



HydroCycle 6" Pro NFT Lettuce Systems



113539

Designed to grow healthy plants without soil using mineral-nutrient solutions.

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WARNING: Cancer and Reproductive Toxicity - P65Warnings.ca.gov

Revision date: 05.23.23

*Actual system may differ from what is shown.

Important Information

READ THIS DOCUMENT BEFORE YOU BEGIN

Thank you for purchasing the 113539 NFT lettuce system. When properly assembled and maintained, this product will provide years of reliable service. These instructions include helpful hints and important information needed to safely assemble and properly maintain the system. Please read these instructions **before** you begin. If you have any questions during the assembly, contact Customer Service.

SAFETY PRECAUTIONS

- Wear eye protection.
- Wear gloves when handling metal pipes.
- Use a portable GFCI (Ground Fault Circuit Interrupter) when working with power tools and cords.

REQUIRED TOOLS

The following list identifies the main tools needed to assemble the hydroponic system. Additional tools may be needed.

- Tape measure and marker
- Variable speed drill (cordless with extra batteries works best)
- 1/4" hex key (Allen) wrench
- Saw for metal and PVC
- Hammer and gloves
- Magnetic nut setter (5/16" x 2-9/16")
- Level (2'-3'— recommended)
- Adjustable pliers
- 5/16" drill bit and 1", 1-3/8", and 2-1/2" hole saws



ASSEMBLY PROCEDURE

Following the instructions as presented will help ensure the proper assembly of your hydroponic table. *This manual describes how to assemble a single table that includes four (4) eight foot (8') channels.* The steps outlining the assembly process are as follows:

1. Verify that all parts are included in the shipment. Notify customer service for questions or concerns.
2. Read these instructions and all additional documentation included with the shipment **before** you begin.
3. Gather the tools and assistants.
4. Assemble the NFT frame and system.
5. Read the care and maintenance information.



WARNING: KEEP ALL ELECTRICAL CORDS AND CONNECTIONS OUT OF THE RESERVOIR. CONSULT THE SERVICES OF A QUALIFIED ELECTRICIAN TO ADEQUATELY AND SAFELY CONNECT THE PUMP TO A POWER SUPPLY.

ALL ELECTRICAL CIRCUITS SHALL BE DESIGNED IN ACCORDANCE WITH LOCAL AND REGIONAL BUILDING CODES AND STANDARDS.

CARE AND MAINTENANCE

Proper care and maintenance of your hydroponic table is important. Check the following items periodically to properly maintain your hydroponic table.

- Check connections and all fasteners to verify that they remain tight.
- Do not climb or stand on the frame or channels at anytime.
- Verify that the supply lines and related fittings are clean and functioning properly.
- Replace all worn or damaged parts and fittings promptly.
- Repair all leaks immediately.
- If the table is moved, inspect all parts and connections before reassembling and use.
- For replacement or missing parts, call 1.800.245.9881 for assistance.

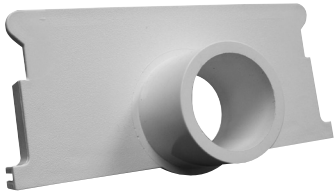
QUICK START GUIDE

For a quick overview of this product, its components, and connection details consult the Quick Start Guide at the back of these instructions.

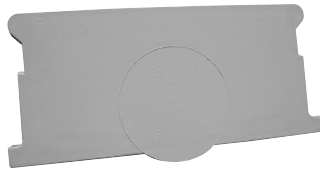
Important Information

PICTORIAL GUIDE

The following graphics and photos will help identify the different parts of the hydroponic system. (Some parts may not be shown.) To prevent mixing of fittings, select only those that are needed for each procedure. **Keep all fittings in the shipping bags until they are needed.**



111128 (4)
End Cap w/ Outlet



111127 (4)
End Cap No Outlet



111698 Ratchet Clamp



Plastic Pipe & Tube Cutter



FA4470B (10)
Tek Screw



WR1095
Tape



109260 Air Stone



110725
Air Pump



110722
Utility Pump

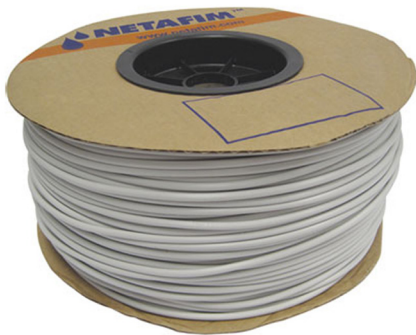


WF6990
PVC Cement
and
113372 Purple
Primer

PVC PRIMER & PVC CEMENT

Follow all directions printed on pvc primer and cement containers. **Purple color of primer does not fade!** Use caution during application to reduce spills and over application at joints.

Prime all joints before assembly.



110408
1/8" White Polyethylene Tubing



WF6504A
3/4" Black Hose



110091 Clear Vinyl Tubing



10015106
Short Tee Fitting (12)

Important Information

PICTORIAL GUIDE (continued)



WF3310



WG3840



111074



WF1023 Filter (1)



112066 (1) Shut-off to attach to WF1023 filter.



106808 & 112539
Hanger



WF6682



WF1530



WF3411



WF1386



WF2990, WF2995
and WF6717



115820
Grommets



WF2153



WF2160



40 Gallon Reservoir



Reservoir Cover



Porthole Cover

ATTENTION: Reservoir and lid style shown throughout this guide may vary. When needed, critical dimensions are noted for hole locations.

Assembly Instructions

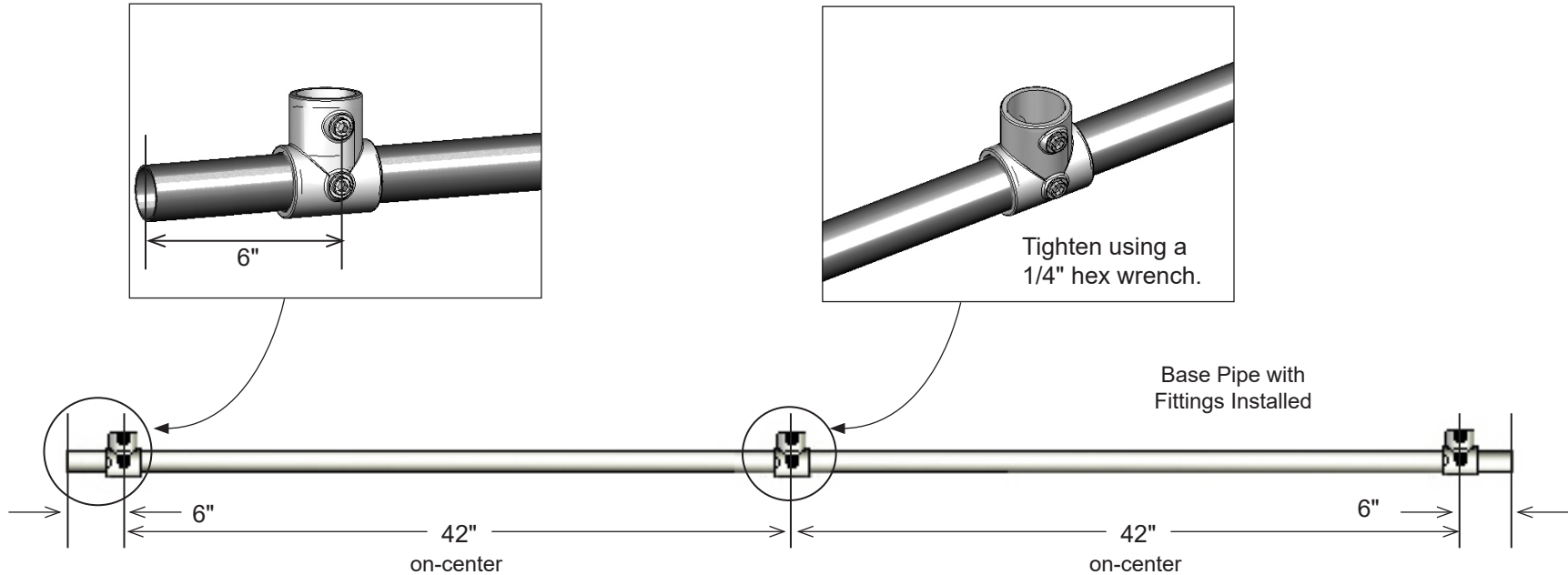
1

ASSEMBLE MAIN SUPPORT FRAME

Consult the Quick Start section near the back of this guide for additional diagrams and photos.

Complete these steps to get started:

1. Place the two (2) base pipes (131P096) on a flat surface, slide three (3) tee fittings onto each 96" pipe, and **space as shown below**. Position with set screws facing up.
2. Using a 1/4" hex wrench, tighten each fitting and recheck the on-center spacing.



1

ASSEMBLE MAIN SUPPORT FRAME (continued)

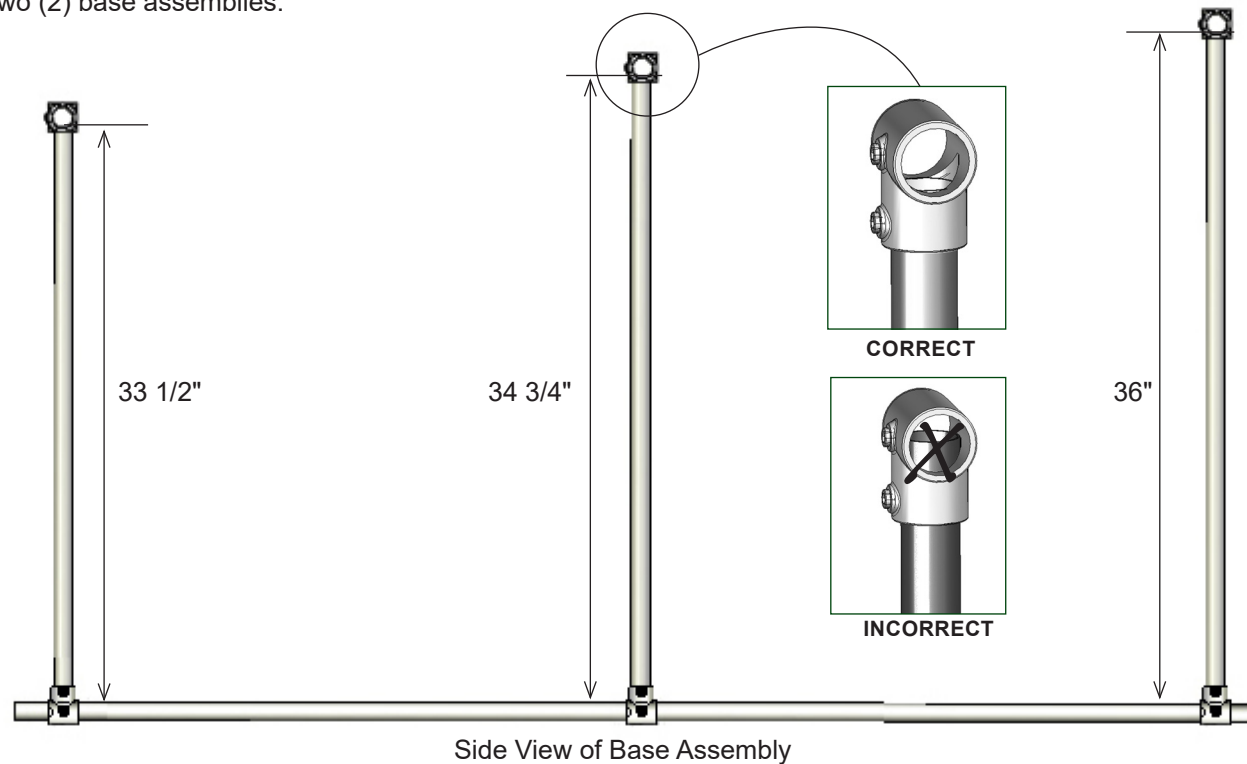
3. With a metal-cutting saw or tool, cut the legs for the support frame. Use **three (3) 131P072 pipes** and cut as follows:

- Two (2) legs at 33-1/2"
- Two (2) legs at 34-3/4"
- Two (2) legs at 36"

ATTENTION: Measure the tubes to ensure you have chosen the correct ones. Do not use the 49-1/2" tubes to cut the leg pipes!

