Damaged Cooper compressor frame
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
Fitted steel patch to damaged area and flange being fitted as well to steel patch.
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
Furnace brazing process of flange to steel plate
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 for frame has been welded and it ready to be metal stitched into frame
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
Repairing upper floor on the upper half of compressor frame
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.
New manufactured flange casting is fitted and ready to be metal stitched into place.
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
Using the 7’ Bed Mill to complete the final machining on the face of the flange
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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