



HydroCycle Hobby NFT Lettuce System



System 115141 — 6" x 60" NFT Channels

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

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

*Actual system may differ from what is shown.

Important Information

READ THIS DOCUMENT BEFORE YOU BEGIN

Thank you for purchasing the 115141 6" NFT micro 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) five foot (5') 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.

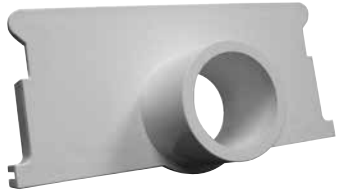
QUICK START GUIDE

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

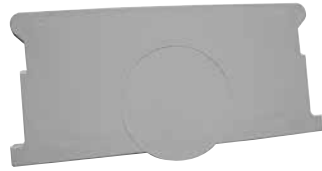
Important Information

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



WR1095
Tape



109260 Air Stone



110725
Air Pump



110722
Utility Pump



110091 Clear
Vinyl Tubing



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.



WF6504A
3/4" Black Hose



111046
1/4" White Polyethylene Tubing



FA4470B (10)
Tek Screw



115857
1" Cap Plugs



FAG332B
Hex Cap
Screw



FALB02B
Hex Nut

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 and
WF6717



118469
Grommets



WF2153



WF2160



WF1576



118451 and 118452
25 Gallon Reservoir and Lid

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

Assemble Main Support Frame

1

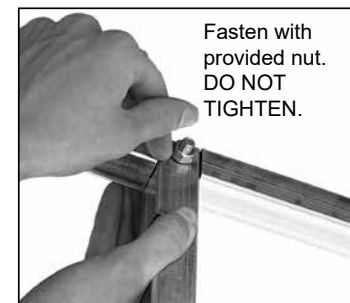
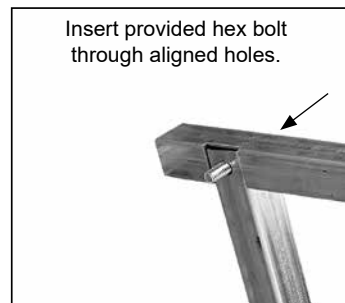
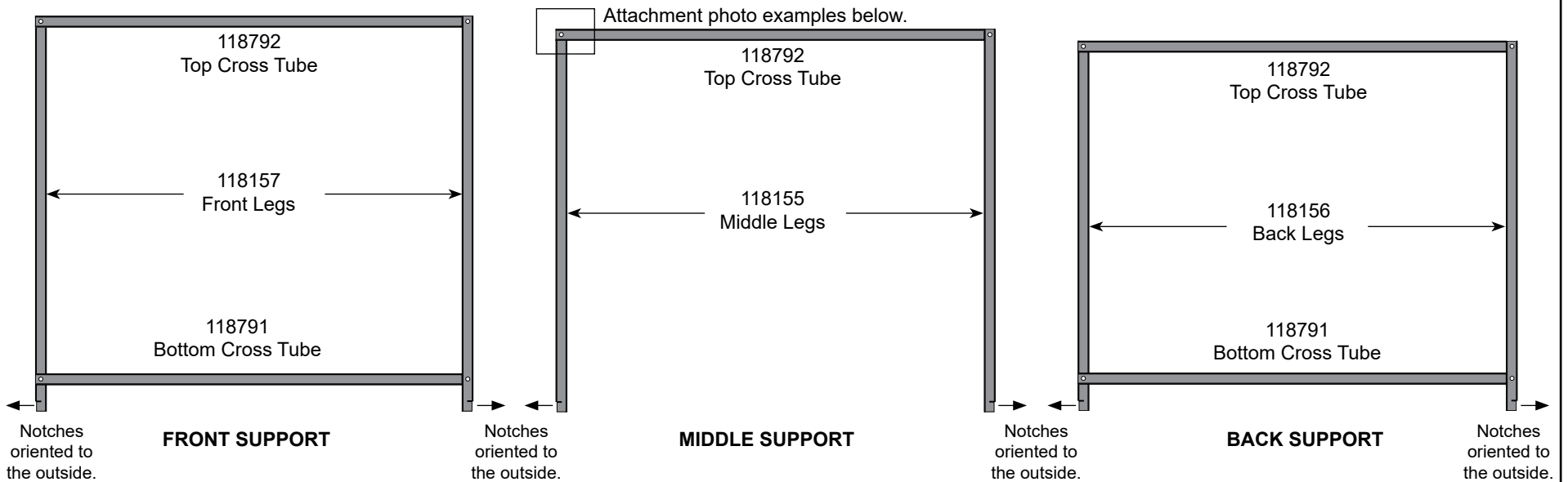
ASSEMBLE MAIN SUPPORT FRAME

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

Complete these steps to get started:

1. Construct the following supports as shown. Each support consists of two matching legs, and cross tubes. Cross tubes are secured to the legs by aligning the matching notches accordingly, and fastening together with a bolt and nut. **Do not tighten nuts at this time.**

IMPORTANT: Matching legs are oriented oppositely in order for the pre-cut notches to align. When assembled properly, the pre-cut notches along the bottom are oriented to the outside. See diagrams.

