

# Custom truck with cracked 5.9 block



# Block had been arc welded with nickel rod causing many more cracks

Arc welding causes serious damage to the cast iron. Hardening, brittleness, pin holes and additional cracks.

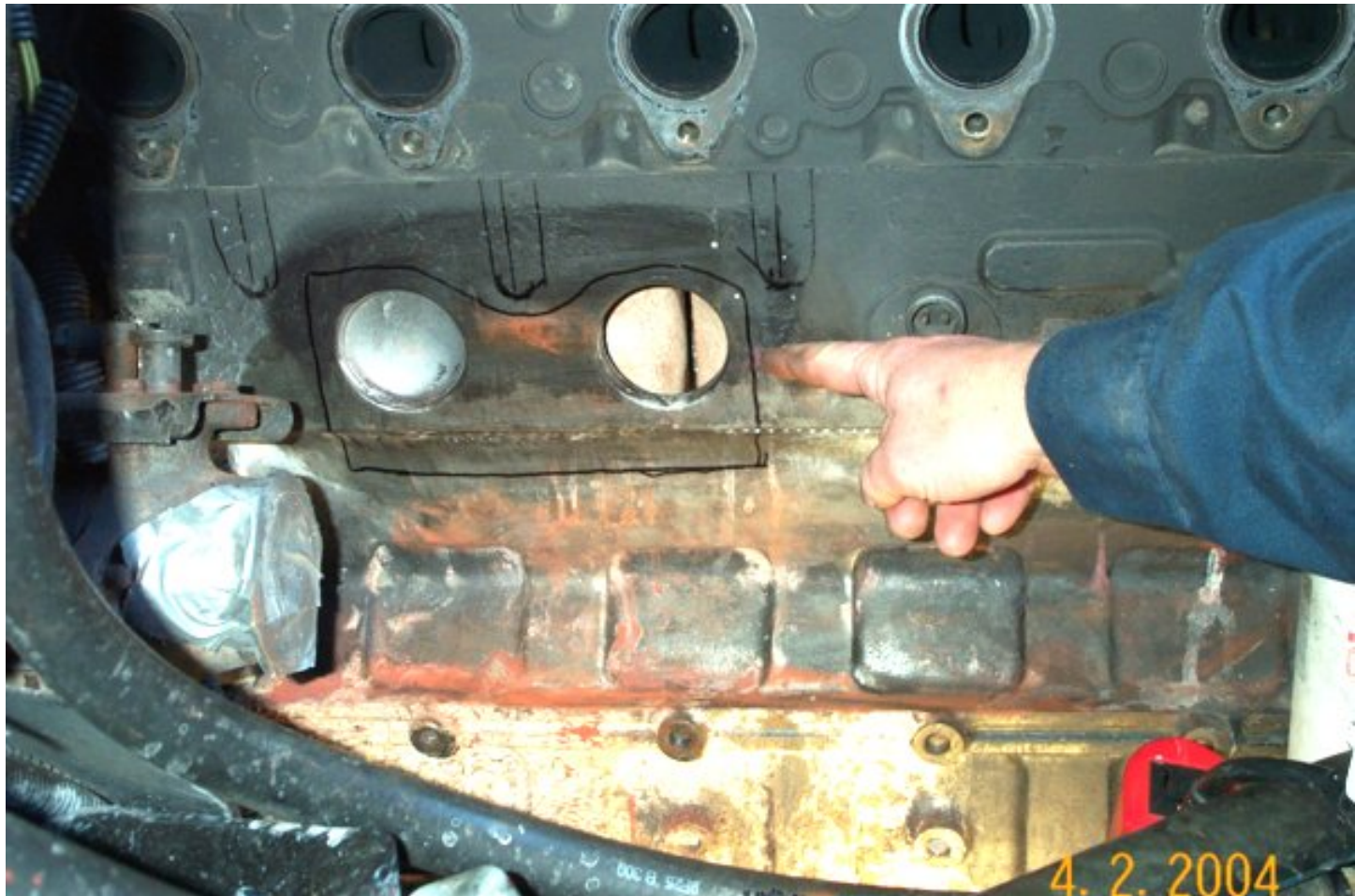
Arc welding is the worst choice to repair a crack in an engine block.



This part of the crack was not welded and was easy to fix



This section was welded and is now too hard to drill and tap



The outlined area will be cut from the block to remove the damaged iron



The non-welded crack is drilled,  
spotfaced and tapped



# The stitching pins are installed



The pins are tightened until the heads twist off



The process will continue until there are no spaces left between the pins creating a solid row of overlapping pins



# A large hole is cut to remove the damaged iron

The hole is cut using an abrasive cut-off wheel on a die grinder.

The weld extended into the core plug holes and could not be repaired by stitching.



# A steel plate is bent to match the shape of the block

Steel plate is used whenever possible because it is easy to cut, bend and shape.

Steel has the same thermal expansion rate as cast iron and is stronger.



The patch is shaped to fit the hole



The patch is secured with a few pins and the stitching process begins



# The stitching pins are installed around the perimeter of the patch

They are installed so that they form a solid, continuous row of overlapping pins.

The pins fill the joint between the patch and the block.



All spaces are filled in with the pins, no spaces are left



# The repair is ground flush and textured with a needle scaler

The core plug holes are not needed so they are filled in with the patch.

No welding, no epoxies, no stress.



# The repair is pressure tested

The block is pressurized with compressed air at 15 psi so as not to damage the Radiator. Soapy water is used to look for any leaks.

This looks radical but it really isn't. Thousands of repairs like this are done every year with this process by professional engine rebuilders



The repair is completed

