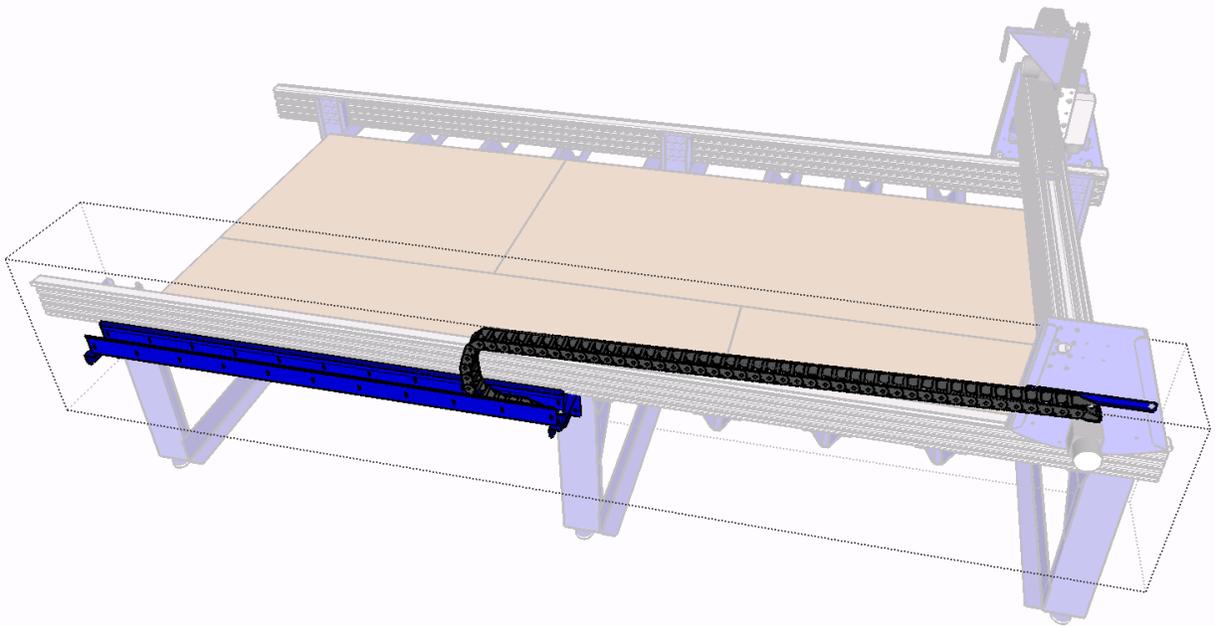


PRS X-Axis Energy Chain (E-chain) Installation



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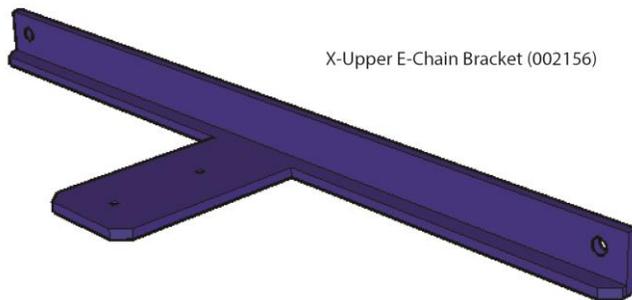
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Introduction

This kit is compatible with PRS Shopbots that have an X-axis cutting area of 48" to 144". It is *not* immediately compatible with older PRT Shopbots, although it may be modified to fit with additional drilling of the trough and mounting brackets. Contact tech support with any issues regarding the modification of a component.

Kit components

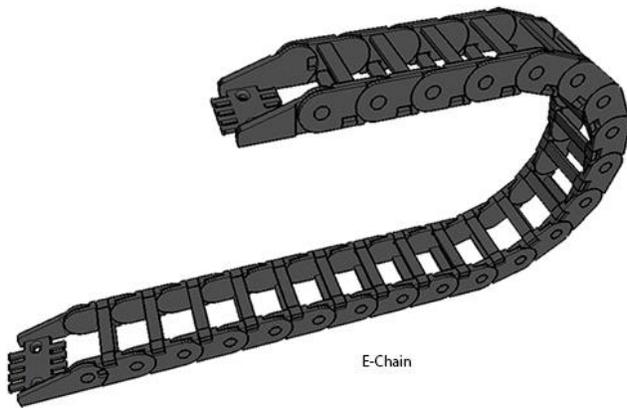
The X-axis E-chain has four main components and a few specialized pieces of hardware.