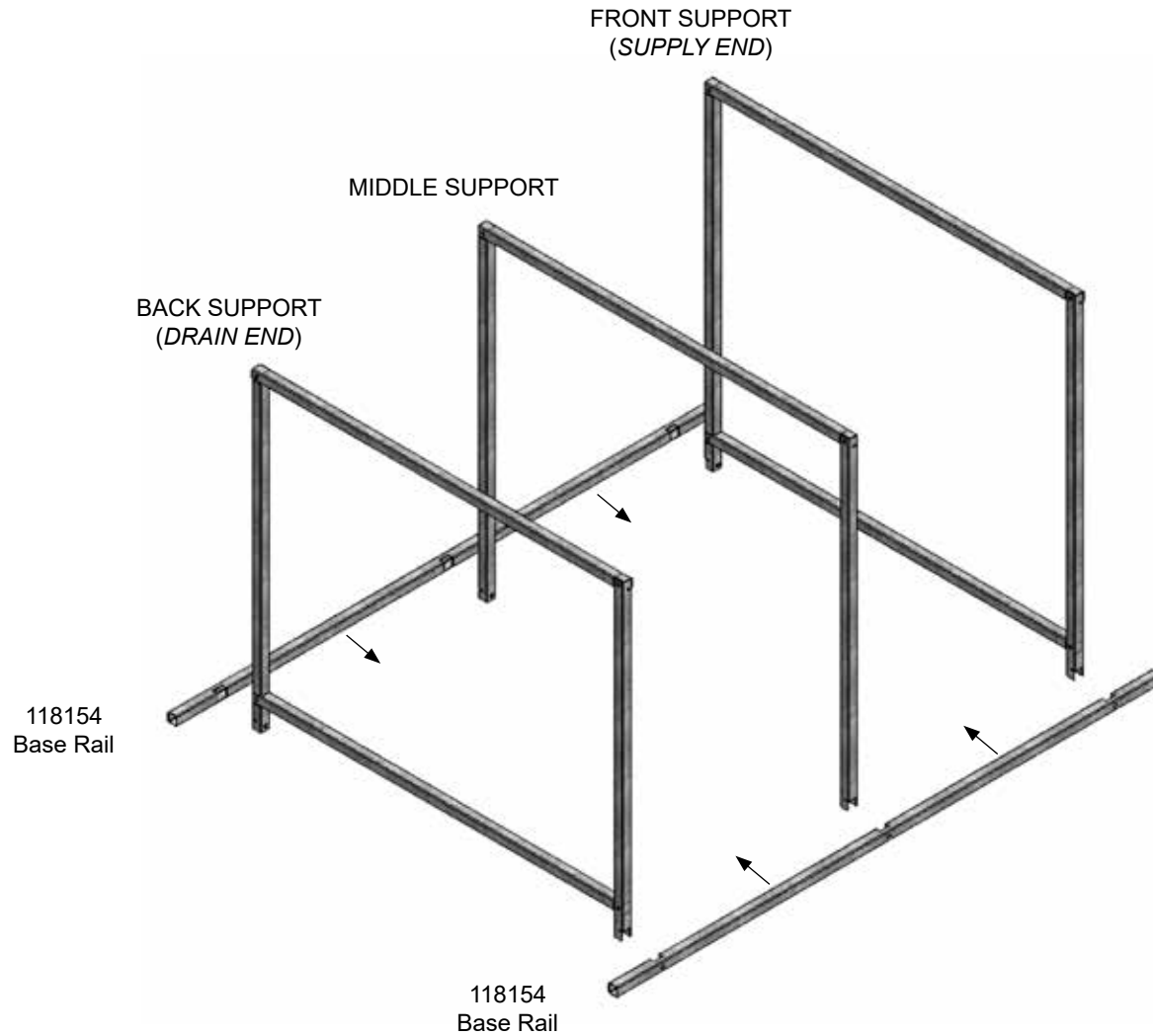


Assemble Main Support Frame

1

ASSEMBLE MAIN SUPPORT FRAME (continued)

2. Locate the 118154 base rails.
3. Align the self-locking notches of the front, middle, and back support legs with those of the 118154 base rails as shown below.
4. Secure all connections with provided hex bolts and nuts. **Do not fully tighten nuts.**

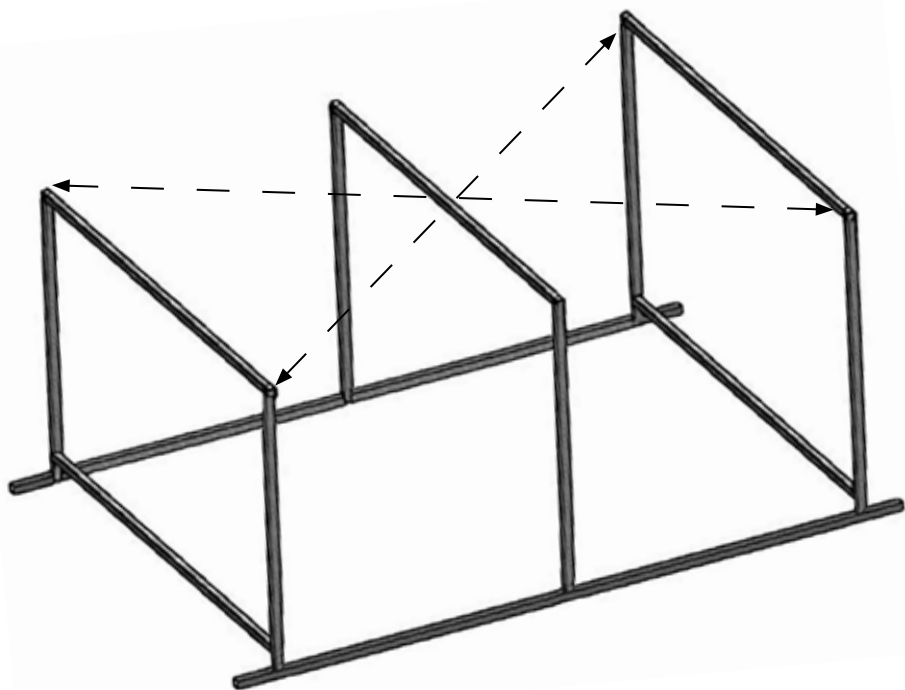


1

ASSEMBLE MAIN SUPPORT FRAME (continued)

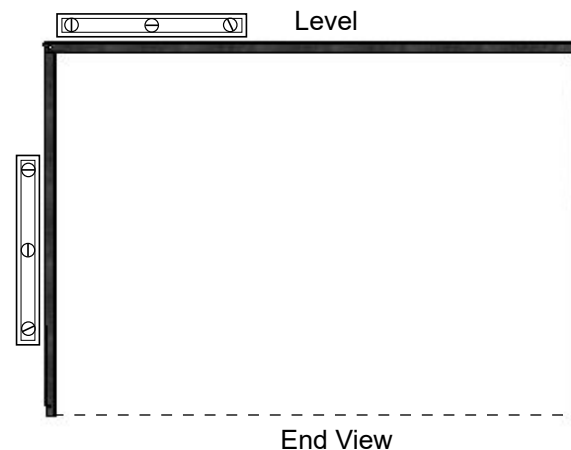
LEVEL AND SQUARE THE MAIN FRAME

Level and square the support frame before adding the 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 sit squarely on the frame. Complete these steps to level and square the main frame:

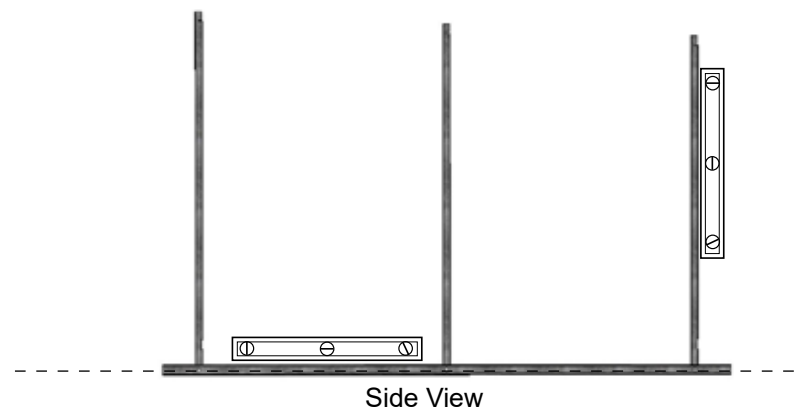


1. To square the frame, measure from corner-to-corner and adjust the frame as needed until the two dimensions are equal. Be sure to measure from the same point at each corner to achieve the best and most accurate results.

*Not to scale.



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



3. Check the bottom tubes to ensure these are level. After completing this step, recheck the frame (Steps 1-2).
4. Once the frame is level and square, tighten all nuts and bolts, and continue with the next procedure.

