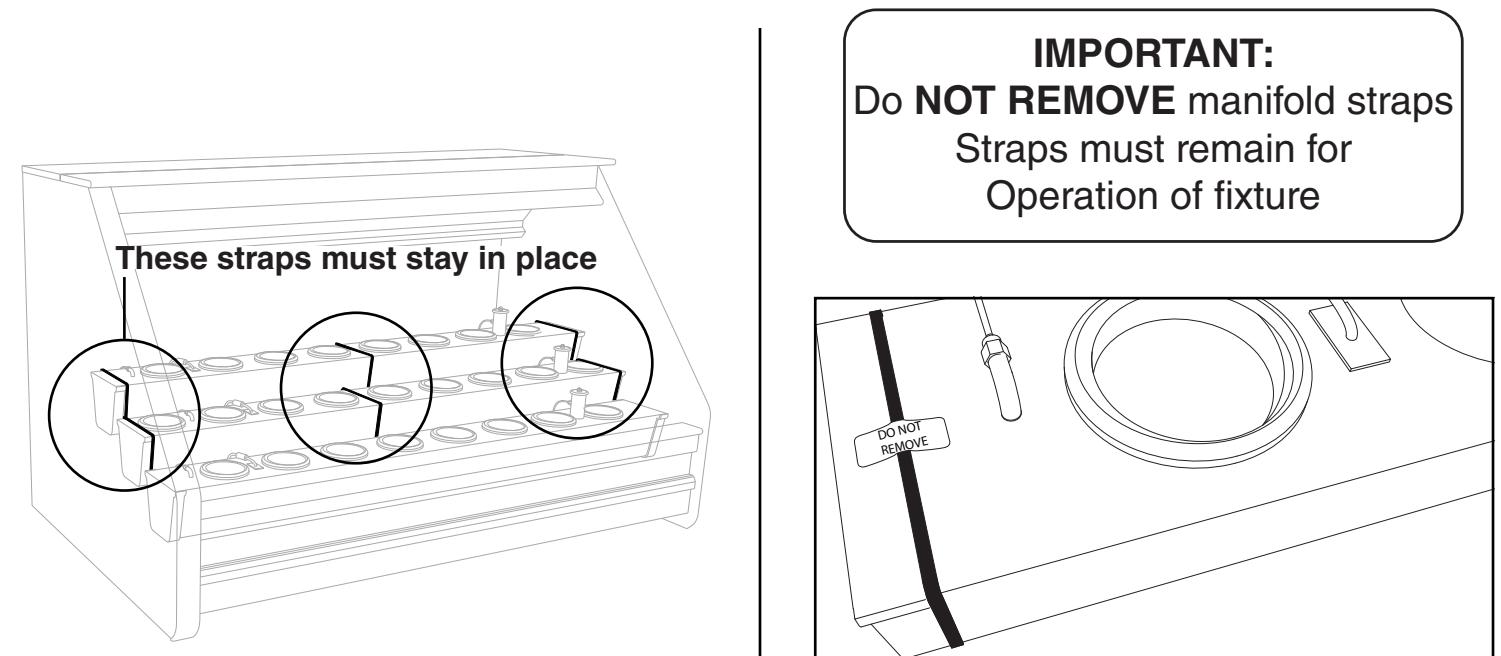
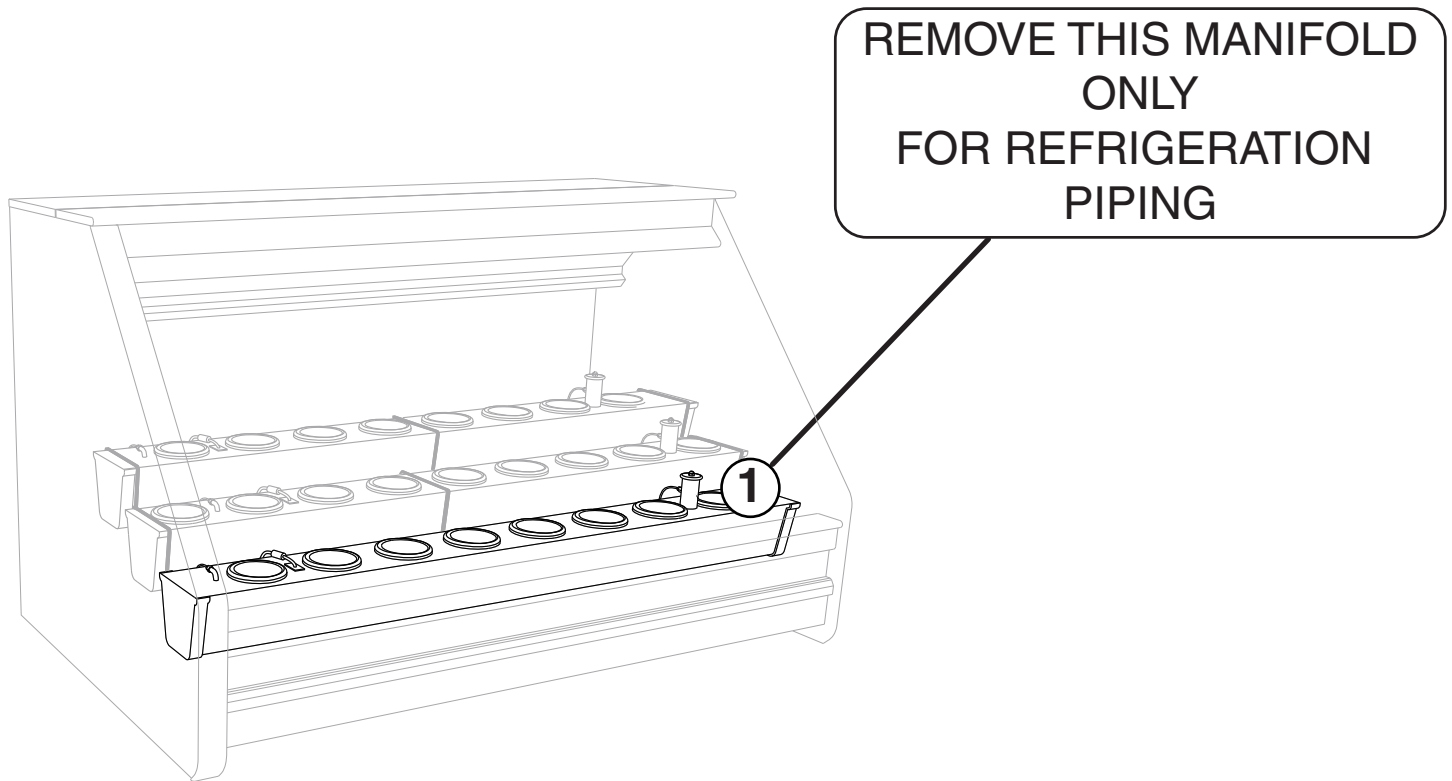


