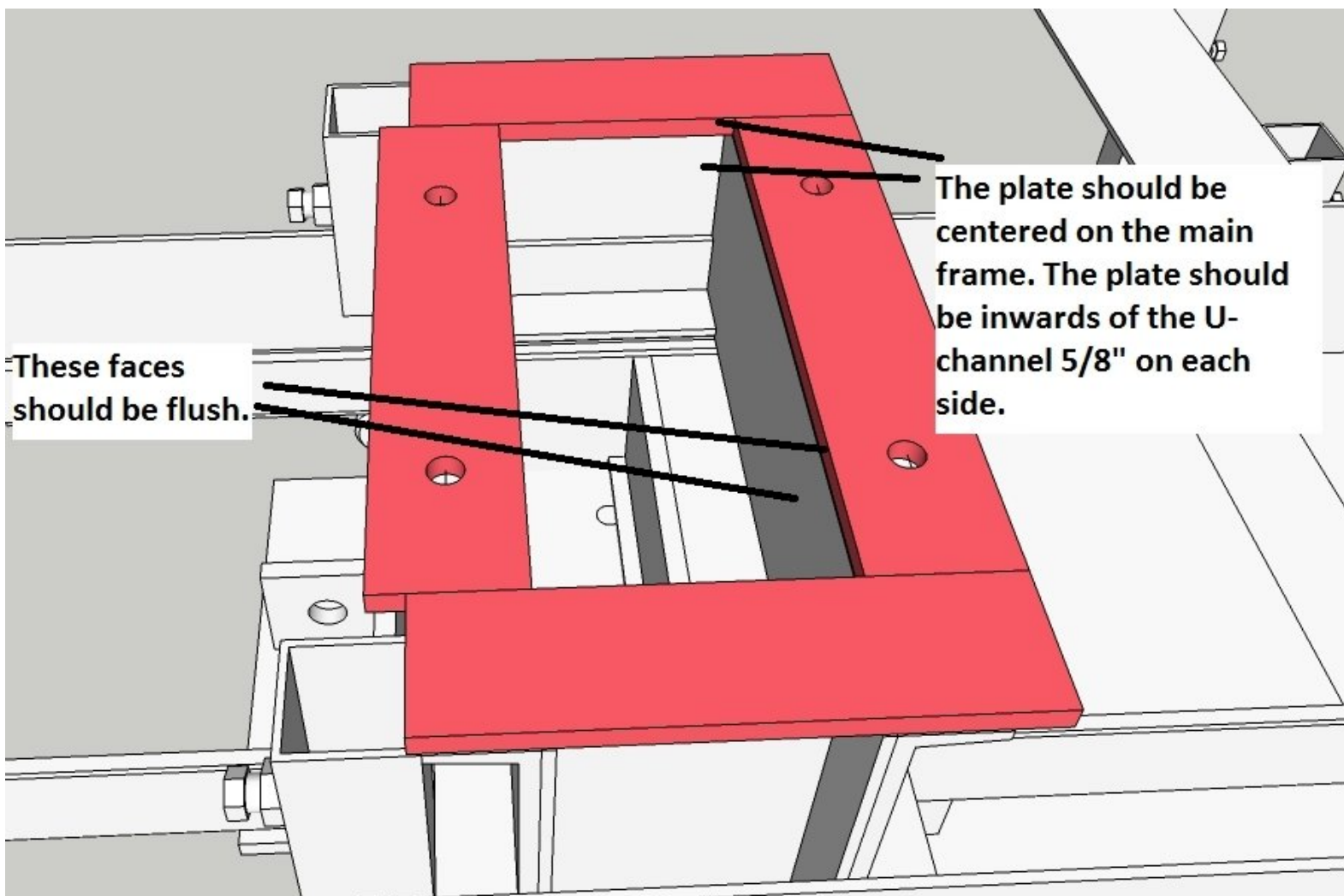




Soil Loading System

This guide covers the installation of the hopper, shaker, and grate to the assembled main frame.

Written By: Dozuki System



INTRODUCTION

You must have finished assembling the main frame before you install the soil loading system.