3

ASSEMBLE ALL 5' 115143 CHANNELS

1. Using the assembled frame as a bench, place one 5' channel (115143) on cross supports.
2. Using 112509 adhesive, attach plain end cap (no outlet-111127) to channel end that is resting on high side of support table. This is the end with 36" legs. Be sure to coat channel end with adhesive *before* you install end cap. Repeat for all channels.
3. Move to other channel end and install the 111128 end cap (with outlet). Coat channel end with adhesive *before* you install 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 the end cap outlet and to inside of 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.**

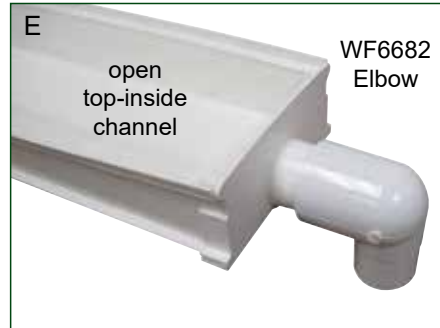
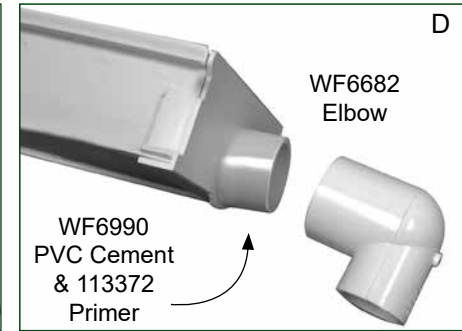
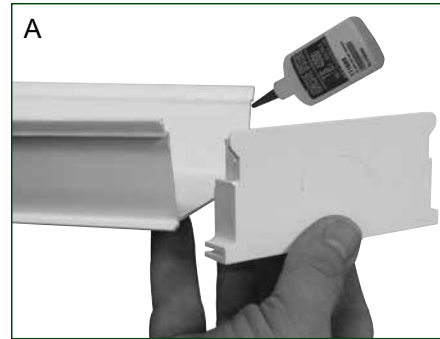


Apply primer and cement in a well-ventilated area. Read and follow container information for additional precautions.

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

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

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



4

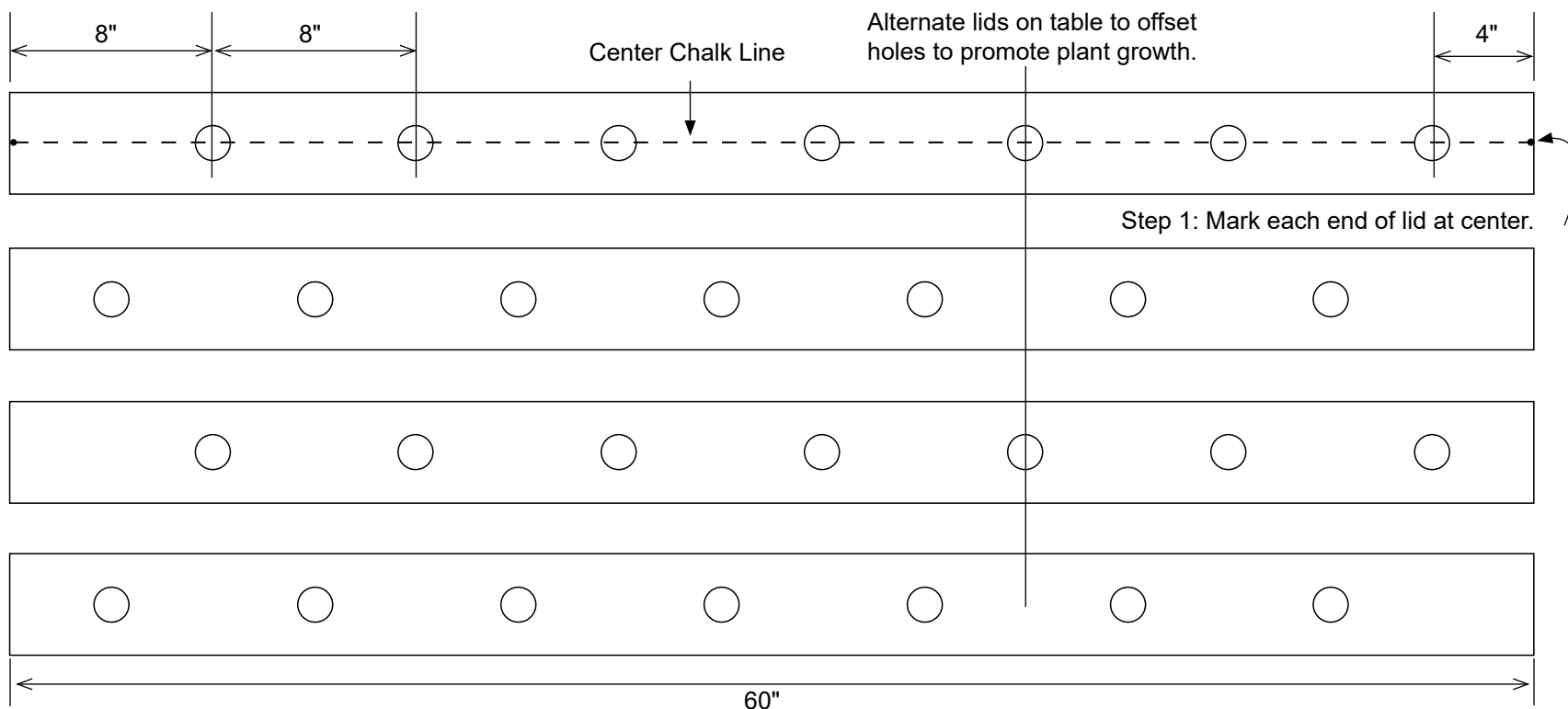
PREPARE THE 5' CHANNEL LIDS (115144)

For this hydroponic system, channel lids ship without plant holes. Hole spacing and size varies depending on plants and growing medium. In this example, spacing for 1-3/8" holes is 8" on-center. **Adjust hole size and spacing as needed for your growing medium and needs.**

1. Select one 5' channel lid and mark center of 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 to identify lid center.
2. Mark center of first hole at 4" from one end. From that mark, mark remaining hole positions at 8" on-center along the chalk line. There will be seven (7) hole positions.
3. Place lid on scrap plywood (or similar material) for backing (if desired) and drill holes using a drill and hole saw bit.

ATTENTION: Hole size depends on plant and growing requirements.

4. Repeat these steps (or use the first lid as a template) to prepare the remaining lids.
5. Rinse lids to remove all shavings so these will not plug nutrient circulation system. Set lids aside for later.
6. Continue with the next procedure.



4

PREPARE THE 5' 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.

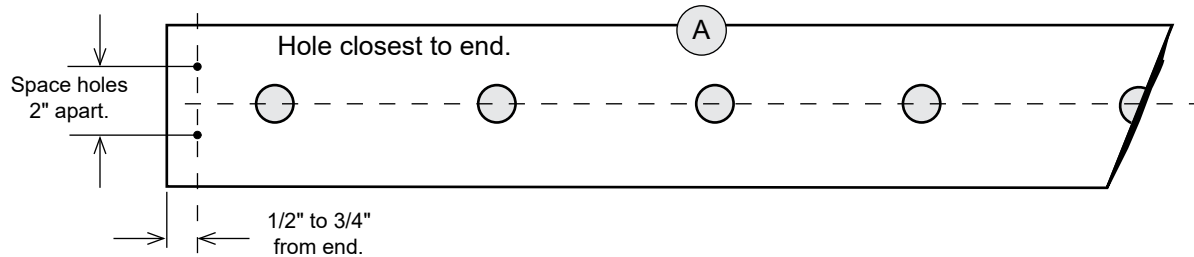
Complete these steps to drill holes for nutrient tubes:

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.