IMPORTANT:

Use This Sill Location For Leveling Point
THIS CASE MUST BE LEVEL
To Maintain Proper Water Levels

For any installation of refrigeration piping, **ONLY REMOVE ROW NUMBER ONE (#1)**. Row #1 is located closest to the front of the case, (see illustration).
DO NOT CUT OR REMOVE BANDING STRAPS FROM ANY OTHER WATERING MANIFOLDS ROWS.

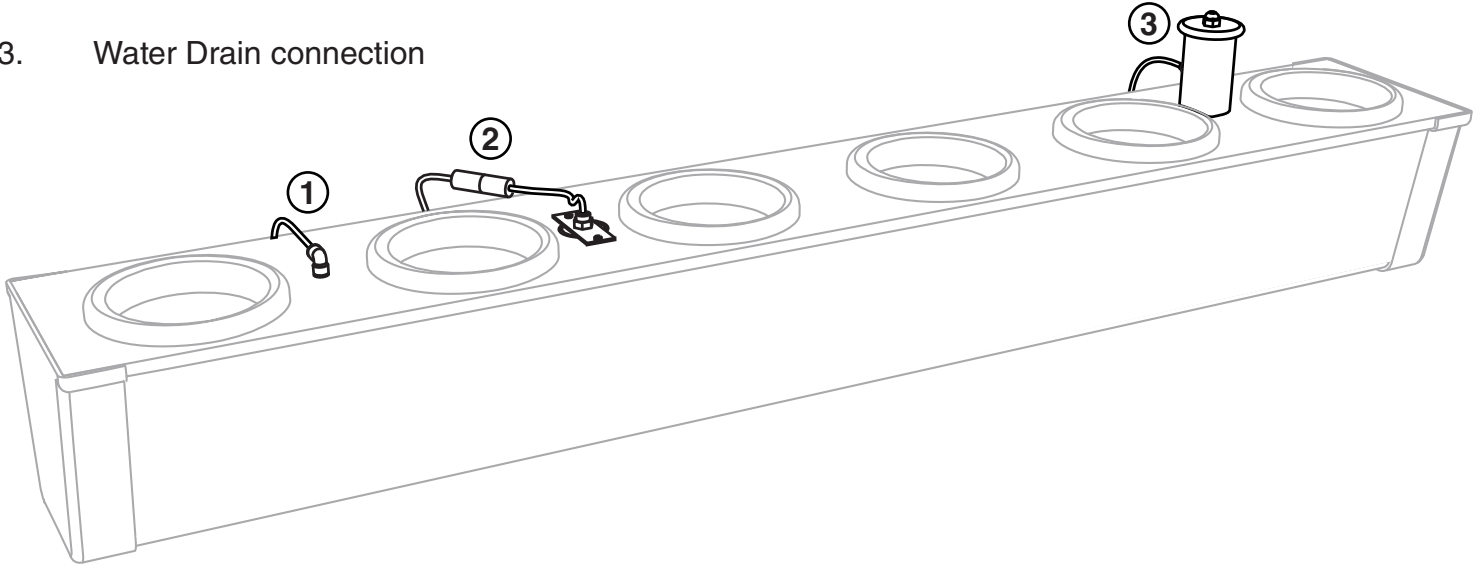
Only row number one (#1), needs to be removed for installation. Removing any other rows may cause the fixture to malfunction.



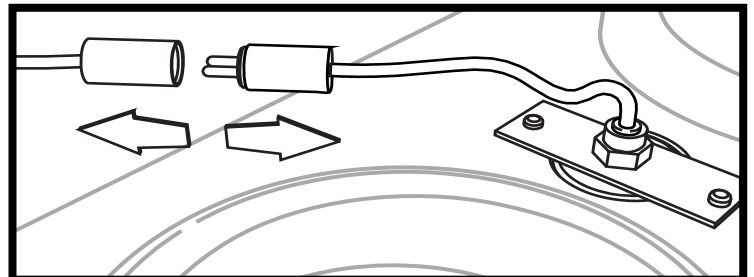
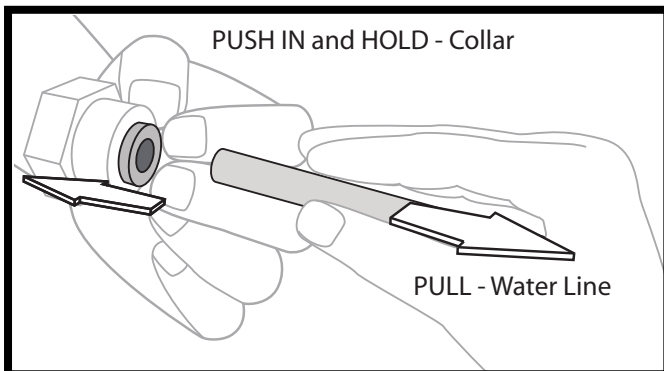
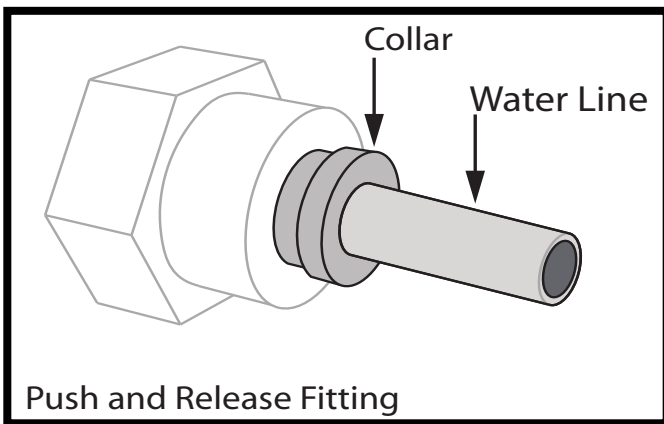
Removing Manifold Connections - Row One

There are three connectors to water manifold #1 that must be disconnected before it can be removed.

