

POWROLL

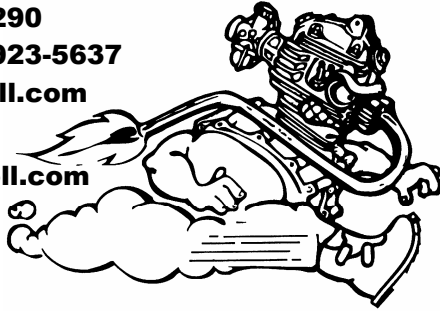
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RUNOUT ROTOR SIDE _____

RUNOUT DRIVE SIDE _____

NO ALIGNMENT WARRANTY - Missing bearings and/or timing sprocket

WARNING: Incorrect installation of press fit items will cause misalignment and damage to your engine. Powroll is not liable for ANY problems occurring on crankshafts with no alignment warranty.

Powroll Stroker Crank Installation Instructions

POWROLL STROKER CRANKS ARE REMANUFACTURED FROM STOCK OEM CRANKSHAFTS AND MAY CONTAIN NEW, USED, AND REMANUFACTURED PARTS. SEE YOUR INVOICE FOR DETAILS.

A stroked crank causes the piston to travel a greater distance per cycle. This causes a higher piston speed as compared to the stock crank at the same RPM. Piston speed is the most decisive factor in determining the RPM limit of your engine. You should figure out your engine's piston speed in order to keep it below the 'Danger Point'. The formula is listed below. Don't be scared off, it's actually quite easily worked.

R.P.M. X STROKE LENGTH (in mm) ÷ 152.4 = PISTON SPEED FPM (feet per min.)
(Using the formula, an engine running at 6,000 RPM with a 74mm stroke = 2,913.39 FPM)

**POWROLL SUGGESTS NO MORE THAN
4000 FPM ON ANY ENGINE**

ASSEMBLY INSTRUCTIONS

FIRST AND MOST IMPORTANT!

**READ AND UNDERSTAND ALL THESE INSTRUCTIONS BEFORE ATTEMPTING
INSTALLATION!**

Your Powroll stroked crank is factory complete and installs like the stock original (may require case or other modifications, refer to model information). Follow standard service manual procedures. Because of the shortened rod length, most pistons must be skirted to clear the flyweights and balancer gear at BDC (Bottom Dead Center). Most Powroll pistons are skirted for the stroke but you should always check to make sure. If you are using any other type of piston you will most likely have to skirt it. There must be a MINIMUM of .020-.030" between piston skirt and flyweight and/or balancer at BDC.

Never hammer or pry on the crankshaft. Cranks bend extremely easily, and such installation abuse can cause serious misalignment and damage your engine.

Pay particular attention to installation cleanliness. Liberally oil all bearing surfaces during assembly. **BREAK IN GENTLY WITH CARB MAIN JET AT LEAST TWO SIZES LARGER.**

CAUTION: Everything depends on your oiling system. All oil passages must be clear. Check oil pump carefully and replace if worn. All gaskets must fit exactly to assure proper oil pressure. Always use original equipment gaskets and stock parts. For vital top-end lubrication, be sure your oil-through spring and plunger assembly on the crank are correctly aligned with the clutch cover, have proper tension, and are in good repair. Refer to your shop manual for proper installation.

SOME STROKER CRANKS INSTALL JUST LIKE OEM PARTS, OTHERS WILL REQUIRE SOME MODIFICATIONS. LISTED ON FOLLOWING PAGE ARE MODELS THAT REQUIRE MODIFICATIONS, IF YOUR MODEL IS NOT LISTED, YOUR POWROLL STROKER CRANK WILL INSTALL WITHOUT ADDITIONAL MODIFICATION.

- > BE SURE CRANKSHAFT WILL ROTATE FREELY BEFORE ASSEMBLING THE ENGINE.**
- > ALL CLEARANCES ARE MINIMUMS. WHENEVER POSSIBLE, MORE CLEARANCE IS BETTER.**

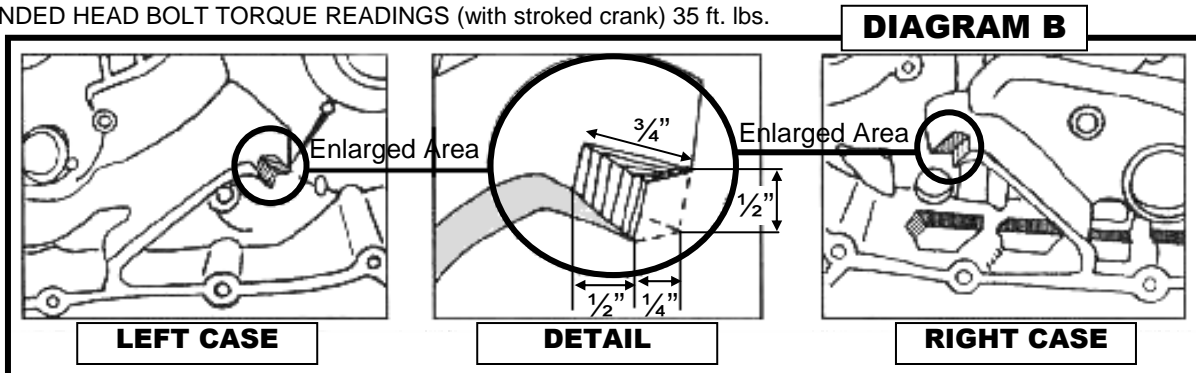
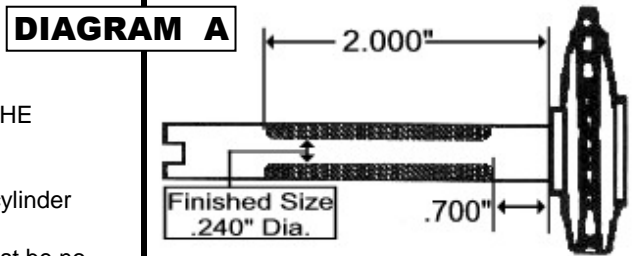
HONDA Early 50cc & 70cc (not XR or CRF) – Diagram A