4. Slide each leg into position as shown and tighten the base pipe tee fitting set screw to secure the legs.
5. Place a tee fitting at the end of each leg. Slide a scrap piece of 1.315" pipe cut from a leg pipe to properly set the fitting position if desired. Assemble on a flat surface to keep the fittings square on the end of the leg pipes. Lock the fittings in place by tightening the set screws and repeat the process for the remaining base pipes.

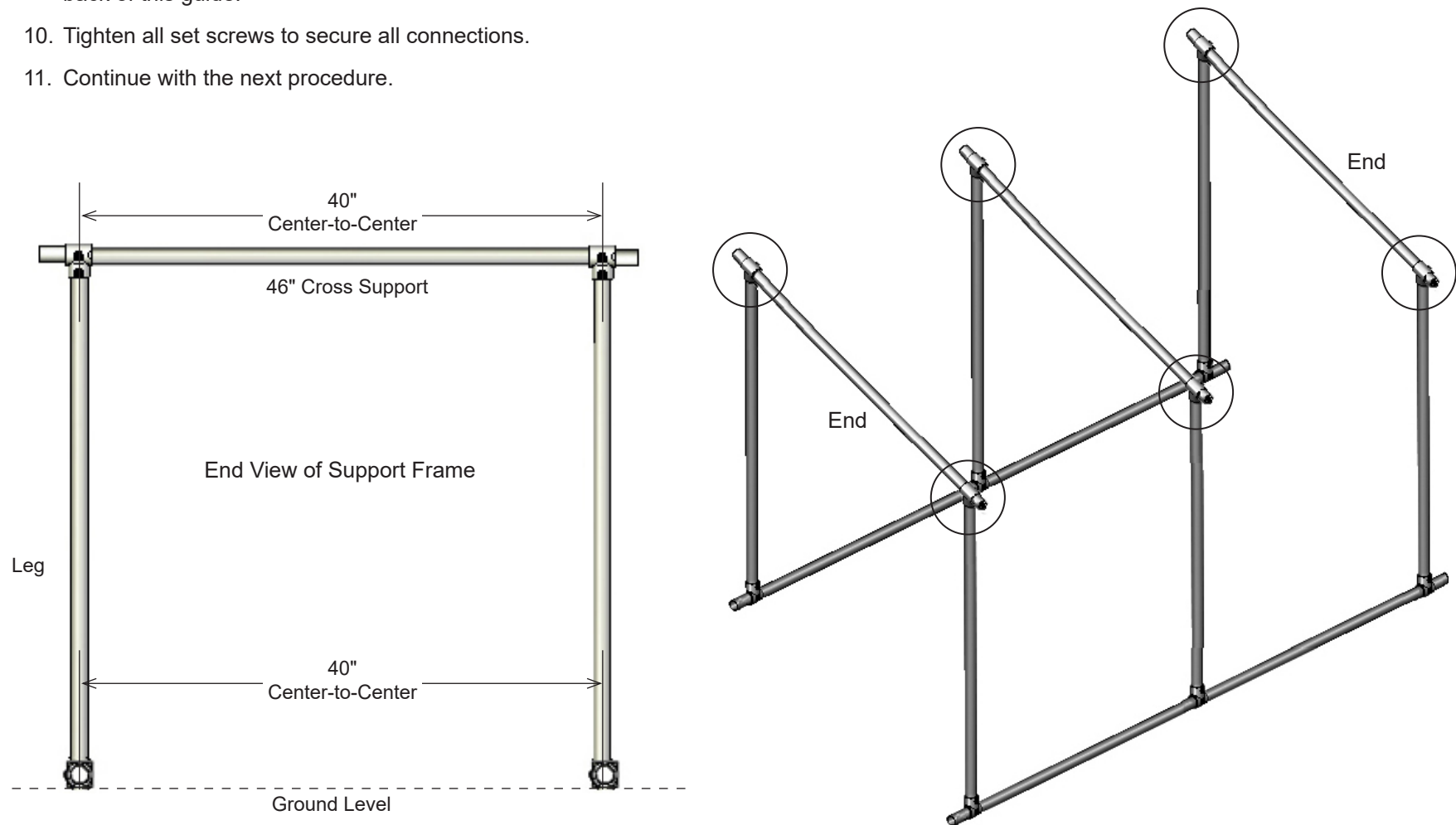
Create two (2) base assemblies.



1

ASSEMBLE MAIN SUPPORT FRAME (continued)

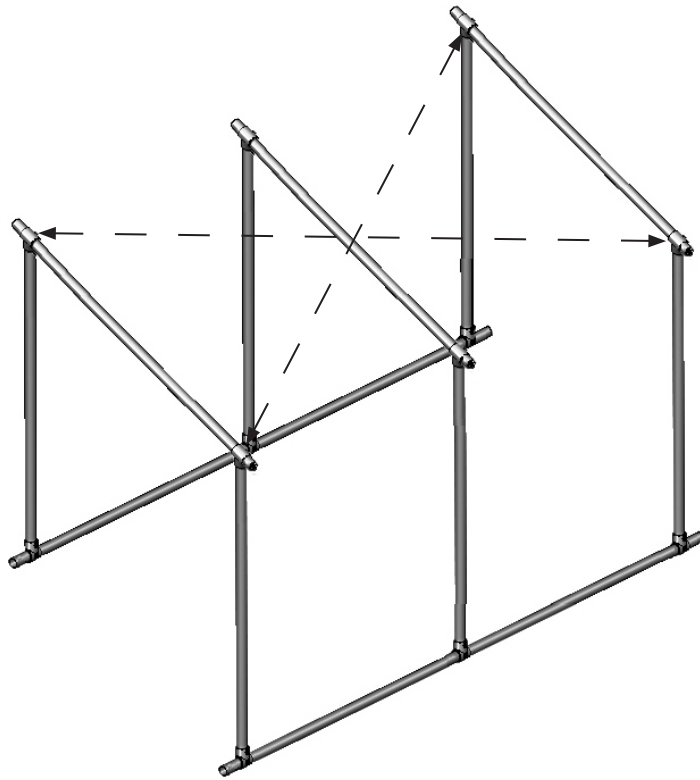
6. With assistance, arrange and stand the two (2) base assemblies so leg lengths of each base assembly are aligned (i.e., 36" with 36", 34 3/4" with 34 3/4", and so on). It is best to **construct support frame where it will be used** so frame can be leveled for final assembly.
7. Next, take the **three (3) 131P0495 pipes and cut each to 46"**. (Pipes can remain full length if you want a wider table. Adjust channel spacing as needed.) These instructions use the 46" cross support. Channels are spaced at 10" on-center for the example throughout this manual.
8. Slide the 46" cross support through the tee fittings at one end of each base assembly. Repeat the step to install the center cross support and remaining end cross support.
9. Set the width of the support frame at ground level and at the cross support. See the diagram below and in the Quick Start section near the back of this guide.
10. Tighten all set screws to secure all connections.
11. Continue with the next procedure.



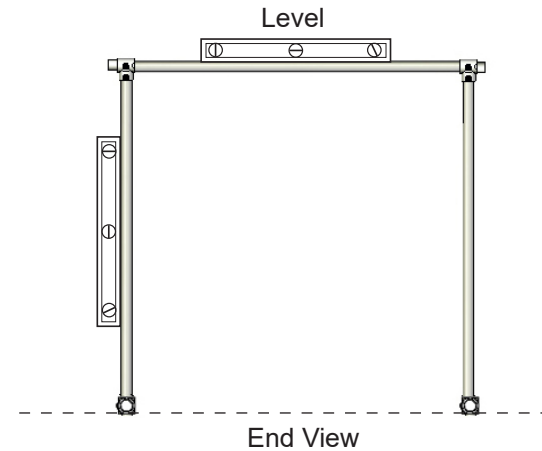
2

LEVEL AND SQUARE THE MAIN FRAME

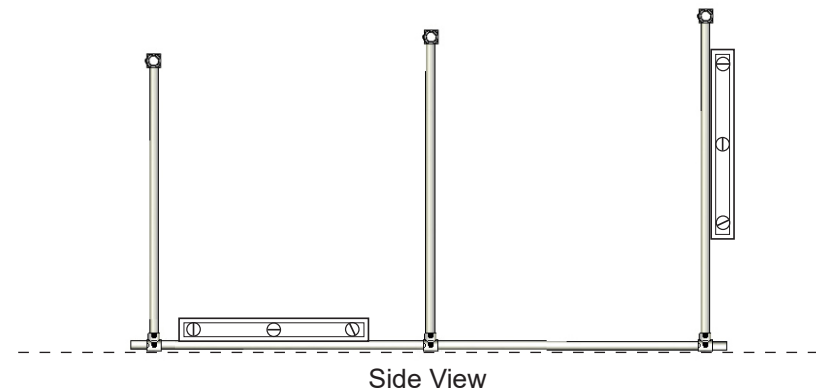
Level and square the support frame before adding the NFT channels. An uneven frame can affect the delivery and distribution of the nutrient solution. Improper flow may cause irregular crop growth. The following procedure helps to ensure that channels will sit squarely on the frame. Complete these steps to level and square the main frame:



1. To square the frame, measure from corner-to-corner and adjust the frame as needed until the two dimensions are equal. Be sure to measure from the same point at each corner to achieve the best and most accurate results.



2. Once the frame is square, verify that all vertical supports are plumb. Verify that all horizontal pipes are level. After making these adjustments, repeat Step 1.



3. Check the bottom pipes to ensure these are level. After completing this step, recheck the frame—Steps 1-2.
4. Once the frame is level and square, continue with the next procedure.

3

ASSEMBLE ALL 8' 113533 CHANNELS

1. Using the assembled frame as a bench, place one 8' channel (113533) on the cross supports.
2. Using the 112509 adhesive, attach the plain end cap (no outlet-111127) to the end of the channel that is resting on the high side of the support table. This is the end with the 36" legs. Be sure to coat the end of the channel with adhesive *before* you install the end cap. Repeat for all 8' channels.
3. Move to the other end of the channel and install the 111128 end cap (with outlet). Coat the end of the channel with adhesive *before* you install the end cap. Repeat for all channels.
4. Next, attach a 90° elbow (WF6682) to each 111128 end cap as shown. Apply pvc primer and pvc cement (WF6990) to end cap outlet and inside fitting and slide fitting onto outlet. Install fitting as shown with open end pointing down in the 6:00 o'clock position.