1. Water Fill connection
2. Water Float connection
3. Water Drain connection



The Fill and Drain are connected with TrueSeal® Push in fittings. To remove these lines, **Push** in the collar and **Pull** the line out. To reinstall, push the collar in and insert the water line until it bottoms out. Ensure that the water line is fully seated.



The Float connection is a simple male / female two prong plug that pulls apart.

Water Drain Pipe Specifications and Installation

The cases are equipped with a 1 1/2" MPT waste outlet connection which terminates in the center of the floral fixture below the insulated bottom.

Provide a drain space between the drainpipe and the floor drain or sewer connection.

ONLY use a 90° fitting, NEVER use a 45° fitting.

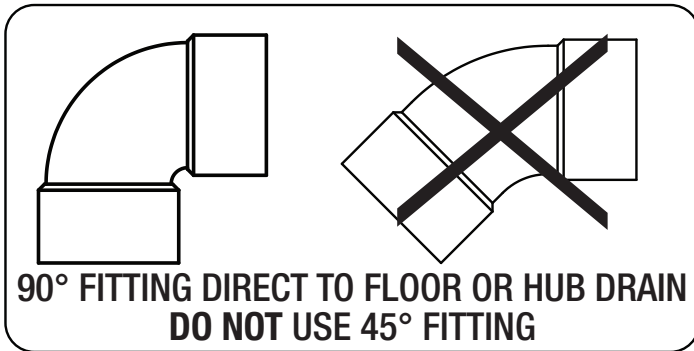
Provide AT LEAST one inch (1") of fall for each four feet (4') of drain. This will provide an adequate amount of fall for proper drainage. Avoid long drainpipe runs that would make it impossible to provide adequate fall.

DO NOT allow the drainpipe to come in contact with non-insulated suction lines.

NEVER use a double water seal.

NEVER use a pipe smaller than 1 1/2"

Improperly installed drainpipes can seriously affect the operation of the fixture and result in costly maintenance.



First Time Activation of the Watering System

When the system is filled with water for the first time, a rapid cycling of the solenoids may occur.

This is due to a 5 - 20 PSI safety pressure control located on the fill solenoid box on the top of the fixture. It is activated by low water pressure. At start up, all manifolds are calling for water at the same time causing a lowering of water pressure.

The rapid cycling will continue until the proper water level is reached and store water pressure is re-stored.

Check the water height in the manifolds when they are full to ensure the case is level by comparing the height of the water in the manifold on each end. They should be the same.

Electrical

Electrical Raceway

An electrical raceway is provided with each floral fixture for running the fan and anti-sweat heaters from case to case without using conduit. This is an approved method by the Underwriters' Laboratories.

Wiring must be run in accordance with local and national electrical codes.

Electrical Connections

All field connections are made in the electrical raceway.

Make sure proper voltage is supplied to your floral fixture.

Check the fixture nameplate for fan and anti-sweat voltage.

Fan Motor

The fans are wired according to the enclosed wiring diagram and must run continuously. The electrical panel must be marked sufficiently to prevent the fan motors from being turned off accidentally. The fan motors are permanently oiled for the life of the motor and require no periodic maintenance.

Grounding the Fixture

When floral fixtures are multiplexed, add the total of the amperage values to determine wire size and circuit protection.

Self-Watering System Control Box

MP (Low Profile Case)

The control box is located under the hinged top.

The control box contains:

- 120v control switch
- 120v replaceable 2A fuse.
- Electronic timer
- Relay controller board

SP (Tall Profile Case)

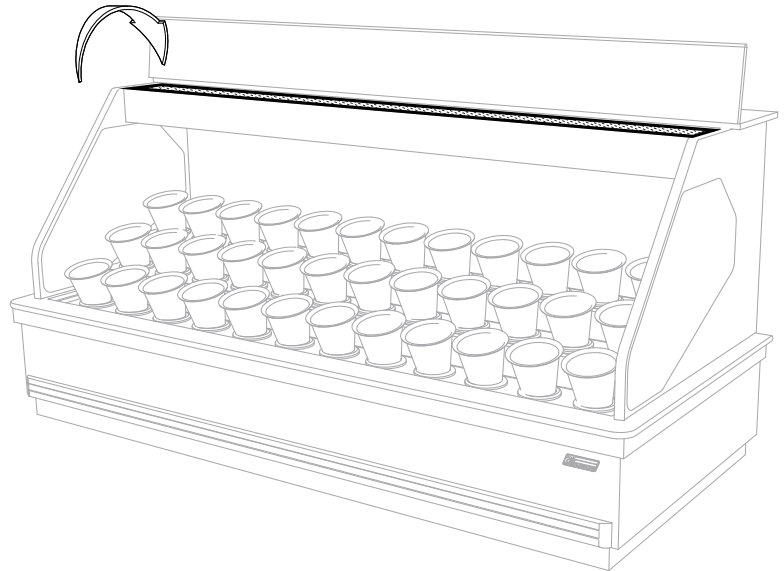
The control boxes are located on top of the case and will dissipate some heat. They must be kept free of obstructions. Store decorations must be placed to allow proper ventilation. These areas are labeled on the case.

