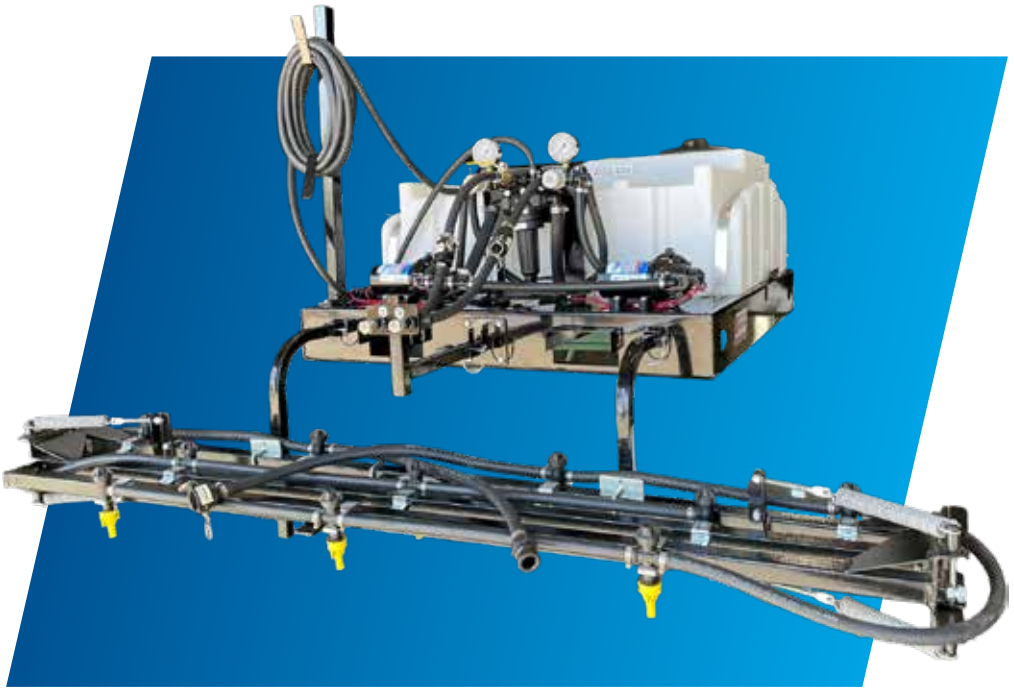
BENCO
SPRAYERS

12' & 18' BOOM SETUP GUIDE



SET UP GUIDE

Rev. 6.24.01

FOR SPRAYER MODELS:
LPSI-B050W, LPSI-B080W, LPSI-B100W
LPSI-B050Y, LPSI-B080Y, LPSI-B100Y

Configuring Your Boom

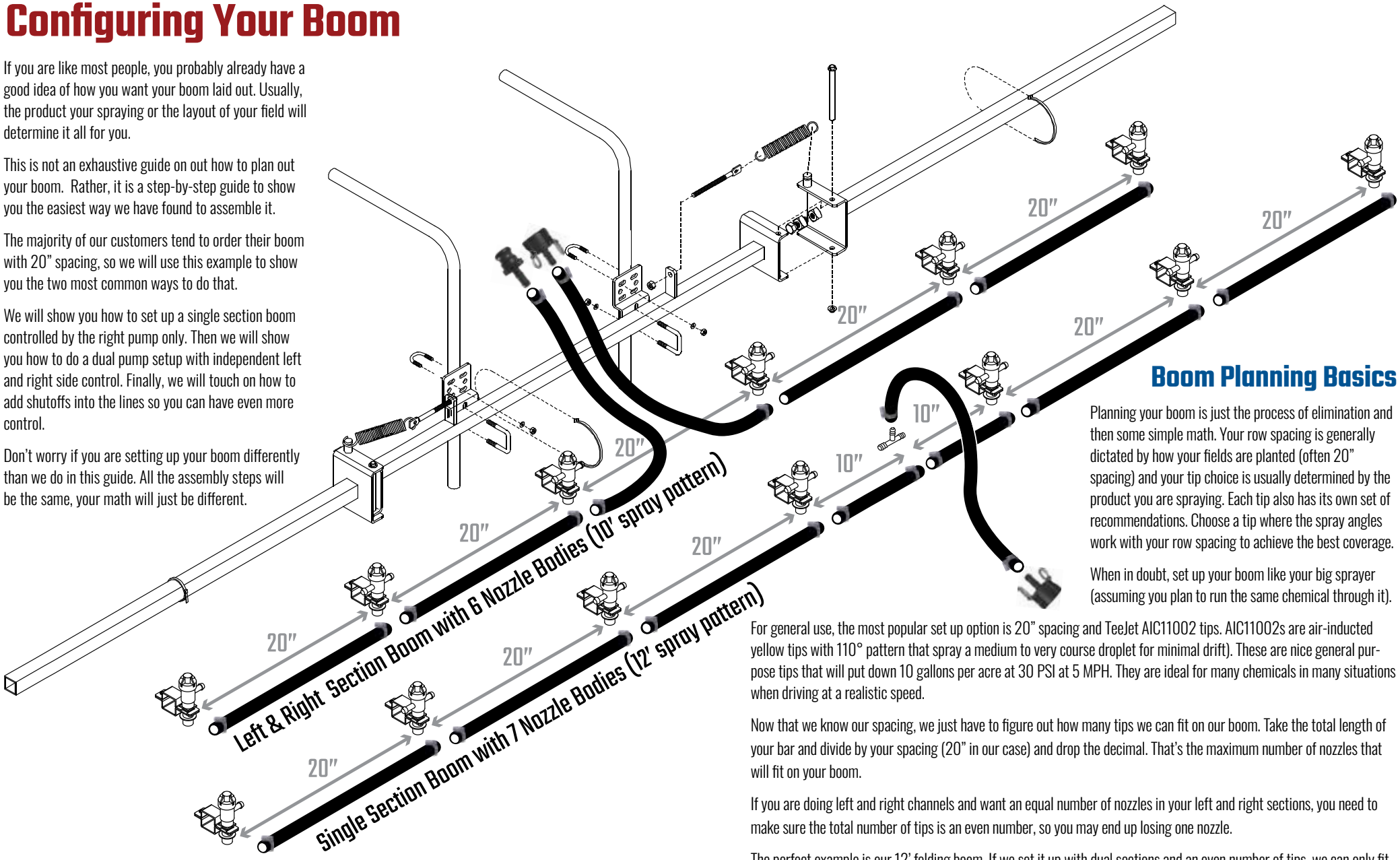
If you are like most people, you probably already have a good idea of how you want your boom laid out. Usually, the product your spraying or the layout of your field will determine it all for you.

This is not an exhaustive guide on out how to plan out your boom. Rather, it is a step-by-step guide to show you the easiest way we have found to assemble it.

The majority of our customers tend to order their boom with 20" spacing, so we will use this example to show you the two most common ways to do that.

We will show you how to set up a single section boom controlled by the right pump only. Then we will show you how to do a dual pump setup with independent left and right side control. Finally, we will touch on how to add shutoffs into the lines so you can have even more control.

Don't worry if you are setting up your boom differently than we do in this guide. All the assembly steps will be the same, your math will just be different.



Tools you will need:

- Tape Measure
- Pencil
- #2 Phillips Screwdriver or 1/4" Nut Driver
- 3/8" socket or wrench
- Utility Knife or hose cutter

Boom Planning Basics

Planning your boom is just the process of elimination and then some simple math. Your row spacing is generally dictated by how your fields are planted (often 20" spacing) and your tip choice is usually determined by the product you are spraying. Each tip also has its own set of recommendations. Choose a tip where the spray angles work with your row spacing to achieve the best coverage.

When in doubt, set up your boom like your big sprayer (assuming you plan to run the same chemical through it).

