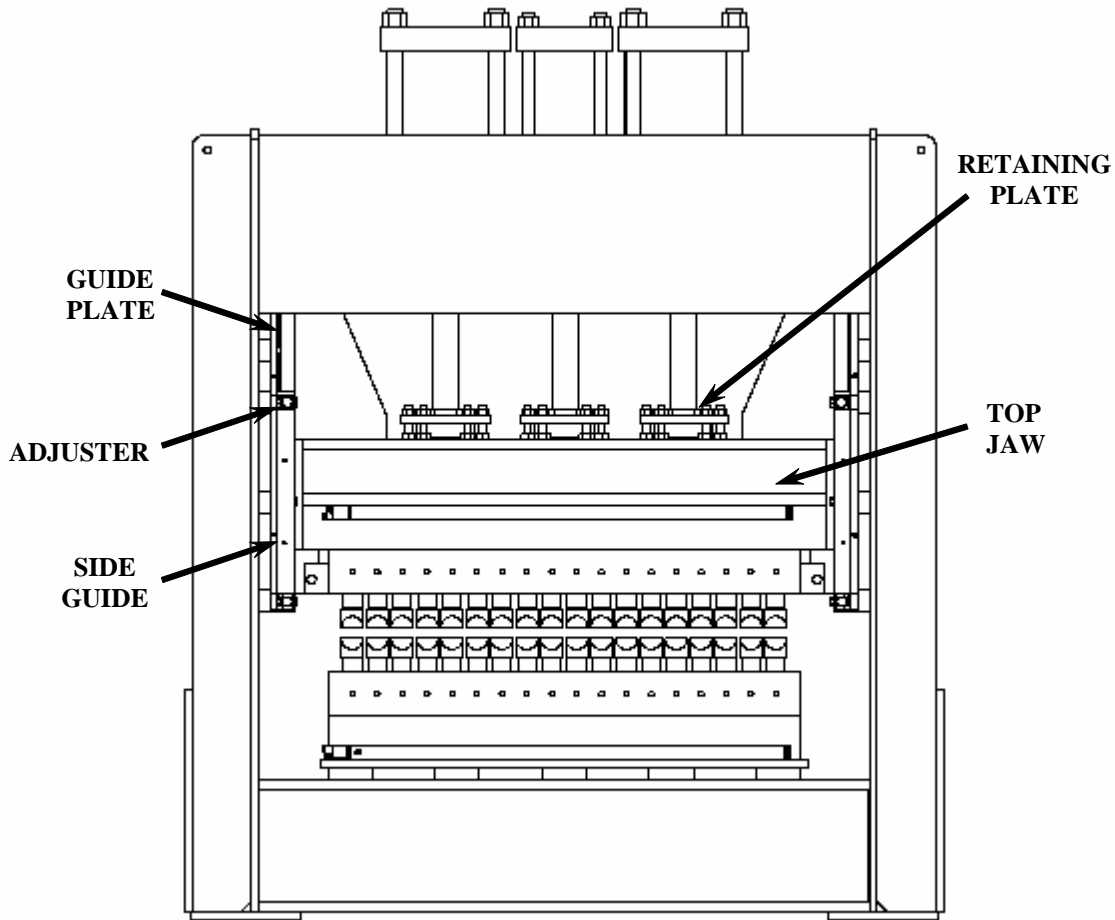
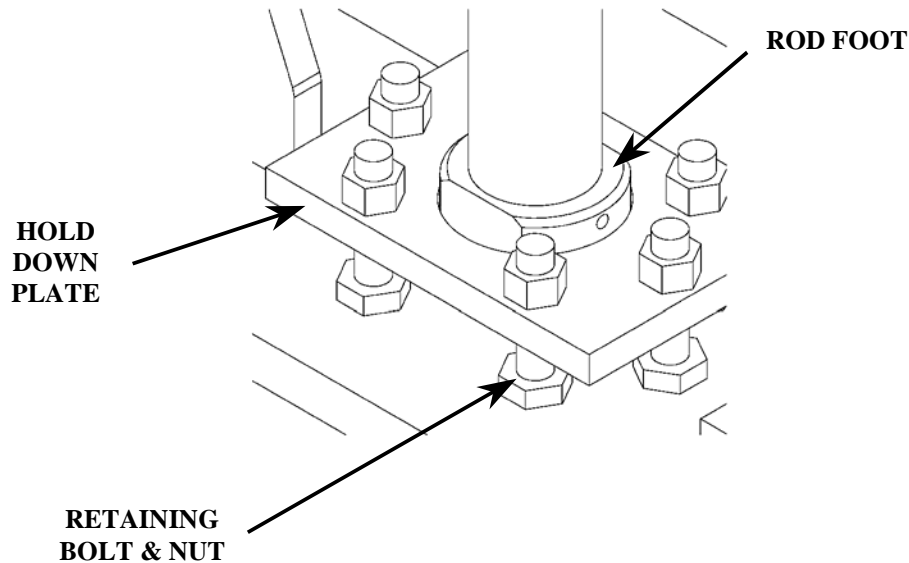


The instructions below will show step by step how to center and torque the tie rods of your cylinders.



**FIGURE 1**

1. Start the power to the cutter. Lower the top jaw all the way down.
2. Inspect the position of the cylinder rod foot with respect to the hold down plate.
  - The rod foot needs to be centered within the hole in the hold down plate. See figure 2. This should be true throughout the entire stroke of the cylinder and may move just a small amount.
  - The top teeth should be directly aligned above the bottom teeth. It may be helpful to take a mirror and look down the length of the teeth to verify that they are in line.



**FIGURE 2 – retaining plate assembly**

3. In most cases the jaw and the cylinders will naturally seek the correct alignment. If the top jaw is out of alignment, then take a measurement of how much so that it can be moved back into position with the guide adjusters.
4. The retaining nuts may appear to be loose. Do not over tighten the nuts on the retaining bolts shown in figure 2. There may appear to be a gap between the rod foot and the top jaw beam. This is natural. Only the cylinder shaft should be pushing against the top jaw, not the rod foot. The system is designed to allow the rod foot to adjust and move around to any misalignment with the top jaw.
5. If it is determined the cylinder is out of alignment, it must be moved back into position. First turn off power to the cutter. Then push and pull each control lever to relieve any pressure left in the system.
6. Loosen the top nuts on the tie rods just enough to allow the cylinder to move, but make sure there isn't a gap larger than 1/16" between the nuts and the top or bottom plates.
7. Use a pry bar against the lower end of the tie rods and the frame gussets to move the cylinder in the proper position. There should be a clean footprint left on the cylinder plate where the cylinder originally was setup. Your goal is to put it back there.
8. When the cylinder is in the desired position, check the top square end cap of the cylinder to see if it is parallel to the frame and not crooked. If so, the cylinder will need to be rotated so the end cap is in line with the others.
9. When the cylinder seems to be in the correct position, tighten down the tie rod nuts. They don't need to be torqued at this point, but snug.

10. Turn on the power to the cutter and check the rod foot alignment again as in step 2. **DO NOT DEAD HEAD THE CYLINDERS!**
11. Repeat step 5 through 10 until correct alignment is made.
12. Finally the cylinder tie rod bolts can be torqued down. Torque each nut on the top of the cylinder down to 1600 ft-lbs for the outside cylinders with 2" diameter tie rods, and 1200 ft-lbs for the center cylinder if it has smaller 1-1/2" diameter tie rods. Torque them in a star sequence pattern like you would a car wheel.
13. Do a final alignment check to make sure the rod foot is centered in the hold down plate.