

Ingersol-Rand KVS Compressor Repairs for Brown& Root Elk Hills, California 2003



Serious damage occurred due to a connecting rod failure



Both sides of the frame suffered damage



The damaged areas were prepared to accept new sections of cast iron



The repair piece is stitched in place

Castmaster C3 pins and L20 Locks are used to replace the strength lost in the crash.



The new section installation is complete



Inside view of the large hole on
the side of the frame



Top view of the same large hole
on the side of the frame



The sides of the hole are cut and ground to accept the new section of cast iron



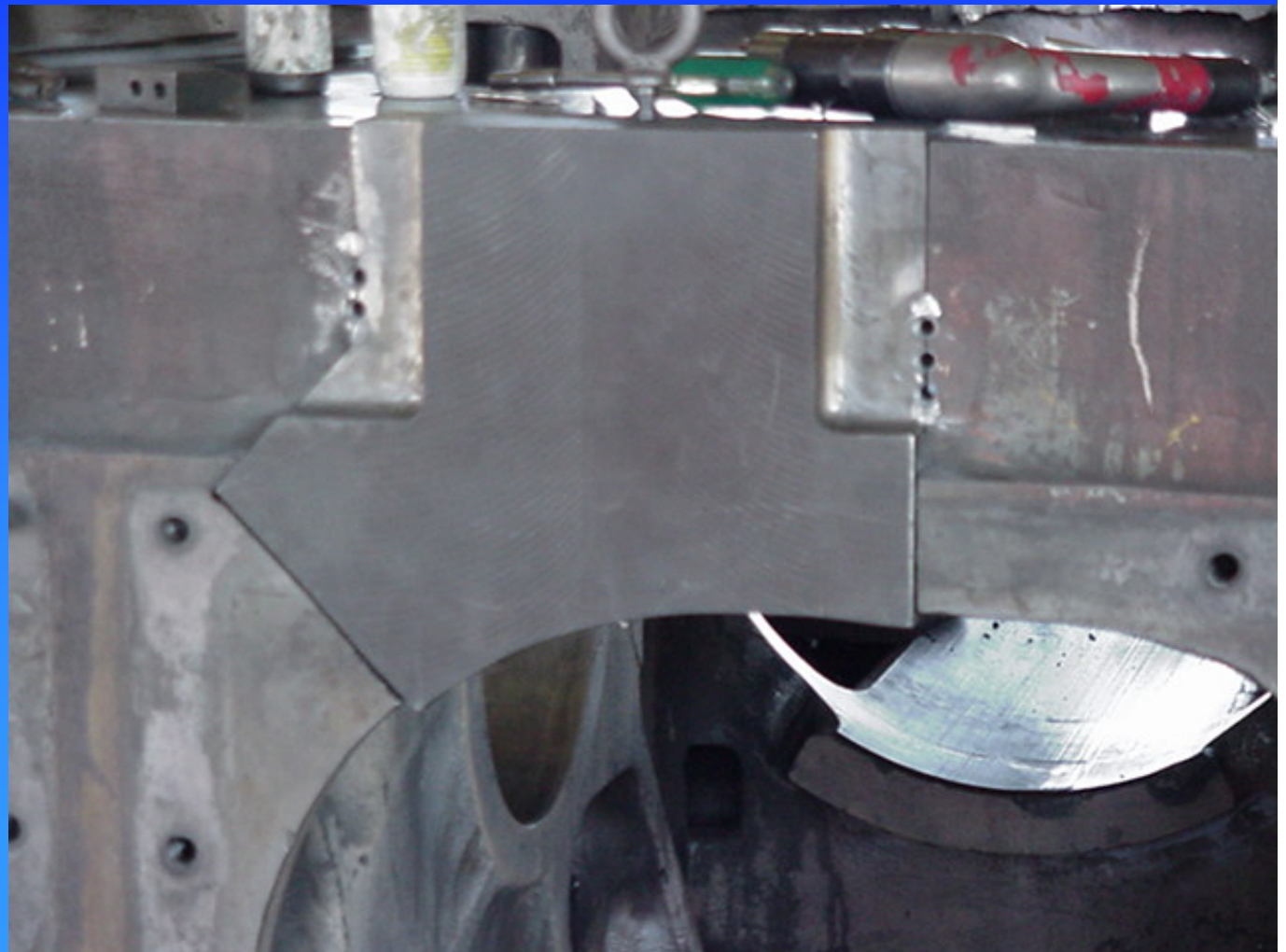
The side walls of the opening are cut at a 90° angle so the new piece can slide in



