



**SONIC
INJECTION**

CRANK GIRDLER INSTALLATION RECOMMENDATIONS

SONIC Injection would like Thank you for your purchase. Your SONIC Injection Main Girdle has been proudly produced to provide greater strength and stability to your engine block. SONIC Injection Main Girdles also reduce and distribute harmonic vibration throughout your engine to produce a smoother running engine throughout the rev range. Main Girdles are provided with CNC Machined spacers were possible.

SONIC Injection has spent a great deal of time with various Crank, Rod and Sump configurations to minimise the work required by our customers to use our Girdles. Despite this some modification to girdle and/or sump may be required fit the Girdle to your engine.

SONIC Injection recommends using a quality Main Stud Kit with our Main Girdles. SONIC Injection can supply ARP Studs for some models.

Please read the entire document and study your specific clearance problems before modifying any part of your SONIC Injection Main Girdle.

INSTALLATION RECOMMENDATIONS

The Following Procedure must be done during pre-assembly checks and machining of your short block. SONIC Injection does not recommend installing a Main Girdle to an engine already assembled unless pre-assembly checks and machining are re-conducted. Consult your Machine Shop for further advise.

1. Main Cap Bolt Pad Checks
 - a. Ensure Bolt Pads on Main Caps are Square and not gouged by previous bolt installation.
 - b. If the bolt pads on the caps are marked in any way machine them as a set to remove damaged metal.
 - c. All Machining to Main Caps MUST be done as a set to ensure Main Girdle sit square on engine.
2. Check Engine components for Clearance.
 - a. Install Spacers if supplied and Girdle to your preassembled short block.
 - b. Rotate Engine assembly and check clearance of Crank, Rods and Pistons.
 - c. Remove the least amount possible to provide clearance for your crank/rod/piston combination.
3. Check Sump for Clearance.
 - a. Install Sump without pickup.
 - b. Check that sump bottoms out on engine block gasket rail without a gasket fitted.
 - c. If sump fails to bottom out by small amount establish part of girdle causing problem and radius that part of girdle only.
 - d. If sump fails to bottom out by a large amount modification to the sump may be required.
4. Check Engine Pick Up Clearance.
 - a. Install Oil Pick Up (and pickup spacer if supplied) with Girdle Installed.
 - b. Modify Pick up as required to clear Main Girdle.
 - c. Install Sump and to ensure Sump still bottoms on Engine Gasket rail without Gasket installed.
5. Check Main Tunnel.
 - a. Remove Crank, Rods and Pistons from engine.
 - b. Install Main Caps, Spacers (if required) and Main Girdle.
 - c. Torque Caps down to Manufacturer's recommendations.
 - d. Check Main Tunnel for Straightness or Abnormalities.
 - e. Line Bore / hone engine block if required.

Once the above procedure has been complete disassemble engine and prepare for final assembly.

Engine specific notes

- **289/302 Windsor, 250/4.1 2v Ford, 403 Olds** Girdles require Main Cap to be machined level with bolt pad, these will be supplied without spacers.
- **138 / Holden Grey**
 - Girdles come with 20mm thick spacers and in some cases require machining as main caps vary in bolt pad height between year models.
 - Girdles come with 5/16 bearing cap preload bolts, these can be used to add some rigidity to main bearing after main bolts/studs are torqued, Medium / High strength Loctite is recommended at final assembly of the preload bolts.
 - Modification of oil pump delivery line required, flexible line used in place of rigid tube or external pickup/pump used.
 - Sump modifications required at front and rear of sump.
- **G161 G180 G200**
 - Version 1 of girdle requires oil pump modification or external pump.
 - Version 2 of girdle utilises 9 out of 10 main bolts and should clear oil pump.

WARRANTY

SONIC Injection uses the highest quality Australian materials in the construction of Main Girdles, pre-inspection of all products is required before installation or modification. In the unlikely event that you find a product defect please contact SONIC Injection for a replacement. Main Girdles are acid cleaned, media blasted and lightly oiled to prevent rust, should the Girdle sit for an extended period it may require extra rust prevention. Modifications to Girdles may be required, check carefully before modification, only remove material required for clearance as Girdles modified are not covered by defect replacement warranty.

RELATED PRODUCTS

Crank Scrapers

SONIC Injection is developing Crank Scrapers for all their Main Girdles. Contact us for availability to suit your application.

PRODUCT DEVELOPMENT

SONIC Injection seeks engines from time to time for product development. Any customer providing an engine to SONIC Injection for product development will be suitably rewarded for their efforts. Contact us if you would like to help and are able to provide a suitable engine for product development.

CONTACTS

Director Luke Hoffman
Phone 0412 207 547
email sales@sonicinjection.com.au