HIRED-HAND®

Unitized System

Evaporative Cooling System & RollSeal® Side Wall System

for Agriculture and Horticulture Structures

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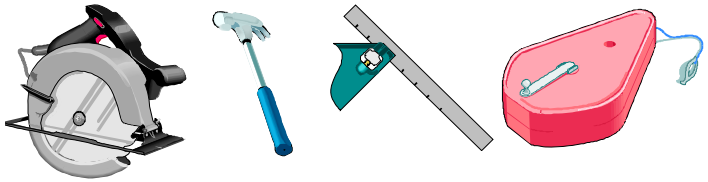
Tools Required

PVC piping glue	PVC piping cutter	Circular Saw
Level	Chalk Line	Hammer
Wrench	Cordless drill with 1/4″ nut driver	



Purpose of Evaporative Cooling

Evaporative cooling is a time tested efficient means of reducing air temperature by drawing incoming air across a wetted surface. Evaporative cooling is especially useful in situations where air inside the space is not re-circulated. The efficiency and the cooling ability evaporative cooling possesses make evaporative cooling a wise choice for agricultural and horticultural structures.

Theory

Evaporative cooling needs only two factors to work: water, and moving air. When air is moved across a wet surface, some of the water on the surface evaporates. This action draws heat from the moving air, cooling, and humidifying the incoming air.

Description of Unitized System

The *Unitized System* combines the RollSeal®side wall curtain with an evaporative cooling cell. The side wall curtain component is a motorized curtain enclosure for the side of an agriculture or horticulture structure that can regulate ventilation when connected to an automatic controller. The evaporative cooling component is a row of evaporative cooling pads and water that cools incoming air. In the unitized system, these components mount in front of a single opening. This gives a system for regulating both temperature and ventilation of a building. Since only one wall opening is required for each system, this increases the efficiency and lowers operating costs. The unitized system may be divided into individual groupings. These groupings are defined by their collective purposes: curtain, reservoir, fill line, pump kit, supply line, spray line, and pads.

Curtain The complete side wall curtain assembly consists of adjacent side wall curtain systems. Each system frames an opening and provides a mount for supporting a drive pipe to which the curtains are attached.

Reservoir The reservoir serves a dual purpose. It holds the water supply for the pump, and collects the water returning from the pads. It consists of eight inch (20.3 cm) diameter PVC piping.

Fill line The fill line supplies make-up water to the system.

Pump Kit The pump kit includes the pump, shutoff valves, bleed off line, and strainer. This section provides the force for moving water from the reservoir to the supply line.

Supply line The supply line carries water from the pump kit to the spray line. This section is made of one and a half inch (3.8 cm) PVC piping and various fittings.

Spray line The spray line is constructed of 1-1/4 inch diameter PVC pipe with holes drilled in the line along the top. These holes are drilled a certain distance apart depending on the size of pad installed. When water is pumped to the spray line, water shoots out the holes onto the distribution plate then drops into the pads.

Pads Constructed of cellulose fibers formed into corrugated blocks. When water flows down the system, and air is drawn through the pads, the air evaporates some of the water, becoming much cooler. When the water reaches the bottom of the pads, it drips back into the reservoir.

Warnings

Warning!

All wiring should be in accordance with National Electric Code or other local codes. Install motors with a 'slave box'.

Warning!

Dangerous rotating machinery.
Keep hands, clothing, etc. clear when operating.
Do not operate without all guards and covers in place.

Warning!

Do not wire two or more motors to one switch without using a relay or slave boxes.

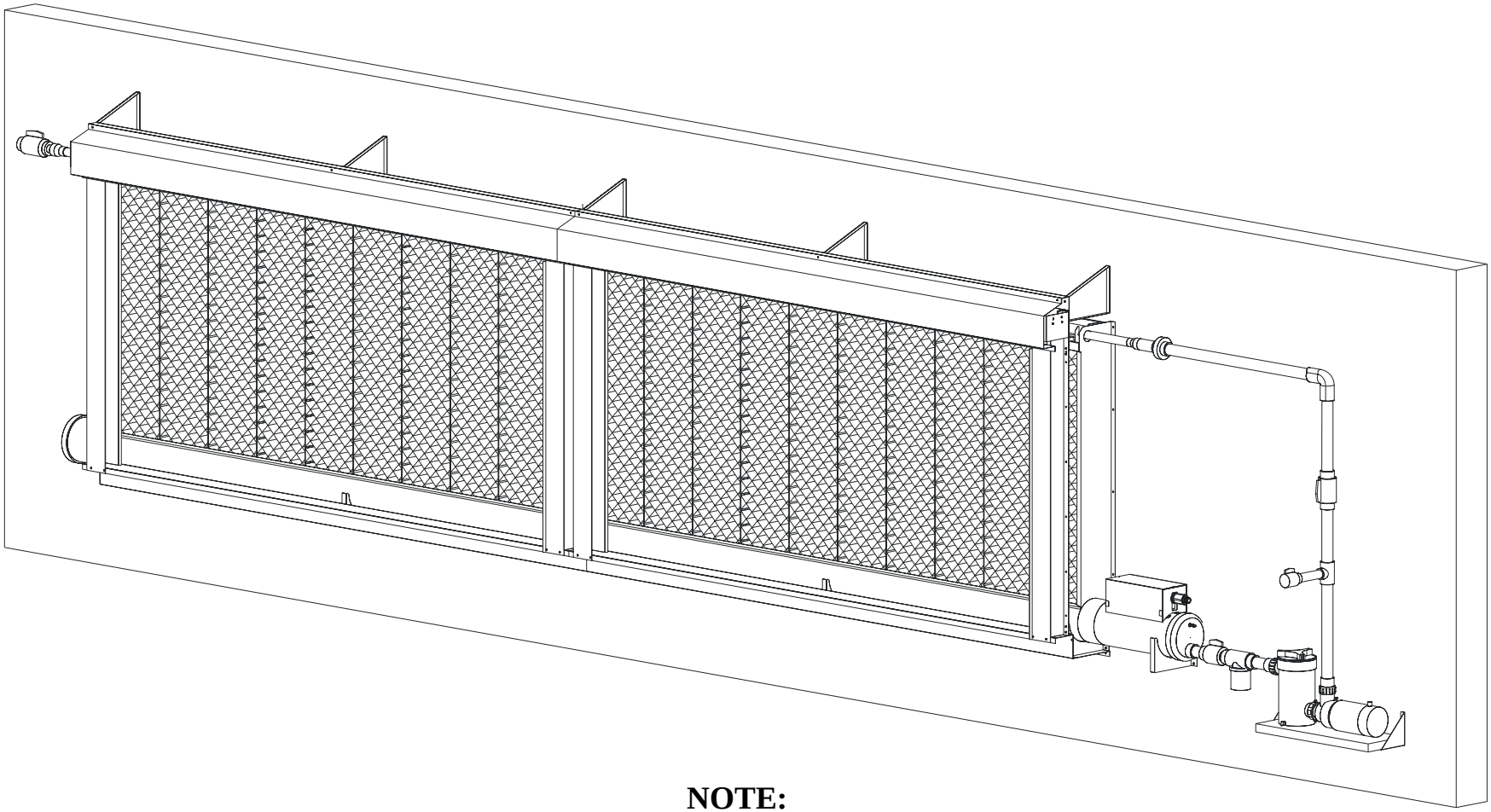
Warning!

When the limit switch adjustment buttons are pushed in, the motor has no stop shut-off points. The number of revolutions is unlimited.

Warning!

The assembled drive pipe is heavy. Do not attempt to lift the drive pipe without a sufficient number of workers.

Unitized System Drawing



NOTE:

Unitized Right End Cap, Unitized Left End Cap, Unitized Top Cover, and Unitized Back Flashing NOT SHOWN in this figure. These parts must be ordered separately.

Limited Warranty

All products are warranted to be free from defects in material and workmanship for a period of one year from the date of purchase if installed and used in strict accordance with the installation instructions. Liability is limited to the sale price of any products proved to be defective or, at manufacturers option, to the replacement of such products upon their return. No products are to be returned to the manufacturer, until there is an inspection and/or a return-goods authorization (RGA) number is issued.

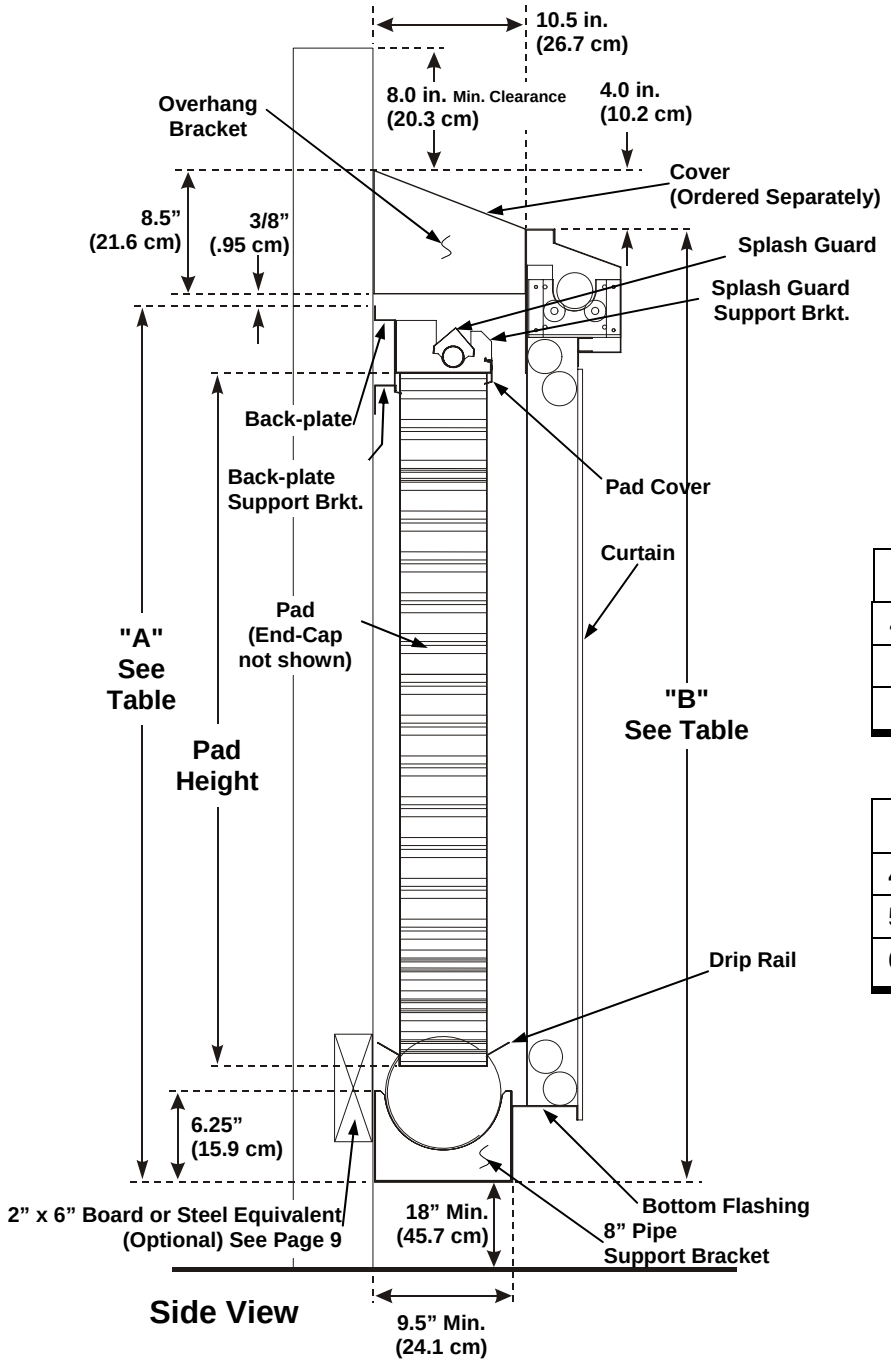
All complaints should be directed first to the authorized distributor who sold the product. If satisfaction is not obtained or the name of the distributor is not known, write the manufacturer that appears below, directed to the attention of Customer Service Manager.

This limited warranty is expressly in lieu of any and all representations and warranties expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose. The remedy set forth in this limited warranty shall be the exclusive remedy available to any person. No person has authority to bind the manufacturer to any representation or warranty other than this limited warranty. The manufacturer shall not be liable for any consequential damages resulting from the use of our products or caused by any defect, failure or malfunction of our products. (Some areas do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.)

This warranty gives you specific legal rights and you may also have other rights that vary from area to area.

Warrantor:

HIRED-HAND, INC.
1733 County Road 68
Bremen, AL 35033



Installation Cross-Section (Agricultural Applications)

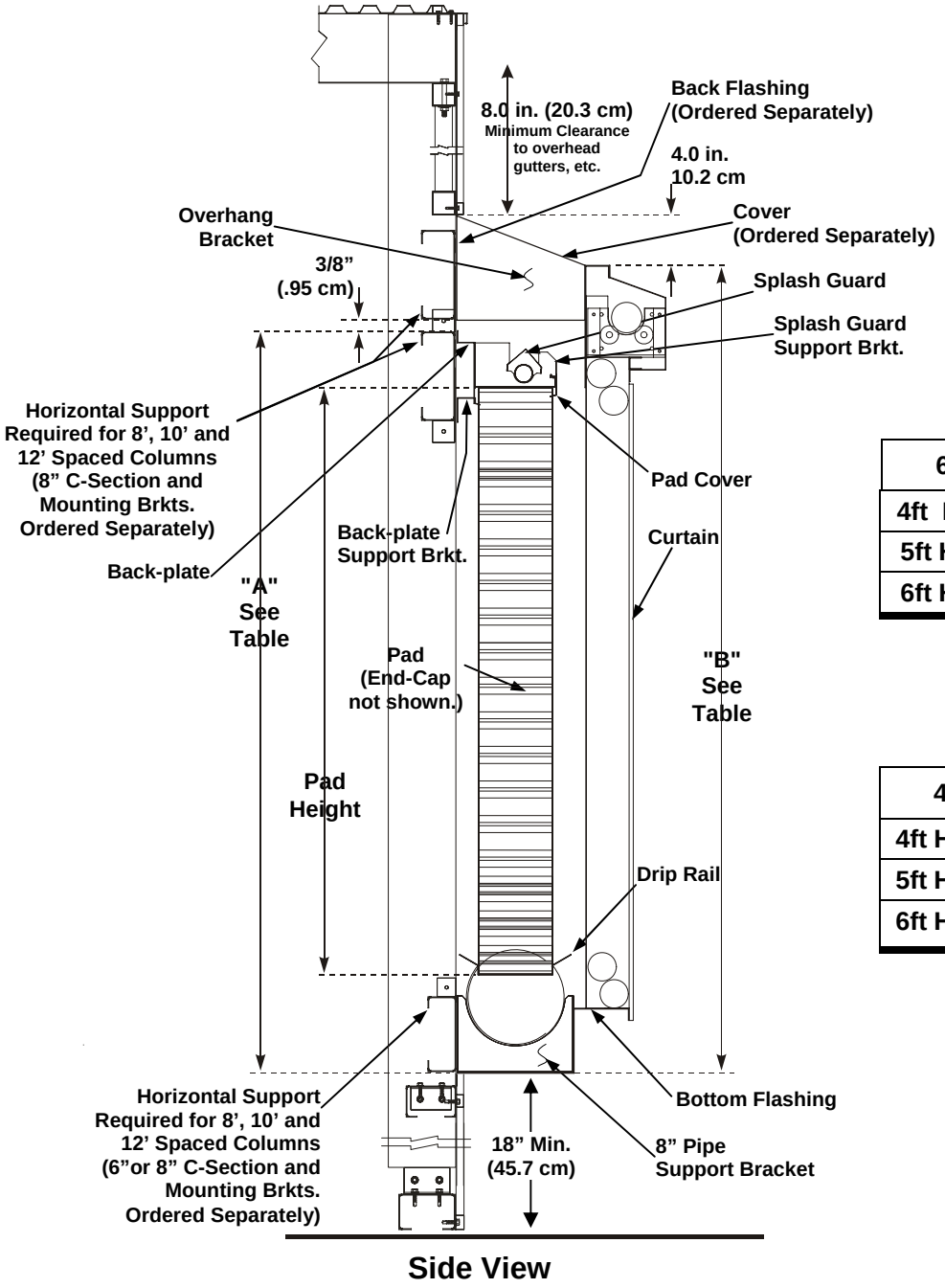
1. Drawing shown to the left is an overview of a completed Unitized system without end caps.

2. The figure details the overall dimension for each pad system and minimum clearance from roof.

NOTE: 2″x 6″ refer to U. S. finished lumber measurements.

6" Pad	"A"		"B"	
4ft High Pad	61 1/8 in.	155.26 cm	66 in.	167.6 cm
5ft High Pad	73 1/8 in.	185.74 cm	78 in.	198.1 cm
6ft High Pad	85 1/8 in.	216.22 cm	90 in.	228.6 cm

4" Pad	"A"		"B"	
4ft High Pad	62 1/8 in.	157.80 cm	66 in.	167.6 cm
5ft High Pad	74 1/8 in.	188.28 cm	78 in.	198.1 cm
6ft High Pad	86 1/8in.	218.76 cm	90 in.	228.6 cm



Side View

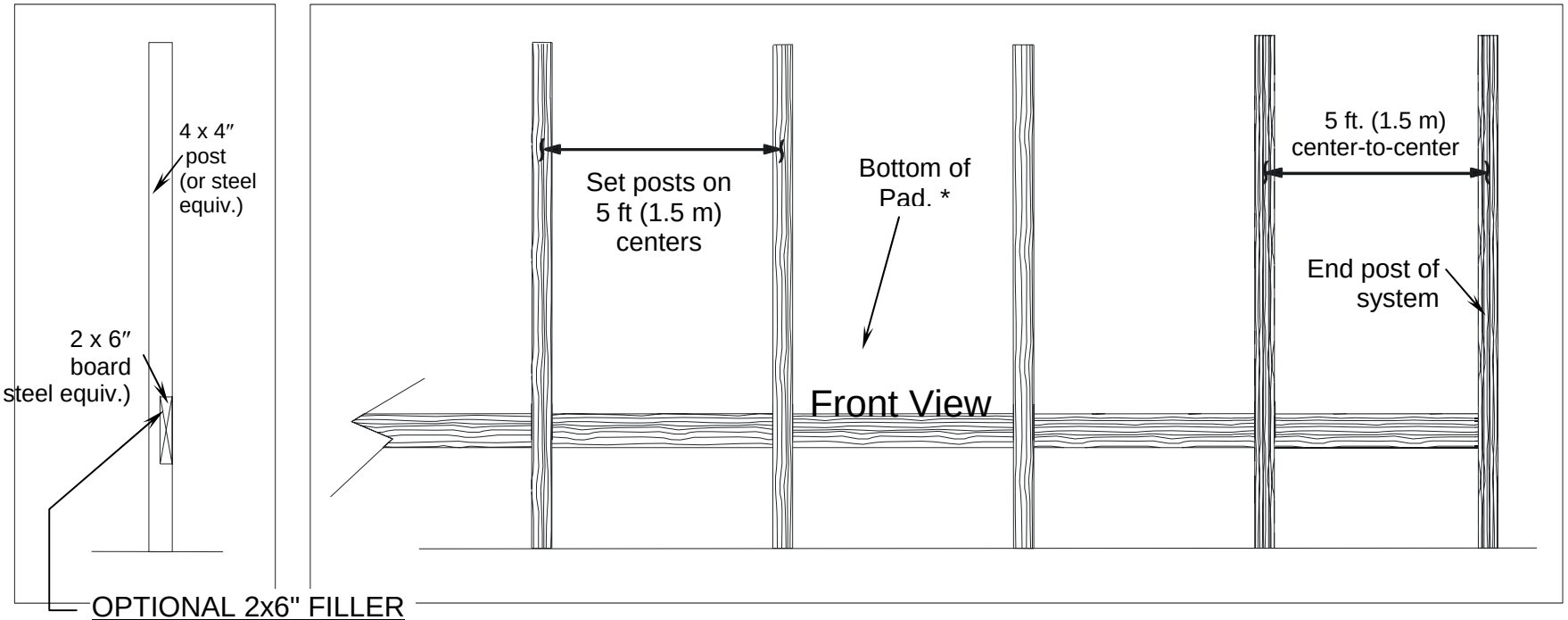
Installation Cross-Section (Horticulture Application)

1. Drawing shown to the left is an overview of a completed Unitized system without end caps.

2. The figure details the overall dimension for each pad system and minimum clearance from roof.

6" Pad	"A"		"B"	
4ft High Pad	61 1/8 in.	155.26 cm	66 in.	167.6 cm
5ft High Pad	73 1/8 in.	185.74 cm	78 in.	198.1 cm
6ft High Pad	85 1/8 in.	216.22 cm	90 in.	228.6 cm

4" Pad	"A"		"B"	
4ft High Pad	62 1/8 in.	157.80 cm	66 in.	167.6 cm
5ft High Pad	74 1/8 in.	188.28 cm	78 in.	198.1 cm
6ft High Pad	86 1/8 in.	218.76 cm	90 in.	228.6 cm



*Pads come in 4 ft, 5 ft. or 6 ft. Heights.
Pads come in 4 in. or 6 in. thickness.

OPTIONAL 2x6" FILLER BOARDS

If your house has a filler, such as tin or concrete kneewall, it may not be necessary to install 2x6" filler boards.

If filler boards are installed,
fit 2x6" filler boards in between posts and flush with front of posts.

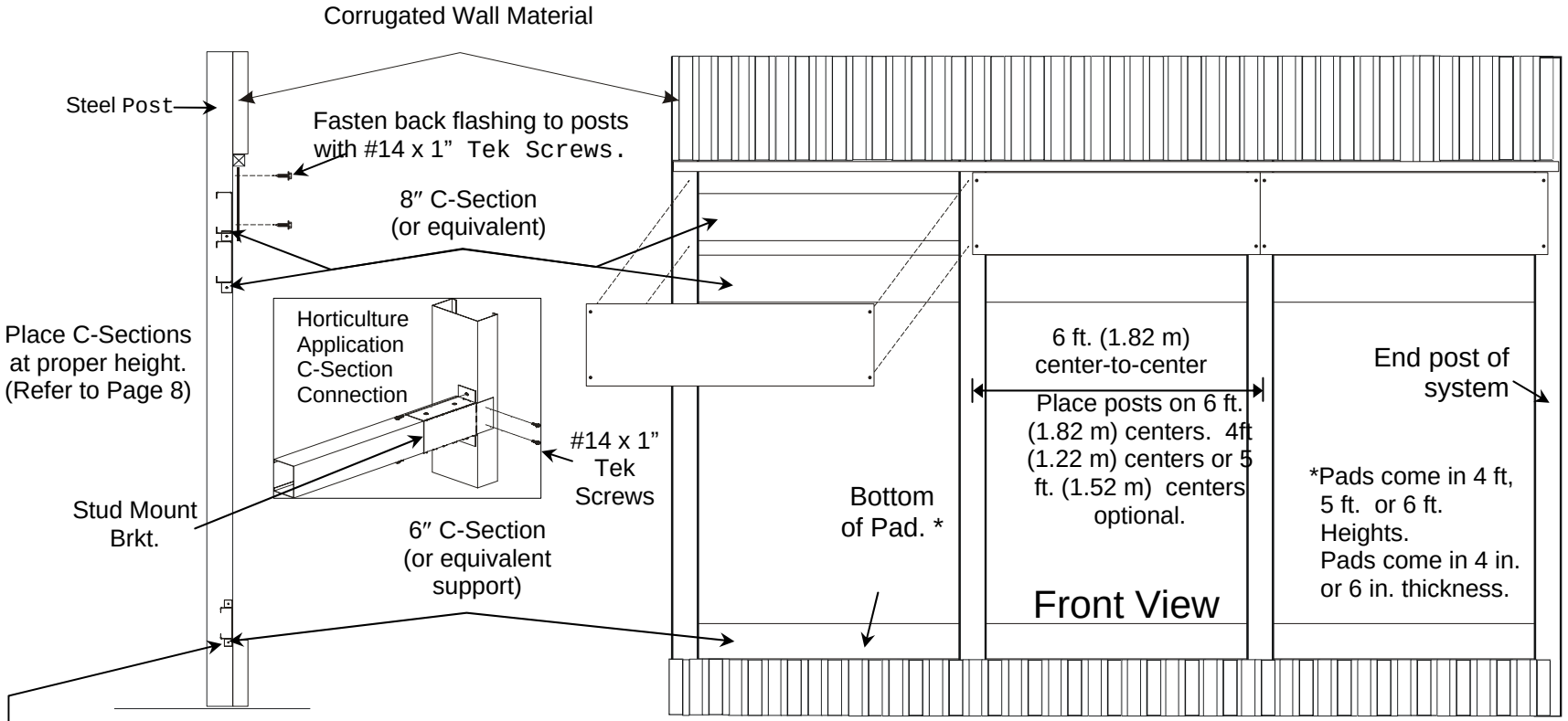
Framing for Agricultural Structures

1. Refer to Page 7 Installation Cross-Section for the framing dimensions of the pads you are installing.
2. Make opening in wall equal to the length of pad and the height of pad.
3. Frame in opening with treated lumber as shown above. Ensure boards are level.

NOTES

1. *Use steel equivalent to frame opening if installing Unitized system to steel building.*

3. Be sure that the 2″x 6″ board is level and flush with the front side of the posts as shown in diagram at left.



OPTIONAL 6" C-Sections

If your house has a filler, such as tin or concrete kneewall, it may not be necessary to install the 6" C-Sections.

If C-Sections are installed, fit the 6" C-Sections in between posts and flush with front of posts.

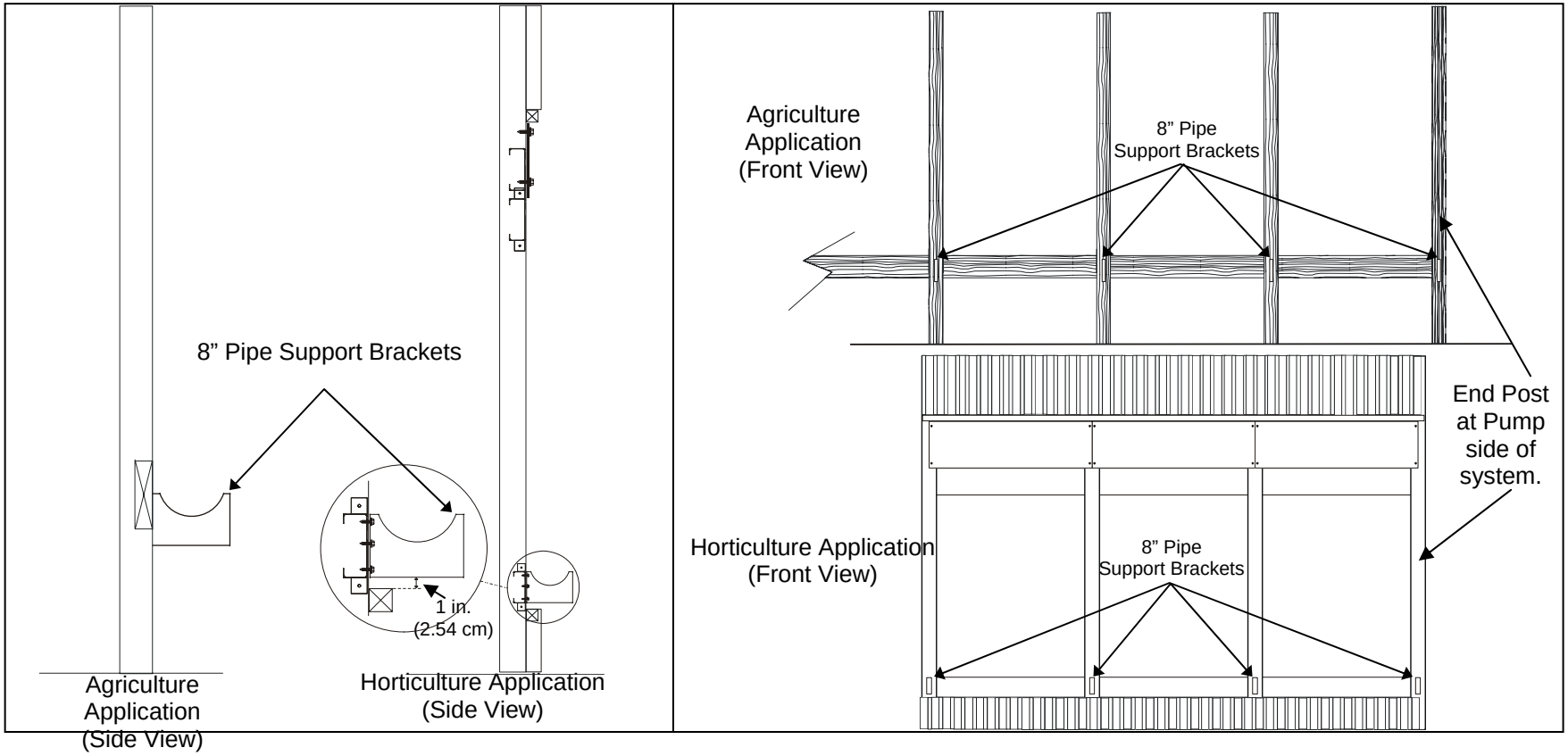
Framing for Horticultural Structures

1. Refer to Page 8 Installation Cross-Section for heights to install C-Sections.
2. Ensure C-Sections are level.
3. Securely fasten C-Sections to posts using Mounting Brackets as shown at left.
4. Use the back flashing to seal off the open space between the top of the cooling system and the top of the overhang bracket. Abut back flashing at centers of posts. Fasten flashing to posts with #14 x 1" Tek screws.