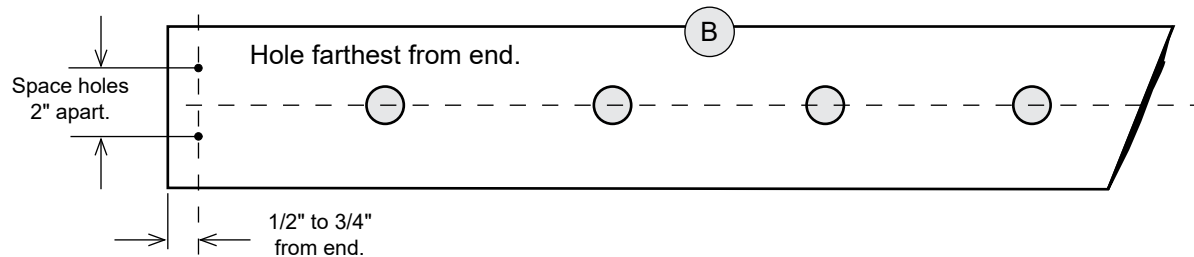
ATTENTION: For the first pile of lids, position nutrient tube holes where first plant hole is closest to the lid end. See A in the photo.

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

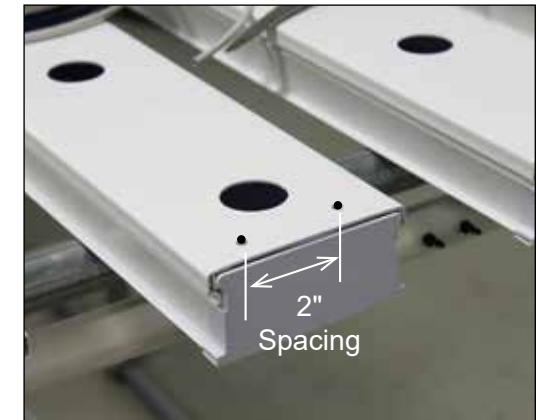
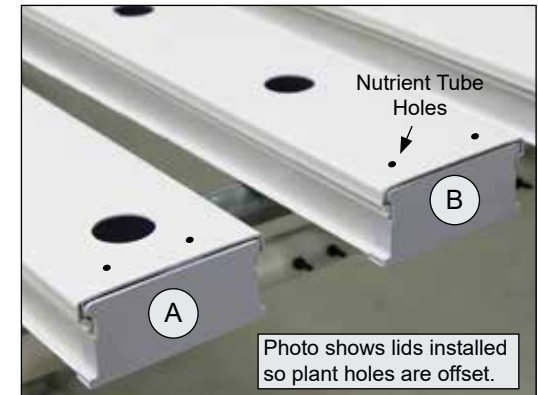
2. Move to pile A and drill two (2) 5/16" holes in each lid where plant hole is closest to lid end. See diagram that follows. Keep lids in the same group when completed.



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.

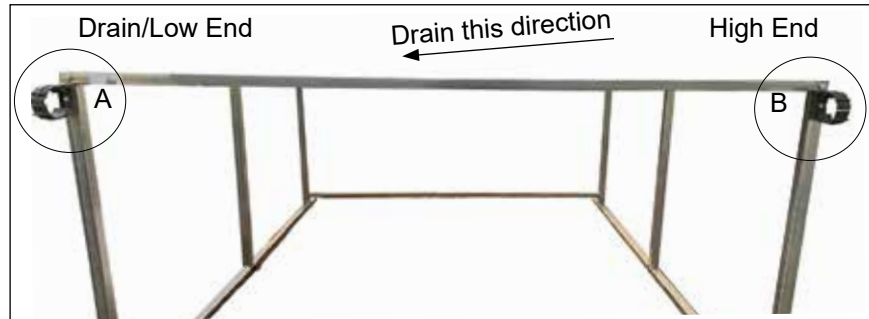
Drain Manifold Hangers

5

DRAIN MANIFOLD HANGERS

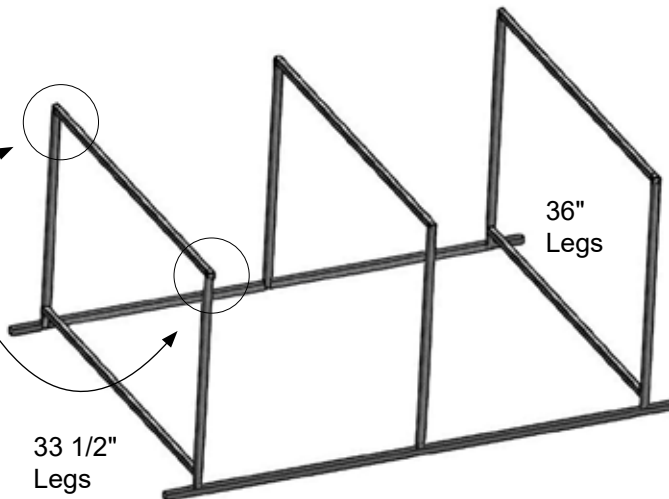
Use the photos to the right to attach the drain manifold mounting hangers to the frame using the FA4472 Tek screws.

Attach Drain Manifold Mounting Clamps at the low end of the frame.



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

Attach hangers here



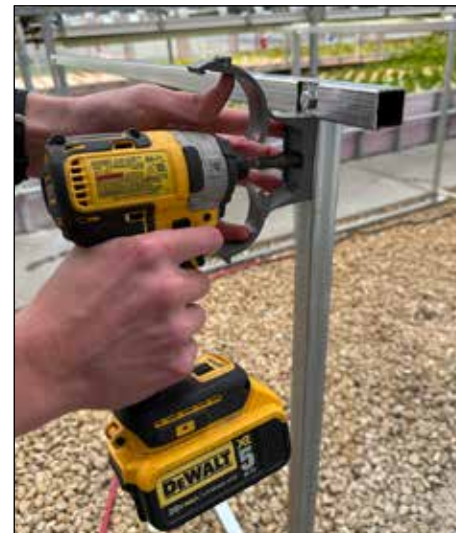
ATTENTION: Install the drain manifold at the low end of the frame, which has the shorter (33-1/2") leg tubes.



A. Position the top of the hanger on the top of the 33-1/2" leg



B. Place the high end hanger right under the bolt of the top tube



FA4472
Tek Screws



112539
2" Pipe Hanger

6

ASSEMBLE AND ATTACH PVC DRAIN MANIFOLD

Complete these steps:

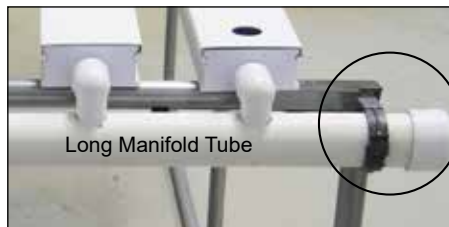
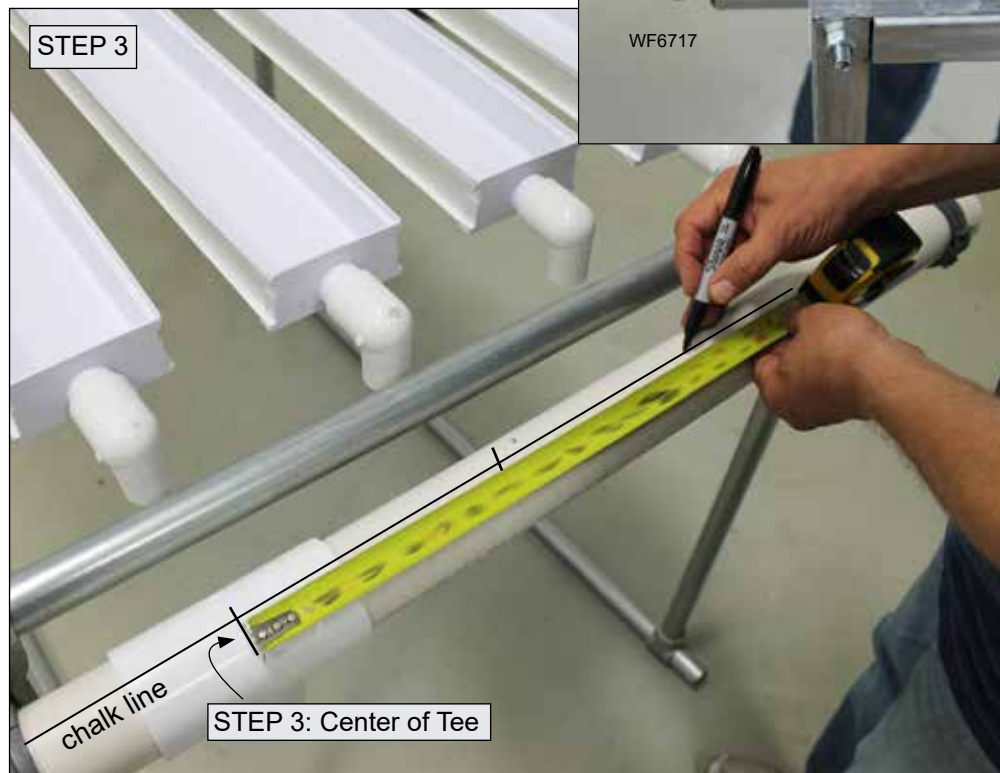
1. Cut one 6" tube from the 2" pvc tube (111560Z5). Apply pvc primer and pvc cement to tube end and fitting. Slide into tee fitting. Repeat to attach remaining section of pvc tubing to tee fitting. Allow cement to set then continue.



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

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



Assembly Instructions

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DRILL HOLES IN RESERVOIR COVER

Drill the 2-1/2" Drain Tube Hole

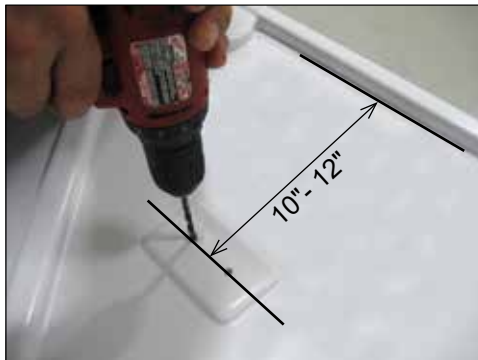
1. Determine in which corner you want to drill the drain tube hole. This is the corner that will be most closely under the tee fitting outlet of the drain manifold.
2. Remove cover from reservoir and drill drain hole in the corner using a 2-1/2" hole saw. Do not drill cover over reservoir. Debris will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

Drill the 1" Supply Tube Hole

1. Using a 1" hole saw, drill a hole for the 3/4" supply tube from the pump. Drill this hole at the same end as the drain tube hole, but in the opposite corner. See X's in upper-right photo.

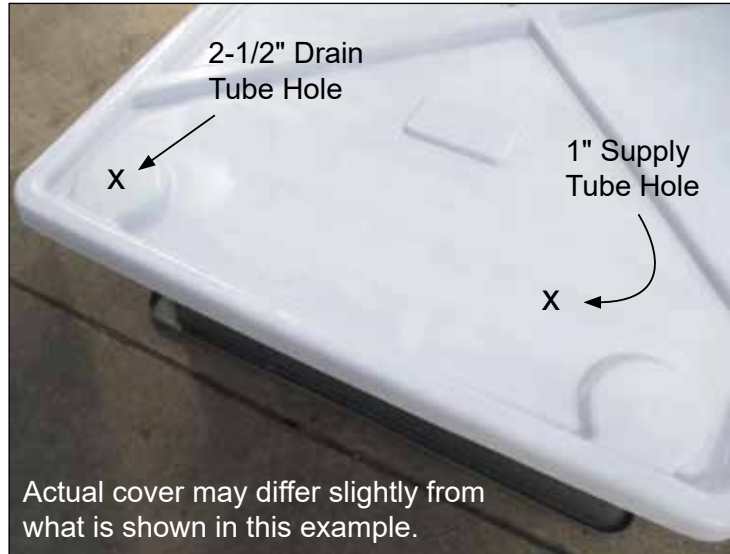
Drill the 5/16" Holes for the Air Pump Tubing

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 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 and 1" Supply Tube Holes



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

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. See below.*



Move cover off reservoir. Place on support to drill 2-1/2" and 1" holes.

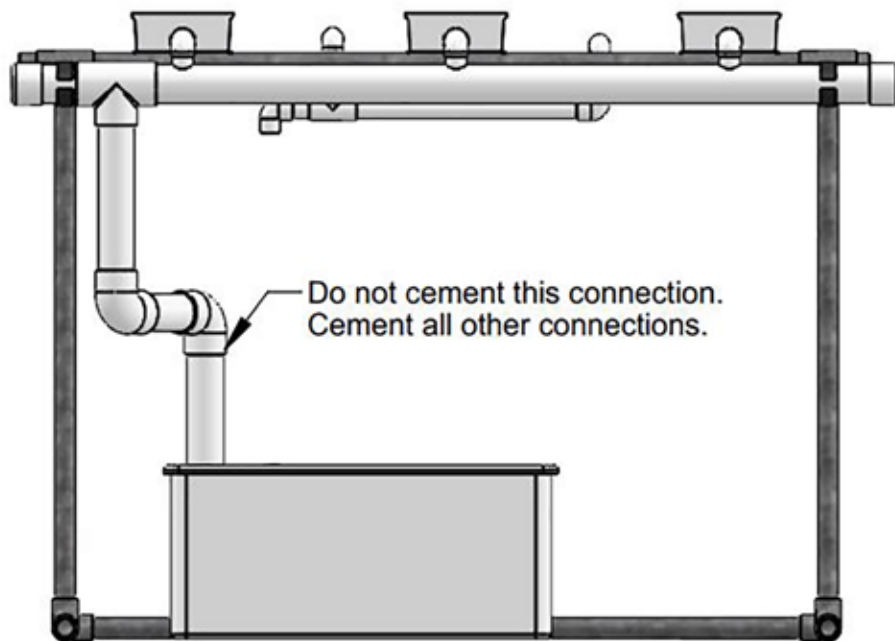
8

DRAIN MANIFOLD

ASSEMBLE VERTICAL DRAIN TUBE

The vertical drain tube is made up of (3) three sections of 2" PVC (111560Z5) and (2) two 2" PVC elbows (WF1574). The length of each PVC tube depends on the position of the reservoir and the support frame.