ATTENTION: Verify that you are using the WF6682 elbows. These are without threads. **Do not use the WF6692 elbow.**

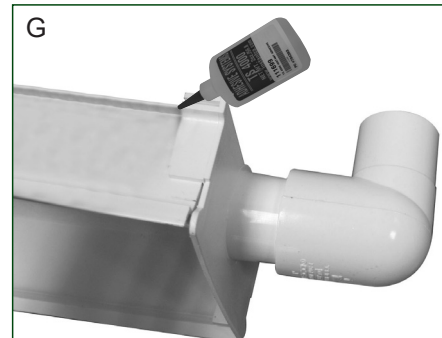
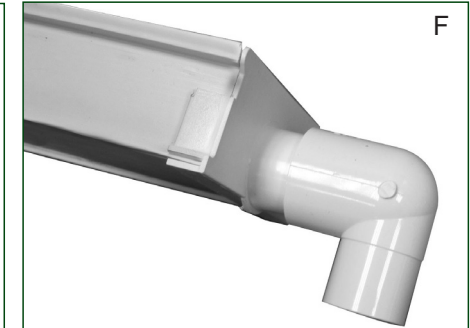
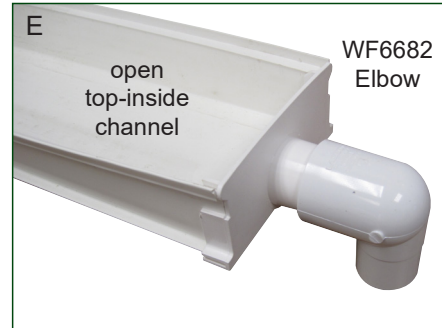
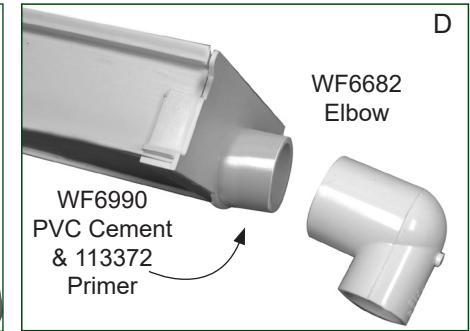
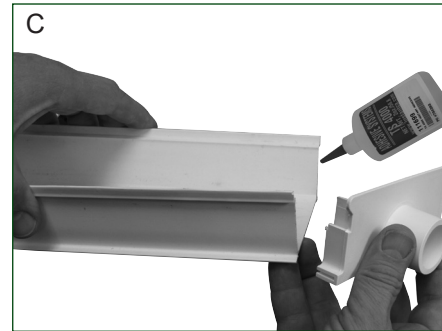
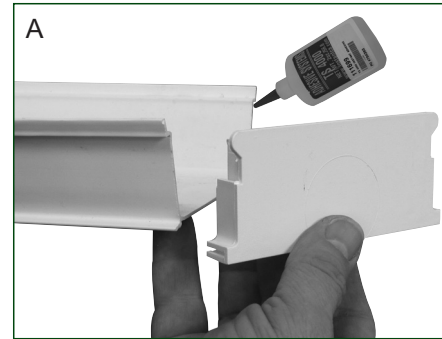


Apply primer and cement in a well-ventilated area. Read and follow container information for additional precautions.

5. Once all end caps and drain elbows are in place, carefully flip all channels over so the bottom is facing up and the open top is down.
6. Apply the 112509 adhesive along the edges to secure end caps to each 8' channel. Photos show an end cap with an outlet. Secure the plain end caps in the same manner.

NOTE: Be sure to coat all edges and seams of the end caps to prevent leaks.

7. Allow the adhesive to dry before moving the channels or testing the system.
8. Continue with the next procedure.

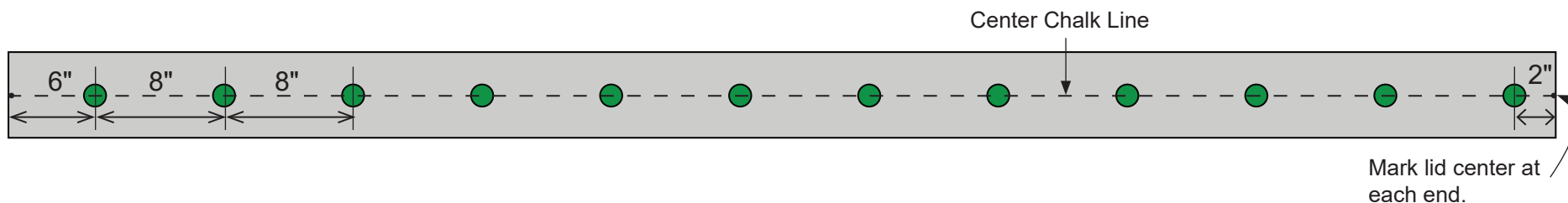


4

PREPARE THE 8' CHANNEL LIDS (113534)

For this hydroponic system, channel lids ship without plant holes. Hole spacing and size varies depending on plants and size of plant medium. Typical spacing for 1-3/8" holes is 8" on-center for most lettuce varieties as shown in this example.

1. Select one 8' channel lid and mark the center of the top at each end. Take a chalk line filled with *non-permanent* chalk, stretch it from end-to-end, align with center marks, and snap a line.
2. Mark center of the first hole at 6" from one end. From that mark, mark the remaining hole positions at 8" on-center along the chalk line. There will be twelve (12) hole positions when completed.
3. Place lid on scrap plywood (or similar material) for backing (if desired) and drill 1-3/8" holes using a drill and hole saw bit. (No backer is needed if using a step bit.)
4. Repeat these steps to prepare and drill the remaining lids.
5. Rinse the lids to remove all shavings so these will not plug the nutrient circulation system. Set the lids aside for later.
6. Continue with the next procedure.



ATTENTION: Use a 1-3/8" hole saw bit to drill the holes. (A step bit* works well. See below.) (Depending on requirements, hole size may differ.)



4

PREPARE THE 8' CHANNEL LIDS (continued)

For improved plant growth, off-set holes when installing lids. Alternate lids as shown below and on previous page. Before snapping lids onto channels, drill the nutrient tube holes at one end of each lid.

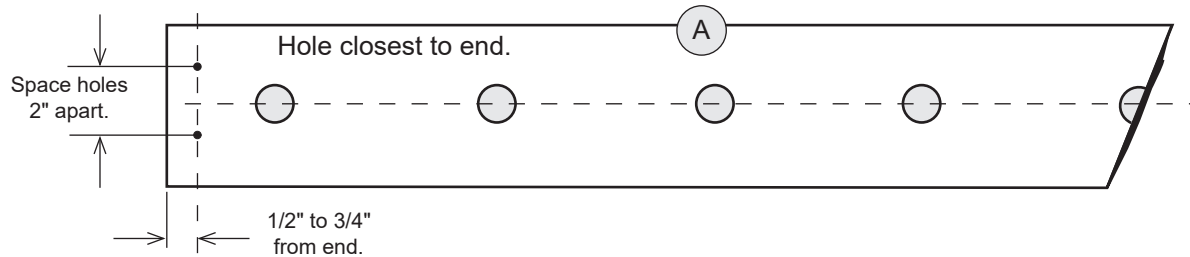
Complete these steps to drill holes for nutrient tubes:

1. Take half of the channel lids and arrange so all plant holes and ends align. Take the remaining channel lids and repeat this step. Keep the two piles separate.

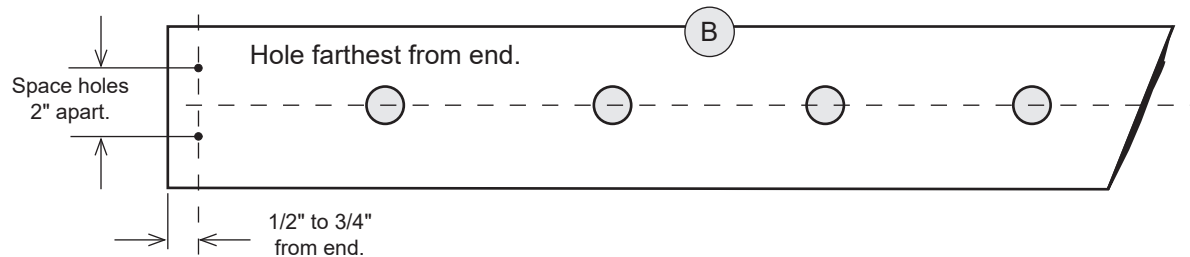
ATTENTION: For the first pile of lids, position nutrient tube holes where first plant hole is closest to the lid end. See A in the photo.

For the remaining lids, position nutrient tube holes where first plant hole is farthest from lid end. See B in the photo.

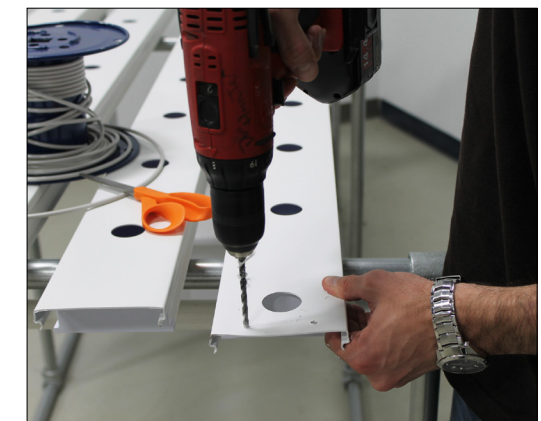
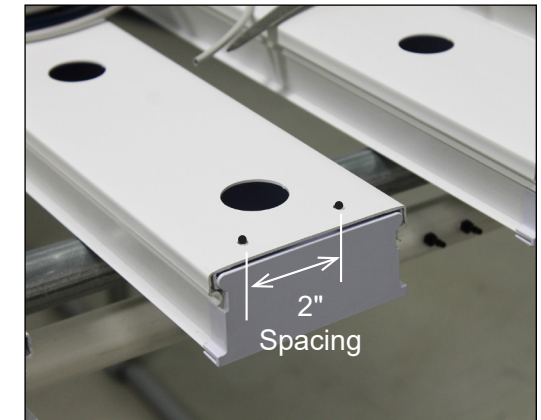
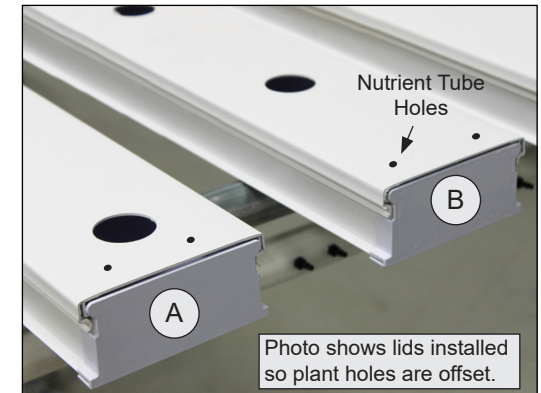
2. Move to pile A and drill two (2) 5/16" holes in each lid where plant hole is closest to lid end. See diagram that follows. Keep lids in the same group when completed.



3. Move to pile B and drill two (2) 5/16" holes in each lid where plant hole is farthest from lid end. See diagram that follows. Keep lids in the same group when completed.



