Damaged Cooper frame TESORO, Martinez, CA



Frame damage that was seen on initial inspection on-site



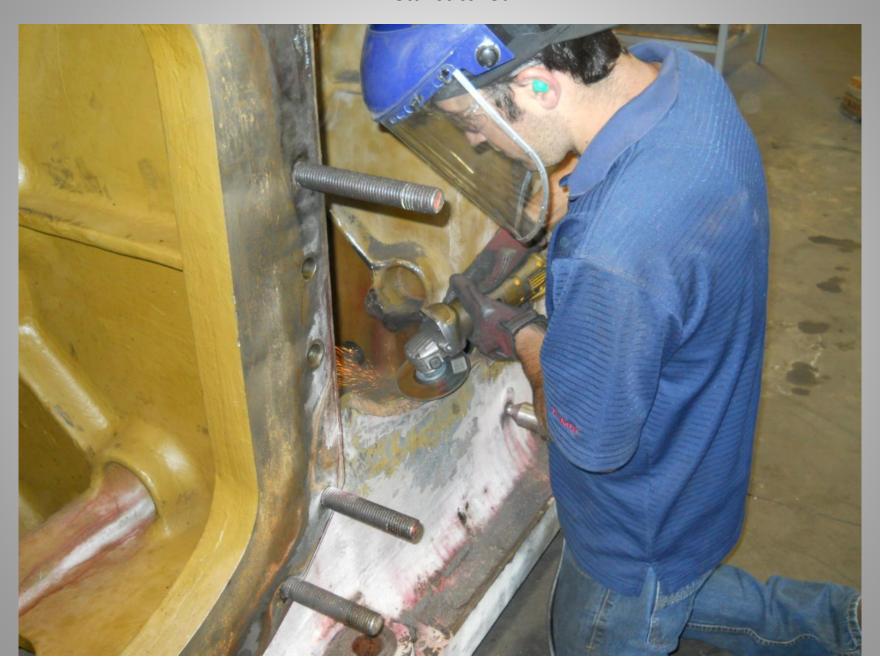
Blown out pieces are sent to *LOCK-N-STITCH* Inc. to be used as templates also to use the good pieces that will be furnace brazed back together



Frame at LOCK-N-STITCH Inc. where the prep work begins on the damaged area



All damaged areas will need to be ground parallel to accept new casting that will be metal stitched



Broken pieces from the flange being laid out to be pieced back together and be furnace brazed



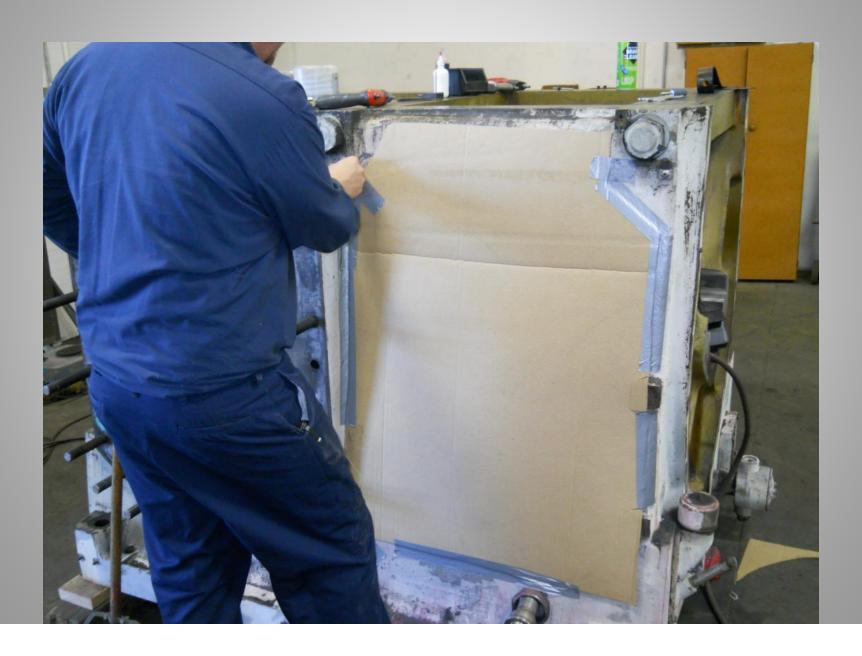
Fitting broken flange pieces and furnace brazing