1. Measure and cut all sections of PVC to connect tee from the horizontal drain manifold to the 2-1/2" drain hole. Dry fit all connections.
NOTE: Typically, (2) two pieces should be cut at 9-1/2" and the third should be cut at 5-1/2".
2. Disassemble.
3. Apply PVC primer and PVC cement to PVC connections. Do not cement the PVC tube that extends from final elbow to reservoir. This allows for cover removal for reservoir maintenance.
4. Reassemble and attach to the horizontal drain tube.



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ATTACH 1" HANGERS FOR NUTRIENT SUPPLY MANIFOLD

Complete these steps:

1. Move to frame end opposite drain manifold.
2. Measure 7-1/2" in from the inside of each support leg and mark position on underside of crossbar.



FA4470B (10)
Tek Screw



106808 Hanger

3. Attach one 106808 hanger in each position using the FA4470 Tek screws and 5/16" x 2-9/16" magnetic nut setter. Do not overtighten!

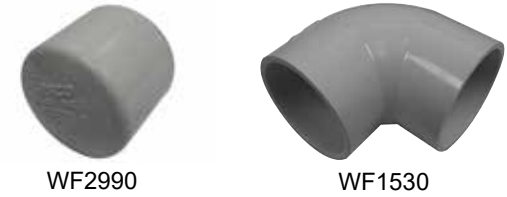


10

ASSEMBLE NUTRIENT SUPPLY MANIFOLD AND ATTACH TO FRAME

Complete these steps:

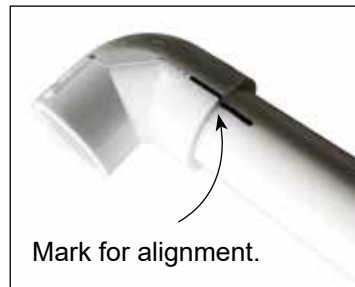
1. Cut a 28" piece of 3/4" pvc tube from a 5' section of 112526 supplied with the system.
2. Slide a WF1530 elbow onto one end of the 28" pipe and a WF2990 cap onto the other end. **Do not cement at this time.**



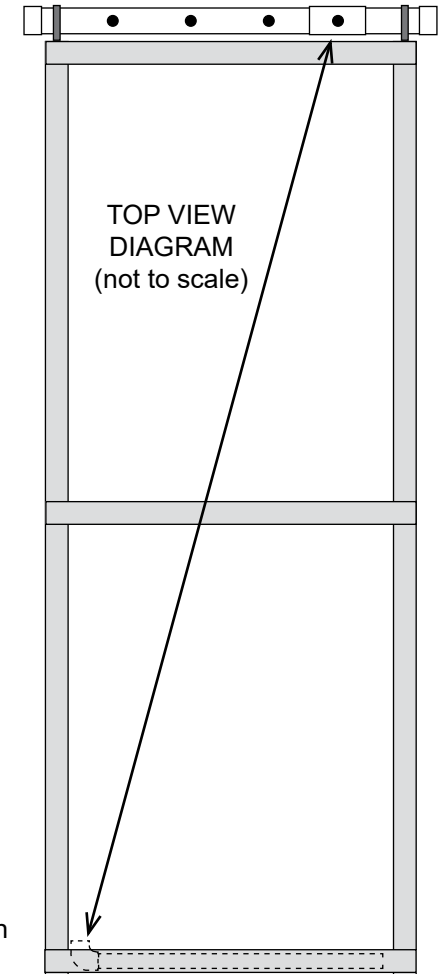
3. Move to the frame and snap the supply manifold into the 3/4" hangers. Install so elbow is at the corner opposite the tee fitting of the drain manifold at the opposite end of the frame.



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.

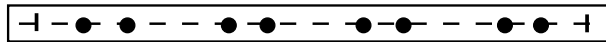


11

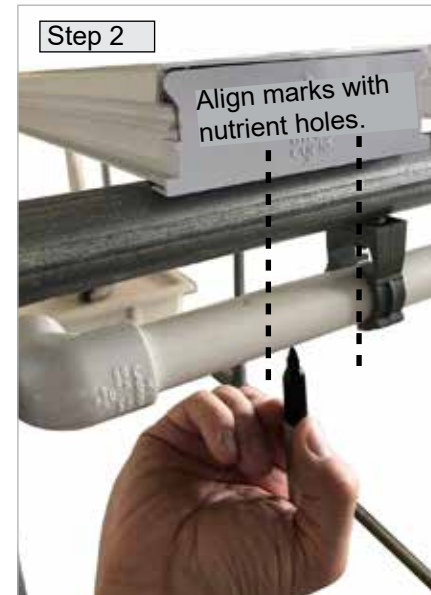
DRILL HOLES TO INSTALL THE 118469 GROMMETS

Complete these steps:

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



Step Bit



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.

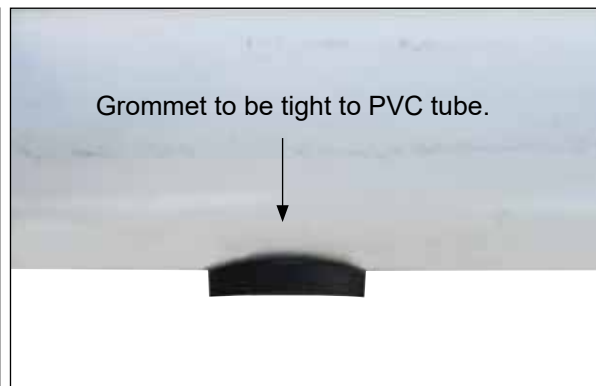
4. Remove elbow and cap and clean loose PVC debris from inside the tube and from around each grommet hole after drilling. Holes must be clean and free of debris before installing top hat grommets.

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

5. Insert one 118469 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



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



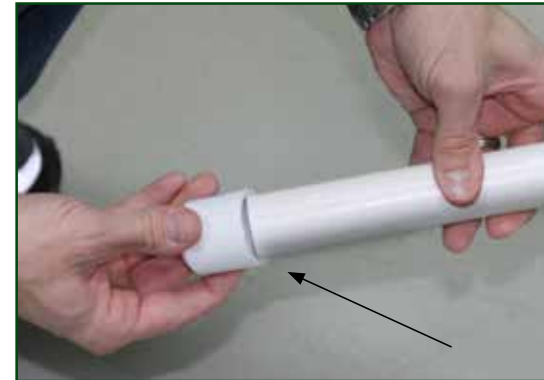
ATTENTION: If using a twist drill bit (as shown), apply slight pressure to allow bit to cut a smooth hole in PVC tube.

6. Continue with next procedure.

12

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.

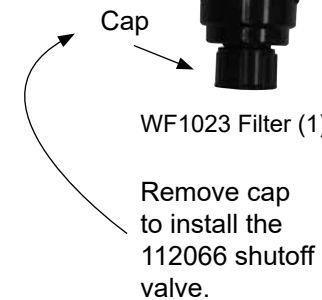
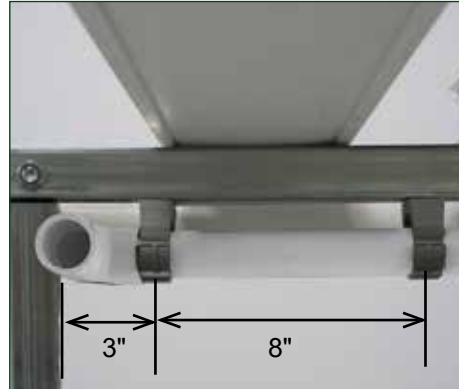


ATTENTION: Actual system may differ.

