



Livernois 3.5 Ecoboost Main Stud Kit

This stud kit is designed to work with most Ford 2010-2015 3.5 Ecoboost engines. It replaces the factory bolts with upgraded 8740 Chrome Moly studs. This stud kit allows for greater clamping force to keep the main caps in place under high loads typical of aftermarket performance Ford Ecoboost engines.

When installing studs in place of factory bolts please follow the directions listed to ensure proper performance and to prevent possible engine damage from incorrect procedures.

1. Remove all factory bolts
2. Clean all threads with a cleaner (solvent, brake clean, lacquer thinner, etc.) and a pipe cleaner style brush to ensure the threads are completely clean, after which use compressed air to dry the bolt holes completely.
3. Thoroughly clean the new studs, nuts and washers to remove all the anti-corrosion film and debris from packing on them.
4. Install the studs into the block with a light amount of oil on the threads.
5. When screwing the studs in be sure to only screw them in until they just bottom out, then back them off about 1 turn.
6. After installing all the main caps proceed to installing all of the washers.
7. Using the supplied ARP lube apply the lube to the threads of the stud as well as the face of the washer.
8. Install all nuts hand tight
9. Starting with the outer studs tighten them first tighten them in sequence to 25 ft lbs.
10. Moving to the inner studs tighten them in sequence to 25 ft lbs
11. After checking thrust clearance torque the outer studs to 65 ft lbs.
12. After outer studs are torqued move to inner studs and torque to 65 ft lbs.
13. After all main studs are torqued install outer side bolts with a small dab of RTV under head of bolt
14. Starting from the inside out torque the outer bolts to 33 Ft lbs
15. The final step is rotating all of the side bolts in sequence again an additional 45 degrees

Notes-

starting in mid 2013 Ford started machining some 3.5 EcoBoost blocks to utilize different inboard vs outboard stud sizing. Our kit can be used on these engines, but will require replacing those studs with new OEM units as our kit does not include these size studs, nor are they offered. We recommend "burnishing" in threads of the nuts and studs by torquing them slightly beneath their torque values 1-2 times before fully torquing them. This will yield a more accurate final torque value which better equalizes fastener preload.

While this kit can be installed without performing machine work we always recommend double checking your housing bores and bearing bores for round and concentricity. The increased clamping load offered by the studs can distort the bore out of round.

Always double check your main bearing clearance regardless of what style of fastener is used. With tolerances and stack up between parts it is essential to always ensure that the correct amount of clearance exists.

We highly recommend mocking up and installing the oil pump pickup tube to ensure adequate clearance between the oil pan pickup and the bottom of the pan. Clay works well for this. Be sure to tighten the pan with gasket in place to simulate actual installed height. Pan to pickup clearance in the range of .300-.400 will provide the proper oil pickup.

The outer main bolts are TTY (torque to yield) fasteners and only allow for 5 total torques before they should be replaced. Since they were already torqued in both machining and assembly 4 times we recommend replacing them with new bolts after using them for your mockup.