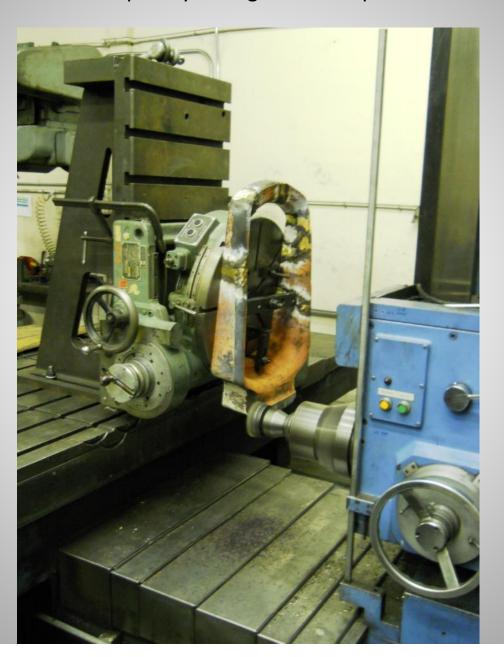
Flange is completed and ready to be welded 1 ½" plate



Making template for casting to be welded to flange and then metal stitched into frame



Machining the surface that will be welded to steel plate. Insuring that flange is completely flat against steel plate





Flange marked out and hole cut out of steel plate for flange opening. Flange is now ready to be welded to steel plate



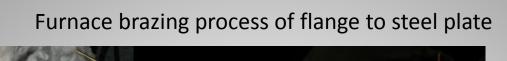


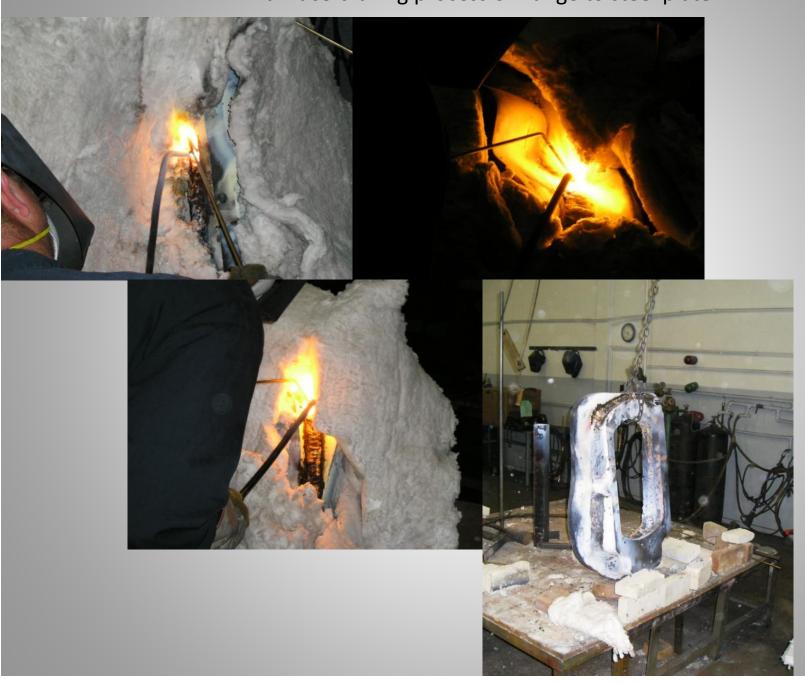
Flange set up in oven and ready to be furnace brazed

Flange tacked to steel plate and ready to welded solid around joint line.