Drain and Fill Cycle

At a predetermined time, the drain and fill cycle with start. The electronic timer and relay controller will energize one solenoid at a time to open the drain valve on a single preset manifold for 220 seconds. As water drains, the float is disabled to allow water to drain from the manifold. Once the drain cycle is complete (220 sec), the float is reactivated and the fill cycle begins. The float will stop the fill cycle when the specified water level is reached for that manifold. The program will continue to drain and fill the remaining manifolds as programmed, typically on the hour or half hour.

Note: The water level may be affected by evaporation or floral hydration. The float will monitor for decreases and automatically maintain the proper manifold water level.

Control Box Locations



Refrigeration - Remote

Basic Operation

Standard discharge air temperature range should be between 36°- 38°F and the coil should be set to + 25°F suction.

The unit should be controlled by thermostat or solenoid suction stop. NEVER use a liquid line solenoid pump down.

Proper set up of these refrigeration controls will ensure correct high humidity levels, constant temperatures and will maximize floral life.

Expansion Valve Specifications

The expansion valve furnished with your floral fixture has been sized for maximum coil efficiency and has been specified for your particular store system.

Adjusting the Superheat

Superheat should be set between +8°- +10° F.

Place a thermocouple under the expansion valve bulb. Read the suction line pressure as close to the coil as possible.

Convert coil suction pressure to temperature.

The difference between the coil temperature and the thermocouple is superheat.

DO NOT set the superheat until the fixture has pulled down to operating temperature. Also, NEVER open or close valve more than ½ turn between adjustments.

IMPORTANT

After connections are made, seal around the refrigeration lines with foam.

Always use a heat shield when welding or using flame near the bottom of the fixture.

Heat will disintegrate the fixture exterior and insulation.

Dehydration of Refrigeration Lines

After installing refrigeration lines, the lines should be blown out with nitrogen before making the final connection at the fixture of the condensing unit.

Keep the pressure below 250 PSI.

This will ensure no foreign matter has been left in the lines.

To prevent scaling due to brazing, dry nitrogen should be allowed to flow through the lines during the brazing process.

Defrost Cycle

Off time defrost is standard on Floraline fixtures.

The fans run continuously and defrost termination is determined by pressure or time (fail safe).

Standard defrost occurs for 30 minutes, twice daily.

Temperature Control

On single condensing unit systems, a thermostat should be used to control temperature.

On parallel units, the temperature control can be provided by the EPR valve, thermostat or solenoid suction stop.

Since many variables are present in each installation, such as store temperature and length of tubing runs, set temperature will vary per installation.

Refrigeration Self-Contained

Your case may be cooled with a self-contained refrigeration unit. If the unit comes installed, it will ship fully charged with refrigerant.

In some cases the condensing unit may ship separately.

There are two options:

1. It will need to be brazed in place and charged on site
Or

2. The lines terminate with self-sealing connectors.

This style connection hook up is designed to self-seal with no loss of refrigerant when disconnected. The unit will be shipped fully charged.

Standard defrost for a self-contained unit occurs for 20 minutes, three times daily.

Water Strainer Cleaning

The water strainer "Y Strainer" should be cleaned once each year if needed.

DO NOT over tighten the strainer cover. Over tightening the water strainer cover will cause cracking and a water leak.

Regular Fixture Cleaning

A mild soap and water solution is recommended for the outer surface of the fixture.

DO NOT use cleaners containing abrasive materials that will scratch and dull the finish.

NEVER introduce water into the fixture faster than the waste outlet can carry it away.

Floral vases can be cleaned with a soft cloth and a floral cleaning solution as recommended by your floral department. More thorough procedures are explained in our supplemental Cleaning Manual. Check www.floraline.com

Joining Two or More Similar Units

Two or more similar fixtures can be joined together to form a continuous parallel case line-up. Multi-case fixtures need to be lined-up in the field by a number sequence, (1,2,3 etc.). This sequence number is located on the side panel of each case.

Inspect refrigeration lines, electrical connections and controls to ensure fixtures are in the proper line-up sequence.

All necessary hardware is shipped with the cases. Locate this box of parts.

