

698GT-A Long Engines



Ford 4.0L 6 Cylinder SOHC and DOHC Long Engines

Although we have been building high performance engines since 1978, it wasn't until 2004 that we began development work on the Ford 4.0L DOHC 6 cylinder "Barra" turbocharged engine. We witnessed numerous catastrophic engine failures after consumers had undertaken simple modifications such as free flowing exhausts and cold air intake systems, so it became apparent there was a need for us to engineer some solutions to address the inherent factory weaknesses.

The engines possess an abundance of untapped power with their large (factory fitted) Garrett GT35/40 turbocharger, however because the engine internals are almost directly taken from the original inline 6 cylinder NA (normally-aspirated) engine of the 1960's, they were not designed to handle 21st century boost-assisted power levels.

We initially developed a lightweight yet durable billet conrod to work with the 99.31mm (almost 4") stroke crank and before long our customers were making 450+ RWKW (700+ flywheel HP). Following this various other engine weaknesses came to the fore such as oil pump problems, valvespring tension, excessive torsional moments, crankcase flex, inadequate cylinder head retention, airflow distribution problems at high boost etc and engineered a range of solutions to suit.

We have seen power levels in excess of 1350KW (1800+HP) with our engines and components, such is the scope for power from these big cube 6 cylinder power plants.

We have 3 power levels available; new for 2014 is our StreeTorquer 550 engine, designed for hi-performance street cars; the venerable 698GT-A engine has been upgraded for 2014 with a few new tricky bits and finally for the seriously power crazed, our 998 Series powerplants are just the ticket!



MY2015 Atomic 698GT-A Long engine specs

- Ultrasonic tested seasoned Ford block – the thickest possible walls are required (we reject 4 in 10 for being like Cleveland blocks - too thin in spots due to core shift)
- Full crankshaft preparation - magnafluxed, checked for index/stroke, **2 stage heat treatment** (normalise/stress relieve and temper), reground/indexed as required, micropolished journals and chamfered oil holes.
- **Manley Platinum Series pistons** – 8.5:1 comp ratio and include coated skirts, anti detonation bands, polished crowns, H/D pins and piston crown cooling - **an Atomic exclusive**.
- Nitro carburised steel turbo rings
- Atomic billet Superleggera conrods **#306200** 698 KW – 6.060" C/C, bushed for floating pins, ARP 2000 bolts, cylindrically ground/honed tunnels and **pressure fed gudgeons/piston crown cooling** - **an Atomic exclusive**
- ACL/King Competition bearings with extra oil feeds for little end bushes
- Fully machined block inc torque plate honed cylinders, decked to crank centreline, main saddle alignment checked etc.
- Race spec clearances to suit the intended usage
- Fully prepped (seasoned) Atomic **Stage 4** cylinder head with 7 angle CNC machined valve job, hand porting of both inlet and exhaust bowl areas and streamlining of injector boss tracts. Fine Ra finish on deck surface, chambers relieved, spring tensions set up and new PC seals fitted.
- Lifter preloads set for Hi-RPM usage.
- Atomic **#306251**, **#306253** or **#306254** Main cap support girdle
- Atomic H/Duty Simplex timing chain **#306620**
- Atomic Induction hardened crank sprocket **#306562**
- Atomic Hi pressure timing chain tensioner **#306563**
- Precision balanced
- Atomic Hi-Mass ANDRA/SFI approved harmonic balancer **#306100**

- Atomic Race Spec H/D valve springs **#306800**
- Atomic Head stud kit - 12 mm **#306651**
- Atomic Oversize Head bolt washers - **#306675**
- Atomic Billet gear oil pump **#306751** – complete with EDM cut chrome moly gears, billet end plate (hard anodized) Grade 10 fasteners, Atomic **#306564** chrome moly guide pivot, high flow bypass circuitry and blueprinted clearances.
- Microglide surface treated camshafts
- Atomic gasket set inc Atomic **#306168** O-ringed head gasket and Viton crank seals
- Atomic **#100790** Anchorlox locking harmonic balancer bolt kit
- Fit new brass welch plugs
- Spray block grey with hi-temp engine enamel (or any other colour you prefer)
- Powder coated rocker cover – your choice of 6 colours
- Precision blueprinting and assembly of long motor
- Engine is fully test run in our engine test cell - verify all vitals of the engine (oil pressure hot and cold, ring bed-in, cylinder % leak down, lifters bled, etc) and report supplied.
- Supply torque specs manual, run-in procedure sheet and DVD of engine operation on test bench
- Supply 7 litres of run-in 15W/40 oil
- Supply genuine Ford oil filter
- 12 months conditional warranty

A long engine comes complete from sump to rocker cover and all engines are run-in on our engine test cell to ensure everything is 100% spot-on before shipping.



Fitting one of our engines to a non-original application is no problem with our Retrofit Series. No need to use the original Ford computer, harness and gearbox, just hook up your choice of turbo or blower, add your favourite ECU and you will have the baddest 6 cylinder around!

And you also have the option of either an engine built to your requirements or we can rebuild your own... the choice is yours!

Atomic engines and components are engineered, dynoed, track tested and fully warranted to give you confidence you won't be let down in the heat of competition.

698GT-A Series New Long Engines

- #306460 SOHC Ford 6 cyl - EB-EL Ford
- #306461 SOHC Ford 6 cyl - AU Ford
- #306462 DOHC Ford 6 cyl - BA Ford
- #306463 DOHC Ford 6 cyl - BF Ford
- #306464 DOHC Ford 6 cyl - FG Ford
- #306465 DOHC Ford 6 cyl - Retrofit Series

698GT-A Series Long Engines - rebuilt from your engine

- #306460-RB SOHC Ford 6 cyl - EB-EL Ford
- #306461-RB SOHC Ford 6 cyl - AU Ford
- #306462-RB DOHC Ford 6 cyl - BA Ford
- #306463-RB DOHC Ford 6 cyl - BF Ford
- #306464-RB DOHC Ford 6 cyl - FG Ford
- #306465-RB DOHC Ford 6 cyl - Retrofit Series

