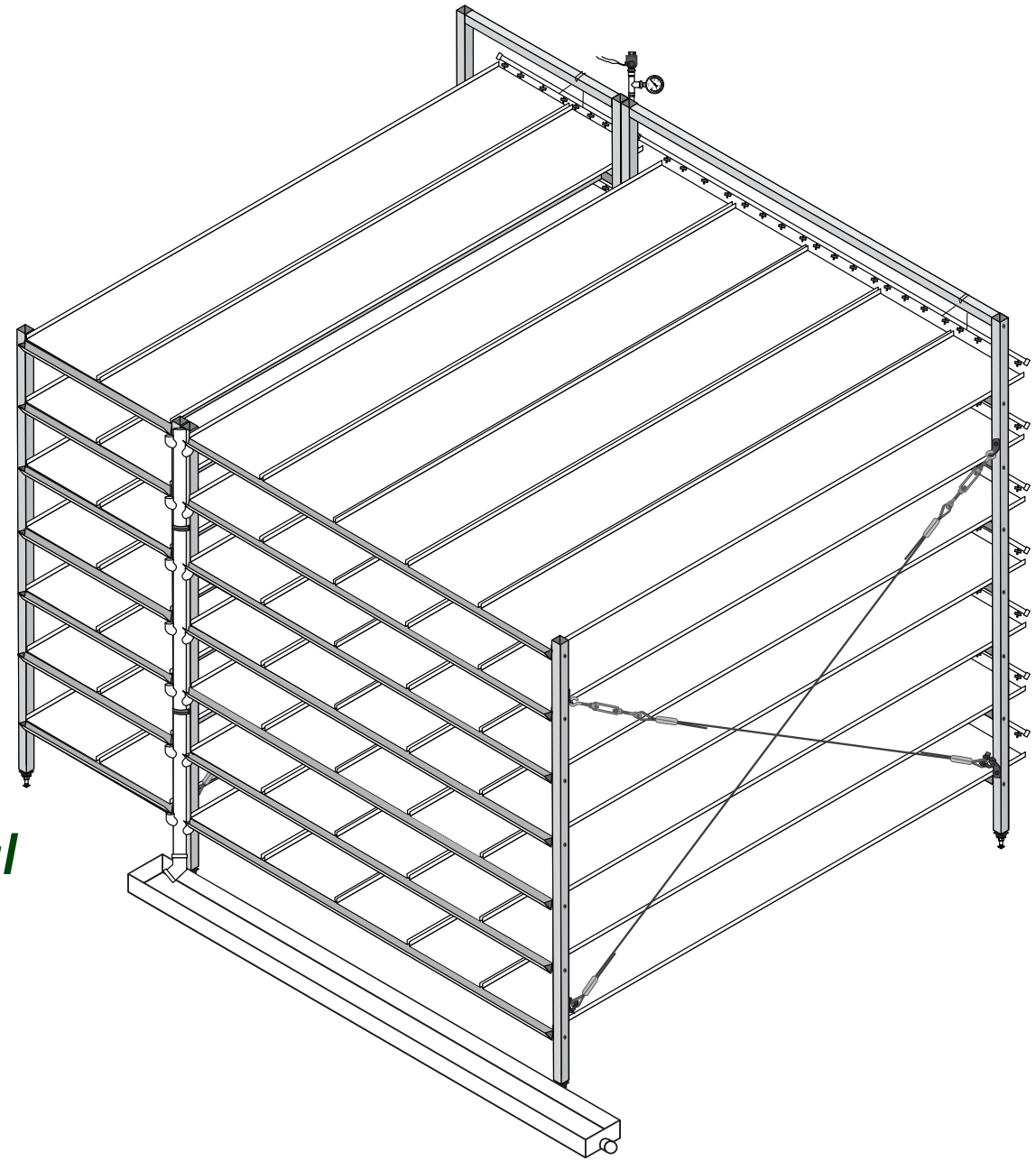
FarmTek®
FODDERPro
healthy, fresh feed every day



FodderPro 3.0 Commercial Feed Systems–113542

"...grow your own nutrient-rich fodder..."

*Actual system may differ slightly from what is shown.

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

Revision date: 02.17.23

Important Information

READ THIS DOCUMENT BEFORE YOU BEGIN

Thank you for purchasing the FodderPro 3.0 Commercial Feed Module. When properly assembled and maintained, this system will provide years of reliable service. This guide includes information needed to safely assemble and maintain the system. Read these instructions ***before*** you begin.

SAFETY PRECAUTIONS

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

REQUIRED TOOLS

The following list identifies the main tools needed to assemble the fodder system. *Additional tools and supports may be needed.*

- Tape measure and marker
- Variable speed drill to drive Tek screws
- Levels: 2' and 4'
- Wrench set or ratchet with 1/2" socket to assemble frame
- 3/16" hex (Allen) wrench—preferably one that can be used in a socket to operate with a drill.
- Adjustable pliers and small hammer
- Ladder or work platform to work at the height of the fodder system frame.

ASSEMBLY PROCEDURE

This manual describes how to assemble the 113542 FodderPro 3.0 system. The steps outlining the assembly process are as follows:

1. Unpack the contents of the shipment and place where you can easily inventory the parts. Refer to the Bill of Materials/Spec Sheets.
2. Verify that all parts listed on the Bill of Materials/Spec Sheets are present. If anything is missing or you have questions, consult the Pictorial Parts Guide and all diagrams for clarification, or contact Customer Service.
3. Read and understand these instructions and all additional documentation included with the shipment ***before*** you begin.
4. Gather the required tools.
5. For best results, assemble the components in the order they are presented in these instructions.

OPEN SYSTEM

The FodderPro 3.0 Commercial Feed System is an open system; the water is not recycled for use *in the fodder system*. The open system requires a water source and a drain, or waste water reservoir to accept the unused water. This water can be recycled for use in other applications such as watering other plants. However, *to promote healthy fodder growth*, it is not recommended for reuse in the fodder system.

IMPORTANT: Have the water tested before feeding it to any livestock.

⚠ ELECTRICAL WARNING!

Fodder frame is metal and will conduct electricity! Exercise caution if working around or on the frame with electric power tools. *Use cordless, battery-power tools.*

CONSULT THE SERVICES OF A QUALIFIED ELECTRICAL TECHNICIAN WHEN INSTALLING TIMERS, ARTIFICIAL LIGHTING, OR OTHER ELECTRICALLY POWERED ACCESSORIES.

⚠ CAUTION!

DO NOT CLIMB ON FRAME!

TO PREVENT INJURY AND POSSIBLE DAMAGE TO THE FODDER SYSTEM AND RELATED COMPONENTS, NEVER CLIMB ON THE ASSEMBLED OR PARTIALLY ASSEMBLED FRAME.

NEVER USE THE FRAME ENDS AS A LADDER TO REACH THE UPPER LEVEL OF THE FODDER FRAME!

ATTENTION: CONSULT ALL DIAGRAMS AND THOSE NEAR THE BACK OF THIS GUIDE TO IDENTIFY CRITICAL DIMENSIONS, PART NUMBERS, AND PART LOCATIONS FOR YOUR COMMERCIAL FODDER SYSTEM.

PICTORIAL GUIDE

The following graphics and photos will help identify the different parts of the fodder system. (Some parts may not be shown.)


WF1330


112838
Tek Screw


AS2162

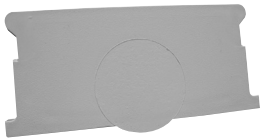

108503

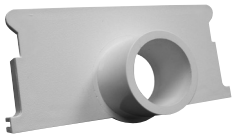

113100


WF2350


WF2372
WF2392
Bushings


WG3840


111127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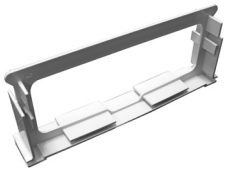

111129


FAH337B

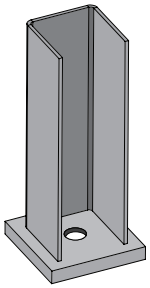

FALB34B


FAG338B

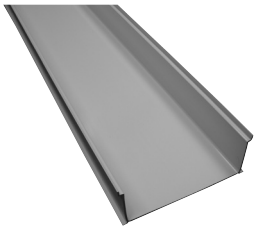

FAME51B


112772

WR4067


112477


WR1220


111003Z120


WR1095


112770


FAPA15


106807


109071
Timer


110406*


110414*

*These extra components are included in the event that damage occurs to the supply manifolds during installation or use. To install, remove the original damaged part and install the new components. See procedure later in this guide.

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.

WF6990 PVC Cement and
113372 Purple Primer

Connecting to a Main Water Supply

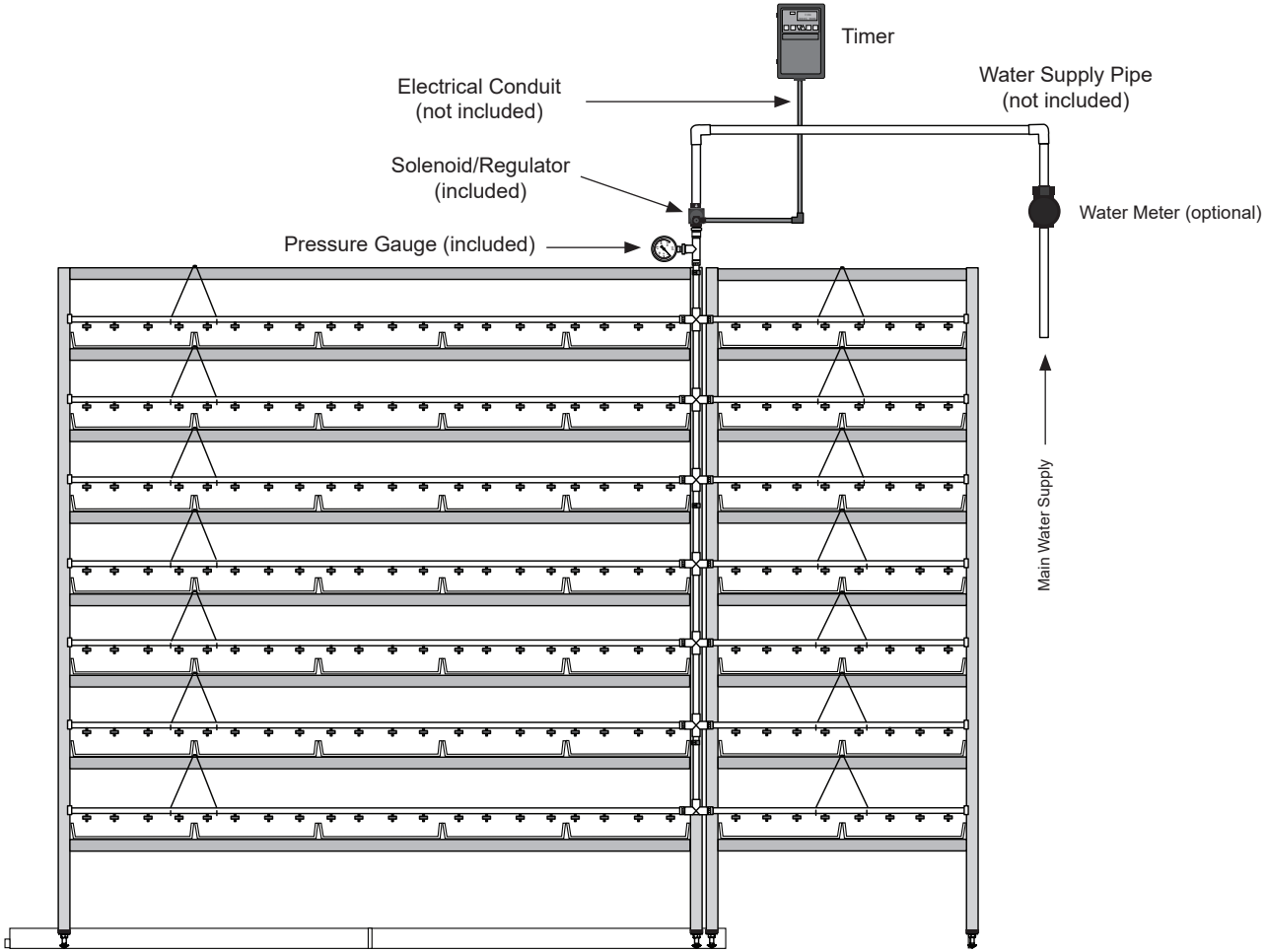
The FodderPro 3.0 Commercial Feed System includes all the components to assemble the main fodder frame, channels, drain gutters, downspout, drain trough, and supply manifold. Optional components are noted in the diagram below. Contact your sales representative for additional information and to purchase additional components.

ATTENTION: Enlist the services of an electrician and plumber during assembly and when attaching the main water supply line to the fodder system. The diagram below shows the basic items needed to supply and control the water to the fodder system. ***All plumbing and wiring to be completed according to established local codes by a professional plumber and electrician.***

Components and materials needed to connect fodder system to main water supply and to connect timer to solenoid are not included. Additional purchase required.

TIMER: Set the timer to as needed to provide water to the system at desired intervals.

WATER PRESSURE: To ensure proper operation of drippers and to prevent fitting leaks, the following pressure range is required: **20 psi (minimum) to 45 psi (maximum)**. Pressures lower than the minimum will not allow drippers to function. Pressures greater than the maximum may damage components and cause fittings to leak.



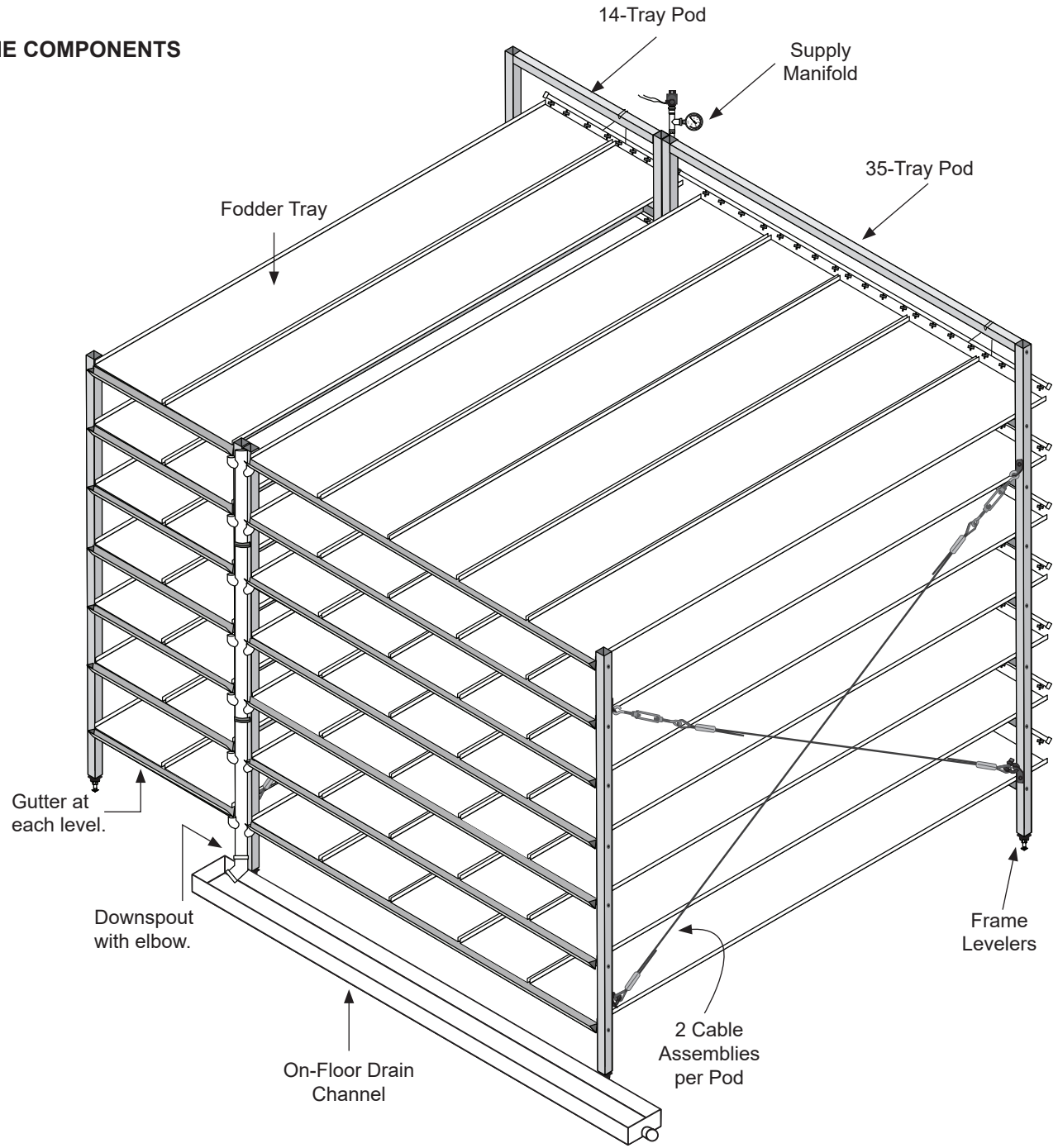
1

LOCATE AND SEPARATE FRAME COMPONENTS

Your 113542 Fodder Pro 3.0 commercial fodder system consists of two (2) frame sections (or pods): one (1) pod two (2) trays wide; one (1) pod five (5) trays wide. Both pods have seven (7) evenly spaced levels. Consult the diagrams on the following pages to better understand the basic layout before you begin. Follow these basic steps to assemble and set the frame for each fodder section.