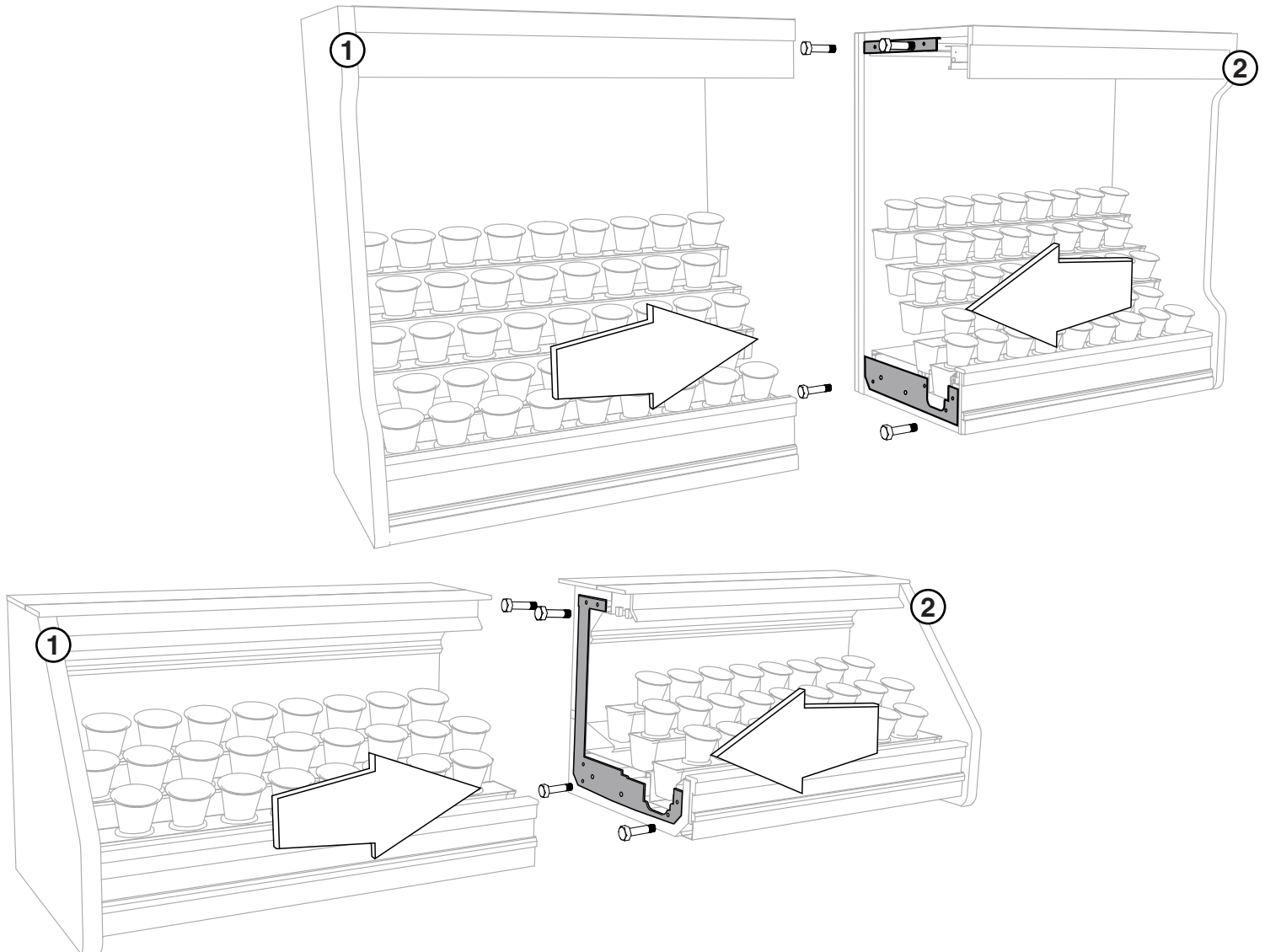
Install the supplied 3/8x3" long hex bolts, washers and nuts in the line-up holes that are accessible from the floral display area. These areas are labeled "Bolt Here". Alternate the tightening of the line-up bolts to gradually pull the cases together. There should be no gap between the cases. If necessary, assist case tightening by bumping opposite ends of the case with a pry bar. The metal understructure of the case should be used as a leverage point. Take care not to let the pry bar come in direct contact with the laminated exterior surfaces of the case, damage will occur.

In-Line Water Connections

Refer to the water line connection page for detailed instructions.

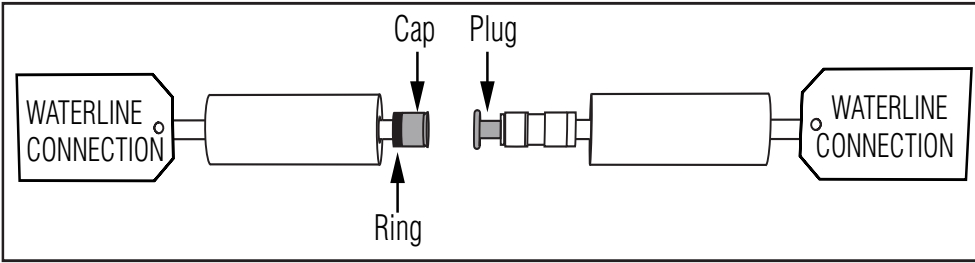
Electrical Connections

All case to case electrical connections are made using male / female Molex terminals. All plug and socket pairings are unique. There will be only one corresponding plug for each socket. This will ensure proper hook up.

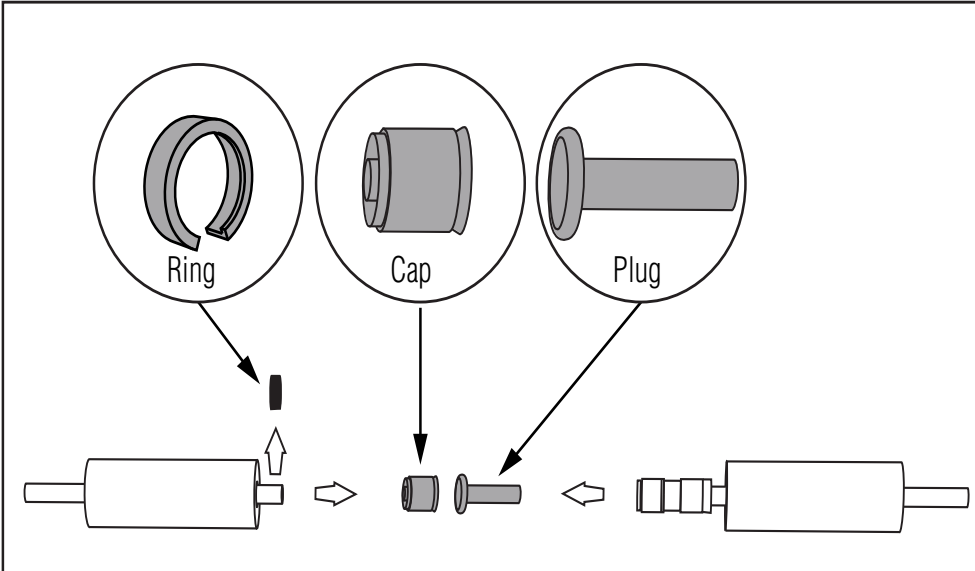


Water Line Connections for Multiple In-line Cases

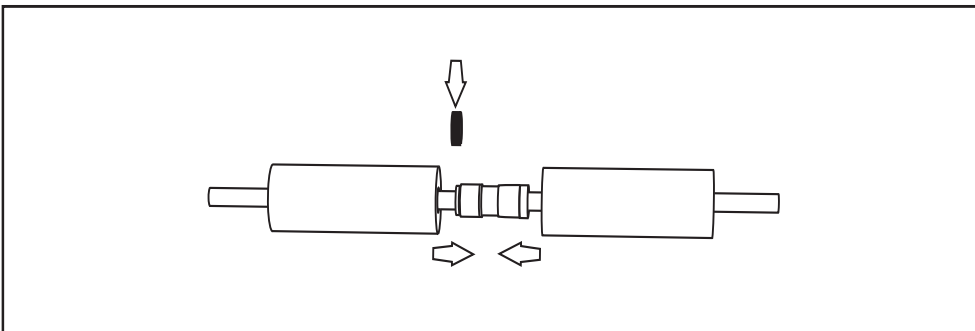
Bolt the cases together before water line connections are made.