NOTES

1. *If a Unitized System is being installed on a Horticultural building with column spacing of 8', 10' or 12', additional framing such as C-Sections must be installed between the columns for attaching the 8" Pipe Support Bracket, Back-Plate, and the Unitized Overhang Bracket.*

2. *Ensure the C-Sections are level and flush with the front side of the posts as shown in diagram at left.*

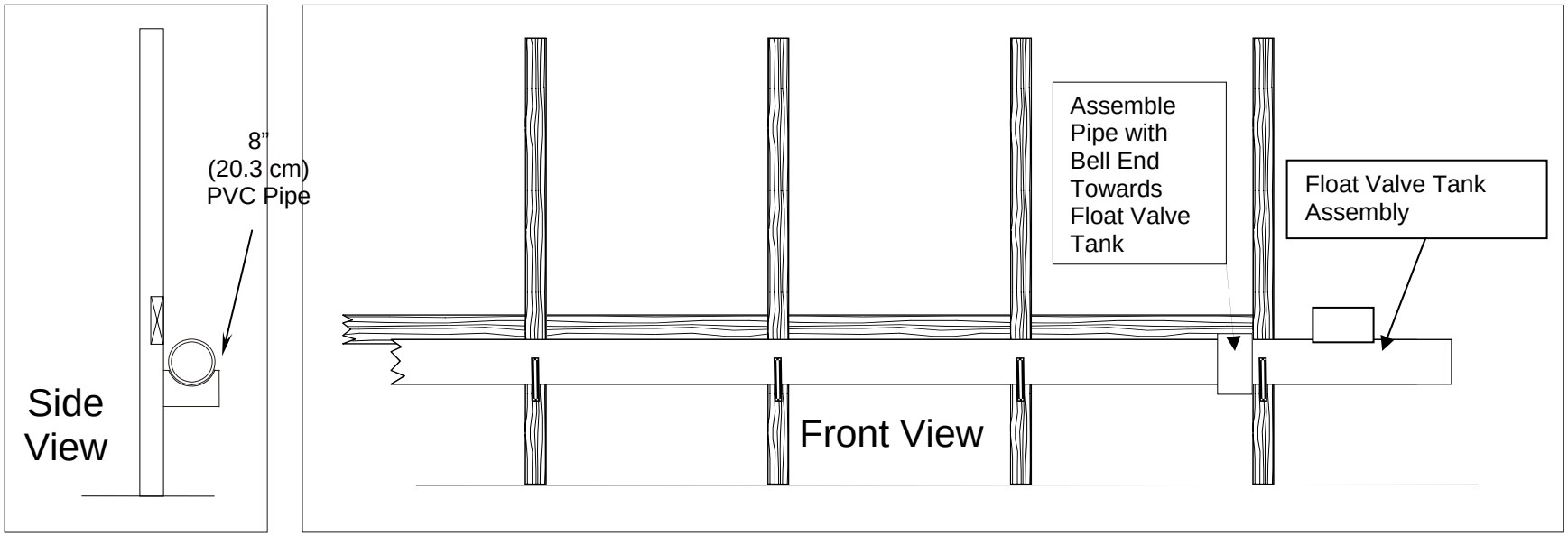


8” Pipe Support Brackets

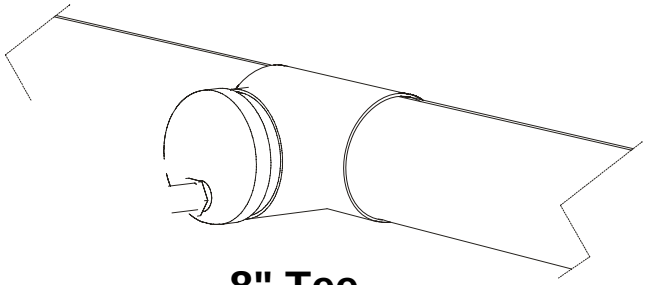
1. Install the 8" pipe support brackets so the system will have 1" of drop toward the pump for proper water supply. Determine the height at which the bottom of the Unitized system should be mounted above the ground. Make a mark on each end post to represent the height.

NOTE: If the Unitized System is being installed for a Horticulture Application, position bottom of each support bracket one inch above the bottom stringer as shown.

2. Stretch chalk line between marks of end posts and mark all posts of system.
3. For each post of system, align bottom edge of metal support bracket with mark on post. Securely mount support brackets on centers of 4” x 4” or steel equivalent columns, not more than 5 ft. (1.52m) O. C. (on center) for agriculture applications or not more than 6 ft. (1.83m) O.C. for horticulture applications.
4. Secure support brackets to wooden posts with ¼ x 2" Lag screws, or secure support brackets to steel posts with #14 x 1" Hex Head TEK screws.



* Wood-Framed Agriculture Example Shown



8" Tee
(Center-Mount System ONLY)

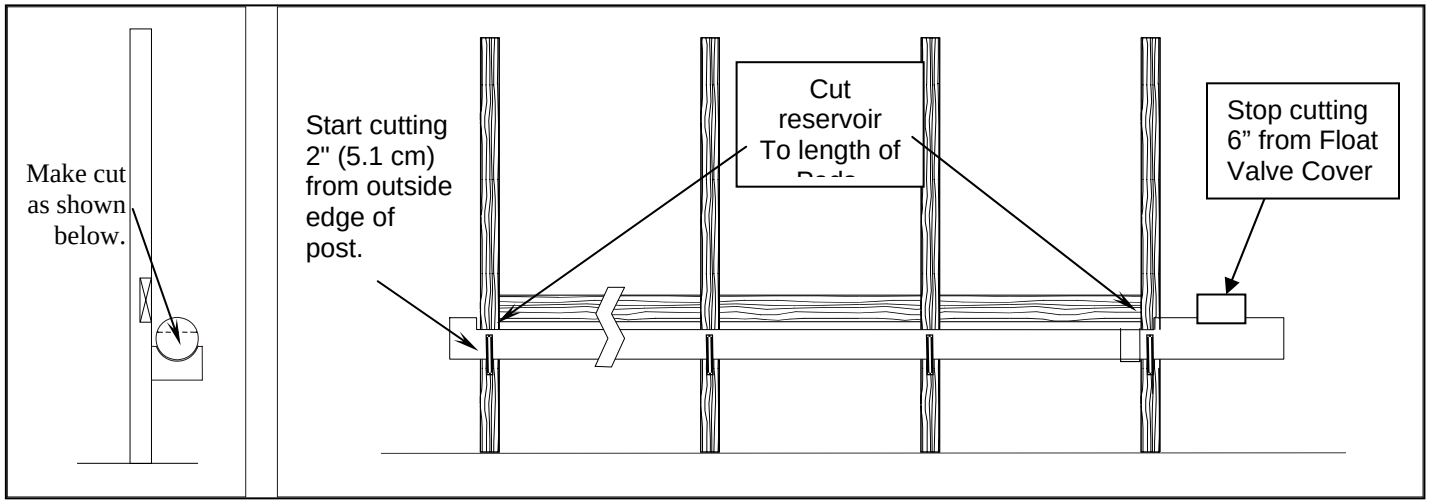
Install 8" (20.3 cm) PVC Pipe

1. Line up the 6.5" wide parallel dotted lines on the 8" (20.3 cm) PVC pipe and glue the sections together with bell end toward pump end to make length of system. Center the float valve tank between the dotted lines. Then glue float valve tank assembly to the pipe. For example, for a system with 50' of pad, the 8" pipe will be 53' (2 ½ ft. on the float tank end and 6 inches extending past the post on the opposite end.)

   NOTE: If a Center-Mount In-Line Pump System is being installed, the 8" Tee should be installed in the middle of the 8" pipe.
2. Place assembled pipe into brackets.
3. Adjust pipe assembly to extend end opposite pump 6" past the post.

Procedures For Gluing PVC Pipe

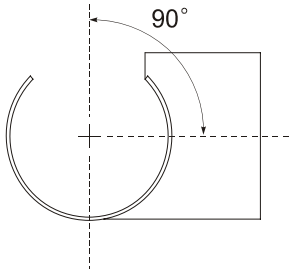
1. Square ends of pipe.
2. Clean pipe and fitting with PVC cleaner.
3. Check dry fit of pipe and fitting.
4. Apply thin coat of cement inside of fitting. (Use care when greater than 85°F).
5. Apply liberal coating to outside of pipe to depth of socket.
6. Assemble parts quickly. Cement must be fluid.
7. Insert pipe into socket using a 1/4 turning motion.
8. Hold pipe and fitting together for 30 seconds. Wipe off excess glue.
9. Wait 15 minutes before rough handling.
10. Do not apply fluid pressure until cement is fully cured (At least one hour).



Side View

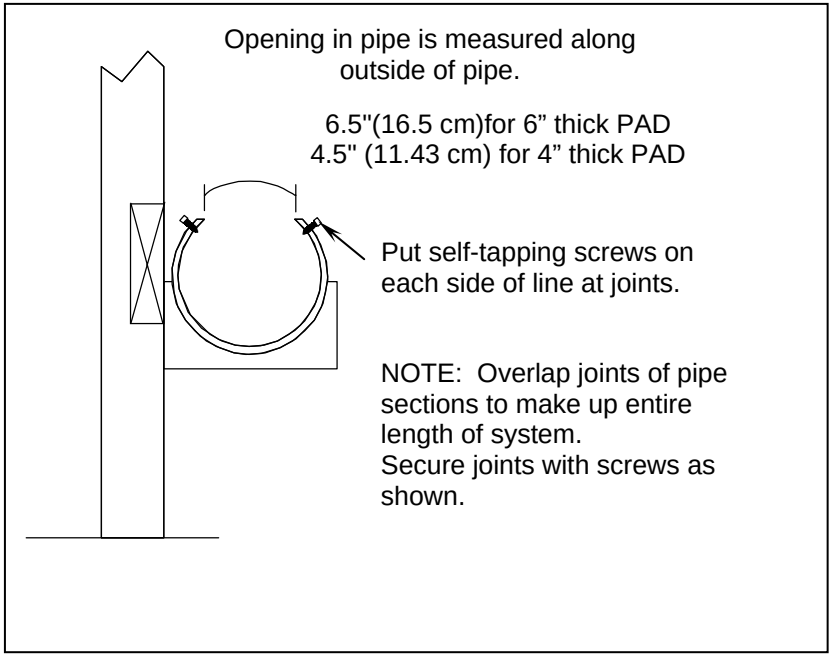
* Wood-Framed Agriculture Example Shown

NOTE: When cutting pipe for Center-Mount System, ensure the 8” PVC Tee and cut opening are at 90° placement.



8” PVC Tee (Center-Mount System ONLY)

Front View



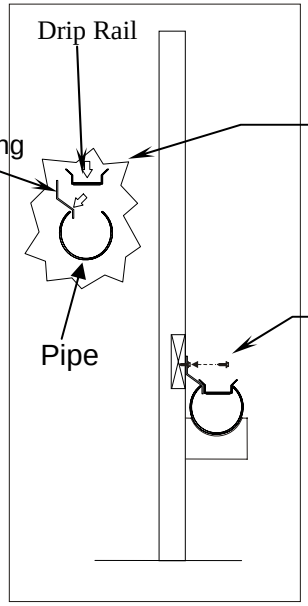
Cut Pipe To Allow For Pads

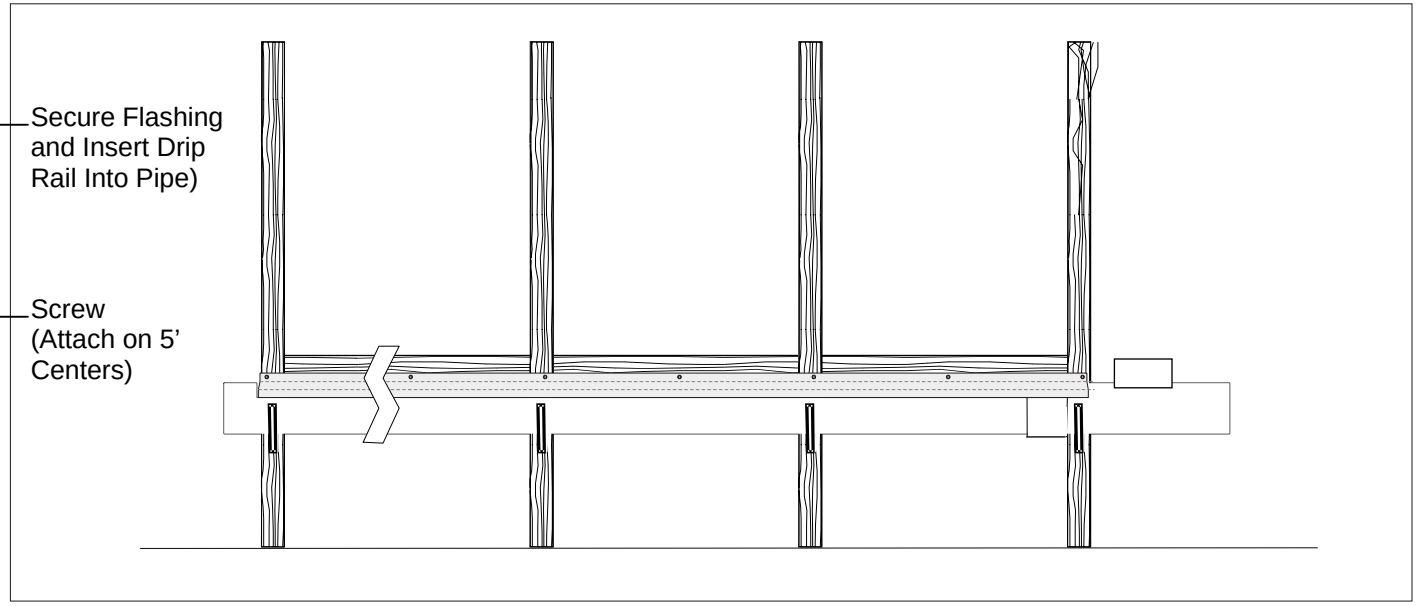
1. At each pipe joint, put self-tapping screws on each side of 6.5” wide parallel dotted lines printed on the pipe, as shown in diagram at left.

2. Start cutting at least 2" (5 cm) from end of pipe as shown above. Cut along the parallel dotted lines. Finish cuts at point where pads will stop. NOTE: Do not cut pipe into Float Valve Tank slot. Stop 6” from Cover. Do not cut pipe all the way to the end, as it will be impossible to assemble the end cap!

3. Remove and discard cut-out section of PVC pipe.

4. If using 4” thick Pad, mark with chalk line, two parallel lines running along the length of pipe. These lines should be at a distance apart of 4.5" (11.43 cm) cm as measured along the outside of pipe. Then cut out section of PVC pipe and follow note 2 and 3.

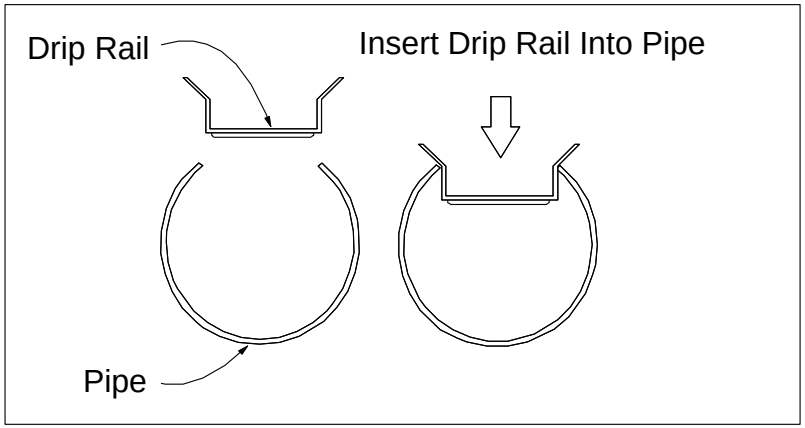




Side View

Front View

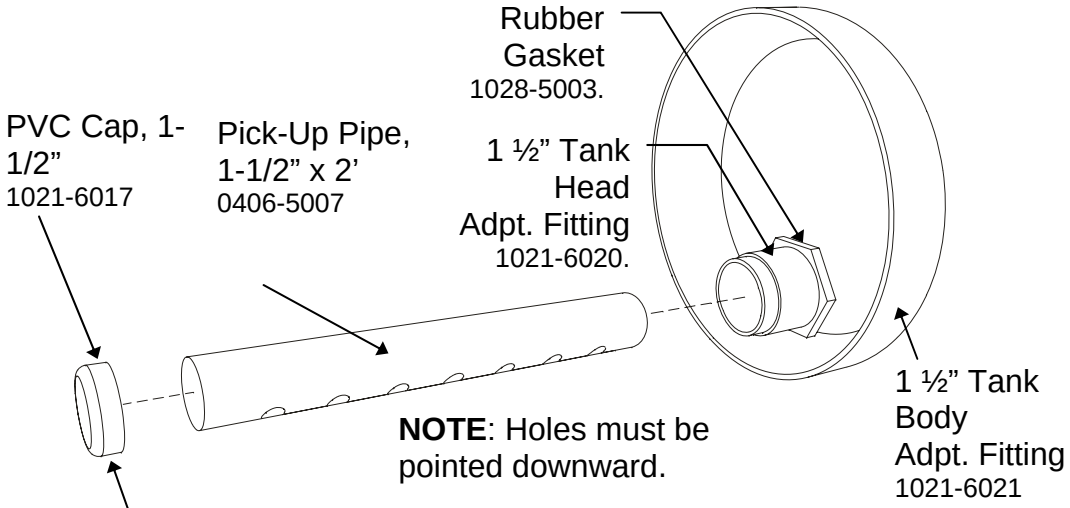
* Wood-Framed Agriculture Example Shown



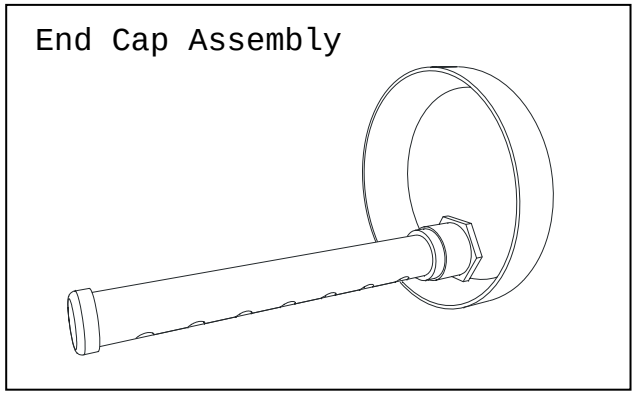
Install Drip Rails

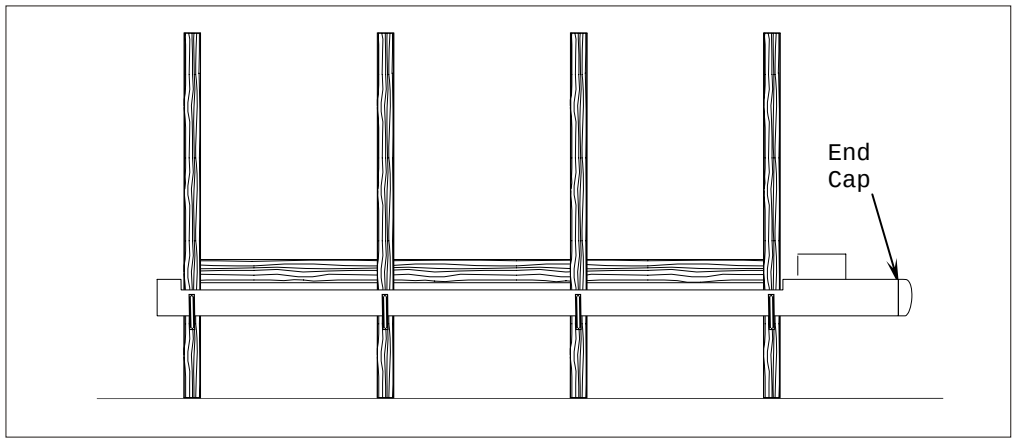
1. Place drip rails along the cut in the pipe as shown at left.

2. Lay drip rails end to end along the entire length of the pads.



End cap for connecting reservoir to pump supply line.





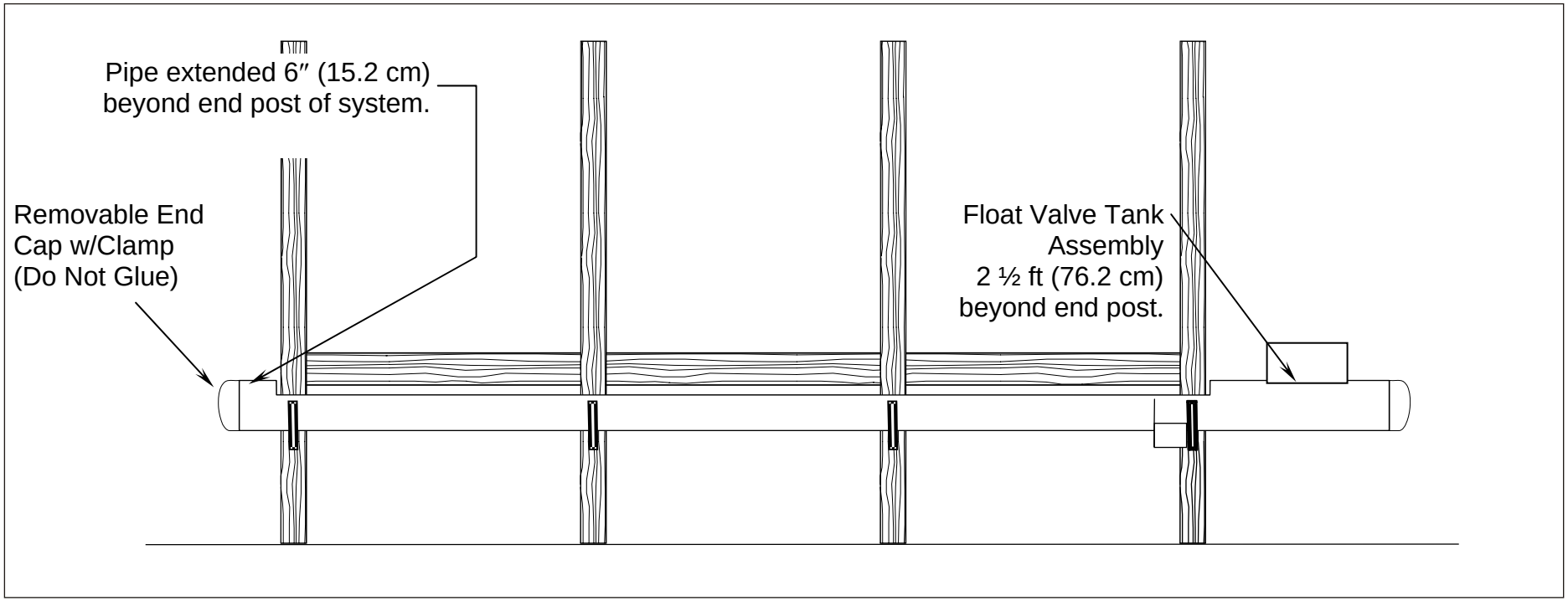
NOTE: End cap assembly shown above-right glues onto the pump side of the reservoir.

Install PVC End Caps

1. Glue 1 ½" end cap of Pick-Up Pipe onto end of pipe as shown in diagram above left. Rotate Pick-Up Pipe to orient holes facing downward. Glue Pick-Up Pipe into pipe adapter fitting on inside of end cap as shown above.

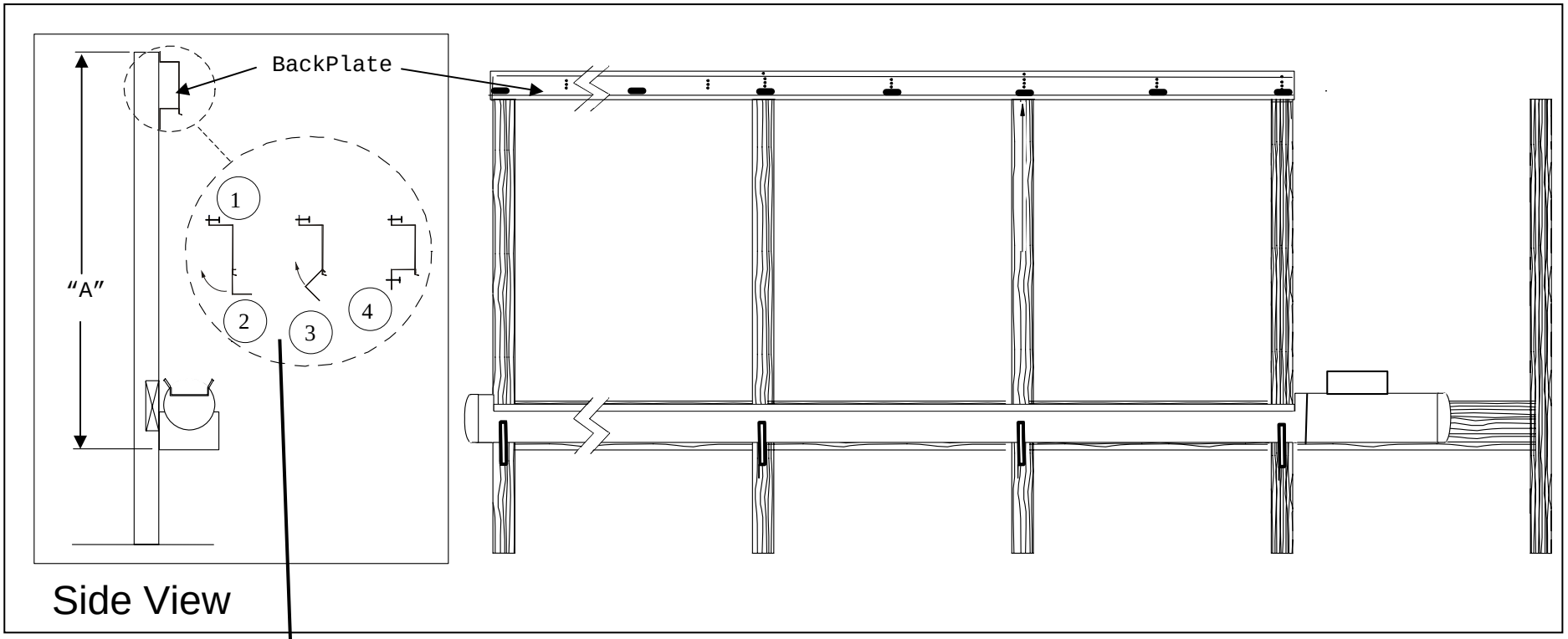
2. Glue PVC end cap assembly into 'In-Line Pump side' of reservoir.

   IMPORTANT! Before gluing, rotate PVC end cap assembly to place Pick-Up Pipe at bottom of reservoir.



Install Removable End Cap

1. Removable end cap should be installed on end opposite the pump side of the reservoir. **DO NOT GLUE**. Tighten worm gear clamp provided with Removable End-caps to pipe.



Side View

Assembly of BackPlate

(1) Install top of BackPlate.
(2) Hook BackPlate Supports in bottom holes of BackPlate. There are 3 Supports per BackPlate. One on each end and one in the middle.
(3) Rotate BackPlate Support Brackets up into position.
(4) Attach with screws.

Install BackPlate

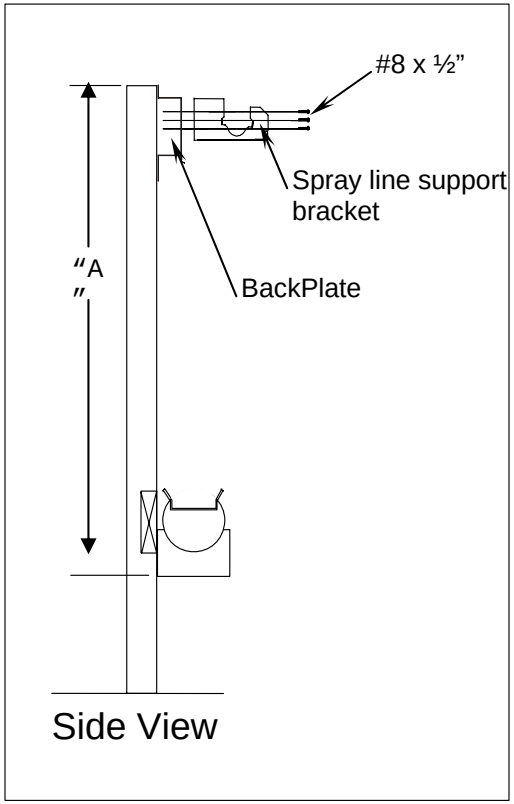
1. Refer to diagram at left. At end post of system on opposite end from float valve, measure dimension "A" as shown and mark post. See the Framing Diagram on Pages 7 and 8 for dimension "A".

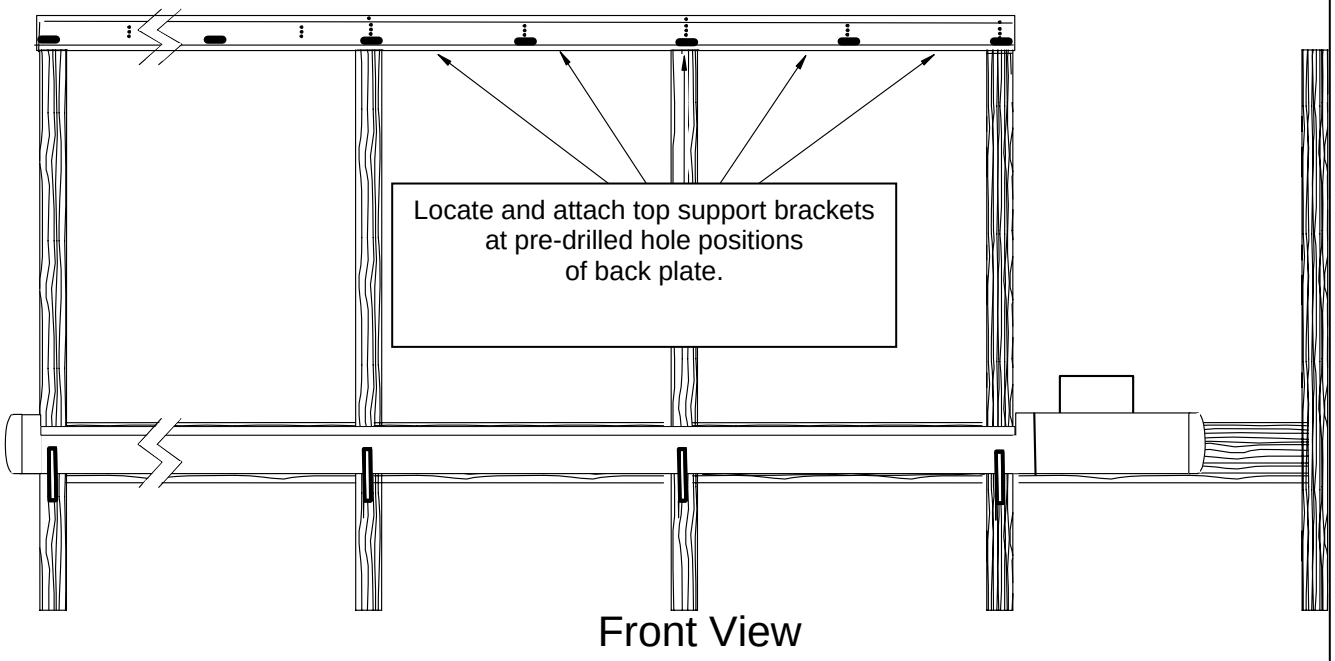
2. At the other end post of system (end post at float valve side of system) ***measure dimension "A" minus one inch (2.5 cm)*** and mark post. This provides a 1" drop for proper water flow.

