



How to build and install the Backhoe Pivot

Pivot allows the side-to-side movement of the Backhoe's Stick and Boom

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INTRODUCTION

[Diagram of Pivot Parts](#)



TOOLS:

- [Hoist](#) (1)
- [MIG welder](#) (1)
- [Oxy-Acetylene Torch](#) (1)
- [Standard hand tools](#) (1)
- [Impact wrench \(helpful\)](#) (1)



PARTS:

- [ADD BOM HERE](#) (1)

Step 1 — How to build and install the Backhoe Pivot



- Take two 12-hole steel tubes. These will be used to mount the Quick Attach.
- Mount two 3x1 hole plates on both ends of one 12-hole tube with 7" bolts and nuts. This will be the bottom of the Quick Attach plate.
- Mount two 2x3 hole plates to the ends of the other 12-hole tube using 7" bolts and nuts. Use only the 2 inner holes, as the third hole will be used to mount the Stabilizer Legs.

Step 2



- Build the Angled Support (pictured in step 3) from a 24" piece of 1/2"x4" plate. Punch 2 holes, 2" in from each end and at 20" spacing using a 1-1/16 bit in an open source [Ironworker Machine](#).
- These support pieces prevent side-to-side movement of the Quick Attach tubes.

Step 3



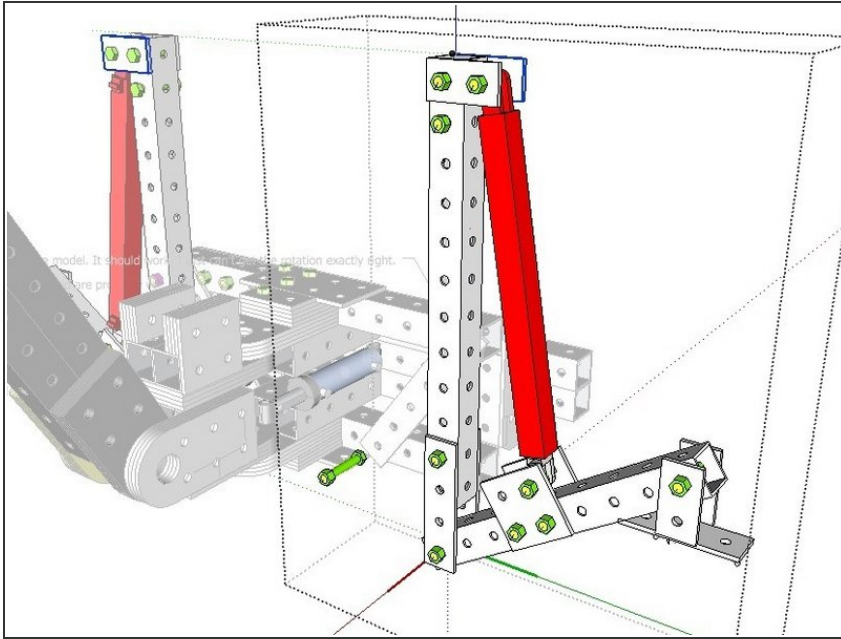
- Install the 2 Angled Supports using 7 inch bolts, one on each side. (as pictured)
- Note: there's a mistake in this picture! The 2 2-hole by 4-hole plates on the top tube should hang down instead of up.

Step 4



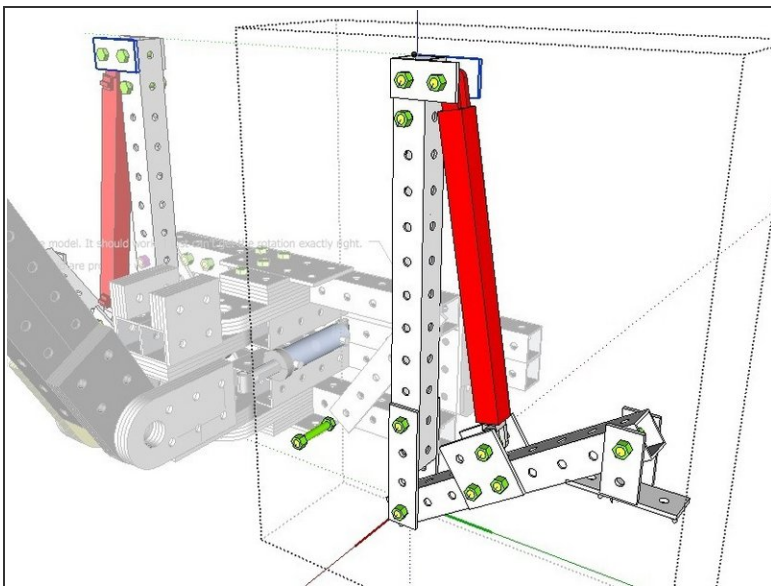
- Mount two 4x1 hole plates to end of 12-hole tube to create vertical support for Stabilizer Legs. (RobK note - check length)
- Attach using 7" bolts with two holes extended beyond the end of the 12-hole tube.
- Mount these vertical supports to Quick Attach tube. Stabilizer Legs will attach to these. (note: photo inaccurate - angled support should already be in place).
- Note: there's a mistake in this picture! The 2 2-hole by 4-hole plates on the bottom tube hangs off the wrong way. It should hang towards the other horizontal tube.