ATTENTION: A solid, level surface such as concrete capable of supporting the frame and fodder is required. If a full concrete slab is not part of the building, install concrete blocks or pavers, or pour small concrete slabs level with the finished grade to support the frame tubes.

1. Review the diagrams to determine the overall footprint of this system and prepare the site for frame assembly. See diagram.
2. Begin by separating the steel frame tubes according to part number and length. Each tube has a specific position on the frame.
3. Next, review the diagrams on the following pages to further divide the tubes by selecting those to construct the **14-tray pod**. The remainder of the tubes are used for the **35-tray pod**.



1

GATHER THE 14-TRAY FRAME COMPONENTS

Follow the basic steps noted below to assemble the 14-tray pod frame.

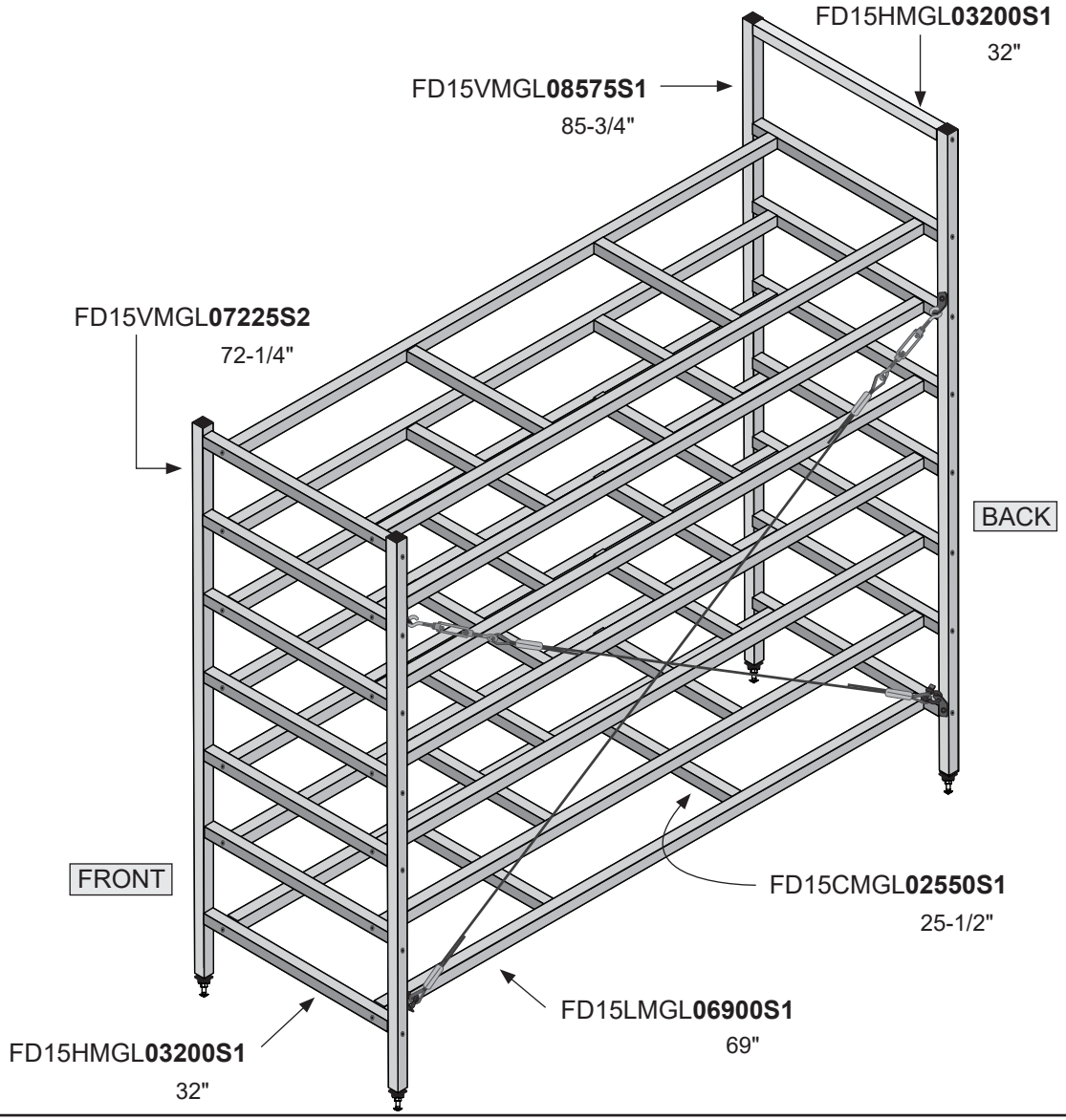
ATTENTION: A solid, level surface such as concrete capable of supporting the frame and fodder is required. If a full concrete slab is not part of the building, install concrete blocks or pavers, or pour small concrete slabs level with the finished grade to support the frame tubes.

Required parts for this pod:

- (2) FD15VMGL08575S1 (Back Vertical Tube)
- (2) FD15VMGL07225S2 (Front Vertical Tube)
- (14) FD15LMGL06900S1 (Front-to-Back Side Tube)
- (15) FD15HMGL03200S1 (Horizontal Tube—Ends)
- (14) FD15CMGL02550S1 (Horizontal Tube—Mid)
- 112772 (5/16" x 3") Flathead Bolt
- FAG338 (5/16" x 3") Hex Cap Bolt
- FAME51B (5/16") Flat Washer

Complete these steps:

1. Identify and collect the parts needed to assemble the **14-tray pod frame**. See diagram to the right.
2. Install the levelers at the bottom of each vertical frame tube. (See Procedure 2.)
3. Assemble the front (drain end) and back (supply end) main frames. (See Procedure 2.)
4. Assemble the center frame sections that connect the end frames. (See Procedure 3.)
5. Attach the diagonal cable assemblies to one side of the frame. (See Procedure 4.)
6. Set the assembled frame in position and level and plumb the frame. (See Procedure 5.)
7. Continue with Procedure 6.



1

GATHER THE 35-TRAY FRAME COMPONENTS

Follow the basic steps noted below to assemble the 35-tray pod frame.

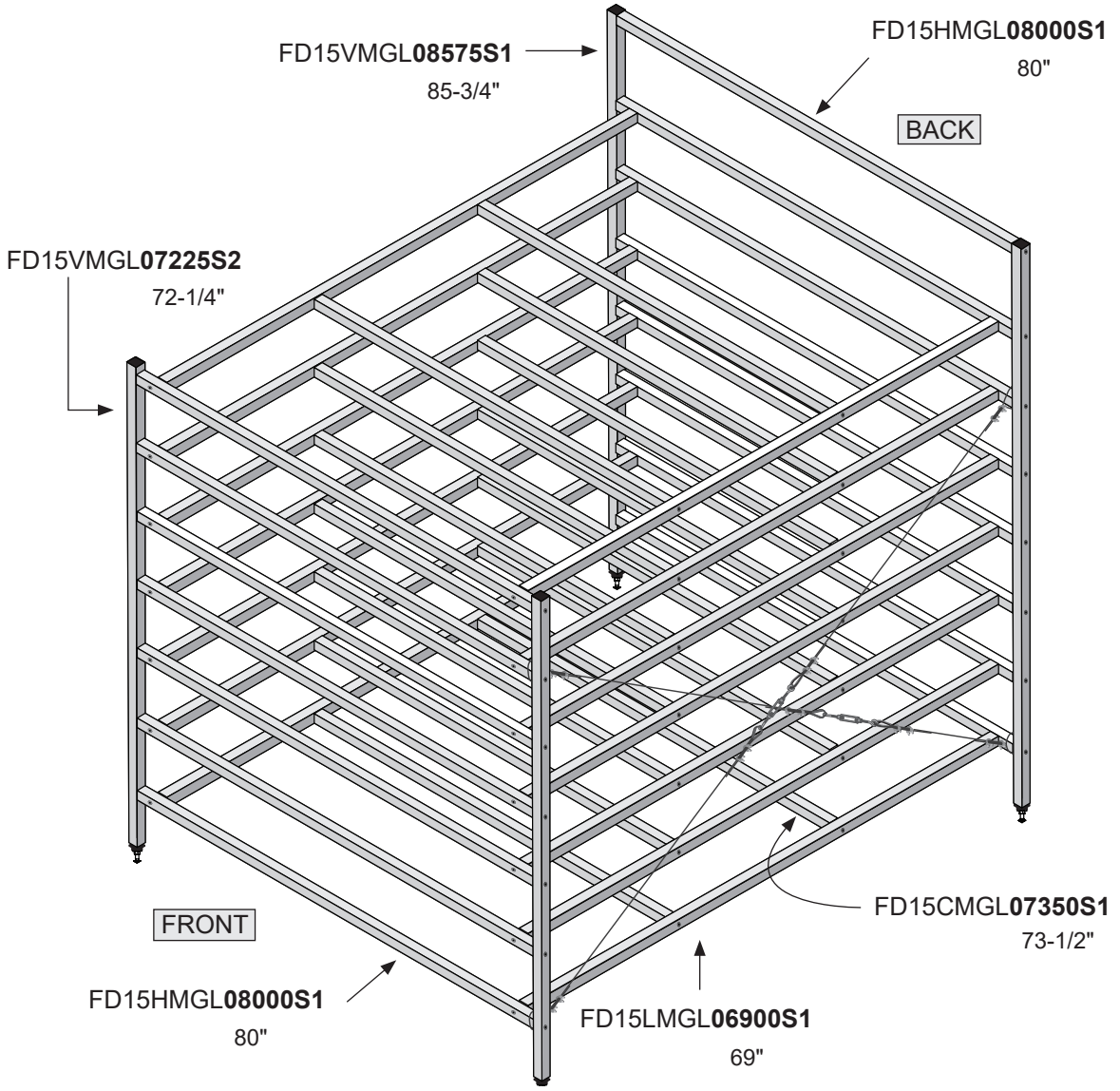
ATTENTION: A solid, level surface such as concrete capable of supporting the frame and fodder is required. If a full concrete slab is not part of the building, install concrete blocks or pavers, or pour small concrete slabs level with the finished grade to support the frame tubes.

Required parts for this pod:

- (2) FD15VMGL08575S1 (Back Vertical Tube)
- (2) FD15VMGL07225S2 (Front Vertical Tube)
- (14) FD15LMGL06900S1 (Front-to-Back Side Tube)
- (15) FD15HMGL08000S1 (Horizontal Tube—Ends)
- (14) FD15CMGL07350S1 (Horizontal Tube—Mid)
- 112772 (5/16" x 3") Flathead Bolt
- FAG338 (5/16" x 3") Hex Cap Bolt
- FAME51B (5/16") Flat Washer

Complete these steps:

1. Identify and collect the parts needed to assemble the **35-tray pod frame**. See diagram to the right.
2. Install the levelers at the bottom of each vertical frame tube. (See Procedure 2.)
3. Assemble the front (drain end) and back (supply end) main frames. (See Procedure 2.)
4. Assemble the center frame sections that connect the end frames. (See Procedure 3.)
5. Attach the diagonal cable assemblies to one side of the frame. (See Procedure 4.)
6. Set the assembled frame in position and level and plumb the frame. (See Procedure 5.)
7. Continue with Procedure 6.

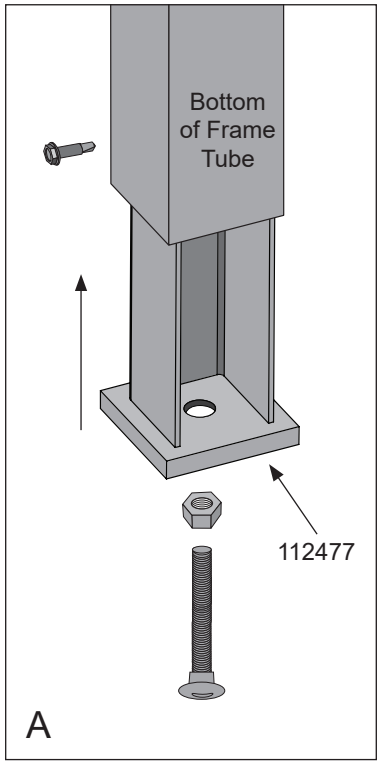


Assemble Main Frame—Ends

2

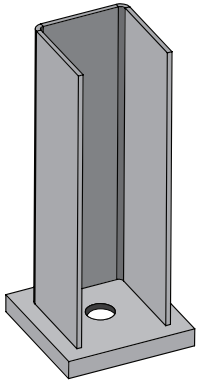
ASSEMBLE END FRAMES

ATTENTION: A solid, level surface such as concrete capable of supporting the frame and fodder is required. If a full concrete slab is not part of the building, install concrete blocks or pavers, or pour small concrete slabs level with the finished grade to support the frame tubes. ***Assemble each frame in the location where it will ultimately be positioned. Other than minor adjustments in position for leveling, moving the frames after assembly is not recommended.***




FALB34B

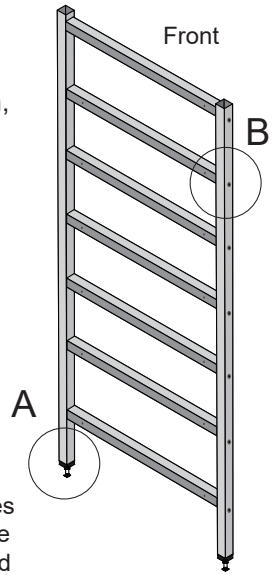

FAH337B

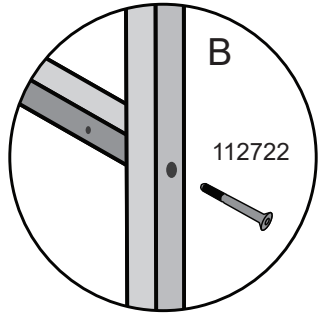

112477

CAUTION: Frames are heavy! Assemble the frame where it will be positioned in the building. To prevent damage, injury, or both, do not move an assembled frame!

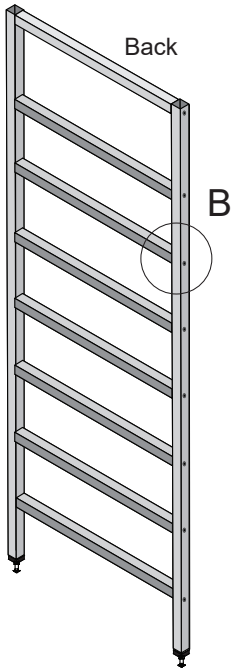

112772
5/16" x 3" Flat Head Bolt

During the frame assembly, position the vertical tubes so the large diameter bolt hole is to the outside of the frame tube. This provides a seat for the tapered head of the 112772 bolt.





Install large hole in tube to the outside.



Complete these steps to install each 112477 insert:

1. Slide one 112477 insert into the bottom of a vertical end frame tube. Tap gently with a small hammer if needed to seat in place.
2. Secure using a 112838 Tek screw. ***Install screw through frame tube and wall of the 112477 insert.***
3. Adjust the FAH337B bolt so that it is fully turned into the threaded plate of the insert. See photo to the right.

IMPORTANT: After assembling the frame sections as shown in Procedures 2-4, set the frame in position and complete Procedure 5 to level and plumb the frame *before assembling the next pod*. ***Do not allow the frame to stand without the cables installed and adjusted. Brace frame before cable installation!***

ATTENTION: The 14-tray pod is used in this example. Except for the main frame components, the assembly of any pod frame is the same.


STEP 3

Install Tek screw on either side of the center line to prevent contact with adjusting bolt.

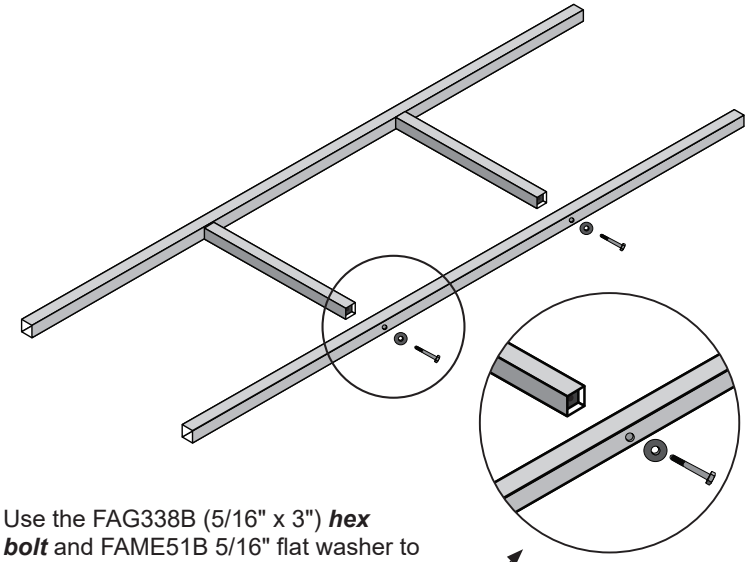
Assemble Main Frame—Center

3

ASSEMBLE CENTER FRAMES

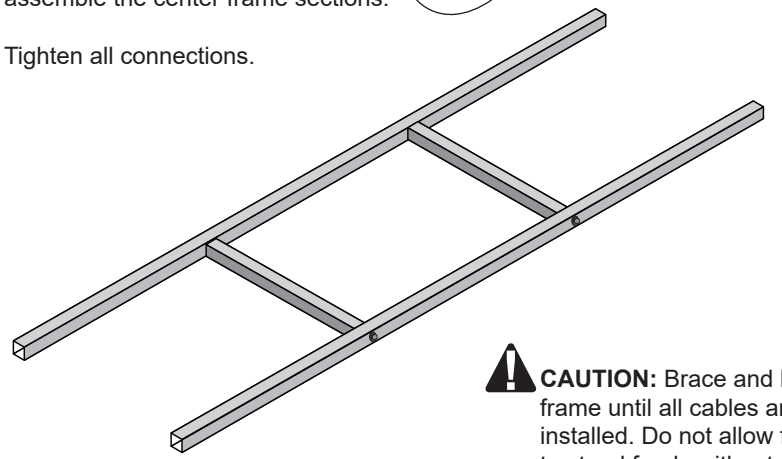
CAUTION: Frames are heavy! Assemble the frame where it will be positioned in the building. To prevent damage, injury, or both, do not move an assembled frame!

