

# **Installation of TCT XL-Saw**

(Updated March 2023)

## **Saw Requirements**

### **Power**

Three phase 240VAC 40A power for main panel power. Incoming power should be as consistent as possible, consult your electrician for advice on what will work best to achieve this.

The saw will run as low as 208VAC, but is not recommended.

In facilities where only 480VAC is available, a step-down transformer can be used; if not ordered in advance of the installation, contact TCT ASAP for more details.

Single phase 110VAC 20A power for computer and monitor on the saw.

An uninterrupted power supply is recommended for plants with frequent power failure.

### **Compressed Air**

Minimum 100psi of constant air pressure to the regulator at the saw.

14 CFM @ 90psi is ideal.

Plants with excessive water in their lines should consider a drier.

### **Network / Internet**

Wi-Fi or hard cable Ethernet internet access is acceptable.

### **Anchoring**

The saw should be anchored to a minimum of 4" thick concrete. Wedge anchors (1/2" x 3-3/4") should be installed at each foot of XL-Saw and XL-Feeder. Wedge anchors (3/8" x 3-3/4") should be installed at each foot of control panel, conveyor and optional transformer.

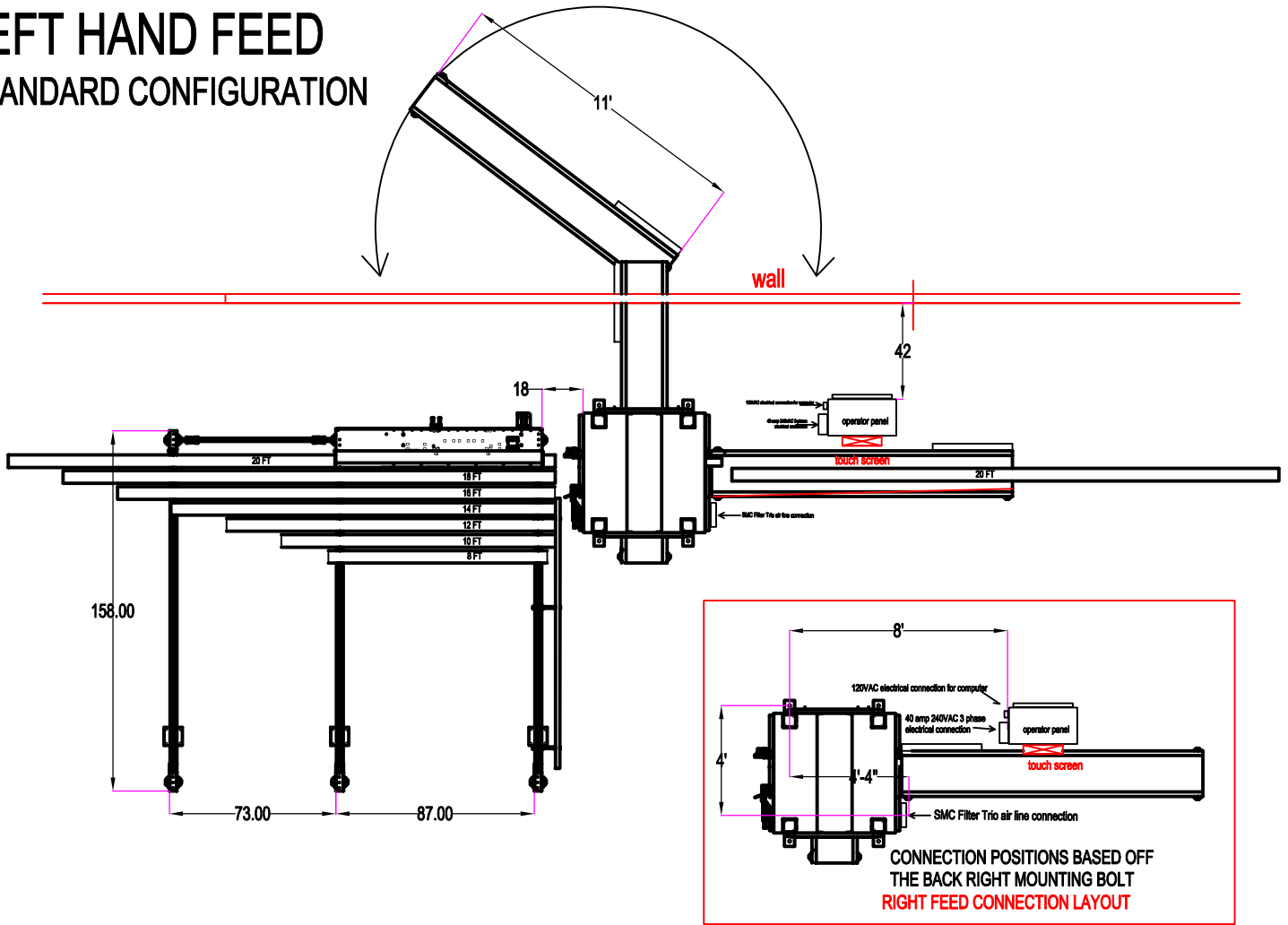
## **When Moving an Existing Saw**

Please review installation guide in great detail. Disassemble saw in reverse order to assembly. Do not remove more wired connections than what is absolutely necessary. Servo feedback and power cables should be left intact, and panel should be moved in tandem with saw. Take note of feeder leg spacing. It is strongly recommended to consult with a TCT technician before beginning disassembly.

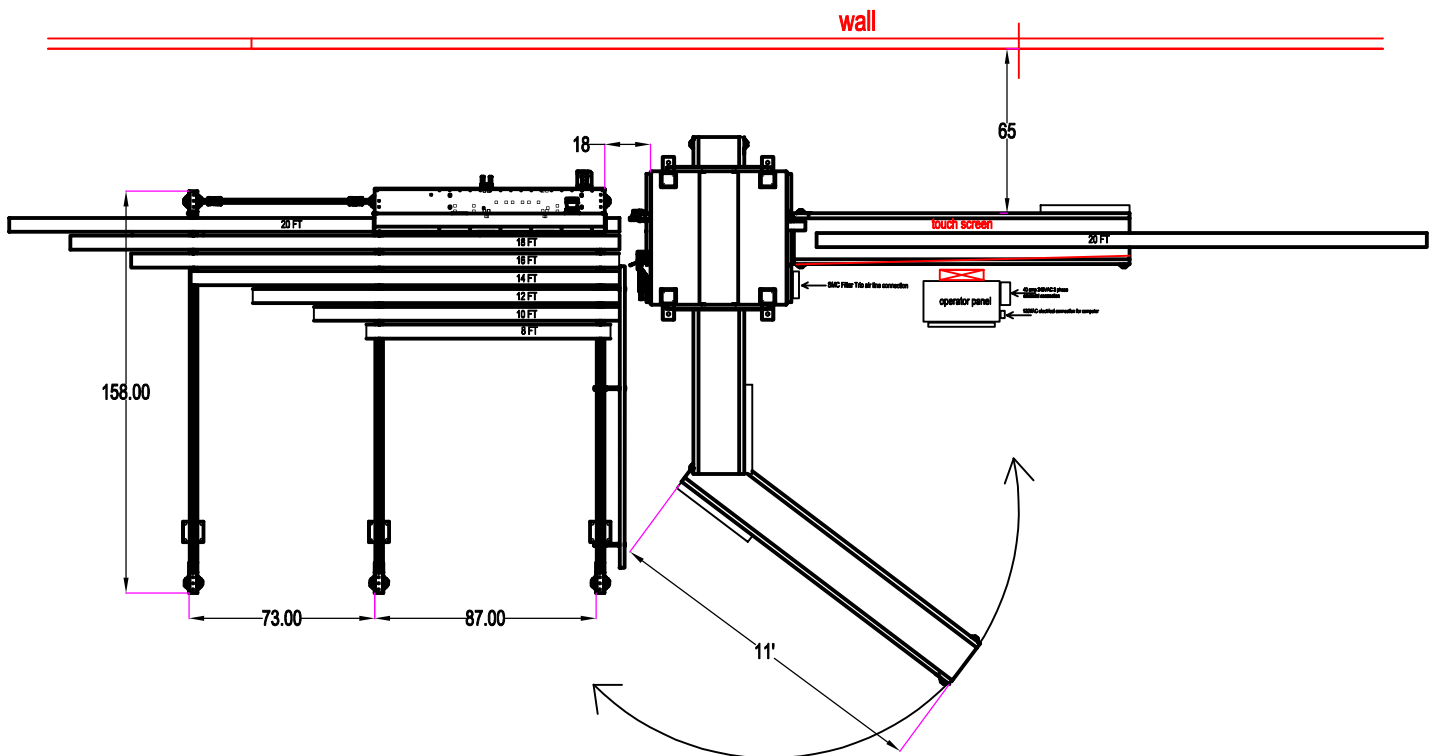
## **Selecting a Location**

Map out area. Look for obstructions that could inhibit lumber loading and/or offloading. Take caution to allow for use of longer lumber in the future. Also determine where waste and incline conveyors for scrap material will be placed, taking into account their lengths. Ensure appropriate access to electrical, compressed-air, and network connections as outlined above. Many of the XL-Saw and XL-Feeder components can be exposed to the outdoors, as long as appropriate maintenance and lubrication procedures are performed often. The control cabinet should be protected from rain or other water sources. The touch screen monitor should not be exposed to direct sunlight.