ATTENTION: Example above continues the example shown on previous page. Actual hole pattern may not resemble what is shown in this example. Whatever the hole pattern, when sliding lids onto channels, position nutrient tube holes opposite the drain end/elbow of the channel.



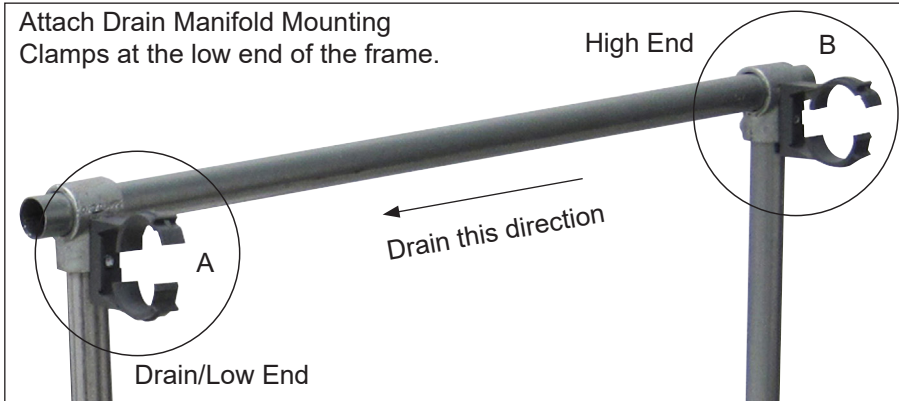
ATTENTION: Drill holes away from open channels to prevent debris from dropping into channels.

5

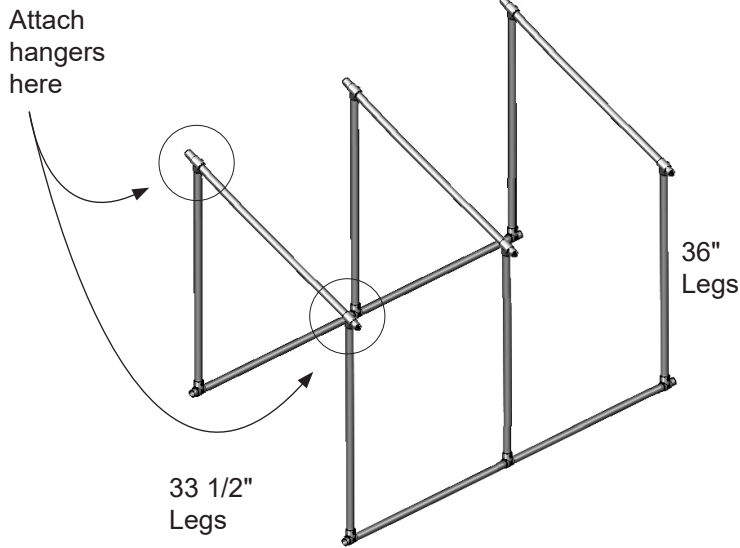
ATTACH DRAIN MANIFOLD HANGERS TO FRAME

Before assembly, dry fit all pvc connections before applying the adhesive. Apply adhesive as instructed only.

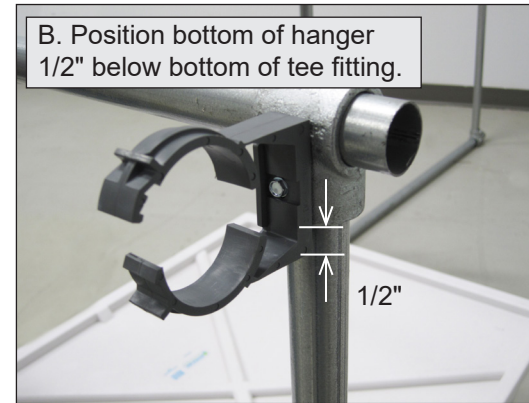
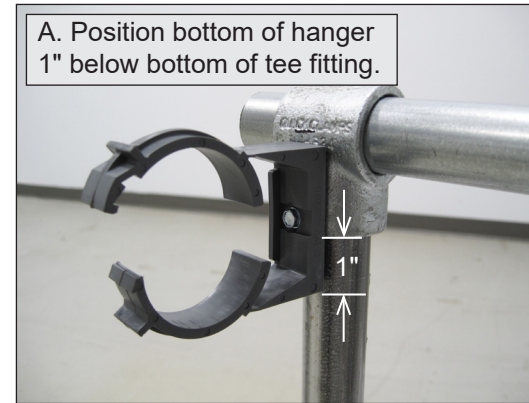
Use the photos to the right to attach the drain manifold mounting hangers to the frame using the FA4470 Tek screws and the magnetic nut setter.



NOTE: Reverse clamp position if you want table to drain in the opposite direction.



ATTENTION: Install the drain manifold at the low end of the frame, which has the shorter (33 1/2") leg pipes.



Assembly Instructions

6

ASSEMBLE AND ATTACH PVC DRAIN MANIFOLD

Complete these steps:

1. Cut one 6" tube from the 2" pvc tube (111560Z5). Apply pvc primer and WF6990 cement to tube end and fitting. Slide into tee fitting. Repeat to attach the remaining section of pvc tubing to the tee fitting. Allow the cement to set then continue.

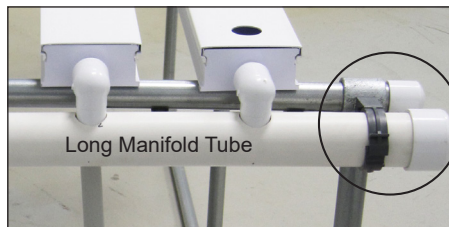


Press against hanger to lock assembly in place.

2. Snap the assembly into the clamps on the frame. Position tee at the low end. Long tube is cut to length later.

ATTENTION: Position tee fitting next to the hanger that is installed lowest on the frame. See the A position on the previous page if needed. Manifold should slope toward the tee fitting.

3. With outlet of tee fitting point straight down, mark center of tee. Snap a line end-to-end. From first mark, mark three (3) additional locations at 10" on-center. There will be four (4) marks.
4. Using a 1-3/8" hole saw, drill a hole at each mark. Do not apply too much pressure on the tube. Doing so may damage clamps. Place a support under pvc tube during drilling, or remove manifold from clamps and drill on a bench.
5. Once holes are drilled, cut the long tube to the desired length. Allow room to install both end caps. **Clean the tube.**
6. Add one WF6717 cap to each end of the manifold. **Do not cement these to the manifold.** They are removed during routine cleaning and maintenance.
7. Continue with the next procedure.



Step 5: Cut the long manifold tube so it extends through clamp, but remains shorter than frame cross support. End cap should be flush with end of cross support when installed.



7

DRILL HOLES IN RESERVOIR COVER

Drill the 2-1/2" Drain Tube Hole

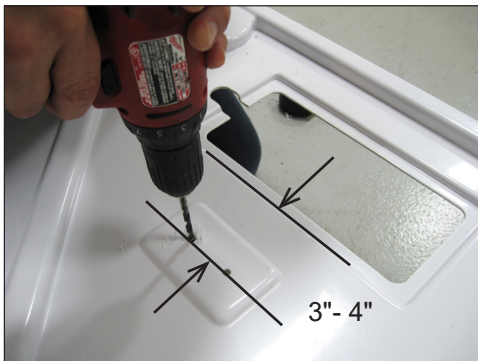
1. Determine in which corner you want to drill the drain tube hole. This is the corner directly under the tee fitting outlet in the drain manifold.
2. Remove the cover from the reservoir and drill the drain hole in the corner using a 2-1/2" hole saw. Do not drill cover over the reservoir. Debris will damage the pump and clog the filter.

Drill the 1" Supply Tube Hole

1. Using a 1" hole saw, drill the hole for the 3/4" supply tube from the pump. Drill this hole at the edge of the porthole opposite the drain tube hole. See the X's in the upper-right photo.
2. Carefully remove the cover material between the porthole and the 1" hole using a hand saw.

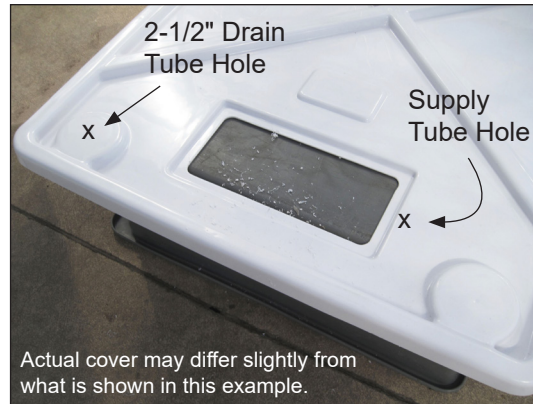
Drill the 5/16" Holes for the Air Pump Tubing

1. Take a 5/16" drill bit and drill two holes 2" apart through cover. See photo below for location.



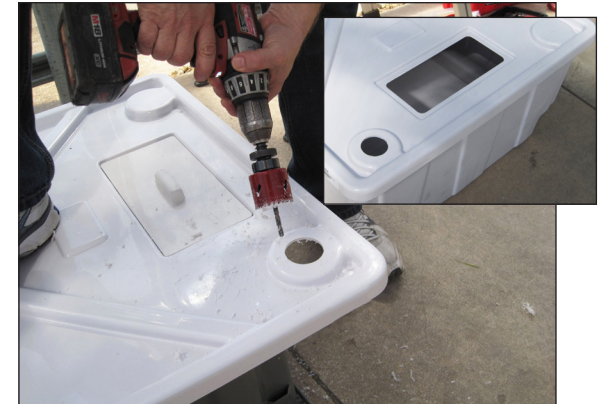
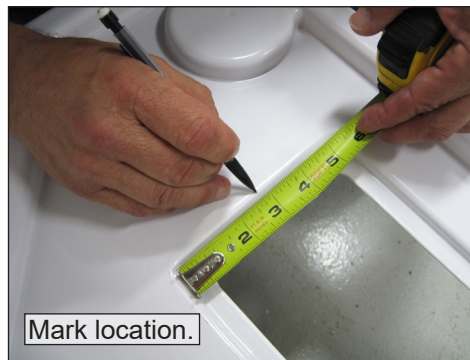
2. Remove all debris from the cover and around all holes to prevent it from dropping into the reservoir when cover is set in place.

Drill the 2-1/2" Drain Tube Hole



ATTENTION: X marks hole locations based on reservoir design and position. Drill one 2-1/2" drain tube and one 1" supply tube hole. Always space holes apart as shown. If 2-1/2" drain hole position is the other corner, drill the 1" supply tube hole on the opposite side of the port hole.

Drill the 1" Supply Hole



Move cover off reservoir. Place on support to drill the 2-1/2" drain hole.

ATTENTION: Reservoir and lid style shown throughout this guide may vary. When needed, critical dimensions are noted for hole locations.