The cam chain guide sprocket spindle (oil pump drive shaft) must be modified as shown to provide clearance for stroked crank assemblies. Remove material in shaded area as shown in Diagram A. Powroll can provide this labor service #25404.

YAMAHA TT 500 – Diagram B

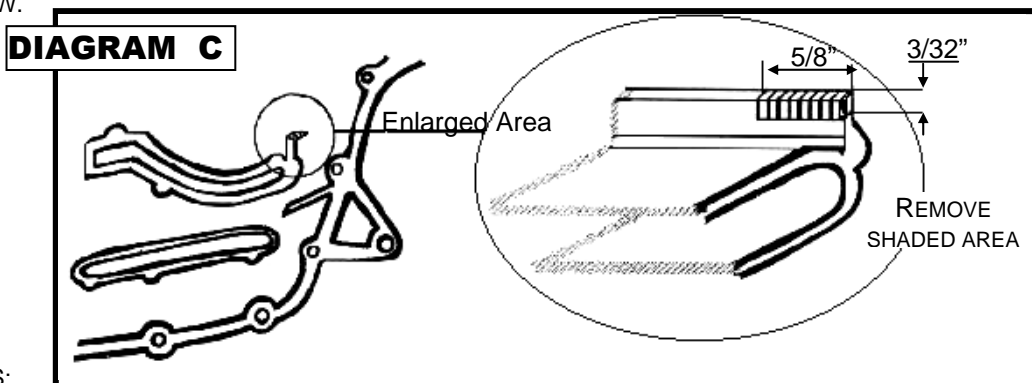
ADDITIONAL ROD CLEARANCE MUST BE PROVIDED IN BOTH HALVES OF THE CRANKCASE AT THE POINT OF CONTACT WITH OIL BAFFLE SHOWN.

1. Discard the aluminum cylinder nuts and replace with the steel nuts found on cylinder head. Torque to 30-35 ft. lbs.
2. Remove the segment of baffle wall as indicated in diagram B. Dimensions must be no less than shown, somewhat larger is okay.
3. Thoroughly clean all filings and chips from both halves.
4. For pressed fit installation of crank assembly, cases must be heated. Heat in oven to 300. Install left case first. Cautiously rotate crank a full 360° to confirm clearance. Install right case with and repeat clearance test.
5. Carefully inspect oil passages in rocker cover from oil entry line to intake rocker shaft. Make certain all ports are open.
6. During installation of cylinder head, apply a light gasket sealant coating to mating surfaces of left cam bearing oil transfer tower and head.
7. RECOMMENDED HEAD BOLT TORQUE READINGS (with stroked crank) 35 ft. lbs.



YAMAHA WARRIOR – Diagram C

WINDAGE TRAY SCRAPER MUST BE MODIFIED AS PER DRAWING. THIS ALLOWS THE ROD TO CLEAR. MUST BE DONE ON BOTH CASE HALVES. SEE DIAGRAM C BELOW.



HONDA RFVC (400EX, XR's, etc.)

WHEN INSTALLING A STROKER IN HONDA RFVC ENGINES, YOU MUST CHECK A FEW CRITICAL CLEARANCES:

THERE MUST BE A MINIMUM of .020" CLEARANCE BETWEEN:

- THE ROD AND ANY TRANSMISSION PARTS (AT THEIR CLOSEST POINT).
- THE ROD AND WINDAGE TRAY (IF ANY). RFVC's with windage trays usually require that approximately one half the thickness be removed in path of rod.

THERE MUST BE A MINIMUM OF .040" CLEARANCE BETWEEN:

- THE ROD AND BALANCER. In some cases, slight grinding of the balancer may be required.
- THE PISTON AND Balancer Gear AT BDC. – With shortened rod strokers, stock and many after-market pistons will require skirting to achieve clearance. Skirt piston to 1.900" (measured from deck edge to bottom of skirt) for adequate clearance.

BE SURE the crankshaft will rotate freely before assembling the engine.

NOTE: All clearances are MINIMUMS. Whenever possible, slightly more clearance is desirable.