13

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.

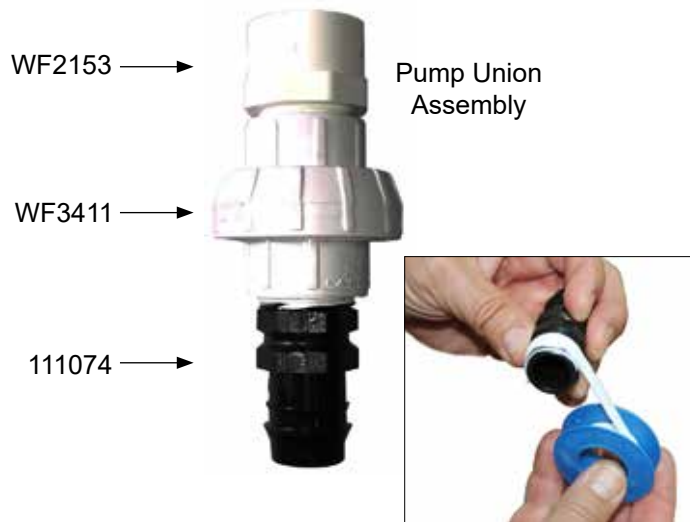
14

ASSEMBLE PUMP AND MAIN SUPPLY LINE

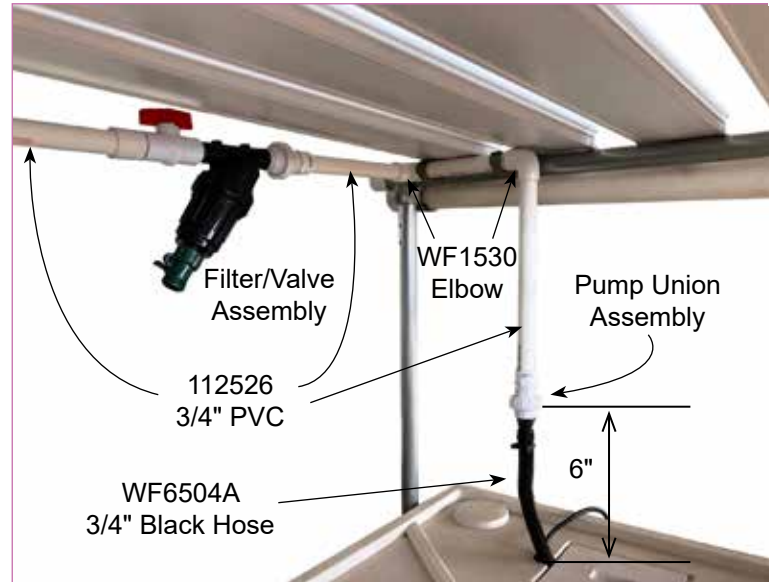
Using the photos on this page and the notes that follow, install the water pump and main supply line.

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**.



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



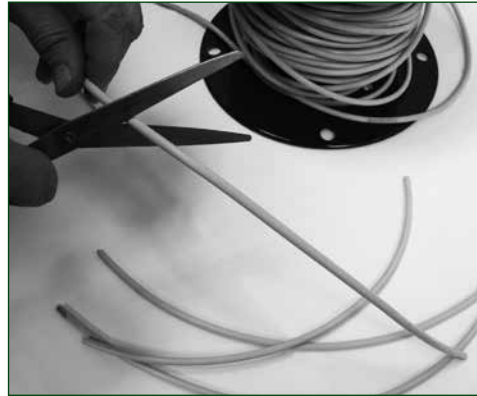
Consult guide included with the pump for pump fitting installation.



15

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.



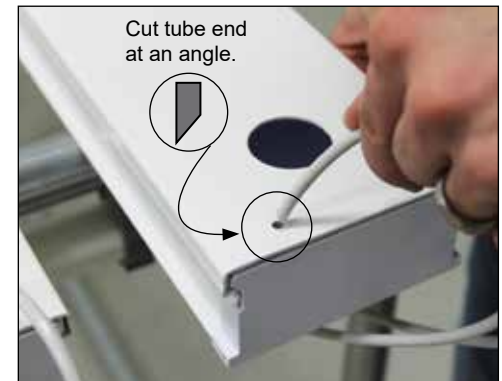
a. Cut the 16" supply tubes from the 111046 poly tubing.



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.



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

ATTACH AIR PUMP AND AERATOR STONES

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

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

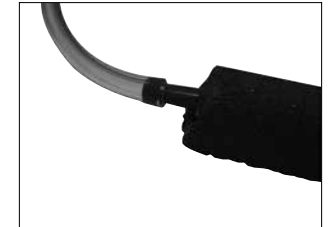
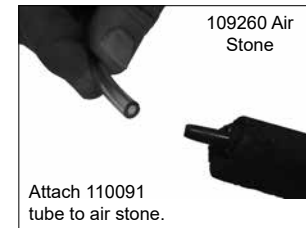


4. Place air pump in position chosen in Step 1.
5. Connect air pump to power and test operation. Verify air is filtering through each air stone. Monitor air pump regularly to ensure proper operation of aerator system.

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

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

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



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INSTALL FRAME CAPS AND SYSTEM CHECK

Install the 115857 square plugs to cap the end of each open end of the base tubes.



System Check

After assembling the 115141 NFT system, take a few minutes to check the system. Complete these steps.

1. Verify all electrical cord ends are outside reservoir.
2. Ensure supply tubes are fully inserted in channel lids.
3. Fill reservoir with a few inches of water to cover pump.
4. Verify that AC2804 in-line valve in main supply tube is open.
5. Plug 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 water is running out each supply tube and 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 reservoir to verify air is pumping to each air stone. Remember to always mount air pump on a surface above water level. Vibrations of pump can cause it to move. Make sure pump does not fall into reservoir or other liquids.
10. Once system has been checked and all adjustments are made, it is ready for use.

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.

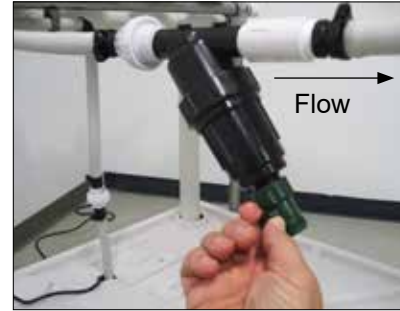
1. Inspect the frame and mounting screws to ensure they are tight and frame is not damaged.
2. Disconnect the main power supply to turn off all pumps. Remove the reservoir cover and inspect the inside of the reservoir. Reservoir should be cleaned each time the nutrient solution is changed. Keep the reservoir 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.

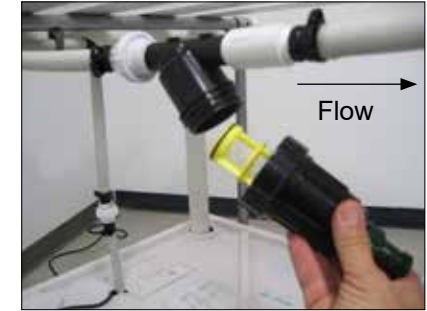
6. With the pump off, disassemble the filter and clean the screen and housing. Reassemble for use. See procedure in the right column.