TOOLS:

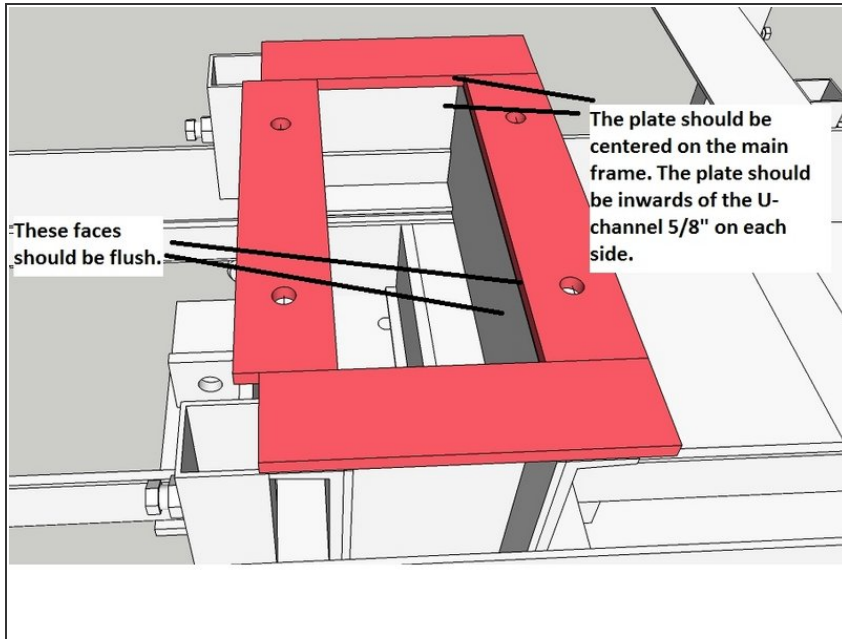
- [Angle grinder](#) (1)
- [c clamps](#) (1)
- [Spray paint](#) (1)
- [torch](#) (1)
- [various wrenches](#) (1)
- [Vise clamps](#) (1)
- [Welder](#) (1)



PARTS:

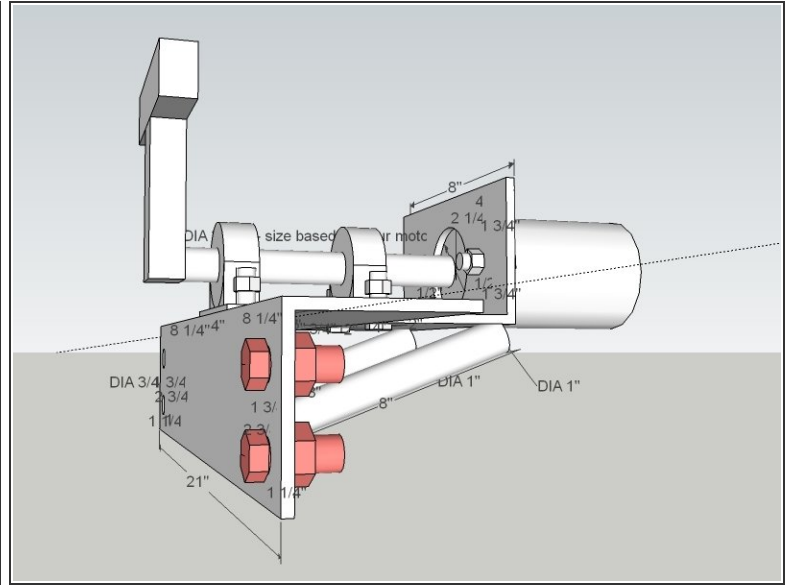
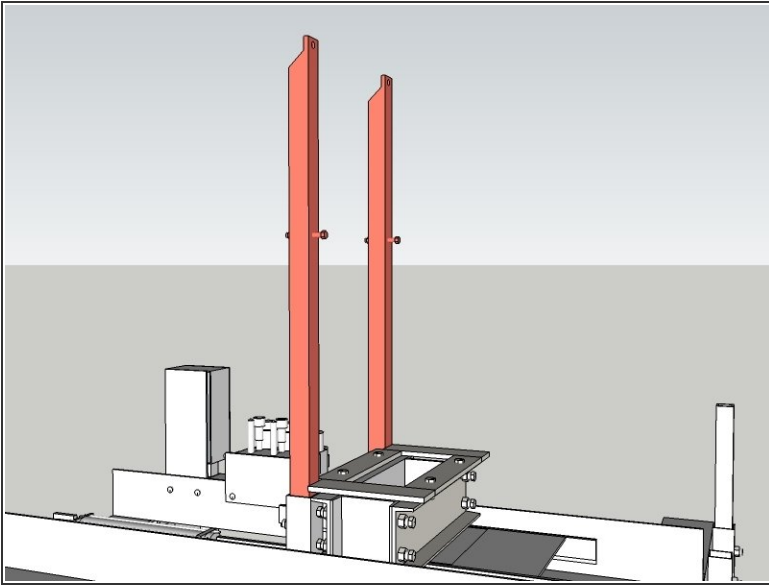
- [3/4" galvanized nuts](#) (10)
4 for hopper mount 4 for mounting the shaker, 2 for the bottom on grate supports
- [1/2" lock nuts](#) (2)
for the grate to hopper supports
- [1/2" nuts](#) (2)
for the hopper to hopper supports
- [3/4"x1.5" bolts](#) (8)
4 for hopper mounting plate, 2 for shaker mount, 2 for grate supports
- [3/4"x2.5" bolts](#) (2)
for top of grate supports to grate
- [1/2"x2.5" bolts](#) (2)
for grate to hopper supports
- [1/2"x3" bolt](#) (2)
for hopper to hopper supports
- [1/2" washers](#) (8)
4 for hopper to hopper supports, 4 for grate to hopper supports
- [3/4" washers](#) (6)
4 for grate to hopper supports, 2 for grate to grate supports
- [1/2"x1" Bolts](#) (4)
For dirt deflector to grate