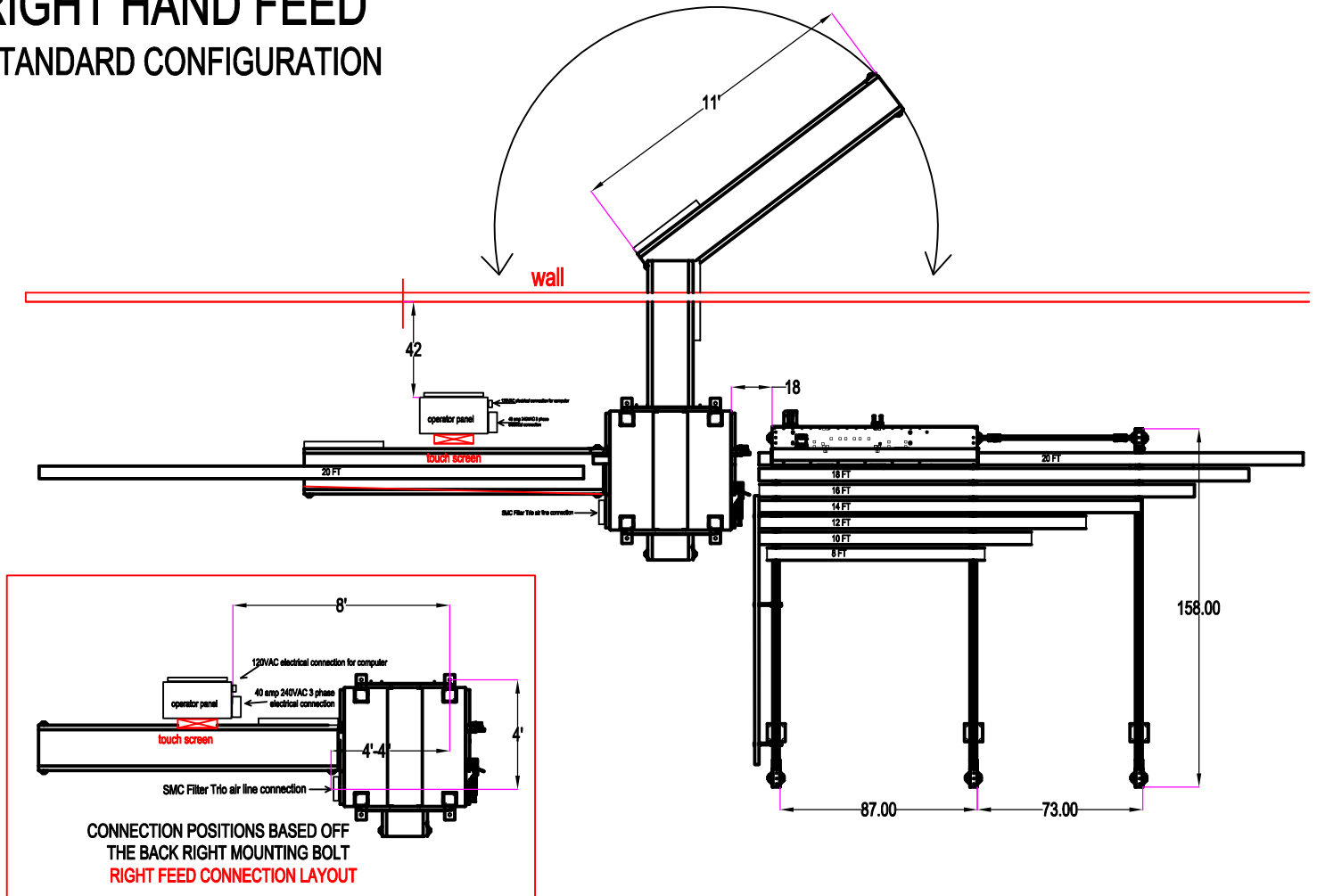
# LEFT HAND FEED STANDARD CONFIGURATION



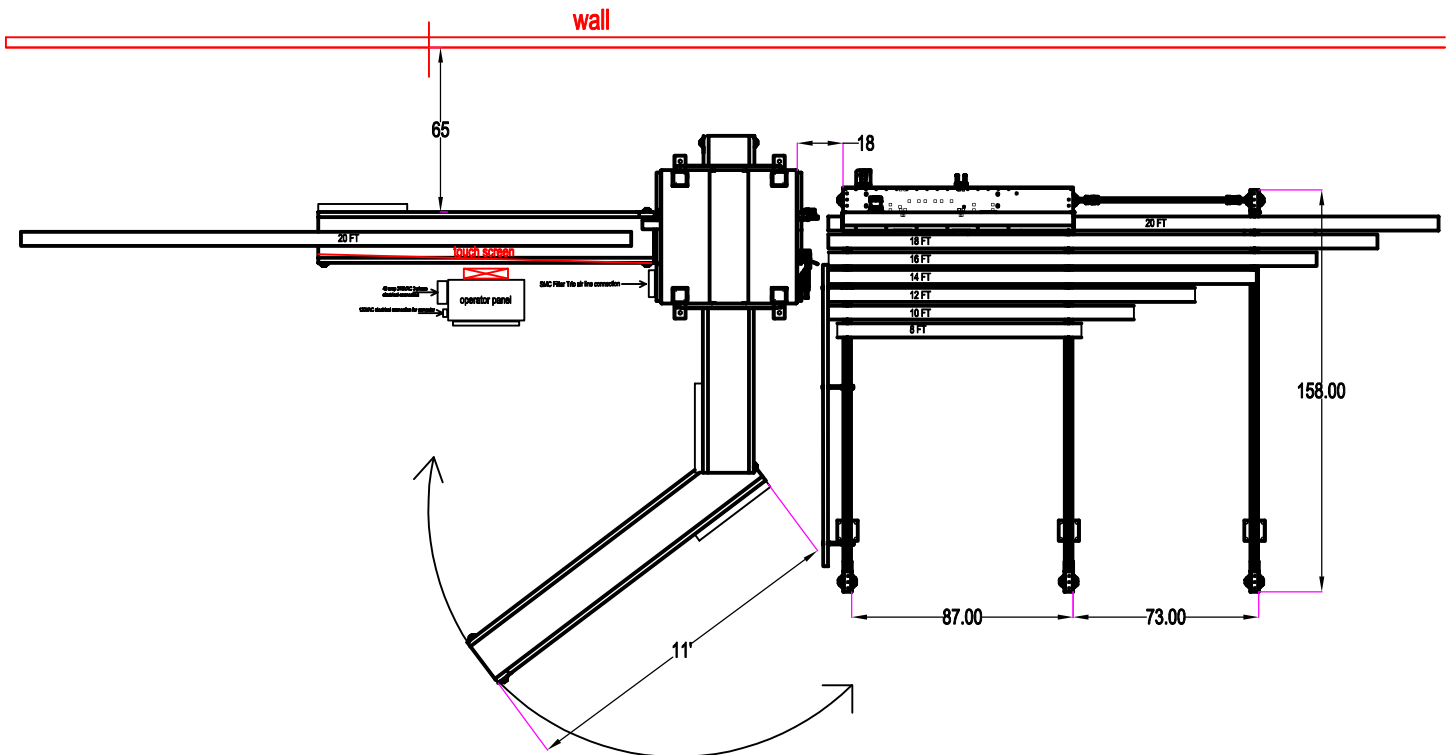
# ALTERNATE CONFIGURATION



# RIGHT HAND FEED STANDARD CONFIGURATION



# ALTERNATE CONFIGURATION



## Installation Step 1: Anchoring XL-Saw and XL-Feeder

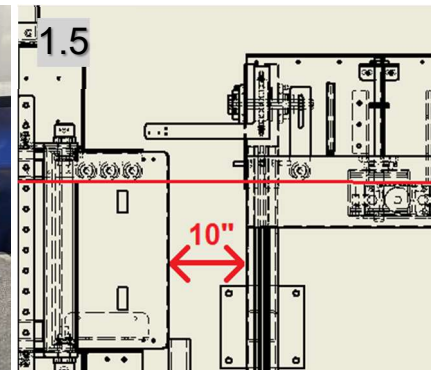
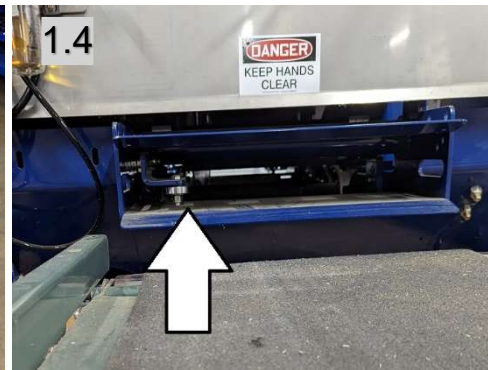
Place saw/cabinet package into rough position. Electrical cabinet is on outfeed side of saw. Use applicable footprint from previous page to arrange components. Right and Left hand saws cannot be interchanged.

Remove lag bolts and any zip-ties from dunnage and offload electrical cabinet, taking care not to let it tip. Remove monitor protection box as soon as possible to prevent it falling on E-Stop button. Lift saw off dunnage and support in-air temporarily.

If equipped, set (4x) leveling feet nuts to 2" high from the floor, assuming concrete floor is level. A square 1/4" washer should be on either side of the foot. For re-installation on saws not equipped with feed, replacement feet can be ordered from TCT. Part number F62-01. Alternatively, 3/4" x 8" threaded rod can be anchored 4" inches deep into concrete. Studs must be secured with epoxy.

Install leveling feet on saw legs, hand-tightening them. Feet should be oriented as referenced in picture. [1.2] When turned properly, there should be easy access to both anchoring holes on each foot. The nuts and washers can be used to support saw.

**DO NOT TIGHTEN FULLY AT THIS TIME.** Lower saw to floor, near final position. Take caution to keep saw square. Do not lean against feet or damage can occur

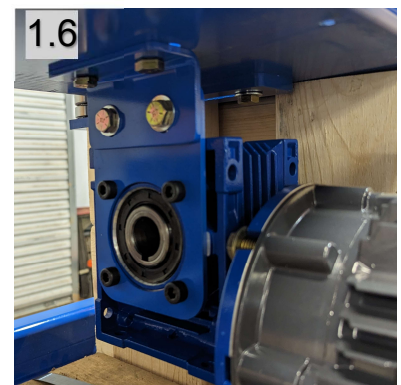


Identify Chain leg #1, chain legs are packaged in order. Bumper guard is on chain leg #1 and should be nearest to saw. End caps with vertical threaded studs should be in line with saw rear. [1.3]

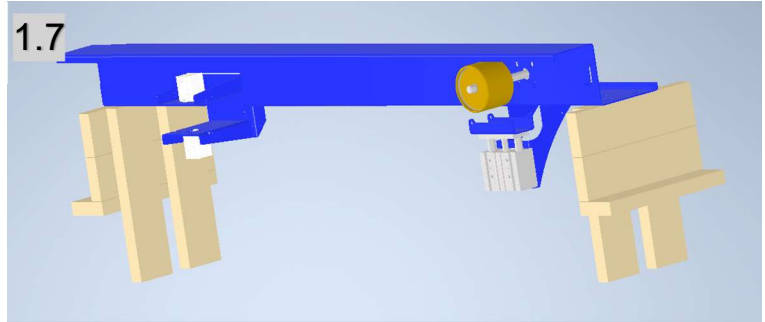
The rear of saw is indicated by the side that roller-bearing fences are inside saw. [1.4] End caps with open holes without studs should be toward stock lumber staging area.