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.

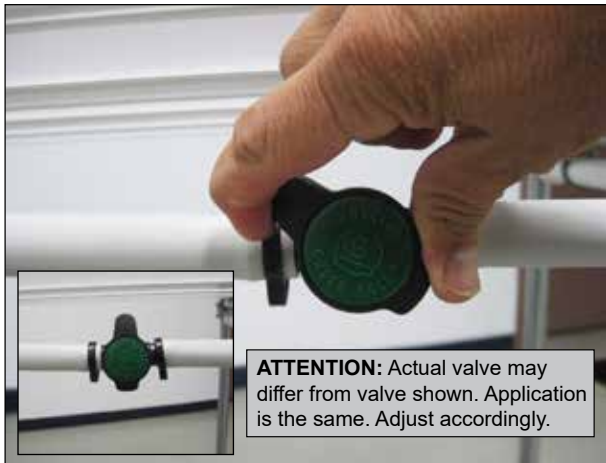


4. Insert the screen back into the housing, reassemble the filter, and *close the valve*.
5. Turn on the pump and check the flow from the supply tubes to each channel.
6. Check filter for leaks.

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.

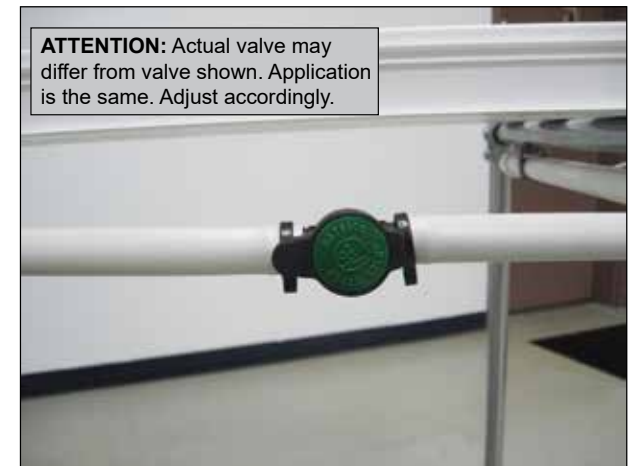


4. Clean the reservoir as needed and repeat the steps to pump it out if needed. Close the shutoff valve.



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

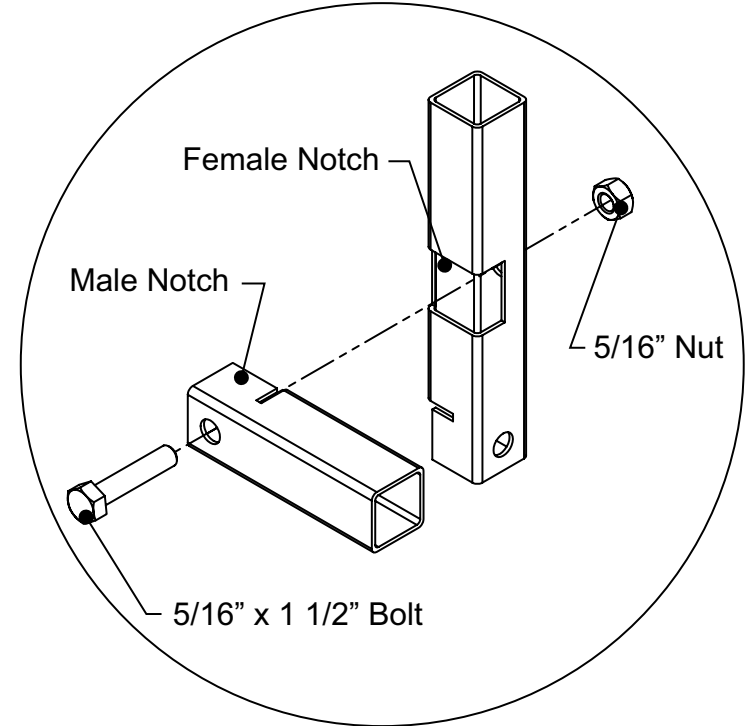
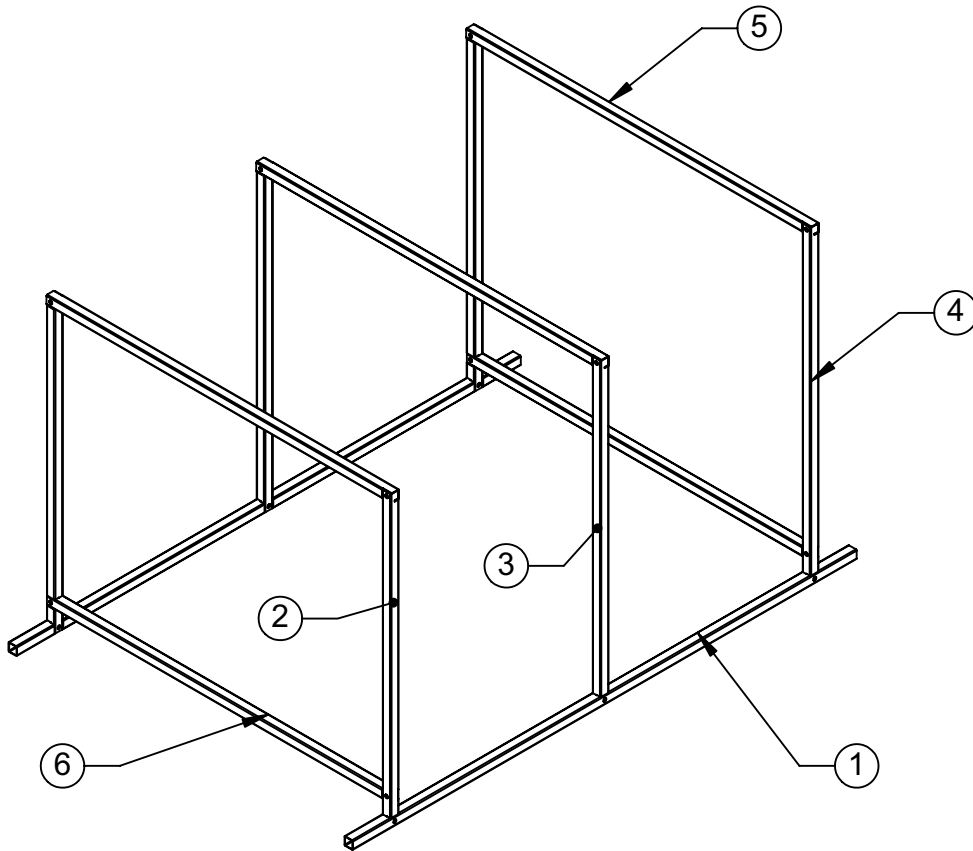
6. Refill the reservoir with nutrient solution.



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.

115141 FRAME



ALL CONNECTIONS

ITEM NO.	Part Number	QTY.	DESCRIPTION
1	118154	2	1" SQ TUBE 16GA 3 FEMALE CUTS
2	118156	2	1" X 33.5" SQ TUBE 16GA
3	118155	2	1" X 35" SQ TUBE 16GA MALE ENDS
4	118157	2	1" X 36" SQ TUBE 16GA
5	118792	3	1" X 41" SQ TUBE 16GA
6	118791	2	1" X 40 7/8" SQ TUBE 16GA OPP MALE ENDS