Step 5



- Install the Leg Pivot Plate (4x1 hole plate at bottom of image), only on the upper hole with 7 inch bolt.

Step 6



- Mount 2x1 hole plate at the top of each vertical leg stabilizer tube using a bolt to attach to the tube and a pin to the right of that, which the cylinder will rotate on.
- Next attach a 2x2 hole plate to the 4th and 5th holes of the stabilizer legs.
- Mount the Leg Cylinders to the plates at top and bottom using four 11" bolts.

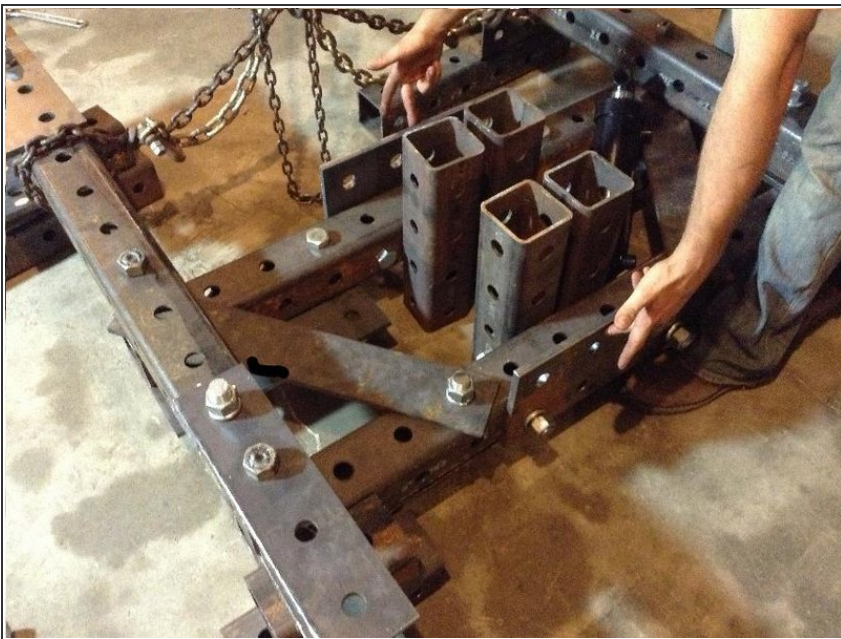
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Step 7



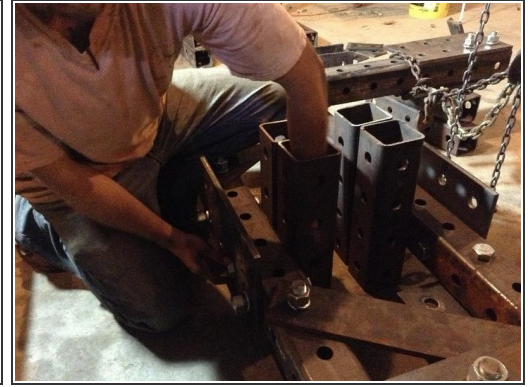
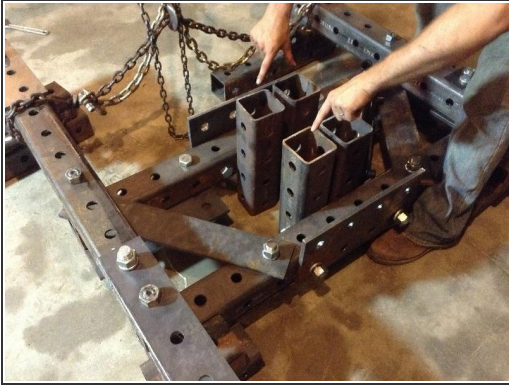
- Weld feet to feet pivot plates (we used a stack of spacers to get the feet in the right position before tacking and welding).
- Next weld a few pieces of something (we used small sections of rebar) to the bottom of the feet for added traction. We used a Z orientation with the hope that this would provide stability in several directions.