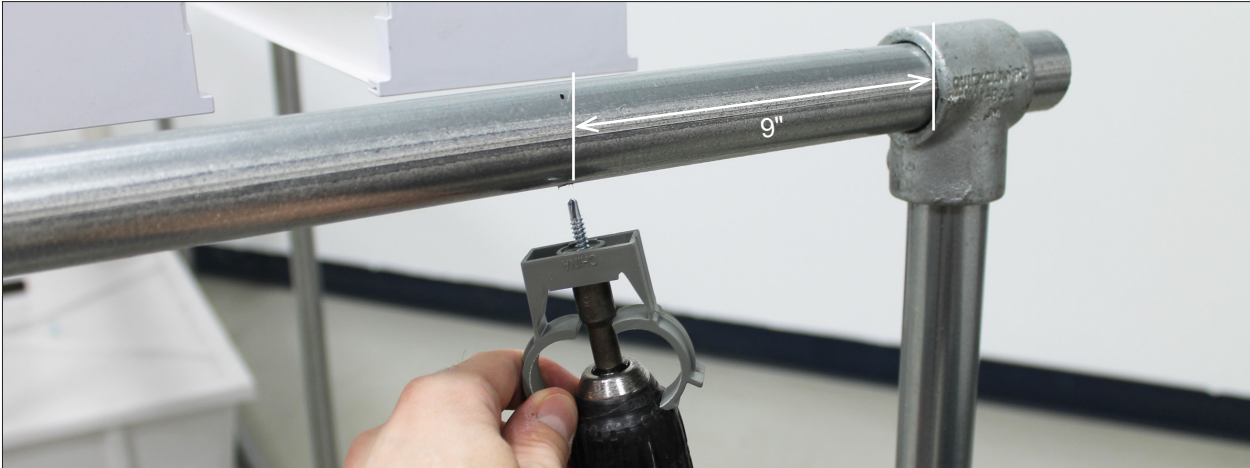


8

ATTACH 1" HANGERS FOR NUTRIENT SUPPLY MANIFOLD

Complete these steps:

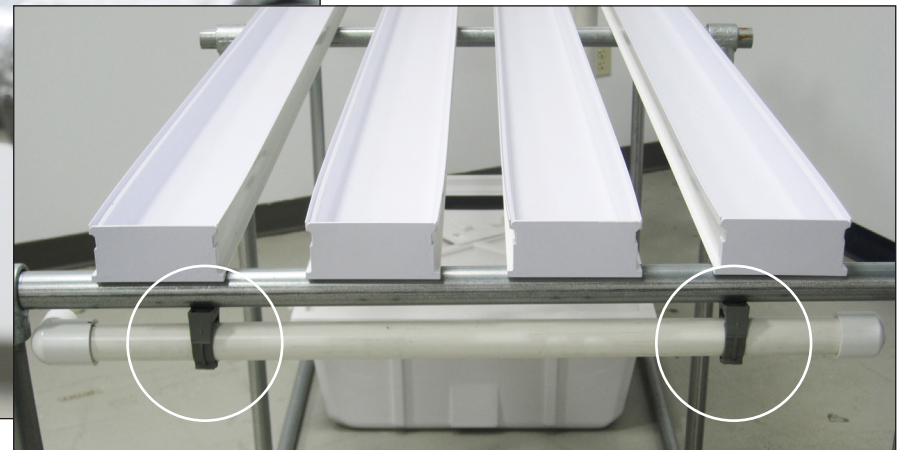
1. Move to the end of the frame opposite the drain manifold.
2. Measure approximately 9" in from each frame tee fitting and mark the position on the underside of the cross support.



3. Attach one 112538 hanger in each position using the FA4470 Tek screws and 100442 driver. Do not overtighten!



ATTENTION: Position of trays and clamps shown below may differ from actual frame.



9

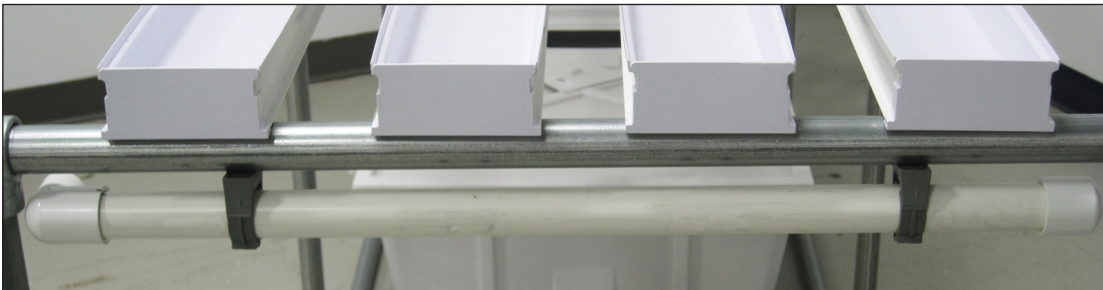
ASSEMBLE NUTRIENT SUPPLY MANIFOLD AND ATTACH TO FRAME

Complete these steps:

1. Cut a piece of 3/4" pvc tube from the 60" section supplied so it fits between the leg pipes. Allow room to install the end fittings as shown below.
2. Slide a WF1530 elbow onto one end of the 28" pipe and a WF2990 cap onto the other end. **Do not cement at this time.**



3. Move to the frame and snap the supply manifold into the 3/4" hangers. Install so elbow is at the corner opposite the tee fitting of the drain manifold at the opposite end of the frame.



4. Verify the open end of the elbow points towards the opposite end of the frame and mark elbow location on both the elbow and manifold tube for alignment purposes.
5. Continue with the next procedure.



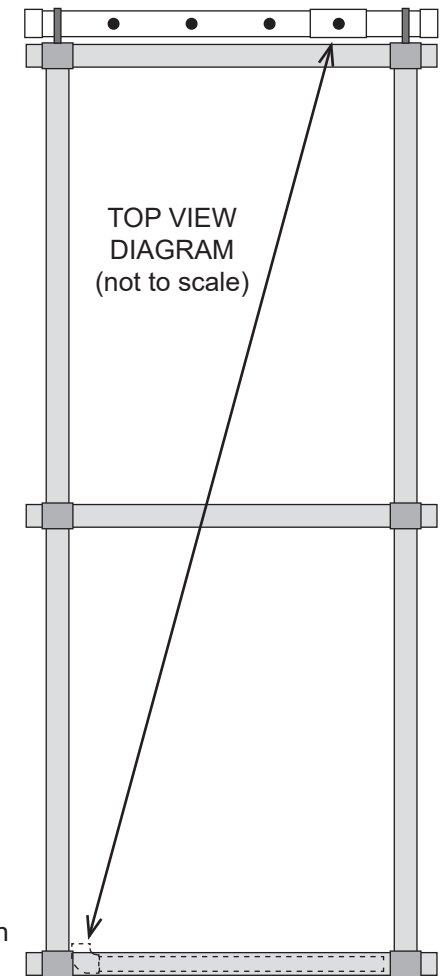
Elbow installed at corner opposite the tee fitting of the drain manifold.



WF2990



WF1530

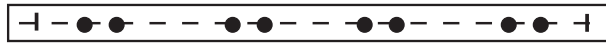


10

DRILL HOLES TO INSTALL THE 115820 GROMMETS

Complete these steps:

1. Verify NFT channels are located in desired positions.
2. Along the bottom side of the manifold tube, mark two (2) hole locations on the supply manifold for each NFT channel. Space holes for each channel approximately 2" apart.
3. Remove manifold from the frame using a small screwdriver to release the jaws of each hanger.
4. Using a **3/8" drill bit** — a step bit is highly recommended — drill holes in PVC tube for top hat grommets.



Step Bit

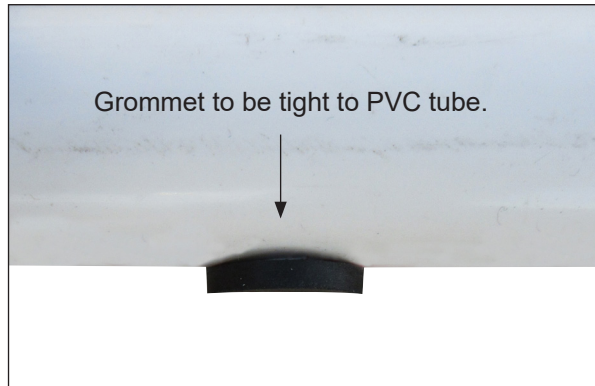
5. Remove elbow and cap and clean loose PVC debris from inside the tube and from around each grommet hole after drilling. Holes must be clean and free of debris before installing top hat grommets.

NOTE: Run a clean cloth through inside of tube, or rinse with water and allow tube to dry before assembly.

6. Insert one 115820 top hat grommet into each 3/8" hole in the PVC tube. Dip grommet in water for easier installation. Wipe off chalk line if desired. Verify through holes in grommets. Puncture if necessary.



Step 6

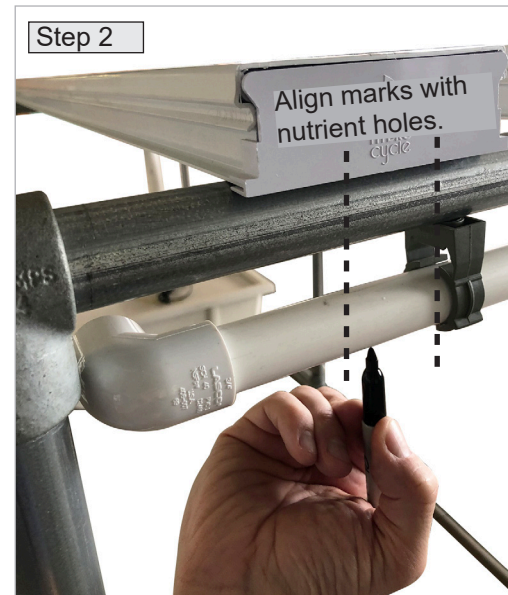


Grommet to be tight to PVC tube.



IMPORTANT: Verify there is an open hole through the grommet before installing. Puncture through if necessary.

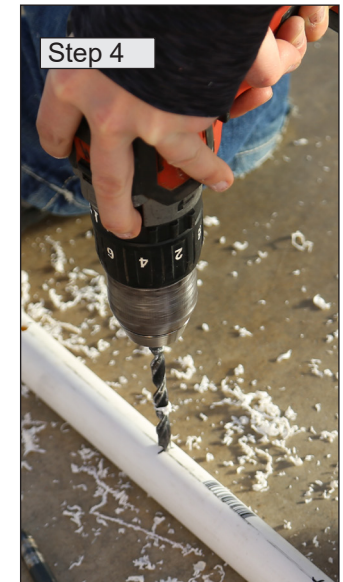
7. Continue with next procedure.



Step 2

Align marks with nutrient holes.

HELPFUL HINT: To maintain hole alignment, along the bottom side, snap a chalkline from one end of the manifold tube to the other. Use non-permanent chalk. Align marks with the nutrient holes drilled into the NFT channels.



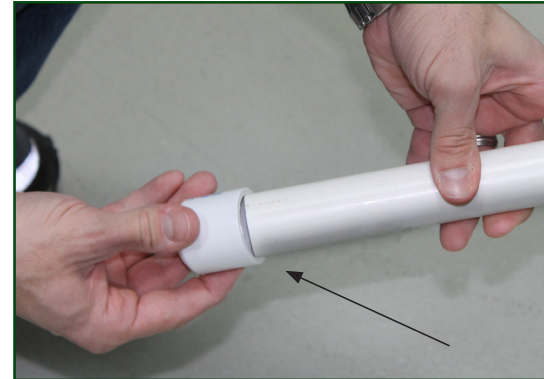
Step 4

ATTENTION: If using a twist drill bit (as shown), apply slight pressure to allow bit to cut a smooth hole in PVC tube.