X-Upper E-Chain Bracket (002156)

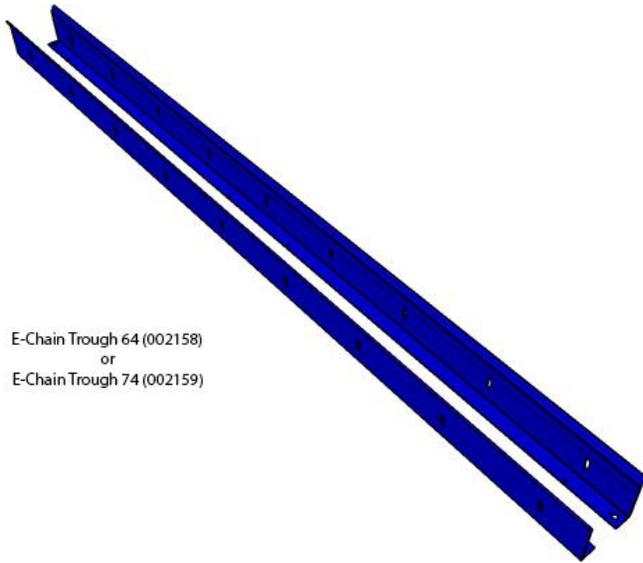
This bracket mounts to the outer side of the gantry end plate and serves as an attachment point for one end of the chain.

Depending on when the PRS model was purchased, the end plate may not have the mounting holes drilled for this bracket and will need to be drilled. Hole locations for the end plates can be found in the drawings at the end of this document.



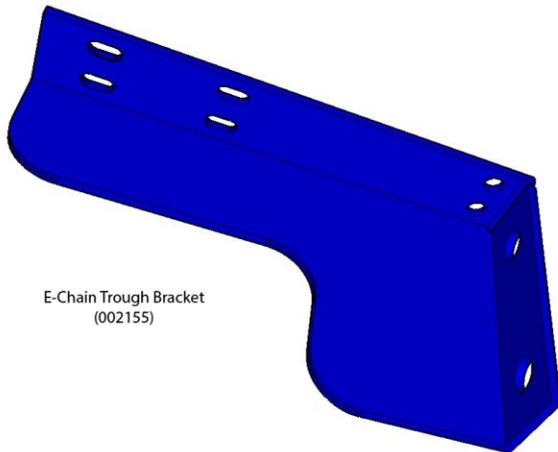
E-Chain

The E-chain will come sized to match the length of ShopBot's X-axis that it was ordered for. It is designed to be center-mounted, meaning that it will be shorter than the actual length of the machine.



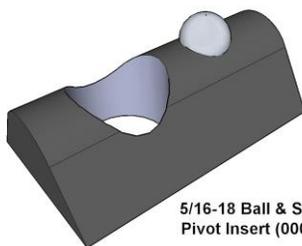
E-Chain Trough 64 (002158)
or
E-Chain Trough 74 (002159)

The E-chain trough will support the chain when traveling down the length of the tool. The E-chain trough also acts as an anchor point for the lower end of the E-chain.



