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BILLET STEEL MAIN GIRDLE INSTALLATION INSTRUCTIONS

<i>COMPONENTS</i>	QTY	
	FORD FE/OLDS	OTHER APPLICATIONS
MAIN GIRDLE	1	1
STUDS	8	10
NUTS	8	10
WASHERS	8	10
HIGH STRENGTH THREADLOCKER, RED	1	1

FASTENER INSTALLATION:

Step 1: Remove all factory main bolts. If rebuild is unnecessary, removal of main caps may not be required.

Step 2: Clean and utilize the appropriate thread “chase tap” on cylinder block main cap threaded bolt holes. This will assure a consistent main cap stud depth and accurate torque readings.

Step 3: Coat the bottom threads with Loctite (or similar thread locker) and hand-tighten into the block. Use oil or moly lube to coat the upper threads of the studs and torque to OEM specifications.

Step 4: Temporarily install the main girdle onto the main caps. Be sure to have 0.020” minimum clearance between the girdle cross bar and the center of the main caps. Spacers (0.145” thick) are included to assist with additional clearance.

Step 5: Depending upon whether OEM or billet-style main caps, it may be necessary to machine a small portion of the crown off the main caps for additional clearance. Alternatively, the girdle cross-bar supports may be machined slightly as well. Make certain to maintain at least 0.275” minimum thickness for the main cap crown machined relief. The crown area must be at the same height as the main bolt pad heights. Hand-tighten the nuts on the studs.

Step 6: Hand-turn the crankshaft and check for both crank counterweight and rod clearances. Identify and mark with a felt tip pen for anticipated clearance issues and modify the girdle accordingly. Mark the spot or spots on the girdle where the crankshaft throws and/or rods conflict accordingly.

Special Notes: More extreme crankshaft strokes, will require additional clearances for connecting rods and crankshaft counterweights. H-Beam connecting rods typically require additional clearances over standard I-beam rods.

Step 7: Install the oil pump by hand-tightening it into place. If there are clearance issues with the pump and/or the girdle, mark the girdle where the clearance issue occurs. Remove small amounts at a time; making certain not to remove too much material from oil pump castings.

Step 8: Remove oil pump and girdle if modifications are required. Mill the girdle where contact occurred and test fit before final installation as necessary.

Step 9: Reinstall the girdle and oil pump, recheck the clearances.

Step 10: Once clearances have been completed, torque the girdle and oil pump into place. Using light oil, torque to factory specifications. If there are clearance issues, you will have to modify the girdle. Mark the spot or spots on the girdle where the crank or rods interfere with crank rotation.

Step 11: Install the windage tray of your choice. Mark the girdle with windage tray mounting bore holes; drill and tap threads for the windage tray fasteners.

Step 12: Install the oil dipstick. Be sure it fits properly, without girdle interference.

Step 13: Check the positioning of the oil pump with the bottom of the oil pan. Choose the proper oil pick-up and tube. Following manufacturer's instructions, mount parallel to the bottom of the pan. Leave ¼" to 3/8" from the bottom of the oil pan.

Step 14: Test fit and Install oil pan, making certain proper fitment and gasket seals.

PLEASE READ ALL SPECIAL NOTES BELOW FOR IMPORTANT INFORMATION.

Special Notes: Most applications will require some additional machining of the girdle for a perfect fit. For example, the Oldsmobile 403/455 main girdle is designed to accept 7/16" studs. The main cap bore holes must be reamed out to accommodate the ½" studs required for the 455ci engine.

PRW alloy steel main cap studs are designed longer, with additional length for main girdle mounting. The main girdles are machined for extra clearance for OEM main caps and distancing with spacers between main cap crowns. If one or more studs need to be shortened remove material from the SAE NC threaded end of the studs whenever possible. Only a qualified machinist with the proper cutting tools should be employed to remove material from the studs and properly dress the threads.

Always check the depth of the main cap bore hole depth in the block; and assure that the threaded end closely matches the depth of the threads in the engine block. Do not over-tighten the studs into the block, especially if the bore hole is deeper than the length of the threads on the main studs!! Use a quality threadlocker (such as the one provided by PRW in the kit) and hand-tighten. Check fitment of cylinder block thread depth, prior to applying threadlocker and installing studs.

The PRW engineering staff has designed these stud girdles to require a minimum of machining for most installations. However, longer crankshaft journals, specialty oil pumps, and other after-market performance parts may require additional clearance for proper fitment. Various after-market manufacturers provide oil pans designed to accommodate PRW main girdles. Performance components are designed for racing and will require expertise to make certain all of the parts being installed are correctly matched and work together seamlessly. The engine builder is responsible for final fitment and appropriate installation clearances.