Place XL-Feeder bundle near saw, approximating Chain leg #1 position. Chain leg #1 body should typically be about 10" from saw opening ("duck-bill"). End-caps open-ends should line up with saw roller-bearing fences. [1.5] Remove all banding. Off-load (2x) XL-Feeder shafts with universal joints and PVC safety coverings; place aside.

Un-bolt XL-Feeder chain motor/gearbox tether bracket from bottom of Z-Beam; place aside. [1.6]



Lift Z-Beam off chains with both wood supports still secured at either end; these will be used as temporary legs. Place aside. [1.7]

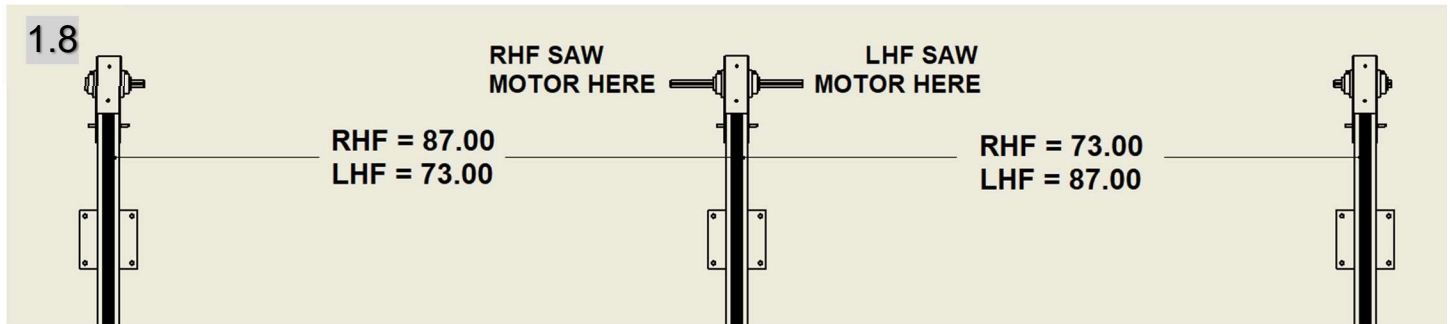


Remove lag bolts from chain leg feet, and lift chain legs from dunnage. Remove and discard dunnage. Place chains near final positions using forklift. [1.8]

Center-to-Center between chains #1 & #2 should be 87";

Center-to-Center between chains #2 & #3 should typically be 73" (but may be 87" on earlier revisions).

**USE CAUTION TO PREVENT TIPPING! NEVER ATTEMPT TO CATCH A TIPPING CHAIN LEG!**



Remove any burrs on chain sprocket shafts, and test-fit key stock. Bag of XL-Feeder supplies can be found in spare parts trunk delivered with saw. Apply anti-seize compound to sprocket shafts. Slide chain motor gearbox onto chain leg #2, leaving it about 1" from bearing on end-cap. Locate 7" long key stock and insert into shaft keyway, through gearbox. Insert 1-5/8" key stock into chain #1 shaft, then slide longer shaft universal joint onto end-cap shaft. Make sure PVC safety covering is installed with set-screw access holes closer to end of PVC nearest chain #1, and holes slightly further from end of PVC nearest chain motor and gearbox. Tighten set-screw completely. [1.9]



Using a helper, lean #2 chain leg far enough away from #1 chain to allow universal joint to slide onto sprocket shaft with 7" key stock (rotate shaft/chains as necessary to line up keyways). Check Center-to-Center between