E-Chain Trough Bracket
(002155)

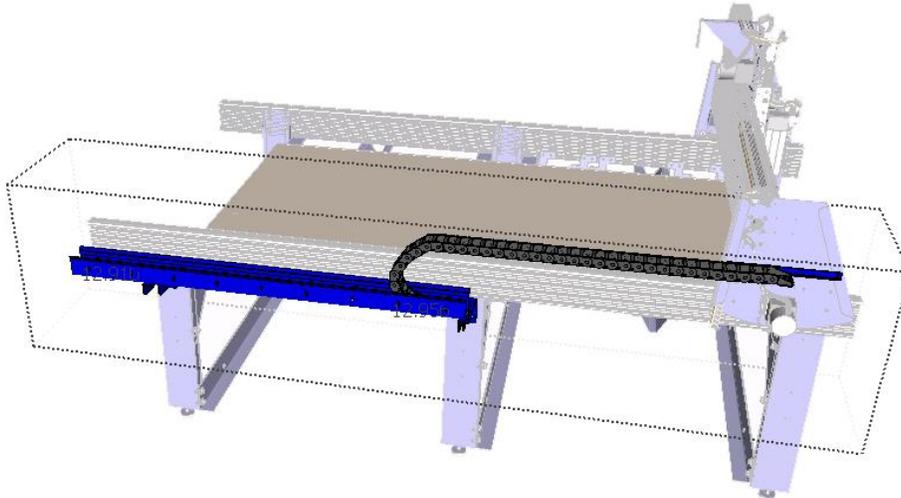
The E-chain trough bracket mounts to the underside of the table side extrusion and rests on the side of the table leg. It serves as a mounting point for the trough.



5/16-18 Ball & Spring
Pivot Insert (000728)

One of the specialized pieces of mounting hardware is the Ball & Spring Pivot Insert (000728). Two of these will be used to mount the E-chain trough brackets to the underside of the table extrusion. Their function is to slip into the slot of the table extrusion and rotate into position before being tightened.

Installation



The above image shows how the E-chain installation looks on a 96" PRS.

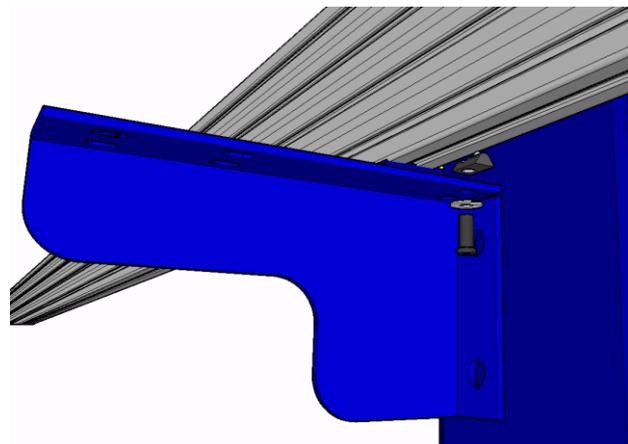
The chain should be mounted on the side of the tool where the Y-axis e-chain "exits" the gantry. When installed, the X-axis chain will carry the cables from the gantry to approximately the center of the ShopBot, where they will route underneath the table to the control box. This means that the trough will need to span across the legs farthest from the X zero position.

Step 1: Installing the Trough Bracket

Depending on the length of ShopBot, the number of trough brackets needed can vary from 2-4. The hardware called for here will reflect the mounting of a single trough bracket.

- (1) E-chain trough bracket (002155)
- (2) Button head screws 5/16-18x3/4
- (2) Lock washers 5/16
- (2) Ball & spring pivot inserts (000728)

Insert the ball & spring pivot to the underside of the extrusion, in line with the table leg. Mount the E-chain trough bracket loosely with the button head screws and washers.



Note: The ball & spring pivot inserts need to be inserted so that the holes are turned toward each other.

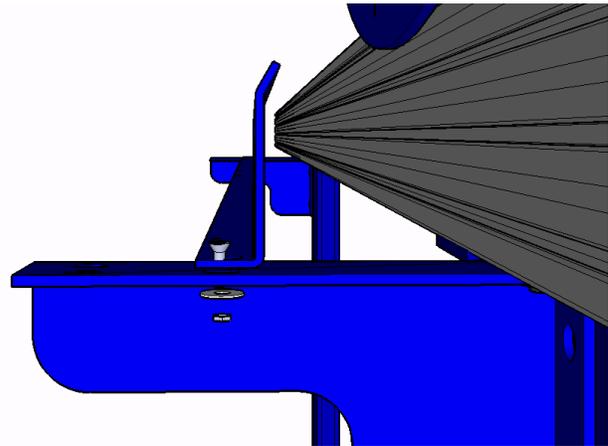
Mount additional trough brackets as needed. Most often, the middle leg and the back leg (farthest from the 0,0 home position) are used.