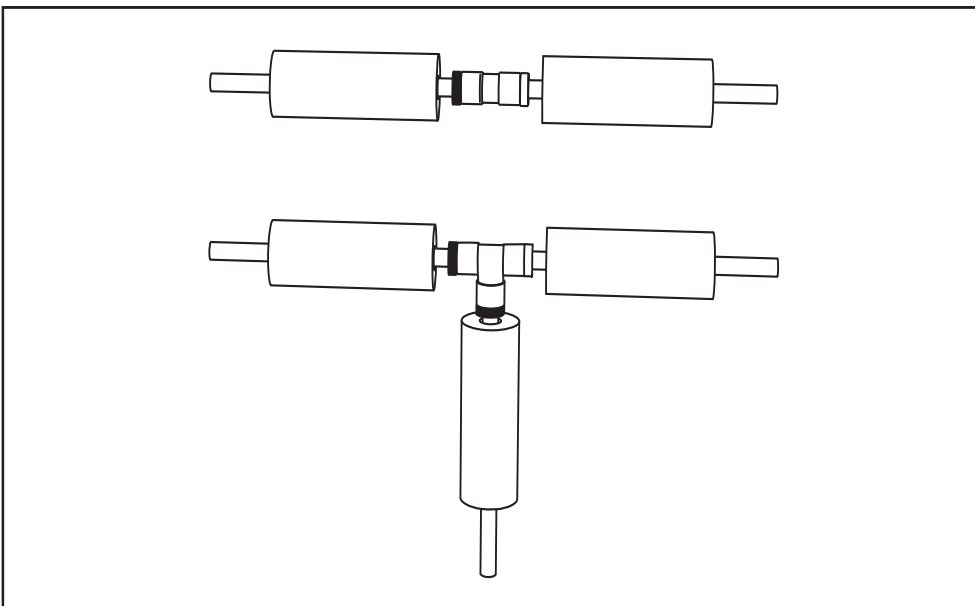
1. Locate the tagged water lines.



- 2. Remove and SAVE the BLUE RING.
- 3. Remove the end Cap.
- 4. Remove the end Plug.
(The cap and plug are no longer needed.)



- 5. Connect the water lines.
- 6. Install the BLUE collar ring.
The BLUE collar ring MUST be installed properly to lock the fitting to the water line.



Completed in-line assembly

Completed "T" assembly

If there are multiple water lines, connect black to black and white to white.

Floraline Case Start Up Checklist

Account / Store #	Primary contact/ Manager	Phone number
Address	Startup date	Appointment time
Reviewed with Store Staff/ Mngr	SOS Name	Floraline Model #

Overall Inspection

Check temperature 36° F		
Signs of condensation	Inspect case interior / Glass	
Check airflow		
Remove tape from water valves		
Remove installation labeling and instructions	Floral sleeve dispenser installed properly	
Check for trash (floral sleeves, paper, loose installation materials) inside of the case and vases	Inspect case exterior for damage, scratches MP Case - no water present on top of case from merchandising potted plants	
Wipe the exterior of the case	SP / FD Case - is top ballast clear for ventilation	
Install / check installation of vases	Install / check installation of shelving	

Water

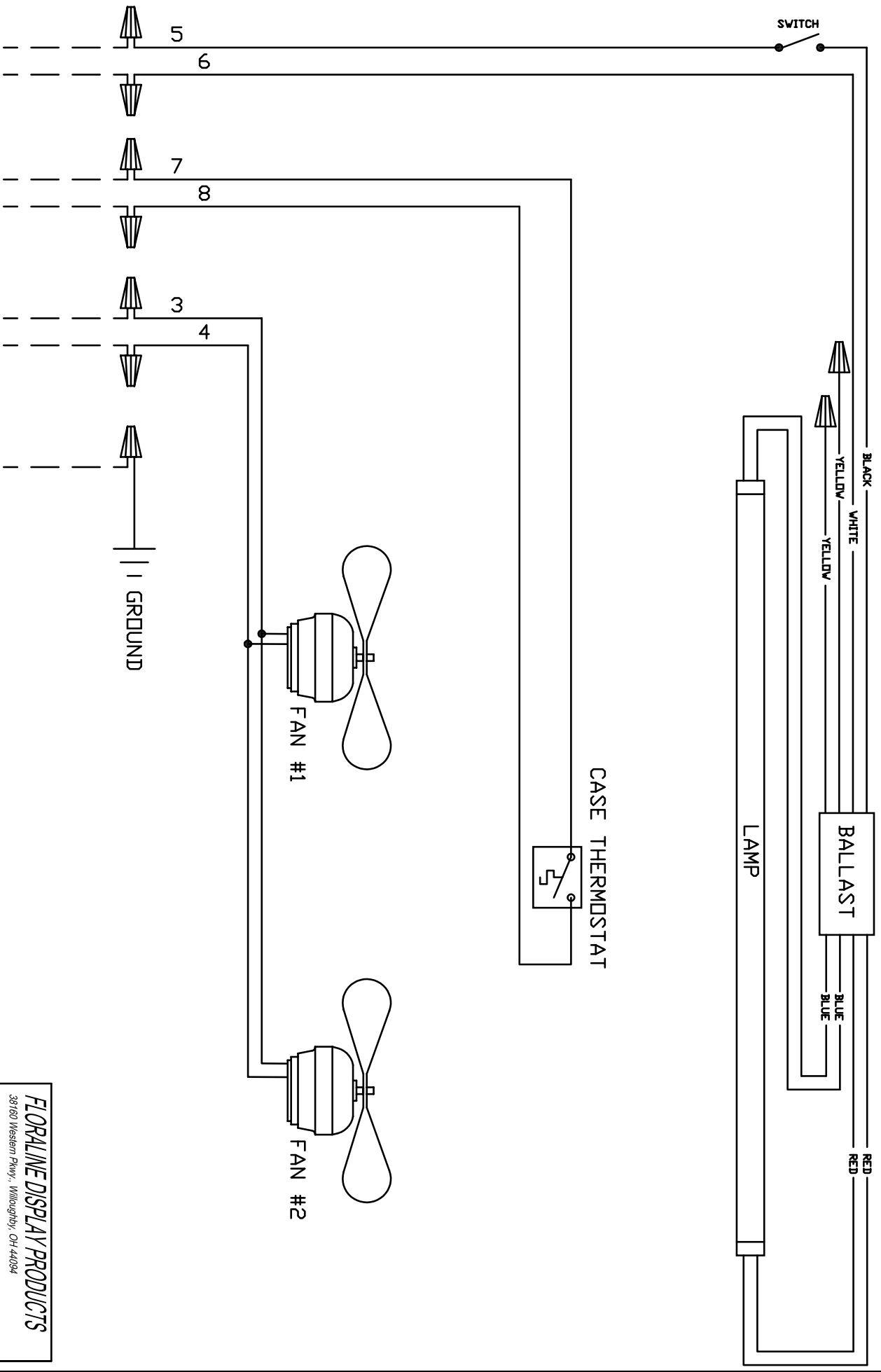
Pull end vases in each row Inspect water clarity Water level height	Cycle drain for each row, verify valve actuation	
Ensure troughs are seated and installed level (use fill water to verify)	Inspect water connections for leaks during fill and drain cycling	
Check installation of the drains	Fill floats connected and working	
Troubleshooting if Not Filling	Check the solenoid for debris Check the cords are plugged in correctly 1-1, 2-2 etc.	
Troubleshooting if No Water	Is the water turned on? Check that all valves are open Check screens in hand valves for clog Check no sharp corners or kinks in hose	
Troubleshooting Corner Case / multiple case set up	Make sure electrical plug is connected in upper trough of the case, this may cause only one side to operate properly	