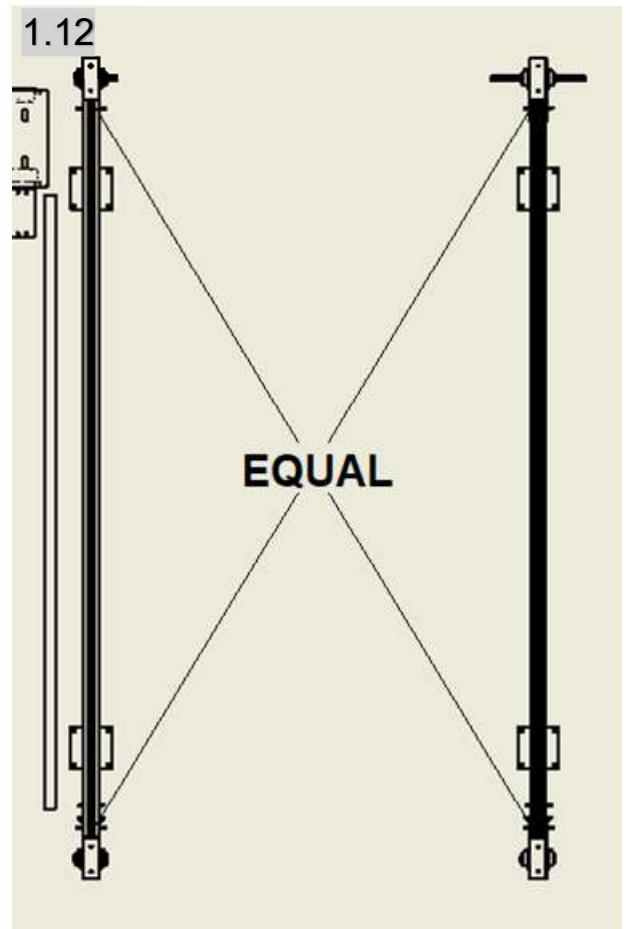
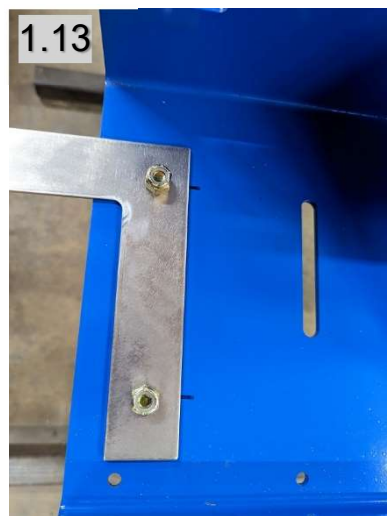
chain #1 & #2 (should be 87"); move as necessary. Tighten set-screw on universal joint completely once studs are exactly 87" Center-to-Center. Ensure chain legs do not lean during this process. Remove (4) bolts from XL-Feeder roller motor, and remove motor (keep track of key stock as you remove motor); set aside. [1.10]



Support Z-Beam (placed aside earlier) with forklift so it cannot fall. Remove screws from wood supports at ends. Using forklift, carefully place Z-Beam onto studs near saw-end of chains #1 & #2.

**DO NOT LOWER FORKLIFT FORKS TO FLOOR TO AVOID BENDING/DAMAGING SHAFT UNDERNEATH!**

Mark extended centers of slotted holes in Z-Beam closest to saw, as slots will be covered and not-visible by sensor bracket in next step. [1.11] Install sensor L-bracket onto chain #1 studs, with long-side toward front of saw. Sensor mounting holes on bracket should generally be within a few inches of saw "duck-bill" opening. Install (2) nuts on studs holding sensor bracket, and (2) nuts with (2) washers on chain #2 studs. Do not tighten yet.

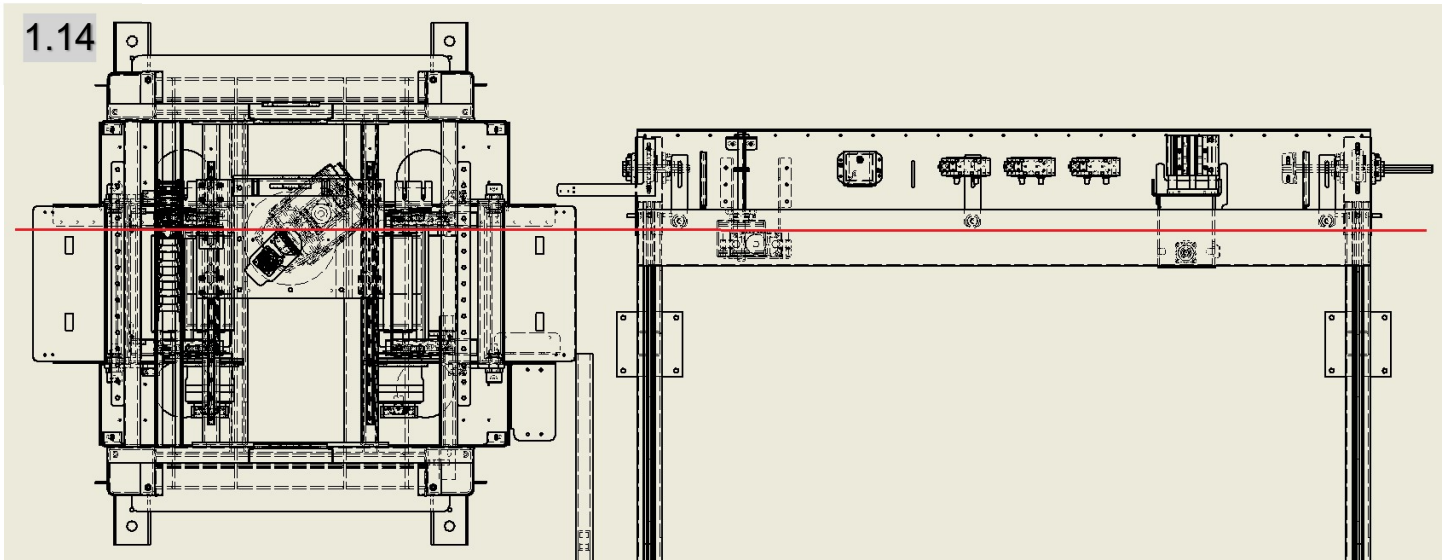


Ensure chains #1 & #2 are aligned with building as desired. Measure from a building wall if possible; be aware that seams in concrete are not always straight nor aligned with building itself. Ensure chains #1 & #2 are parallel by measuring diagonally to common points on each chain body. Be aware that vertical legs and adjustment tabs may not always be welded in the same place; measuring diagonally from the inner side studs that secure the sprocket end-caps is the preferred method. [1.12]

Slide Z-Beam until studs are in centers of slotted holes (use marks made in earlier step). Tighten nuts on Z-Beam ends. [1.13]

Move/rotate saw if necessary to align (3) XL-Feeder fence roller bearings with fence roller bearings inside saw. **[1.14]** This can be done using levers or forklift. Use caution to prevent damaging saw or XL-Feeder components.

**PROPER ALIGNMENT IS CRITICAL TO SUCCESSFUL CALIBRATION OF SAW!** Keep spacing between saw "duck-bill" and chain #1 body near 10" if possible.



Re-check parallel and alignment of XL-Feeder chain legs to ensure they have not moved. Drill and anchor chain legs #1 & #2, as well as saw feet, using 1/2" x 3-3/4" concrete wedge anchors. Wedge anchors are included with new saws; these can be found inside spare parts trunk. Line up chain #3 with #1 & #2, keeping Center-to-Center between #2 and #3 at typically 73". Dimension may vary when re-installing an older machine.

Install shaft with PVC guard between chains #2 & #3 in a similar manner to the first shaft. Make sure universal joint does not slide onto longer chain #2 shaft too far to prevent internal interference with joint itself. Use anti-seize and remaining (2) key stock pieces found earlier. Tighten set screws completely. Final Center-to-Center between chains #2 & #3 may vary. Exact spacing is not critical if universal joints are not binding and have good purchase on shafts. Re-check parallel and alignment of chain #3 using cross measure method used earlier. Ensure chain body is not leaning to one side or the other. Drill and anchor chain leg #3 using remaining 1/2" x 3-3/4" concrete wedge anchors. A few unused anchors may remain; this is normal.

