



## PRW BILLET STEEL MAIN GIRDLE INSTALLATION INSTRUCTIONS

<b>PARTS LIST</b>	
<b>ITEM</b>	<b>QUANTITY</b>
<i>Main girdle</i>	<i>1 each</i>
<i>Studs</i>	<i>10 each</i>
<i>Nuts</i>	<i>10 each</i>
<i>Washers</i>	<i>10 each</i>
<i>High Strength Threadlocker, Red</i>	<i>2ml bullet</i>

### **Installation**

#### **Step 1**

Remove all factory main bolts. Do not remove the main caps.

#### **Step 2**

Clean and chase all of the threads in the main bolt holes. This will help provide 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**

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. Add washers if needed.

#### **Step 5**

Hand-tighten the nuts.

#### **Step 6**

Hand-turn the crankshaft and check for both crank counterweight and rod clearance. 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 are hitting.

#### **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.

#### **Step 8**

Remove oil pump and girdle if modifications need to be made. Mill the girdle where contact occurred.

#### **Step 9**

Reinstall the girdle and oil pump, recheck the clearances.

#### **Step 10**

Once you have the clearances, you can torque the girdle and oil pump into place. Torque to factory specs.

### **Step 11**

Install the windage tray, if using.

### **Step 12**

Install the oil dipstick. Be sure it fits all the way in and does not hit the girdle.

### **Step 13**

Check the positioning of the oil pump with the bottom of the oil pan. The pick-up should be parallel to the bottom of the pan, and between a 1/4" and 3/8" from the bottom.

### **Step 14**

Install oil pan.

## **SPECIAL NOTES: PLEASE READ ALL THE SPECIAL NOTES ON THESE INSTRUCTIONS FOR ADDITIONAL 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 1/2" studs required for the 455ci engine.

In many cases, the main cap studs are designed longer, with additional length for windage trays, extra clearance for aftermarket main caps, or more distance between the main caps and the girdle for crankshafts with a longer stroke. For those reasons, the studs provided with the kit may need to be machined to a shorter length. If the 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 thread locker (such as the one provided by PRW in the kit) and hand-tighten only if you are uncertain of the depth of the threads into the engine block.

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 aftermarket performance parts may require additional fitment. Some OEM oil pans are not designed to accommodate an aftermarket main girdle. Be aware that these parts are designed for racing and, as such, 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.