IMPORTANT: After assembling the frame sections as shown in Procedures 2-4, set the frame in position and complete Procedure 5 to level and plumb the frame *before assembling the next pod*. ***Do not allow the frame to stand without the cables installed and adjusted. Brace frame before cable installation.***

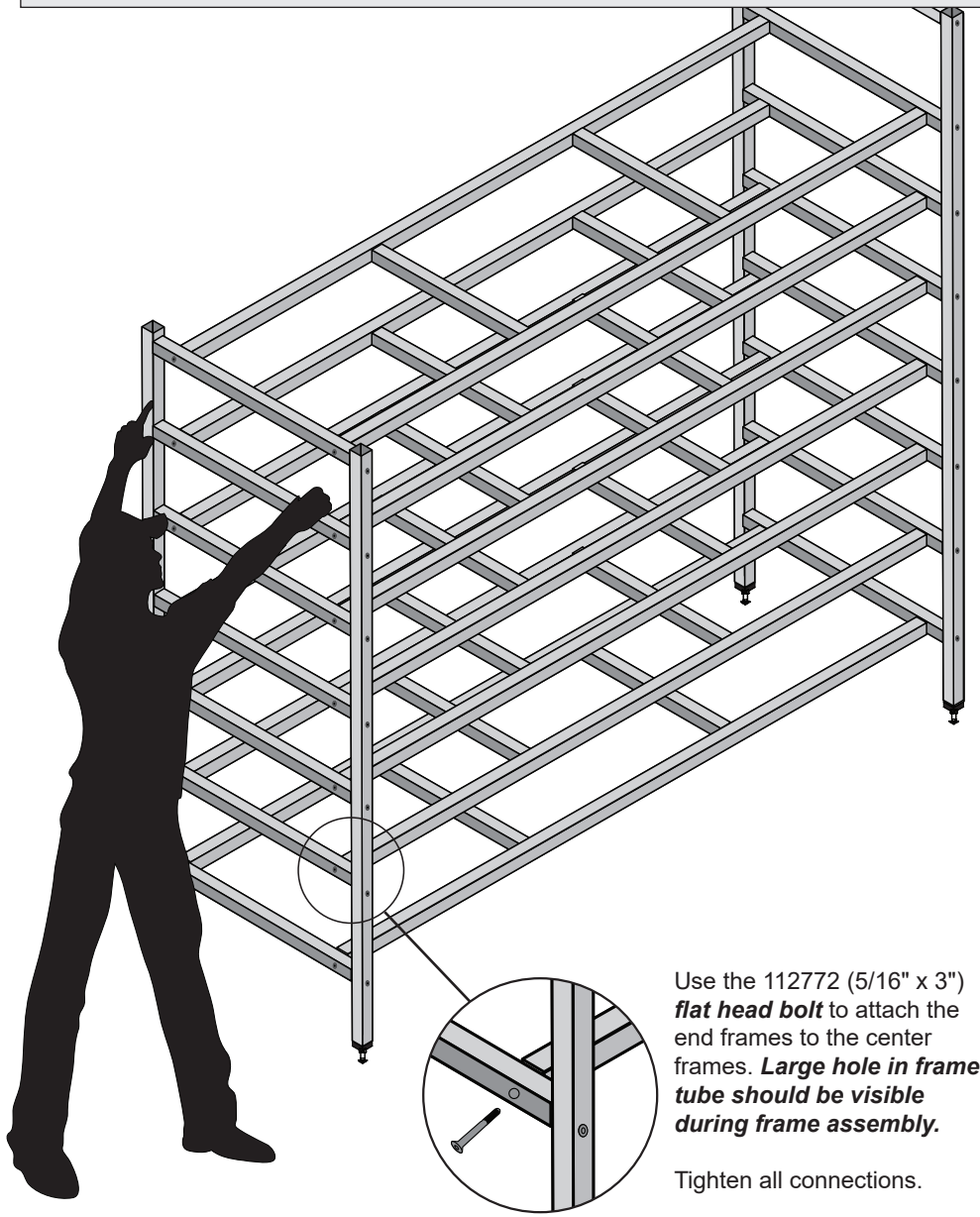


Use the FAG338B (5/16" x 3") ***hex bolt*** and FAME51B 5/16" flat washer to assemble the center frame sections.

Tighten all connections.



CAUTION: Brace and hold frame until all cables are installed. Do not allow frame to stand freely without cables installed and adjusted.



Use the 112772 (5/16" x 3") ***flat head bolt*** to attach the end frames to the center frames. ***Large hole in frame tube should be visible during frame assembly.***

Tighten all connections.

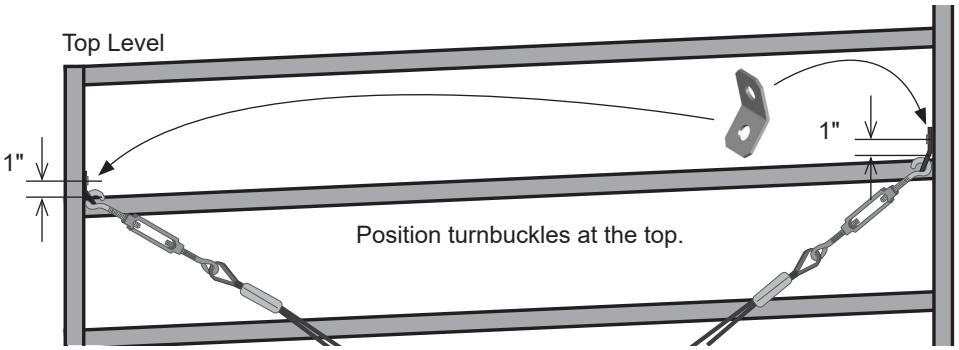
4

INSTALL FRAME CABLES—FDCAB13L0703S1T

There are two (2) cable assemblies for each pod frame. Install these assemblies on the same side of the frame.

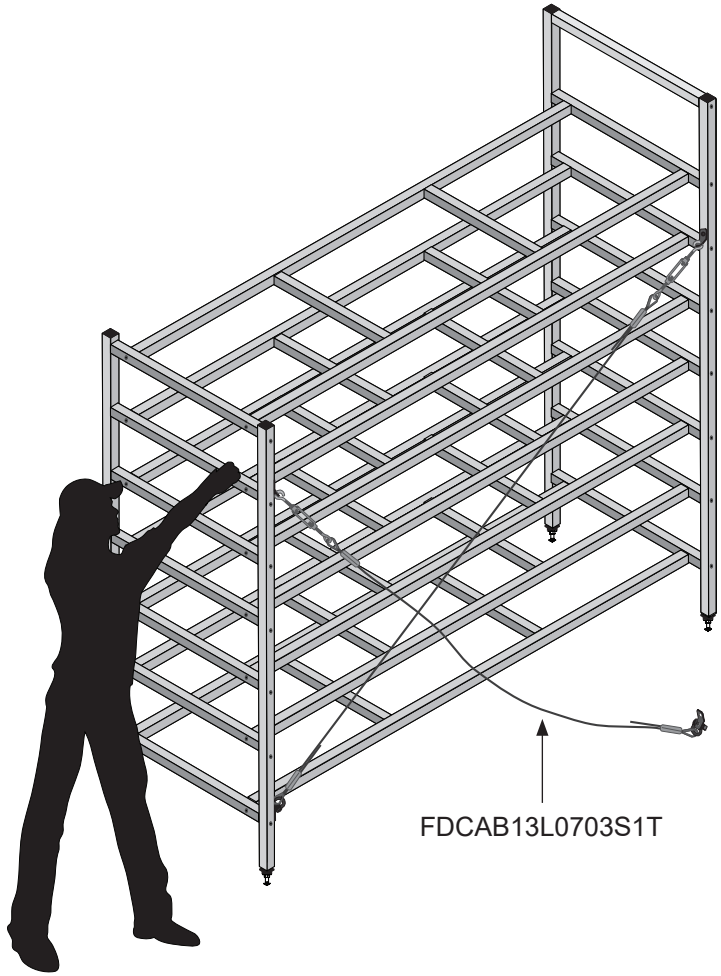
Complete these steps:

1. Attach the top 108503 brackets to the frame approximately 1" ***above the top of the second level frame tube***. Use a Tek screw and FAME51B flat washer to secure each bracket to the center of the vertical frame tube.



2. Take the first cable assembly, fully open the turnbuckle *without disassembling it*, and hook it to one of the installed 108503 brackets.
3. Take an AS2162 shackle, remove the pin, and slide the shackle over the free end of the finished cable.

4. Secure a 108503 bracket to the shackle by reinstalling and tightening the shackle pin.



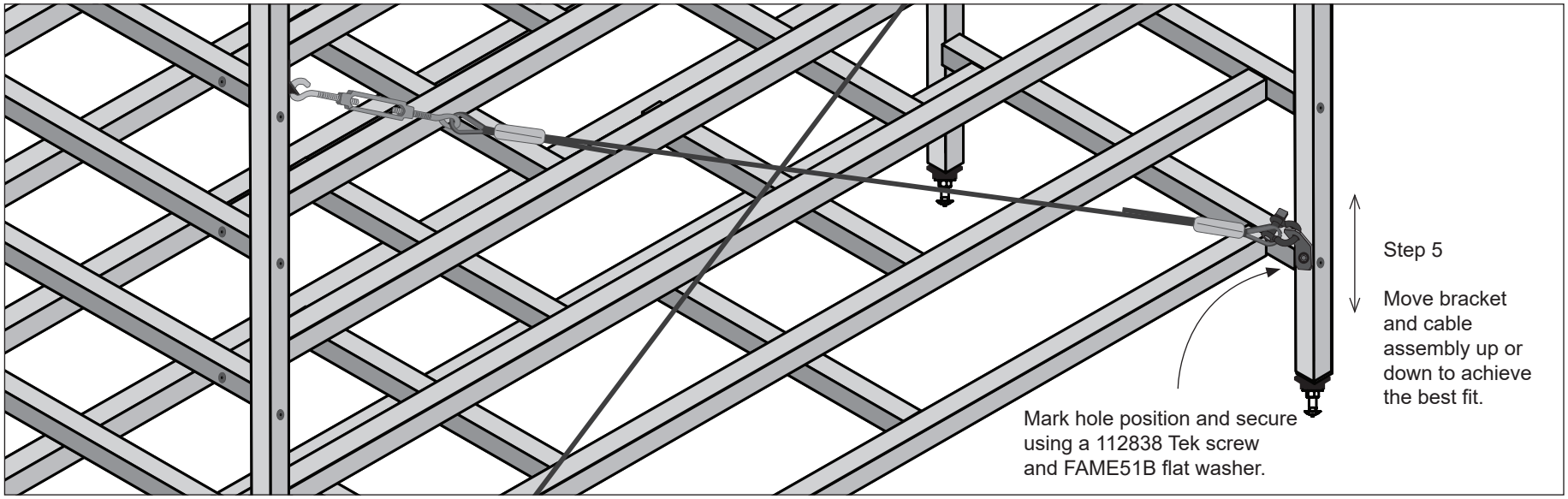
WARNING! ***BRACE THE FRAME IN PLACE DURING CABLE INSTALLATION. HAVE AN ASSISTANT HOLD THE FRAME STEADY WHILE INSTALLING THE CABLE BRACKETS. FAILING TO BRACE THE FRAME AND HAVE AN ASSISTANT HOLD IT STEADY DURING THIS PROCEDURE MAY CAUSE THE FRAME TO COLLAPSE! DO NOT PROCEED WITH THIS STEP WITHOUT BRACING AND ASSISTANCE.***

4

INSTALL CABLES—FDCAB13L0703S1T (continued)

5. With assistance, place the 108503 bracket against the frame tube and mark the hole position using a marker.

   NOTE: Adjust the position of the bracket on the frame leg to allow the cable to sag an inch or so. This ensures sufficient adjustment when it is time to plumb the vertical frame tubes.



6. Attach the 108503 bracket with cable assembly to the frame tube using a 112838 Tek screw and FAME51B washer. Tek screw should be snug. ***Do not overtighten!*** Doing so will strip the threads from the hole.
7. Repeat these steps to install the remaining cable assembly for the first pod frame.
8. After installing both cable assemblies, evenly tighten each turnbuckle to remove cable slack. If you run out of turnbuckle adjustment and slack remains, loosen the turnbuckle and lower the 108503 bracket on the frame. Retighten to remove slack.
9. With assistance, carefully adjust the frame to position it on the site where the entire fodder system will be assembled. Review the diagrams near the end of this guide for details.
10. Continue with the next procedure.

Plumb and Level Each Frame Pod

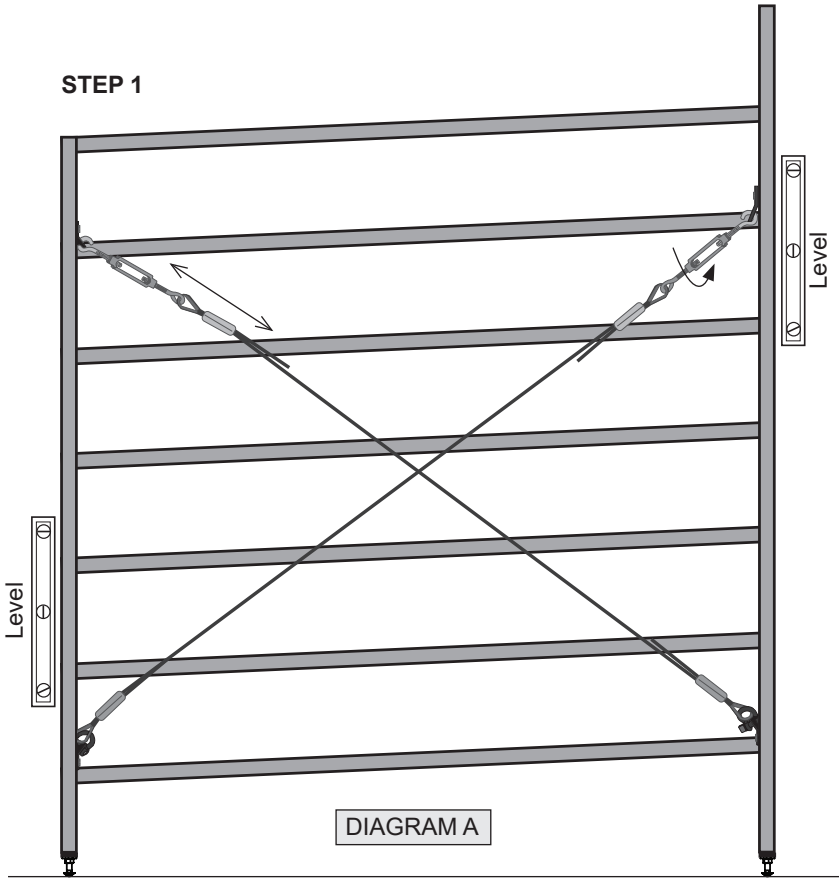
5

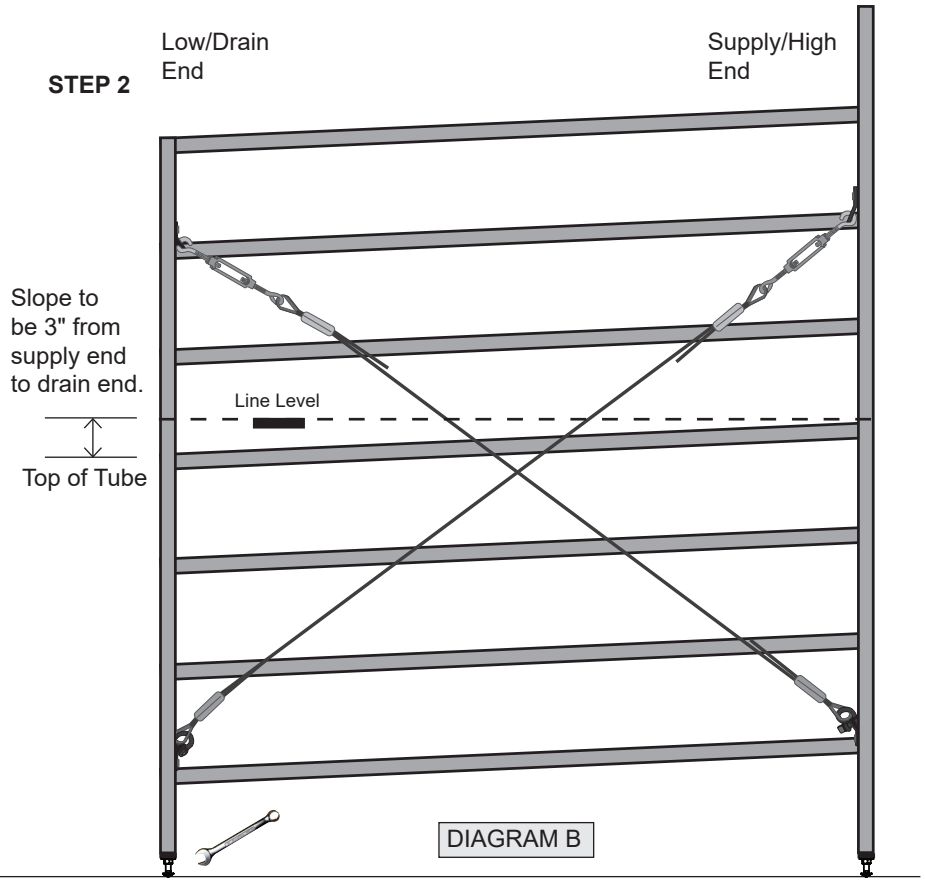
PLUMB AND LEVEL EACH FRAME POD

Each frame pod slopes 3" from back-to-front to ensure proper water flow, distribution, and drainage. If the finished grade is sloped in any direction, use the adjustable levelers to maintain the 3" slope and to level the ends. ***DO NOT EXCEED THE 3" SLOPE.***