Install XL-Feeder sensors. Sensors and mounting hardware can be found in the previously mentioned bag of XL-Feeder supplies. Identify which sensor is the receiver (R) and emitter transmitter (T). **[1.15]** Uncoil sensor cables from around the electrical control box on the Z-Beam. **[1.16]**



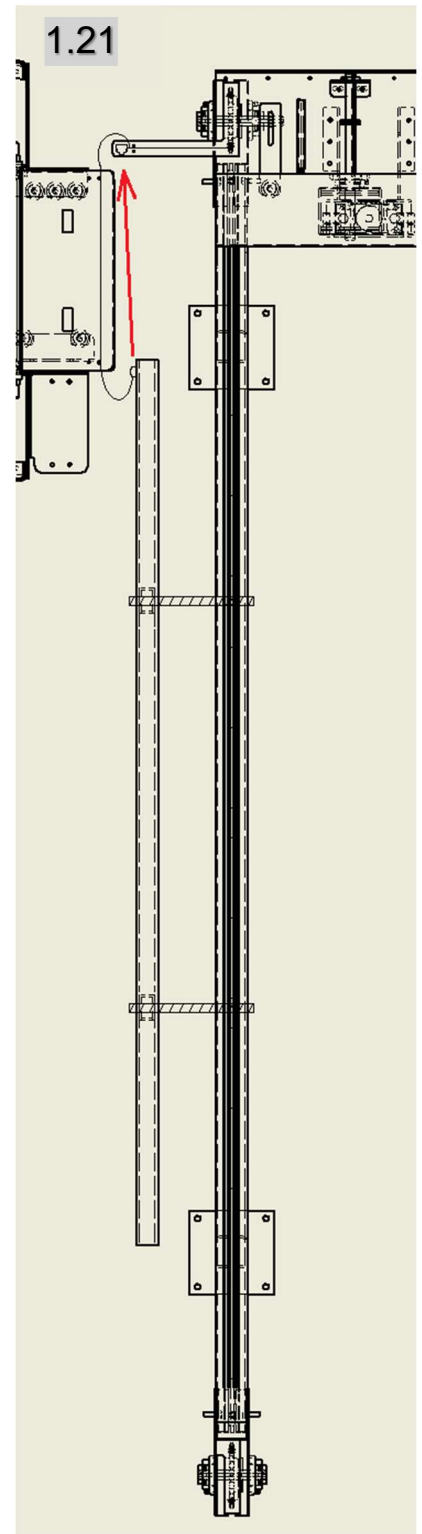
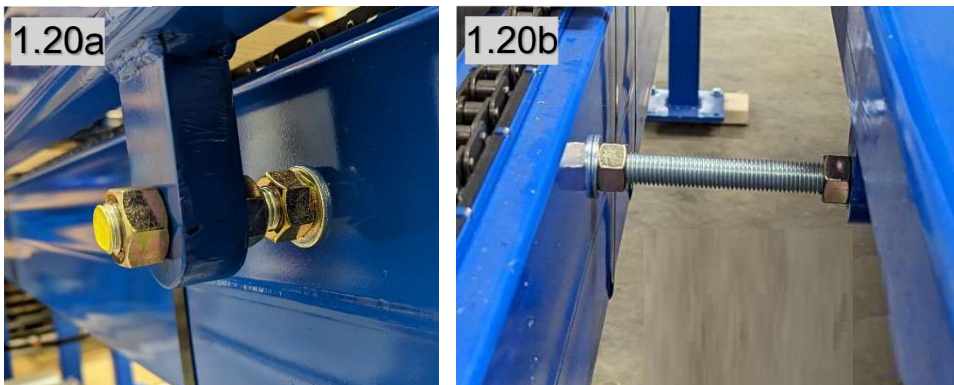
**Receiver:** Screw the straight sensor cable to the receiver. Mount the receiver to the L bracket on the Z-Beam, using the enclosed hardware. [1.17] Sensor should be on top of the L bracket with red lens facing the bumper guard. [1.18] Alignment is in a later step this chapter.

**Transmitter / Emitter:** Screw the right-angle sensor cable (has air tubing sleeve protecting cables) to the emitter. Route the cable above the “duck bill”, and below the stainless print guard. [1.18] Mount the emitter on the saw side of the bumper guard (red lens facing the L bracket on the Z-Beam) using the enclosed hardware. [1.19]

Zip tie all wires in place. Take caution that both sensors and cables are protected from moving lumber, and pinch points. Additional XL-Feeder wiring is addressed in the next chapter.



Align XL-Feeder bumper guard. Loosen both threaded rods on the bumper guard. [1.20] Extend the one closest to the Z-Beam at its widest point. Skew guard so that the mounted through beam emitter is aimed at its receiver on the L bracket. Secure threaded rod farthest away from the Z-Beam in this position. Confirm both threaded rods are secure. Note: The overall taper will prevent lumber from binding on the fence as it travels to the gripper. [1.21]





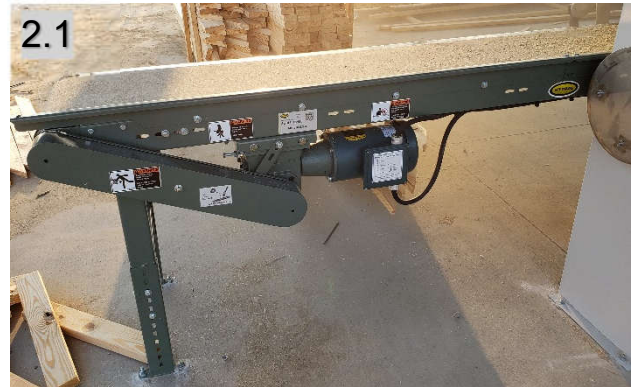
## Installation Step 2: Anchoring Conveyors and Control Panel

### Outfeed Conveyor

Orient conveyor so that motor/gearbox assembly is away from the operator to minimize interference with operation of saw, as well as potential damage to motor and/or gearbox. Typically the motor should be on the side away from the operator; this is also the side where the control cabinet should usually be placed. [2.1]

Generally, the outfeed conveyor will be around 36" to top of belt, at center of conveyor, with a 1" incline as the conveyor extends away from the saw; adapt as necessary to accommodate variations in floor surfaces.

- Set legs that will be closest to the saw at 31½ inches (making top of conveyor belt at ~24 inches in +/- 35½"). On typical tall Hytrol legs, use the top (highest) slotted hole in the extendable foot and the 6th one from the top. It is sometimes desirable to lay control cabinet cables inside the closest leg unit before bolting it onto the outfeed conveyor, to keep cables from drooping toward the floor. These cables will later be tied underneath the side-rails of the outfeed conveyor.
- Set legs that will be furthest from the saw at 32½ inches (making top of conveyor belt at ~24 inches from furthest end +/- 36½"); note that this is 1 inch higher than the end closest to saw).



Line up the conveyor with the outfeed "duckbill" of saw; the more accurate the better. Leave about 1 to 1-½ inches of space between saw (sitting generally level to the floor) and edge of outfeed conveyor belt; this allows clearance for future adjustment of saw leveling and/or belt tensioning. [2.2]



Install the included guard rails on the side **opposite** the operator (catching person), so that they can prevent boards from pushing against the control cabinet (which will also be located on that side). Make sure the closer rail to the saw is aimed slightly in front of the further rail, so there is no "lip" which the board can catch on and cause damage. Use the included junction plate (two slotted holes) with button-head bolts and nuts to join the rails together. [2.3]



Use 3/8" x 3-3/4" inch wedge anchors to permanently locate conveyor (these should be included).

## Scrap and Incline Conveyors

These conveyors are usually set up to best take advantage of available space and offloading, often protruding outside the building to keep the scrap hopper away from the operational area. Remember these key points:

- The scrap conveyor sits partially underneath the saw's cutting bay **[2.4 LEFT]**; and the incline conveyor usually extends from the high-end of the scrap conveyor into the scrap hopper **[2.4 RIGHT]**. In situations where space is limited or low volumes of scrap are anticipated, the incline conveyor is sometimes omitted altogether; a smaller hopper can be placed underneath the scrap conveyor instead.