Step 8



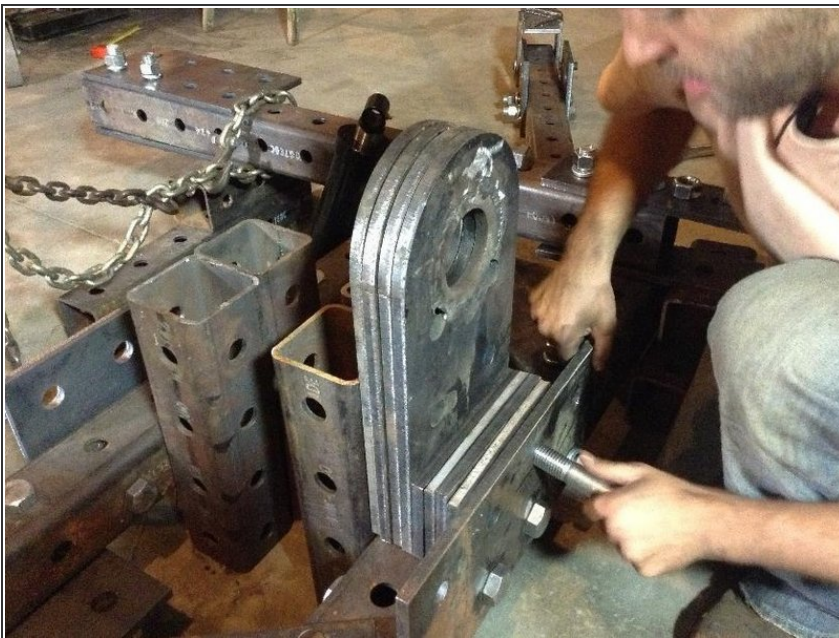
- Attach two 2x4 hole Reinforcement Plates to the top and bottom Quick Attach tubes

Step 9



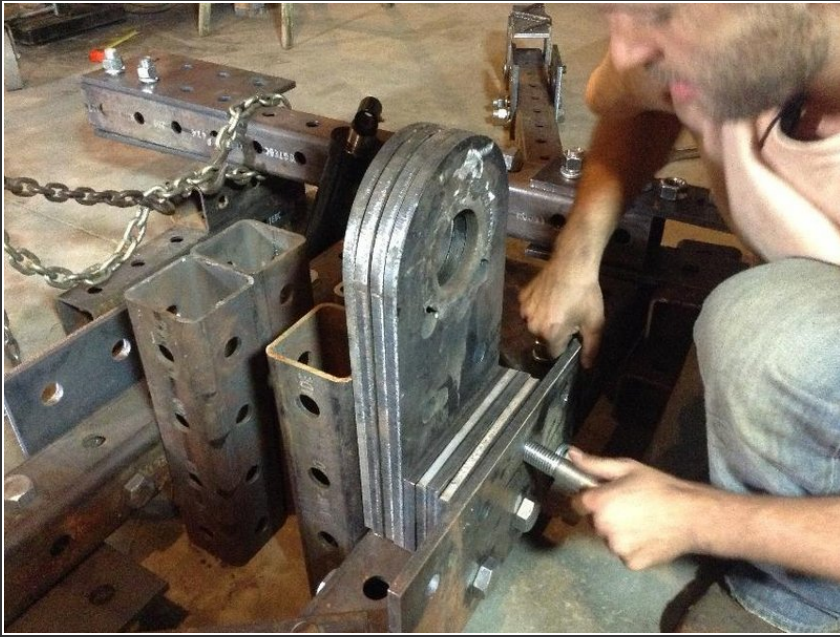
- Attach Main Pivot Tubes to Quick Attach tubes. Leave a space of 4" between them. Use ~10" bolts to attach Reinforcement plates to the Main Pivot Tubes (through Quick Attach tubes)
- Insert bolts through the tube (bolts should not pass through the 4" space between the Main Pivot Tubes because the pivot cylinders will move through this space).

Step 10



- Attach 4 pivot plates and five 1x2 hole plates as spacers between Reinforcement plate and pivot tubes. Use ~6" bolts
- Nuts will be mounted to the inside of pivot tubes. Hold the nut inside the tube (with a vice if necessary) while screwing in the bolts. Tighten with impact driver

Step 11



- Hold nut inside tube to do this.

Step 12



- Place Spacer Plates between the Bottom Reinforcement Plate and the Pivot Plates. Bolt these with 6" bolts

Step 13



- Bolt the Pivot Plates to the Main Pivot Tubes.