11

FINISH MANIFOLD

1. Once all gromets are installed, apply pvc primer and cement to each end of the pvc supply manifold and inside elbow and cap and reinstall. Be sure to align the marks to install the elbow in the correct position.



Apply primer and cement to both ends of the supply manifold and inside fittings. Reinstall fittings.



WF6990 PVC
Cement & 113372
PVC Purple Primer

2. Allow cement to set and snap the assembled manifold back in the hangers.

IMPORTANT: Assemble manifold by positioning top hat grommets down toward floor. Review sample picture below for a finished manifold with 1/4" feeder tubes to NFT channels.

3. Continue with the next procedure.

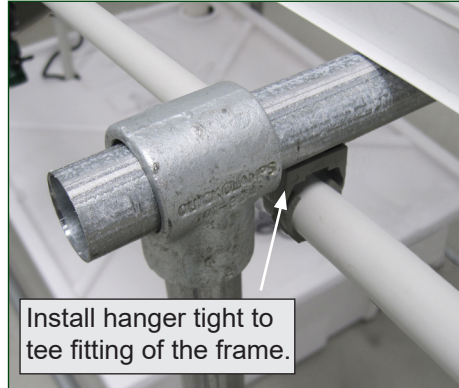
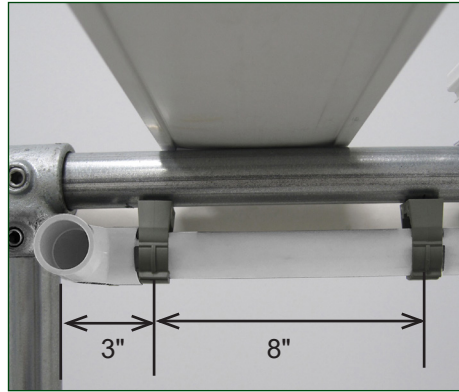


ATTENTION: Actual system may differ.

12

ASSEMBLE FILTER/VALVE, PUMP AND MAIN SUPPLY LINE

1. Take the 106808 hangers and attach two to the inside of the crossbar at the drain end of the frame using the FA4470B Tek screws. Consult the photo at the right for dimensions.
2. Move to the middle crossbar and attach the last 106808 hanger to the underside of that crossbar.
3. Using the photo below, assemble the filter/valve and related fittings. Wrap all threads with thread tape before assembly.



4. Continue with the next procedure.



Cap



Remove cap to install the 112066 shutoff valve.

Assembly Instructions

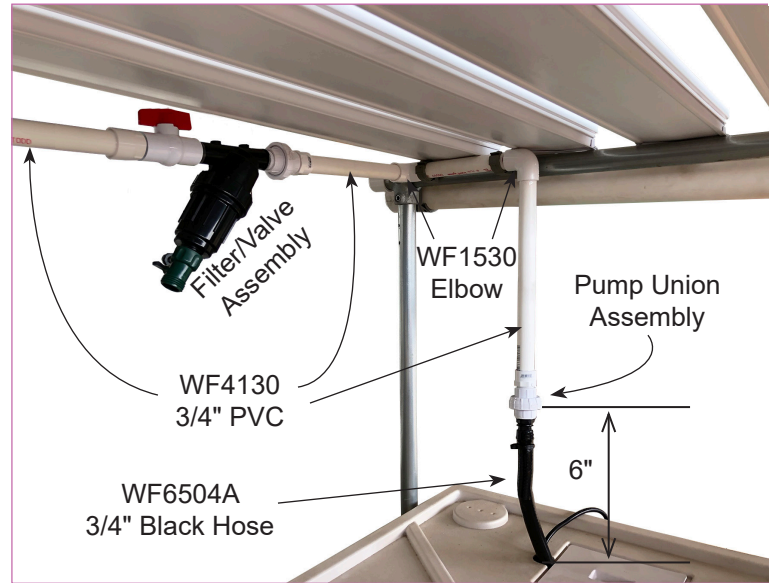
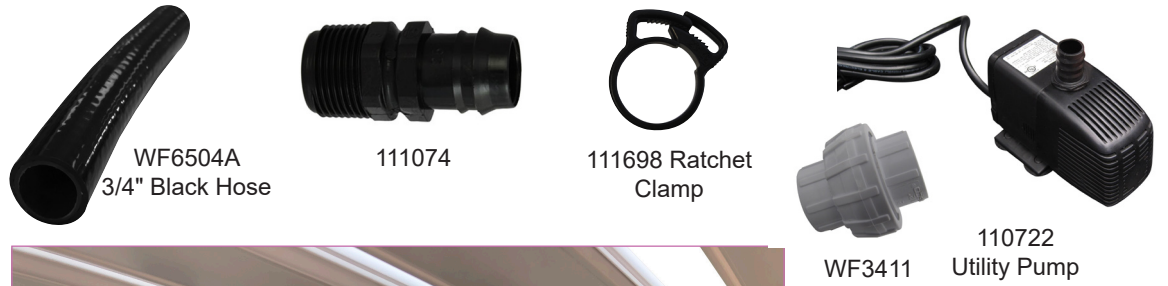
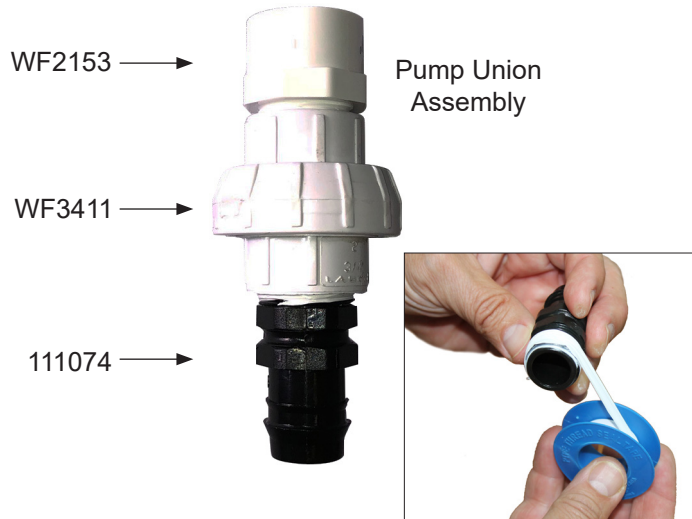
13

ASSEMBLE PUMP AND MAIN SUPPLY LINE

Using the photos on this page and the notes that follow, install the water pump and main supply line.

Read, understand, and follow these notes to construct the main supply line and pump assembly:

- Fully insert all fittings into the 3/4" black hose during assembly. See photo and note below.
- Secure all 3/4" black hose and fitting connections using the 111698 ratchet clamps.
- Position the pump union assembly approximately 6" above the reservoir cover. Secure with ratchet clamps.
- Position the filter/valve assembly at the reservoir end of the frame between the crossbars as shown.
- Install filter assembly **according to the water flow arrow on the filter housing**.



Consult guide included with the pump for pump fitting

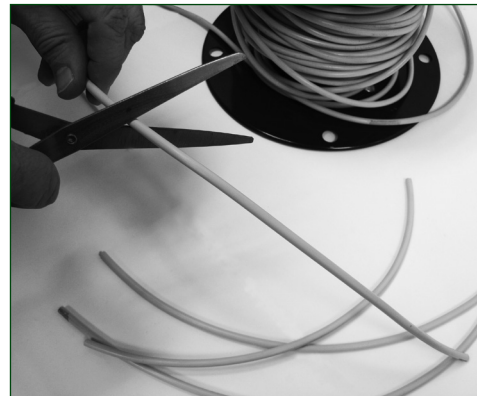


ATTENTION: Use pliers to gently squeeze ratchet clamps around tubing.

14

CUT AND INSTALL THE SUPPLY TUBES

1. Determine the desired 1/4" tube length. Tube should reach from the grommet in the supply manifold to a hole in the channel lid immediately above the grommet.
2. Adjust tube length if needed and cut remaining tubes from the 111046 tube. Use the plastic pipe and tube cutter to create a clean, smooth cut.
3. Once all tubes are cut, slide one into each grommet. Wet the tube end for easier installation. To ensure 1/4" feeder tube is fully inserted into top hat grommet of supply manifold, mark a line on tube end opposite beveled end that is 1/2" in from end. Tubes can be marked individually, or aligned and marked using a straight edge to save time.
4. Insert two tubes into a channel lid at each location. **Trim the end of each tube at an angle for easier installation.**
5. Continue by connecting the air circulation pump.



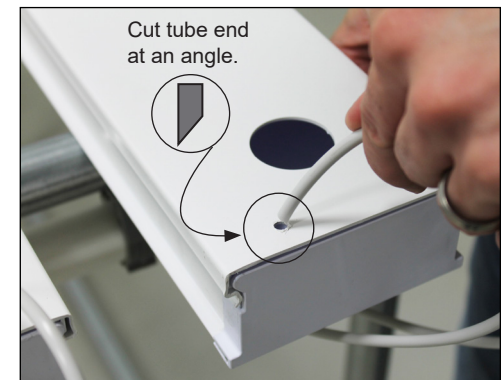
a. Cut the 16" supply tubes from the 111046 poly tubing.



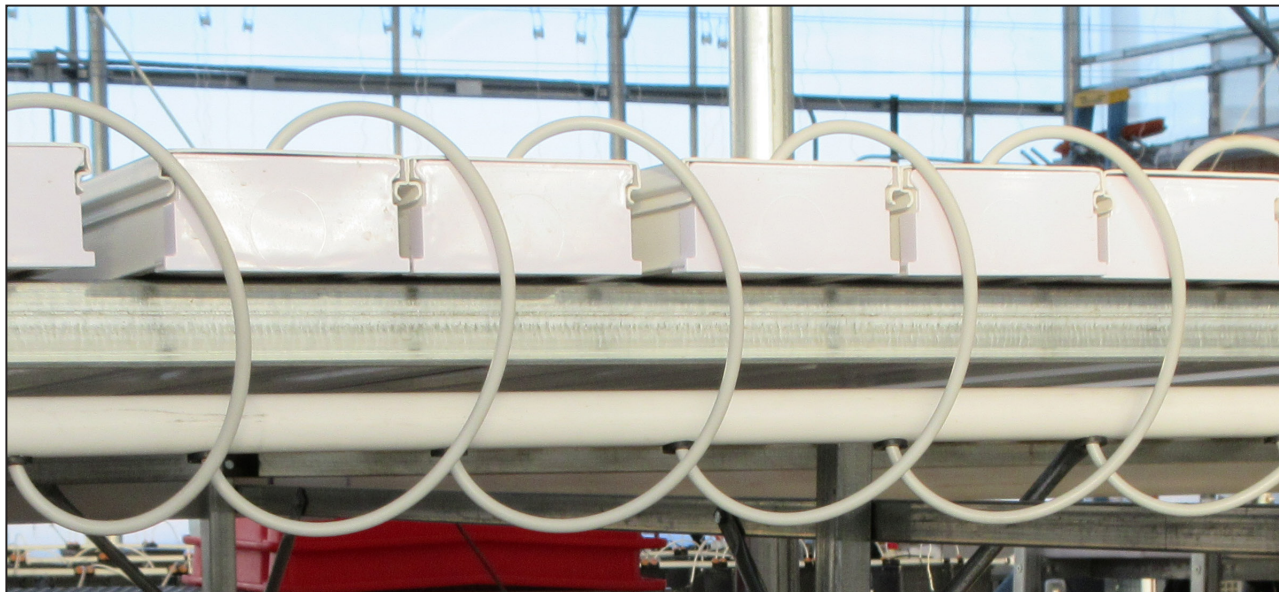
b. Mark tube for depth of insertion into grommet.



c. Slide one tube into each of the supply manifold grommets.



d. Slide lid back onto channel. Install tubes in holes.