Review the diagrams on this page and complete these steps:

1. Place a level along each vertical support on the cable side of the frame and tighten or loosen the cable turnbuckles as needed to plumb the corner supports. Tighten turnbuckles evenly. See diagram A. When adjusted correctly, all vertical frame tubes are plumb.
2. Check the slope from back to front. See diagram B. Adjust levelers as needed (Steps a-c). Lock carriage bolts in place using the locknut on each bolt.
    a. Align a string or straight edge with the top of a frame tube ***at the supply or high end of the frame*** (Diagram B).
    b. Move to drain or low end and tie string to frame above the frame tube. Hang a line level on the string to ensure that the string line is level.
    c. Measure from string to the frame tube. Dimension to be 3". Adjust frame levelers (if needed) to achieve the 3" slope.

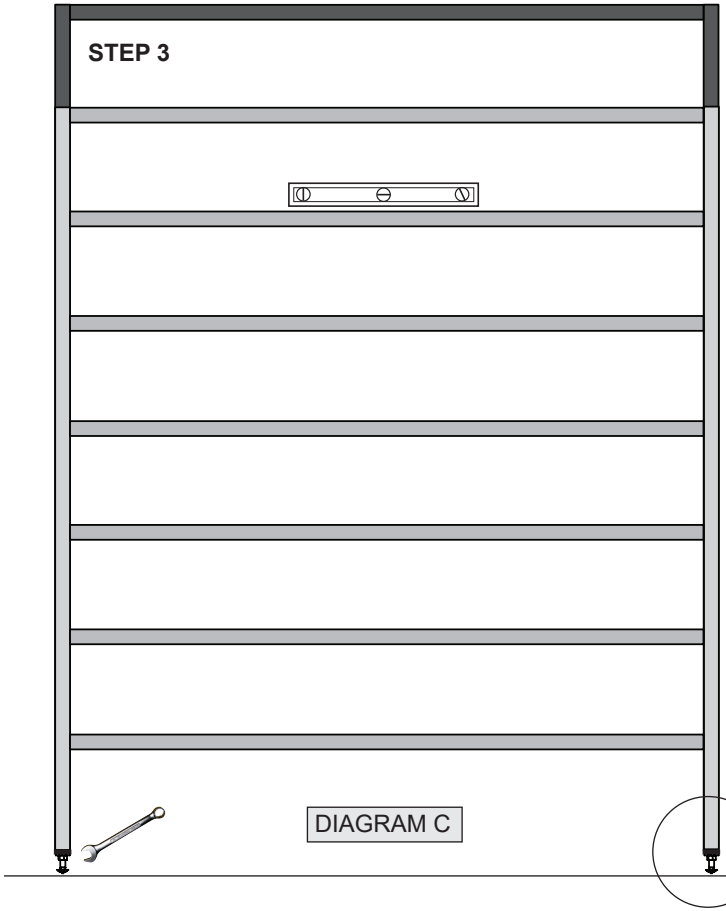


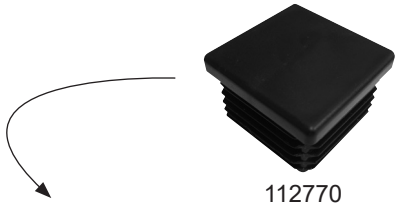


5

PLUMB AND LEVEL EACH FRAME POD—continued

3. At the end walls, adjust the levelers to level the frame side-to-side. Set a level on the end frame cross member and adjust. See diagram C.





Install one 112770 finishing cap in the top of each vertical frame tube. Gently tap into tube if needed.

4. Repeat Step 2 to recheck the back-to-front slope.
5. Verify that all levelers are locked in place. ***For improved stability, avoid fully extending the levelers.***
6. Assemble and set the next pod in position and repeat this procedure (Procedure 5).
7. After assembling pod frames, set in place, leveled, and plumbed, install the 112770 finishing plug in the top of each vertical frame tube.
8. Continue with the installation of the gutters and downspout.

6

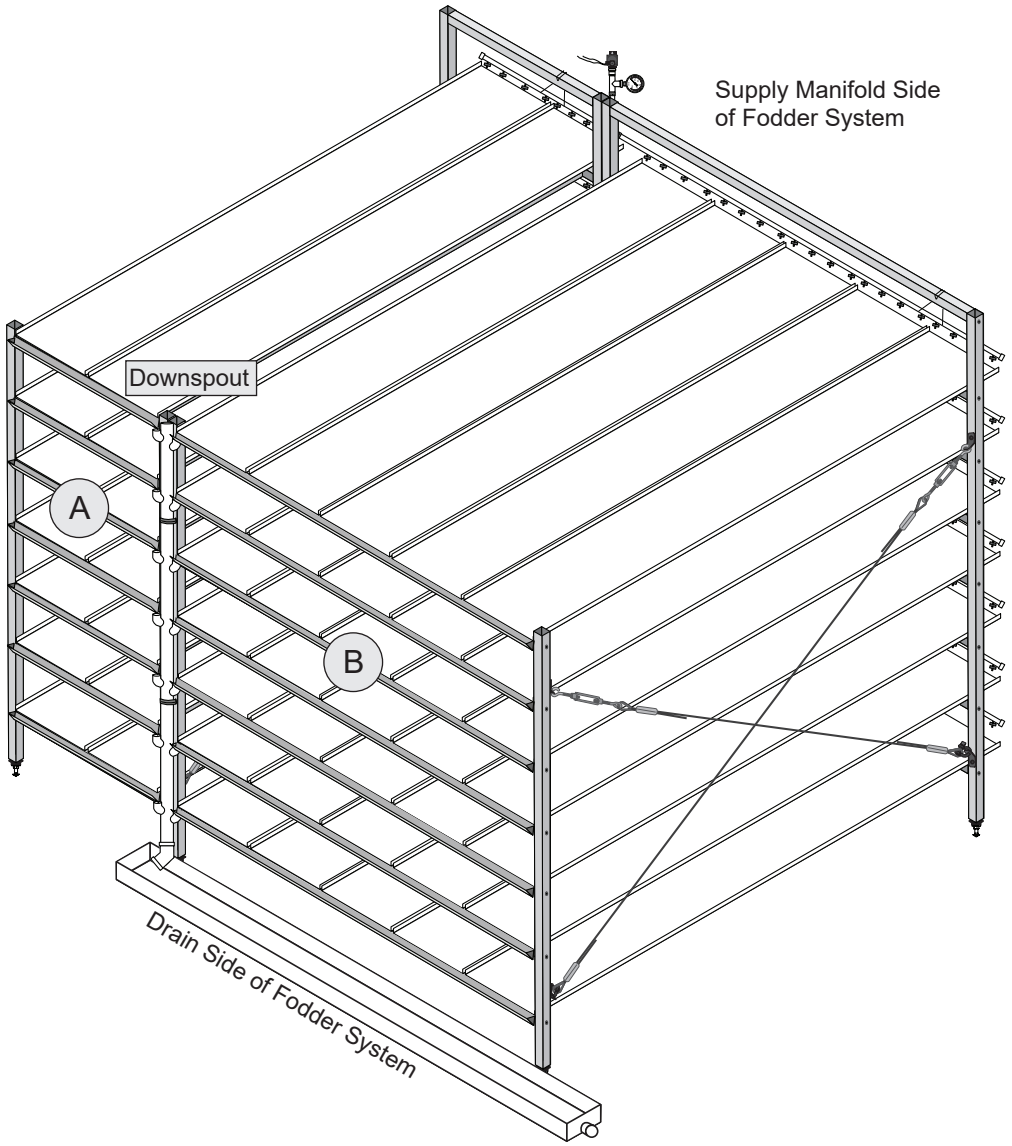
INSTALL GUTTERS

ATTENTION: Install gutters before installing the downspout.

Gutters are installed at the drain/low side of each frame pod. There are two (2) different gutter types for this fodder system. Each has a specific position on the frame. Each is designed to drain toward the downspout when installed correctly. Diagram below shows the downspout location and identifies where to install each gutter type.

Required parts:

- FGS01R03125F Gutter (Pod A)
- FGS01L07925F Gutter (Pod B)
- 112838 #10 x 1" Tek Screws
- Magnetic Nut Setter (5/16" x 2-9/16")



6

INSTALL GUTTERS—continued

Complete these steps:

1. Using the diagram on the previous page, pick the gutter section and set it in place on the pod frame.
2. Ensure that the gutter slopes toward the downspout location shown on the diagram.

   ATTENTION: Downspout is installed ***after*** all gutters are installed.
3. Set all trays in place on the frame where gutter was installed.
4. Mark two (2) locations between trays at each end of the gutter.

   ATTENTION: For the shorter, 2-tray gutters, install one (1) screw between the two trays. For all other gutters, position all fasteners between the two trays at each end regardless of how many trays are on each pod level.
5. Remove the trays and drive a 112838 Tek screw through the gutter and into the frame tube at the locations chosen in Step 4.
6. Repeat this procedure to install all remaining gutters.
7. Continue with the installation of the downspouts.

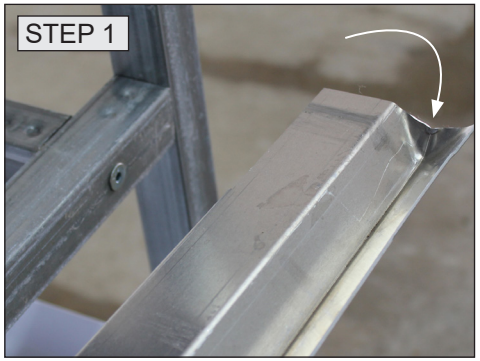


Photo shows crimped or high end of gutter, which is opposite the drain end.

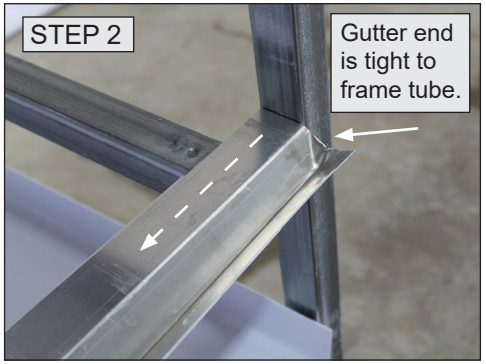
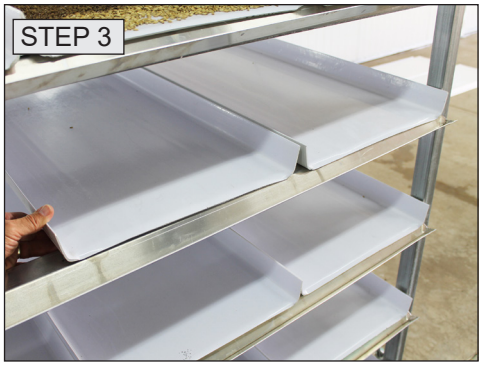


Photo shows installed gutter. Dashed arrow indicates direction of water flow.



Set trays on frame to judge where to install fasteners to secure gutter to frame.

Center fastener location so screw head does not contact any part of any tray.

Slide trays back from gutter to allow for the installation of the 112838 fasteners.

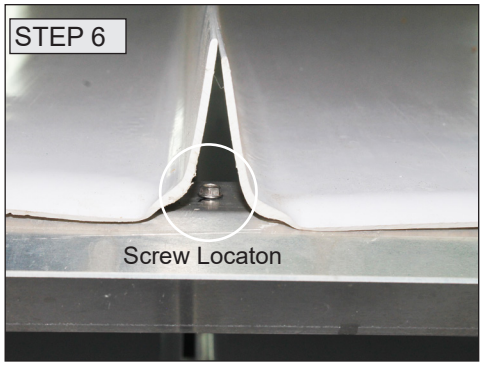


Photo shows trays in position with fastener installed to secure gutter.

7

INSTALL DOWNSPOUT

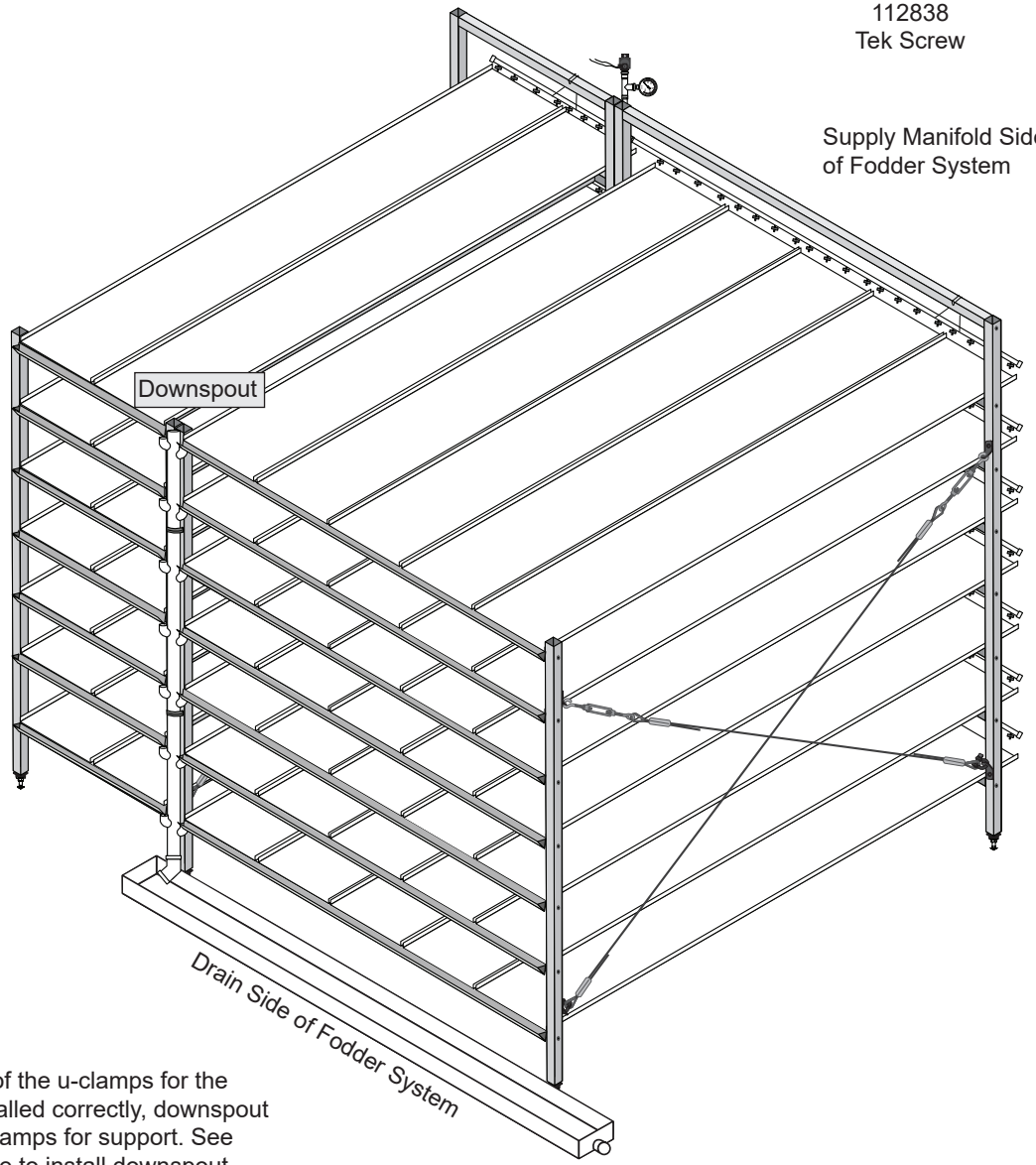
Attach downspout to the vertical frame members at the low end of the installed gutters in the location noted in the diagram below. Photo shows an installed downspout.