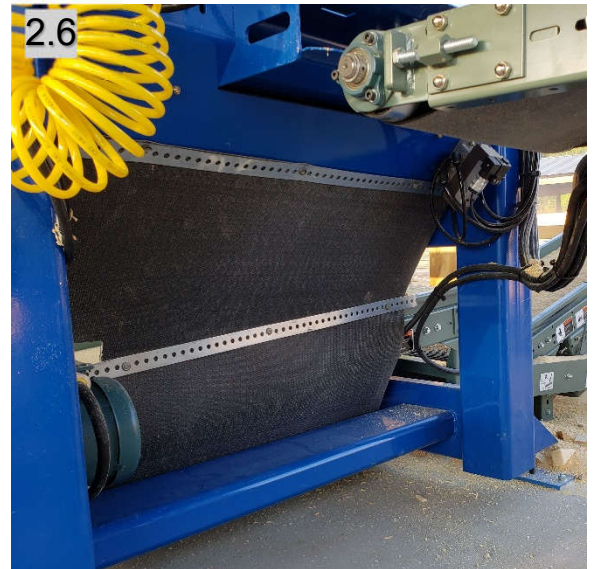
- Leave enough space above the scrap conveyor to accommodate scrap pieces that fall vertically onto the belt; typically at least 6" of clearance at every point of the belt is sufficient.
- Usually you want a high-clearance underneath the discharge end of the scrap conveyor, to leave enough clearance to fit the incline conveyor underneath without risk of scrap pieces wedging between the two belts. Often 20-24" works well.
- Leave some clearance under the front end of the scrap conveyor as well, as the conveyor will reverse for short job-pieces and it is sometimes desirable to place a container under it to collect these pieces and any scrap pieces that make it alongside them. **[2.5]**
- Pay attention to the location of the motor/gearbox on the scrap conveyor. Typically it is placed at the higher end where the scrap and incline conveyor meet, but is not required. Make certain to leave enough room to access the motor junction box, and to remove the motor and/or gearbox for maintenance purposes in the future.
- Place the short legs on the incline conveyor close to the motor/gearbox end, so that end will be the lower end that meets the scrap conveyor. This is preferable because it keeps the motor/gearbox assembly away from the end that the forklift operators interact with, and prevents damage.
- Place the tall legs near the center of the incline conveyor; adjust as needed to gain an appropriate incline angle. Too little angle will prevent use of taller hoppers; however, too much angle will negatively impact the belt's ability to carry scrap up to the hopper.



Use 3/8" x 3-3/4" inch wedge anchors to permanently locate both conveyors. After the incline conveyor is anchored to the floor, use the included brace bars and angle brackets to connect between the bottom of the tall legs and the body of the conveyor to strengthen it (forming a triangular structure). [2.4]

Once conveyors are permanently located, use included self-tapping screws and perforated flat-bar to attach rubber sheets to either side underneath saw angular plates. Then attach them to the scrap conveyor, forming a small arch to optimally direct scrap pieces onto the scrap conveyor belt. Trim the excess from the bottom. [2.6]

Use the excess trimmings of the rubber sheet(s) to form a shroud at the lower end of the incline conveyor, to keep material from falling off the end of the belt, and to keep scrap pieces from getting wedged between the scrap and incline belts.



## Conveyor Wiring

Using the included SJ00W cord and aluminum strain-reliefs:

**Outfeed:** Wire at the control cabinet using the right-most knockout and terminal block at the bottom-right of the cabinet [2.7], (this is driven with contactor C1)

**Scrap:** Wire at the control cabinet using the left-most knockout and terminal block at the bottom-left of the cabinet [2.7] (this will be driven with VFD2).

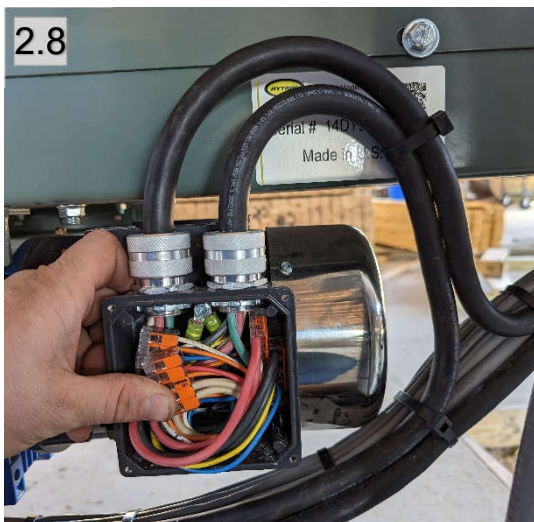
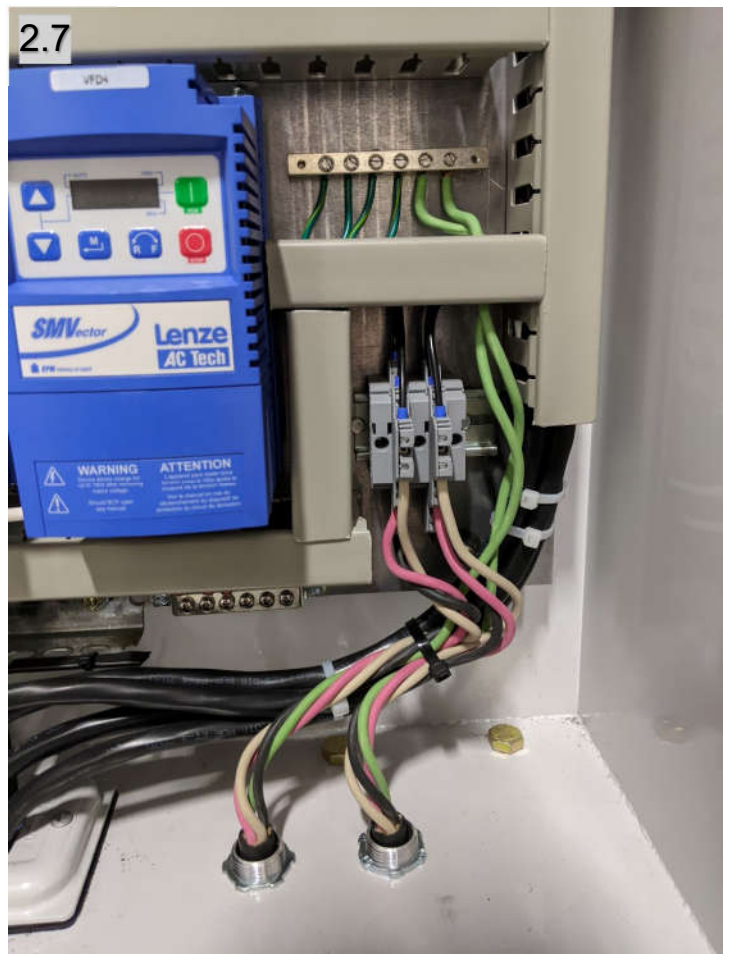
Make sure to terminate the ground wires at the ground bus bar above the terminal blocks in the cabinet [2.7]

**Incline:** Wire at the Outfeed Conveyor junction box in a "daisy chain" method [2.8].

At the motor junction boxes: Use the included aluminum strain-reliefs, ring-terminal crimp connectors, and Wago lever-nuts (or use your own wire-nuts).

Zip-tie cords underneath side-rails of conveyor beds using the provided holes, taking care to prevent cords contacting the belt now and in the future.

Ensure you have no loose strands at any of the motors or at the terminal blocks in the cabinet.



## Control Cabinet

Cut material can be received on either the front or the rear of the saw. See footprint standard and alternate orientation. The cable bundle on the control cabinet should be long enough to place the cabinet on either side of the outfeed conveyor.

Position the control cabinet near the center of the outfeed conveyor, on the side **opposite** the operator (catching person). **[2.9]** The monitor will be facing toward the operator, over top of the conveyor belt; the cabinet door should be easily accessible. Leave about 1" of space between the cabinet and conveyor guard rail installed earlier. Leave room to access the disconnect switch-box on the side of the control cabinet (especially if it will be located on the side closest to saw; 36 inches is generally accepted as minimum distance.

Make sure the cabinet's cable bundle has enough slack to hang comfortably underneath the outfeed conveyor side-rail. Zip-tie cords and cables underneath side-rails of outfeed conveyor bed using the provided holes, taking care to prevent cords contacting the belt now and in the future. **[2.10]**

Use 3/8" x 3-3/4" inch anchors to permanently locate cabinet (these should be included).

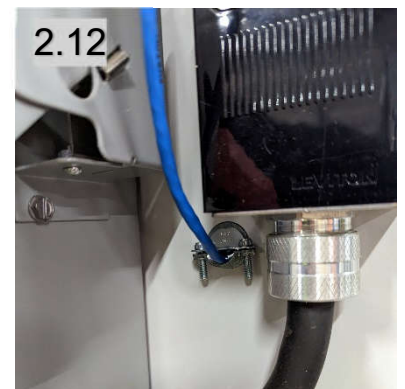
Install both air filters (included) on cabinet using base plate, top plate and four 1/4-20" x 4" threaded rods with wing nuts.