The new section is fitted in place and locked with a few stitching pins

The new piece is cast and machined to fit the hole.

All machined surfaces are left high so that they can be machined flush to the original surface.



After the stitching is completed all critical surfaces are machined with portable equipment



The side wall repair is completed

Many L20 and L30 locks were used as well as C# and C4 CASTMASTER stitching pins



The underside of the top half of the frame was also damaged



The area is prepared for the new section to be fitted and stitched in place



The new piece is stitched and locked for strength

L20 and C3 stitching pins are used to attach the new piece



Main bearing caps are inspected for fit

The jaw fit on all caps were loose and required oven fusion welding and machining to reestablish the correct fit.



The line bore was checked with a wire line to map the straightness of the bore.



Our large portable line boring machine was used to machine to main line bore to within .001”



Cutting the bores



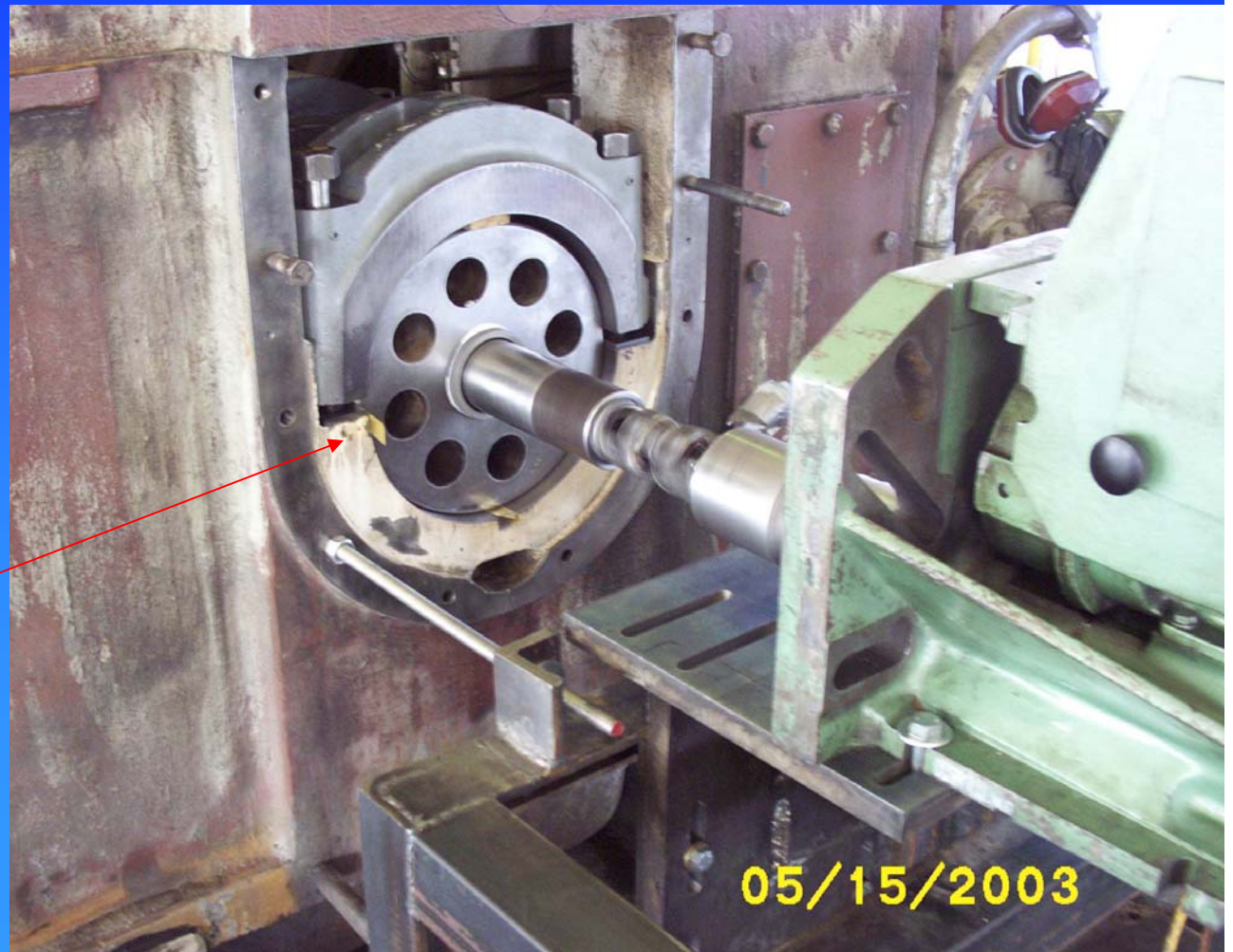
Measuring one of the bores during the boring process with the bar in place