3. Stretch chalk line between marks of end posts and mark all posts of system.

4. For each post of system, align top edge of BackPlate with mark on post. Assemble BackPlate as shown in diagram at left. Securely mount BackPlate on centers of 4x4" posts, not more than 5 ft. (1.52 m) O. C. (on center).

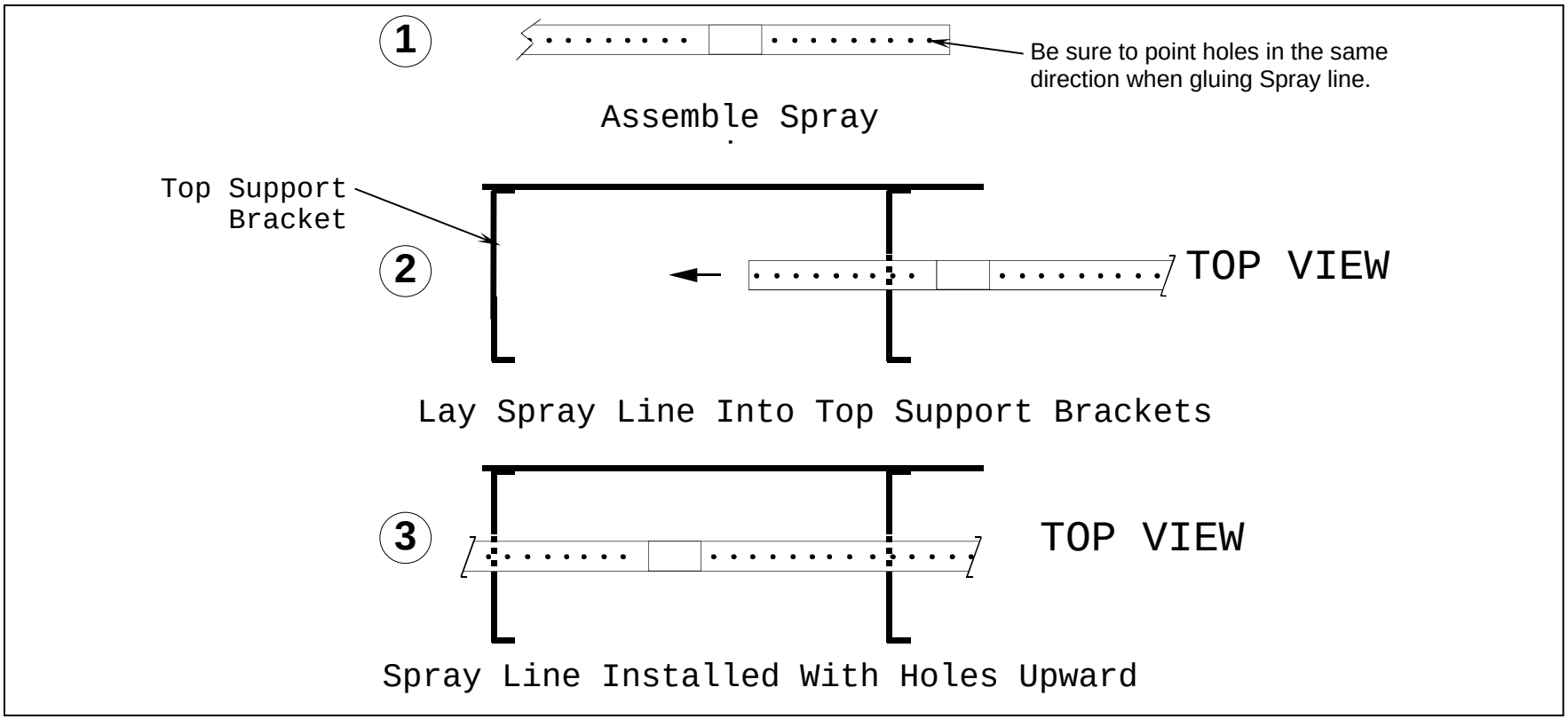
5. Secure BackPlate to wooden framing with #10 x 1" Hex Head screws, or secure Backplate to steel framing with #12 x 1" Hex Head TEK screws.

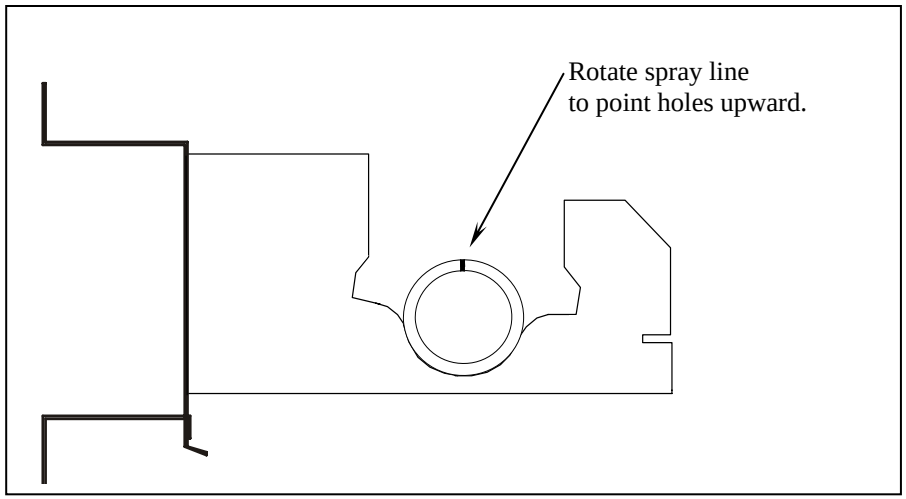




Install Spray Line Support Brackets

1. Make sure BackPlate is at proper framing height.
2. Attach spray line support brackets with #8 x ½” TEK screws at the pre-drilled hole positions as shown in diagram above.



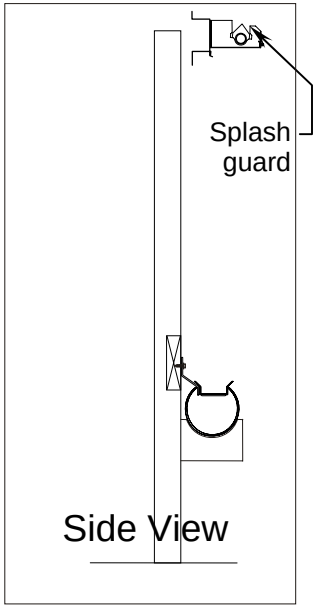


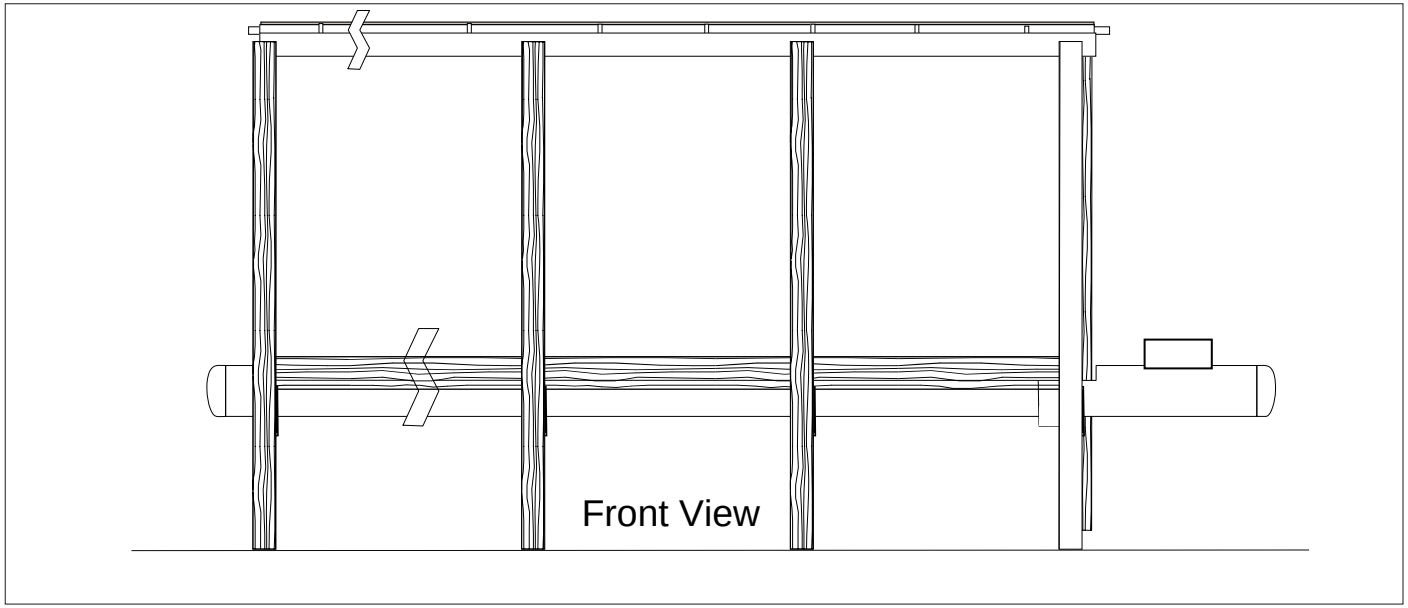
Install Spray Line

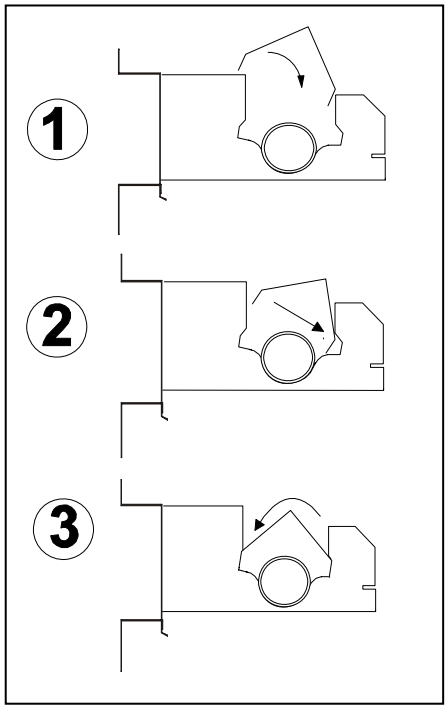
1. Glue spray line sections together. Important! Glue joints with spray line holes pointed in the same direction. Allow glue to dry.

2. Insert spray line assembly into one end of top bracket. Slide assembly until spray line spans entire length of top bracket.

3. Rotate spray line to place holes facing upward. (NOTE: Side View shown at 1







Insert splash guard into support bracket.

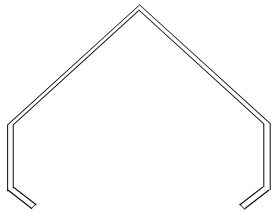
Press front of splash guard into bracket as shown.

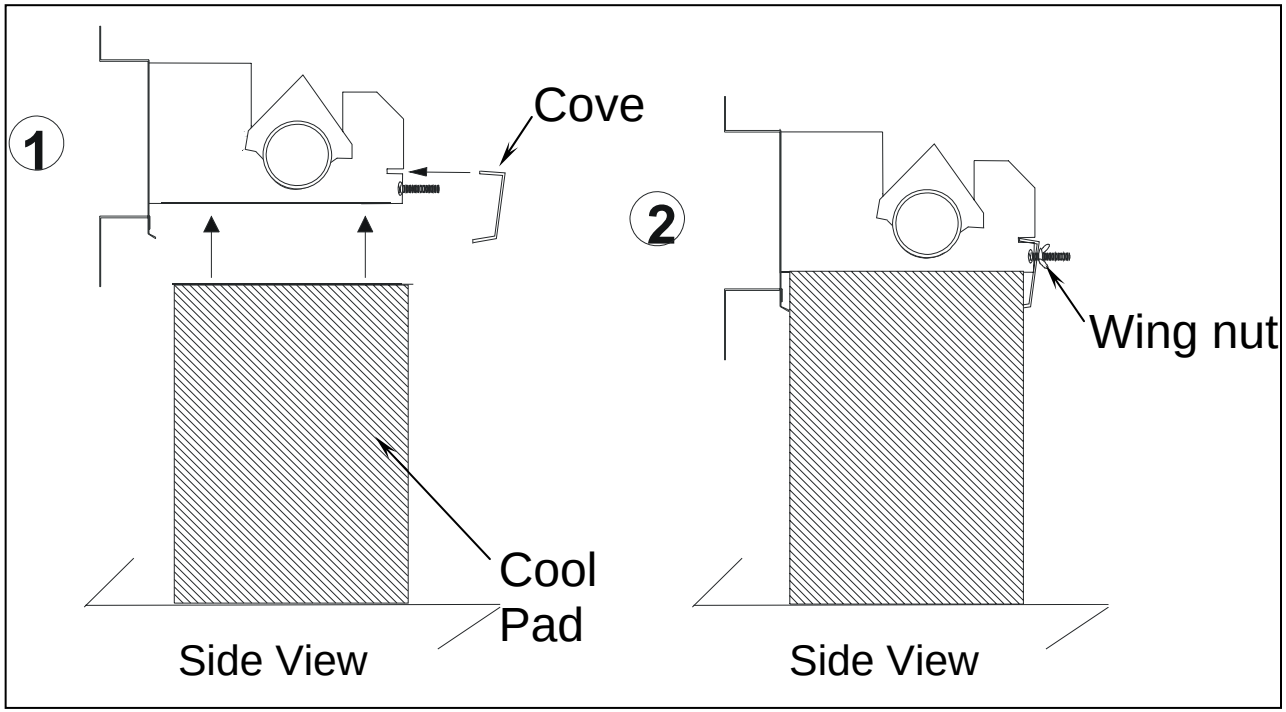
Squeeze and twist splash guard downward to snap splash guard into place.

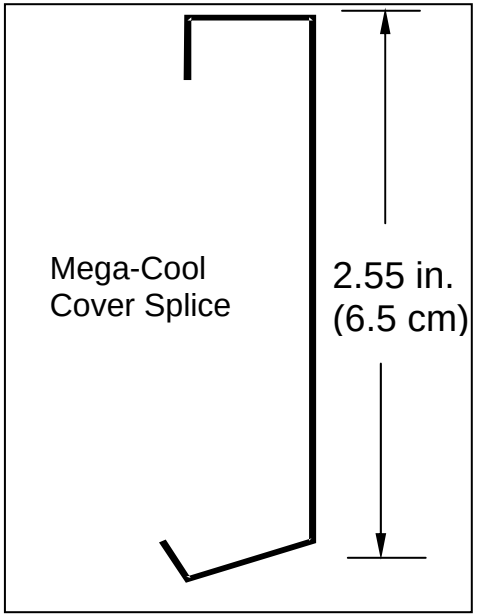
Install Splash Guards

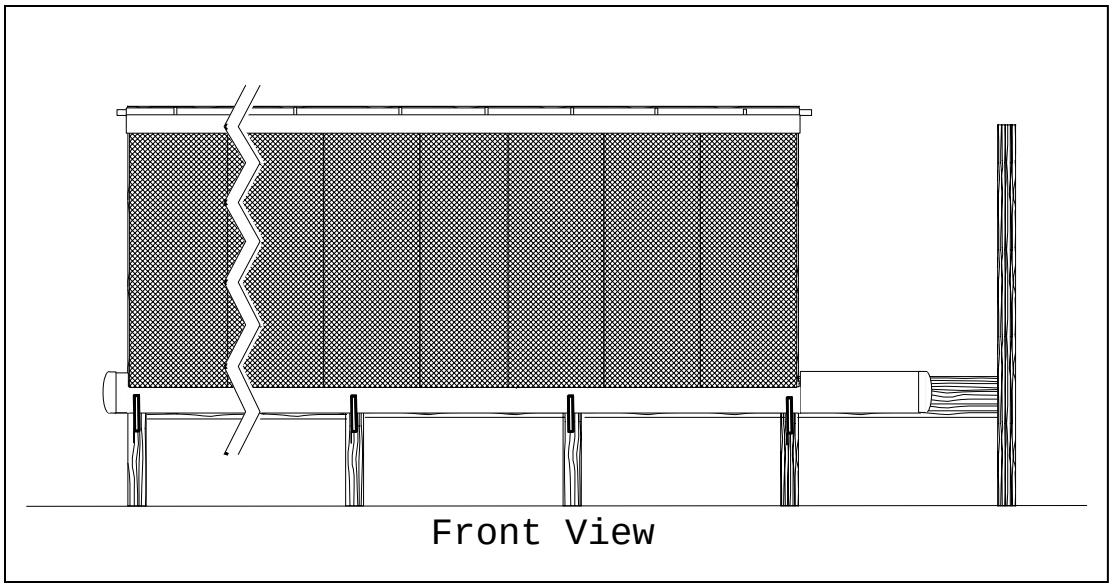
1. Insert splash guard into support bracket as shown in diagram at left.
2. Press front edge of splash guard against support bracket as shown.
3. Use both hands to grip splash guard near midpoint. Squeeze and rotate splash guard downward until splash guard locks into position in the support bracket.
4. Add a splash guard splice to each joint where two splash guards abut. Splash guard splice clips over joint. See diagram below.

Splash Guard Splice



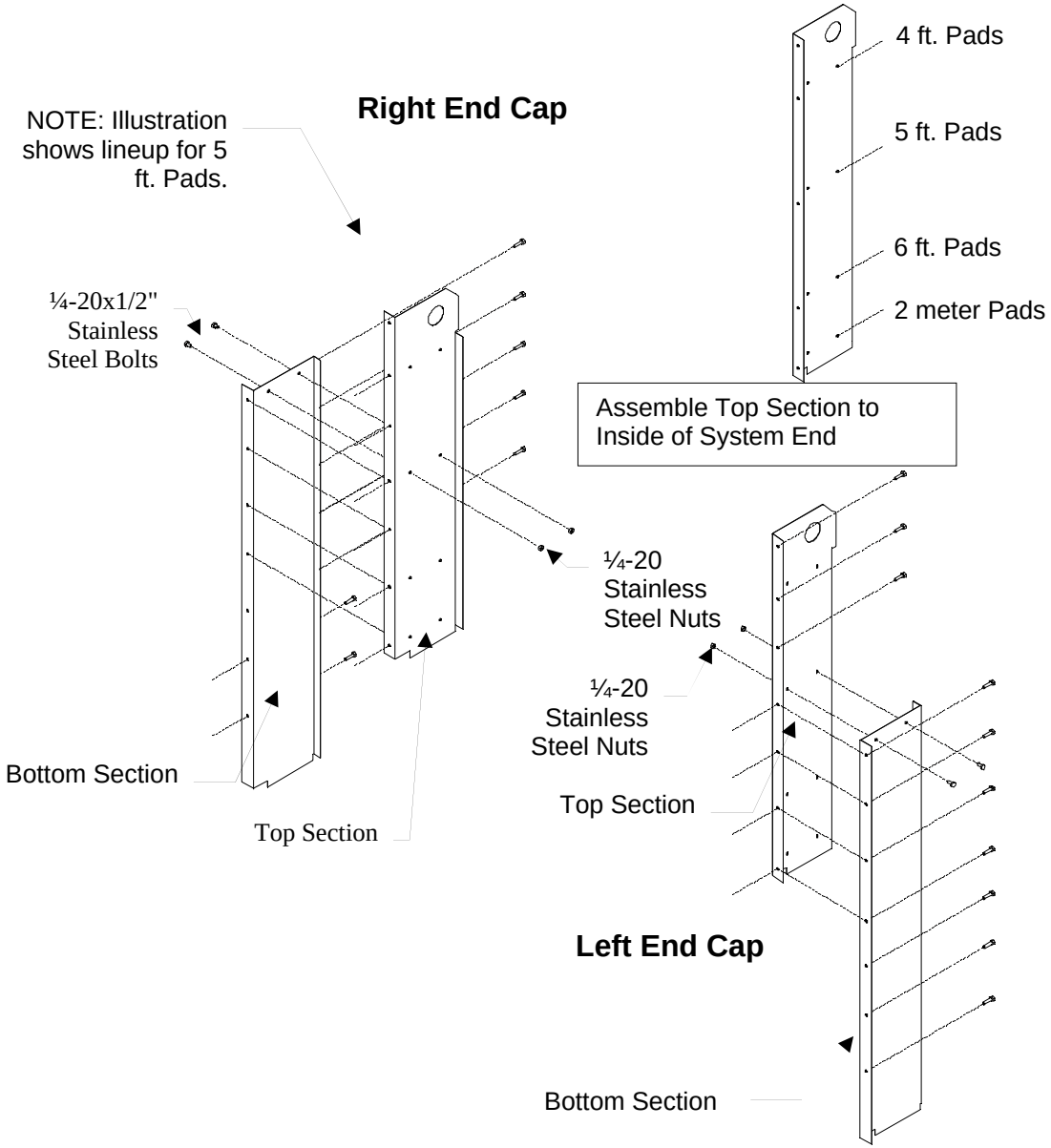






Install Cool Pads & Front Covers

1. Insert pads into drip rail at bottom.
2. Fit bolts through holes in back of support brackets as shown above.
3. Fit top of cool pad underneath spray line support bracket and against back plate. Repeat for all pads.
4. Fit covers into the front slots of the spray line support brackets. Insert top flange of cover into slots of brackets as shown above.
5. Install and tighten wing nuts to secure cover in place.
6. Add cover splice to each joint where two covers abut. See diagram above for cover splice.



6" PAD ONLY:

Assemble Left Hand and Right Hand Top and Bottom System End Cap Sections together using ¼-20x1/2" stainless steel bolts and ¼-20 stainless steel nuts provided as shown above to the desired height.

NOTE: Top Section without bottom section used for 3 ft. high pads.

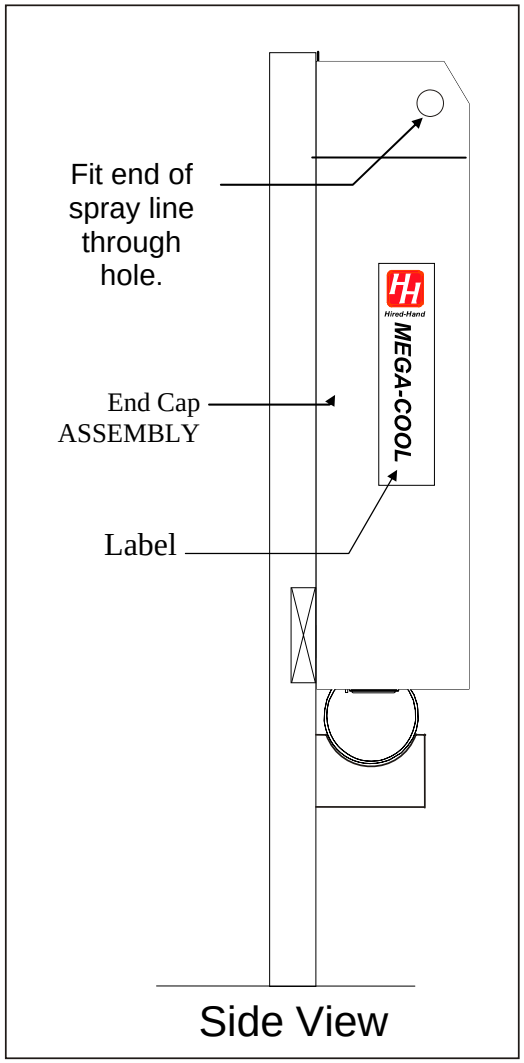
System End Cap assembly:
Top holes in top section adjust height for 4 ft. pads.

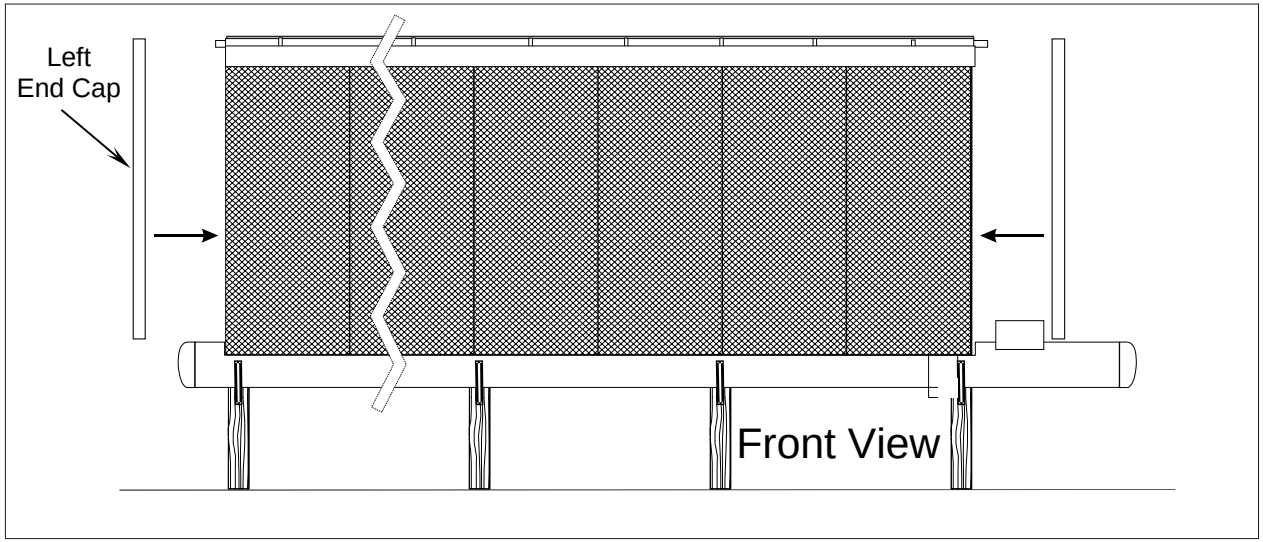
Second set of holes from the 4 ft. holes adjust height for 5 ft. pads.

Third set of holes from the 4 ft. holes adjust height for 6 ft. pads.

Bottom set of holes adjust height for 2 meter pads.

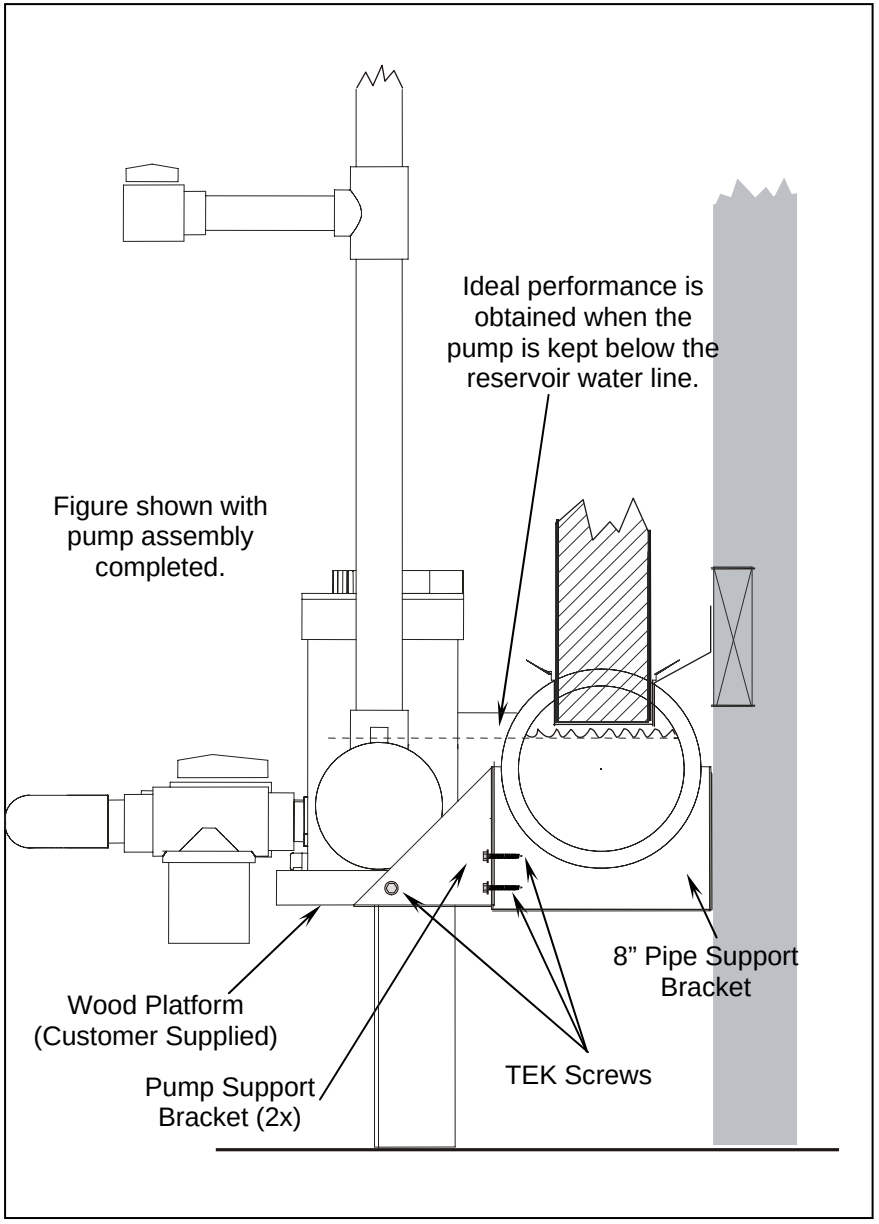
Assemble End Caps





Install System End Caps

1. Install metal end cap assembly at each end of system. (See Page 22)
2. Fit spray line through hole at top of end cap.
3. Securely fasten end caps to framing with #10 x 1” TEK screws.
4. Press 1/4” plastic plugs into exposed holes to prevent spray from coming through these holes.
5. Paste label onto end cap as shown.



Install In-Line Pump Platform

The In-Line Pump Platform should be attached near the Float Valve Assembly as close to the end of the system as possible, or for a Center-Mount In-Line Pump setup, in the middle of the system. Refer to the figure shown.