112838
Tek Screw

FAPA15

Required parts:

- 112838 #10 x 1" Tek Screws
- Magnetic Nut Setter (5/16" x 2-9/16")
- FAPA15 U-Clamp
- FDSBRKT Downspout Bracket
- FDS01L069 Downspout

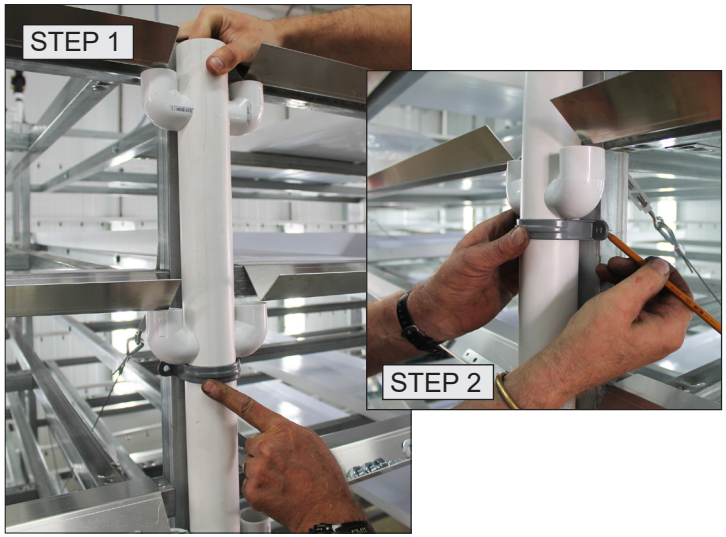


Circles show location of the u-clamps for the downspout. When installed correctly, downspout elbows rest on the u-clamps for support. See procedure on next page to install downspout.

7 INSTALL DOWNSPOUT—continued

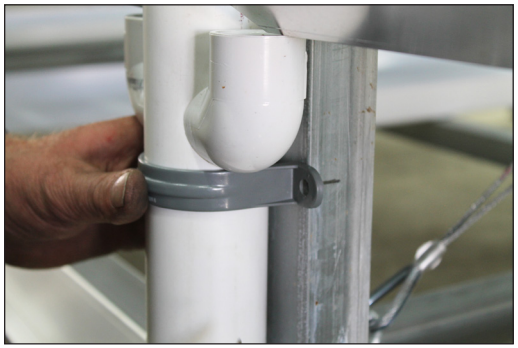
Complete these steps:

1. Place downspout in position against frame. Slide one FAPA15 u-clamp around downspout at second level from top.



ATTENTION: An assistant is needed for this step. Some gutters may not contact the drain elbows. A drip edge at drain end of each gutter helps guide water into drain elbows.

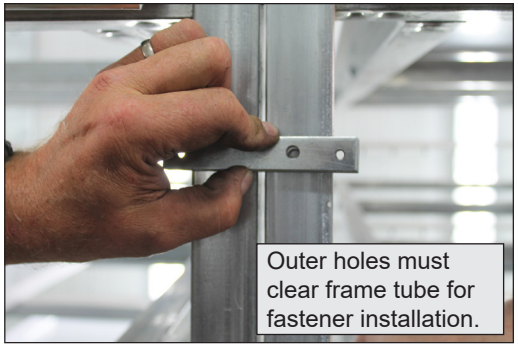
2. On the frame tube, mark the center of each hole using u-clamp as a guide.



NOTE: For best results and support, verify that u-clamp is snug to the underside of drain elbows as shown.

3. Hold downspout. Mark lower bracket location at second level *from bottom*.

4. Place FDSBRKT bracket against frame and align bolt holes with marks.



5. Verify that bracket position allows for installation of fasteners in each hole.

6. Using the nut setter, install a 112838 Tek screw in ***center hole of bracket***.

7. Repeat to attach remaining FDSBRKT flat bracket.

NOTE: If frame blocks outer hole, use a clamp to squeeze frame tubes together when installing downspout.

8. After installing the upper and lower brackets, have an assistant hold the downspout in position against the frame and FDSBRKT flat brackets.

7 INSTALL DOWNSPOUT—continued

9. Slide a u-clamp into position over downspout and align clamp holes with holes in bracket.
10. Take the 112838 Tek screws and attach the u-clamp to the flat bracket. Do not overtighten screws. Doing so can damage the u-clamp.

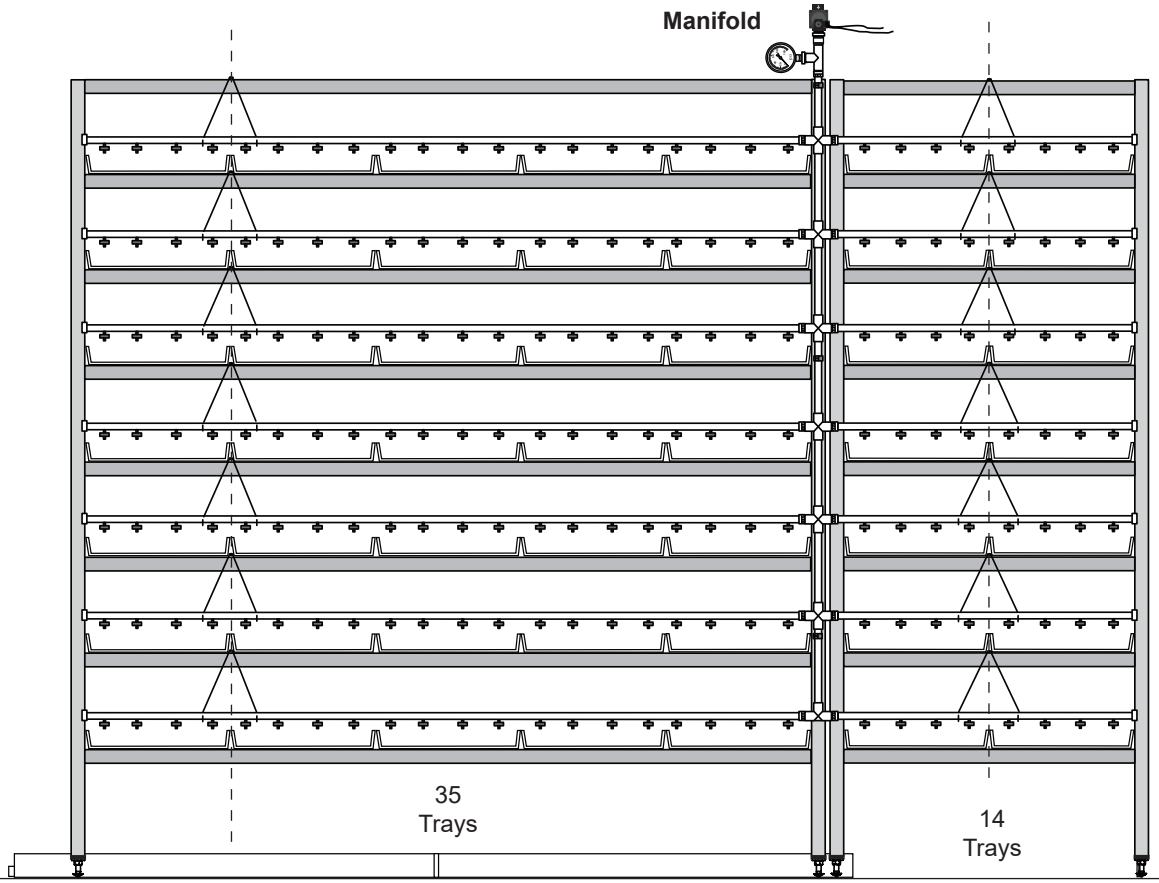
NOTE: In most instances, downspout elbows (seen in left photo) are tight to the underside of the gutters. Slight variations may occur during the manufacturing process. In such cases, some elbows may remain slightly below the gutter while others on the same downspout touch the gutter when downspout is installed. The drip edge on each gutter compensates for these variations.

11. Repeat step to install remaining u-clamp for the downspout.

8

ASSEMBLE AND ATTACH SUPPLY MANIFOLD

The 113542 Fodder Pro 3.0 system includes one supply manifold to deliver water to the fodder trays. Review the diagram below and those near the end of this guide to better understand manifold locations before you begin manifold assembly.



The pages that follow describe how to assemble and install the manifold. Manifold supplies water to all trays. ***The standard 113542 system is designed to harvest 7 trays each day.*** Continue with the procedures that follow to assemble and attach the supply manifold to the frame.

ATTENTION: During installation, first attach manifold assembly to frame. Position the 106807 pipe hangers as shown to ensure they do not interfere with manifold fittings. Identify horizontal manifold branch tube positions and install as noted. Install wire hangers between trays. ***In no instance should a tray rest on a wire hanger.***

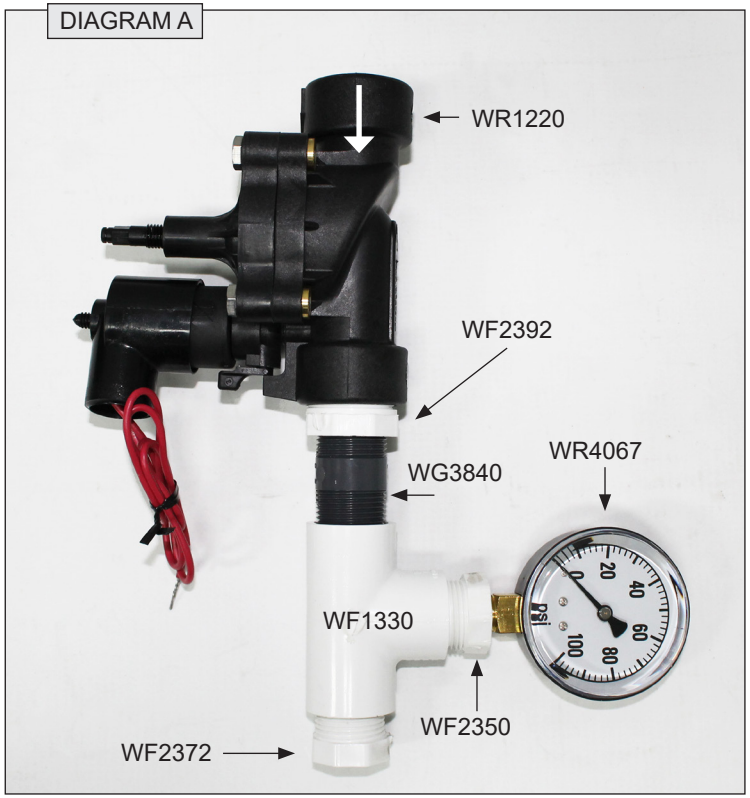
8a ASSEMBLE GAUGE AND REGULATOR

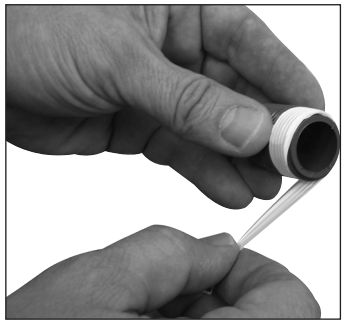

WR1095

Complete this procedure to assemble the gauge and regulator portion of the supply manifold. Use Diagram A to complete the assembly.

Wrap all threaded fittings (4-5 times) with WR1095 tape before assembly. Wrap threads in a direction the will not allow the tape to unwind when fittings are assembled.

DIAGRAM A





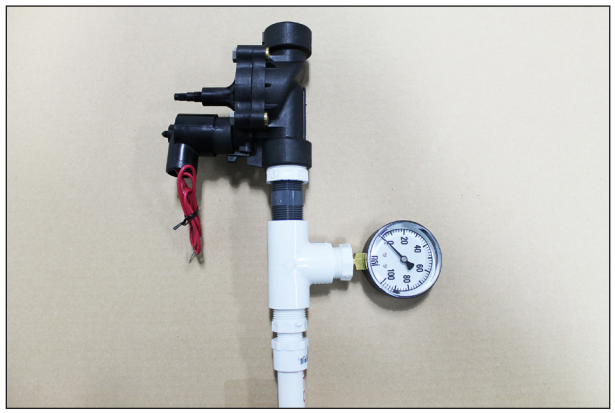
IMPORTANT: Install the WR1220 solenoid so the arrow points in the direction the water flows.

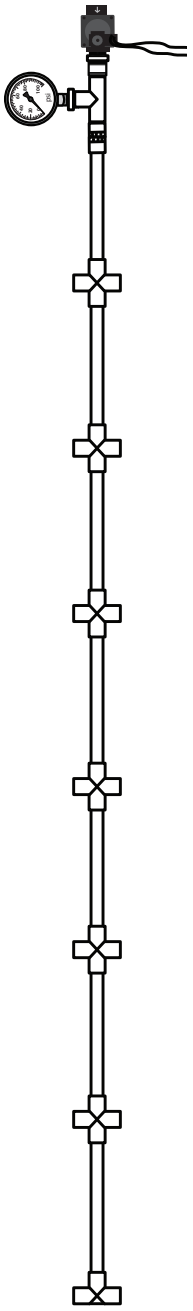
See Procedure 11 to adjust and set the water pressure.

8b ATTACH GAUGE & REGULATOR TO MANIFOLD TRUNK

Complete these steps:

1. Wrap the threads of the fitting at the end of the manifold trunk with thread tape.
2. Attach a gauge and regulator assembly to the manifold trunk. Tighten until snug.
3. Continue by attaching the assembly to the frame.





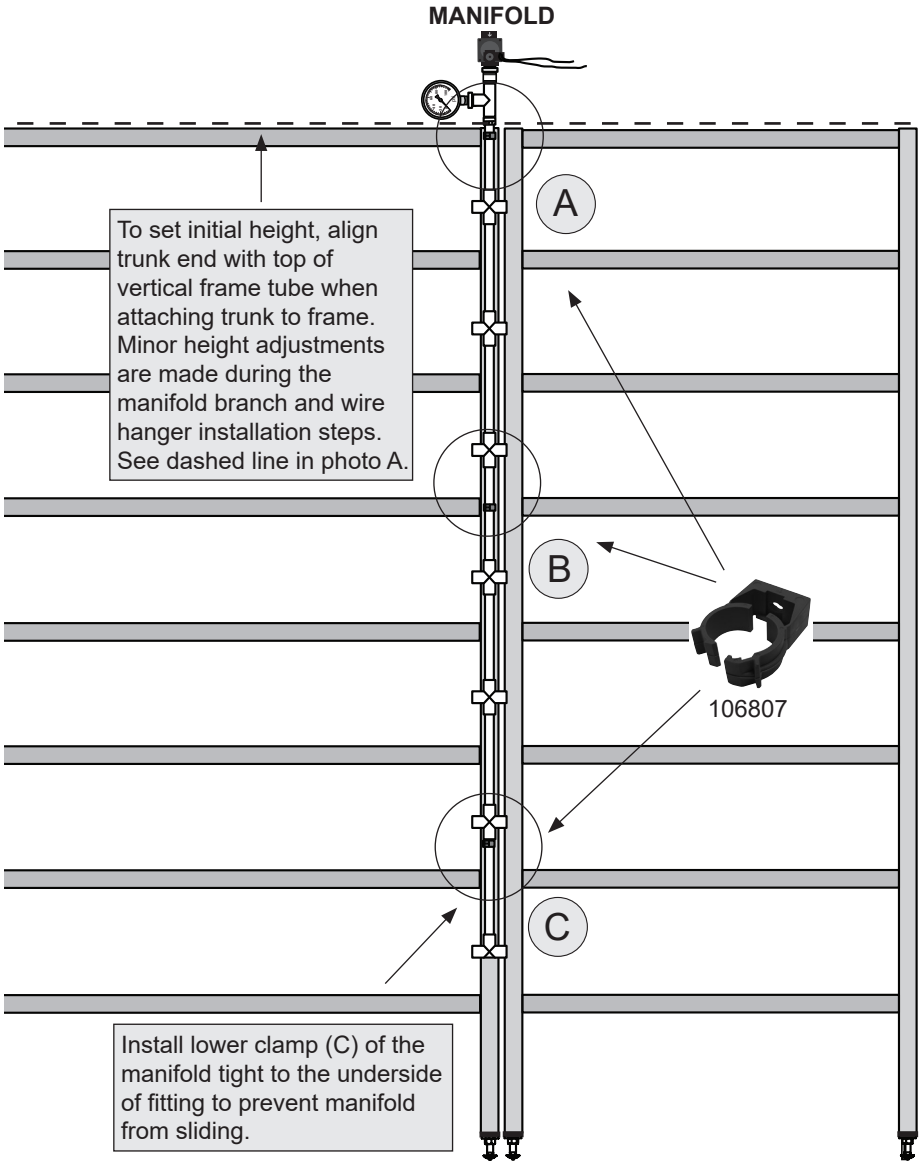
(FPT2H105)

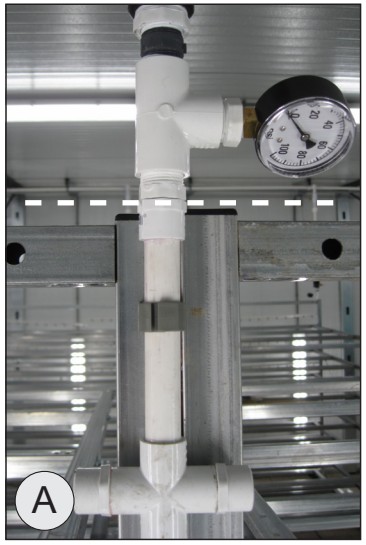
8c

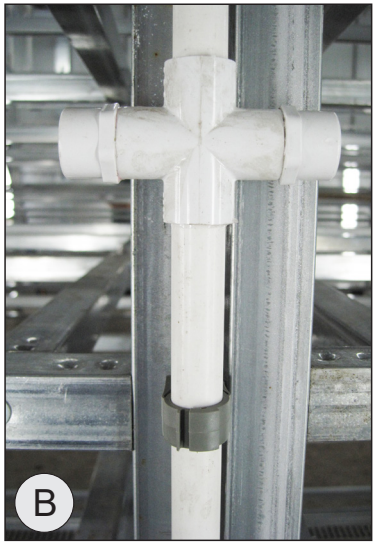
ATTACH MANIFOLD ASSEMBLY TO FRAME


106807


112838
Tek Screw





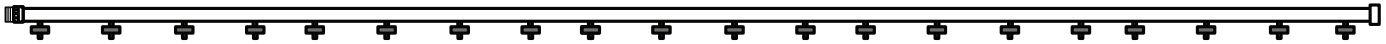


8d

INSTALL MANIFOLD BRANCH TUBES

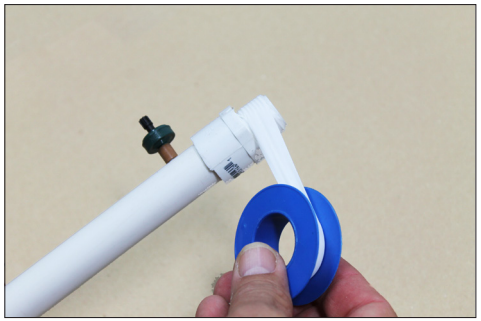
After installing the manifold assembly, apply thread tape to the fitting at the end of each horizontal branch tube and attach tubes to the manifold trunk. Consult the full frame diagram below and those on the next pages to install branch tubes.

