



# INSTALLATION GUIDELINES



The guidelines below are not a substitute for a professional engine builders experience with particular applications. Always seek advice from a professional engine builder if in doubt.

## CONNECTING ROD INSTALLATION

The following guidelines are for those who have purchased the PEC H-Beam or PEC Racing connecting rods.

### General Guidelines.

- Before use the connecting rods should be checked that they are correct for your application. This means checking that critical dimensions are correct. Note that some dimensions may be different to the OEM connecting rod depending on piston application.
- The fit of the pin in the small end should be checked. Although the small end is honed to suit most makes of pin there may be some that are too tight e.g. coated pins. In these cases the small end should be honed to suit your pins. Clearances are typically 0.0005 to 0.00075 x nominal pin diameter. Clearance should be no more than 0.02mm (0.0008”).
- The connecting rods are balanced end to end to a tolerance of +/- 2 grams across the set. This tolerance has been found to be a good compromise between cost and what is required for a fast road or mild competition engine. If more accurate balancing is required please contact P.E.C for more information. All machining tolerances are to OEM specifications.
- After all checks and any balancing/machining operations have been carried out the connecting rods should be checked over for burrs. These should be removed with a suitable de-burring tool or small file. It is also worthwhile removing the sharp edge at the cap joints with a small needle file or stone. This is to prevent shaving any material off the back of the bearings during installation.
- The connecting rods should be thoroughly cleaned of all debris, swarf, burrs, etc. and protective oils. Pay particular attention to the bolt threads. Any debris left in the threads will affect the tightening of the bolts. After cleaning, coat the side of the connecting rod big end with layout dye and scribe the cylinder numbers on both the rod and caps to prevent the caps getting mixed up.
- Always note the original bolt lengths on the table overleaf to check their suitability for reuse during engine rebuild.
- Before installation fit the piston onto the connecting rod and check there is sufficient clearance between the small end and the piston underside for full movement. On some pistons it may be necessary to modify the piston underside to gain full movement. During engine assembly the bearings should be installed in a clean and dry big end bore. Clean oil or assembly lube should only be applied to the bearing surface or crank pin before assembly. Make sure everything is clean: foreign debris is the biggest cause of bearing failure in rebuilt engines. A dummy build of the short block should be carried out to check that the crankshaft, connecting rods and pistons all move correctly. On some engines it may be necessary to machine clearance notches in the block for the connecting rod big ends.
- Liberally coat the bolt thread and bolt under head area with the supplied lubricant.
- Tighten bolts in one gradual pull. Do not tighten in steps.
- P.E.C always recommends using a stretch gauge to tighten connecting rod bolts.



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## 3/8" x 1.5" UHL ARP2000 Bolts.

Stretch        0.0055" – 0.0060" (0.1397mm – 0.1524mm)  
Torque         55lb-ft with ARP Ultra-Torque Assembly Lube

## 5/16" x 1.5" UHL ARP2000 Bolts.

Stretch        0.0050" – 0.0055" (0.1270mm – 0.1397mm)  
Torque         30lb-ft with ARP Ultra-Torque Assembly Lube

**Please note that if a blister pack of bolts has been supplied with the connecting rods the enclosed washers should not be used.**

## Rebuild Time.

During engine rebuild measure the uninstalled length of the bolts and compare to the original lengths. If the bolt has elongated by more than 0.001" (0.0254mm) replace bolt before fitment. It is recommended to immediately grind a flat on the threads of the over stretched bolts to prevent accidental reuse.

<i>Bolt #</i>	<i>Original Length (inches)</i>	<i>Required Stretch (inches)</i>	<i>Required Stretched Length (inches)</i>	<i>Recorded Torque Value (LB-FT)</i>
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

## TERMS & CONDITIONS

Due to the nature of high-performance and racing applications, PEC parts are sold without any express warranty or any implied warranty of merchantability or fitness for a particular purpose. PEC shall not, under any circumstances, be liable for any special, incidental or consequential damages, including, but not limited to, damage, or loss of property or equipment, loss of profits or revenue(s), cost of purchased or replacement goods, or claims of customers of the purchase, which may arise and/or result from sale, installation or use of these parts. Installation of these parts may void vehicle manufacturers warranty coverage and/or may cause the vehicle to be illegal in some countries. Please check with local laws on the road use of your vehicle. PEC reserves the right to make product improvements and changes without notice and without incurring liability with respect to similar products previously manufactured. By using these parts you are accepting these terms and conditions.