

## P2P Racing Engine Break In Procedure

### **Purpose:**

The purpose of this document is to outline the procedure for typical engine break in for the P2P Racing LLC short/long block assemblies. A freshly built motor requires a certain amount of time/cycles to both “bed-in” the piston rings to the freshly-honed cylinder walls AND to allow the bearings to correctly seat and wear in before high loading events. If followed, this procedure will give you the most longevity out of your new motor, and keep your new build reliable. If you have any questions or comments, please email us directly at [Ryan.Payne@P2Peng.com](mailto:Ryan.Payne@P2Peng.com).

### **Procedure**

#### **Standard Street/Track Build**

When starting the car, check for oil leaks and coolant leaks. Before and after every drive, check your oil levels to verify there is not excessive oil consumption. There should be less than 0.5qt(s) of oil consumed during the first 100 miles. If oil consumption exceeds this allowable limit, please reach out to us as soon as possible please. Racing conditions will change this effect. Do not use Synthetic oil at this time. After the motor has been through an initial heat cycle/warm up procedure, immediately drive the car to bed the rings. Keep your RPM below the allowable limit, but when coming to a stop try to use a downshifting engine brake technique, instead of the brake pedal. Ex. 4<sup>th</sup> gear 45 mph, go to 3<sup>rd</sup>, then 2<sup>nd</sup>, then 1<sup>st</sup>, and then finally apply the brake to 0mph. Use this technique for the entirety of the break in procedure. This allows the rings to better seat. If using Ethanol, oil changes must be done every 1,000miles or less as the Ethanol thins out the oil and may result in reduced shear capacity of the oil.

#### 0 Miles – 100 Miles

- Required Oil – Joe Gibb’s Driven Break-In Oil 10w-40
- Max RPM – 3500 RPM
- Max Boost – 1 Bar or 14.7psi
- DO NOT IDLE FOR PROLONGED PERIODS OF TIME
- Max oil temp 240°F
- Min Hot Idle (1000rpm maintained) Oil Pressure 15psi
- Average Running Oil Pressure is 75psi-85psi.

After the first 100 miles, change the oil and oil filter (Page 2). Inspect the drained oil for large chunks of metallic material. A small amount of material in the oil is normal, this is usually from the cylinder wall and very top layer of bearing babbitt. You may find an Oil Filter Cutter [HERE](#). See pictures below;



Too Much Material



Normal



Ideal

### 100 Miles – 500 Miles

Continue with the same break in procedure as stated before, do not let the motor idle for long periods of time. Maintain lower boost levels with lower RPM while the motor continues to break in.

- Required Oil – Joe Gibb’s Driven Break-In Oil 10w-40
- Required Filter – WIX, Denso
- Max RPM – 3500 RPM
- Max Boost – 1 Bar or 14.7psi
- DO NOT IDLE FOR PROLONGED PERIODS OF TIME
- Max oil temp 240°F
- Min Hot Idle (1000rpm maintained) Oil Pressure 15psi
- Average Running Oil Pressure is 75psi-85psi.

### 500 Miles – 1000 Miles

Continue with the same break in procedure as stated before, do not let the motor idle for long periods of time. Maintain lower boost levels with lower RPM while the motor continues to break in.

- Required Oil – Joe Gibb’s Driven Break-In Oil 10w-40
- Required Filter – WIX, Denso
- Max RPM – 3500 RPM
- Max Boost – 1 Bar or 14.7psi
- DO NOT IDLE FOR PROLONGED PERIODS OF TIME
- Max oil temp 240°F
- Min Hot Idle (1000rpm maintained) Oil Pressure 15psi
- Average Running Oil Pressure is 75psi-85psi.

### 1000 Miles – 3000 Miles

You may now go get tuned. First change the oil and use Joe Gibbs Driven 5w30 Synthetic Racing Oil during the tune. Once the tune is complete, cut open your filter, verify there are no large particles (the oil will be darker and some material will be present) and do a full oil change back to conventional Break-In oil as stated below. Do not use synthetic oil until after 3,000 miles.

- Required Oil – Joe Gibb’s Driven Break-In Oil 10w-40
- Required Filter – WIX, Denso
- Max RPM –
  - ARP 2000 Rod Bolts – 7900RPM
  - ARP 625+ Rod Bolts – 8500+RPM
- Max Boost – Tuner Recommended
- DO NOT IDLE FOR PROLONGED PERIODS OF TIME
- Max oil temp 240°F
- Min Hot Idle (1000rpm maintained) Oil Pressure 15psi
- Average Running Oil Pressure is 75psi-85psi.

Customer Specific Engine Blueprint

Customer \_\_\_\_\_ Invoice Number \_\_\_\_\_ Date of Build \_\_\_\_\_

Engine Designation \_\_\_\_\_ Customer Specified Use \_\_\_\_\_

Head Gasket Required \_\_\_\_\_

Suggested RPM Limit \_\_\_\_\_

Suggested Engine HP/TQ Limit \_\_\_\_\_

\*\*\*\*\*See below for blueprint specs of your specific motor\*\*\*\*\*

	1	2	3	4	5
Piston Diameter					
Cylinder Diameter					
Crank Mains					
Crank Rods					
Main Housing Diameter					
Rod Housing Diameter					
Main Bearing Thickness					
Rod Bearing Thickness					
Mains Clearance					
Rod Clearance					

Notes:

## **P2P Racing Limited Warranty for Professionally Installed Short Blocks**

**Disclosure:** P2P Racing uses the highest end components with the best manufacturing techniques currently available. Our motors are built the highest of standards and will therefore be far superior to a stock motor. Thus P2P Racing will stand behind our product for a period of 1 year or 10,000 miles with a limited warranty.

### **Warranty Limitation:**

- Standard warranty begins on day of delivery of motor.
- Standard warranty only applies to components manufactured, assembled, or machined by P2P Racing.
- Standard warranty does not apply to other components such as turbo charger, radiator, etc. or any component that may have been damaged by the motor failure.
- Standard warranty does not cover shipping costs to P2P Racing. If warranty is denied, the customer will be responsible for shipping back to their residence/installer.
- Standard warranty does not include labor costs associated with removing/reinstalling the motor UNLESS the installer has agreed to a predetermined price with P2P Racing prior to removing the motor. This will only be paid to the customer IF warranty is granted.
- Standard warranty does not cover gaskets, fluids, ancillary consumables used for removing/reinstalling motor.
- Standard warranty is only offered if the motor was professionally installed by a professional shop. Receipts will be required.
- Customer is responsible for initiating warranty claims. You may email us directly.
- Motors built with customer supplied parts will not be covered under the warranty.
- The Customer will be required to supply receipts showing proper maintenance in accordance with our break in procedure and oil change intervals.
- Failure due to casting flaws in the heads and/or case halves will not be covered.
- Standard warranty does not apply to customers that run the motor in a track setting. This includes auto-x, driver educational track weekends, road course, drag strip, etc.
- If the warranty claim is denied, the customer will be responsible for all labor charges for engine tear down and analysis.

### **Guidelines for Failure Modes Not Covered under our Standard Warranty:**

- Bearing failures from abuse (over-revving, money shifting, etc) via overloading, lack of oil, dirty oil etc. are very easily determined and will be a reason to deny warranty.
- Improper tuning is also very easily determined via melted pistons, bent wrist pins, etc.
- Foreign objects being introduced to the combustion chamber tend to embed themselves into the soft aluminum of the piston or the head.
- Failure of ancillary components such as fuel pump, injectors, wiring, etc.