For general use, the most popular set up option is 20" spacing and TeeJet AIC11002 tips. AIC11002s are air-inducted yellow tips with 110° pattern that spray a medium to very course droplet for minimal drift). These are nice general purpose tips that will put down 10 gallons per acre at 30 PSI at 5 MPH. They are ideal for many chemicals in many situations when driving at a realistic speed.

Now that we know our spacing, we just have to figure out how many tips we can fit on our boom. Take the total length of your bar and divide by your spacing (20" in our case) and drop the decimal. That's the maximum number of nozzles that will fit on your boom.

If you are doing left and right channels and want an equal number of nozzles in your left and right sections, you need to make sure the total number of tips is an even number, so you may end up losing one nozzle.

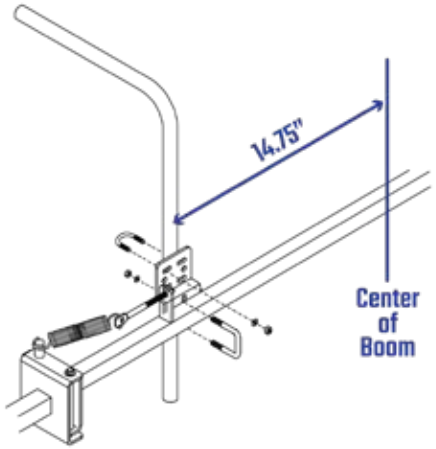
The perfect example is our 12' folding boom. If we set it up with dual sections and an even number of tips, we can only fit six nozzle bodies, giving us 120 inches, or 10 feet of coverage. (6 nozzles X 20" spray pattern per nozzle = 120") But, the boom's bar can actually accommodate 7 nozzle bodies, giving us a maximum of 140 inches of coverage, or 11.67 feet. (7 nozzles X 20" spray pattern per nozzle = 140")

Either way, the boom itself is the same, but one is considered a 10' boom and one a 12' boom. The size of the boom is measured by the total spray pattern, not the physical bar.

Assembling Your Boom

Step 1: Mount the Boom for Assembly

To minimize the total amount of cursing during later assembly steps, we recommend you start by mounting the boom to the brackets, then attaching it to the sprayer to hold it off the ground for you. Make sure you have plenty of room in your work area to fold and unfold the boom's arms completely, as you'll be doing this several times during the install.



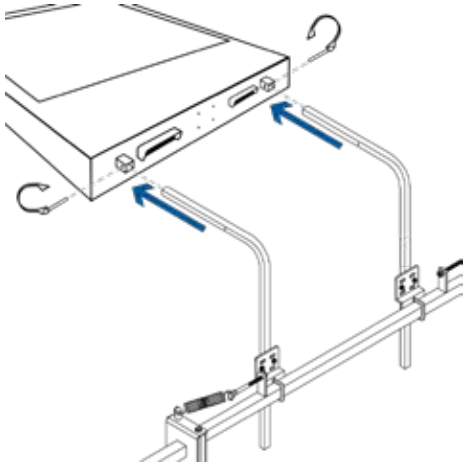
Attach the Bracket

The boom will come mostly assembled. There will be two brackets and four U-bolts in a bag taped to the frame. All you have to do is mount the boom to the support bracket using the larger of the supplied U-bolts. Then attach the mounting arms to the support bracket using the other set of U-bolts.

Measure and mark the middle of the central boom section. The mounting holes in the sprayer for the boom mounts are 29.5" apart, so measure 14.75" on either side of this central point and attach each bracket to the central boom section.

Now that the brackets are properly centered and spaced, attach the mounting arms to the bracket using the smaller set of U-bolts.

You want the U-bolts to be snug enough to hold, but loose enough you can still wiggle them into position a little. Things won't be straight or level right now, and that's ok.



Mount the Boom to the Sprayer

Pick up the boom and insert it into the mounting tubes in the sprayer and pin it in place. This first time may generate some choice words as you get everything lined up.