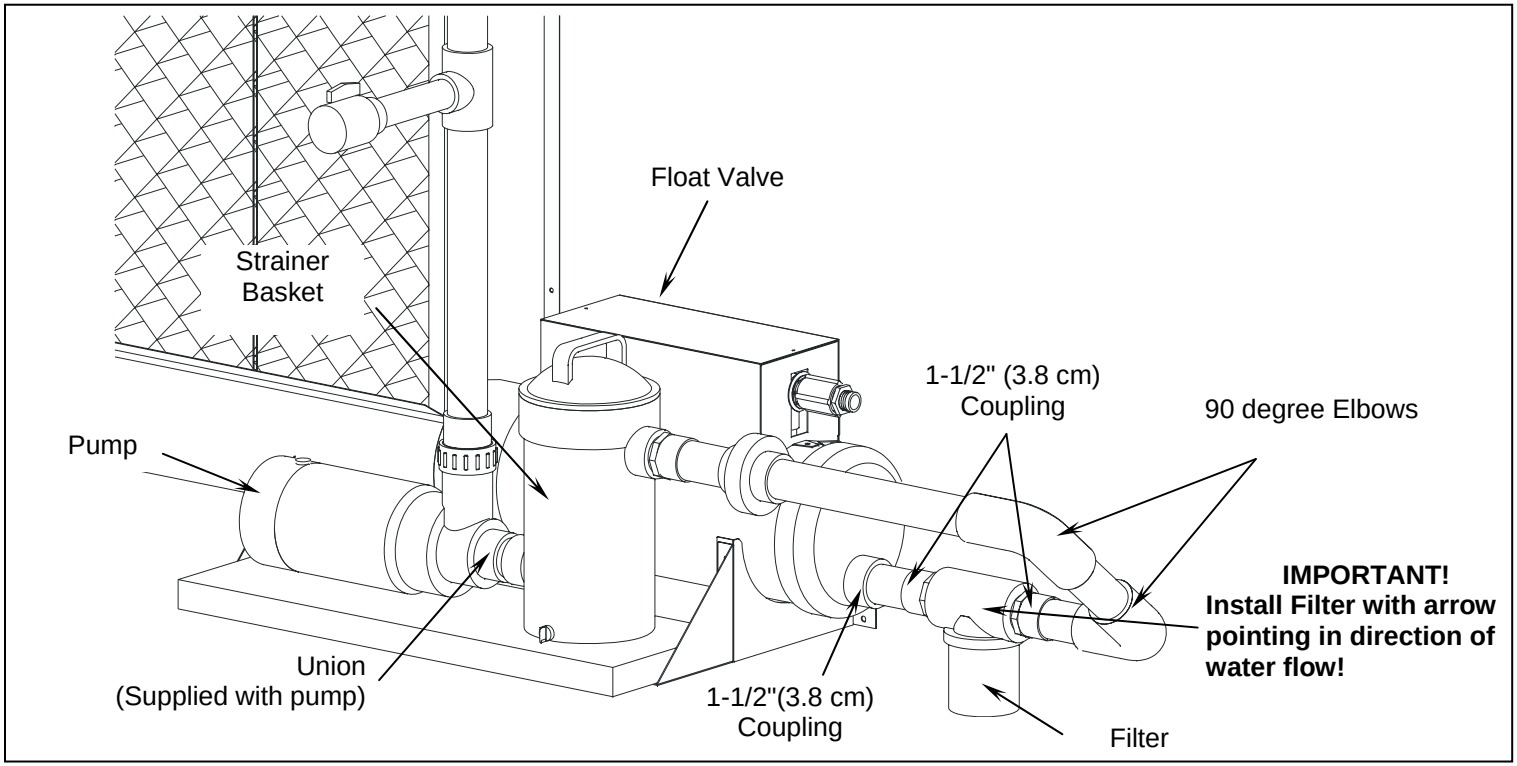
1. Leaving room for two attachment screws as shown, stretch a chalk line between the two Pipe Support Brackets and mark the LEVEL position on the Pipe Support Brackets for the top edge of the In-Line Pump Support Brackets.

NOTE: The In-Line Pump Support Brackets should be mounted lower than the Pipe Support Brackets as shown for ideal In-Line Pump location.

2. Align the In-Line Pump Support Brackets with the marks on the Pipe Support Brackets and securely mount with #14 x 1" Hex Head TEK Screws.

3. Cut a treated 2" x 6" wood board to the appropriate length to rest securely in the In-Line Pump Support Brackets. Attach the wood to the brackets on both ends with TEK screws.

NOTE: Ideal performance and priming will be maintained when the In-Line Pump is placed closer to the reservoir outlet and when the In-Line Pump is mounted lower in relation to the water level of the reservoir.

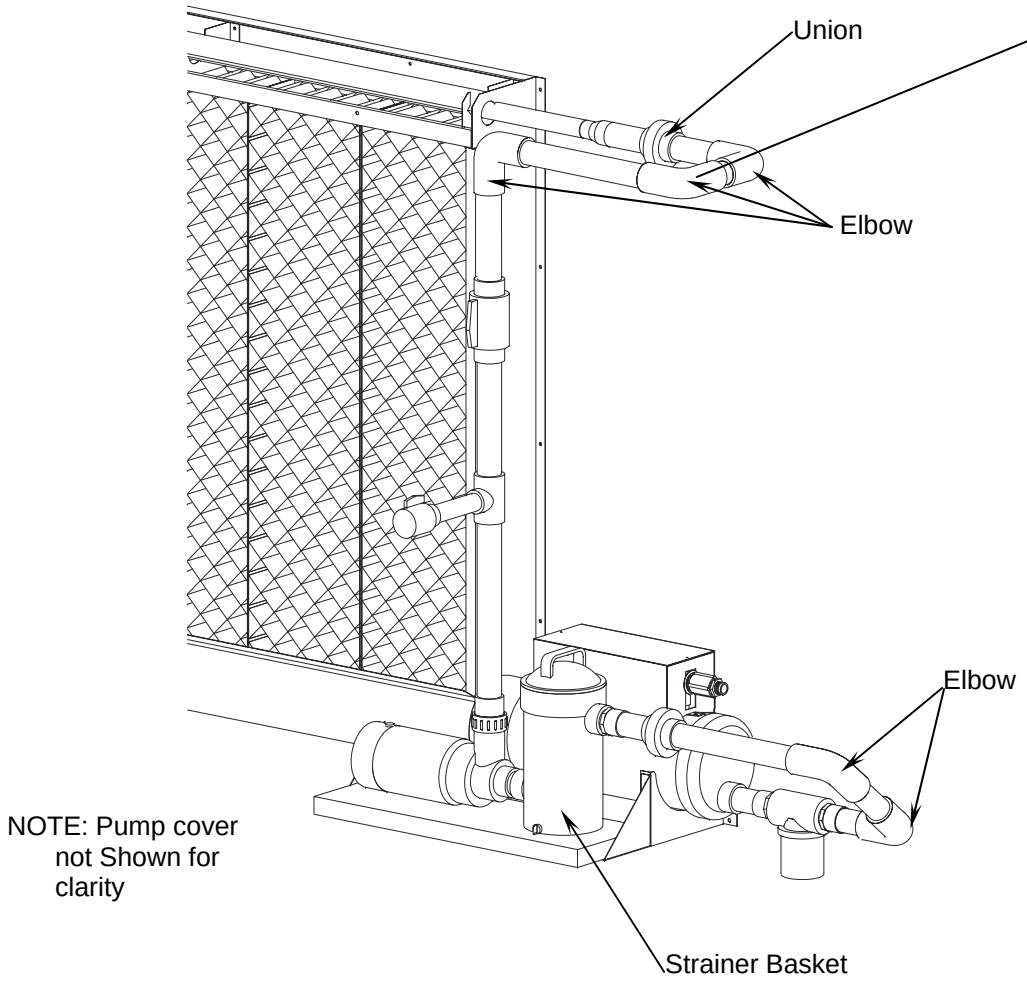


Install In-Line Pump and Assemble Supply Line

1. Place In-Line Pump on the platform as shown above. Install the Strainer Basket O-rings. Connect the lower port of the strainer basket to the In-Line Pump inlet using the liquid-tight fitting attached to the strainer basket. Hand-tighten ONLY.
2. Connect the upper port of the strainer basket to the union. Hand-tighten ONLY.
3. Connect two 1-1/2" (3.8 cm) couplings; One to the outlet side and another to the inlet side of the filter. Cut two 4" (10.16 cm) lengths of 1-1/2" (3.8 cm) dia. PVC pipe. Install one end of pipe to strainer basket union and the other end to the 1-1/2" (3.8cm) coupling on the outlet-side of the filter.

NOTE: Install filter with the arrow pointed in the direction of water flow (toward the In-Line Pump).

4. Connect the other 4"(10.16cm) length piece of pipe to the inlet-side of the filter and to the ball valve.
5. Measurements will need to be verified before installation of the remaining section of pipe from the ball valve to the 1-1/2" (3.8 cm) coupling at the 8" end-cap.
6. Use two 1-1/2" (3.8 cm) elbows to install remaining sections of PVC pipe from the ball valve to the end-cap coupling. Cut PVC pipe as required. See the In-Line Pump supply line diagram.



IMPORTANT WATER FLOW INFORMATION!

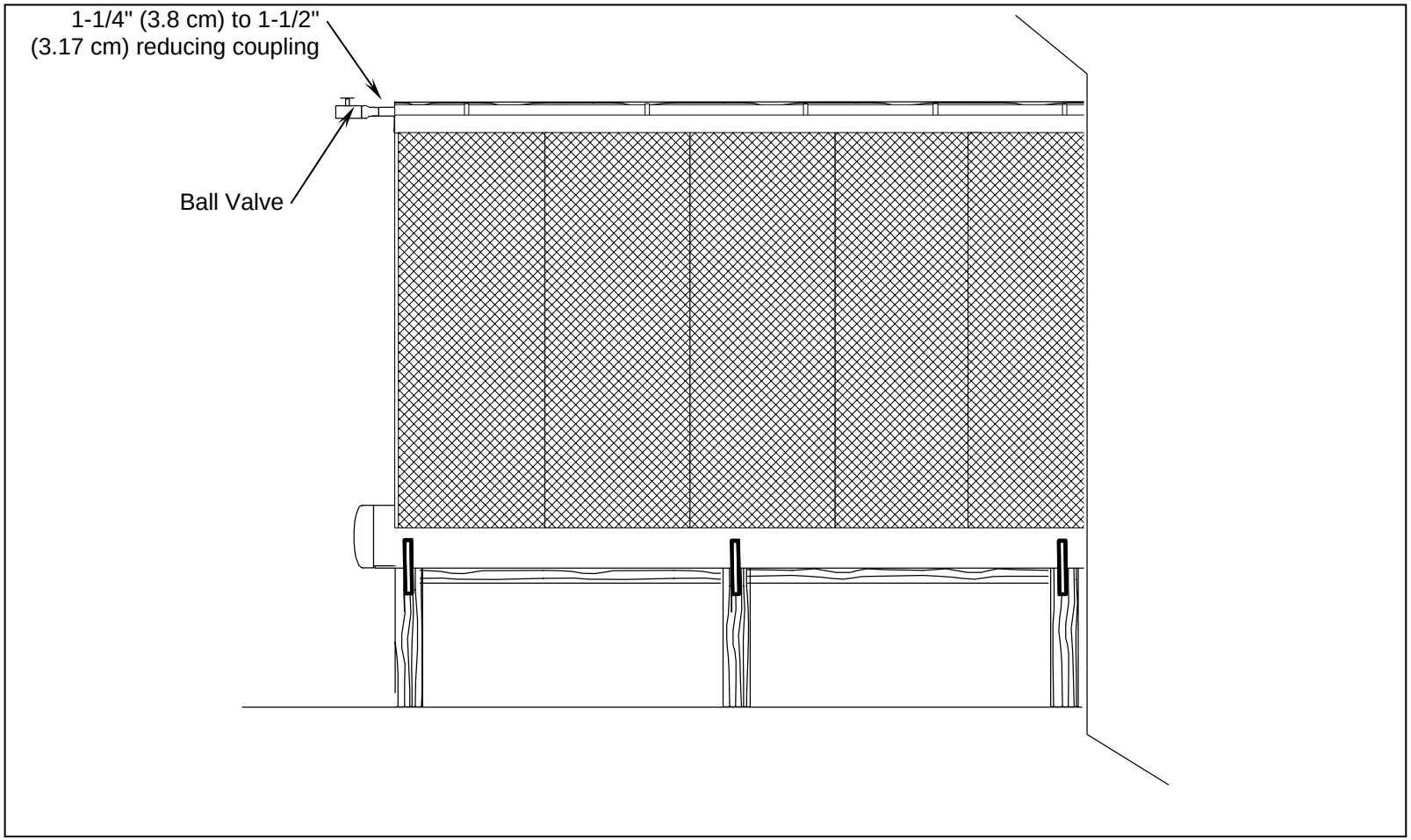
The water flow can be adjusted using ball valves (flow regulators) to ensure adequate water flow through system. The pump can supply adequate pressure to systems up to 80 feet in length. Lengths up to 120 feet can be accomplished when the Center-Mount System is installed.

IMPORTANT! Refer to Diagram on page 27 for additional spray line connections for systems greater than 80 ft. (24.4m)

Connect In-Line Pump to Spray Line

NOTE: The total vertical height of pipe sections in the following instructions must reach from In-Line Pump to level of spray line. Adjust lengths of pipe sections as required for proper height.

1. Attach PVC pipe section to outlet of In-Line Pump with union.
2. Attach 1" (2.5 cm) dia. PVC extension with ball valve to open end of pipe. This is used as an exhaust port to drain system.
3. Extend PVC pipe section with ball valve to height of spray line. Attach 90° elbow at top of pipe section.
4. Add PVC pipe section with union to connect elbow to spray line as shown in diagram.
5. Slide In-Line Pump cover over the In-Line Pump and fasten with screws to the wood platform.



Add Ball Valve To End

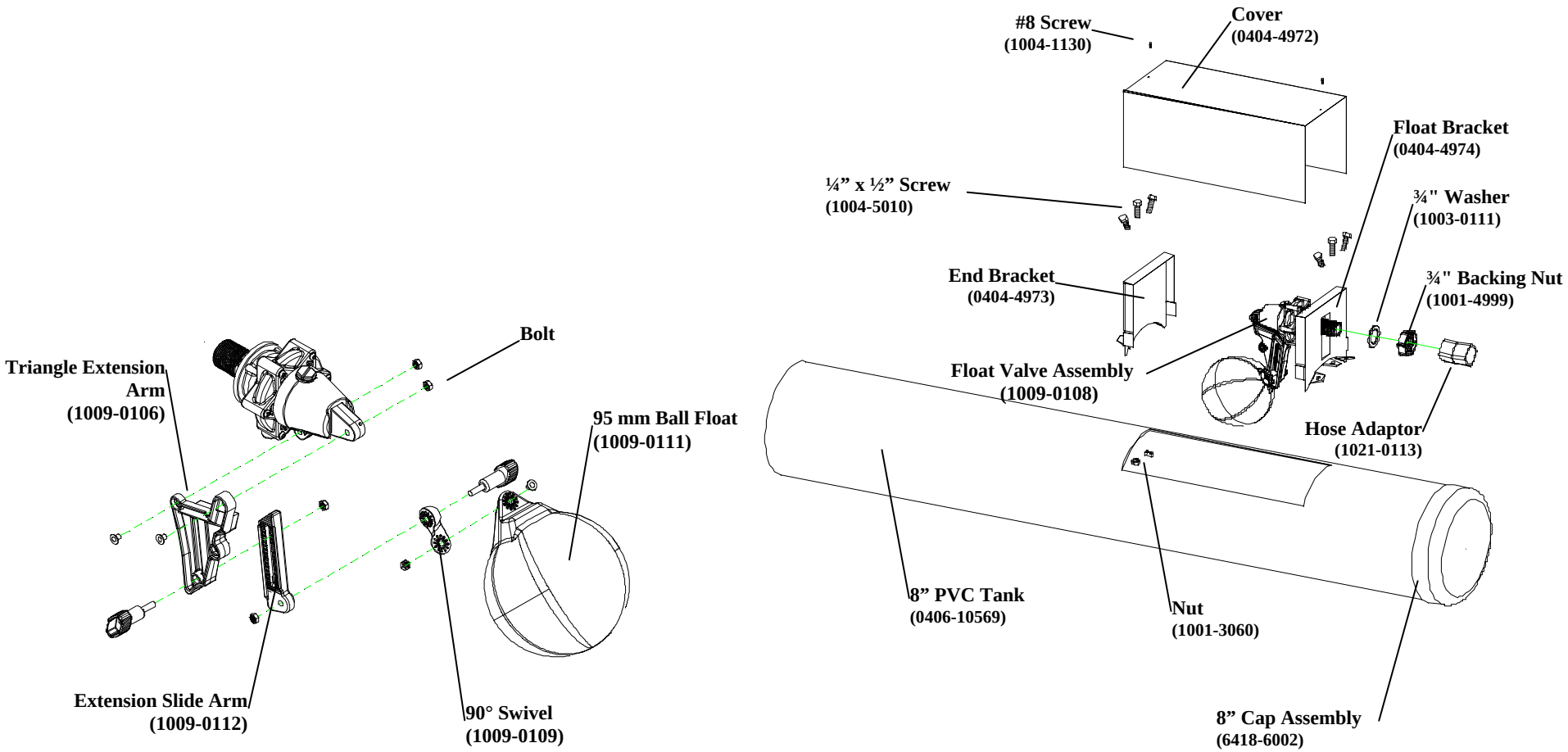
1. Install 1-1/2" (3.8 cm) x 1-1/4" (3.17 cm) reducing coupling to opposite end of spray line.
2 Glue ball valve to end of system.

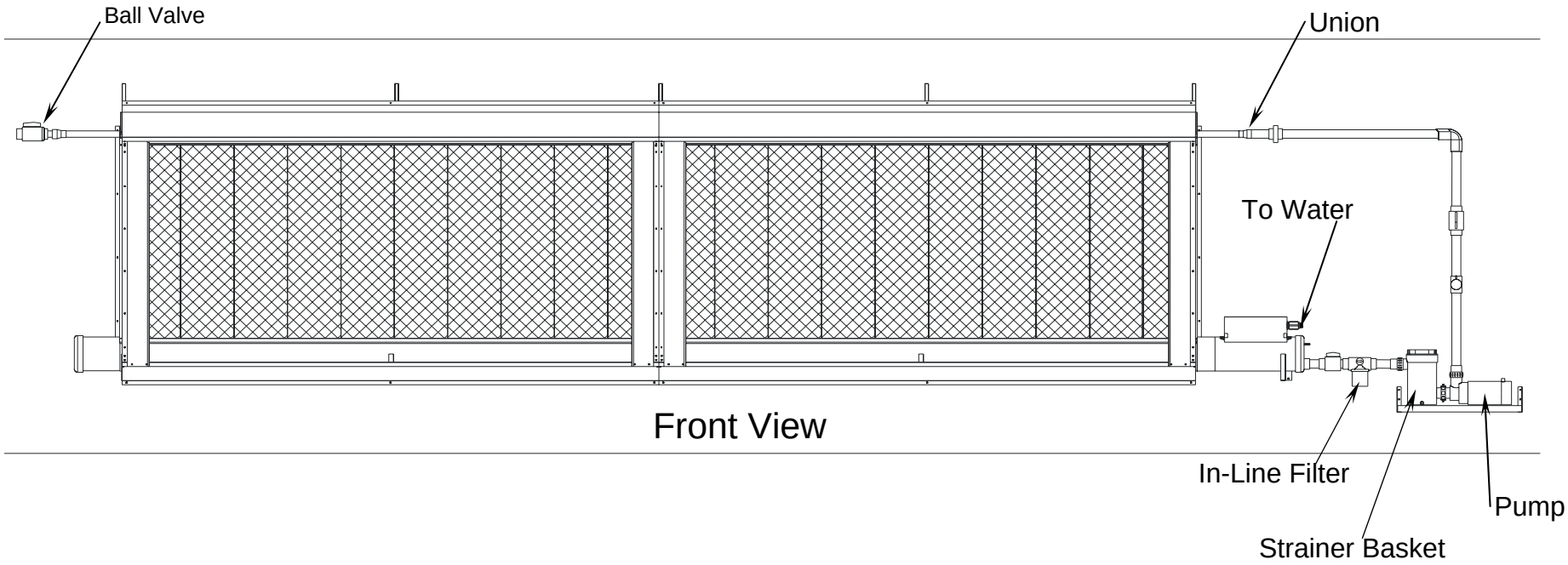
NOTE: If a Center-Mount In-Line Pump System is being installed, a ball valve and coupling must be placed on both ends of the system. Refer to the Center-Mount System Diagram on Pages 25 and 29.

Float Valve Assembly

1. Screw water supply hose onto fitting.
2. Use slot in bracket to adjust water level. If slot is not enough adjustment, remove cover and move float arm to another position.

Float Valve Tank Assembly





Front View

NOTES:

1. Expect about 70 gallons of water per 50 feet of reservoir pipe.
2. Lubricate the strainer basket lid seal with Vaseline to ensure vacuum-tight seal.

Flush System

It is very important to flush the system. After completing system assembly, follow steps below in order to flush out debris from pipes.

1. Open ball valve at end of system. See diagram above.
2. Turn on water. Fill reservoir to fill line. Fill the Strainer Basket.

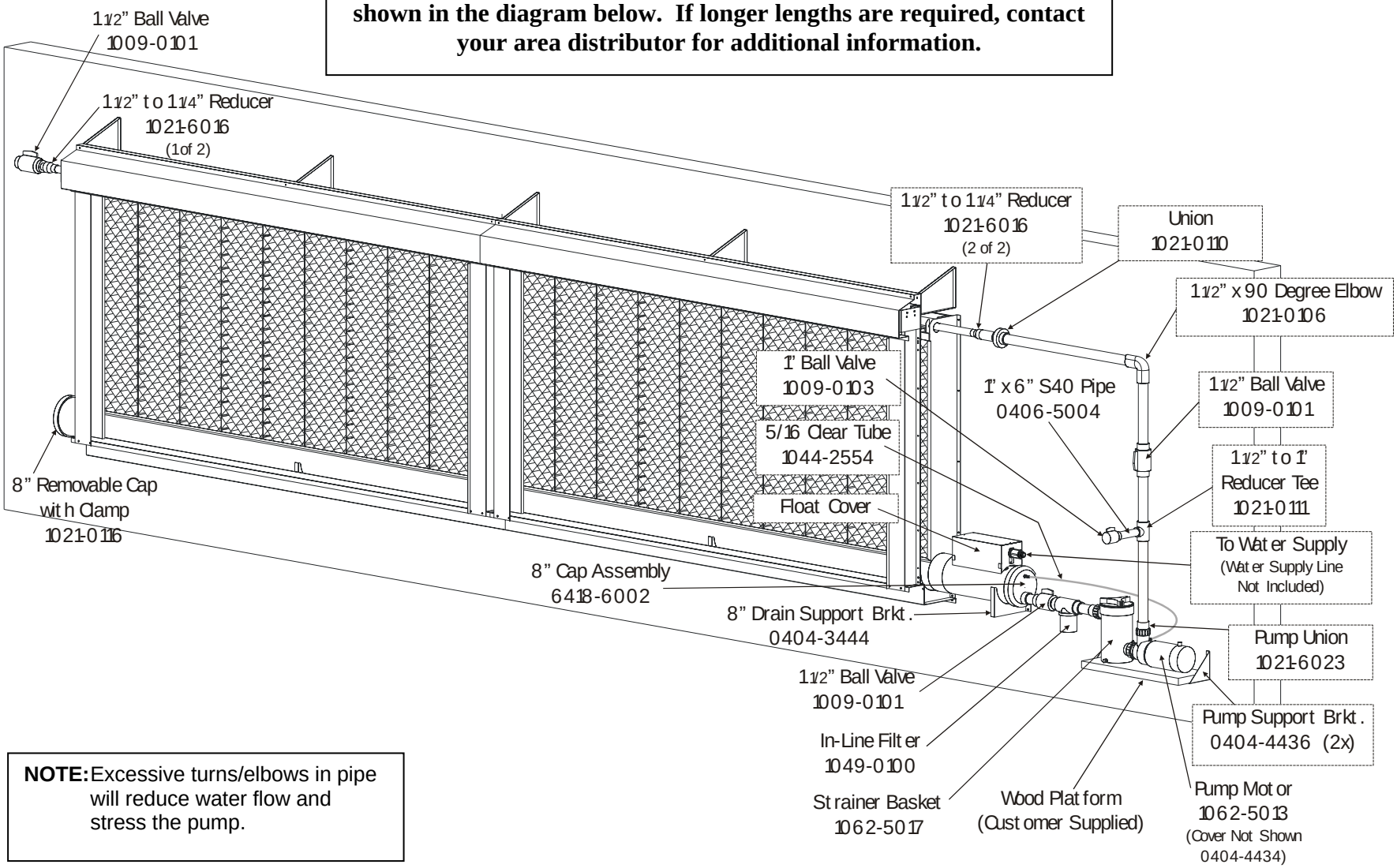
WARNING: Do not over-tighten the Strainer Basket lid. Hand-Tight ONLY.

3. Turn on pump to flush out system.
4. After flushing system, turn off pump.
5. Close ball valve at end of spray line.
6. Clean In-Line Filter.
7. Resume normal operation.

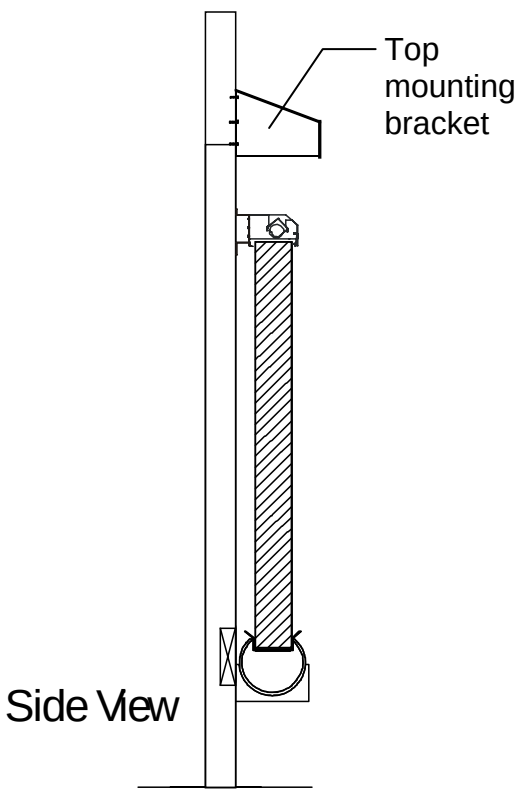
Unitized 10'-80' System

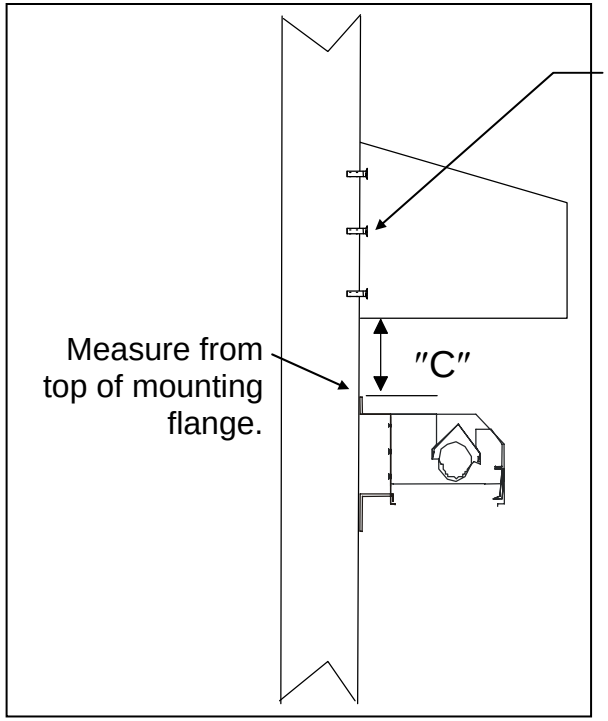
Evaporative Cooling Part Numbers

Unitized Systems are designed to span lengths up to 80 feet from a single water supply & pump located at the end of the System as shown in the diagram below. If longer lengths are required, contact your area distributor for additional information.



NOTE: Excessive turns/elbows in pipe will reduce water flow and stress the pump.





Make sure 2″x 6″ board is at proper height. See tables on pages 3 & 4.