FPB2PG—2 Tray Branch



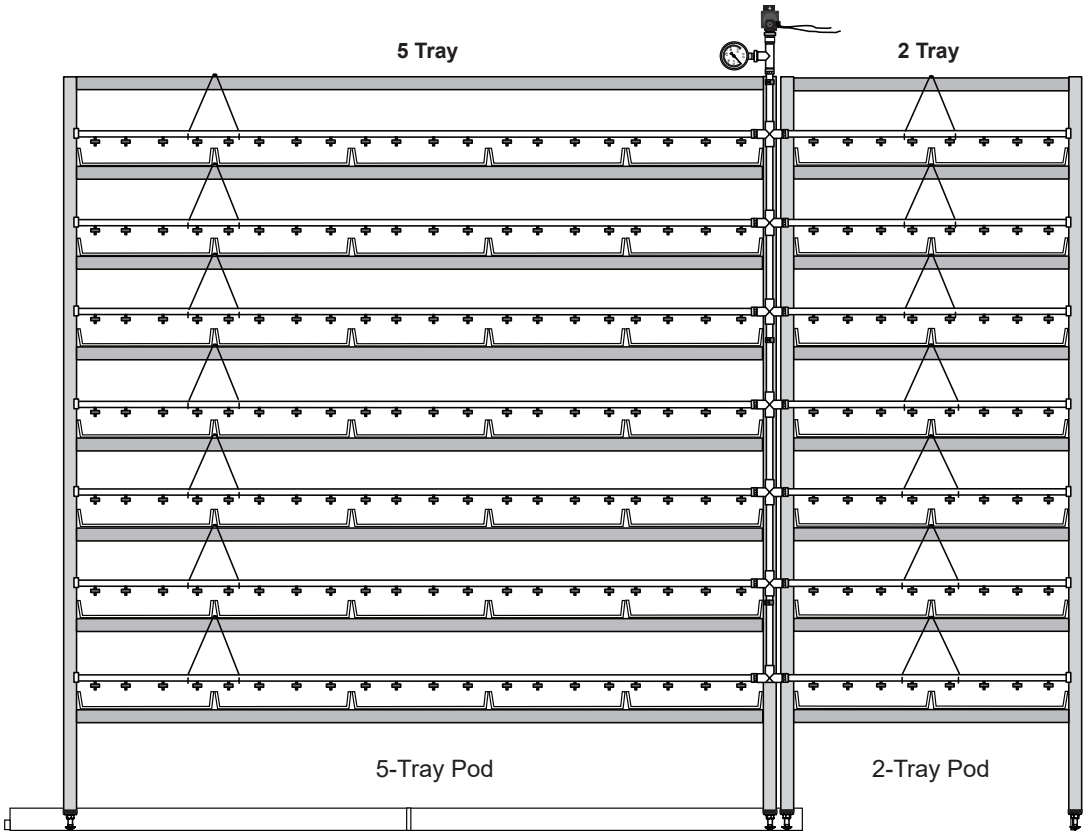
FPB5PG—5 Tray Branch

Wrap the threaded end of each manifold branch tube with thread tape before attaching it to the manifold trunk.



ASSEMBLY NOTES

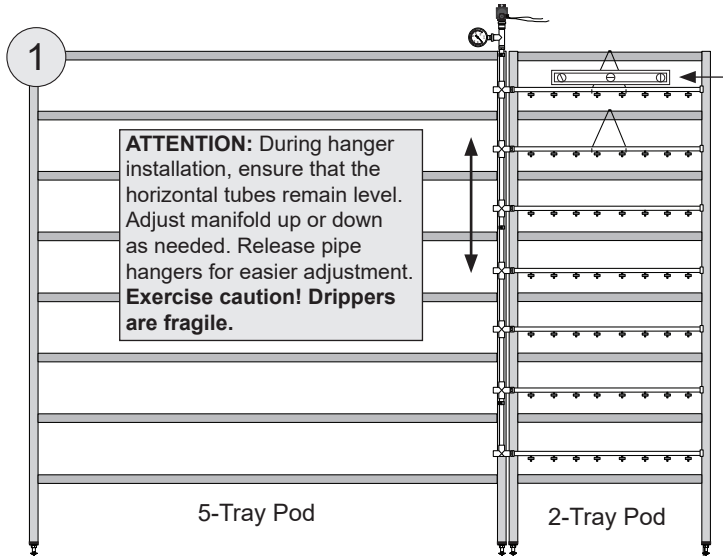
- Wrap branch fitting threads with thread tape.
- Tighten branch tube connection until snug. Do not overtighten!
- Install so dripper nozzles point straight down to tray position.



8d

INSTALL MANIFOLD BRANCH TUBES—continued

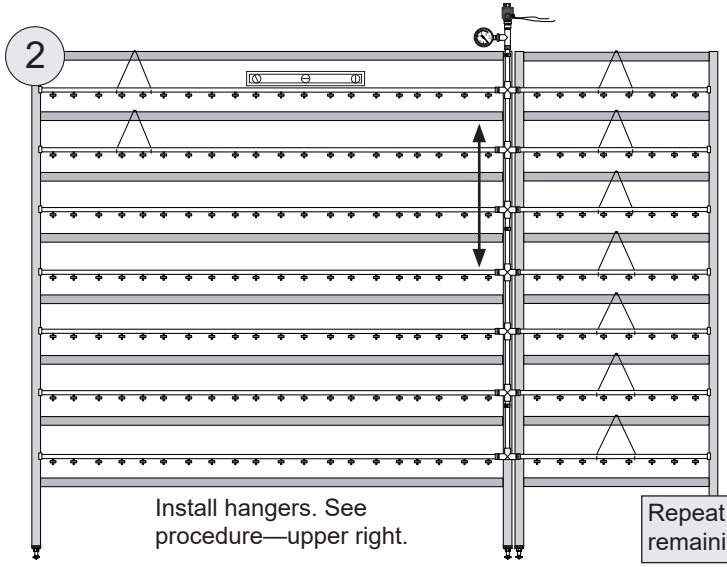
The following diagrams show one way to attach the horizontal branch tubes to the manifold. Personal preference and experience may affect how you complete the installation. Review all diagrams that follow and continue by installing the manifold branch tubes.



Level

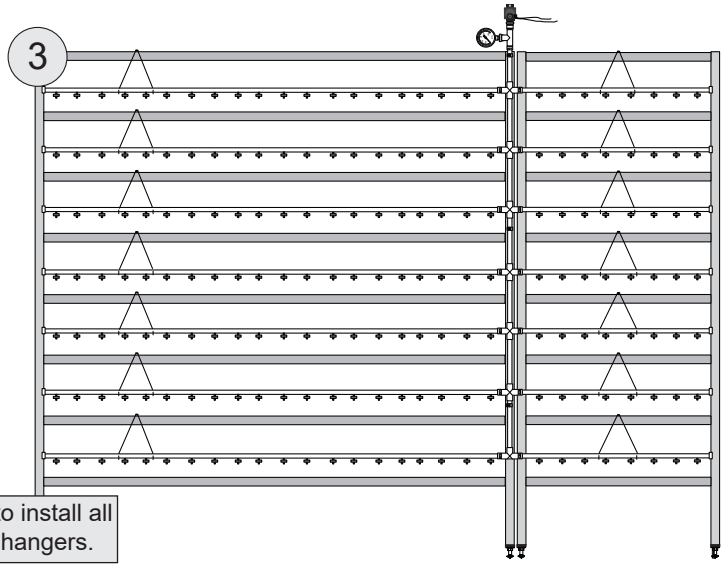
Install wire hanger between the trays. Place trays in position as guides, or measure to ensure correct hanger placement.

Slide manifold up or down to level branch tubes.



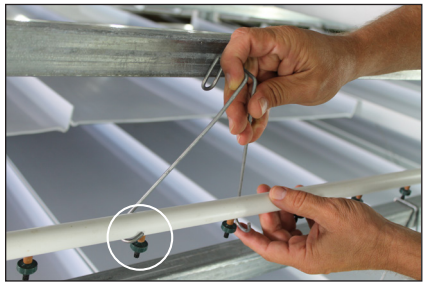
Slide manifold up or down to level branch tubes.

Install hangers. See procedure—upper right.

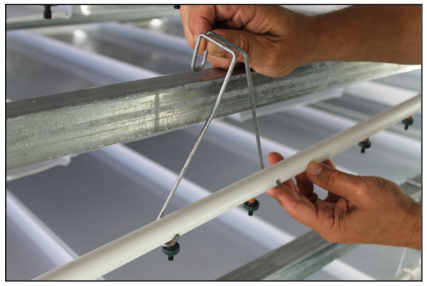


Repeat all steps as needed to install all remaining branch tubes and hangers.

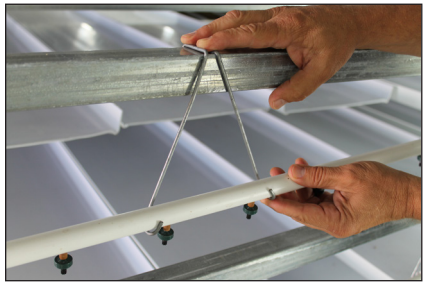
INSTALL BRANCH HANGERS—113100



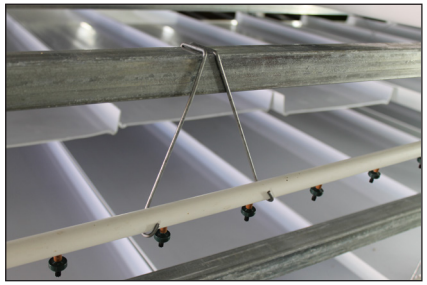
1. Hook hanger ends under branch tube. Bend hanger as needed to place hanger ends as shown.



2. Seat tube tightly in hanger. Hanger hooks are outside of the drippers.



3. Hook hanger over top of frame tube and gently pull down to seat hanger in place.



4. Verify that hanger hooks are positioned outside of each dripper as shown.

Assemble and Install On-Floor Drain Channel

9 ASSEMBLE AND INSTALL THE ON-FLOOR DRAIN CHANNEL

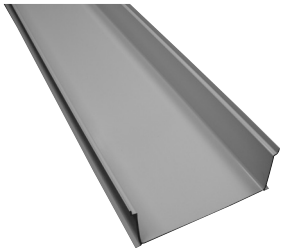
The on-floor GT70 drain channel is designed to deliver drain water away from the fodder system to a holding tank, drain, or other predetermined destination.

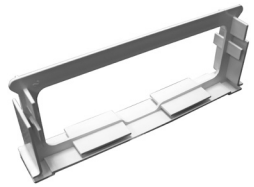
NOTE: The on-floor drain channel helps direct drain water away from the fodder system to a predetermined location. Additional materials may be needed to achieve the desired results. Contact your sales representative to purchase additional channels, splices, and end caps if needed.

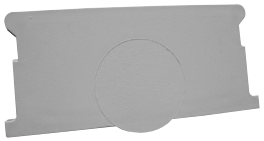
Complete these steps to assemble the drain channel.

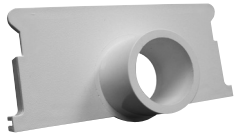
1. Gather the parts shown at the right.
2. Using pvc primer and pvc cement, assemble the on-floor drain channel.
3. After the cement has set, move the drain channel into position under the downspout.

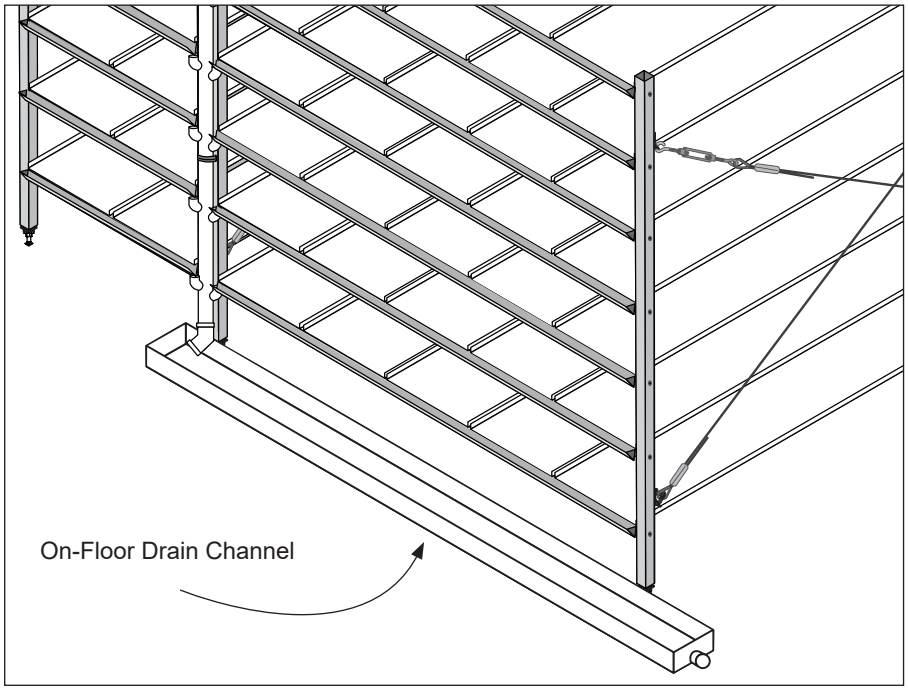
WR6990


111003Z060


111129

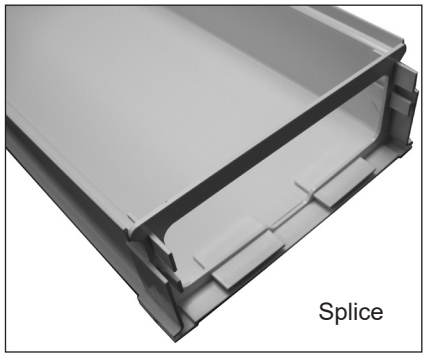

111127


111128



NOTE: Once the gutter is cemented, it cannot be disassembled without damaging the components.


End Cap


Splice

10 Basic System Check Before Operation

Complete these steps:

1. Set trays in place on each rack. Position the tray end that is curved upwards below the drippers at the high end of the frame. ***Carefully slide all trays into position for testing. Do not contact the drippers with trays. Drippers are fragile! They may break.***
2. Verify that the on-floor drain channel (if used) is positioned as needed to direct water to the floor drain or recapture tank.
3. Enlist the services of a licensed professional plumber to connect the main water supply to the assembled fodder system. (***Do not turn water on until the WR1220 solenoid is set. See Procedure 11 on next page.)***
4. Enlist the services of a licensed professional electrician to connect the main power to the timer and the timer to the solenoid. (Consult the documentation included with the timer to properly connect it.)
5. Set the WR1220 solenoid valve as described in Procedure 11 on the next page.
6. After completing Procedure 11, set the timer according to the desired watering cycles.
7. With the water running, inspect each dripper to ensure proper operation.

