

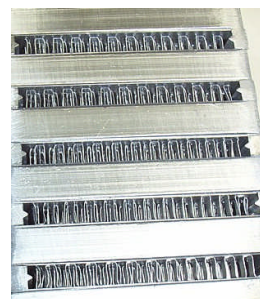
TREADSTONE PERFORMANCE



Treadstone Intercoolers

Treadstone Intercooler features superb quality highly efficient bar and plate construction. Our quality cast end tanks ensure evenly distributed airflow and low-pressure drop. Our intercoolers are pressure checked to 150psi and come with a 1-year warranty against manufacture defect. Bar & Plate Intercoolers are proven to be the most efficient air to air intercoolers on the market. Older styles of tube and fin intercoolers just don't stack up. If your ultimate goal is to cool the Air to the maximum you have to go Bar & Plate.

We manufacture our bar and plate cores with strict guidelines, and are specifically designed to maximize cooling using the most surface area possible in any given space. Our cores give the perfect balance between heat exchanging efficiency and flow. Our internal fin structure design is top notch, and is where the most important changes can be made to enhance the cooling rate. Treadstone intercooler cores feature a high heat-dissipating "Inner fin" design. This is ideal for medium to high boost levels on higher horsepower or upgraded turbo engines. The larger internal surface area provides superior cooling efficiency for radiating excessive heat and minimizing heat soak. We manufacture the internal fin with smaller gauge to dissipate heat faster. We use a staggering of the internal fin to provide more surface area and dissipate more heat, this staggering of the fins causes turbulence in the air passing through the intercooler, which slows it down to be dissipated to the ambient air side of the intercooler (the atmospheric air). Competitors will overlook this design characteristic and produce fins that are straight through, which transfers very little heat. The external fins are also manufactured with smaller gauge to dissipate heat to the atmosphere more efficiently. They are also louvered to slow down the ambient air causing turbulence enhancing the cooling rate even more. In general, these design characteristics is what gives Treadstone Intercoolers the leading edge in intercooler technology.



Vertical and horizontal flow characteristics

Vertical and horizontal flow cores that we manufacture have different internal fin design characteristics. Horizontal flow coolers have long runner lengths which means higher pressure drop through the core, while vertical cores have short runner lengths and lower pressure drops, we understand this by changing the density of our internal fin structure for any given intercooler. Many vertical cores that we manufacture are designed for larger displacement motors that do not require high boost pressures, therefore we need a dense internal fin design to extract all the heat we can, as the air passes through 6-10" of core length. On the other hand many smaller displacement motors 1.6L to 3.0L will require higher boost pressures 15psi and above, to achieve the power levels we are looking for. With this higher boost pressure means higher compressor outlet temp, and we need to cool this air over a longer runner length of intercooler. Making the runner length longer means higher pressure drop through core, and this is something that robs us of power. Manufacturing a slightly less dense core than our vertical flow cores, we can still have low pressure drop through core, while still extracting as much heat as possible



Pressure drop

With all Turbocharged Systems pressure drops are to be expected, the difference in pressure on either sides of the intercooler is what's called pressure drop. The more air you try to force through an intercooler the more pressure drop it will have. With a well-designed system matched to the specific application, we can optimize the performance gain from your intercooler. Basically the rating on our intercoolers for pressure drop is 1.5cfm is to 1Hp, and this rating is at less than 1psi pressure drop through the core. So if you car is making 300hp, your flowing 450 cfm through the core. If this flow # is less than the rating on our core, then you have a pressure drop through the core less than 1psi, and your operating efficiently. Exceeding this figure is not detrimental, and it is done all the time, we just try to give the most efficient rating figure for our intercoolers.