Distance ″C″		
Framing System	4″ Pad	6″ Pad
2″ x 2″ & 2″ x 6″	0.25″	0.25″
Single 2″ x 6″	3.25″	3.25″

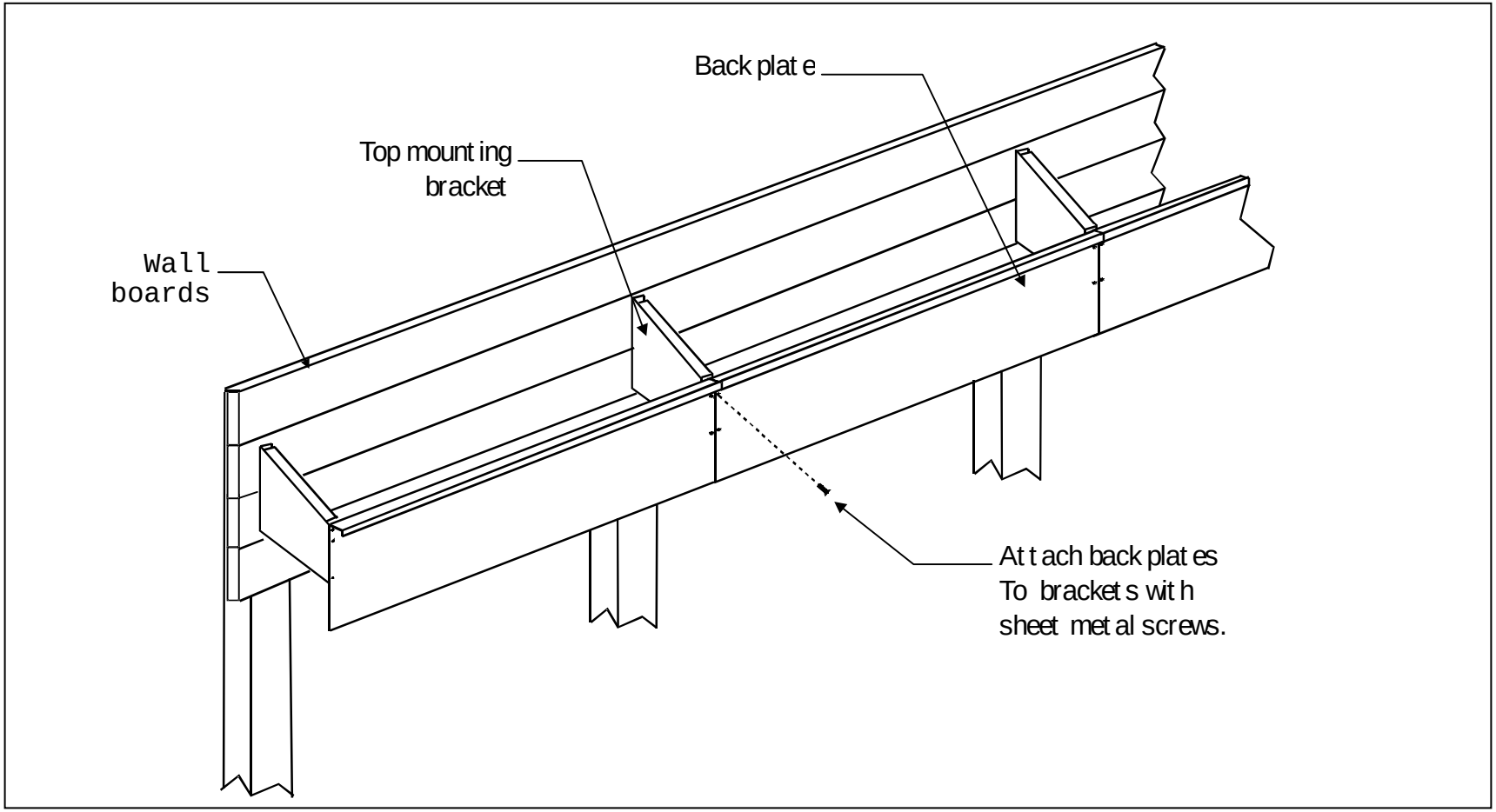
Horizontal Spacing For Top Mounting Brackets	
Back Plate	Spacing
8 ft.	4 ft.
10 ft.	5 ft.
12 ft.	6 ft.

Top Mounting Brackets

1. Install top mounting brackets for curtain installation. Mount end bracket in line with end of cool cell system. Vertically position each bracket distance ″C″ from top 2″x 6″ board as shown above (Refer to Installation Overview for the framing you are installing, page 3 or 4).

2. Top mounting brackets should be spaced by the horizontal distance given in table at left depending upon which system you are installing.

3. Secure top mounting brackets to wall board with ¼ x 1.5 Lag screws.

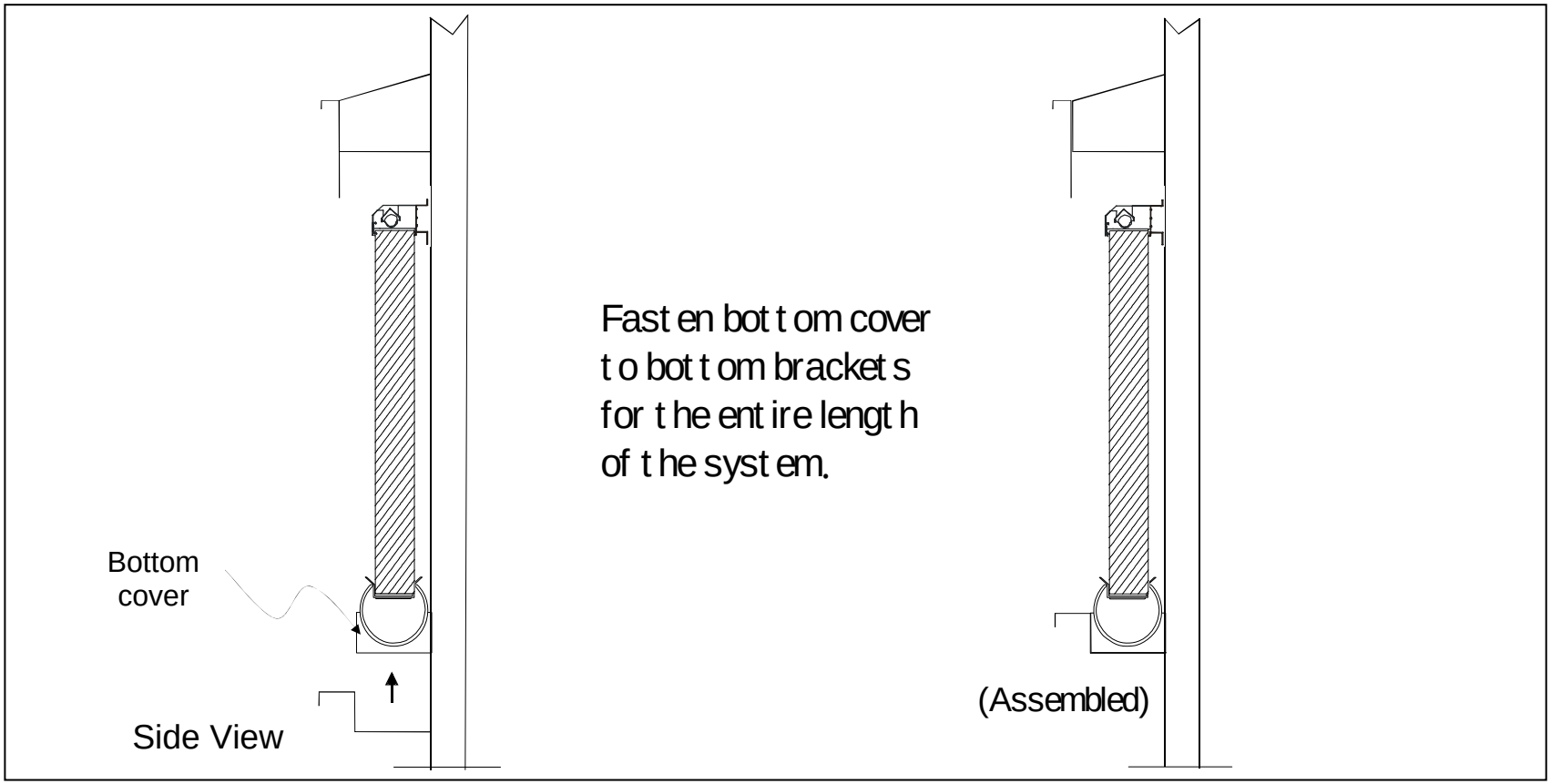


Back Plates

1. Back plates attach to mounting brackets with sheet metal screws.

2. Attach screws through topmost holes of back plate. (NOTE: The lower screw holes are for attachment of vertical members. Do not install screws through lower holes at this time).

3. Start at one end. Attach all back plates as shown in diagram above

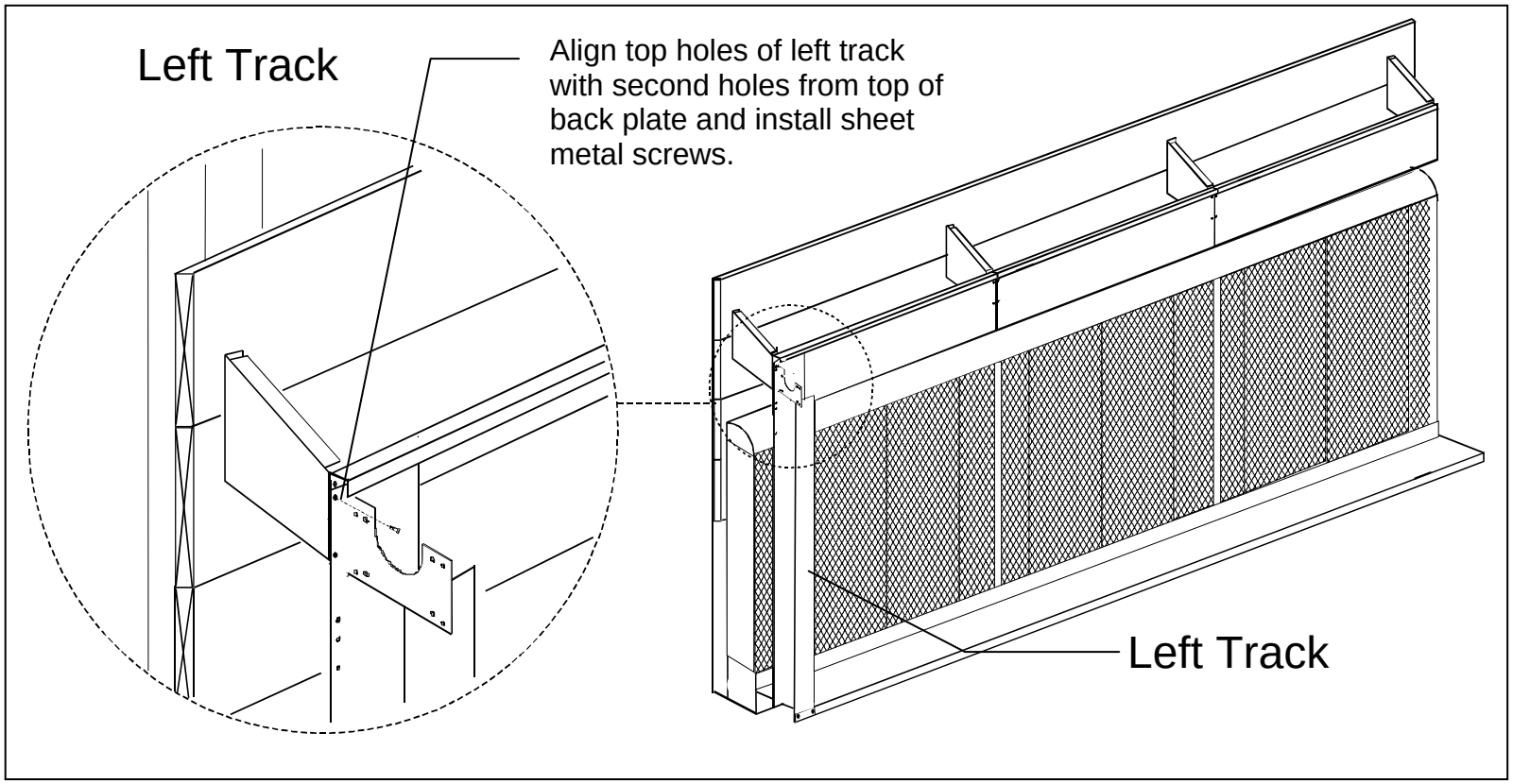


Bottom Cover

1. Bottom cover pieces fit underneath the lower mounting brackets of cooling pads.

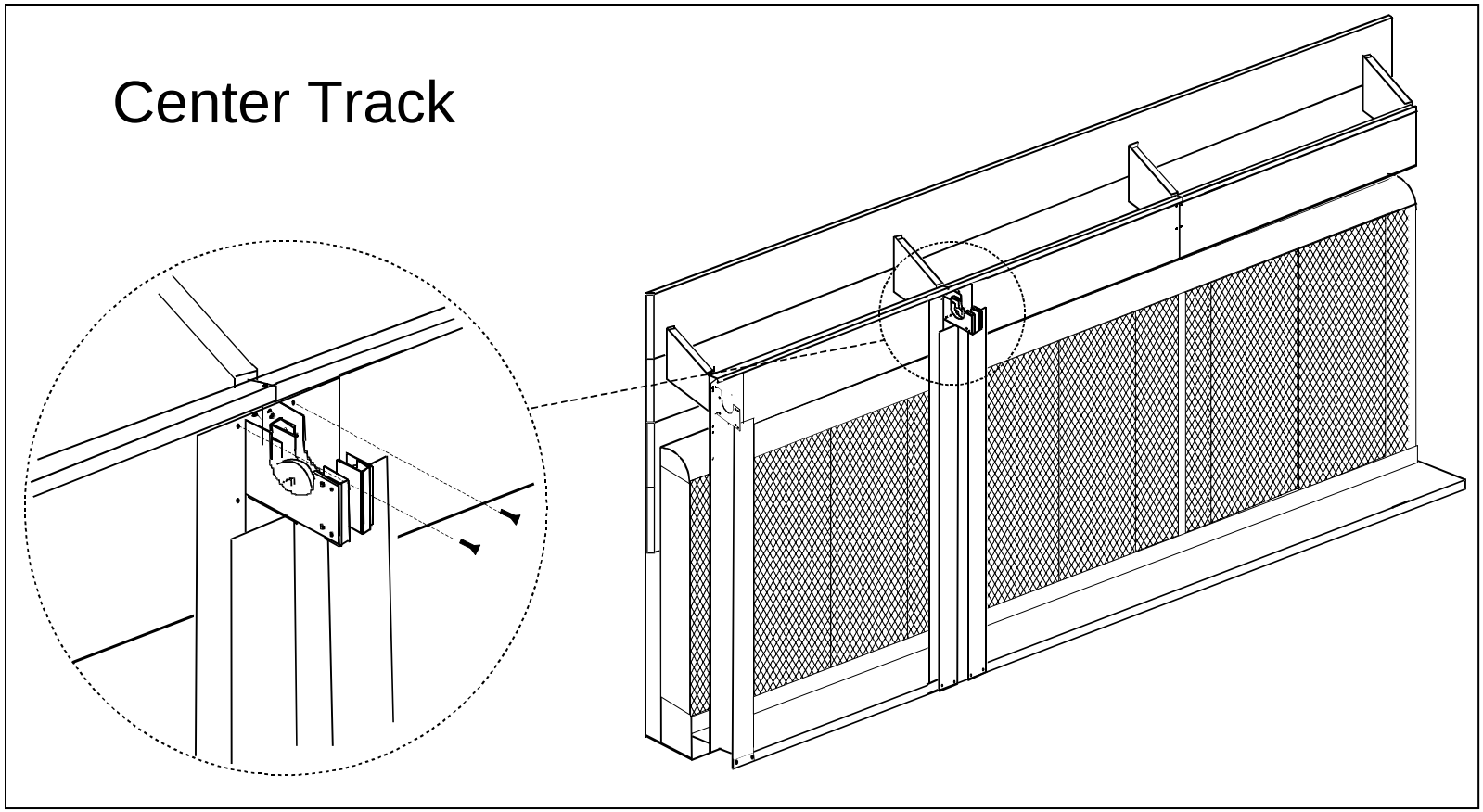
2. Attach bottom covers to lower bracket with sheet metal screws.

3. Install bottom covers along the entire length of system.



Left Track

1. At left end of system, install left track. Align the left-hand edge of the track unit with the left-hand edge of the back plate.
2. Match second row of holes (from top of back plate) with the topmost holes of left track as shown in diagram above.
3. Install sheet metal screws to hold left track in position. Tighten screws securely.
4. Fasten bottom of left track to bottom cover with sheet metal screws.



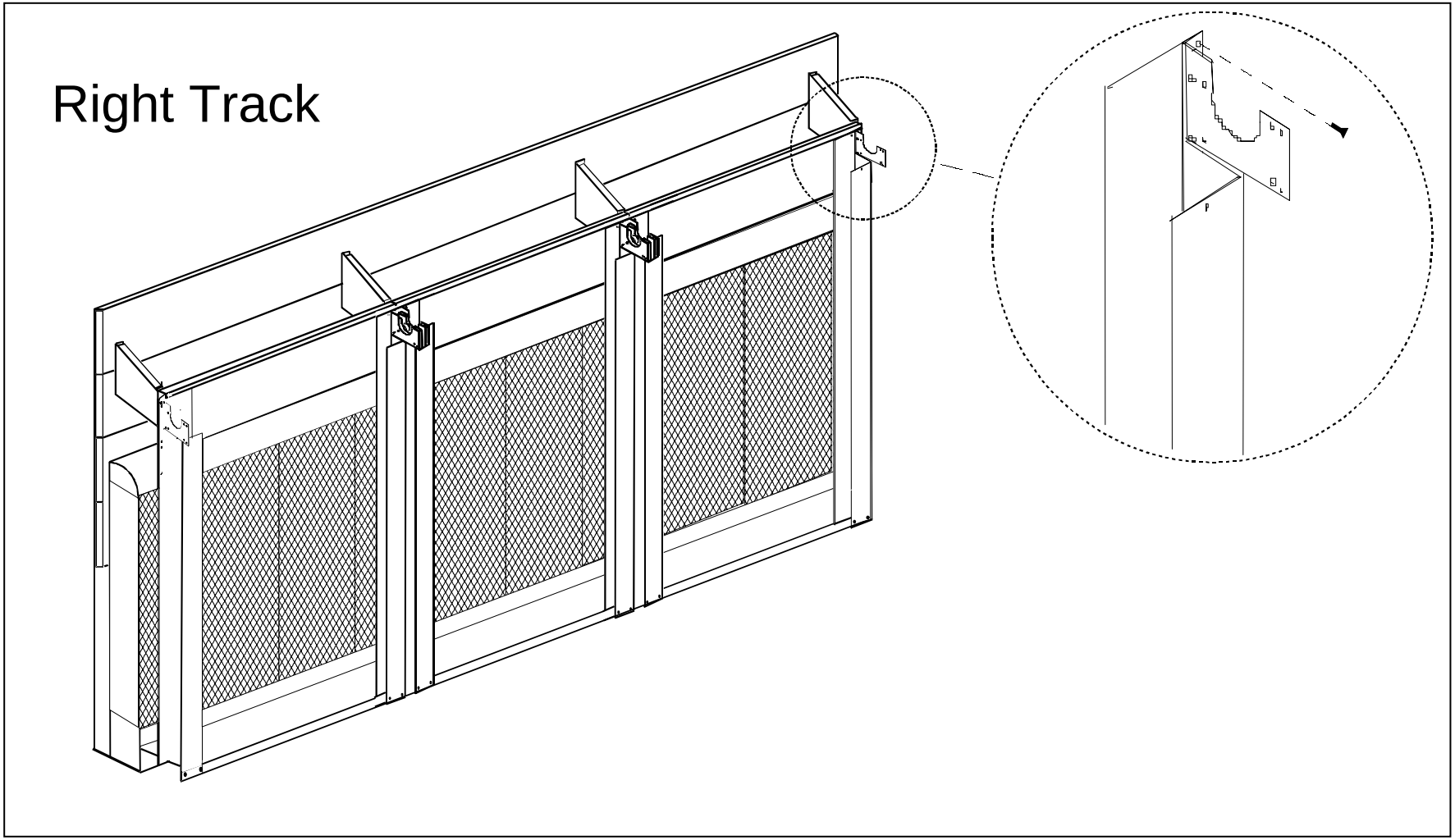
Center Tracks

1. Move to the next joint where the edges of two back plates abut, and install a center track. Align the two topmost holes of the center track with the second holes from the top of the back plates as shown in the diagram above.

2. Install sheet metal screws through holes to fasten center track.

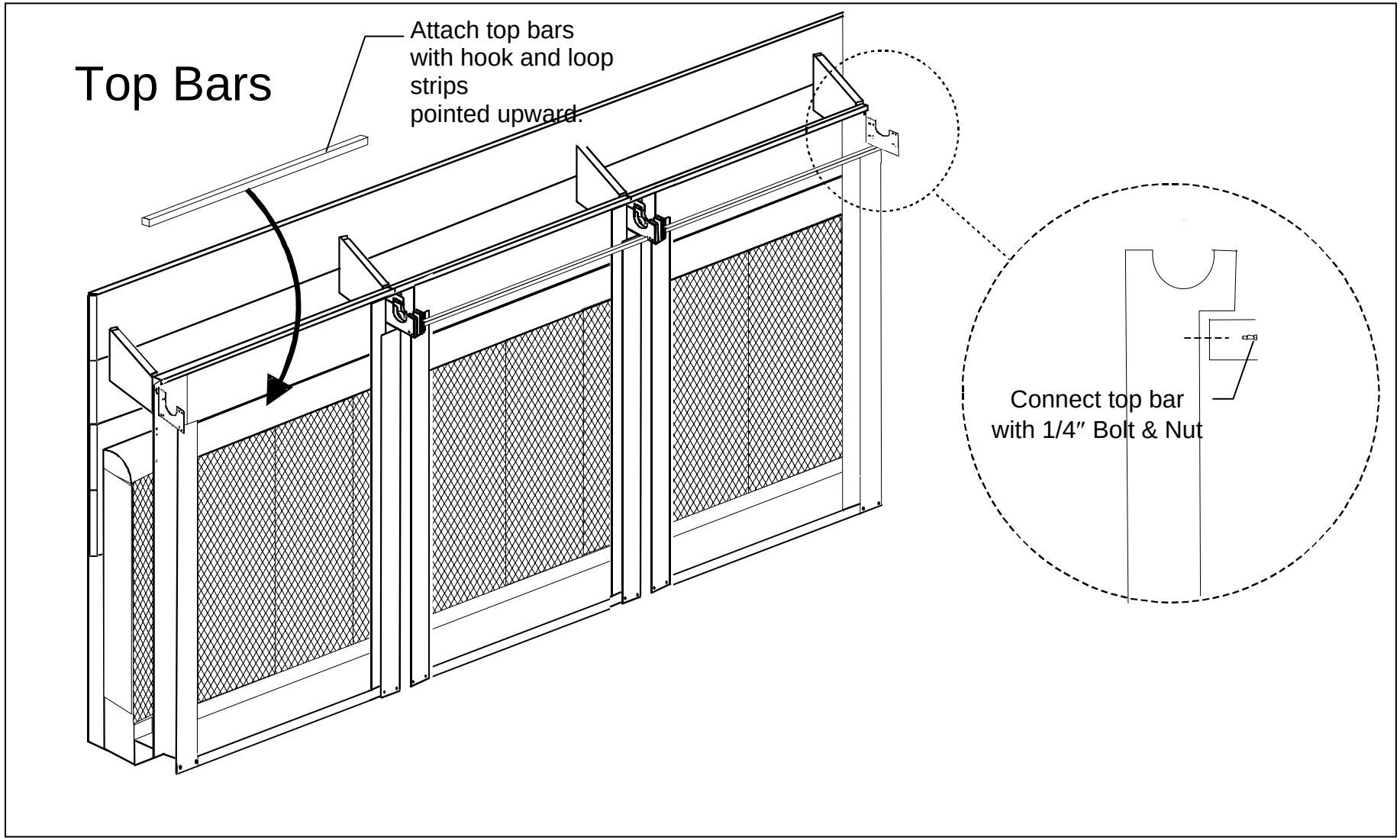
3. Fasten bottom of center track to bottom cover with sheet metal screws.

4. Install all center tracks by repeating steps 1-3.



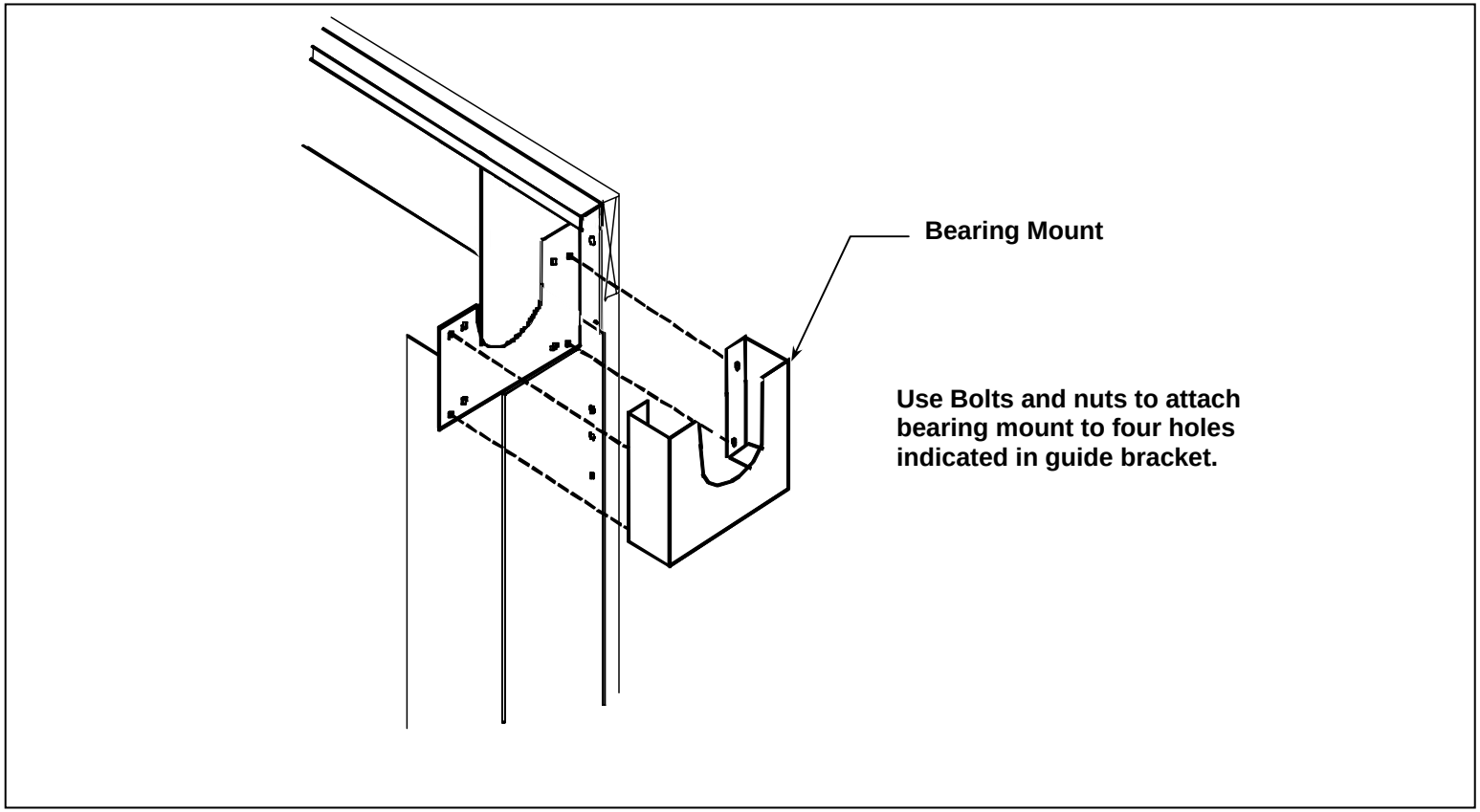
Right Track

1. Align the right-hand edge of track unit with the right-hand edge of the back plate.
2. Match the second row of holes from top of back plate with the topmost holes in the right track.
3. Install sheet metal screws to hold right track in position.



Top Bar

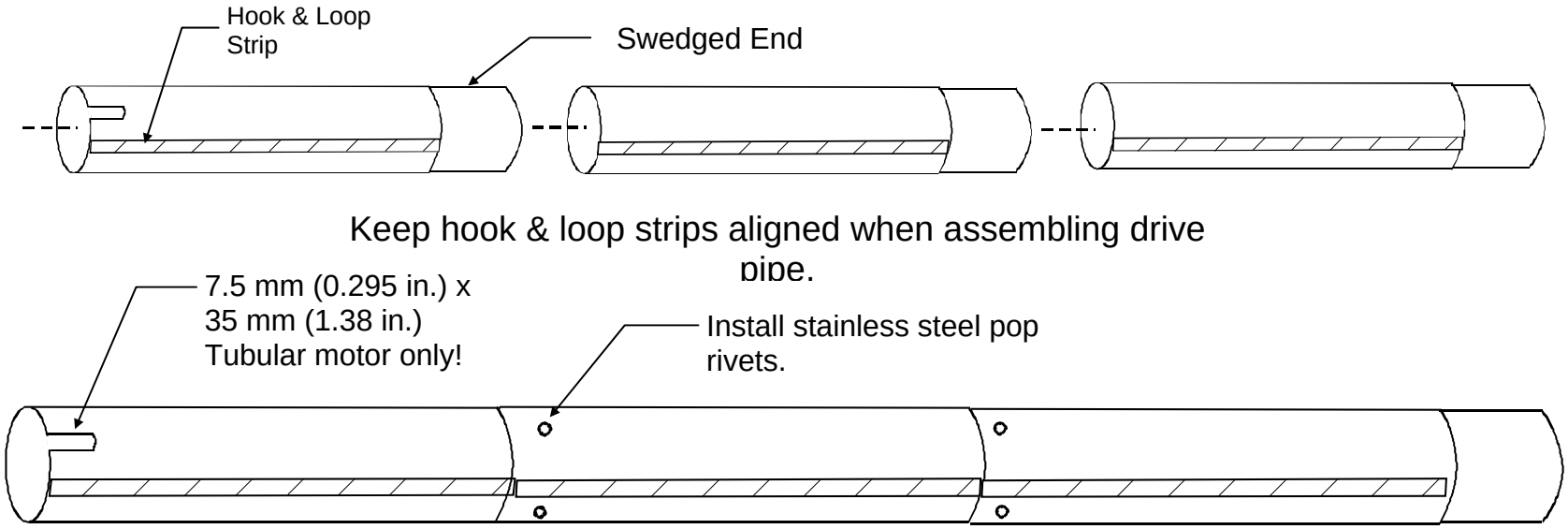
1. Top bar attaches underneath mounting brackets. Hook & loop strip faces upward.
2. Secure top bars to mounting brackets with self-drilling screws.



Tubular (Somfy) Motor

Bearing Mount Attachment

1. Attach bearing mount on opposite end of system from motor.
2. Fasten bearing mount securely with bolts & nuts provided.