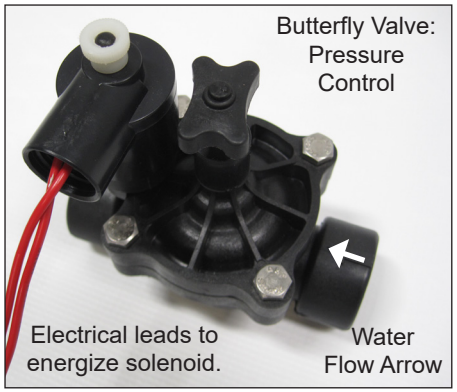
*Actual system may differ from what is shown in these photos.

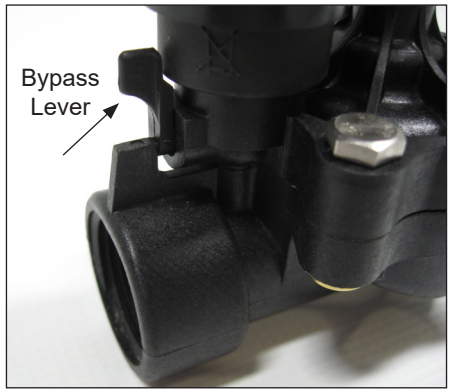
8. After checking the system and setting the desired watering cycles, continue by soaking the seed and seeding the trays.

Setting the WR1220 110 VAC Solenoid Valve

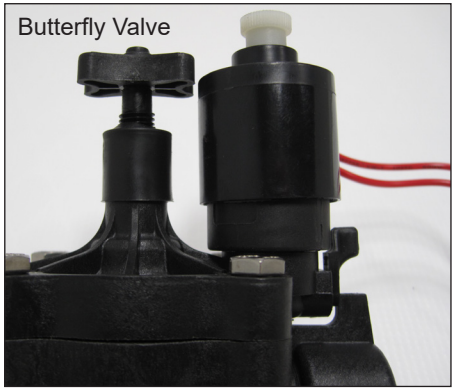
11

NOTE: The WR1220 110 volt solenoid valve is normally closed (N/C). When bypass lever on the valve housing is closed—Step 2 below—, solenoid must be energized to allow water to flow. Inlet pressure must be 15 psi greater than the regulated outlet pressure to allow the valve to fully close during operation.

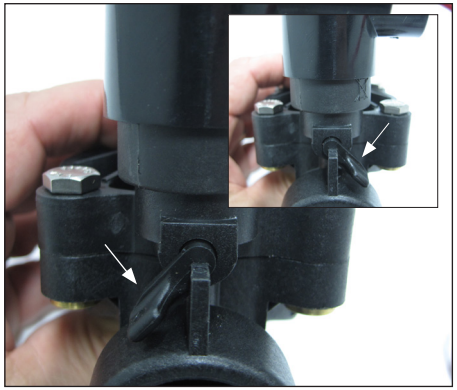




Photos above identify the different parts of the WR1220 solenoid valve.

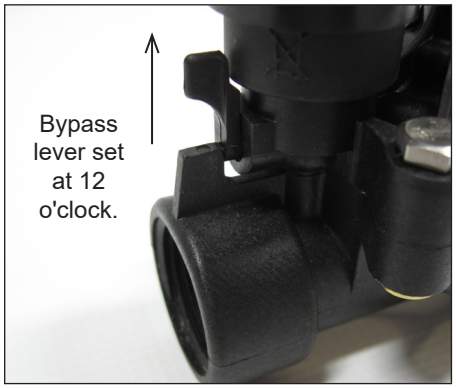


1. With the water turned off, *move to the WR1220* and turn butterfly valve clockwise until fully closed. Do not overtighten.

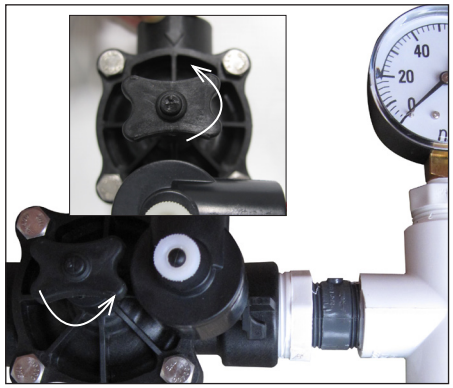


2. Rotate the bypass lever to the 7 o'clock or 5 o'clock position to close the valve.

3. Turn on main water to supply water to the WR1220 valve.

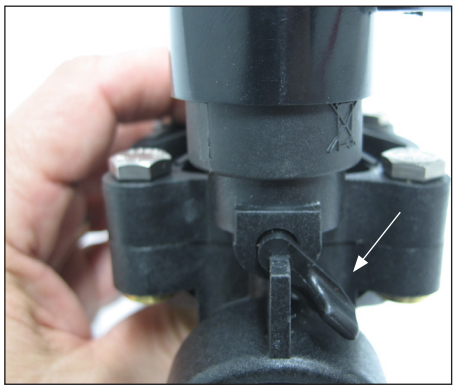


4. Move the bypass lever to 12 o'clock to allow water to flow into the valve.



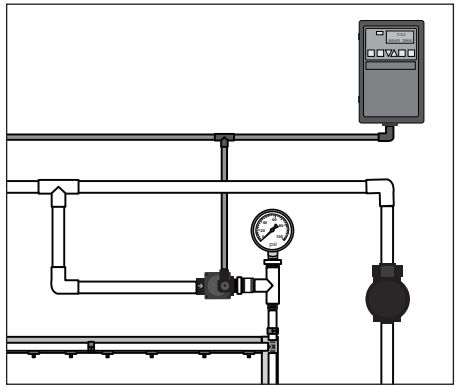
5. Turn butterfly valve counter-clockwise and set the desired water pressure (20 psi – 45 psi).

   ATTENTION: To prevent damage to the drippers, water pressure should not exceed 45 psi.



6. With the pressure at the desired setting, close the bypass lever by rotating it to either the 7 o'clock or 5 o'clock position.

   ATTENTION: Close the bypass lever during system operation.



7. Return to Procedure 10 (previous page) and continue with Step 6.

12 Replacing the 110414 Adapter and 110406 Emitter

110414*

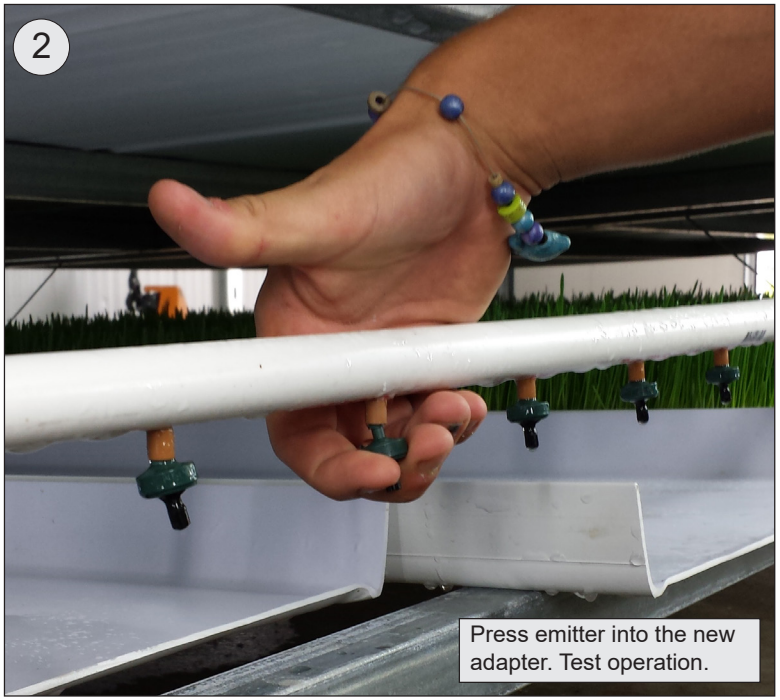
110406*

Adapters and emitters are easily replaced if broken or damaged. Complete these steps:

1. Using a small punch or similar tool, carefully push the broken portion of the 110414 adapter *into the 1/2" pvc supply tube*.

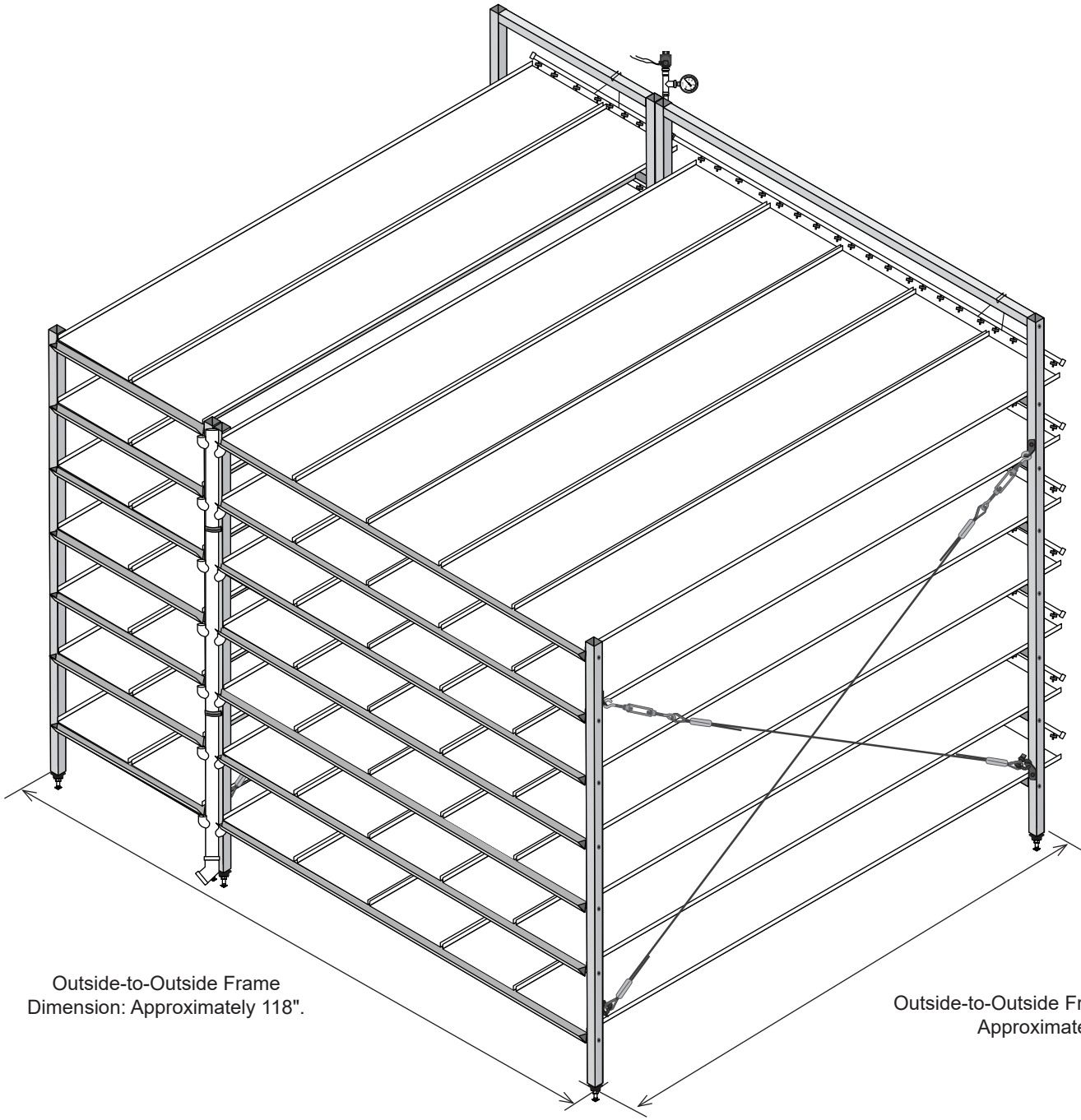
   ATTENTION: Remove horizontal tube from vertical manifold pipe if needed. Tool used to push broken adapter into pvc tube must have a diameter smaller than the hole in pvc tube. ***Do not damage the adapter hole in the pvc tube.***
2. Once the broken adapter is pushed into tube, align replacement 110414 adapter with hole in pvc tube and gently grip with adjustable pliers as shown below in Photo 1. Assure the adapter is straight in line with the axis of hole.
3. Gently squeeze pliers until adapter is seated and locked into pvc tube.
4. Align tapered end of the 110406 emitter with new adapter as shown in Photo 2 and press the emitter into the adapter.
5. Check emitter. Assure that it is fully seated.
6. Attach horizontal supply tube to vertical manifold pipe if it was removed.
7. Test operation.

Press new adapter into hole in horizontal pvc tube.

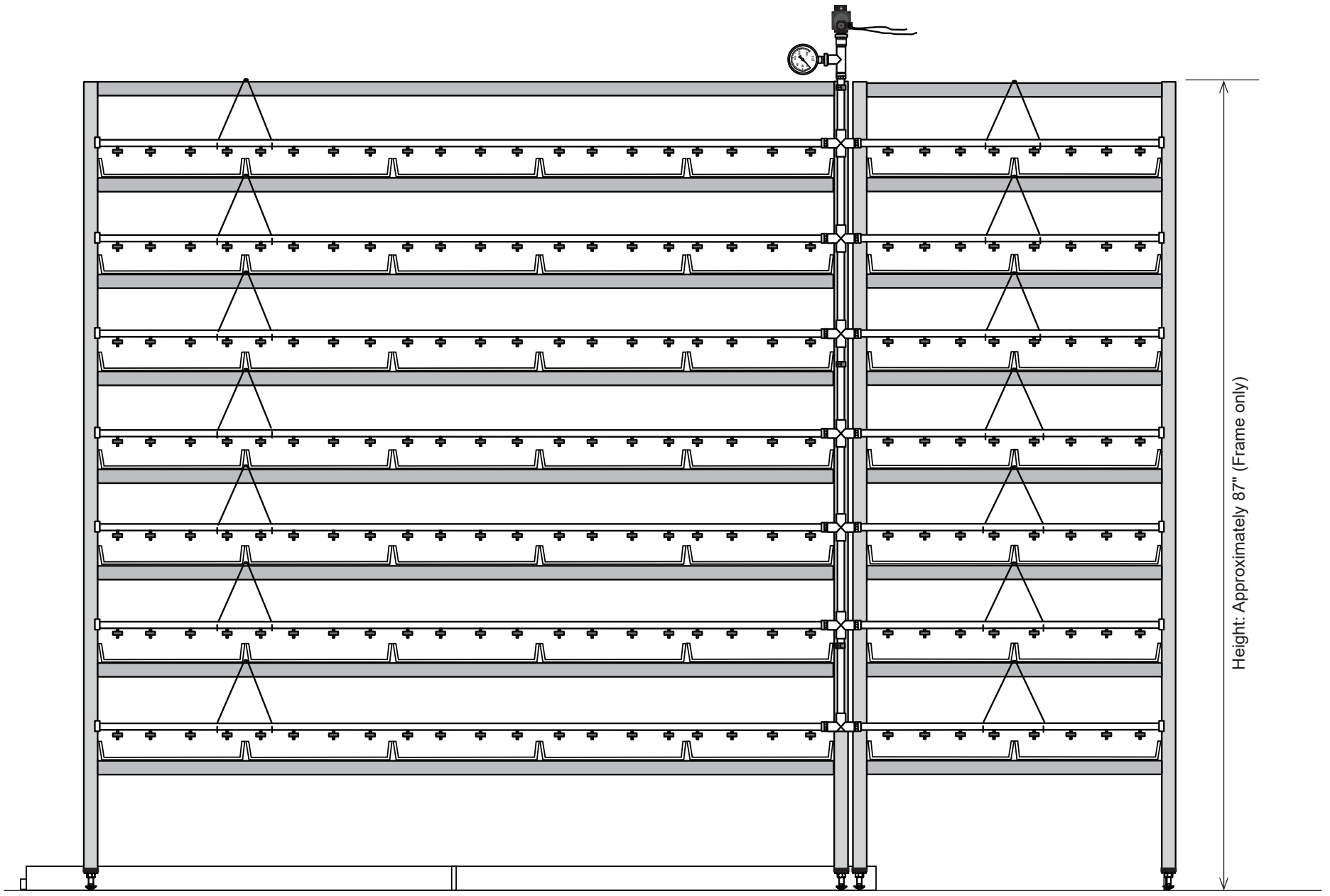


Press emitter into the new adapter. Test operation.