Step 2: Installing the Trough

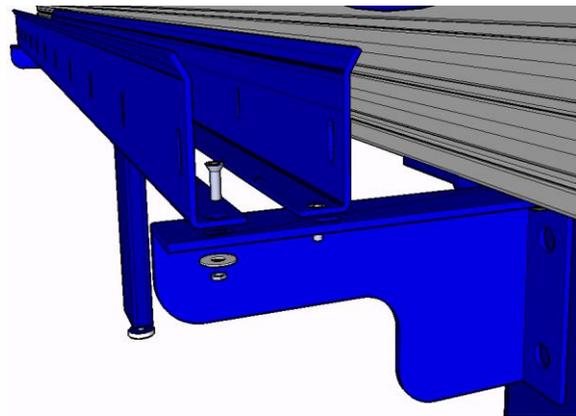
- (2) E-chain troughs (64 or 74)
- (4) Flat head screws $\frac{1}{4}$ -20x3/4
- (4) Lock washers $\frac{1}{4}$
- (4) Flat washers $\frac{1}{4}$
- (4) $\frac{1}{4}$ Nylock nuts

Position the E-chain trough so the holes closest to the edges are over the inside holes in the trough brackets.

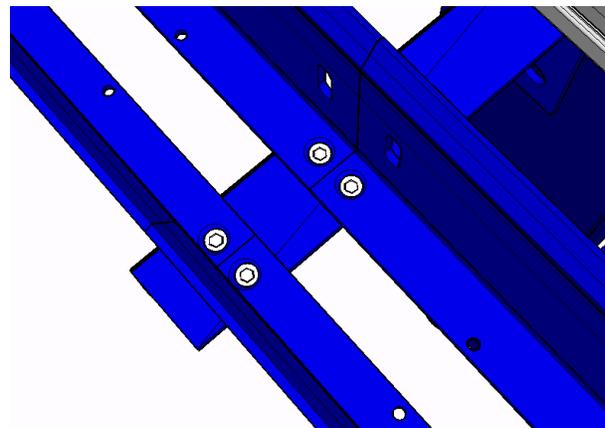
Secure the trough to the bracket using the $\frac{1}{4}$ " flat head screws, flat washers, lock washers, and Nylock nuts.



Repeat the above process for the other trough piece, using the outer holes on the bracket.



For models that need extended lengths of trough: Use the second set of holes in the E-chain bracket to butt the trough sets together.

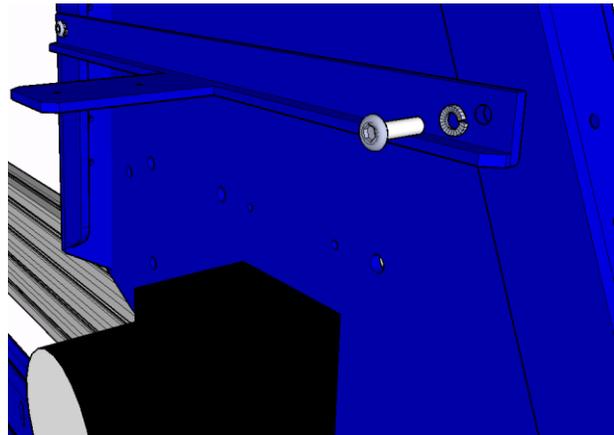


Step 3: Installing the X-Upper E-Chain Bracket

- (1) X-upper E-chain bracket (002156)
- (2) Button head screws $\frac{1}{4}$ -20x3/4
- (2) Lock washer $\frac{1}{4}$

Mount the X-upper E-chain bracket to the $\frac{1}{4}$ -20 holes located in the side of the endplate and secure bracket with button head screws and lock washers.