The boring machine coupled to the boring bar

Special alignment rings are made to fit the bores and are held in place by the bearing caps.

Shims are used to force alignment to keep the new bore line straight.

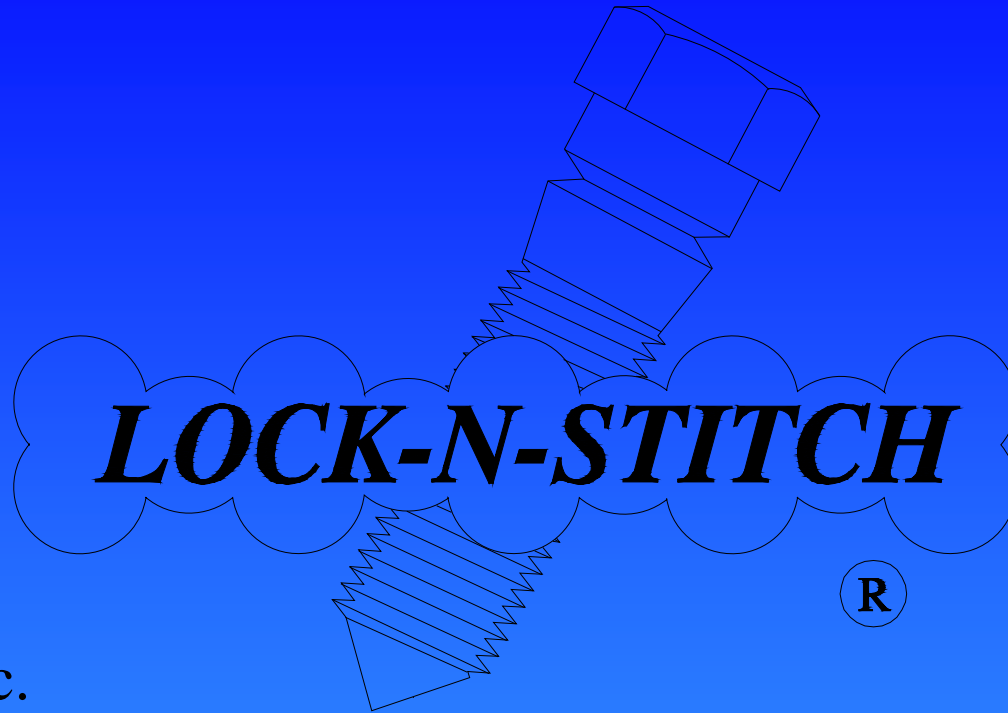


After boring, the bore is inspected by wire line to measure the diameter and straightness of the bores



The repairs and machine work are completed and the compressor is ready to be reassembled





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