Step 1 — Torch the holes for the hopper mounting plate



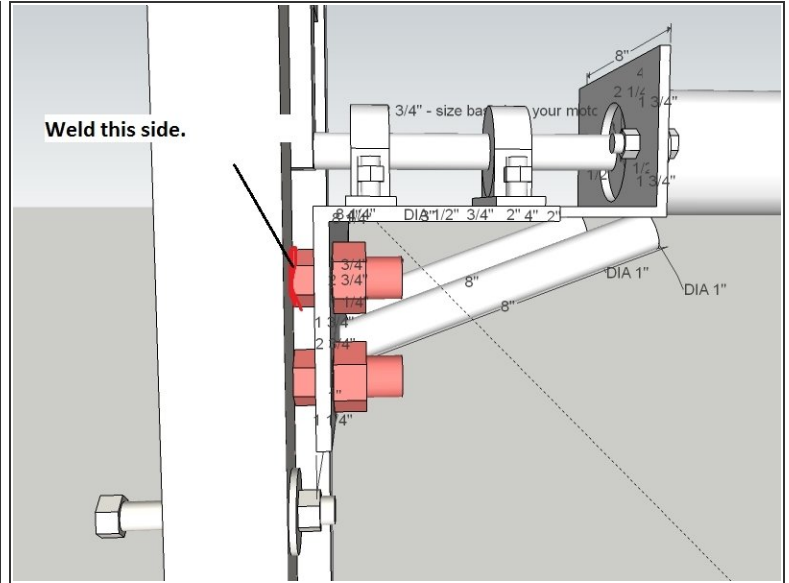
- Clamp the hopper mounting plate to the top of the main frame, positioned as shown, with the cutaways positioned by the leg holders.
- Clamp it so that the side you grinded down the welds on is touching the main frame.
- Torch the holes thru to the main frame.
 - Check that the fit is good by putting bolts in all the holes.
- Grind away all the slag.
- Bolt the mount to the frame.

Step 2 — Install hopper supports and prepare shaker mount.