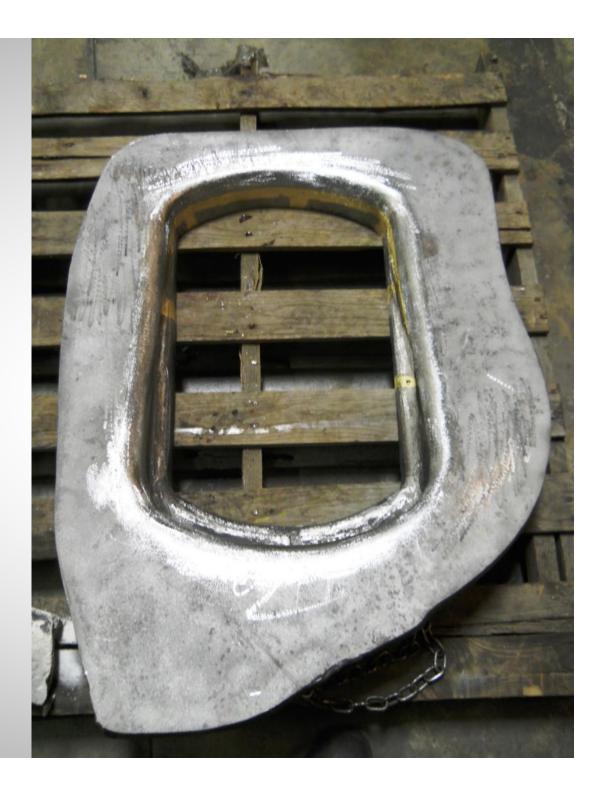
Furnace brazing in process





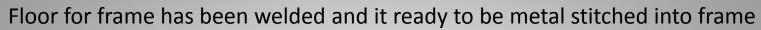


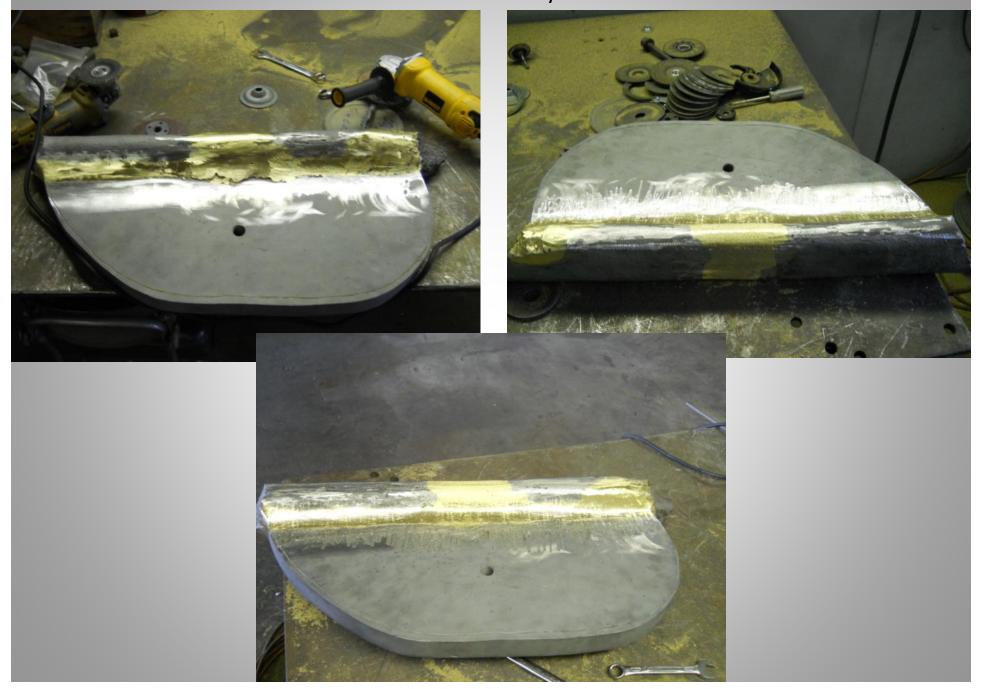
Flange is completed and ready to be metal stitched into the frame



We saved the two pieces from the floor that would be hard to match up and welded them back together and then welded the steel plate to them to complete the floor casting. (See next slide)



