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The BTU Bandit

Is this COOLING SYSTEM ENEMY on board your racecar?

When racecar engine operating temperatures exceed the desired optimum temperature by 20-40° F, as is common in many race situations, like close drafting, it is obviously essential to dissipate all the heat possible to be competitive.

Many teams in a variety of automobile motorsports divisions traditionally install a line within the cooling system, which runs from the high pressure engine effluent, to the low pressure water pump suction. As we understand, the perceived need for this hose is to facilitate priming during a gravity fill of coolant during the setup procedure. The negative effect this hose has on the ability of the racecar to dissipate BTU's (HEAT) once it is on the track clearly dictates to us that this outdated setup should be immediately abandoned.

Because, On the Track, this Hose becomes . . . . the BTU Bandit!

Why is the BTU Bandit soooooooooo BAD?

1] First and foremost, the high-pressure differential of this flowpath creates a high velocity flow, undesirably directing heated coolant directly back into the engine without dissipation. BTU's that have been removed from the engine, are now being returned to the engine, increasing the balance of latent heat maintained within the racecar.

2] Second, this high velocity branch off the high-pressure line can also direct AIR within the system right into the water pump impeller. (AIR which would normally collect in the top of the radiator tanks and assist with THERMAL EXPANSION) The fast churning water pump will break this air down into MICROBUBBLES and then send them on into the engine's water jackets. Here these miniature air bubbles have a tendency to cling to the metal (like CO^2 bubbles in a soft drink glass) and form an INSULATING BARRIER, detrimental to heat transfer.

3] Third, because of the overall negative effect contributed to heat dissipation by this hose, it only provides EXCESS WEIGHT and additional LEAK POSSIBILITIES to the racecar.

So . . . . Lighten Up and Run Cooler!

The opinion at Vapor Trial Racing is that the BTU Bandit should be permanently removed from the racecar because it ❶ reintroduces HEAT back into the engine, ❷ causes ENTRAPPED AIR to interfere with heat transfer, and ❸ adds WEIGHT to the racecar.

Remove the BTU Bandit from your racecar, and then test it to verify to yourself that the racecar does cool more efficiently. Any problems with initial setup, which may arise from the omission of the BTU Bandit, can be remedied by replacing the gravity method of fill and drain of coolant, with a simple, fast, pressurized coolant fill and recovery system.