Dosatron

Is Dosatron "ON" when filling?	IMPORTANT: Dosatron must be on when filling.	
Troubleshooting if not working	Check to see if unit is working during the drain cycle, if so the lines are reversed, to fix- switch the lines at the hand valves. Air may be in the unit, prime with the button on top	

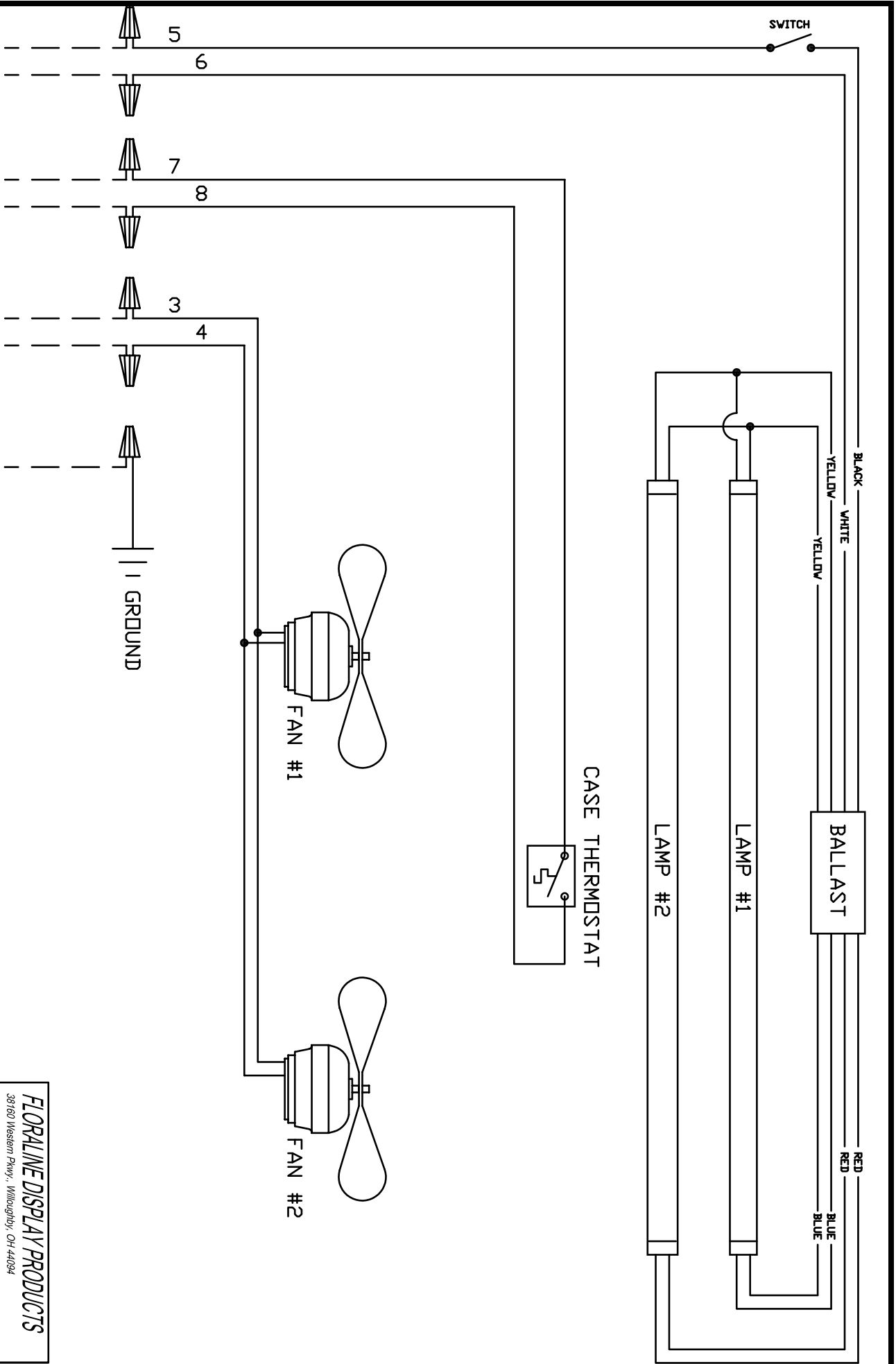
Staff Training

Demonstrate manual trough draining for cleaning	Point out key aspects of the cleaning manual and give them a copy of it	
Online resources at www.floraline.com Technical pdfs, cleaning manual	Photograph of case - email to randy@floraline.com	