## Control Cabinet Wiring

Connect at least 40A 240VAC 3-phase power and ground connections to the disconnect switch-box at the top of the control cabinet. **[2.11]**

Connect 20A 120VAC power directly to the double-gang switch and outlet box near the bottom of the control cabinet; junction to the existing wire connectors inside the box, as all further connections have already been made for you. **[2.11]**

Use either the 1/2 inch knockout to the side of the disconnect switch-box or the 1/2 inch knockout at the bottom of the cabinet near the door hinge to feed network cable into the cabinet to be connected to PC at a later step. Use the included "Romex"-style clamp connector to grip the cable, or provide an alternative to seal the hole and support the cable. **[2.12]**



Locate the coil of cables at the saw **[2.13]**. Remove zip ties and uncoil the bundle. Starting at the saw, **loosely** zip tie the bundle as it is routed to its landing locations, branching out each tube or wire along the route.



Branch off the printer air-hose supply from the main bundle (it should be connected with a tee or Y-fitting just underneath the saw's stainless-steel housing, and will likely already be connected to the printer's air-regulator above). **[2.14]** Continue zip-tying.

Branch off the printer cable (black connector with silver thumb-nut) **[2.15]** and feed it above the "duck-bill" on the infeed side of the saw but underneath the stainless-steel printer guard; zip-tie it to the sensor cord ran earlier. Continue zip-tying main bundle, attaching it to large oval cutout on rear side of "duck-bill" **[2.16]**.



Branch off the 4-conductor AF Chains cable and run it underneath the Z-Beam; pass it above the two air-lines that run to the air-cylinder underneath the AF Roller **[2.17]**.

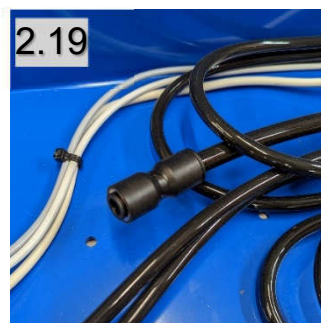
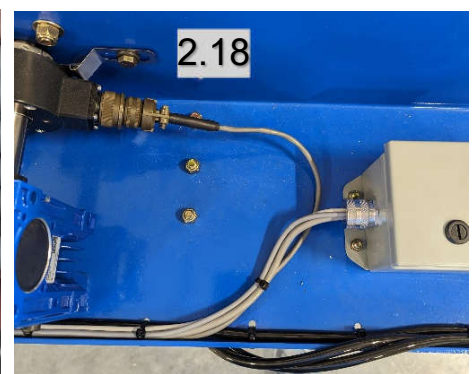
Lay remaining cables on top of Z-Beam along rear edge. Continue zip-tying bundle, and tie to rear edge of Z-Beam using first (2) holes. Remember to include AF Chains cable **[2.17]** underneath Z-Beam when zip-tying.

Branch off the AF Roller cable and temporarily lay it back toward the saw. Add-in sensor cords from earlier. Continue zip-tying bundle and AF Chains cable underneath until just past AF Roller gear-drive.



Branch off encoder cable (dark-green connector with green thumb-nut) **[2.15]**; connect to encoder **[2.18]**. If necessary, create a loop with excess cable of about 6" in diameter (typical). Make sure to fully-tighten connector!

Branch off air-tubing and run to air connection at air valves. **[2.19]** Trim to length, leaving plenty of slack for future needs (make a gradual loop if possible). Remove temporary zip-tied plug from valve supply input; connect air-tubing.



Open gray TB2 junction box on Z-Beam **[2.20]** and feed remaining 12-conductor TB2 cable **[2.15]** through strain-relief on side closest to AF Roller gear-drive (along-side (2) sensor cords already installed) **[2.18]**. Leave a small amount of slack in cables outside of box, or make a loop similar to encoder cable and zip-tie together.

Trim TB2 cable about 6 inches from entrance to junction box, then gently strip jacket back. Trim shield wire.

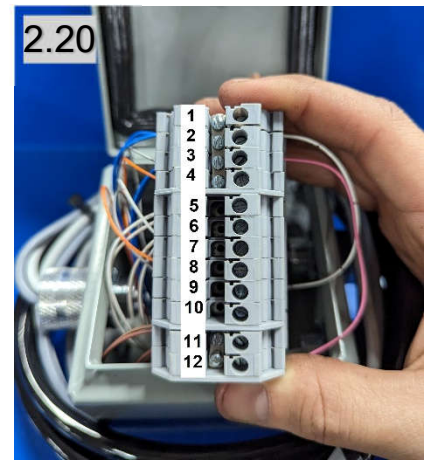
Tie-back the following (4) wires: BLUE, GREEN, PINK and TAN (Light Brown) as they are for future expansion and will not be used at this time. Make sure they cannot short on any terminals.

Locate (4) terminals on TB2 junction terminal block that have a bonding strip in the middle with (4) screws bonding them together. These are terminals 1 through 4.

Connect remaining (8) wires to TB2 junction terminal block on side opposite existing wires. Note that terminal #1 will likely already have a wire attached; this is normal. Connect as follows **[2.21]**.

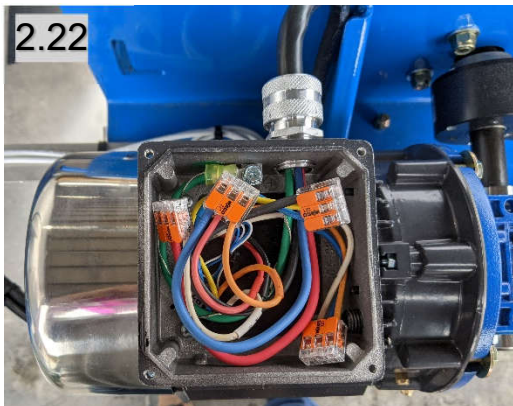
Finish zip-tying AF Chains cable underneath rear edge of Z-Beam, until AF Chains motor is reached (usually 2nd to last hole on edge of Z-Beam).

Install the AF Roller motor that was removed earlier, and gently tighten the (4) bolts with flat-washers and lock-washers. Run the AF Roller cable to the AC motor on the chain gear-drive at the middle chain, underneath the motor, leaving a gradual loop of wire just under the motor. Trim the cable to length, allowing enough slack for future service. **[2.22]**



**2.21 TB2 Cable Termination**

1	⊕	-	-
2	⊕	-	-
3	⊕	-	-
4	⊕	BLACK	■
5		ORANGE	■
6		WHITE	
7		BROWN	■
8		PURPLE	■
9		YELLOW	■
10		GRAY	■
11	⊕	RED	■
12	⊕	-	-



Run the AF Chains cable underneath the rear edge of the Z-Beam to the AC motor on the chain gear-drive at the middle chain, **[2.23]** using zip-ties to hold it up. Trim the cable to length, allowing enough slack for future service (it is preferable to rotate the motor's junction-box such that the strain relief is facing \*away\* from the saw; then, loop the cable past the motor and back into the strain-relief).

For both motors: Terminate the wires using the included aluminum strain-reliefs and crimp ring-terminals for the ground wire(s) (use the included lever-nuts or provide your own wire-nuts). If the cable has a braided-shield, carefully cut away the shield about 8" from the end of the cable **[2.22]**.

## Air-line Connection

Connect air compressor line to Filter-Regulator-Lubricator “Trio” on outfeed side wall of saw **[2.24]**. Remember these key points:

Please review air supply requirements sent with the saw. If you have any questions, please contact TCT as quickly as possible to discuss options.

If you tend to have moisture in your air supply, or are in a humid location, consider adding a separate dryer if not already installed. The Trio contains a water separator/filter, but it can only process small amounts of water or contaminants. If necessary, add a drain section on a tee to the supply line at the wall, so that excess moisture that condenses in the air line can be drained before it gets to the saw.

The input port to the Trio (usually to the left of the red exhaust valve knob) has a ½ inch NPT pipe thread **[2.24]**.

You may either connect rigid pipe **[2.25]** or air hose directly to this port with appropriate fittings, or connect a male quick-connect fitting **[2.26]** to it and connect a mating female quick-connect fitting to an air hose. Ensure pipe or hose is rated for the application as appropriate.

If using quick-connect fittings, when possible it is highly recommended to use ⅜ inch or larger quick-connect fittings, as smaller fittings limit flow to the air system and could cause problems **[2.26]**.