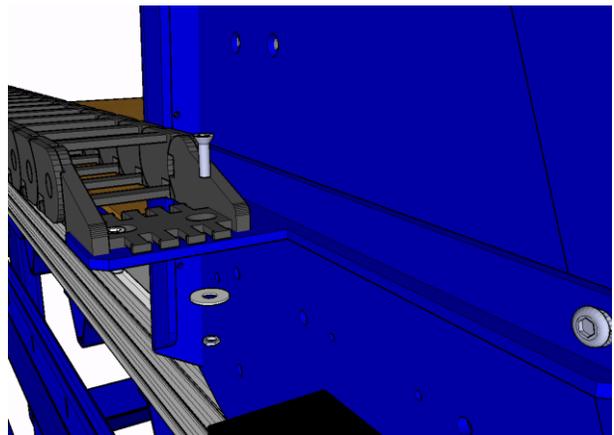
Note: Some very early PRS models may have undersized holes that will not accommodate $\frac{1}{4}$ " hardware. If so, it will be necessary to drill them out.



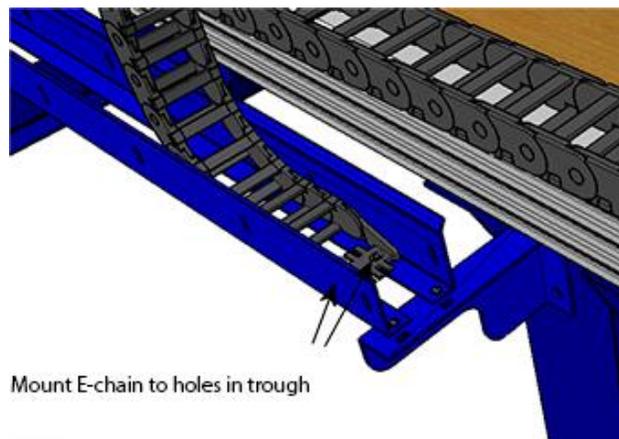
Step 4: Installing the E-chain

- (1) E-chain
- (4) Flat head screws 10-32x3/4
- (4) Flat washer #10
- (4) Lock washer #10
- (4) 10-32 Nut

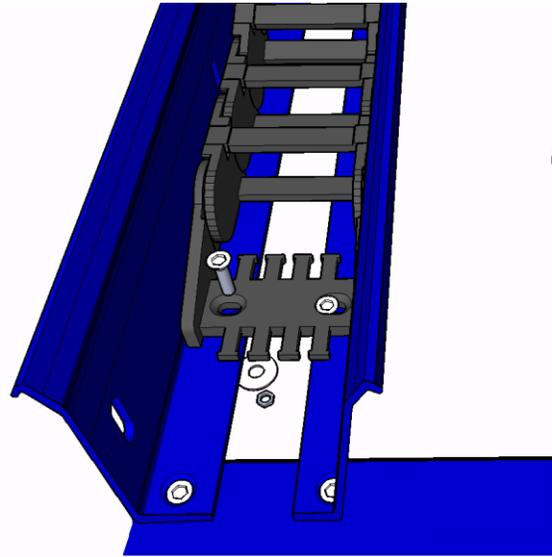
Attach the E-chain to the tab that extends out from the X-upper E-chain bracket, and secure E-chain with flat head screws, flat washers, lock washers and nuts.



On the other end of the E-chain attach the E-chain to the holes located $3 \frac{1}{2}$ " (64mm) from the end of the trough and closest to the middle of the machine.

