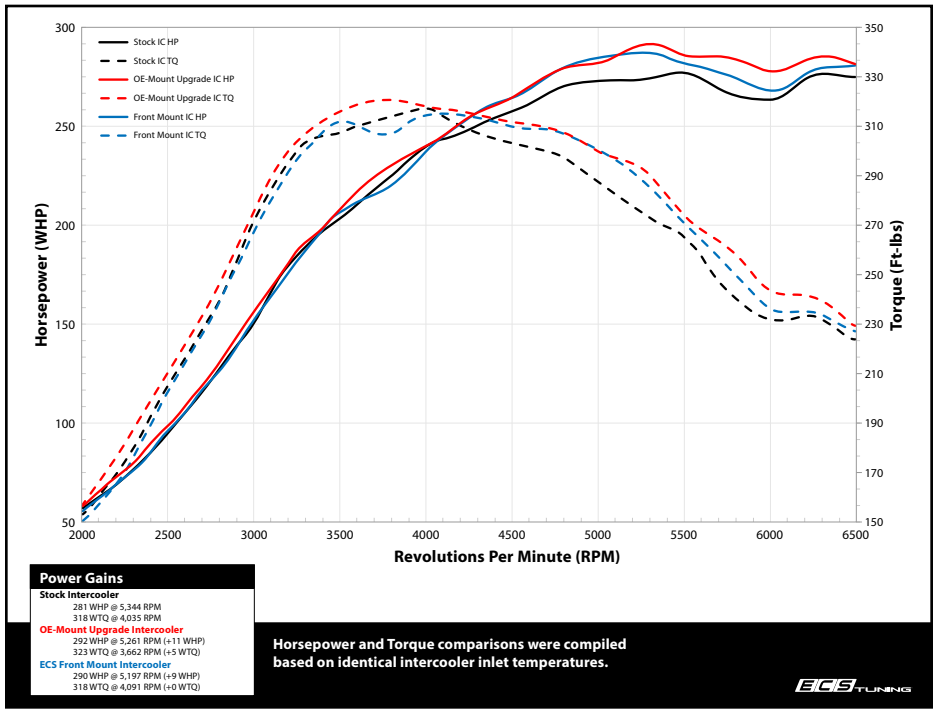
MK5 FRONT MOUNT INTERCOOLER TESTING RESULTS



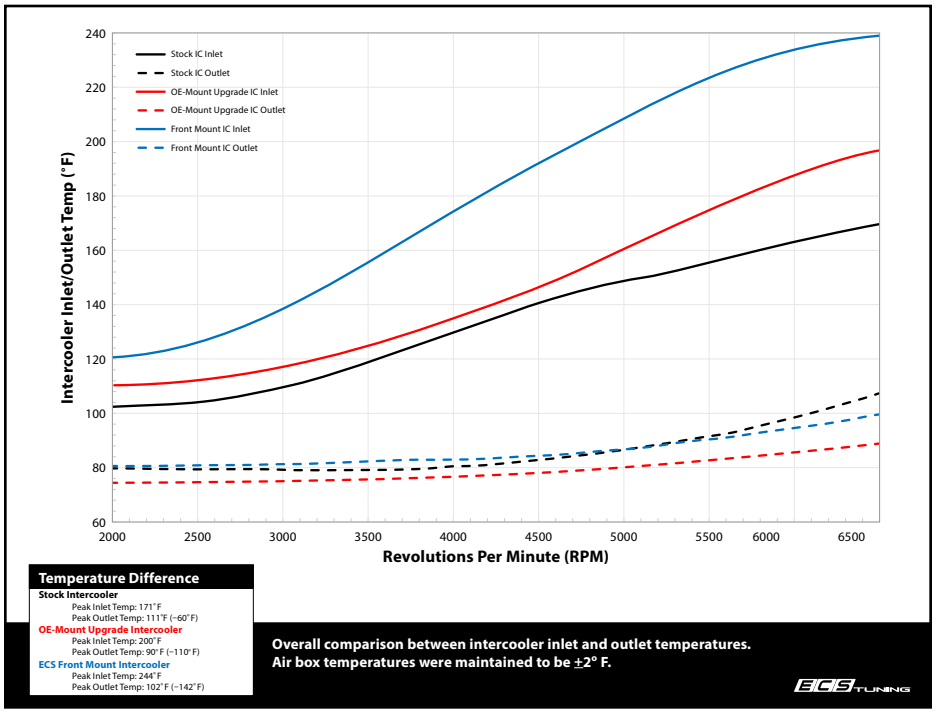
Horsepower & Torque

The graph above shows the horsepower and torque curves for all three intercooler types. We expected to see gains in both power and torque, and we weren't disappointed! Here were the results:

OE-Mount Upgrade IC:
292 WHP @ 5,261 RPM **(+11 WHP)**
323 WTQ @ 3,662 RPM **(+5 WTQ)**

Front Mount IC:
290 WHP @ 5,197 RPM **(+9 WHP)**
318 WTQ @ 4,091 RPM **(+0 WTQ)**

You may notice that we don't gain any peak torque with the front mount, but don't let that scare you. What we see in return is consistent torque gains over the stock intercooler once we get above 4,000 RPM. The increased torque in these RPM ranges will translate to better throttle response, more passing power, and more fun for you!



Intercooler Inlet vs Outlet Temperature

This graph tracks the temperature of air as it enters and exits the intercooler. Outlet temperatures will obviously be lower than inlet temperatures, but we're looking at both numbers to see how much heat the intercooler is removing from the inlet air. Cooler air is denser air, and denser air leads to more power.

