

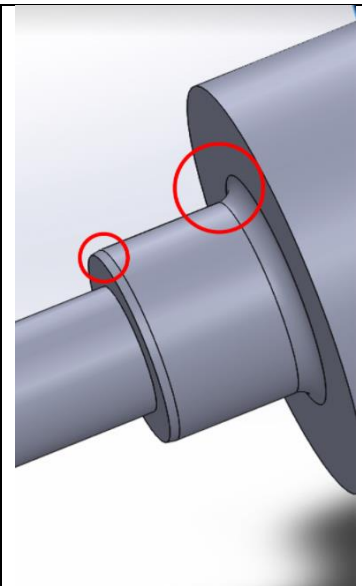
Installation Instructions: RB OIL PUMPS, COLLARS & ADJUSTMENT

Your new PRP FLAT DRIVE OR QUAD KEY SPLINE DRIVE COLLAR, is recommended to be installed by a qualified machine shop with either crank grinding or turning equipment, tolerance is crucial.

First start by removing the OEM drive section of the crankshaft, this is best done on a lathe or crank grinder to bring down the outside diameter of the main shaft to size. Bear in mind the crankshaft should be cut or ground first and allowed to cool down PRIOR to taking measurements. The crankshaft must also be at room temperature when measurements are taken.



OEM crank pre modification



Grind the OEM drive off to size notice the neat radius circled far right, tolerance is -3 thou interference, shot peening is done now in the collar if you choose to do so, reference you tube link below. (please use a micrometer and bore gauge) and give yourself a small taper lead in to ease installation of the collar.



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Heat up and install collar with blow torch, oxy, or high frequency current equipment, fit it over the prepped and ready crank nose, use a flogging tube and hammer or brass punch or equivalent tooling at your disposal. (400 degrees C, or cherry red)



Trial fit your oil pump or oil pump gear to ensure there is no binding, we recommend using a 'PRP oil pump alignment tool' as it will help ensure that you have aligned the pump and gears correctly which will lead to a failsafe operation. Please ensure you DO NOT USE grub screws, sealants or Loctite, these methods are not required with our quality gears whether it be spline or flat drive.

How to prep an RB crank:

https://www.youtube.com/watch?v=VWTrIDbIh_E&list=PLc2lxK6lgrGABRbig8GBuTRO29AiCWUCx&index=6

Oil pump gears, pumps and alignment.

https://www.youtube.com/watch?v=bWhLtZ_Pg5g

NOTE: You must prime your RB oil pump before use! New engines take an extremely long time to build oil pressure when the pump is dry, it needs oil to seal and start sucking oil from the pan, either prime your engine with a priming tank or at the least pour oil in the -10 fitting on the right hand side of the pump (as you look at the front) this will help you get pressure faster and will help avoid pump damage.

NOTE 2: Please check that you're A/C bracket and or water pump do not push on the oil pump in any direction as it can and will push the pump out of alignment and cause your gears to bind.

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OIL PUMP PRESSURE ADJUSTMENT

Oil pump pressure can be easily adjusted by shimming the pressure relief valve with 1 shim which should give you approx 8 -16 psi pressure increase across the board, flow is determined by your bearing clearances, the larger the clearance the more flow.

Pressure is determined by the pressure relief bypass valve that is always bypassing oil to maintain the desired oil pressure, with average bearing clearances .002" Big ends and .0025 Main bearing clearance for example, you should see 100- 100 psi cold at idle, once warm you should expect 30 – 40 psi cold, and 80- 100 psi warm (depending on the viscosity of oil you are using).

If you wish to see more gauge oil pressure, remove the plug shown below, and shim the inside of the plug with 1 x shim or washer and you should see 20 – 30 Psi increase, please only increase one washer at a time with a maximum of 2 shims or washers, this should see you at over 140 psi up top.



NOTE: The pressures mentioned above are a guide, we are not advising you to run any specific oil pressure as there are many variables, your PRP pump comes set up as a pre-set bolt in for the greater average of RB engines and is calibrated to conform with the industry standard average zone as far as pressure is concerned for a performance engine, although completely adjustable to suit your particular requirements.