



The Art of Metal Stitching

Instructions for installing the LC59RB reinforcement brackets on the Cummins 5.9 series 53 block

The LC59RB bracket is designed to add strength to the side of the engine block to prevent cracking and/or additional cracking after a metal stitching repair.

This addresses the cause of the cracking problem that we have identified as a slight weakness due to the shape of the block and slow heat transfer to the lower outside wall of the block following cold starting of the engine in some blocks with the # 53 cast on the lower drivers side front corner of the block.



The bracket should be installed immediately after metal stitching the crack.

Please note that it is possible for a crack to have started and not yet be deep enough to show on the outside and be leaking. If a crack does appear later after the bracket is installed it can be removed and the crack can be stitched and then the bracket can be reinstalled.



After removing the turbo charger and exhaust manifold remove the center core plug.



Be careful to not let the core plug fall into the water jacket.



Clean the inside of the hole with a wire brush to remove all rust and scale.



Place a small amount of grease on the o-ring.



Turn the locking tabs inward and insert the bracket into the core plug hole.



Align the bracket so that it is perpendicular to the side of the block and tighten the socket head cap screws until the tabs lock onto the back side of the wall of the block. The screws will feel slightly tight. They have a non-permanent thread locker on the threads.

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Place the center punch tool into the bottom bolt holes and strike it with a hammer to mark the place to drill the holes.



Remove the bracket by loosening the screws enough to allow the locking tabs to rotate back inward. Remove the bracket and set it aside.



Use the drill bit provided and drill two holes where you marked the spot with the punch. It is important to get these holes drilled as close to perpendicular as possible to assure alignment to the holes in the bracket.



Drill both holes one inch deep



Apply the L750 tapping fluid to the tap and tap the holes to the bottom of the holes. Be careful to align the tap to the drilled holes.



It may be helpful to remove the tap after tapping half way down to clean it before continuing. Be careful! not to break the tap.



Blow the shavings from the tapped holes.



Re-apply a small amount of grease to the o-ring.



Turn the screws so that the tabs are turned inward and insert the bracket back into the core plug hole. Tighten the screws until the tabs lock behind the casting wall but do not torque the screws yet.



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Apply a small amount of LHC623 thread locker to the 5/16 socket head bolts and insert them through the bottom flange and start them into the tapped holes.



Screw them down close to the flange but do not tighten them yet.



Torque the upper bolts to 120 inch pounds or 10 ft.pounds.



Now torque the bottom bolts to 168 inch pounds or 14 ft. pounds. Skip back and forth between them to make sure that they are tightened as close to the same as you can. The bottom of the flange will not contact the block.



You can pressure test the installation by using compressed air that is regulated to 15 PSI. Do not exceed this limit or you can cause permanent damage to the cooling system.



Use a spray bottle with a light soap solution to check for leaks. Reassemble the engine and test drive the vehicle to make sure that there are no other leaks to the cooling system. Make sure that the coolant is clean and filled correctly.

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