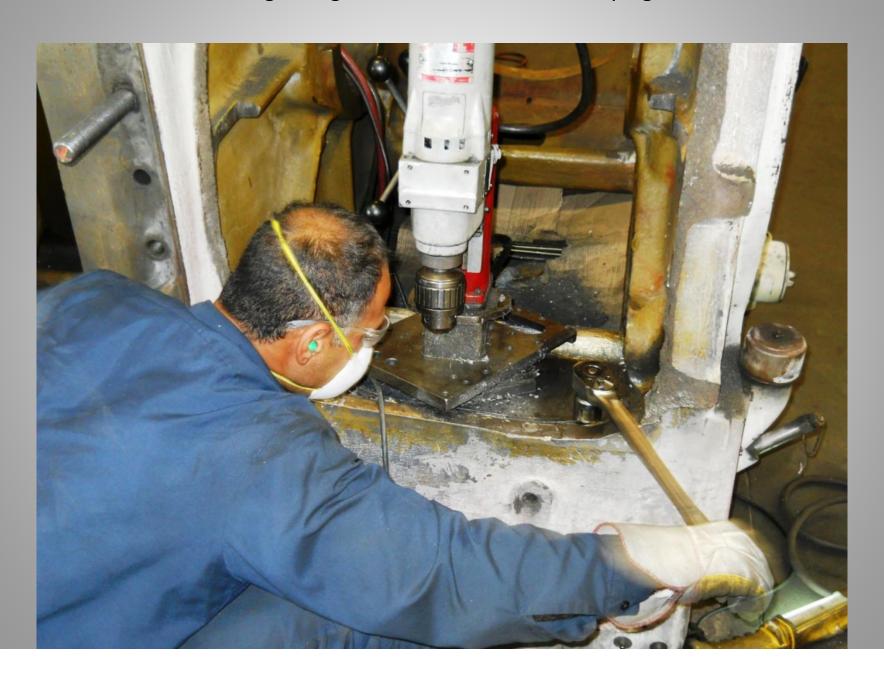




Floor patch has been fitted



Using a Mag base Drill to install the FP7 plugs



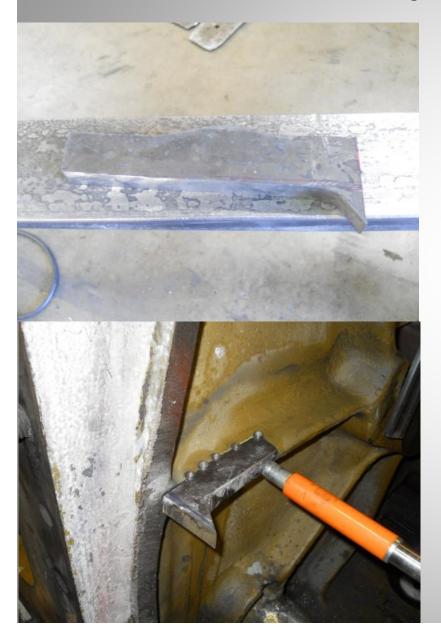
Floor is stitched in and ready to be hand finished



Completed floor repair

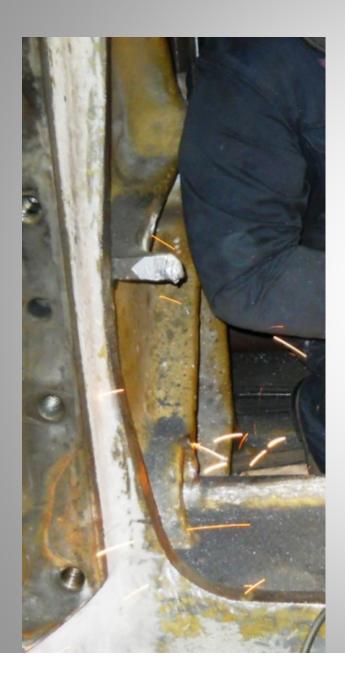


Before the main outside flange can be metal stitched all the eternal damage must be checked and repaired. This makes the accessibility that much easier. Here you see two of the main bearing wall gussets being metal stitched into place