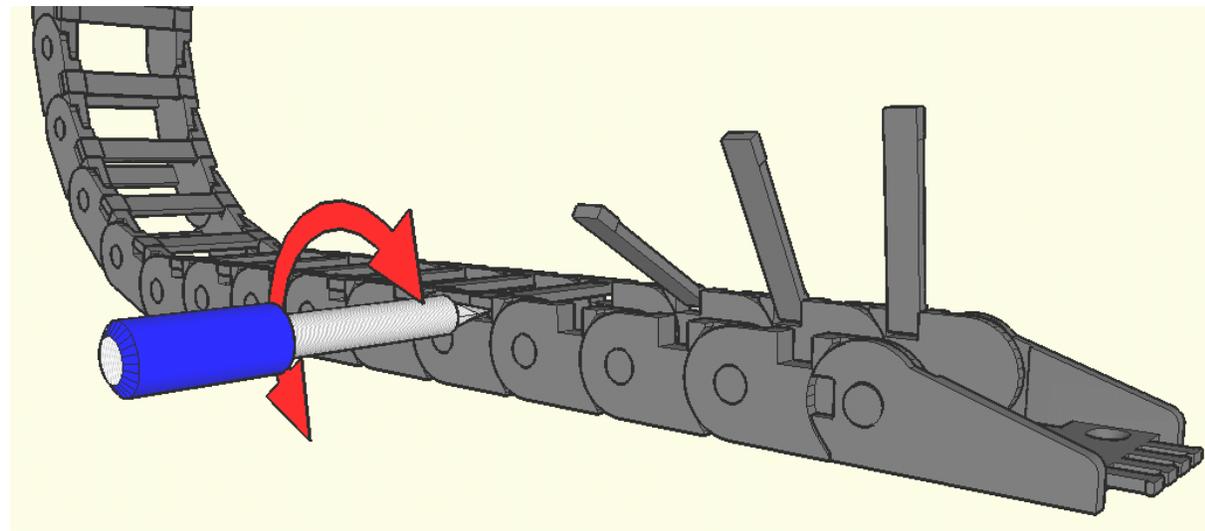


Secure E-chain to trough with flat head screws, flat washers, lock washers and nuts.



Move the E-chain back and forth along the X-axis the full extent of travel. The E-chain should not feel as if it is binding or under tension. If this appears to be the case, loosen the 5/16-18 button head screws in the trough bracket and slightly adjust the trough in the needed direction along the table side. Completely tighten down the button head screws.

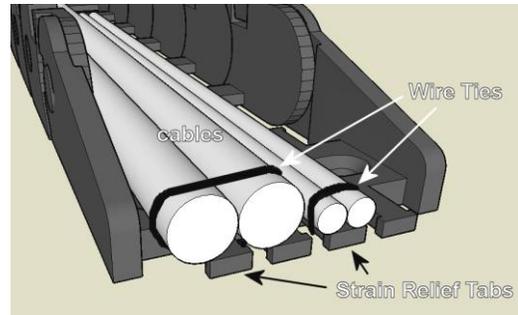
Opening the E-chain



Insert the tip of a flathead screwdriver into either side of the hinged access bar. Turn the screwdriver approximately $\frac{1}{4}$ turn in each direction until the sides of the access bars release. Open the access bars to run wiring that is common to the machine.

