

## First Start

After the first start, run the engine for 15-20 minutes at gently varying speeds between 2000 and 3000 rpm. Do not blip the throttle continuously as this adds lots of fuel – be gentle on the throttle.

It is critical to vary the revs for proper run-in.

Throughout this period make sure the engine is not left to idle.

Check that the coolant is circulating properly, bleed if necessary and ensure the thermostat opens and the radiator gets hot from bottom to top. Ensure the cooling fan is working.

After this, switch off the engine, inspect for oil, coolant, or fuel leaks. If all is good, take it on the road.

Gently head to a low traffic area, where you can do long pulls at low load followed by engine braking. This process is called "Vacuum Pulls" and helps seat the piston rings. Repeat for no more than 50 miles avoiding anything over half throttle, and half maximum revs.

After 50 miles the initial ring seating should be complete, and now the engine should be driven gently following the guidelines below.

## Running-In Guidelines

1. When starting from cold, do not rev the engine, allow it to run for at least 30 seconds before applying any load, also, allow the engine to idle for 30 seconds before switching off to allow the hot oil to circulate away from the turbo lines.
2. For the first 1000 miles/16 hours, avoid anything over ½ throttle for extended periods, accelerate gently up to half engine speed, avoid keeping the engine at a constant speed e.g. motorway cruising, and do not labour or lug the engine at low engine speeds in high gears.
3. Complete the oil and filter change after the running in period and ensure any extra work like head bolt re-torquing is completed if applicable.
4. From 1000 miles/16 hours to 1500 miles/25 hours, avoid anything over ¾ throttle, vary the engine speed when possible.
5. After 1500 miles/25 hours start to accelerate in short bursts to 'stretch' the engine.
6. Complete the first service in line with the manufacturer recommended service schedule, or, in the case of 'extended oil change intervals' preferably at half the recommended interval.

Bear in mind that a new engine will generate more heat during the running in period, which can show up in the cooling system, at any sign of overheating, STOP, allow the engine to cool down, then check the cooling system for any problems, do not allow the engine to overheat as damage may occur. As the engine loosens up it will run faster and cooler until it is fully run in.