Once you have the boom pinned in place, adjust the arms so they are as perfectly vertical as possible and tighten down the U-bolts on the cross bar to lock it in place.

If you are installing everything right in your UTV, Now may be a good time to level the boom and get your height adjusted. Even if you have us assemble the booms for you, they will still need height adjustment once mounted in your vehicle.

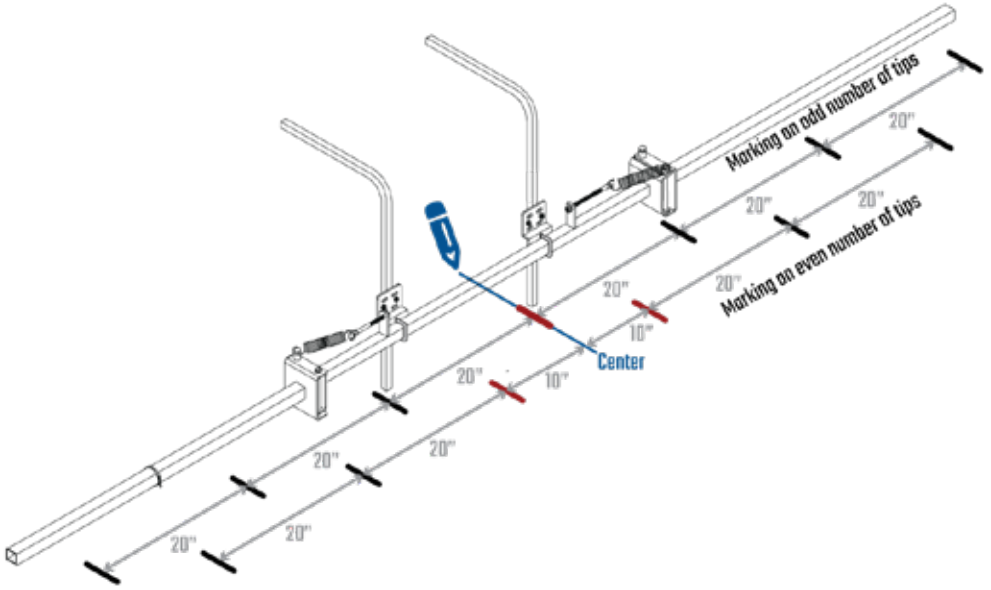
At 20" spacing, 110° tips (most common) want 20" of ground clearance for ideal overlap and coverage. 80° tips like 30" of ground clearance for the best coverage.

Once properly adjusted and tightened, the boom keeps it's adjustments pretty well. It's worth taking a little extra time to get the mounting brackets squared up now. Once adjusted, taking the boom on and off is a breeze.

Assembling Your Boom

Step 2: Plan Your Spray Pattern

Now that the the boom is securely mounted, we can start figuring out the placement of our spray tips and the coverage pattern of the entire spray boom. We are using 20" spacing, which is the most common, but adjust your widths to match the correct row spacing for your needs. The methods for setting up a 12' or 18' boom are all the same.



Marking the Boom for an odd number or tips

When marking your boom, extend the arms full and start at the center of your bar, where you marked earlier. Start marking out your nozzle body mounting points based on your row spacing (20" in our case). If you are adding an odd number of nozzles, your first nozzle will be directly in the center of the bar. Work out ward from the center on each side, marking every 20" on center until the bar is fully marked.

Marking the Boom for an even number or tips

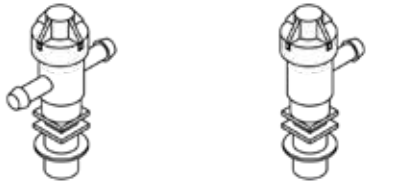
If you are setting up an even number of nozzles, start at the center of the boom again, but this time measure out 1/2 the row spacing on either side (10" in our case). This will give us our first two nozzle body mounting points and we can work outward from there, marking for nozzle bodies at our row spacing (20" in our case).