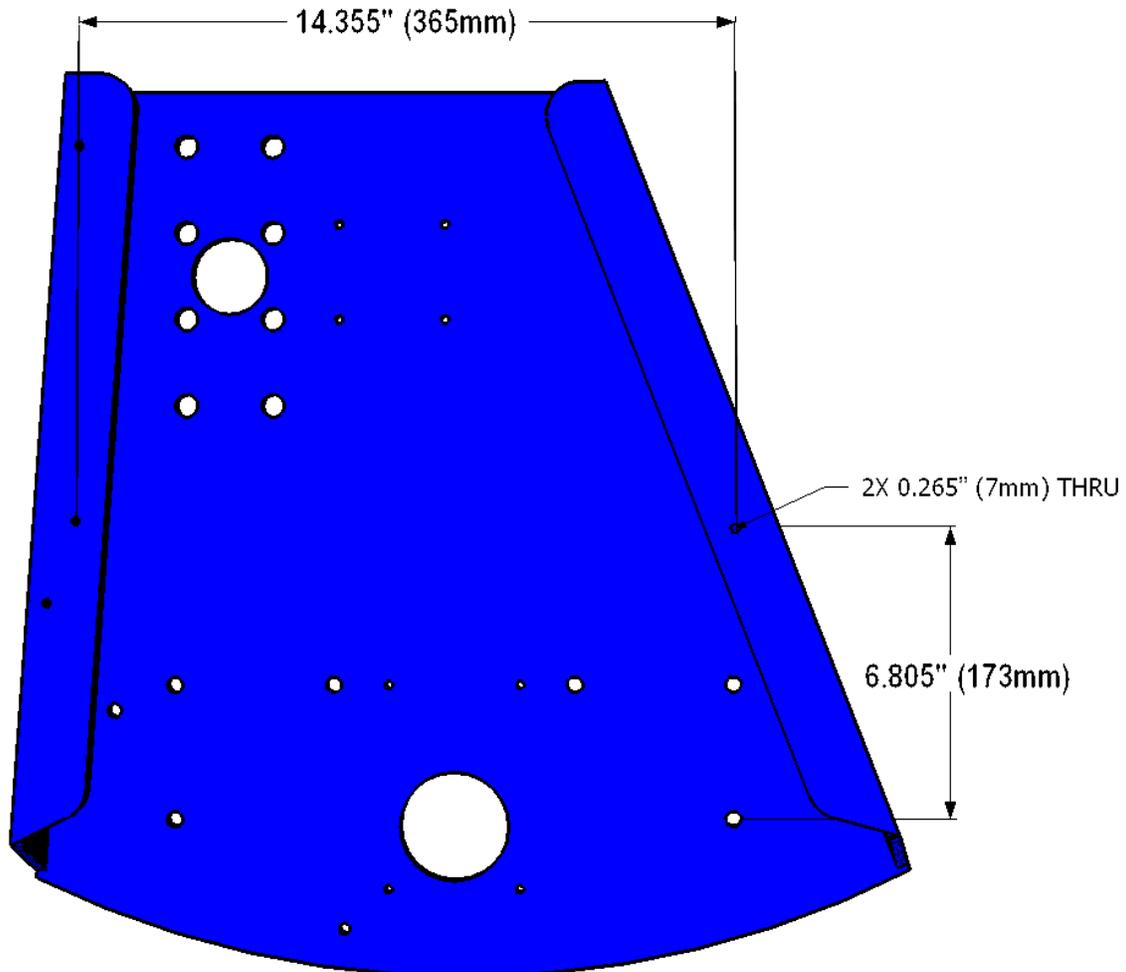
Use wire ties to secure the cables to the strain relief tabs on the ends of the E-chain to keep the cables secure.

Only use wire ties on the ends of the chain, as shown here. Using them inside the chain is discouraged because they are likely to bind during movement.



End Plate Drawing

Use this drawing to drill two holes for the mounting of the X-upper E-chain bracket if necessary (only for very early model PRS tools).