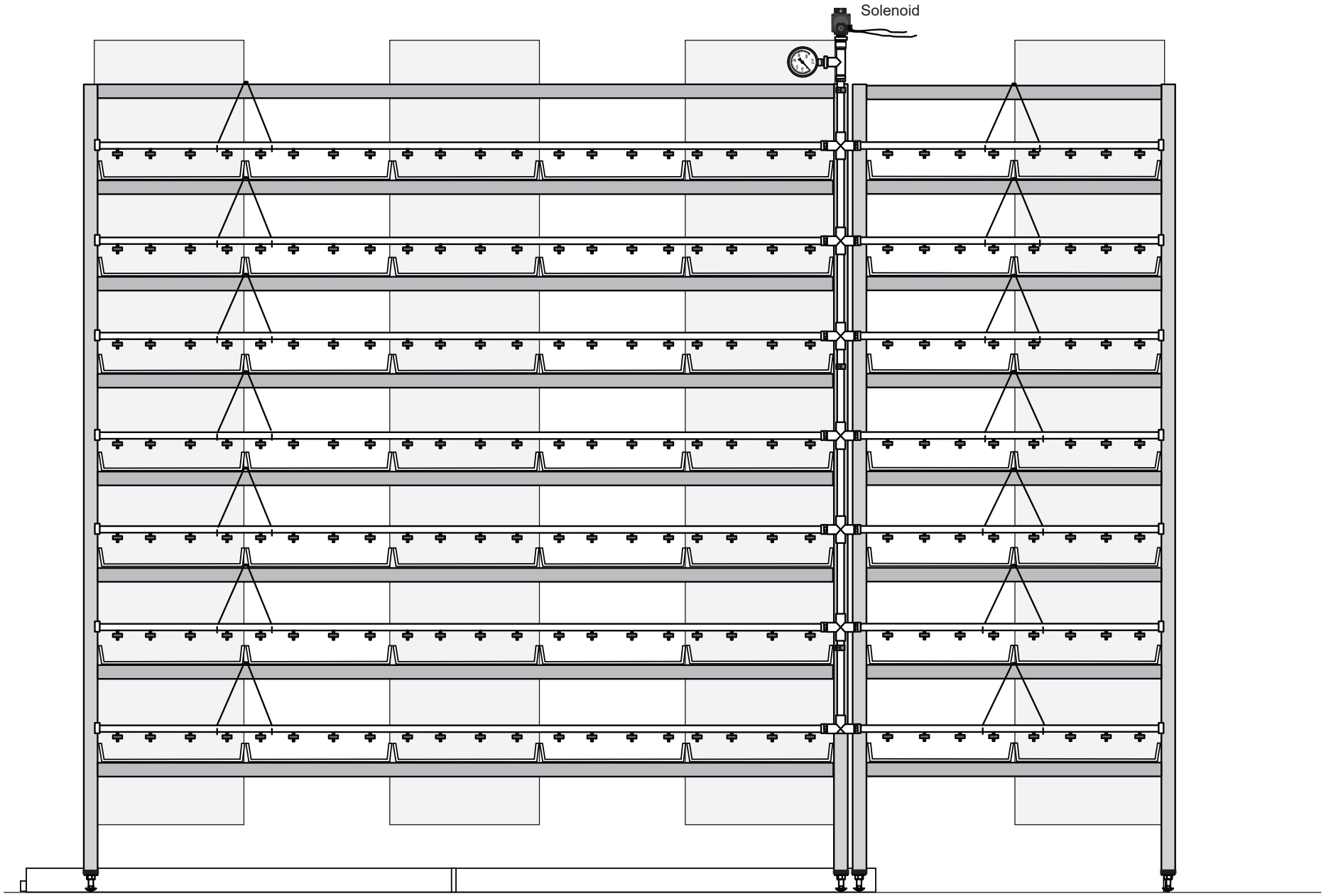
Full Frame View



Supply End—Back



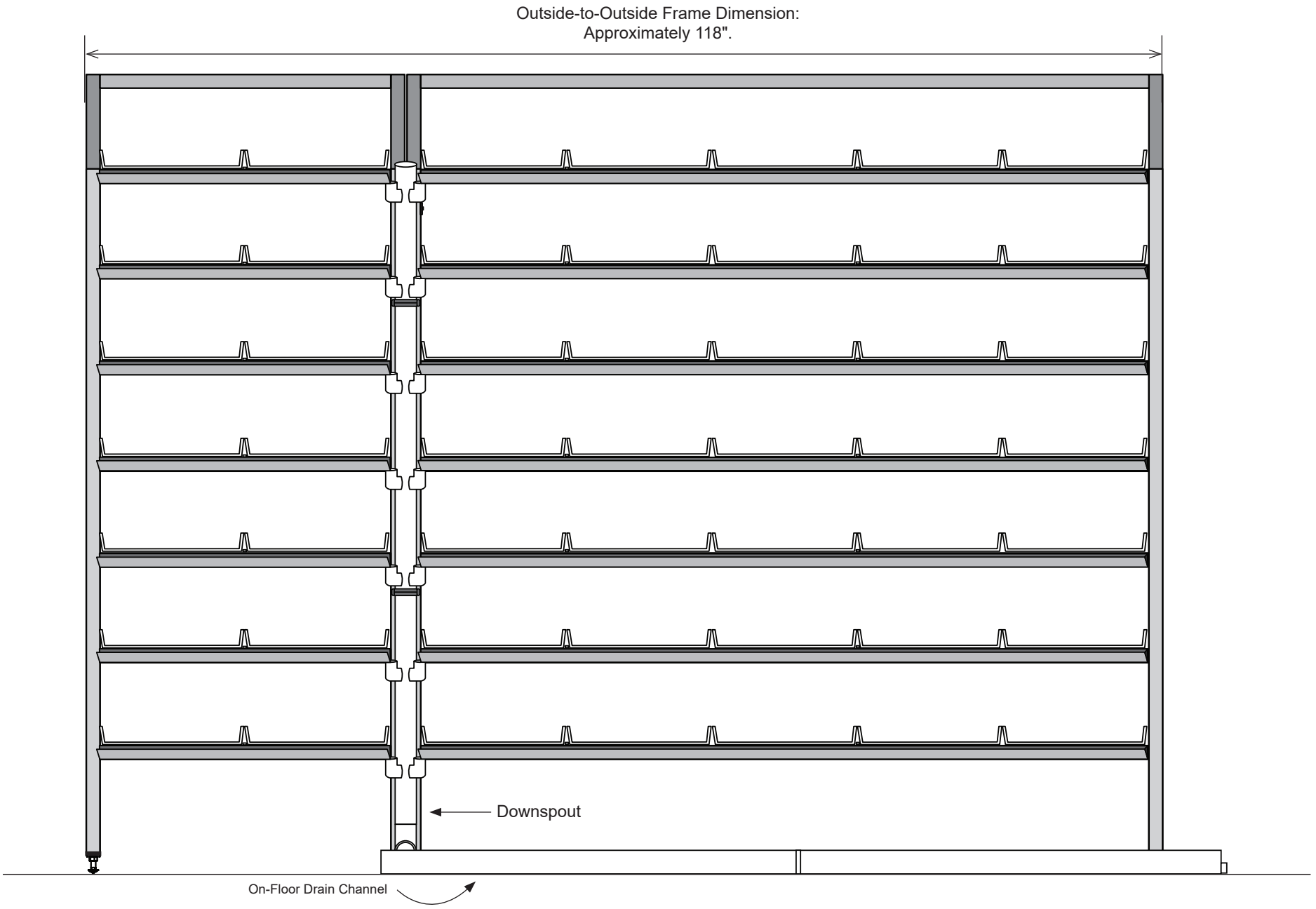
Supply End (Back)—Manifold & Watering



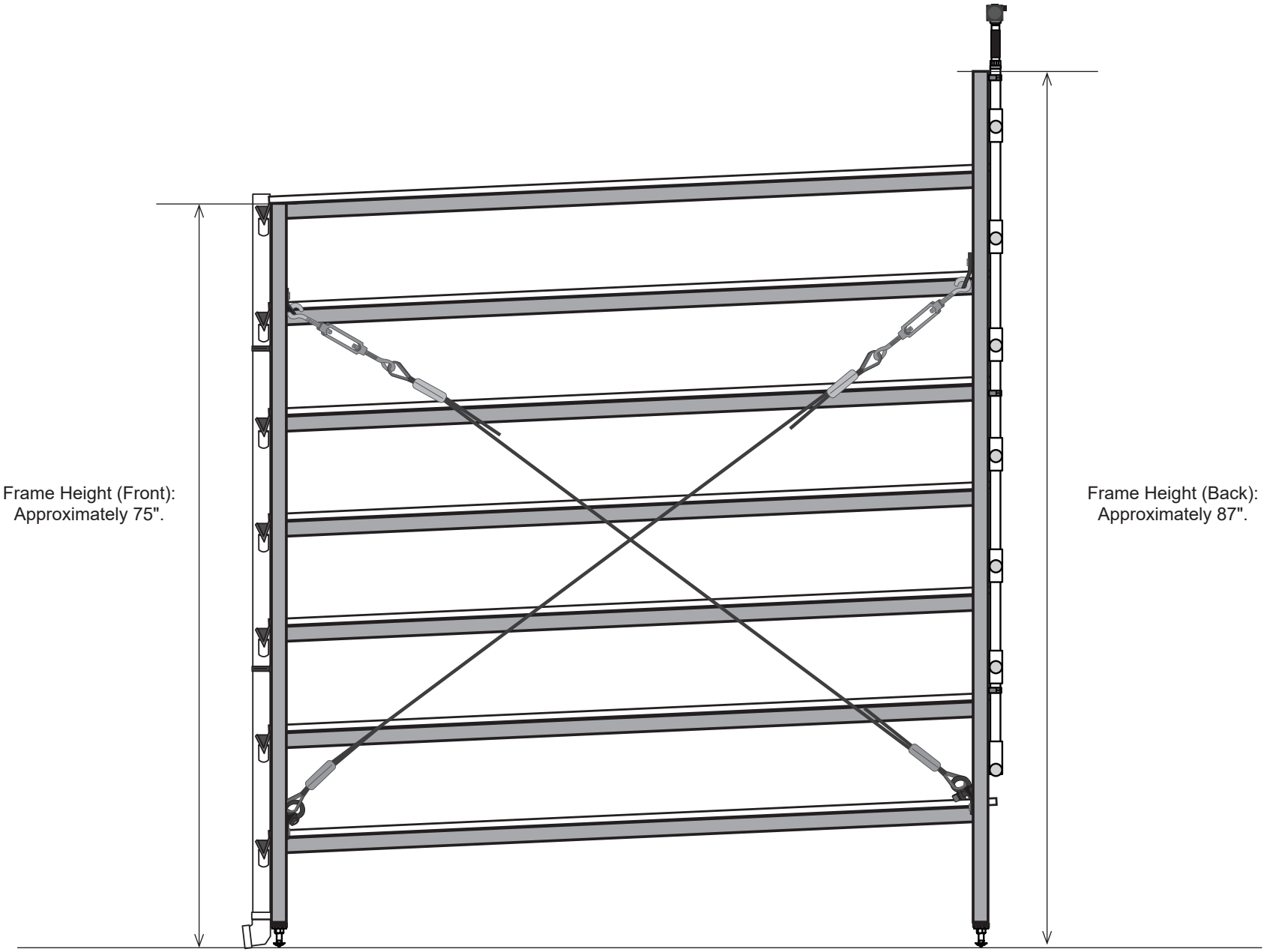
ATTENTION: Timer controls water to the entire fodder system. Fodder system is designed to harvest seven (7) trays each day. Example above shows harvesting seven trays vertically—one tray at each level.

Drain End—Front

ATTENTION: The supply manifold and drippers are not shown in the drain end diagram.



Side View


Frame Height (Front):
Approximately 75".
Frame Height (Back):
Approximately 87".

General Growing Tips

Despite the factors that must be addressed before you begin using your fodder system, these general tips will help you get started:

- **Water Quality:** Clean water is a must. If you can't drink it, don't use it. If you are not sure about the water quality, have it tested.
- **Water Temperature:** Keep the water temperature constant and in the range suitable for the seed or grain you are using.
- **Quality of the Seed or Grain:** While it may cost slightly more, good quality, clean grain or seed will save time. You won't have to clean the grain, or worry about foreign objects growing in the fodder that might pose a danger to your animals if eaten.
- **Climate Control:** A properly maintained environment is a must. Ensure you have controls in place to automatically control temperature and humidity. Additionally, do not rely solely on automatic equipment; ensure you are physically monitoring the environment daily and make adjustments if needed.
- **Keep the System Clean:** Follow the cleaning guidelines presented in this guide.

General Guidelines to Promote Optimal Growth	
Water Temperature	60° F (minimum) to 75° F (maximum)
pH Level	6.2 - 6.4 (range)
Humidity	40% to 80% (Best in most cases is 60%.)
Ideal Temperature Range	63° F to 75° F

Basic Maintenance

The fodder system requires regular maintenance and cleaning. The duration between the maintenance and cleaning sessions, however, depends on how and where the system is used and what seeds are grown. The only way to determine a regular maintenance and cleaning schedule is to closely monitor your system once it is fully functioning. A clean fodder system increases fodder production and reduces loss due to mold and other harmful biological and environmental factors.

Below are a few suggestions to help maintain and clean the fodder system:

- Check all fittings to ensure there are no leaks. Repair or replace damaged parts immediately. Seal all leaks when found.
- For best results, clean and disinfect the fodder channels after each harvest. System is designed so channels can be removed and cleaned. Use a 10:1 mixture (water/bleach) to disinfect the channels when cleaning. Be sure to rinse thoroughly to remove the cleaning solution before using the channels.
- Store, prepare, and soak seeds in an area that is separate from the operating fodder system.

Additional Photo — Full System

*Actual system differs from what is shown. Component assembly is the same. Photo is provided to show a fully assembled fodder system.

Additional Photo — Full System

*Actual system differs from what is shown. Component assembly is the same. Photo is provided to show a fully assembled fodder system.

Additional Photo — Full System

Photo left shows the lower end of supply manifold. Photo above shows the manifold branch tubes connected to the manifold trunk.

*Actual system may differ from what is shown. Photos provided to show an example of an assembled system.

Additional Photo — Full System

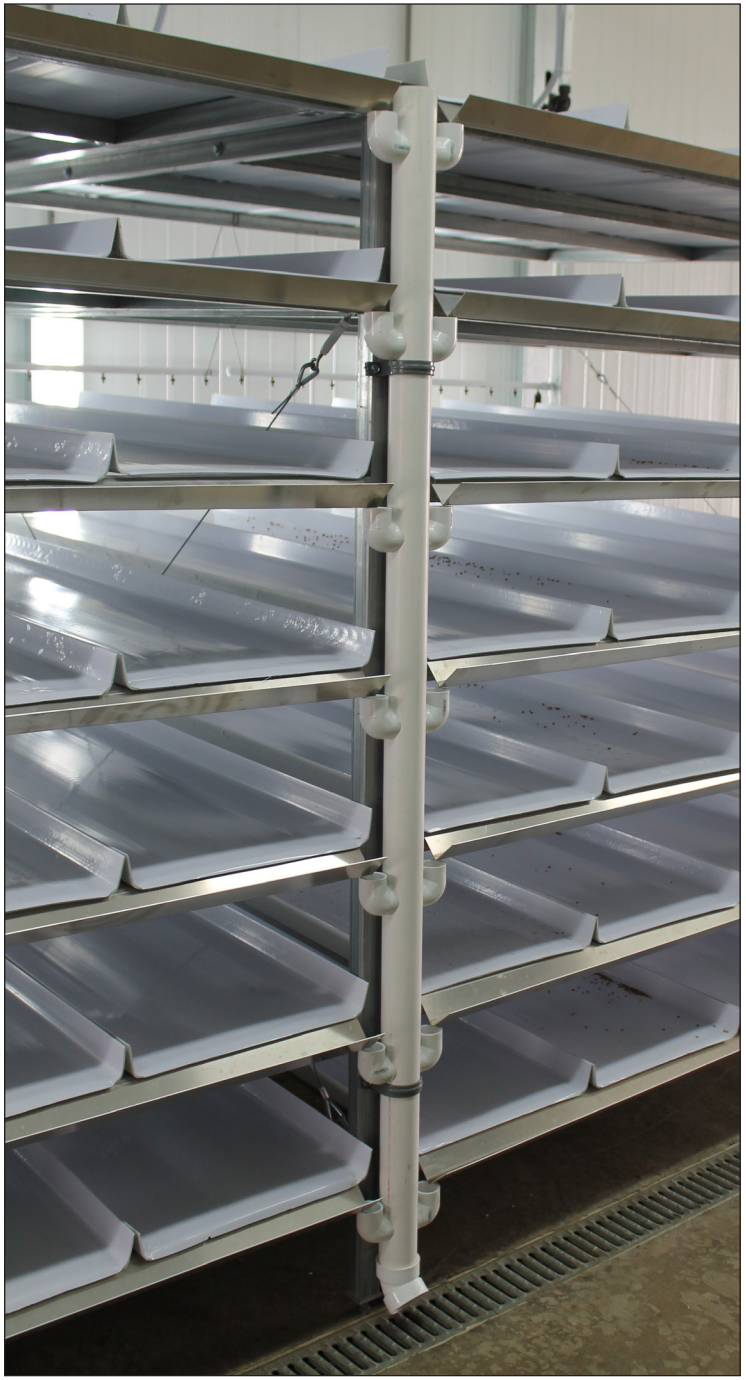


Photo left shows downspout and installed trays. Photo above shows seeded trays and gutter end of the system. When properly installed, curved end of each tray allows water to flow easily into gutter. Photo below shows close up of gutters and downspout drain elbows.

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