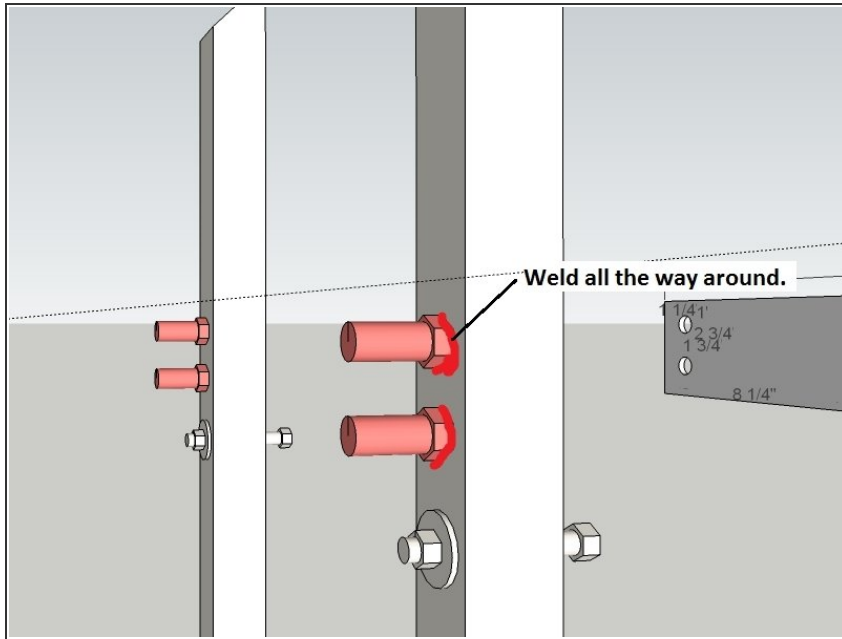
- Install the hopper supports into the leg holders.
 - Make sure you put the support with bolts on it on the correct side (refer to your shaker motor and look where you marked it.)
 - Their bottom side should be flush with the bottom of the leg holders on the frame.
 - Make sure they are orientated correctly. See photo.
- On the side of the shaker motor that you didn't weld bolts for, put a bolt (3/4"x1.5") thru both holes and tighten nuts onto them.
 - The nut should be on the side of the mount that the motor will be installed to. (see photo)

A photograph of a hydraulic testing rig in a workshop. The rig consists of a vertical frame with a horizontal beam. A red emergency stop button is circled in red on the control panel. The workshop has a wooden roof and a large window looking out onto a green landscape. A large blue gas cylinder is visible on the right side of the frame.



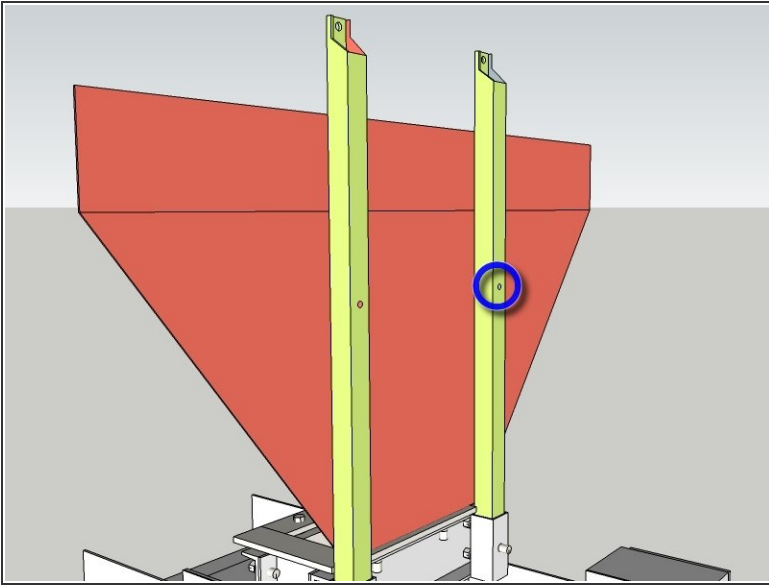
- Place the shaker onto the bolts already welded to the hopper supports.
- Clamp the other side to the hopper support.
 - Use a square to make sure the shaker mount is square with the hopper supports.
- Tighten nuts onto the side with the welded bolts.
- Tack the bolts to the hopper support.
 - Make sure you tack them to the hopper support, NOT the shaker mount.
 - Tack as much as you can from this position.

Step 4 — Weld shaker bolts.