Both main bearing wall gussets are repaired

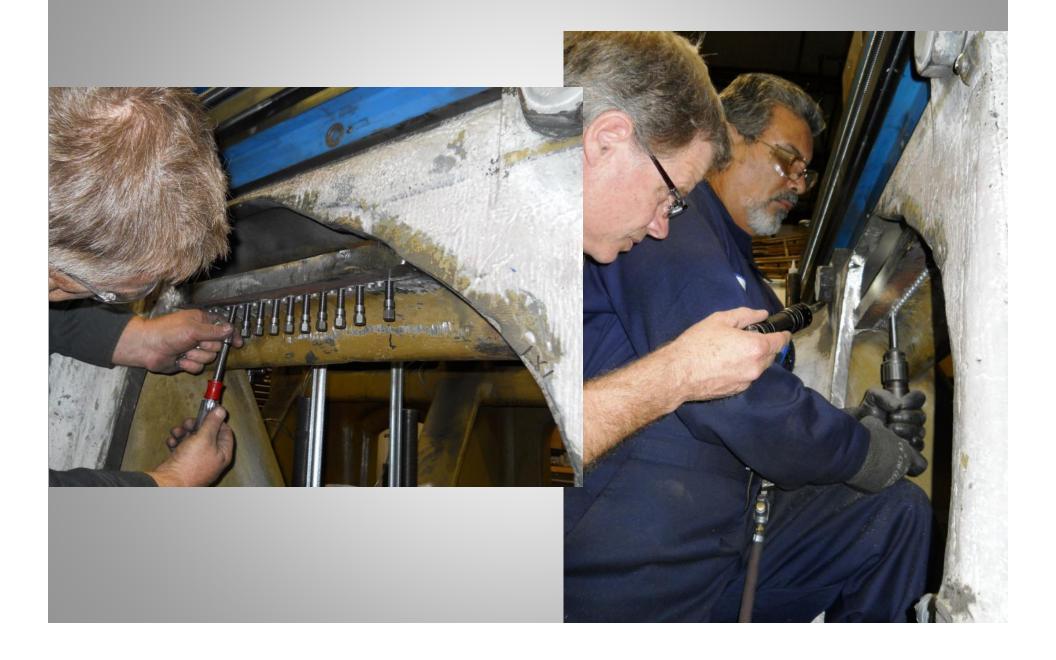




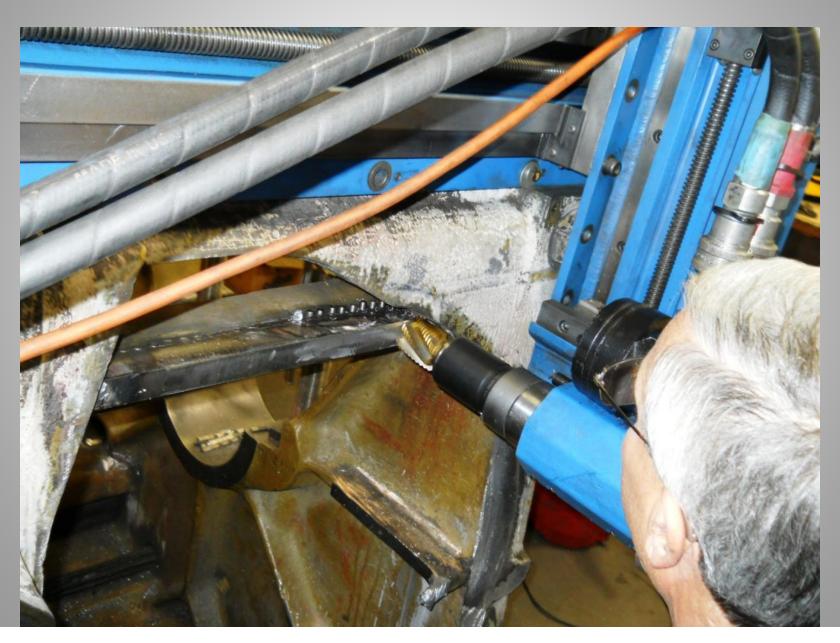




Patch fitted and metal stitching almost complete



Using the 7' Bed Mill to mill off the front of the new casting so it sits flush with the casting





