Bolt Torque

Lower crankcase (Main Bearing) High RPM base plate bolts 8 x M8 x 110mm 28Nm. (but done in stages 10Nm, 20Nm then 28Nm in the standard tightening pattern).

ARP Head studs 48Nm (but tightened in stages 10Nm, 20Nm, 33Nm then 48Nm in the standard tightening pattern). 12 point 7/16”. With ARP thread lubricant.

ARP 2000 Big end bolts 30ft/lb (40.7Nm). 12 point 3/8”. With ARP thread lubricant.

Unbrako big end bolts 39.5ft/lb (53.5Nm). 7/32” Allen head screw. This is with a dry thread.

Helicoil (“V” Coils) & Copper Head Gaskets with Sealing Wires

If you really want head bolts tight (for race or extreme power) you can use Helicoil (or “V” coil) thread inserts in the block, then the torque can really be upped. With helicoil (or “V” coil) thread inserts:

ARP Head studs. Smear both sides of head gasket, block sealing face and head sealing face completely with very thin smear of Wellseal and leave to go tacky and assemble.

Tighten to 48Nm (but tightened in stages 10Nm, 20Nm, 33Nm then 48Nm in the standard tightening pattern). 12 point 7/16”. With ARP thread lubricant.

Leave for 24hrs then loosen all the Head nuts and start again but to 60Nm (but tightened in stages 10Nm, 20Nm, 33Nm, 48Nm then 60Nm in the standard tightening pattern)

At 200Hp+ we have gone beyond the capabilities of M9 x 1.25 holding in an aluminium block, the Helicoil (or “V” coil) effectively increase the thread diameter and allow the torque to increased thus increasing the clamping loads.