15

ATTENTION: Always position the air pump *above* the nutrient level to prevent siphoning of the reservoir.

ATTENTION: Reservoir and lid style shown throughout this guide may vary. When needed, critical dimensions are noted for hole locations.

ATTACH THE AIR PUMP AND AERATOR STONES

For optimal system performance and to extend the life of the nutrient solution through increased oxygenation, an aerator pump and aerator stones are included. Position stones at the bottom of the reservoir opposite the water pump. *Air pump must remain above nutrient level to prevent siphoning.*

1. Choose a position for the air pump and use it to determine the length of each air tube. Cut two air tubes of equal length using the 110091 tubing and tube cutter.

ATTENTION: Position the air pump at a level that is **above the nutrient level at all times to prevent siphoning** of the reservoir.

2. Attach one stone to each line and set the stones in the reservoir. See photo for stone position opposite the water pump.
3. Place the reservoir cover on the reservoir and feed the tubing up through the access holes and connect the free end of each tube to the air pump.



4. Place the air pump in the position chosen in Step 1.
5. Connect the air pump to power and test the operation. Verify that air is filtering through each air stone. Monitor the air pump regularly to ensure proper operation of the aerator system.

NOTE: When the system is fully operational, the air pump will run continuously. **Do not connect the air pump to any circuit controlled by a timer or shutoff switch.**

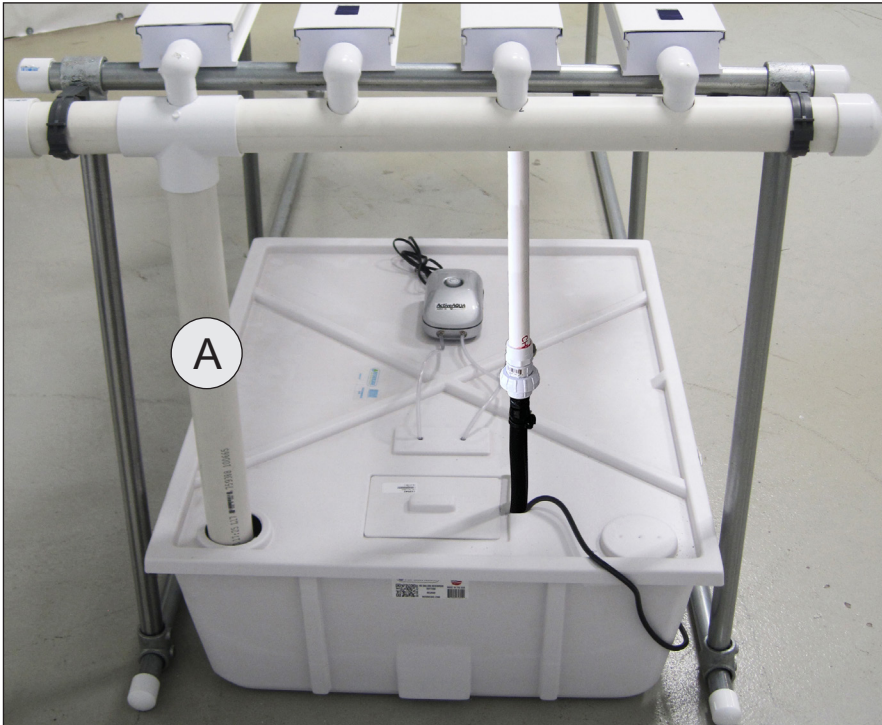
6. After testing air flow, turn off the aerator pump until the system is fully functional.



16

INSTALL VERTICAL DRAIN TUBE AND FRAME CAPS

The vertical drain tube (A) directs the nutrient solution back to the tank. Use the remainder of the first 111560Z5 tube if it is long enough to reach an inch or so through the cover and into the tank. Or, cut a new piece from the 111560Z5 tube that remains. Tube end in the tank must remain above the nutrient solution to allow additional oxygen to mix with the solution during operation.



Do not cement the vertical drain tube to the tee fitting. In most instances, it is best to allow it to remain free so it can be removed to service and drain the reservoir. Check the tube often to ensure that it is not working loose during operation.

ATTENTION: If the tube is cemented to the tee fitting, additional steps will need to be taken to remove the cover or reposition the tank.

Install the WF2995 pvc caps to cover the end of each open pipe.



Actual lids have square holes for plants.

ATTENTION: Do not cement or drive the caps onto the pipe using a hammer. If needed, lightly tap to start on pipe and to hold in place.

System Check

System Check

After assembling the 112525 NFT system, take a few minutes to check the system. Complete these steps.

1. Verify that all electrical cord ends are outside the reservoir.
2. Ensure that the supply tubes are fully inserted in the channel lids.
3. Fill the reservoir with a few inches of water to cover the pump.
4. Verify that the AC2804 in-line valve in the main supply tube is open.
5. Plug the water and air pump power cords into an GFCI (Ground Fault Circuit Interrupter) outlet. Both pumps should turn on.



WARNING: KEEP ALL ELECTRICAL CORDS AND CONNECTIONS OUT OF THE RESERVOIR. CONSULT THE SERVICES OF A QUALIFIED ELECTRICIAN TO ADEQUATELY AND SAFELY CONNECT THE PUMPS TO A POWER SUPPLY.

ALL ELECTRICAL CIRCUITS SHALL BE DESIGNED IN ACCORDANCE WITH LOCAL AND REGIONAL BUILDING CODES AND STANDARDS.

6. Check each NFT channel to ensure that water is running out each supply tube and the drain end of each channel.
7. Check all plumbing connections—main supply line and filter—for leaks.
8. Check all pvc fittings for leaks.
9. Look for bubbles in the reservoir to verify that the air is pumping to each air stone. Remember to always mount the air pump on a surface that is above the water level. Vibrations of the pump can cause it to move. Make sure the pump does not fall into the reservoir or other liquids.
10. Once the system has been checked and all adjustments are made, it is ready for use.



Column reserved for notes.

OPERATIONAL AND MAINTENANCE INFORMATION

General Cleaning and Maintenance Instructions

For optimal performance and to increase yields, check and clean the NFT system periodically. Time between maintenance and cleaning depends on the growing environment and specific use of the system. Complete the following steps as needed to ensure that your system is working properly.

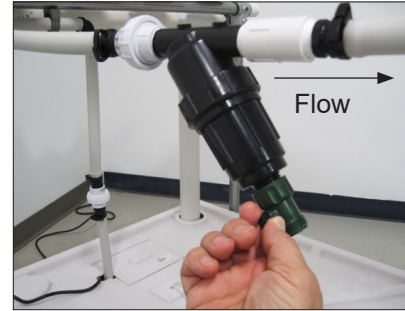
1. Inspect the frame and mounting screws to ensure they are tight and frame is not damaged.
2. Disconnect the main power supply to turn off all pumps. Remove the reservoir cover and inspect the inside of the reservoir. Reservoir should be cleaned each time the nutrient solution is changed. Keep the reservoir and porthole covers in place during operation to prevent light from entering the reservoir.
3. Check all plumbing and main supply connections to ensure that all are operating as designed.
4. Replace worn or cracked supply tubes as needed.
5. Clean the drain tube if needed. Remove the end plugs and inspect the inside of the tube. Clean the drain tube by pulling or pushing a brush or cloth through the it. Rinse with clean water.

NOTE: Do not allow debris from the drain tube to contaminate the contents of the reservoir. Remove the vertical tube and clean.

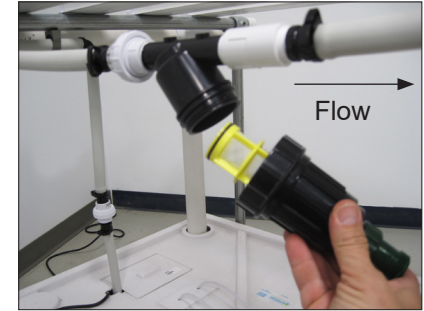
6. With the pump off, disassemble the filter and clean the screen and housing. Reassemble for use. See procedure in the right column.

Clean the Filter Screen and Housing

For best results, clean the filter screen regularly or when the flow rate changes unexpectedly. Complete these steps to clean the filter screen.



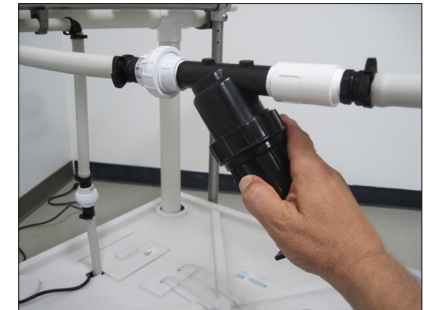
1. Shutoff the power to the nutrient pump. Open the valve on the filter to drain the system.



2. Grip the filter housing and the main supply line and unscrew the housing. Do not apply force to the filter fittings.



3. Remove the screen from the housing. Using clean water, rinse the housing and the screen.

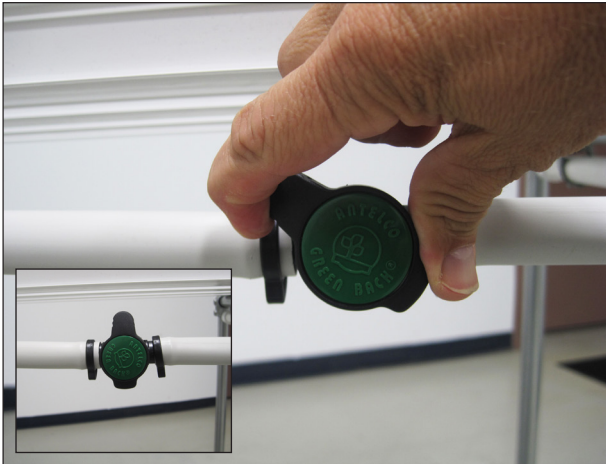


4. Insert the screen back into the housing, reassemble the filter, and *close the valve*.
5. Turn on the pump and check the flow from the supply tubes to each channel.
6. Check filter for leaks.