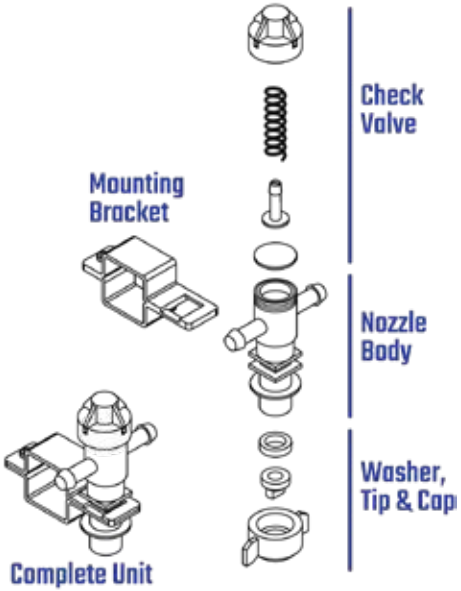
Assembling Your Boom

Step 3: Attach Your Nozzle Bodies & Tips

Now that everything is marked, this job is a breeze. Each nozzle body will come with a metal bracket to hold it in place. It is a simple one-screw mounting process.

You will have two styles of nozzle bodies that come with your boom, “L” bodies and a “T” bodies. This refers to their hose barbs. “L” bodies only have 1 hose barb and look like an upside down capital L. They go on the end of the boom with the hose barb facing the center. The “T” bodies have hose barbs sticking out both sides and transfer water through them to the next nozzle body. These all go in the middle of the boom with the hose barbs parallel to the boom arm.





Attach the brackets and nozzle bodies

Attach the brackets where you have them marked out on the boom. Center the brackets on your marks at 20” intervals.

Use the a L nozzle body on each end and the T nozzle bodies for all the tips in the middle of the boom.

Attaching them is simple. Loosen the screw at the back of the bracket and slide it over the bar. Usually, you will have the bracket arm facing the rear, but you may find when you fold the boom there are interference issues and you need to rotate the bracket to face forward. Either is acceptable.

While the screw is still loose, slide the top and bottom open like a scissors, opening the square area enough to insert the nozzle body.

Drop the nozzle body into the bracket so that the square hole in the bracket closes in between the two square ledges molded onto the nozzle body. Be sure the hose barbs on the nozzle body are running parallel to the boom.

Tighten the screw on the bracket to lock everything in place.

Close and open then boom as you are adding the brackets to make sure the boom folds nicely without interference. Keep in mind there will be hoses running between each nozzle body as well, so things could get crowded.

Attach your tips

Secure the caps to the nozzle bodies by simply pushing the cap onto the bottom and twisting 1/4 turn.

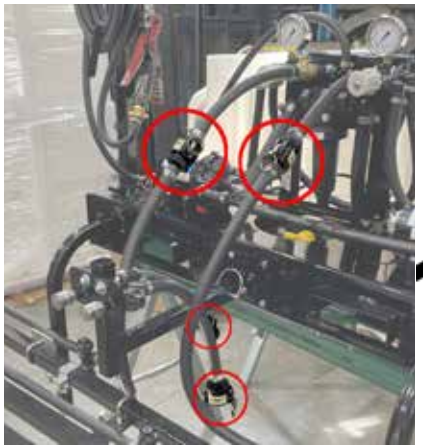
We usually send one-piece caps. If you have separate tips and caps, you may need to insert the nozzle into the cap and add the Gasket (see illustration). Push the assembled cap onto the nozzle body and rotate 1/4 turn like above.