Drive Pipe Assembly

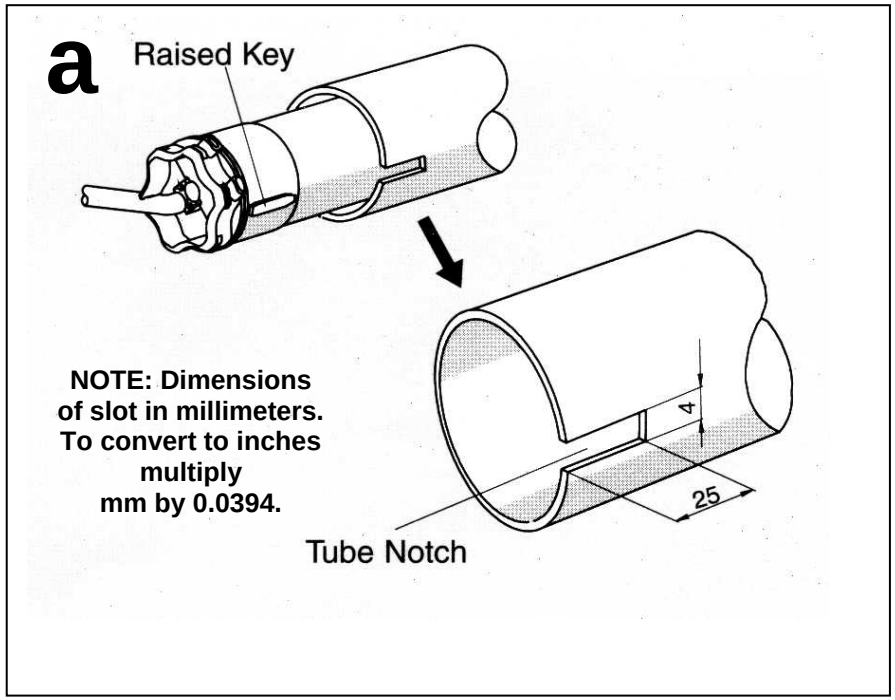
1. Starting at one end of the system, arrange drive pipe sections on the ground end-to-end with the swedge ends nonadjacent. For tubular motor: Place the slotted section of pipe at the end of the assembly where the motor will be installed.

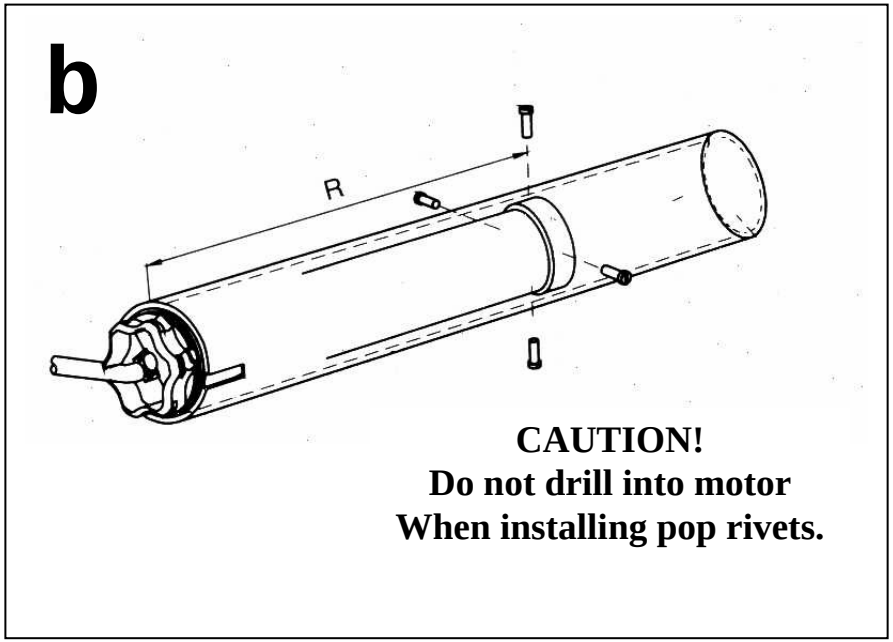
2. IMPORTANT! There is a hook & loop strip laminated to each pipe section. Keep the hook & loop strips lined up when connecting the pipe sections in order to form a continuous hook & loop strip running the entire length of the drive pipe.

3. Couple pipe sections together by sliding the swedged end of one section into the adjacent pipe. (NOTE: It might be necessary to take a hammer and straighten out the dimples in the ends of the pipes which were created when the pipe sections were cut). Attach the sections together by installing stainless steel pop rivets.

NOTE: Pop rivet installation: Drill 3/16 in. (4.8 mm) dia. holes through the pipe and swedged end which form a junction of two pipe sections. At each junction, drill two holes about 2 in. (5.08 cm) apart on each side of the pipe as shown in the diagram above. Insert rivets through these holes to fasten the pipe sections together.

NOTE: If installing tubular motor, proceed to next section - 'Tubular Motor'. If installing Ridder motor, go to Section entitled 'Ridder Motor Installation'.

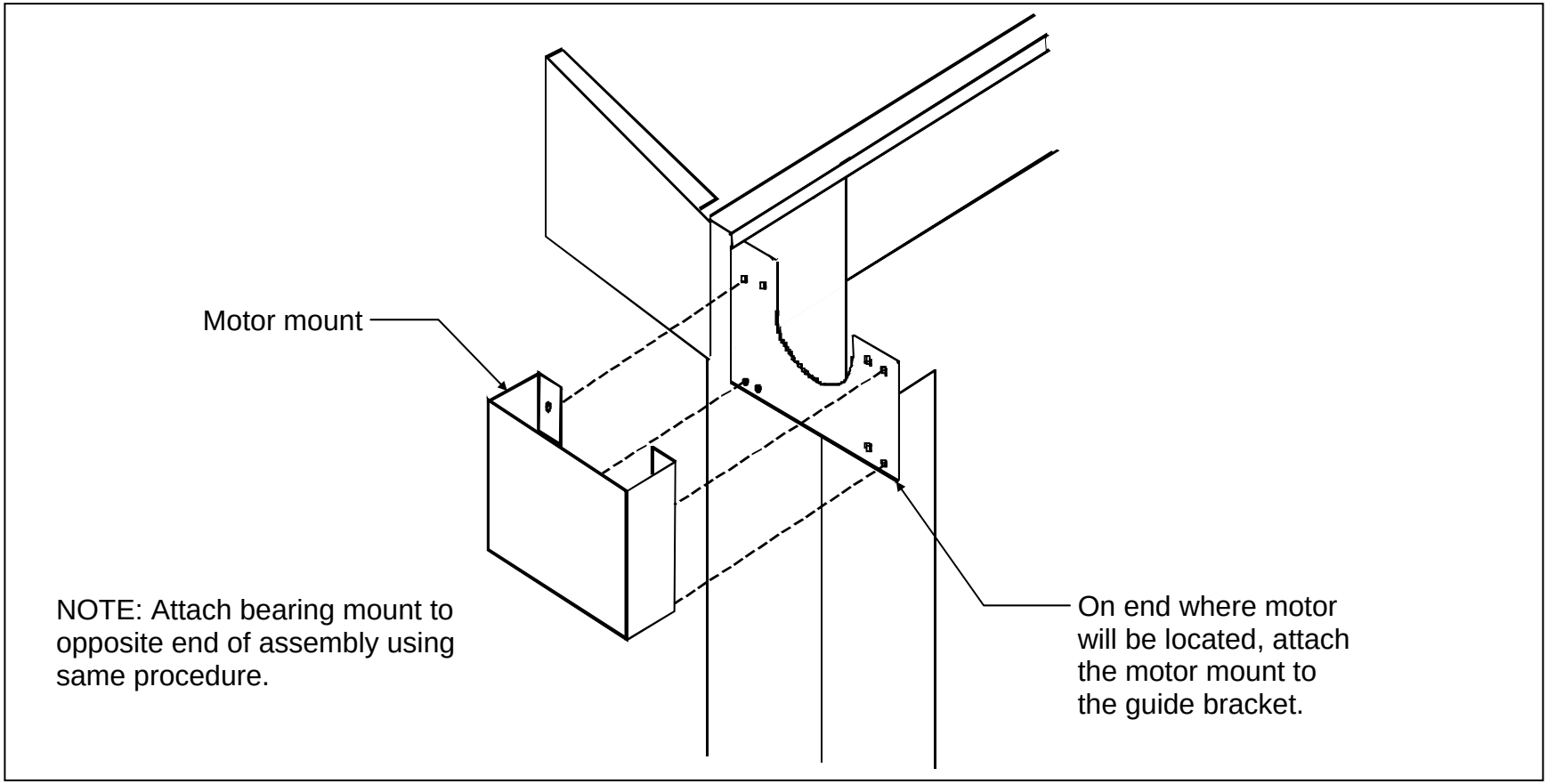




Tubular Motor

1. Before sliding motor into drive pipe, measure distance from end of motor to end of motor tube. This distance is labeled as R in detail b above.
1. Slide tubular motor into the slotted end of the drive pipe until the raised key of the motor head seats into the notch. (see detail a)
2. As shown in detail b, drill several 3/16 in. (4.8 mm) holes around the circumference of pipe at distance R (measured in step 1). Install stainless steel pop rivets into the holes to fasten motor tube.

NOTE: At this point of the installation, the drive pipe may be installed onto the guide brackets. REFER TO SECTION - 'PLACEMENT OF DRIVE PIPE INTO GUIDE BRACKETS'. After installing drive pipe, return to Section - 'Attachment Of Tubular Motor To Motor Mount'.

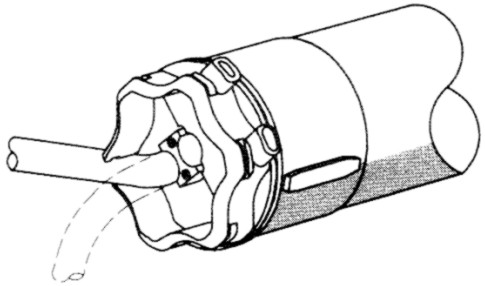


Tubular Motor Mount Attachment

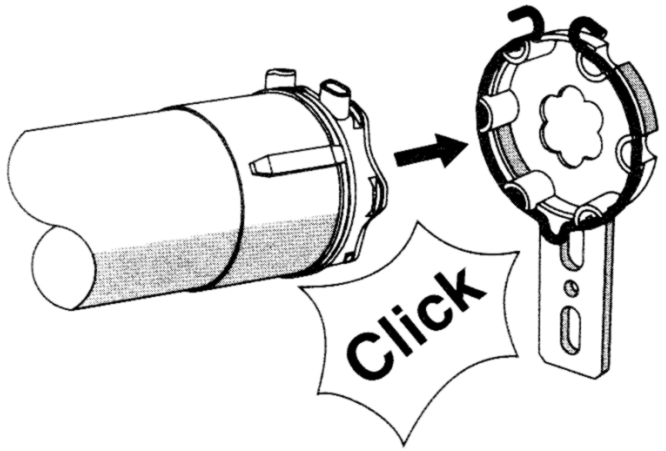
1. Attach the motor mount to either the left track or the right track depending on which end of the system the motor is to be located. Install four bolts and nuts through the holes of the motor mount and through the respective holes of the guide bracket.

2. Tighten bolts and nuts securely.

Motor Cable Positioning
Depending on the application, the motor cable can pass through the center of side of the motor head. Raise yellow cover plate, reposition the cable, and then press cover plate into position.



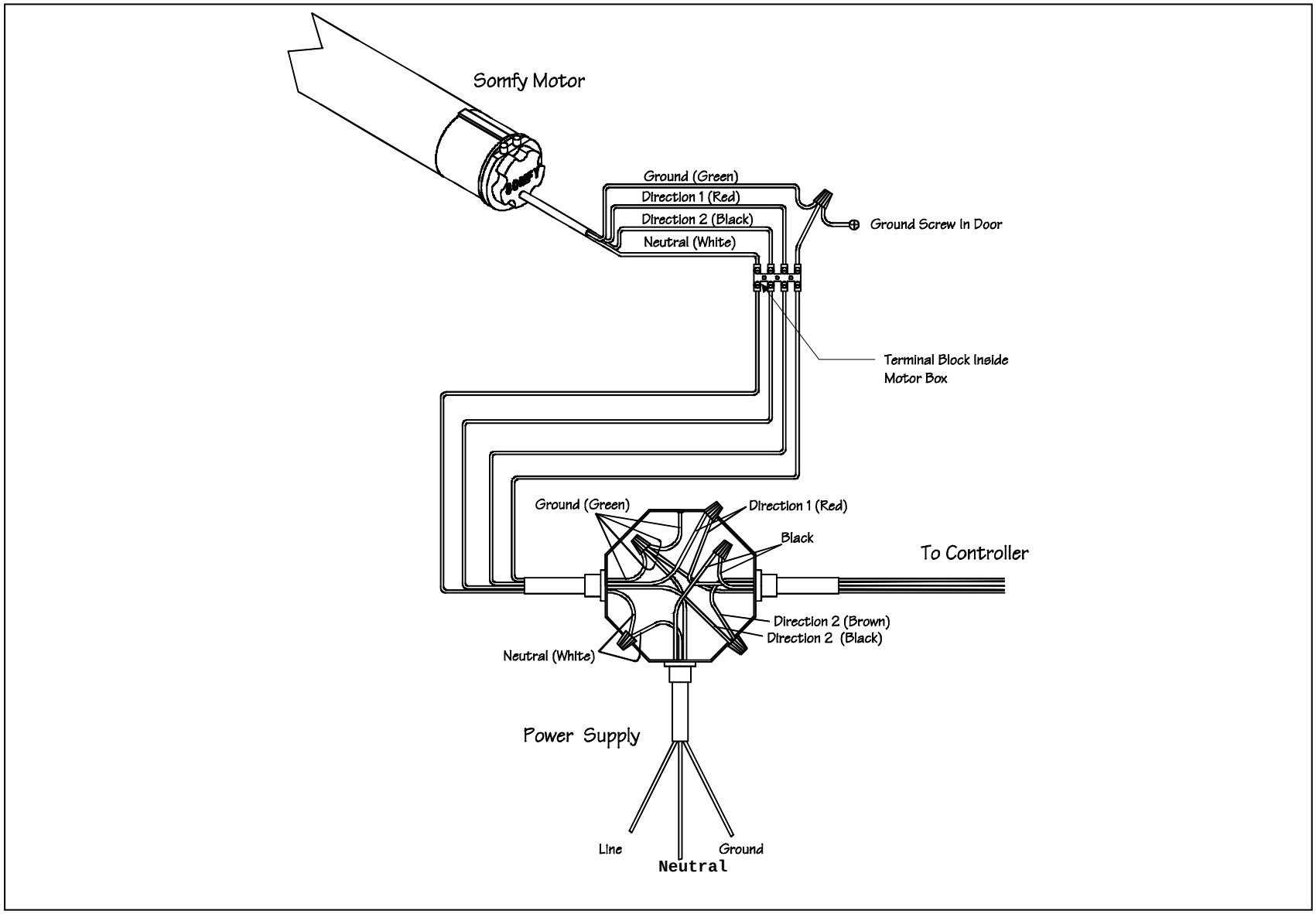
Mounting The Motorized Tube
The motor brackets are equipped with a clip ring. This clip ring does not have to be removed for installation. You can press the motor axially into the motor bracket in any of six positions, so that the limit switch adjustment buttons are always easily accessible.



Attachment Of Tubular Motor To Motor Mount

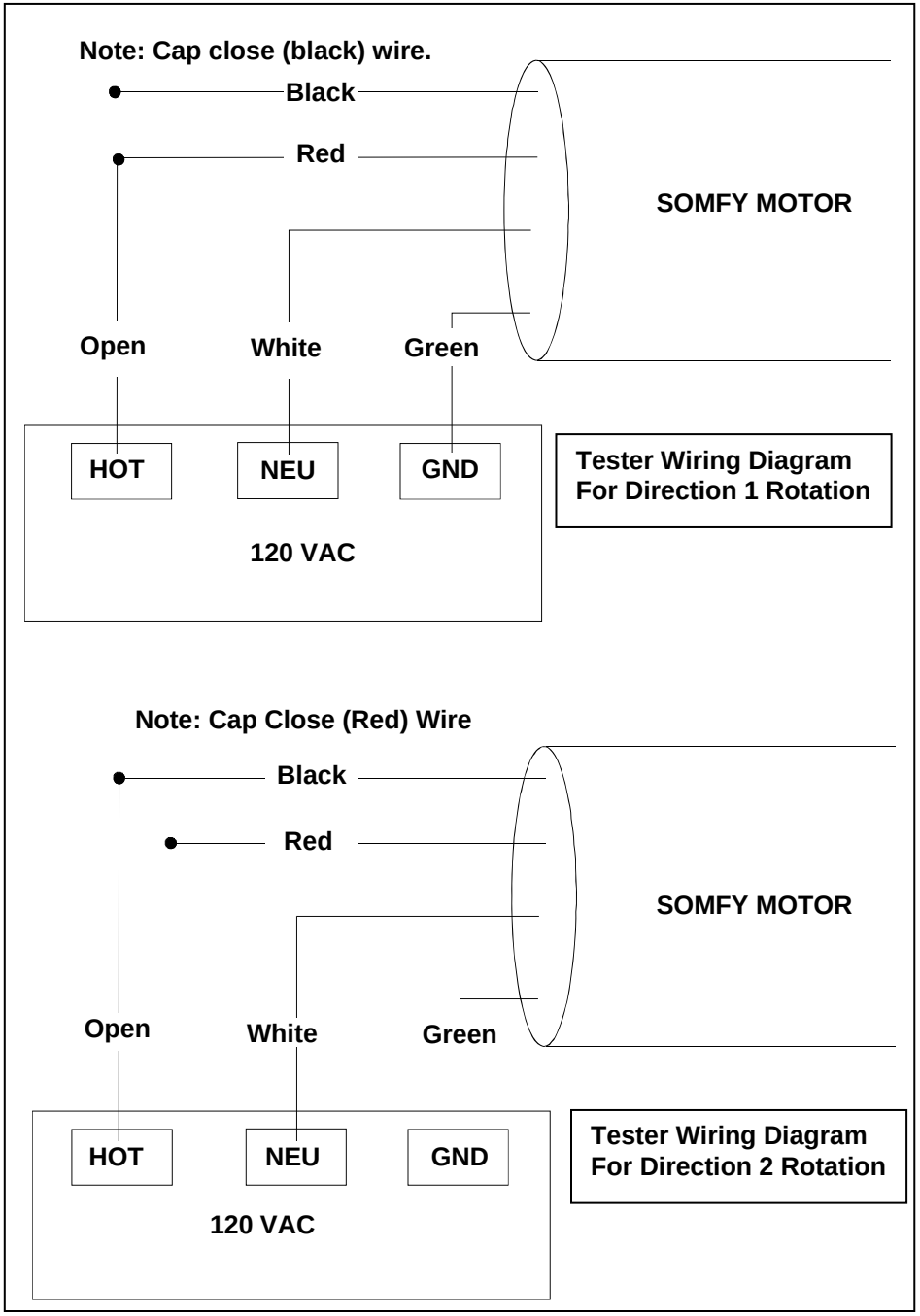
1. Lift end of drive pipe containing motor. Press motor into bracket that is installed on the motor mount.

2. Be sure that the limit switches are accessible.



Tubular Motor Electrical Wiring Diagram

1. Disconnect all electrical power sources.
2. Connect wiring to motor as shown in diagram above.



Tubular Motor Tester Wiring Diagram

1. Disconnect all power sources.

2. Wire motor according to diagram.
(Direction 1 refers to counter-clockwise rotation of motor as viewed from connection end of motor).

3. Connect power.

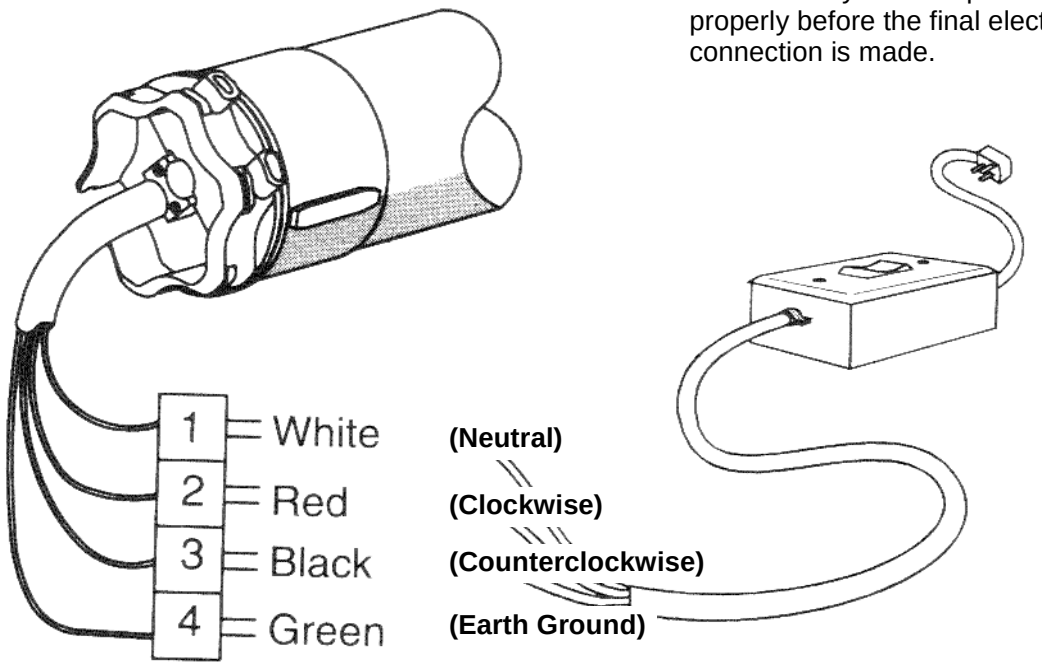
4. Test motor.

5. Disconnect electrical power.

6. Remove test wires

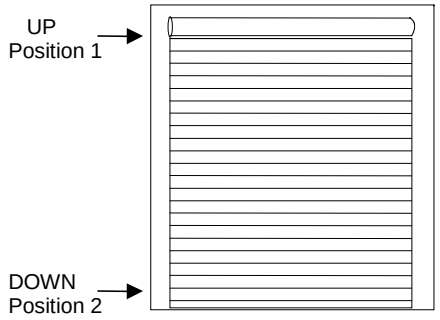
See Section "Motor Tester Wiring Diagram" for test cable.

Somfy recommends using a test cable to set the motor limits, and to ensure the system is operating properly before the final electrical connection is made.

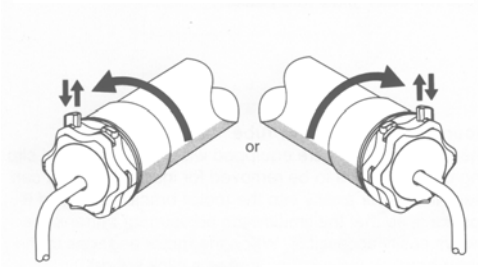


Connecting Power and Testing The Motor

1. See section “Tubular Motor Tester Wiring Diagram” for a description of test cable. Construct test cable and connect the test cable to the motor cable. Match the wire colors and connect the power.
2. Remove yellow protective cap from the limit switch adjustments buttons.
3. Press both limit switch adjustment buttons inward. (The buttons will automatically remain locked).
4. Check that the motor rotates properly when switch is turned on.
5. Disconnect electrical power while installing curtains.

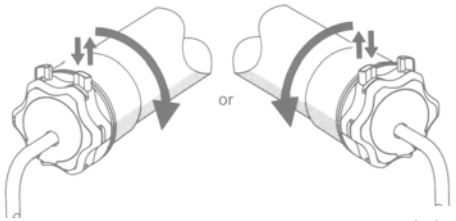


Stop Position 1
Depending On Type Of Installation



Motor On left Motor On Right

Stop Position 2
Depending On Type Of Installation



Motor On Left Motor On Right

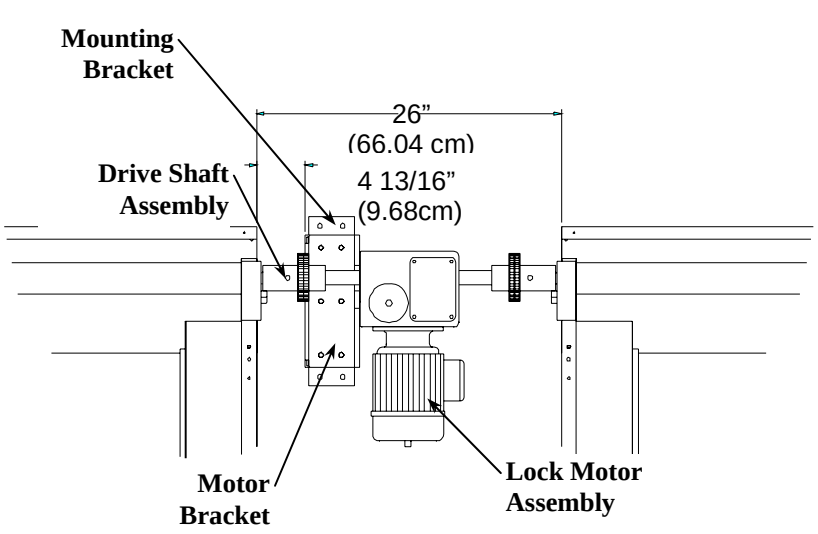
Setting Limit Switches Of Tube Motor

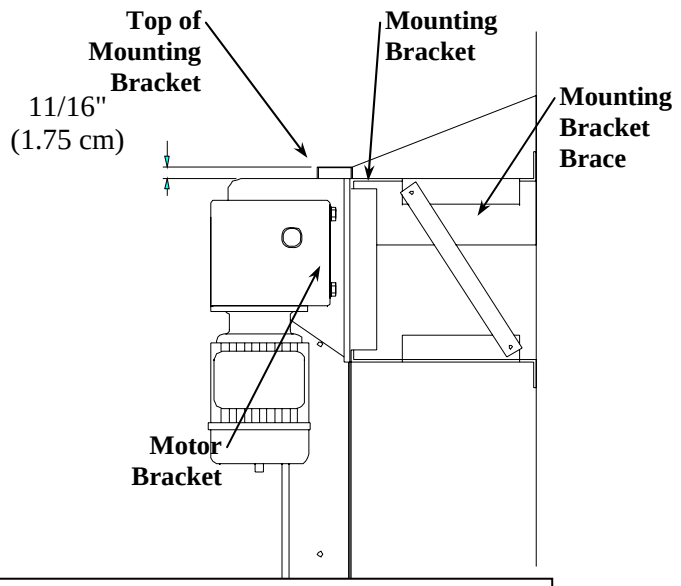
NOTE: Set Limit Switches After Installing Curtain

The UP position & DOWN position have to be set. This is where the curtain will automatically stop.

1. Ensure the power switch is in the OFF position.
2. Remove the protective cap from the motor head. Depress fully both limit switch push buttons (if not already pushed). They will automatically lock in the DOWN position.
3. Turn on the power switch and check that the system operates correctly. If not, put the switch in the OFF position, **disconnect all power sources**, and reverse the black and red motor connection wires.
4. Stop Position 1
   Bring motor rotation into desired stop position 1 (Note direction of rotation differs whether motor mounted on left or right end of system). Turn off power switch when position is reached.
   Unlock the UP limit switch push button by depressing and releasing it. This sets the UP limit.
   Stop Position 2
   Repeat the above operation to set the lower limit.
5. Check with the switch that the motor stops at the UP & DOWN positions just set.
6. Refit the protective cap.
7. Allow the motor to run in both directions, until it shuts off in the stop positions. Because of the built in thermal protection feature, the motor may shut OFF automatically after running without interruption for an extended period of time. Please wait until the motor has cooled off and is ready for operation again, (approximately 10-15 minutes).

   Changing the Set STOP Position
   Press the limit switch adjustment button that lies in the direction of rotation. Bring the curtain into the desired STOP position. Release the limit switch adjustment button by pressing it down again.



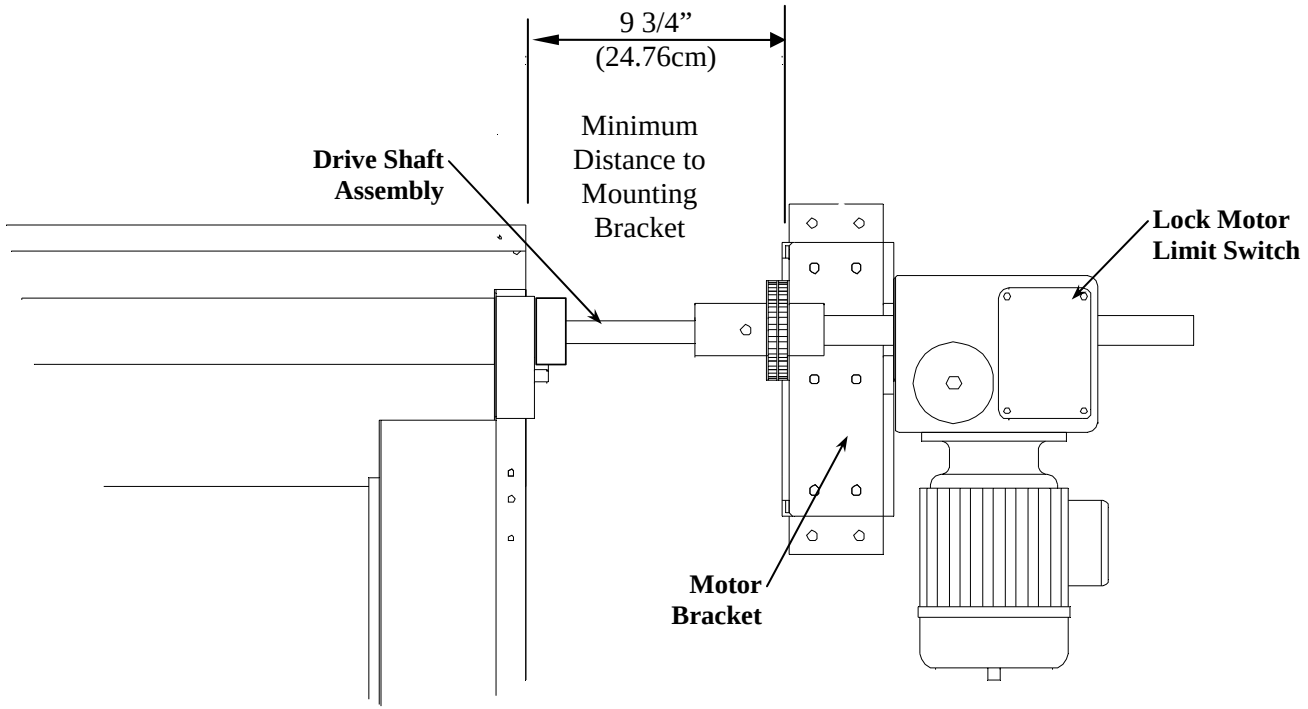


IMPORTANT! Diagram above shows two separate unitized systems with motor mounted between systems. When two systems are installed, separate backplates by 2’-2” (66.04 cm) to allow for installation of motor.

Lock Motor Mount

NOTE: Install motor mount after drive pipe has been positioned in guide brackets.

