

KIT INCLUDES

- 16 X** MAIN STUDS
M10 X 157 MM
M8 X 142 MM
- 16 X** NUTS
- 1X** FASTENER ASSEMBLY
LUBRICANT
- 2X** SOCKETS
- 2X** ALLEN KEYS
- 16 X** WASHERS

INSTALLATION MANUAL

MAZDA/FORD 2.5L KL V6 MX-6, 626, MILLENNIA, FORD PROBE GT MAIN STUD KIT

PART NUMBER MP882 | 1993-2002

XOTIC PERFORMANCE is a leading manufacturer of high-performance main studs for internal combustion engines. Our main studs are designed to replace the factory main bolts and provide superior strength, durability, and performance.

XOTIC PERFORMANCE main studs are engineered using premium steel alloys that offer superior tensile strength and durability compared to bolts. They are designed to provide a consistent and uniform clamping force on the main caps and engine block, which helps to distribute the load more evenly and reduce the risk of main bearing failure.

Our main studs are an essential component of high-performance engines, especially those that are subjected to high loads, high RPMs, or extreme conditions such as racing or towing. They are often used in conjunction with other performance upgrades such as forged internals, high-performance bearings, and upgraded oiling systems to ensure the engine can withstand the demands placed on it.

A COMMON MISTAKE TO AVOID

When torqueing a fastener, do not stop short of the recommended

torque until the desired torque is reached (i.e. keep torqueing without stopping until the desired torque is achieved). If by accident, you stop short of the recommended torque, loosen the fastener and retorque.

When upgrading from factory main bolts to high-strength main studs, the increased clamping force can alter the geometry of the main bearing bores. We strongly recommend checking the bores for size and roundness after installing the studs. If necessary, perform an align hone with the same fasteners and lubricant that will be used during final assembly at the specified torque. This ensures optimal bearing clearance and long-term engine reliability.

VERIFY FIRST

Before installing any components, please verify whether this part number is compatible with the vehicle applications cited above. Inspect all package components, and clean as necessary to ensure accurate installation. Any obvious defects or shipping damages should be reported to us.

Tools and Supplies Needed

- Torque wrench (½" and ¾")
- M8 x 1.25" bottoming tap
- M10 x 1.25" tap or thread chaser (Part # CS318 in our catalog)
- Ratchets and socket extensions
- RTV sealant (e.g., Permatex Ultra Grey or equivalent)
- Brake cleaner or acetone

GET TO ACTION!

1. Clean & Prep the Block

- Ensure the block is completely clean and dry.
- Clean threads thoroughly with brake cleaner or acetone using a brush or swab.
- Use compressed air to blow out all main stud holes.
- Ensure all bolt holes are clean and free of any debris.

2. Tap or Chase the Threads

- Use an M10 x 1.25 tap or thread chaser to clean the block threads.
- Use an M8 x 1.25 bottoming tap for the M8 bolt holes and cut all the way to the bottom.
- Add light cutting oil when tapping.
- Work slowly by hand; you should not have to apply force on the tap until the bottom of the M8 thread holes.
- Blow out and clean the holes again after tapping (Repeat step 1).

3. Test Fit Studs (Optional but Recommended)

- Hand-thread each stud (no lube) into the block to verify proper depth and clean threads.
- Remove all studs before proceeding to RTV.



4. Install the Main Girdle

- Apply a continuous bead of RTV sealant to the mating surfaces between the block and the main girdle.
- Carefully position and lower the girdle into place, aligning with dowels.
- Press down evenly and allow the RTV to skin over for 5–10 minutes (check sealant instructions).
- Do not disturb the girdle once set.

5. Install Main Studs Through the Girdle

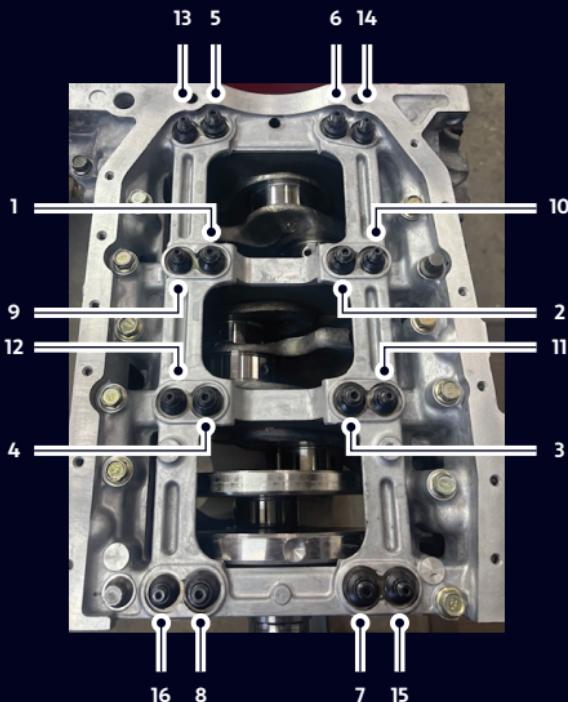
- After the girdle is in place with RTV, install the main studs with provided thread lubricant on both ends.
- Thread each stud through the girdle into the block by hand.
- Use a 3mm or 4mm Allen key to lightly run the studs in.
- Do not overtighten—finger tight is enough.
- ~~Ensure consistent seating~~ to measure the distance from the mating surface (deck or main cap) to the top of each installed stud.
- Ensure all studs of the same length group sit level with each other (within 1 mm / 0.040").
- Uneven height may indicate debris or incorrect thread engagement.
- Properly installed studs will bottom out smoothly and show even height across all positions.
- If a stud appears higher or lower than the others:
 - Remove it
 - Re-clean the hole
 - Do not use tools to force studs deeper.
- Incorrect stud seating can lead to off-angle stress, uneven preload, or stud fracture during engine operation.

6. Install Washers and Nuts

- Apply thread lubricant to the underside of the nuts and top side of the washer (rounded edge faces up).
- (NOTE: DO NOT PUT LUBRICANT ON THE FLAT UNDERSIDE OF THE WASHER THAT CONTACTS THE GIRDLE)
- Place XOTIC PERFORMANCE washers onto the studs.
- The dry (unlubricated) flat side faces down against the girdle.
- Thread all 12-point nuts onto the studs by hand until seated.

7. Torque the Studs

- Torque in three equal steps using the following torque sequence.
- Final torque specs are:
- **M8 - 28 ft-lbs**
- **M10 - 62 ft-lbs**
- Consistency matters: always use the XOTIC PERFORMANCE supplied lubricant and proper torque specs.



8. Final Inspection

Verify:

- Washers are seated flat with dry undersides.
- Nuts are fully torqued in the correct order.
- RTV is evenly compressed and not excessively squeezed out.

NOTE: You will need to check the main bearing alignment after installing our main stud kit. In most cases, your block will need to be sent into a machine shop for an align hone to correct for distortion of the main tunnel.



NEED HELP?

For technical support, please email:
tech@xotic-performance.com



SCAN ME

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Show off your craft on Instagram and tag us in your picture for a chance to be featured!

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