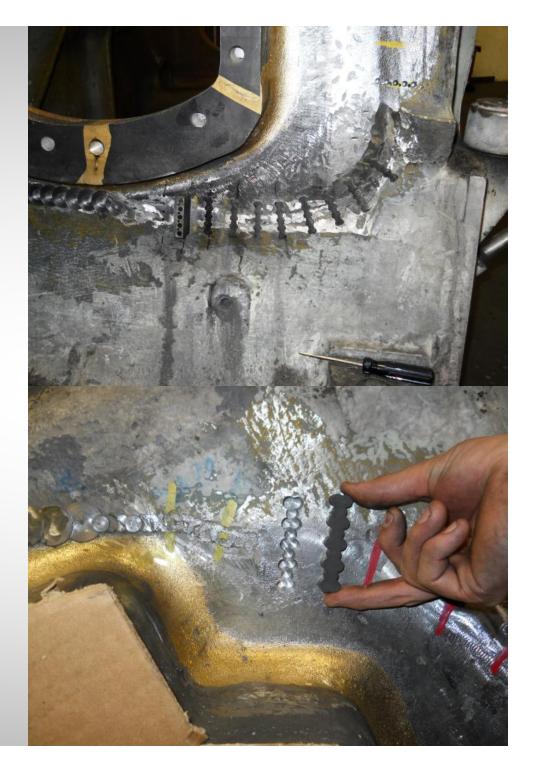
Flange has a couple stitching pins in place to hold it in place. Using the Mag base Drill the stitching begins until the entire joint is sealed with overlapping stitching pins



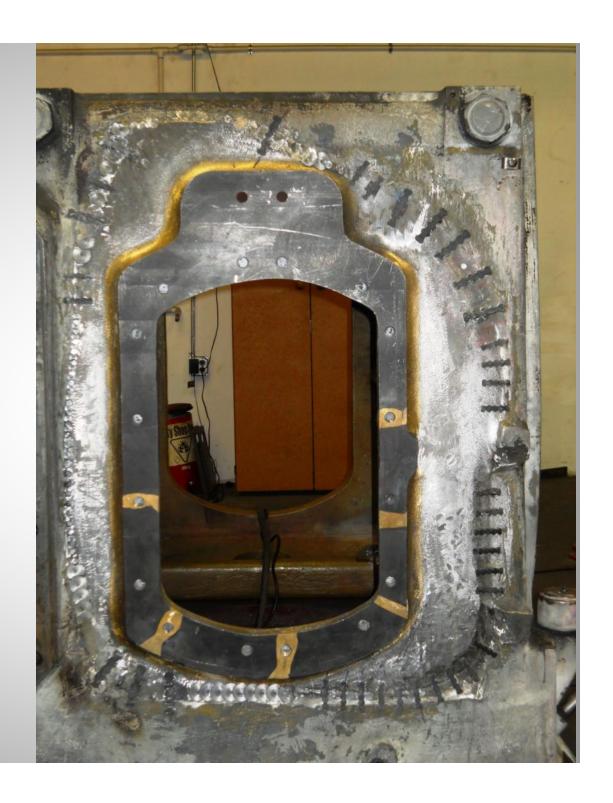


L20 Locks are being installed every inch to additional across the repair. These Locks have a total of 19,775 PSI per location



