



Important Information Regarding Your New Forge Motorsport Cooling Product



Congratulations on purchasing a Forge Motorsport cooling product, made in Great Britain. You have chosen wisely, you now have a product that simply leaves the competition behind. All you need to do now is install and maintain the product correctly to maximise its full potential.

All Forge products are tested before leaving our facility to ensure you 100% satisfaction.

Important Information

When a Forge Motorsport cooling product leaves our facility we take great care in protecting and packaging it to ensure it arrives with the customer in the best condition. It's most important that on opening your delivery you carefully check the box, product and packaging before installing it. If at this stage you find any issues or concerns that it has been damaged in transit you **MUST** inform us, or your Forge Motorsport Dealer, **BEFORE** attempting to fit it. We will replace or repair ANY Forge Motorsport product that may have been damaged in transit, but we cannot guarantee to offer this service IF you have attempted to fit the product whilst damaged.

Important Installation Information

When you ordered your Forge Motorsport cooling product we made it either to your own design specifications or requirements, or for one of our standard aftermarket performance applications. How your new product works and fits to this application can be affected by several issues: Have you carried out any other modifications? Has the vehicle been involved in a previous accident? Have there been any changes to the chassis or the alignment of the vehicle or have there been any design changes to the specific year or model of your vehicle? Please consider these issues when starting your fitment. Any issues should be raised with Forge Motorsport or your supplying dealer as a matter of urgency.

Important General Information

The following pages will outline some helpful hints and procedures to maximise the efficiency and longevity of your Forge Motorsport products. These are general guides and **not** to be taken as fitting instructions. Quite simply you **MUST** read and **ACTION** these recommendations. To follow are issues Forge Motorsport have encountered that will cause reliability and performance related problems. Forge Motorsport will **not** warranty, replace or repair any products that have been force fitted, incorrectly installed or been subjected to electrolysis. If a radiator has a blackened inside this is strong indicator that electrolysis has occurred and a warranty claim will be refused.



Important Information on Radiator Install

An electrolysis test should be performed on your vehicle before installing a Forge Motorsport radiator, to detect and repair any such situations. These problems are a result of something wrong with your vehicle, allowing abnormal currents into the coolant system. Forge **will not** offer warranty against such situations. Please read below to insure that your car is free of this condition.

Improper Flush

Cooling systems require a thorough flush of the radiator, engine, overflow tank, hoses and heater core. Failure to do so will lead to mixing coolants and contaminates, creating a corrosive cocktail for the cooling system.

Corrosion

The correct coolant and distilled water mixture prescribed by the coolant manufacture of choice must be maintained. Water with high trace elements of minerals will create problems for aluminum radiators not normally seen in copper/brass radiators.

Electrolysis

Electrolysis is the systematic removal of the protective layer on the inside of the radiator tubes due to improper grounding in the electrical system. Electrical grounding problems can stem from poor installation of aftermarket accessories or incorrect vehicle collision damage repair.

Electrolysis facts

An electrical current passing through the coolant can cause system component failures, due to electrical ground problems and the generation of static electricity elsewhere in the vehicle. Electrical grounding problems can stem from poor installation of aftermarket accessories or incorrect vehicle collision damage repairs. This can destroy cooling system components regardless of the quality of cooling system maintenance. Depending on conditions it can be as quick as 7 days to ruin a radiator. The only way it can be stopped is to correct the electrical problem causing the current. Damage resulting from an electrical current can be pitted liners, oil coolers, radiators, extreme aluminum corrosion, and abnormal water pump and head gasket failure.



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Testing for electrolysis in cooling system

A multimeter or voltmeter capable of reading both AC and DC currents is required to test cooling systems. The meter needs to read zero to the maximum voltage of the system being tested in tenths of a volt. The meter leads must be long enough to reach between the coolant and the ground side of the battery. An ohm function of a multimeter is very helpful to pinpoint areas of resistance in an electrical system that will cause an electrical current to ground through the coolant rather than the engineered electrical circuit.

Procedure

Attach the proper meter lead to the groundside of the battery negative to negative or positive-to-positive. Install the second lead in the coolant touching the coolant only. Read the DC and AC voltage with all systems off. If a block heater is present, also take a reading with the heater turned on. If an automatic battery charger is present as a standby system, take a reading with this system running as well. Read the DC and AC voltage with the electrical starter engaged. Read the DC and the AC voltage with the engine running and all systems turned on: lights, coolers, fans, heaters, air conditioning.

Voltage of zero to .3 is normal in a coolant of cast iron engine. Such an engine will be destroyed with time by .5 volts, and engine manufactures are reporting .15 volts will destroy an aluminum engine.

The current will be AC if the problem is due to static electricity. If the coolant shows an electrical problem with all the equipment turned on; turn off one system at a time until you finally turn off the system that stops the electrical current. When the current stops, this will indicate the electrical system causing the problem. Be particularly careful of starters. They can cause as much damage to a cooling system as a direct connection to an arc welder. This is due to the ampage present. Always change the coolant if a current is detected. The electrical current will destroy the protecting chemicals in a properly inhibited coolant.

Like most parts on your car the Forge Motorsport radiator will need to be serviced to ensure its continued excellent performance. You are responsible for the monitoring of the engine temperature operation and for ensuring the correct detection and monitoring devices are in place and working to alert you to any overheating or other engine related malfunctions. At the time of installing the Forge Motorsport radiator an approved coolant must be used and added to the coolant system. Be sure you follow these golden rules: **NEVER mix coolant** and **ALWAYS use DISTILLED water**.



Good General Information and Care for Your



Forge Motorsport Cooling Product

Intercoolers

- On installing your intercooler be sure that all hoses clamps and fittings are tightened to prevent any leakage.
- Ensure that none of the intercooler or the associated plumbing components are rubbing on any body parts. This can cause premature failure and warranty invalidation from Forge Motorsport.
- Do not use **any** car cleaning products, solutions; shampoo's to clean your intercooler, radiator or oil cooler. The use of these products can damage the Forge Motorsport cooling systems and invalidate your warranty.
- We recommend that you should inspect your intercooler on a regular basis for bent and/or crushed fins. Any bent fins should be carefully straightened as to allow ambient air to pass through the core face.

Engine Oil Coolers and Transmission Oil Coolers

- Ensure all hose clamps and fixing are tightened and secure to prevent leakage
- Do not exceed an 80psi rating

What You Should Do If A Fault Develops

If you suspect that you have an issue, you should take your vehicle back to where the installation of your Forge Motorsport product was carried out or to a suitable and qualified tuner for investigation on the problem.

If you suspect that problem has occurred due to faulty manufacture please contact your Forge Motorsport dealer or Forge Motorsport UK, Forge Motorsport USA or Forge Motorsport Asia depending on your geographical location, to discuss the issue.

How to Get the Best from your Forge Motorsport Cooling Product

- Ensure a reputable and competent garage, tuner or mechanic carries out the fitting.
- Carry out regular visual checks, inspections and service.
- Only fit the Forge Motorsport cooling product for the application that it was designed for.
- Do not fit other parts that could detrimentally affect the efficiency of your Forge Motorsport cooling product.

Engineered For Performance – Race Proven, Daily driven