

RADIATOR GUIDE



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PRIOR TO INSTALLATION OF FITTINGS:

Lubricate threads with an anti-seize compound or white lithium grease to reduce galling. For tapered pipe threads apply Teflon® tape.

COOLANT:

C&R encourages the use of distilled water in all aluminum radiators. Failure to use distilled water may void the warranty.

Tap and well water contain harmful minerals that coat the internal surfaces of your radiator, reducing its ability to dissipate heat. In extreme cases, the deposits can restrict or totally block the flow of coolant through the radiators cooling tubes. Certain minerals can also create corrosion that can eat through the aluminum.

Upon installation of all radiators and/or heat exchangers the coolant in the system must be circulated and mixed by running the engine at operating temperature for a minimum of five (5) minutes. This allows for proper mixing of coolant and corrosion protection.

The raw materials used in aluminum core construction can be susceptible to corrosion. If a new radiator has been exposed to moisture internally, it is vital that the radiator is dried prior to storage (oven, pressurized air, etc.) Used radiators are not as susceptible to this corrosion. Once a radiator is put into service and heat cycled, the internal surfaces of the radiator become passivated. In the context of corrosion, passivation is the spontaneous formation of a hard, non-reactive surface film that inhibits corrosion. It is imperative that all radiators that have not been heat cycled or passivated are stored in a "dry" state as a precaution.

For racing applications we recommend some type of additive or corrosion inhibitor to be used in the cooling system. An anti-corrosive additive like NEO Keep Cool, Joe Gibbs CSP, or Conklin SAFE work very well. Anti-freeze will raise the temperature of your race engine, do not use it unless racing (or transporting) in conditions where outside temps will be below freezing.

For all other applications follow your OEM recommended anti-freeze/coolant.

Failure to use proper coolant/antifreeze will result in damage. C&R is not responsible for damage caused by use of improper coolant in C&R Radiators.

USE OF PROPER RADIATOR CAP:

We recommend using a 28-32 lb. cap for most racing applications. For all other applications please follow your OEM recommended rate.

CAUTION! Always remove the radiator cap slowly and carefully. Removing the radiator cap from a hot pressurized system can cause serious burns from escaping steam and coolant.



RADIATOR THERMAL SHOCK:

Rapid introduction of ice water to a hot radiator/cooling system can, and will, cause the tubes of the radiator to develop cracks at the tube to header junction. Also, there is the possibility of placing undue stress on engine components. If a radiator develops a crack where the tube is brazed to the header plate, the cause is likely "Thermal Shock". While this type of failure generally occurs near the inlet of the radiator, it can also appear on the opposite corner from the inlet. At operation temperature, a NASCAR size radiator can grow as much as 1/8th inch in width! When very cold water is introduced to a hot radiator, there is a rapid contraction of the cooling tubes. These tubes are doing their intended job, dissipating heat rapidly. Since the tank and header portion of the radiator have substantially more mass than the tube, they contract at a much reduced rate. In essence, the contracting (shrinking) tube is pulled beyond its breaking point and a crack develops. This crack will always develop at the joint, as this is the point of highest stress. These failures generally are experienced during dyno runs and on track practice sessions when the entire cooling system is subject to multiple heating/cooling cycles. The use of ice water to cool the system exaggerates the process. Race events present a natural heating/cooling rate, therefore no "Thermal Shock". To prevent "Thermal Shock", the system must be cooled down gradually. If ice or cold water are induced to a hot radiator "Thermal Shock" failures will occur!

C & R Racing, Inc. will not be responsible for "Thermal Shock" failures. We have worked tirelessly to provide teams with the performance they demand. When treated properly, C & R radiators will provide race proven durability and race winning performance.

STOP LEAK ADDITIVES:

C&R recommends Dike by Conklin, a non-ceramic stop leak. The non-ceramic formula stays suspended in water therefore leaving no residue when drained.

CLEANING YOUR C&R RADIATOR:

Ensure that solvent does not enter the inside of the radiator. Solvent damages the seal of the double pass baffle.

ADDITIVES:

C&R has extensively tested many additives that claim to lower water temps. We have yet to find any that reduce temperature. NEO Keep Cool, Joe Gibbs CSP, or Conklin SAFE does have good anti-corrosive properties that will help keep mineral deposits and rust residue to a minimum. This will help keep your cooling system working efficiently for more race miles.

We do not recommend mixing or using different types of water conditioner at the same time in your cooling system.

RETURNING A C&R PRODUCT:

If you need to return a radiator please contact your sales representative for a RGA number. Make sure you contact who you purchased from first to start the return process. Include the RGA number, name, address, and phone number with the radiator. C&R will contact you upon receipt of the radiator.

PROTECT YOUR INVESTMENT AND YOUR COOLING SYSTEM:

- When capping oil heat exchangers, oil coolers, or transmission coolers during dyno runs, the oil must be drained from the heat exchanger.
- Failure to drain the oil can result in a fracture to the heat exchanger core.
- C&R Racing, Inc. is not responsible for damage caused by improper maintenance of C&R Radiators.

Although we take every precaution to ensure that no foreign material has entered this part, we STRONGLY ENCOURAGE our customers check for contaminates before installation.