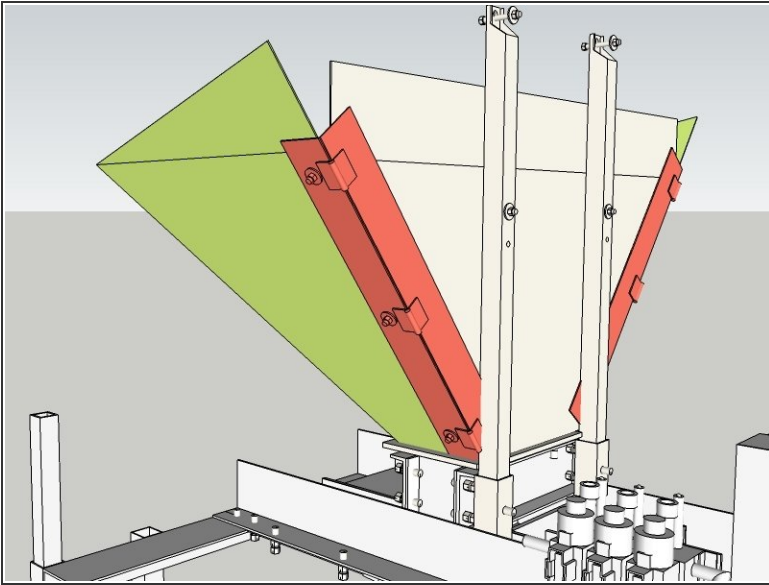
- Loosen all the nuts and remove the shaker.
- Protect the threads on the bolts.
- Weld all the way around the bolt to the hopper supports.
- Don't remount the shaker yet.

Step 5 — Clamp the hopper back to supports and torch holes



- Clamp the 34" tall hopper back to the hopper supports.
 - It should be centered horizontally between them, and touching the supports all the way down to the hopper mounting plate.
- Torch through the holes circled in the diagram, so you torch through the hopper sheet metal.
 - Torch through it on each side, just enough so you have 2 small holes.
- Un-clamp the sheet metal and torch 1/2" holes for the bolt.

Step 6 — Remount the first plate, and prepare to weld



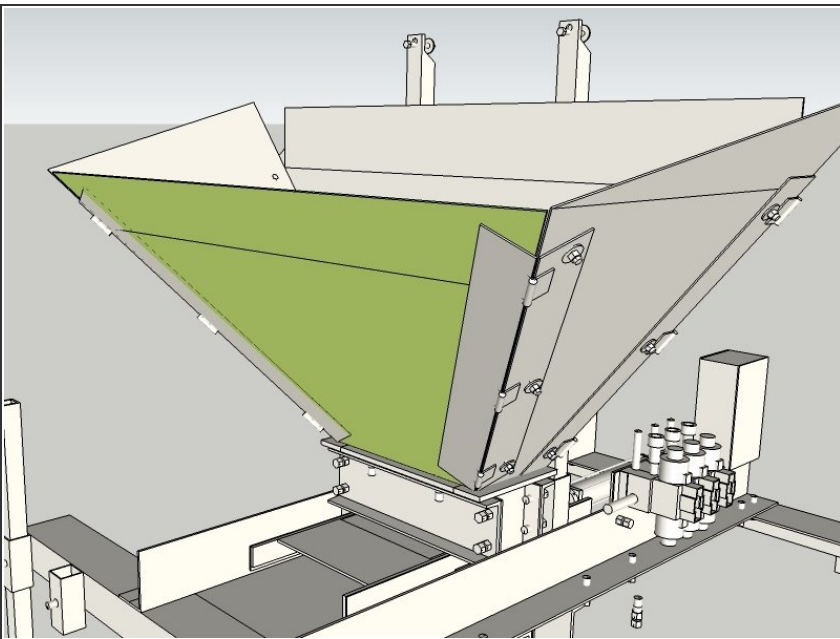
- Grind off the slag from the torching.
- Mount the first plate back to the hopper supports.
 - Use a 1/2"x3" bolt and a nut with washers on each side.
- Lift the side pieces and clamp them to the first plate via the hinge plates.
 - Minimize the gap between them as much as you can by pushing them together tightly.

Step 7 — Weld the hinge plates to the back piece



- Weld it about 50%, as no more is necessary.
- Weld in 3-4 inch sections.