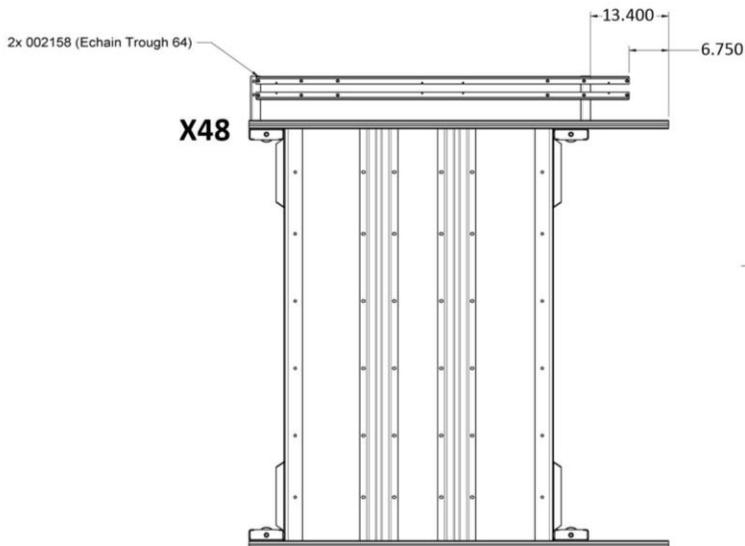
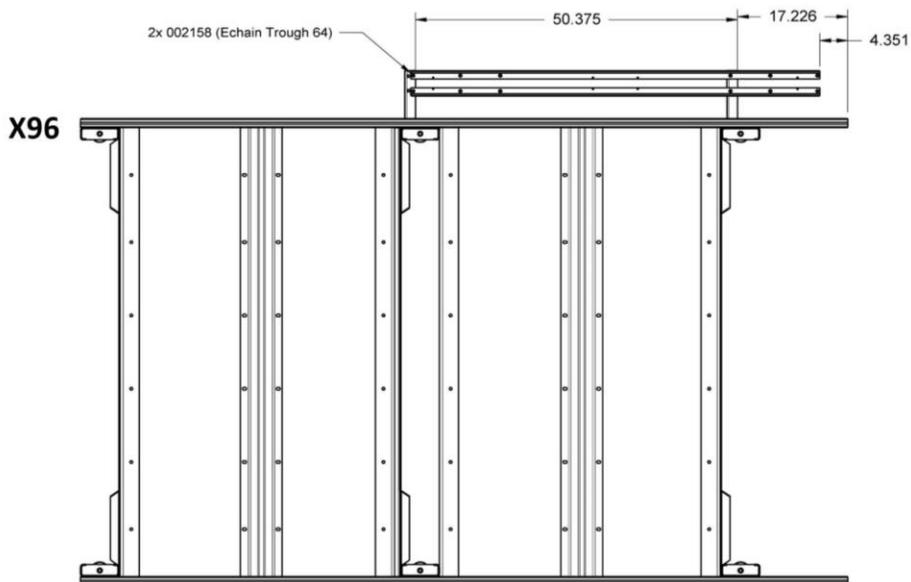
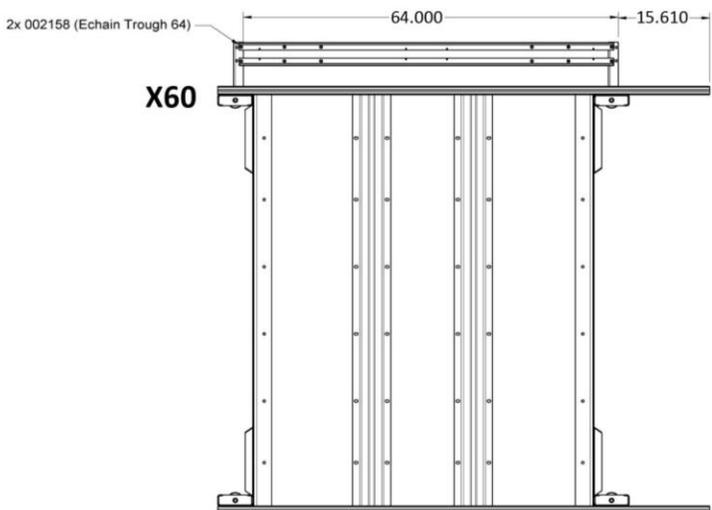


Table drawings for
E-chain placement

NOT TO SCALE



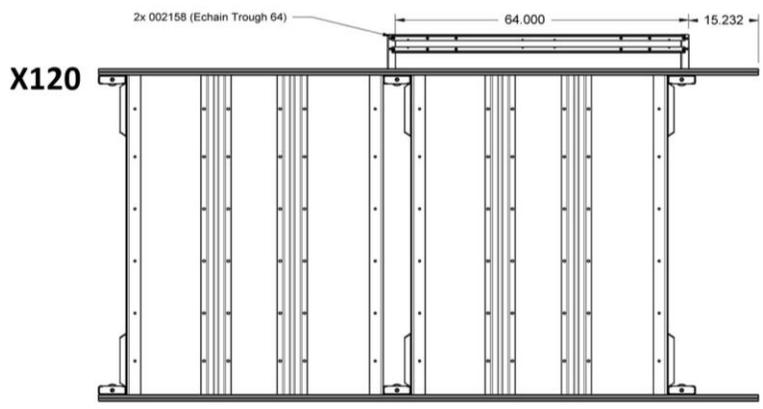


Table drawings for
E-chain placement

NOT TO SCALE