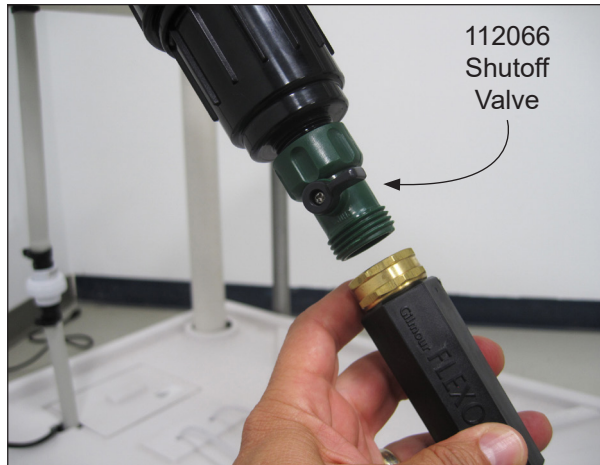
OPERATIONAL AND MAINTENANCE INFORMATION

RESERVOIR CLEANING AND MAINTENANCE

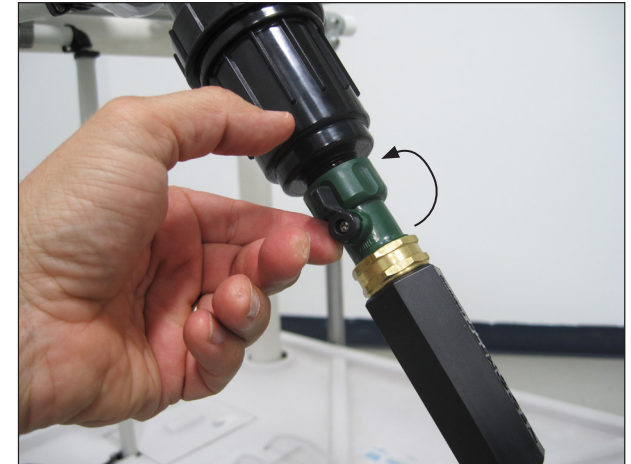
Clean the reservoir periodically to maximize plant growth and to minimize system contamination. The steps that follow can be used to change nutrient solution and to pump the reservoir for cleaning and typical maintenance. *Cleaning the filter is strongly recommended after cleaning the reservoir.*



1. Turn off the nutrient pump and close the in-line valve in the main supply line. Depending on installation, knob may point up or down.



2. Connect a garden hose to the shutoff valve of the filter. Place the end of the hose in a bucket or run it to the desired location.



3. Open the shutoff valve on the filter and turn the pump on to pump out the reservoir. Turn off the pump once the reservoir is empty.



4. Clean the reservoir as needed and repeat the steps to pump it out if needed. Close the shutoff valve.



5. Remove the hose and clean the filter. See previous page for procedure.

6. Refill the reservoir with nutrient solution.

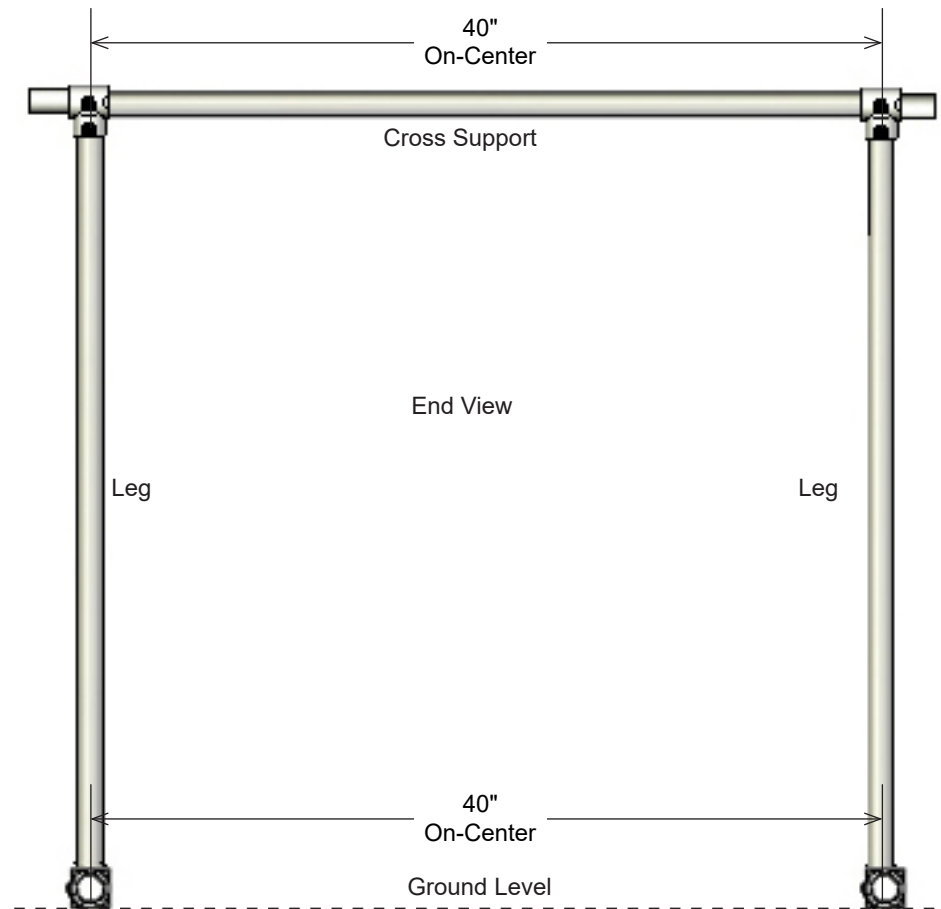
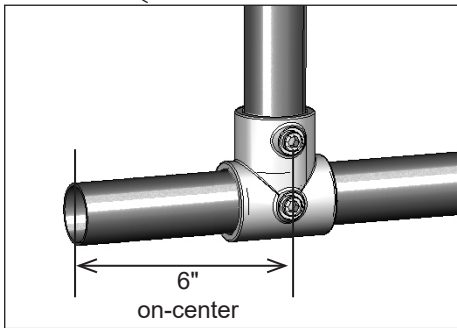
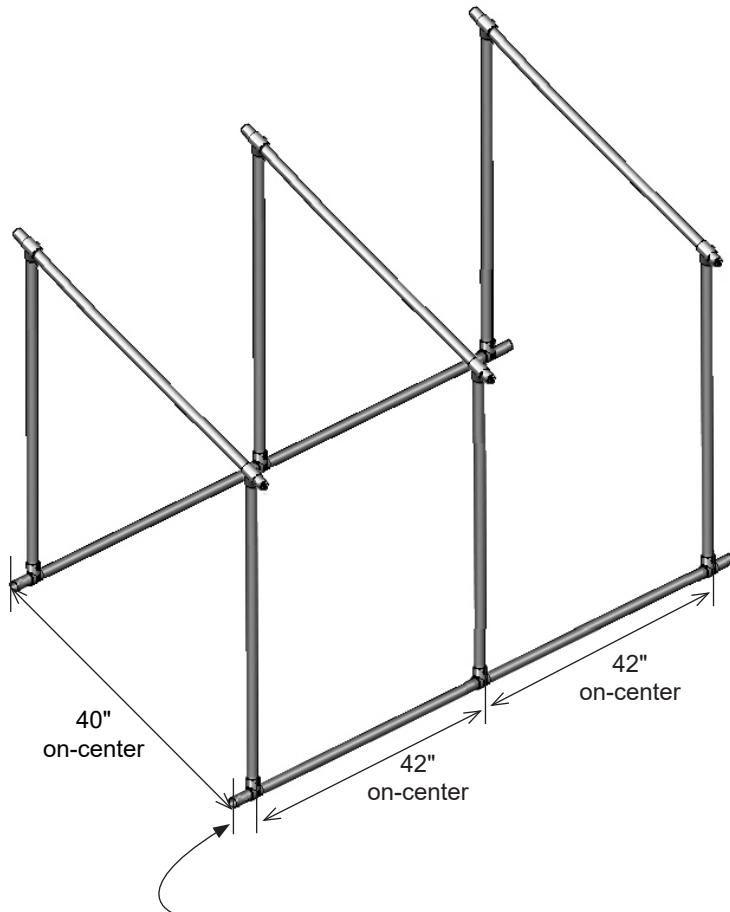


7. Open the in-line valve and turn on the pump to resume operation. Knob may point in opposite direction depending on how valve was installed.

8. Check all fittings and tubes.

113539 FRAME

SUPPORT FRAME DIMENSIONS AND VIEWS



ADDITIONAL PHOTOS

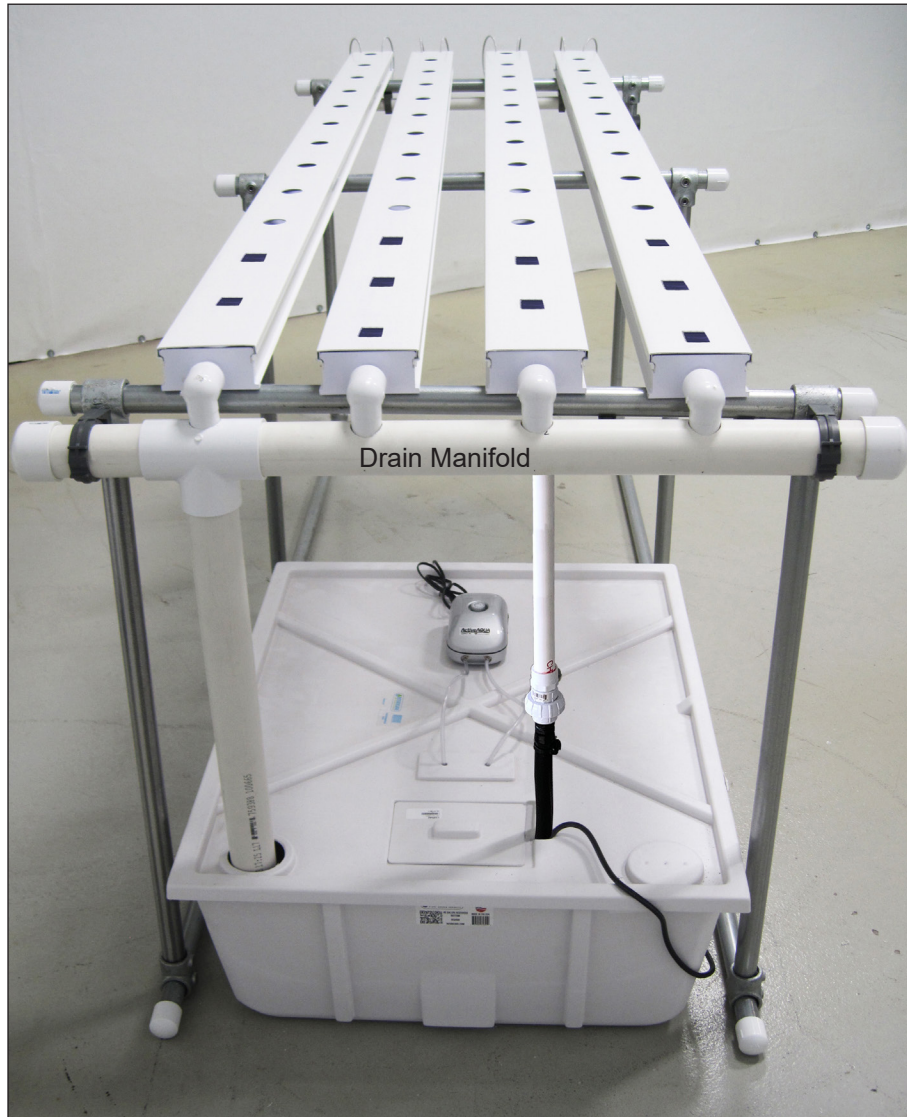


Photo above shows a completed table as viewed from the drain end.



Photo shows the supply manifold and supply tubes of the NFT system.



Photo shows a side view of a completed 112525 table. Filter/valve assembly, pump union assembly, reservoir, and air pump are also visible.

ATTENTION: Reservoir and lid style shown throughout this guide may vary. When needed, critical dimensions are noted for hole locations.

ADDITIONAL PHOTO



ATTENTION: Reservoir and lid style shown throughout this guide may vary. When needed, critical dimensions are noted for hole locations.