Step 8 — Clamp and weld the front piece



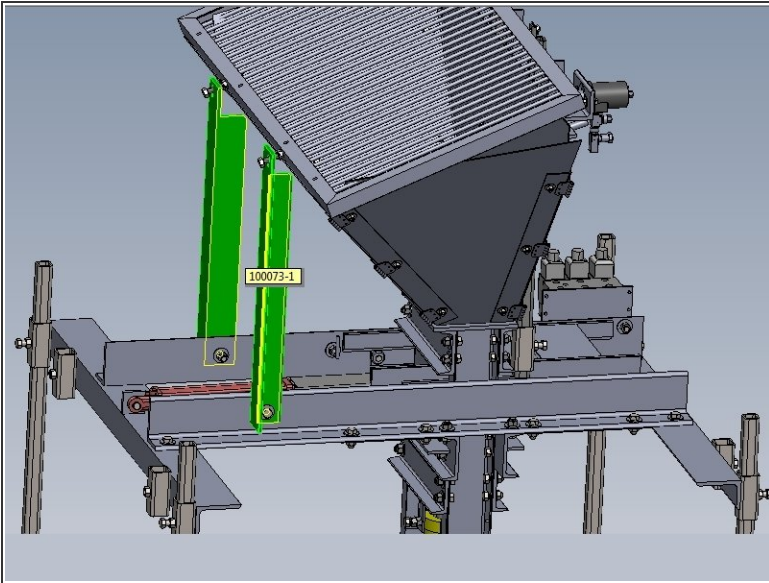
- Clamp the final piece in place to the other side of the side pieces.
- Yet again, minimize the gap between the two.
- You may need somebody to get inside of the hopper and push out so you can clamp it well.
- Weld the last piece like you welded the first one.

Step 9 — Place the grate and bolt it to the hopper supports



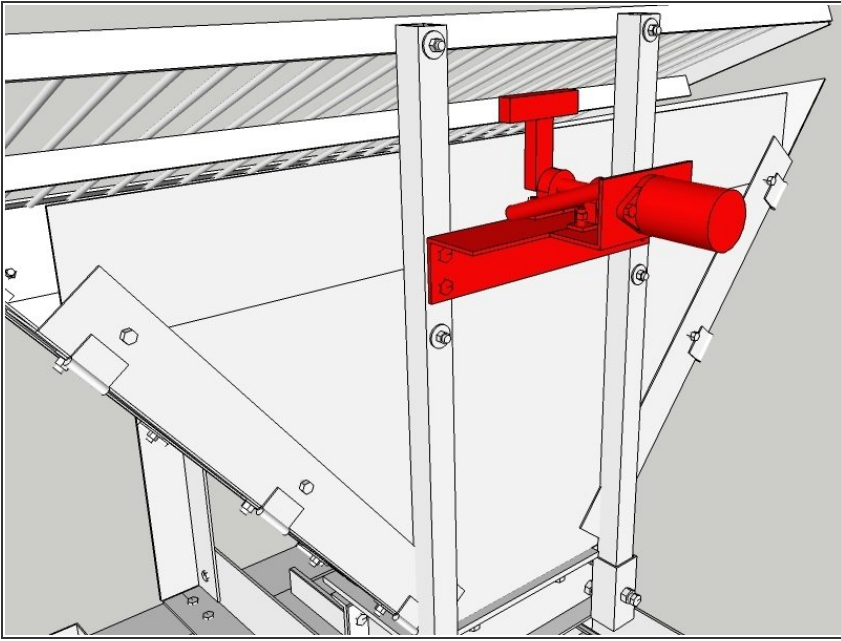
- Get a friend or two and lift the grate on top of the hopper.
- The front end (with the slots) should be as shown, and the grate should be inside of the hopper on the other side (the side with the nuts).
- Have your friend hold the grate in place for the next step, or use C-Clamps to clamp the grate to the supports.
- Bolt the grate to the hopper supports (1/2"x 2.5" bolt and lock nut). Bolt both loosely, and then tighten them.
- You'll need 2 washers on each side, as the holes are slots and a 1/2" washer will be too small to prevent the washer from warping. Use a 3/4" washer as the other one.
- You may want to use a large nut in place of a washer on the hopper support side. (see photo)

Step 10 — Install the grate supports



- Loosely bolt the grate supports to the primary arms
- Bolt (3/4"x2.5" bolt) The grate mounts through the hopper to the grate.
 - Use a 3/4" washer where the bolt goes thru the grate support.
- Tighten all bolts

Step 11 — Re-install the shaker



- [invalid guide link] on the shaker motor mount if you haven't already.
- Place it on the bolts on the hopper supports.
 - If for some reason it doesn't fit, torch away whatever metal is preventing it.
- Tighten nuts onto it.

Step 12 — Install the Dirt Deflector Plate



- Bolt it to the grate.