FIELD WIRING (- - - - -)
 USE COPPER CONDUCTORS RATED 60 DEGREE C. ONLY
 ALL WIRING TO COMPLY WITH APPLICABLE CODES.

FLORALINE DISPLAY PRODUCTS			
38160 Western Pkwy., Willoughby, OH 44094			
TITLE			
CASE WIRING SCHEMATIC			
MODELS MP-4, -6, & -8			
NO.	DATE	SCALE	SHEET
DLM	12/16/99	N/A	
APPROV.	DATE	SCALE	SHEET
DESIGN	DATE	SCALE	SHEET
MPCASEWIRING9FT			0

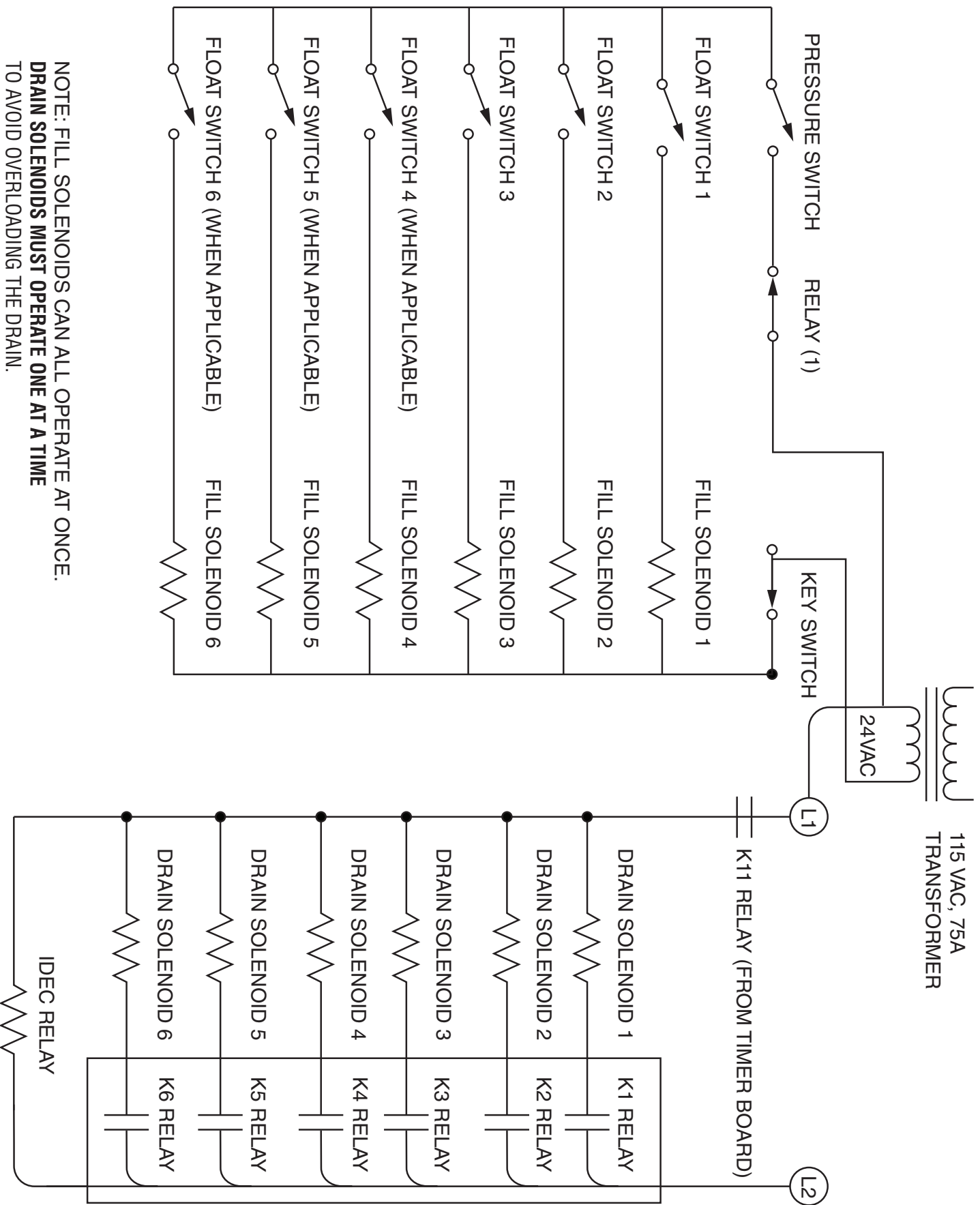


FIELD WIRING (---) USE COPPER CONDUCTORS RATED 60 DEGREE C. ONLY ALL WIRING TO COMPLY WITH APPLICABLE CODES.

FLORALINE DISPLAY PRODUCTS
 38160 Western Pkwy., Willoughby, OH 44094

CASE WIRING SCHEMATIC
 MODELS SP-4, -6, & -8

DATE	BY	SCALE	REV.
12/15/99	DLM	N/A	0
SPEC CASE WIRING			0



NOTE: FILL SOLENOIDS CAN ALL OPERATE AT ONCE.
DRAIN SOLENOIDS MUST OPERATE ONE AT A TIME
 TO AVOID OVERLOADING THE DRAIN.

PROGRAMMING PORT

COMM PORT