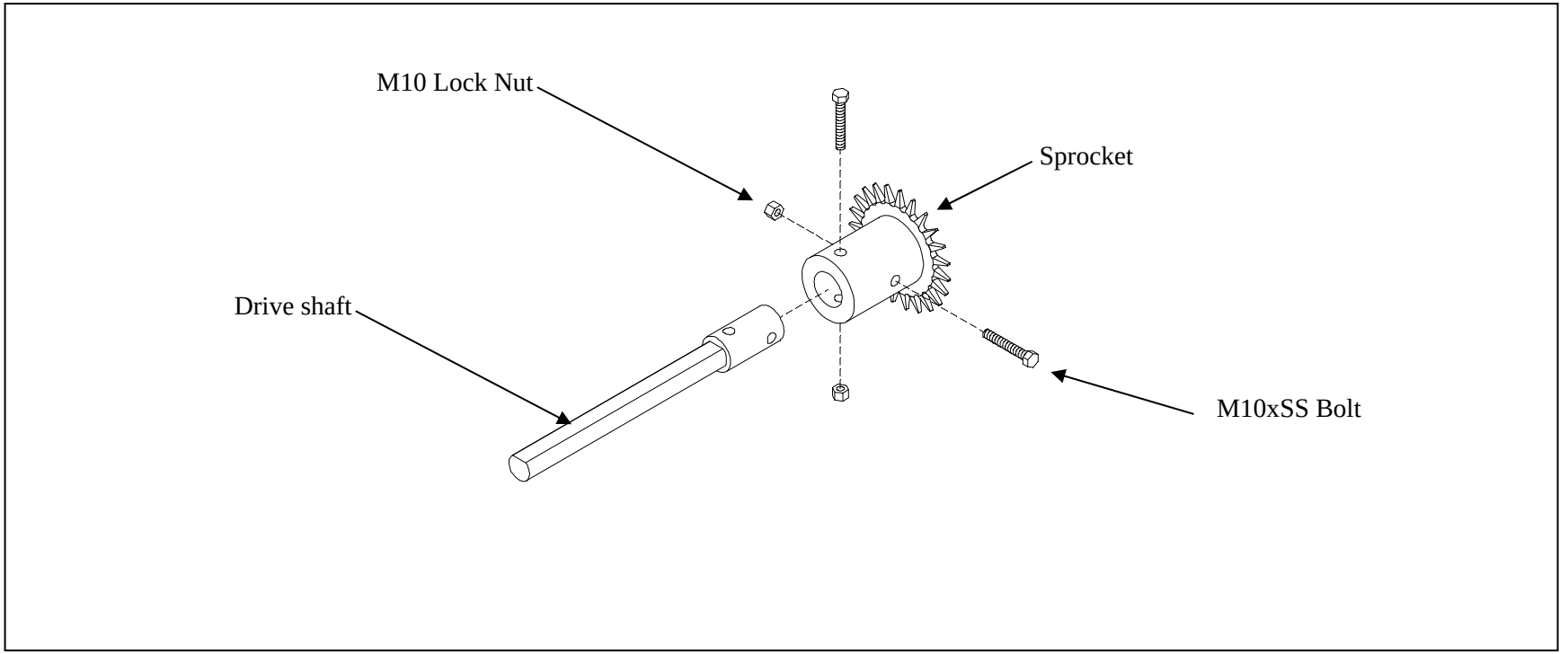
1. Attach (2) mounting bracket braces to sides of mounting bracket with #14x1 Tek screws.
2. Attach mounting bracket assembly to fasten motor mount to mounting bracket with 3/8-16x1” screws and 3/8-16 lock nuts provided.
3. Position top edge of motor mount bracket exactly 19/32” (1.51 cm) from top edge of backplate.
4. Align slot of motor mount bracket in line with end of drive pipe.
   IMPORTANT! Make sure that sprocket of motor will align exactly with the sprocket on end of drive pipe.
5. With motor mount properly aligned according to steps 1 and 2, attach to framing with 3/8x2” Lag Screws



For Mounting Lock Motor on End of System

1. On the right hand end of the system, position left hand side of Mounting Bracket 9 3/4" minimum from Back Plate to account for Cover Splice on end of system.

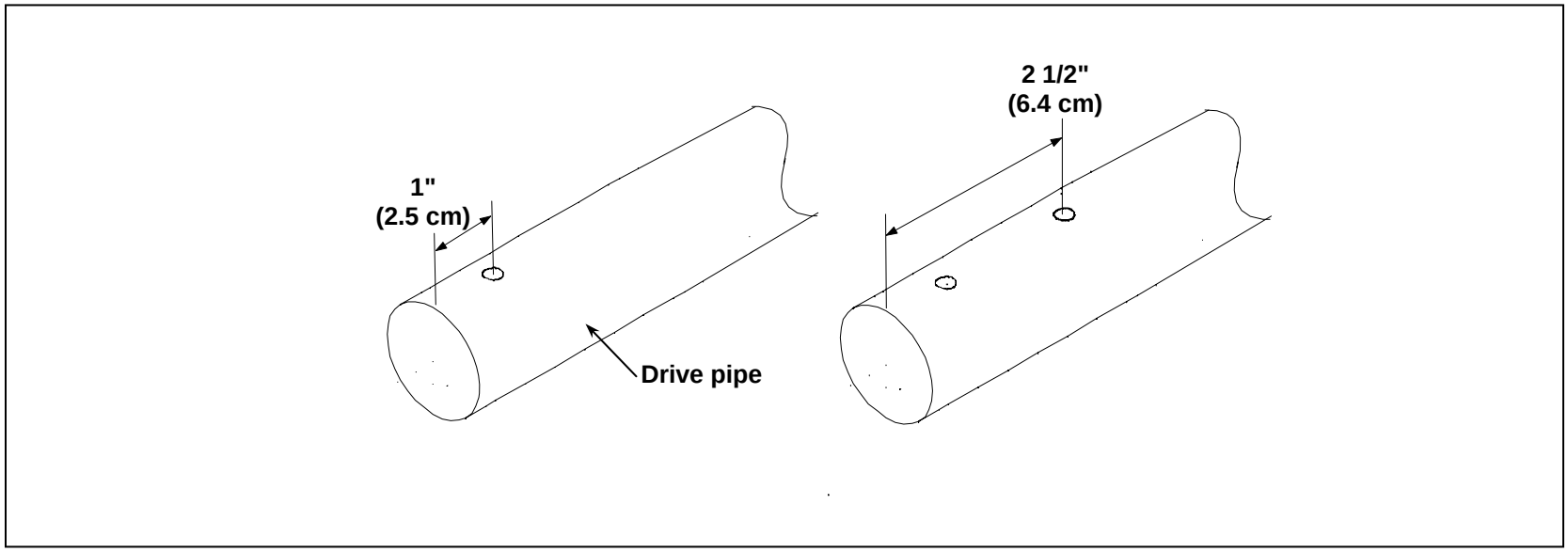
2. On the left hand end of the system, position right hand side of motor 9 3/4" minimum from Back Plate to account for Cover Splice on end of system.



Drive Pipe Connection for Lock Motor

1. Fit end of drive pipe into sprocket (a). IMPORTANT! Make sure that end of drive shaft is flush with end of sprocket.

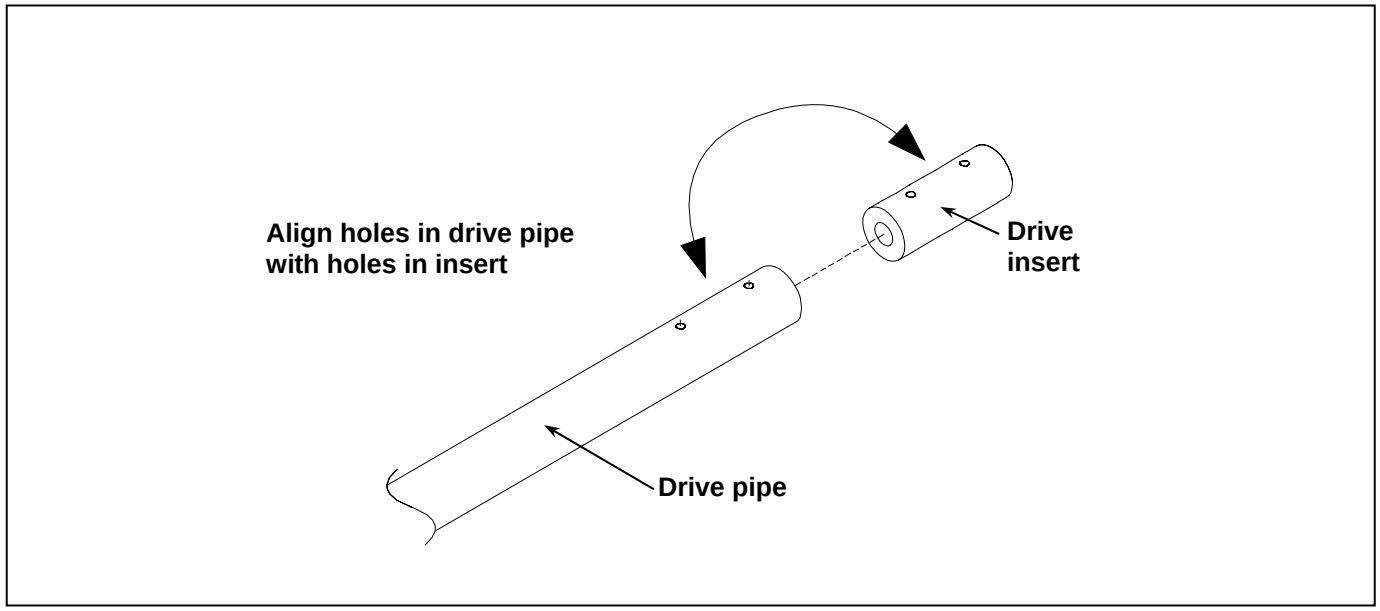
2. Weld pieces together (b).



Drill Holes in Drive Pipe for Drive Insert

1. Measure 1" (2.54 cm) from one end of drive pipe. Mark pipe. Measure 2 1/2" (6.35 cm) from end of pipe in line with first mark. Mark pipe.

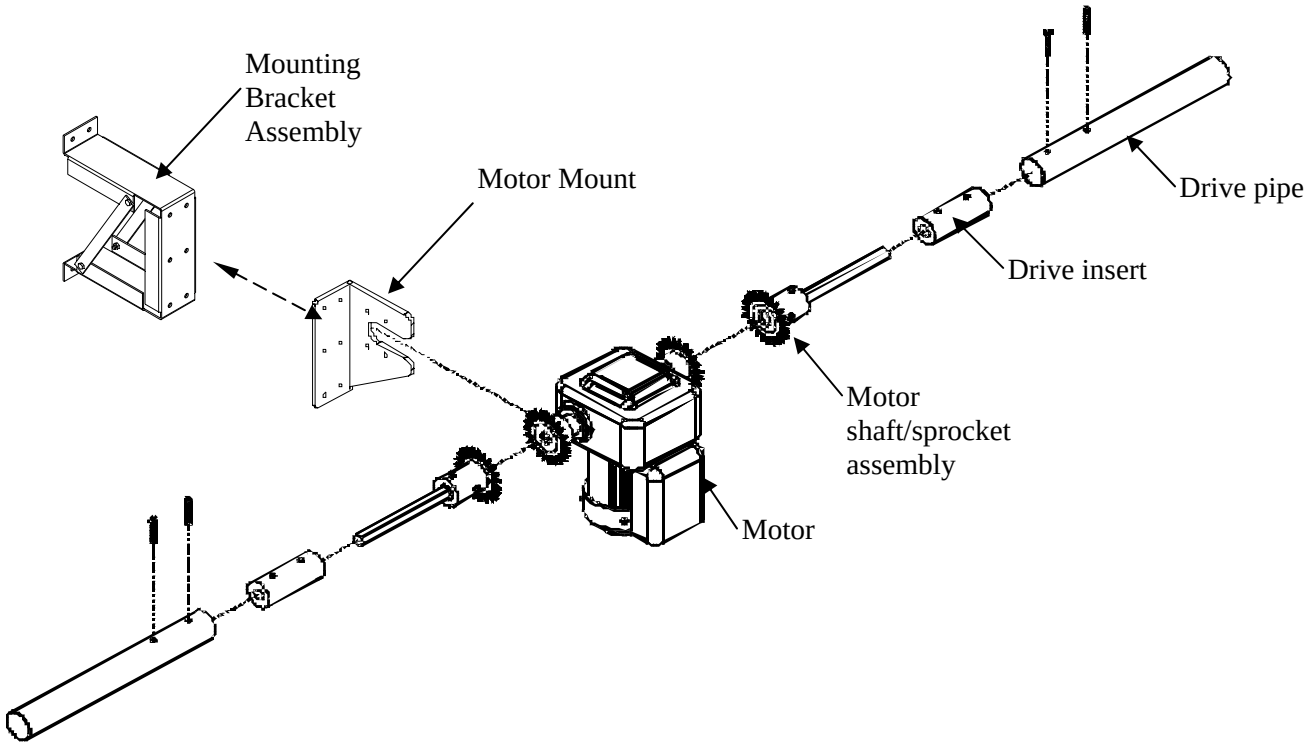
2. Drill a 3/8" (0.95 cm) hole in pipe at each mark.



Lock Drive Insert Assembly

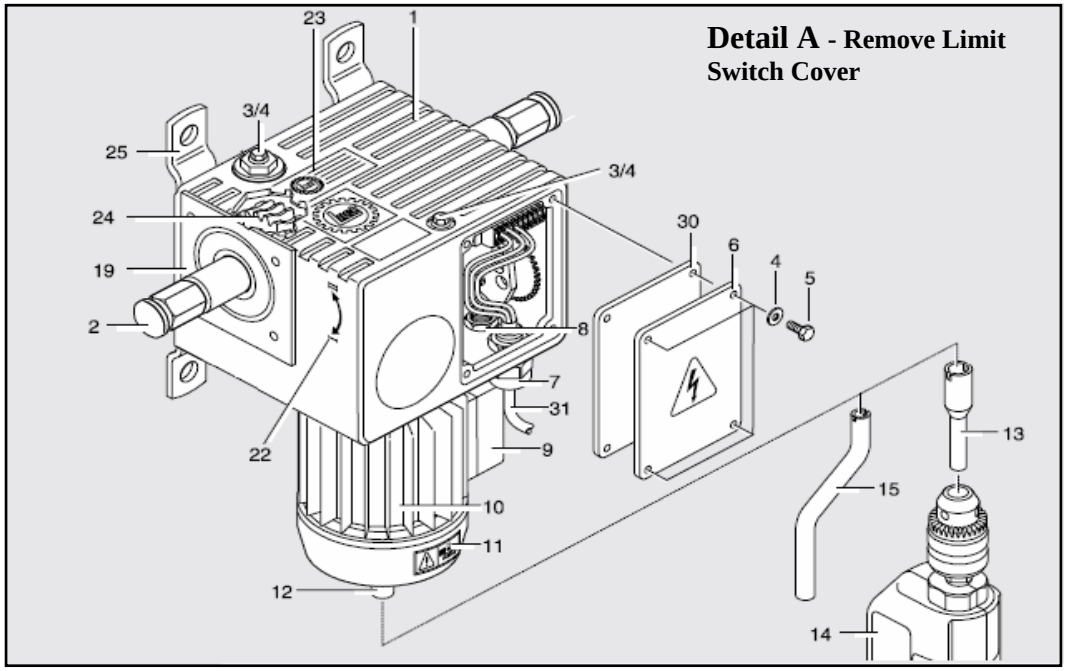
1. Slide the drive pipe assembly into the end of the drive pipe. Align the holes of the drive insert with holes of drive pipe.

2. Fit drive insert flush with end of drive pipe.

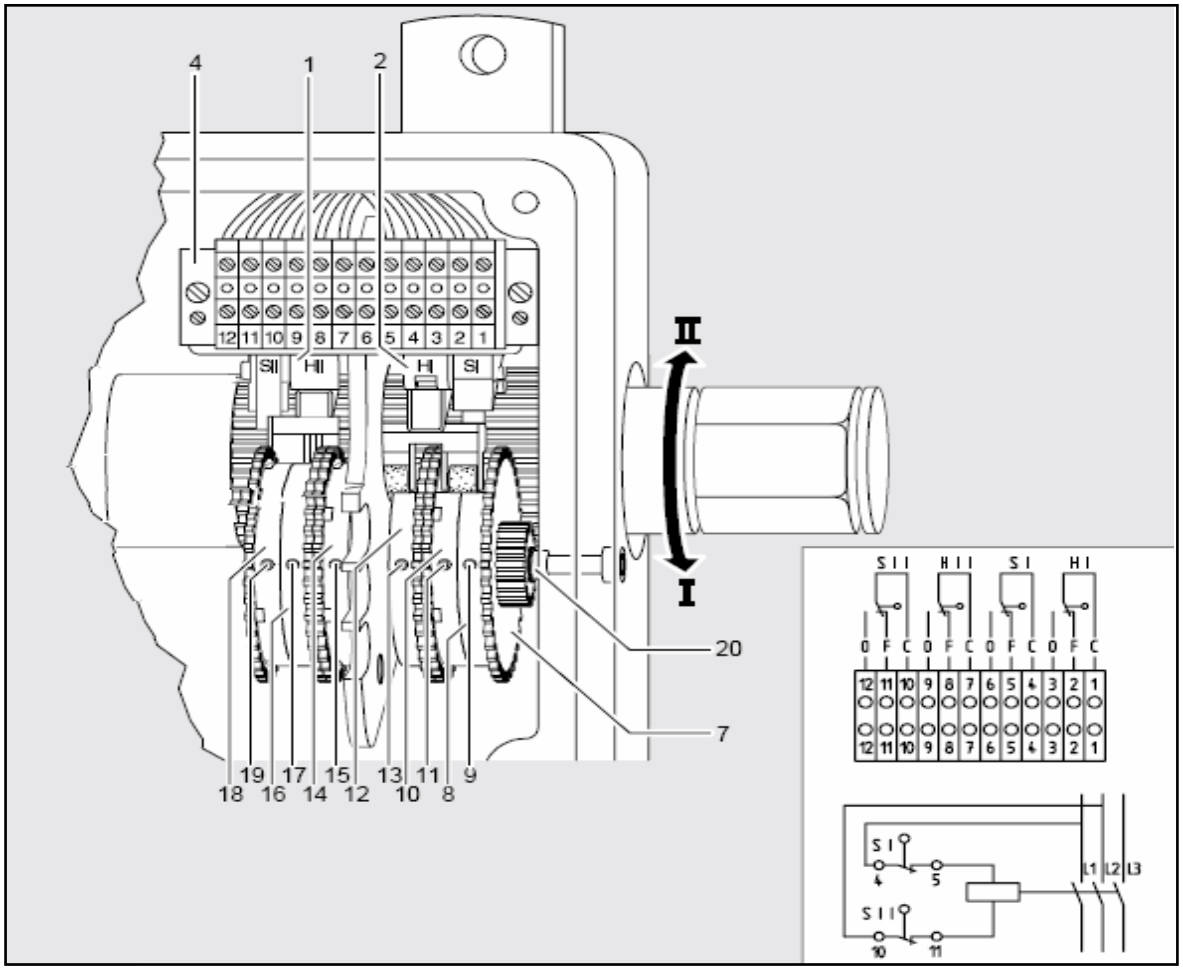


Installation of Lock Motor

1. Refer to Section -'Placement of Drive Pipe into Guide Brackets' for instructions on installing the drive pipe into the guide brackets.
2. Insert the drive shaft / sprocket assembly into center hole of drive insert. Rotate drive shaft to align flat on shaft with two screw holes in drive insert.
3. Attach the Lock motor to the motor mount with the four bolts provided. Tighten the bolts securely.
4. After attaching the Lock motor to the motor mount, bolt the motor mount to the mounting bracket with 3/8-16 x 1” hex bolts and 3/8-16 nuts. Attach the mounting bracket to the filler with 3/8 x 2” lag screws. If necessary, loosen the two screws holding the drive insert and the drive shaft. Slide the drive shaft to achieve proper spacing between the sprockets. Tighten the set screws securely.
5. Connect the sprockets together with the double link chain



Reference to Items in Detail A – Remove Limit Switch Cover			
Item	Description	Item	Description
1	Drive Unit	15	Hand Crank
2	Output Shaft	16	Not Used
3	Not Used	17	Not Used
4	Copper Sealing Ring	18	Mounting Bore
5	Double Chain	19	Chain
6	Limit Switch Cover	20	Chain Coupling
7	Connector	21	Drive Pipe Shaft
8	Not Used	22	Direction Arrow
9	Terminal Box Cover	23	Not Used
10	Electric Motor	24	Worm Wheel
11	Warning Label	25	Bracket
12	Motor Shaft	26	Not Used
13	Adaptor	27	Not Used
14	Electric Drill	30	Seal

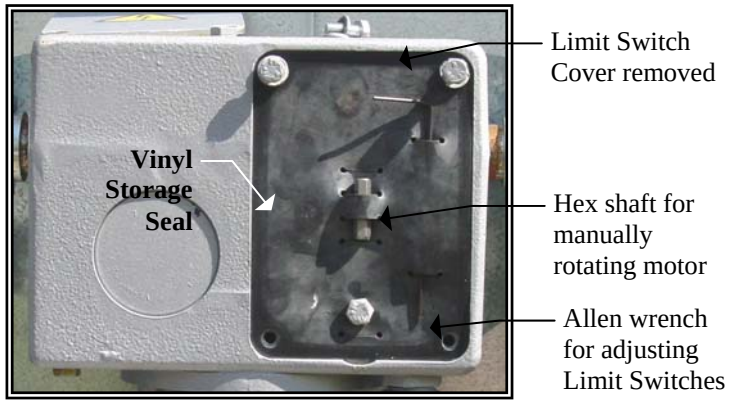


Reference to Items in Detail B – Adjust Limit Switches							
Item	Description		Item	Description		Item	Description
1	Switch HII		8	Setting Ring		15	HII Setting Ring Screw
2	Switch HI		9	SI Setting Ring Screw		16	HI Setting Ring
3	Not Used		10	HI Setting Ring		17	HII Setting Ring Screw
4	Terminal Rail		11	HI Setting Ring Screw		18	SII Setting Ring
5	Not Used		12	Setting Ring		19	SII Setting Ring
6	Not Used		13	HII Setting Ring Screw		20	Not Used
7	Not used		14	HII Setting Ring			

To set the Limit Switches, locate the Lock Motor Control Box. See Detail C. NOTE: Items noted in brackets [ ] in this section can be found in Detail B.

1. Unscrew the limit Switch Cover and locate the Allen Wrench and the hex shaft packaged in the Vinyl Storage Seal. See Detail D.

2. Remove the Vinyl Storage Seal and locate the six Hex Adjusting Screws on the Ring Screws. See Detail E.

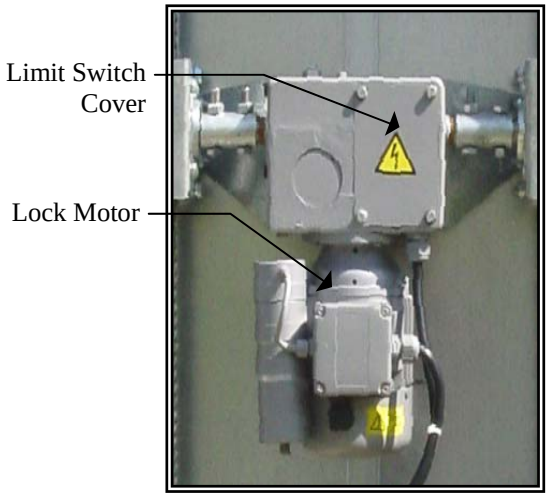


Detail D – Remove Limit Switch Cover

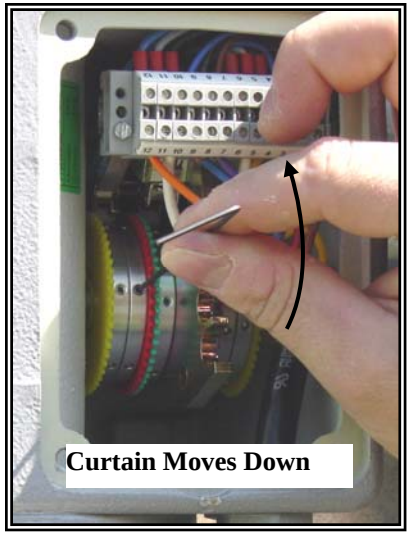
3. Run the curtains to the bottom position by using a Crank or Drill [Item 14 Detail B] or by manually turning the one of the three Left Adjusting Screws with the Allen Wrench from the Vinyl Seal as illustrated in Detail E. NOTE: If turning the drive with drill and adaptor, run to end position carefully (very slowly). Maximum drive speed is 1400 rpm.

   NOTE: Electrical power must be applied and Limit Switches must be properly wired for curtains to operate by moving the Setting Rings.

4. With the curtain at the bottom limit, turn the Left Limit Switch's 3 Setting Rings until the Limit Switch Roller [22] snaps into place in the Switch Groove [21]. See Detail F.



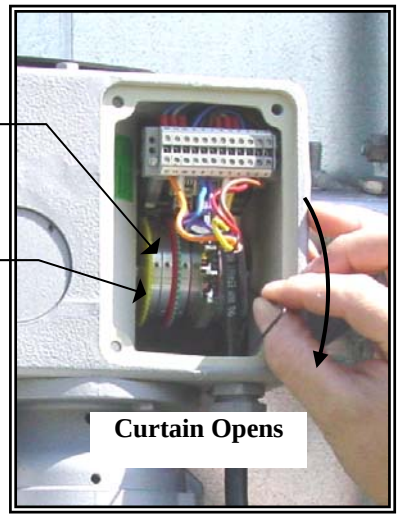
Detail C – Lock Motor



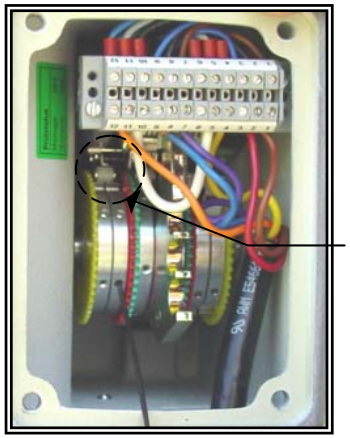
Detail E – Manually Close Curtain

5. When the three switch grooves [21] are in line, the three Adjusting Screws in the adjusting rings [9, 11, 13] are also in one line. Tighten the screws in the setting rings [9, 11, 13] using a 1.5 mm hex wrench. Torque to 1.3 to 1.5 in.-lb.