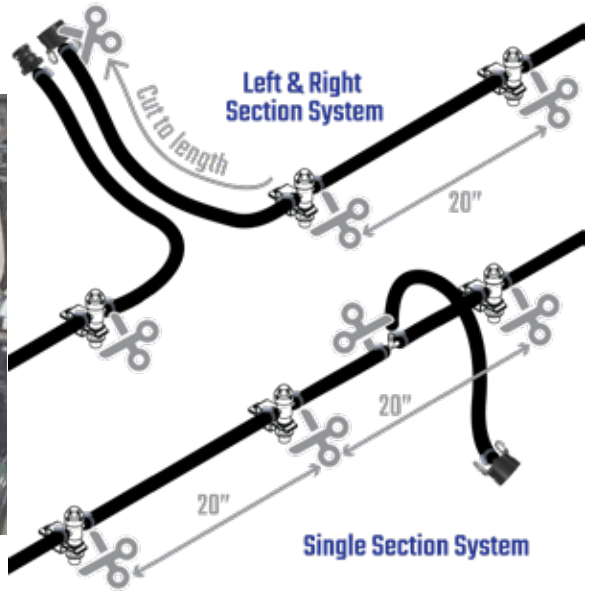
Plumbing the Boom

Step 4: Cut Hoses to Length and Clamp them on Nozzle Bodies

The last step is to run your hoses from nozzle to nozzle, connecting the whole system together. You will receive one long length of hose, allowing you to cut each piece to the exact length you need. The easiest way to do it is just to **hold the hose up and cut each piece to size individually**. Try to cover as much of each hose barb as possible on each side of the hose.

When you get to the boom’s fold, **fold that section in completely and run the hose around the outside of the fold**, leaving a fair amount of slack. It is better to leave it a little long and trim it later than to cut it too tight and have issues when you want to fold the boom. Attach the lines and test folding and unfolding the boom to make sure the hose doesn’t kink and moves freely with the boom.





Left & Right Section Boom Supply Lines

When plumbing up a dual section system, run one line to the left pump from the center-most nozzle body on the left & one to the right pump from the center-most nozzle body on the right. This creates your left & right sections.

If you are adding cam lock fittings from scratch:

1. Cut the supply line going to the boomless nozzle somewhere in the middle and insert the male & female cam lock fittings. Be sure they connect easily.
2. Now disconnect the boomless fitting and insert the empty cam lock that will go to the boom into the supply line cam lock running from the pump (no hose yet).
3. Run the hose from the nozzle body up to the cam lock’s fitting’s hose barb, leaving plenty of slack.
4. Cut the hose and attach it on both ends with clamps.

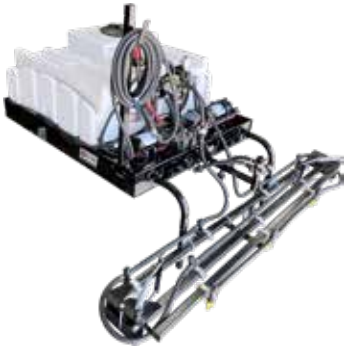
Single Section Boom Supply Lines

On a single section boom, instead of running up to the pump directly from a nozzle body hose barb we will just splice a T fitting into a hose running in between two nozzle bodies. From the T we will run a line up to the right pump. By using a T, we pressurize the whole system as a single section.

You will still want to use a cam lock fitting to make it easy to remove your boom. Like the dual section system, get your cam lock fitting set up first and then run the hose up to the hose barb on the fitting. Leave a little slack for height adjustments down the road.

Hint: Don’t forget to slide the hose clamps on the hose before you push it onto the hose barbs. Lubricating the inside of the hose and the hose barb itself can make the process a lot easier too.

BENCO 12' & 18' Booms



Winterizing your Boom

There is not much to do come winter. We recommend you run a little glycol based antifreeze through the system to be safe. But you can generally blow out the lines and be safe. There may be a little water left in the check valves which could cause issues. Any damage due to freezing water is not covered under your warranty.

Storing your Boom

When it comes time to store your sprayer, just pull the out the boom, rotate it 180 degrees so the spray tips face upward, then slide the boom back into the sprayer and pin it in place. Please make sure the hoses are disconnected before you remove and rotate the boom.

Your sprayer can now be stored flat with the boom securely mounted and elevated off the ground.

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