Step 14



- Step 18 wisdom

Step 15



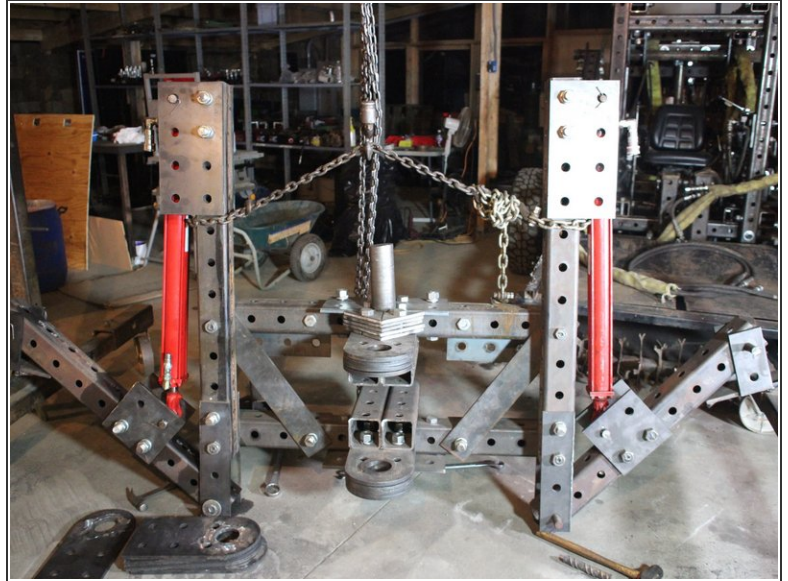
- Step 19 ifo

Step 16



- Step 20

Step 17



- Step 21

Step 18



- Zero - flip pivot upside down using a hoist

Step 19



- build cylinder bottom mount plates consisting of one by four whole plate pieces

Step 20



- cut bushings four-cylinder bottom mount and bolt cylinder mount one by fours to the pivot part one

Step 21



- Cut 7.5 inch 1 inch shaft to size and weld a T handle on it consisting of a piece of 2" x 0.5" rebar

Step 22



- place cylinder in position and place shaft through Buesching and cylinder mount and through second Bushing
- hold in place to where it will be welded put a small spacer underneath the rod and part of the cylinder to fit exactly within The 4 inch cavity of pivot part one.
- The bushing location should be exactly 1.6 inches behind the & whole of the one by four hole plate, Or right behind the hole So that people can be put in the fourth hole of the one by four hole plate

Step 23



- Repeat for the second cylinder

Step 24



- Build cylinder rod and mount

Step 25



- take a 2 x 3 whole plate and notch out a space on the one end that is two and three-quarter inches from the edges and 2 inches deep.

Step 26



- Take a second plate which is an unfinished pivot plate and cut it down to 11 1/2 inches on the long side and cut off 1/2 inch from all sides to make it slightly smaller than the 3 x 2 whole plate

Step 27



- weld these two pieces together all around the edges for a solid fit.

Step 28



- Weld the 2 inch mounting bushings around the notch exactly 1.5 inches away from the edge of the 2 x 3 plate. Make sure that the spacing between them is exactly 2.25 inches or the width of the rod and cylinder tube. Weld with the shaft in place

Step 29



- weld the 2 x 3 gusset plate right in front of the cylinder mount bushings and weld solidly to the plate assembly. Do two of these per mounting plate.

Step 30



- repeat for the second cylinder

Step 31



- bolt the Rod and mount plate to pivot part two using short bolts. Do this only hand tight.

Step 32



- Put in the rod and mounting pin to make sure it fits

Step 33



- take off the Rob and mounting plate and put on two pivot plates. For mounting the boom

Step 34



- Bolt on the cylinder boom cylinder mounting assembly to the top of that part two

Step 35



- Mount the quick attach Finger assemblies on the tractor - at hole 10 on the front loader
- Add spacer behind the assemblies so they clear bolts on pivot. (Extra pivot plates used as spacers in this build)

Step 36



- Move tractor to the backhoe and put the upper quick attach finger weldment into place on both the right and left-hand sides Of the quick attach and tack into place
- Add triangular support to side of finger for strength

Step 37



- Add fingers for bottom of Quick Attach
- Determine the location of the latch hole for the bottom quick attach part and torch it out

Step 38



- Put the bottom quick attach plate weldment into place on the backhoe and tack

Step 39



- Move tractor away and finish weld the quick attach plates on the Backhoe