6. Open the Curtain. See Detail G.



Detail G – Manually Open Curtain



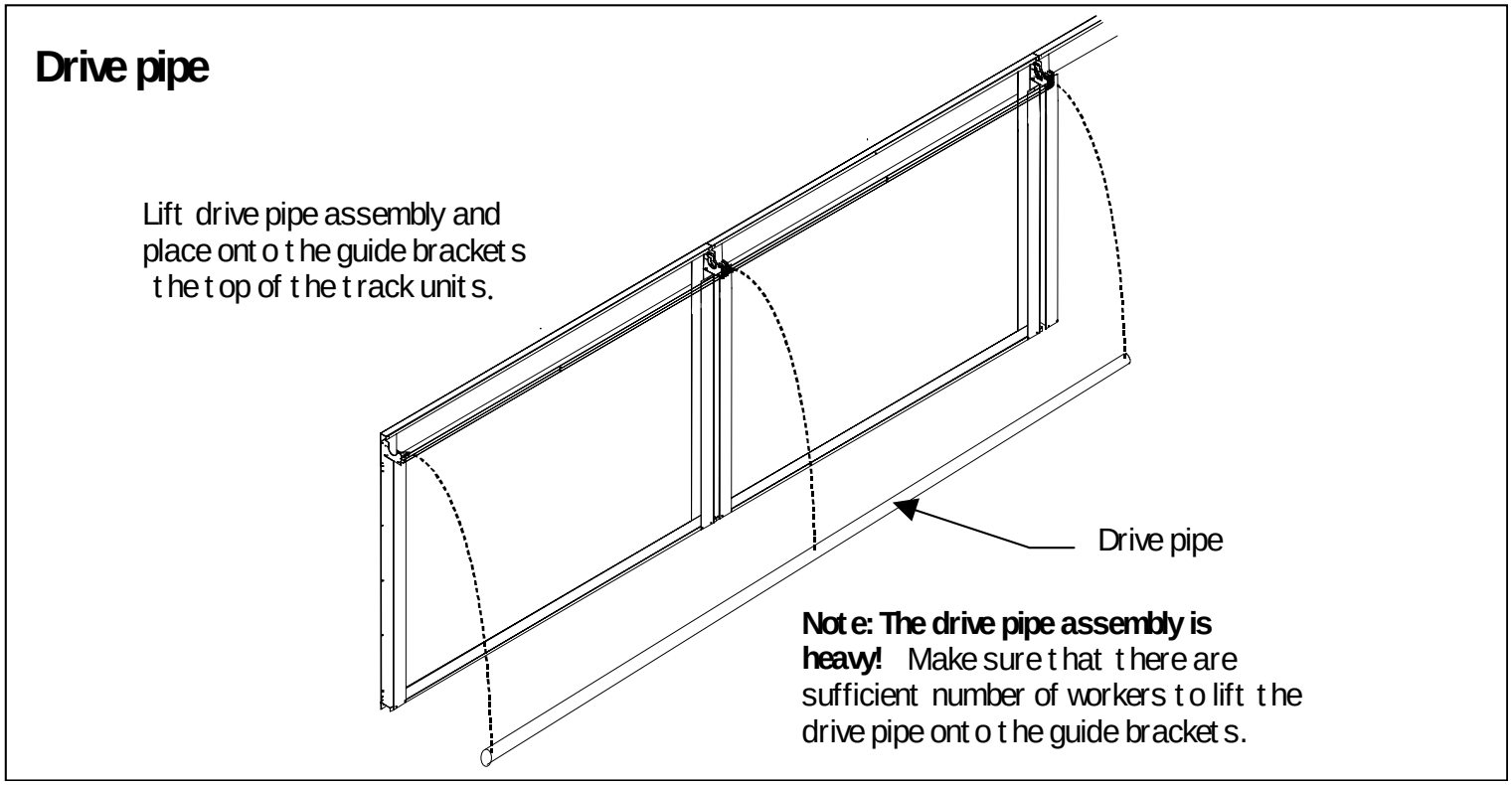
Detail F – Left Limit Switch Roller

7. Turn the 3 Setting Rings of the Right Limit Switch like in Step 4.

8. Tighten screws in setting rings [15, 17, 19] to 1.3 to 1.5 in.-lb.

9. Verify the operation of the Limit Switch Settings by operating the curtain from the controller.

10. Replace the tools in the Vinyl Seal and replace the Limit Switch Cover [6] and Seal [30].

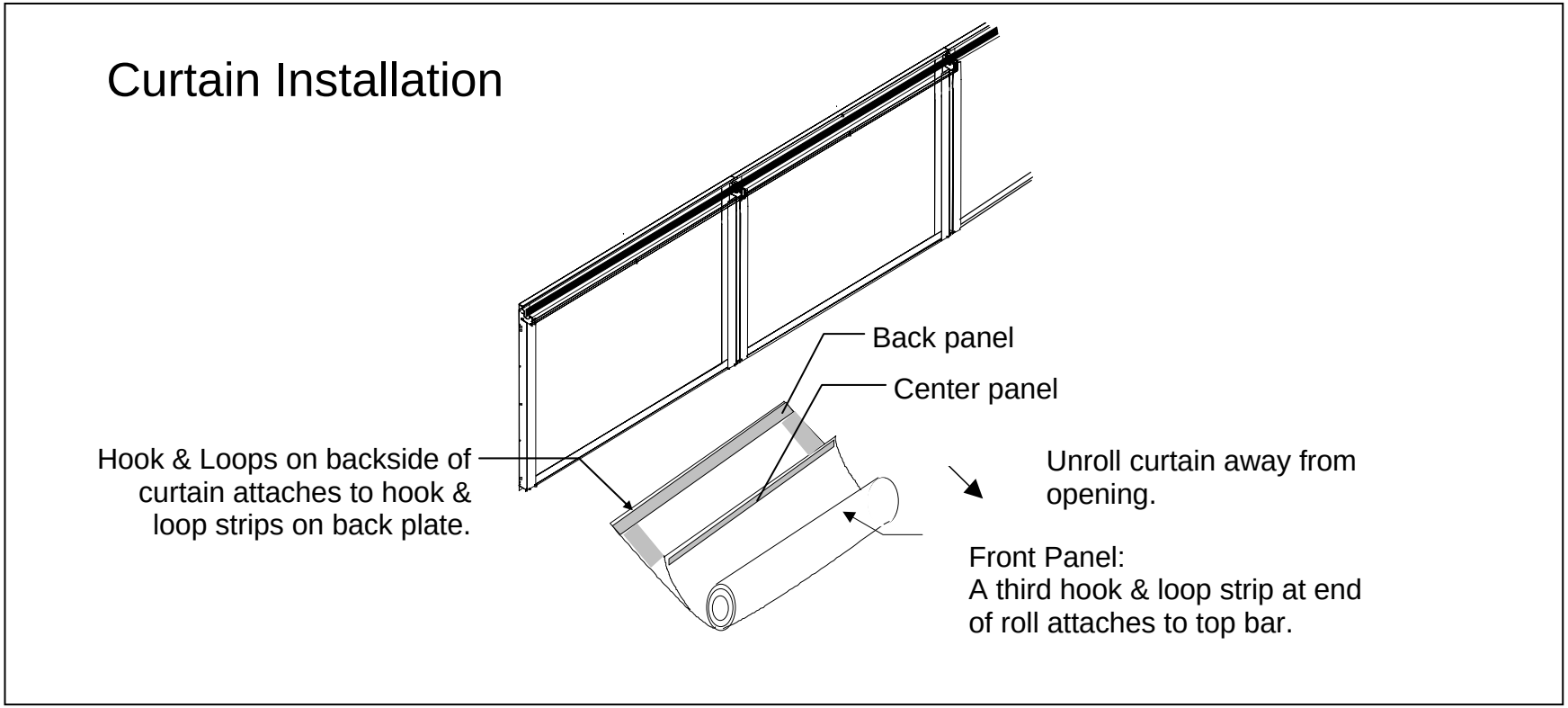


Placement of the Drive Pipe into the Guide Brackets if Assembled on the Ground

1. After fastening pipe sections together and installing motor, lift drive pipe assembly and place it onto guide brackets at the top of the track units. and installing motor, lift drive pipe assembly and place it onto guide brackets at the top of the track units.

   NOTE: The drive pipe is heavy and will require several workers to lift it into position.
   CAUTION! Do not attempt to lift the drive pipe without a sufficient number of workers.

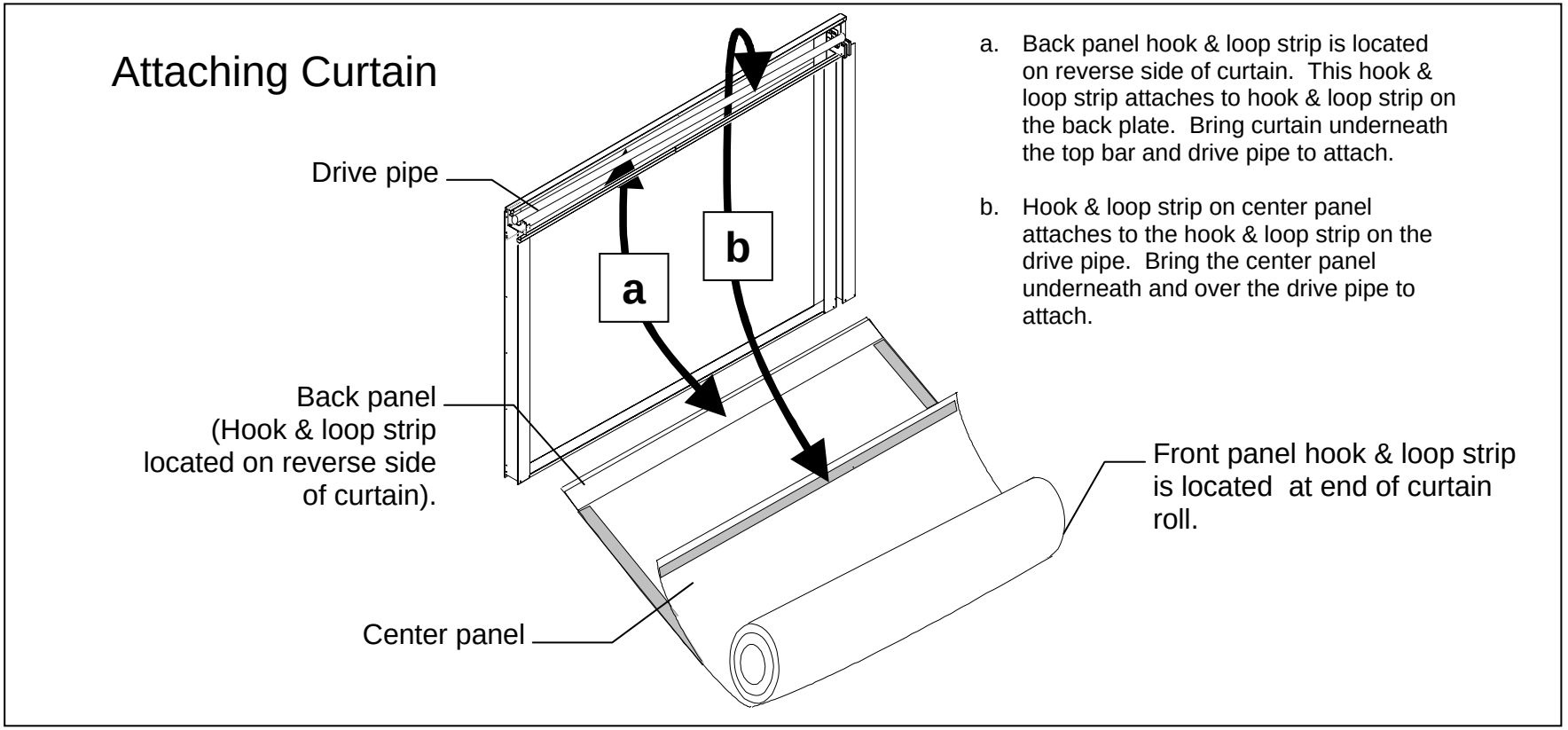
2. For installation of very long drive pipes it may be necessary to leave one or more junctions of the drive pipe unattached to create lighter drive pipe sections that can be more easily lifted onto the guide brackets. Connect the loose junctions with pop rivets after the drive pipe is placed onto guide brackets.



Curtain Installation

A RollSeal curtain has three panels: a back panel, a center panel, and a front panel. The curtain has hook & loop strips attached to the edges. These hook & loop strips interlock with the hook & loop strips laminated on the track units, drive pipe, and top bar. The curtain is held taut by two cylindrical weights that fit into the folds of the curtain. This design creates a seal when the curtain is lowered, and enables the unit to be raised by a single drive.

1. Each curtain is shipped in a roll. Lay the curtain roll on the ground in front of each opening so that the curtain unrolls away from the system.
2. Unroll the curtain slowly. (This works best if two workers pull the corners of the curtain). Note that the curtain has three ends with hook & loop strips attached. The panel having 2″ wide hook & loop strips on the top of the curtain and 1″ wide strips down each side (which offset 2.5″ from edge) is the back panel that attaches to the back plate. The end having 1″ hook & loop strips on the top and no hook & loop strips running down the sides is the center panel which will attach to the drive pipe. The panel with the 1″ strip running at top and 2″ strips on the sides is the front panel. The front panel attaches to the top bar.



3. Pull the back panel (panel with largest hook & loop strip) upward underneath the drive pipe and attach to the hook & loop strips on the back plate. Align top of curtain even with top of hook & loop strip on back plate. Stretch the curtain taut. Press curtain firmly to secure.

4. Locate the center panel and attach the hook & loop strip on the edge of this center panel to the hook & loop strip on the drive pipe. Pass the center panel underneath the drive pipe before securing hook & loop strips to the drive pipe.

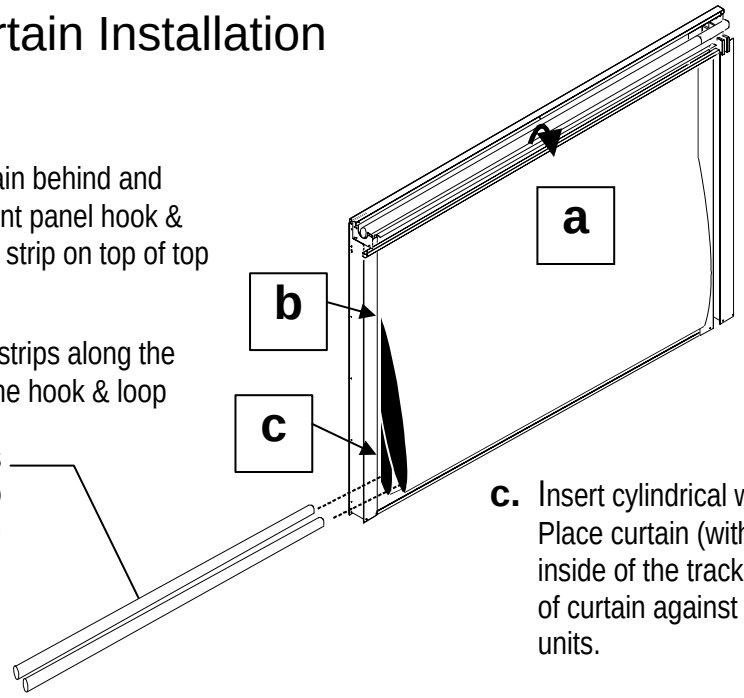
5. The front panel of the curtain passes underneath the top bar. The hook & loop strip of the front panel attaches to the hook & loop strip on the top edge of the top bar.

6. The curtains also have hook & loop strips running along the sides. These strips attach to the back edges of the track units, and inside the front edges of the track units. Press these hook & loop strips firmly to secure the curtain.

Completing Curtain Installation

a. Bring front panel of curtain behind and over top bar. Secure front panel hook & loop strip to hook & loop strip on top of top bar.

b. Secure the hook & loop strips along the edges of the curtain to the hook & loop strips on the track units.



c. Insert cylindrical weights into folds of curtain. Place curtain (with weights installed) into the inside of the track unit. Press hook & loop strips of curtain against hook & loop strips on the track units.

7. After the curtains are secured to the hook & loop strips on the sides of the track units in step 6, insert the tubular weights into the folds of the curtain. This will pull the curtain taut as the hook & loop strip is pressed securely.

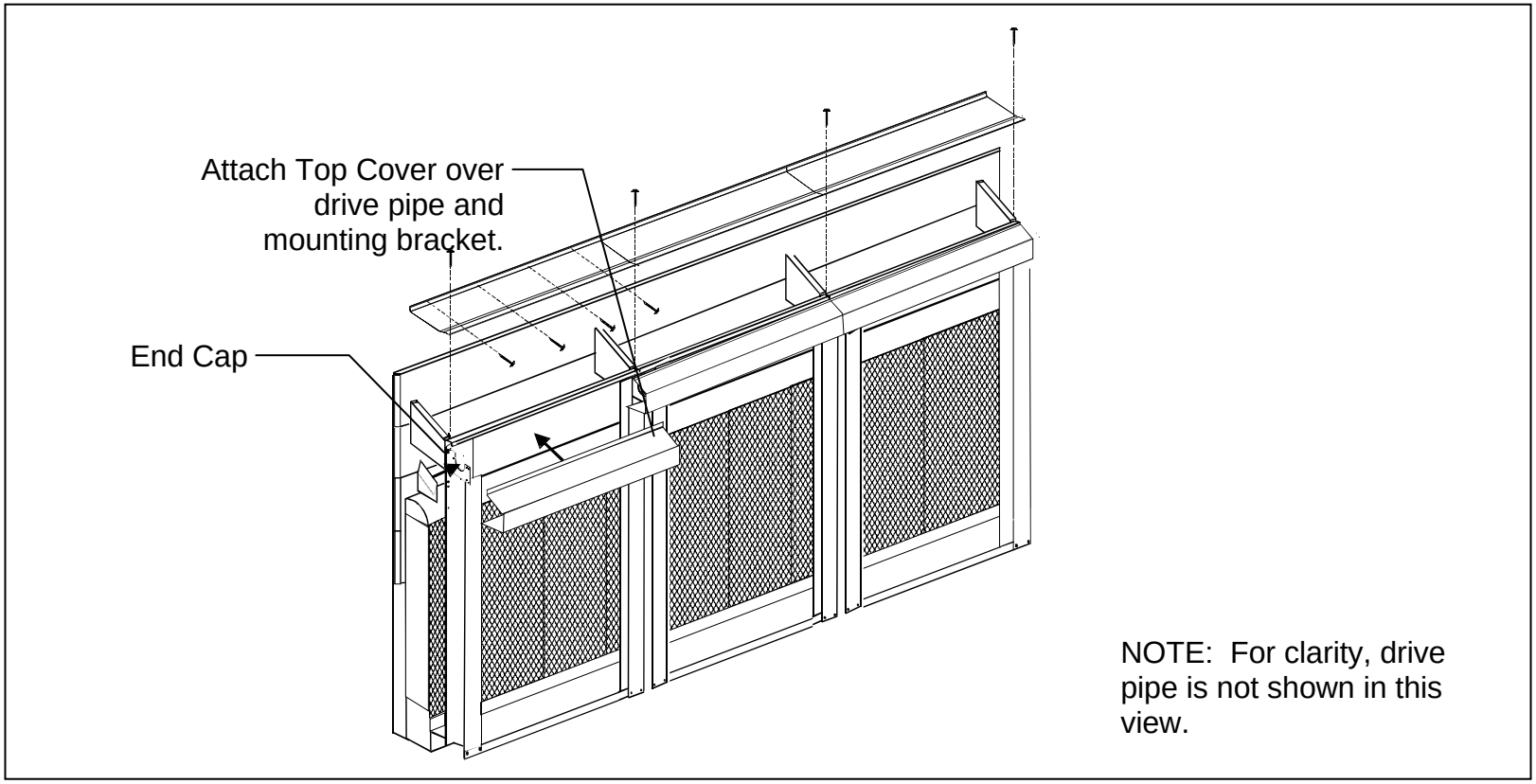
8. Repeat steps 1 through 7 for all side wall curtain systems.

9. Install top covers. Attach top covers to guide brackets with nuts and screws provided.

10. Install electrical power to the tubular motor. See Section “Electrical Wiring Diagram”.

11. Work out any bulges or creases in the curtains by unzipping and zipping the hook & loop strips as required to achieve a tight fit.

12. This completes curtain installation.



Top Covers and Top Flashing

After completing the curtain installation, and setting and testing the limit switches on the motor, install the top covers.

1. Place top covers as shown.
2. Attach top covers to back plate with sheet metal screws.
3. Attach end cap to each end of curtain system as shown.
4. Fit Top Flashing to top of support brackets.
5. Bolt back flashing to stringers with 1/4x1 ½ hex lag screws.
6. Attach flashing to top of support bracket with #14x1 tek screw located 1/2″ from edge of bracket.

Operation

Initial Start-UP

When the pads are new, their slick surfaces will prevent the fast soaking that will happen with older pads. For this reason, it is important that the first time new pads are used, allow the pump to run for one or two days continuously. This will "soak-in" the pads, and allow faster start-up later. This one to two days is called the "break-in" period.

At the end of the "break-in" period, inspect pads carefully. Any dry streaks will indicate an inconsistent water distribution. If you find these dry streaks, raise the splash guard, and run a pipe cleaner, or small dowel into the holes in the spray line to clear any clogged holes. Since this section of pipe should not be glued, you may re-align the spray line if needed.

Normal Operation

Under normal conditions, the pump should run constantly when air is being drawn through the pads. If outside conditions are not warm enough to run the Unitized System constantly, it may not be warm enough to run it at all.

While the system is operating, look for signs of scale formation. Scale is a concentration of solids that will "plate" on the surface of the pads if the water contains too many impurities. If scale is noticed, increase your bleed off rate.

If you allow the water level in the reservoir to get too high, the bottom of the pads may stand in water. If the pads are submerged, they will become waterlogged. When this happens, they will lose their rigidity, and begin to break down at the bottom. This will greatly reduce pad life, and should be avoided.

Extending Pad Life

As you use the Unitized System, you will notice the need for good preventive maintenance. Algae growth, scale (hard crusty deposits), and dirt accumulation are typical problems associated with poor maintenance. Maintaining the Unitized System is very simple. It takes a small amount of time and effort. If you follow the guidelines below, your pad and gutters will last much longer, and be much more efficient.

Limit On-Off Cycling

Many farmers have seen greater cooling effects from evaporative cooling systems when they run the system on a ten minute timer. Although this cooling may give short term improvement of cooling, the pad life is greatly shortened. For this reason, you must choose for yourself which is more important: pad life, or greater cooling.

When the system is started and stopped every ten minutes, the pads are wetted, and dried out six times per hour (Up to 144 times per day). Each time the pads dry, the minerals in the water remain on the pad in greater concentration. These chemicals and minerals will weaken the pad, and limit the cooling effectiveness.

The Unitized System has a recommended water flow rate for best performance. If this flow rate is maintained, the water flowing down the pad will continuously flush the pad clean. (As only a small percentage of the water will evaporate).

Dry the pads completely each night by turning off the pump and drawing air through the pads with your fans.

Why Bleed-Off Water From The System?

If you have ever left a pot of coffee warming on the coffee maker, you know the two principles at work in evaporative cooling systems. First, as the coffee sits on the warming plate, the level of water in the pot goes down. Second, the remaining coffee gets stronger as the water evaporates.

In your cooling systems, these effects will apply. As water evaporates, no impurities are carried along. This leaves all sorts of minerals, chemicals, and other impurities behind. The concentration of impurities in the reservoir and the system will quickly rise.

As the water is evaporated, the make-up water is added. Since the water still contains impurities, make-up water contributes to the problem. The only way to reduce the concentration is by taking water from the system. Hired-Hand's Unitized System is designed with a bleed off valve in the supply line just past the pipe union on the discharge side of the pump. This valve should be throttled to allow just enough water to escape the system.

The amount of water you should bleed off depends upon water quality in your area. If you have a large amount of impurities, you will need to allow

more water to escape. If you see scale beginning to form on the pads, you will need to increase your bleed off rate.

The best method of determining the bleed off rate is to first find out how much evaporation is occurring. To calculate a rough estimate of your evaporation, multiply the area of pad by the air speed through the pad, by the temperature drop from one side to the other, then divide the final number by 500,000.

For example, if your pad is five feet tall and 60 feet long, an your air speed is 300 feet per minute, and the outside temperature is 95 degrees, and inside temperature is 75 degrees, then you would give 3.6 gallons per minute.

If water is extremely hard-large amounts of minerals, etc. – the bleed off rate should equal evaporation.

If minerals are a small problem, make the bleed off rate from ¼ to ½ the evaporation rate.

For areas with little or no dissolved solids, make the bleed off rate anywhere from 1/10 to 1/4 the evaporation rate.

These values are estimates, so individual rates will vary. Try to keep your water as clean as possible to minimize scale formation on the pads.

Water Distribution

Maintaining even water distribution to the pads is the most important way of extending pad life. If an area of pad does not receive enough water, it will clog or soften.

By raising the water plate on the top of the pads, while the pump is running, you will see the jets of water shooting up into the air. If any of the jets look weaker than the others, it needs to be cleaned out. If at any time you see dry spots or streaks, investigate to see why. Most problems associated with water distribution may be fixed with a good cleaning of the distribution pipe.

Algae Treatment

If algae develops on pipes or on the pipes, it may be necessary to add a water treatment compound to control algae growth. Consult your local agricultural distributor for a recommended water treatment compound.

Cleaning The Pads

1. Shut off pump and clean filter.
2. Completely empty the reservoir of water and silt.
3. Refill reservoir with clean water.
4. If possible, turn off fans. (If this is not possible, run fans at minimum levels).
5. Manually turn on the pumps to run fresh water over the pads for about 30 minutes. Use as much water as possible.
6. Open the ends of the water distribution pipes to flush out debris that could clog the holes. Replace the covers when done. When using silt collection, remove plug and drain the system.
7. Gently hose stubborn deposits from the face of the pads.
8. Completely empty the reservoir to remove all the old algae and dirt that will rinse off the pads.
9. Refill with clean water.
10. Check to make sure that the bleed off is still functioning properly.

Winterizing the System

1. Shut off pump.
2. Close ball valve between strainer and reservoir.
3. Remove strainer cover.
4. Open ball valve between strainer and reservoir. Drain water from system. NOTE: Expect about 70 gallons of standing water per 50 feet of reservoir pipe.
5. Do not replace strainer cover until recharging the system for normal operation.

Hired-Hand Unitized Checklist

Have the right amount of water running over the pad.

Identify and correct leaks in the system.

Reduce the amount of On-Off cycles.

Excessive dust, fumes, and harsh cleaners should be avoided.

Disinfect the whole system once per quarter.

Have the reservoir and pad in the shade if possible.

Allow the pads to dry completely every 24 hours.

Never use phosphate based water treatment chemicals.

Drain the system during extended shutdowns.

Unitized System Replacement Parts

Description	6” Pad System	4” Pad System
BackPlate	0404-4546	0404-4693
8” Pipe Support Bracket	0404-3444	0404-3444
Cover	0403-4555	0403-4555
Drip Rail	0403-3443	0403-3474
System Right Adjustable End	0403-10570	0403-10585
System Left Adjustable End	0403-10571	0403-10586
System Right End Cap	0403-10572	0403-10587
System Left End Cap Bottom	0403-10573	0403-10588
Float Cover	0404-4972	0404-4972
Float Valve Assembly	6450-7598	6450-7598
Float Extension Arm	1009-0102	1009-0102
Float 95 mm Ball	1009-0111	1009-0111
Float Extension Slide Arm	1009-0112	1009-0112
Float 90° Swivel	1009-0109	1009-0109
Float Bracket End	0404-4973	0404-4973
Float Bracket Adjustment	0404-4974	0404-4974
In-Line Pump (60 Hz)	1062-5027	1062-5027
In-Line Pump (50 Hz)	1062-5013	1062-5013
In-Line Pump Support	0404-4436	0404-4436
In-Line Pump Cover	0404-4434	0404-4434
In-Line Pump Base	0404-4435	0404-4435
Sump Pump (60 Hz)	1062-5025	1062-5025
Splash Guard	0403-4548	0403-4548
Splash Guard Splice	0403-4557	0403-4557
Splash Guard Support	0403-4547	0403-4692

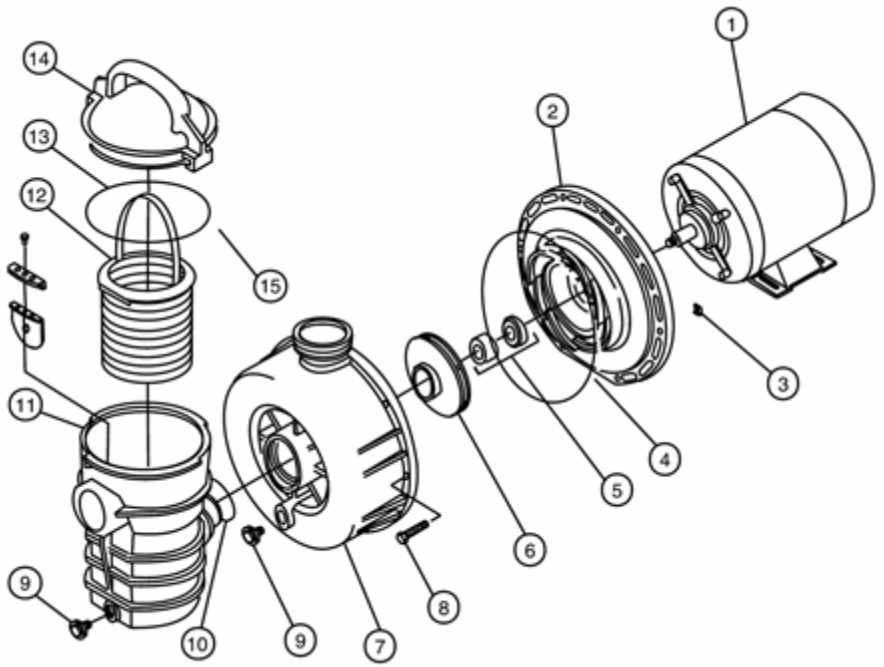
In-Line Filter	1049-0100	1049-0100
Filter Screen	1049-0101	1049-0101
Filter Gasket	1049-0102	1049-0102
Strainer Basket	1062-5017	1062-5017
Back Plate Support	0404-4711	0404-4694
Cover Flashing 8'	0404-6814	0404-6814
Cover Flashing 10'	0404-6991	0404-6991
Cover Flashing 12'	0404-6818	0404-6818

Fitting Description	Part No.
Ball valve 1-1/2"	1009-0101
Ball valve 1"	1009-0103
Elbow 90 1-1/2"	1021-0106
Adapter male 1-1/2"	1021-0109
Union 1-1/2"	1021-0110
Tee 1-1/2" to 1"	1021-0111
Removable Cap 8"	1021-0116
Adapter MGHTx1"	1021-6002
Coupling 1-1/2" to 1-1/4"	1021-6016
Cap 1-1/2"	1021-6017
Barb 5/16"	1021-6022

Mega-Cool In-Line Pump Corner Kits			
Kit	Parts	Part Number	Qty
End In-Line Pump Kit 6518-9580	90° Elbow PVC Fitting	1001-0106	1
	8" PVC Elbow	1021-6004	1
	1-1/2" to 1-1/4" PVC Coupling	1021-6016	2
	8" PVC Pipe	1008-0101	10 ft.
	1-1/2" PVC Pipe	1008-0104	10 ft.
Center In-Line Pump Kit 6518-6581	90º Elbow PVC Fitting	1021-0106	1
	1-1/2" PVC TEE	1021-6024	1
	8" PVC TEE	1021-6003	1
	1-1/2" to 1-1/4" PVC Coupling	1021-6016	2
	8" PVC Pipe	1008-0101	10 ft.
	1-1/2" PVC Pipe	1008-0104	10 ft.

Mega-Cool In-Line Pump Supply Kits	
Kit Number	Description
6618-9500	MegaCool Supply Kit 240v 60Hz End-System
6618-9501	MegaCool Supply Kit 240v 50Hz End System
6618-9502	MegaCool Supply Kit w/o In-Line Pump End System
6618-9503	MegaCool Supply Kit 240v 60Hz Center-Mount w/6” PVC Tee Drip Rail
6618-9504	MegaCool Supply Kit 240v 50Hz Center-Mount w/6” PVC Tee Drip Rail
6618-9505	MegaCool Supply Kit w/o In-Line Pump Center-Mount w/6” PVC Tee Drip Rail
6618-9506	MegaCool Supply Kit 240v 60Hz Center-Mount w/4” PVC Tee Drip Rail
6618-9507	MegaCool Supply Kit 240v 50Hz Center-Mount w/4” PVC Tee Drip Rail
6618-9508	MegaCool Supply Kit w/o In-Line Pump Center-Mount w/4” PVC Tee Drip Rail

Mega-Cool Sump Pump Supply Kits	
Kit Number	Description
6618-9509	MegaCool Tee Tank Sump Pump Kit 240v 60Hz End Mount-System 80 ft.
6618-8500	MegaCool Tee Tank Sump Pump Kit 240v 60Hz 4” Center Mount-System 80 ft.
6618-9510	MegaCool Tee Tank Sump Pump Kit 240v 60Hz 6” Center Mount-System 80 ft.



Mega-Cool Pump Supply Kits		
Item	Part No.	Description
1	1062-8000	3/4 hp, 1 spl, 48 frame Thru-Bolt 115, w/on-off switch
2	1062-8001	Diffuser - 3/4 hp bracket
3	1062-8002	Nut - 10-24 s/s, 6 req.
4	1062-8003	O-ring - 3/16 in. bracket diffuser
5	1062-8004	Seal - 5/8 in. mechanical PS 200
6	1062-8005	Impeller - 3/4 hp
7	1062-8006	Housing - body

Mega-Cool Pump Supply Kits		
Item	Part No.	Description
8	1062-8007	Screw 10-24-1 1/2 in. slotted hex, 6 req.
9	1062-8008	Plug 1/4 in. drain plug black
10	1062-8009	O-ring - 2 1/8 in. i.d. x 1/8 in. dia.
11	1062-8010	Pot
12	1062-8011	Basket w/handle
13	1062-8012	O-ring - lid
14	1062-8013	Lid - universal
15	1062-8014	Pot Replacement Assembly

NOTES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