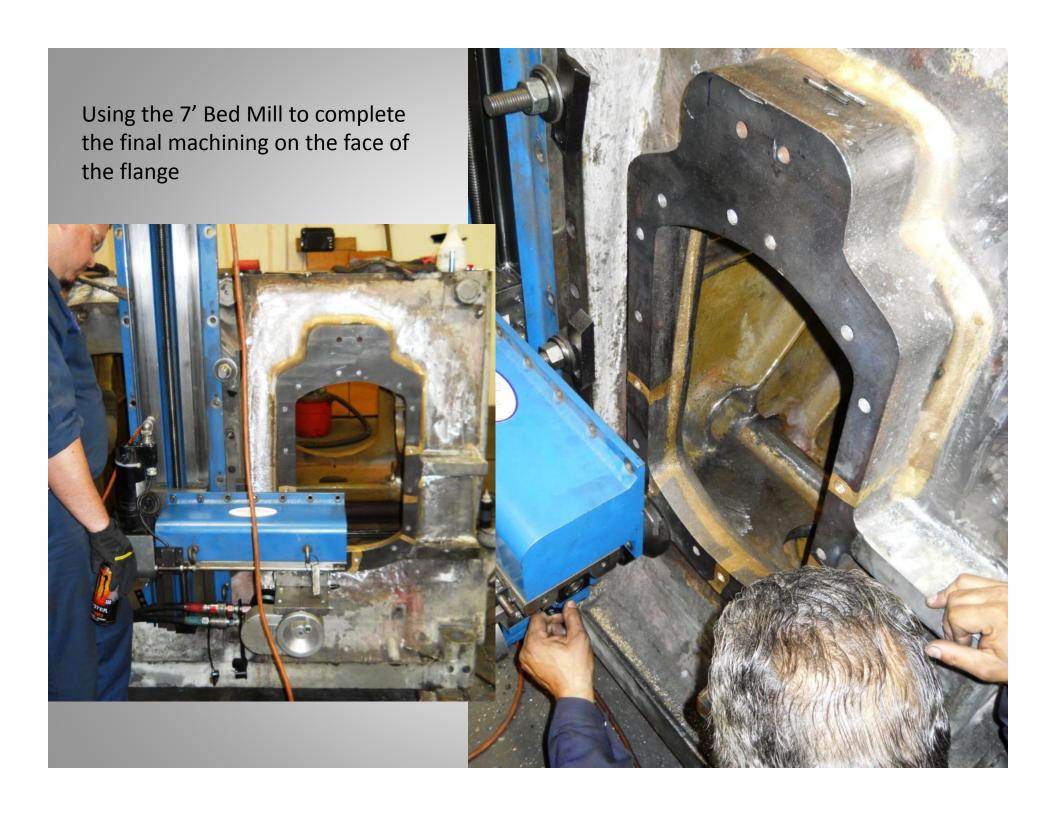


Metal stitching and Locks installed is completed. Ready to be hand finished and flange surface machined.



Outer gusset flanges repaired





All repairs where Mag Checked to make sure that all damage was repaired











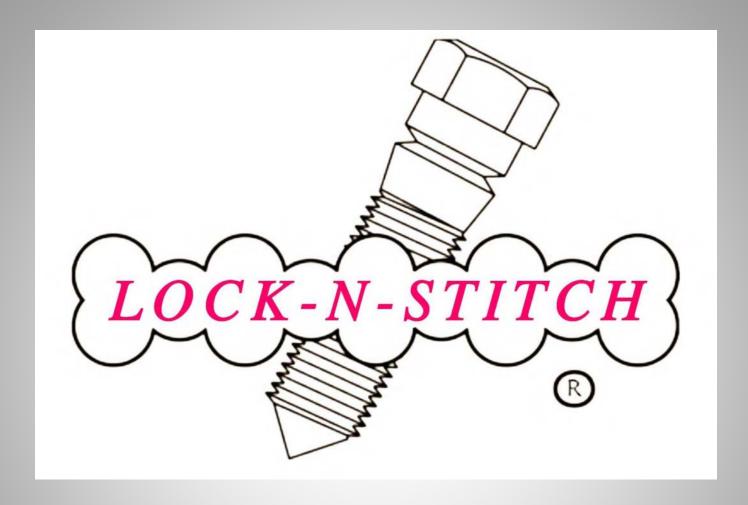
Pressured washed and ready for paint





Repair completed in 15 days 24 hours around the clock





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