If using air hose, it is highly recommended to use ½ inch air supply hose as a minimum. The saw can operate from ⅜ inch hose but runs the risk of being starved for air during rapid operation.

It may be desirable to add a tee in the supply line before the Trio **[2.25]** that has a quick-connect fitting for a blow-off air hose that can be used for cleaning.

New saws usually ship with the air regulator on the main Trio set to 0PSI. This needs to be increased to 65PSI once the pressure is applied to the saw and all air connections are terminated.

Remember that if the air pipe or hose is attached to the saw’s stainless-steel housing, it may need to be removed if panels need to be moved or lifted for future cleaning and maintenance reasons. Leave slack in hoses, or leave extra space with rigid pipe so that panels can be moved freely.



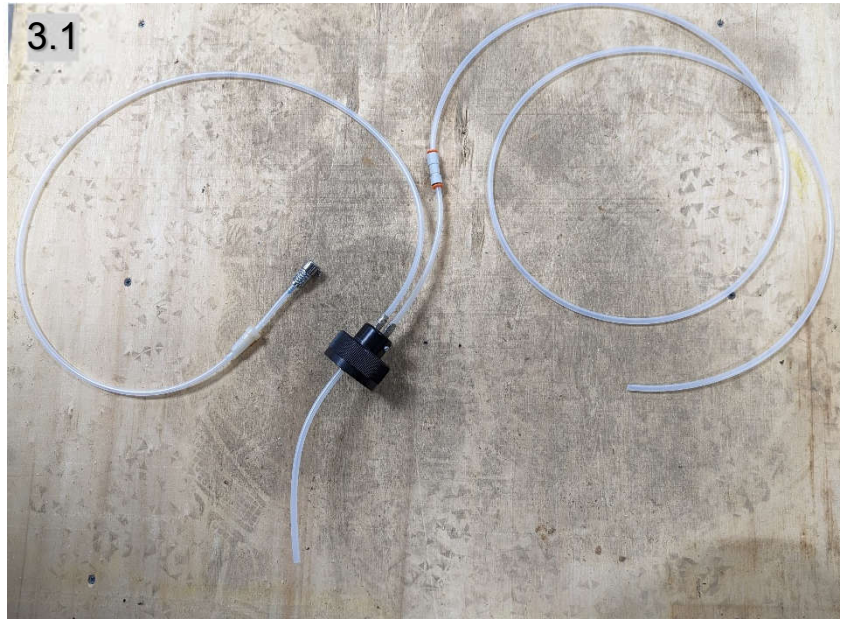
## Installation Step 3: Final Assembly

### Print System

Begin by installing the ink lines on the cap assembly. [3.1]

On the NON pickup side of the cap, install the section of ink line that will run from the printer air regulator to the cap assembly. Note that this section of line will never have ink in it, just air from the printer regulator. Push the line onto the barb fitting of the cap and then screw down the compression fitting onto the threaded portion of the fitting, capturing the ink line and securing it for an airtight seal.

Install the one way check valve inline on this section that runs from the printer regulator to the cap assembly. Nearer the cap is recommended so that if the cap is accidentally installed backwards, ink will go no further than the one way check valve so that ink will not accidentally back fed into the pneumatics of the saw.



Remove plug piece from right hand side of printer regulator and firmly press the loose end of NON pickup side tubing into the fitting. [3.2]

Next, install the section of ink line on the pickup line side of the cap assembly using the same method as described for installing the air supply side of the cap assembly. Leave enough slack so that the line will reach the printhead without being under any pulling tension.

Install the inline filter on the section of line from the cap assembly to the printhead. Recommended location is nearer the printhead. Push ink line onto barb fittings of the inline filter. Take careful note of the flow direction of the filter upon assembly.

Next install the quick disconnect fitting on the end of this section of ink line that supplies ink to the printhead. Push the line onto the barb fitting of the quick disconnect fitting (see photo).

Next, remove the plastic cap from the ink jug and install the cap assembly into the ink jug. Screw the cap assembly down on the threaded lid until firmly hand tight.

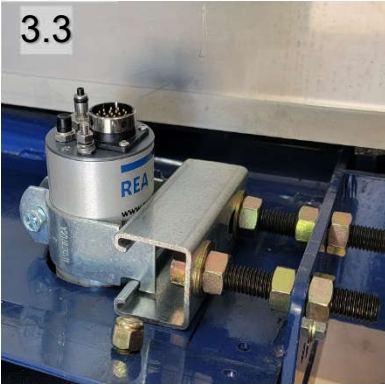
Turn the air supply on to the saw and the printer regulator should display no more than 10 psi. (Note blow off valve on regulator will make noise if pressure is greater than 10psi, see REA guide on how to adjust printer regulator pressure if this occurs).

The ink jug should now inflate in it's container and ink should begin to flow down the supply side line that connects to the printhead. Bleed air from the line before connecting the line to the printhead. See REA guide for bleeding instructions. Once the line has been properly bled and you see no air bubbles on the supply side line from the ink jug to the quick disconnect fitting, you can then connect the fitting to the printhead.

The 19 pin cable should be connected after the saw is powered on and everything else is confirmed to be working. This is to minimize the chance of damage. The 1/4 turn connector and it will click into place.



3.3



Secure the print head on the infeed side of the XL-Saw using the provided conduit clamp. Do not overtighten, snug is sufficient. **[3.3]** Ensure that the orientation of the printhead is aligned with the rectangular hole on the mounting plate such that all 7 jets are in alignment with the hole. Note that if the text is backwards or upside down, you may need to flip orientation 180deg in it's mounting location.

Press the flush printer icon in the Saw program a few times while taking a scrap piece of lumber held under the printhead and move it while the flush button is pressed. You should see all 7 jets and 7 lines. Note that it might take awhile for the ink to darken as the printhead is shipped with acetone cleaner in it from the factory.

## Leveling Saw

After physical installation is complete, and before calibration of saw, perform the following:

1. Use an 8 or 10 foot board. Place it into the saw such that it is protruding from either side of the saw by the same amount (centered).
2. Actuate the pilot overrides on both infeed and outfeed valves on the rear of the saw (mounted at 45 degrees underneath) to clamp the upper idler rollers onto the board.
3. Utilize the sections of the XL-Saw Calibration Guide titled "Adjusting Upper Clamp Hard Stops" and "Upper Idle Roller Hard Stops" to ensure the adjustments are set properly.

On the infeed side, the board should float just slightly above the 1st chain of the XL-Feeder (about  $\frac{1}{8}$  inch). On the outfeed side the board should float about  $\frac{3}{8}$  inch above the outfeed conveyor belt. To adjust this:

1. Keep the nuts on top of the saw feet tight on the side opposite to the side you are adjusting. Loosen the nuts on the feet on the same side.
2. Turn lower nuts in the appropriate direction to raise or lower the saw as needed. If possible, have a helper turn the nut at the front of the saw while you turn the rear nut to limit stress on the studs.
3. Continuously check the height of the board on both sides of the saw as you make adjustments (remember that if the infeed side is raised, the outfeed will lower by a smaller amount, and vice-versa).
4. Once the board is floating above the chain and conveyor belt by the appropriate amounts, lightly tighten the top nuts on the feet for that side of the saw.
5. If needed, repeat this process with the opposite side of the saw, and keep checking until dimensions are reached.

Once this is complete, recheck the alignment of the saw fence roller bearings to the XL-Feeder fence roller bearings. If necessary, loosen all top feet nuts on the saw and use a lever to gently shift the saw frame until the fences are perfectly aligned. Then gently tighten all 4 top nuts, and finally tighten all nuts completely (ensure they cannot vibrate loose through normal operation of the saw).

**Calibration:** At this point the saw is ready to power on and prepare for calibration. Please note that saws ship with all (9) breakers in the "off" position. See "Calibration Manual". Take note that some AC motors may move in the opposite direction than intended. This can be corrected by swapping wires of the individual motors at their respective connection boxes.

**Cut File Preparation:** The saw cuts with ".XLCUT" files that are made from your ".TRS" or ".WEB" files using XL-Optimizer. XL-OPT can be installed on your batching PC or on the XL-Saw PC. Lab View Run Time Engine is required to run this program. Both XL-OPT and LVRTE can be found on our website. See XL-Opt Quick Start Guide for more information.