Stock IC:
−60° F max decrease

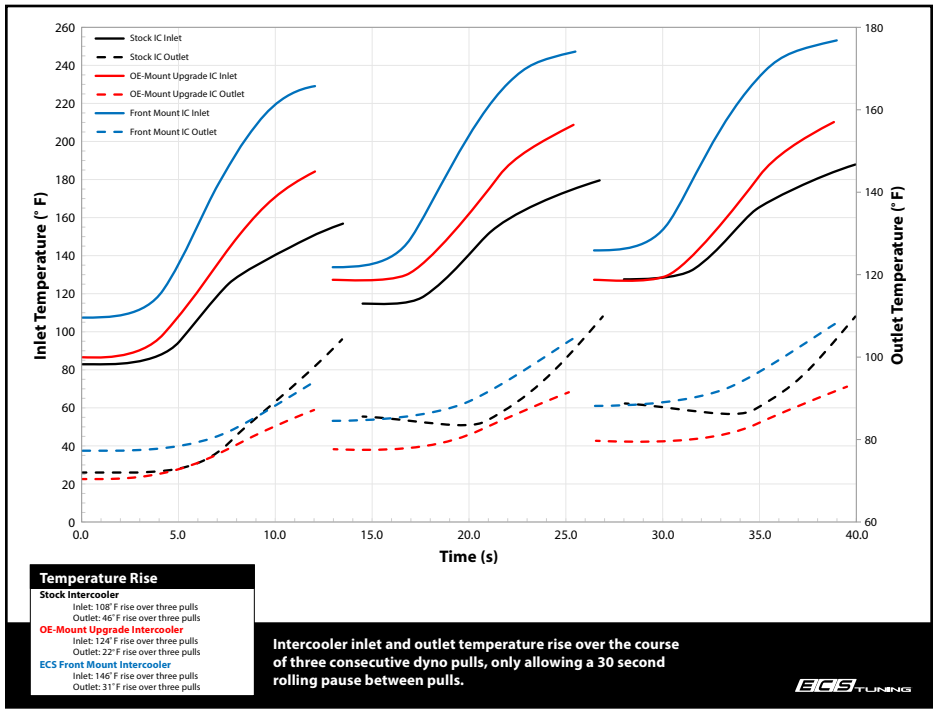
OE-Mount Upgrade IC:
−110° F max decrease

Front Mount IC:
−142° F max decrease

The front mount intercooler came out on top in this test, likely due to its location out in front of the radiator which gives it unrestricted access to clean, cool air. It's clear that our front mount intercooler boasts some serious performance benefits without the added cost or complexity of the OE-mount upgrade intercooler.

We performed extensive testing on our front mount intercooler and compared it to the stock unit, as well as an upgraded OE-mount intercooler. All of these tests were performed on the same vehicle under the same conditions.

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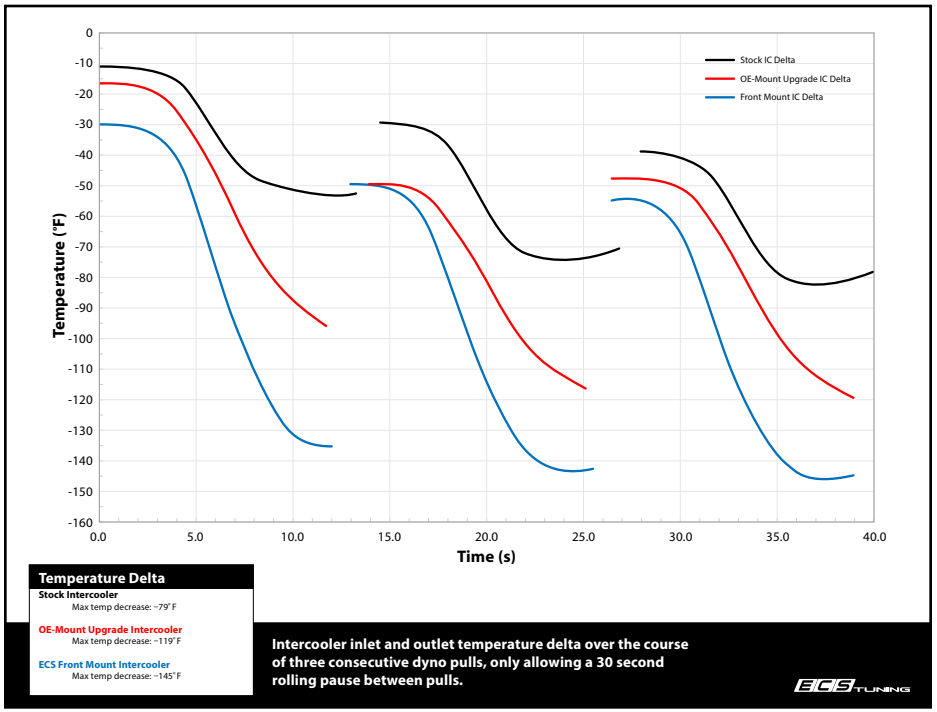


Temperature Rise

This graph tracks air temps at the intercooler inlet and outlet during three consecutive dyno pulls, we're looking for signs of "heat soak". Since the intercooler is trying to remove heat from the air before it reaches the engine, we want to see the **Outlet** temps rise as little as possible for the best possible performance. Here were the results:

Stock IC:	**OE-Mount Upgrade IC:**	**Front Mount IC:**
Inlet: 108° F temp rise	**Inlet:** 124° F temp rise	**Inlet:** 146° F temp rise
Outlet: 46° F temp rise	**Outlet:** 22° F temp rise	**Outlet:** 31° F temp rise

Our OE-mount intercooler came out on top here with an **Outlet** temp rise of 22° F. However, with an **Outlet** temp rise of only 31° F our front mount intercooler still boasts some serious "bang for your buck" performance without the added cost or complexity of the OE-mount upgrade intercooler.



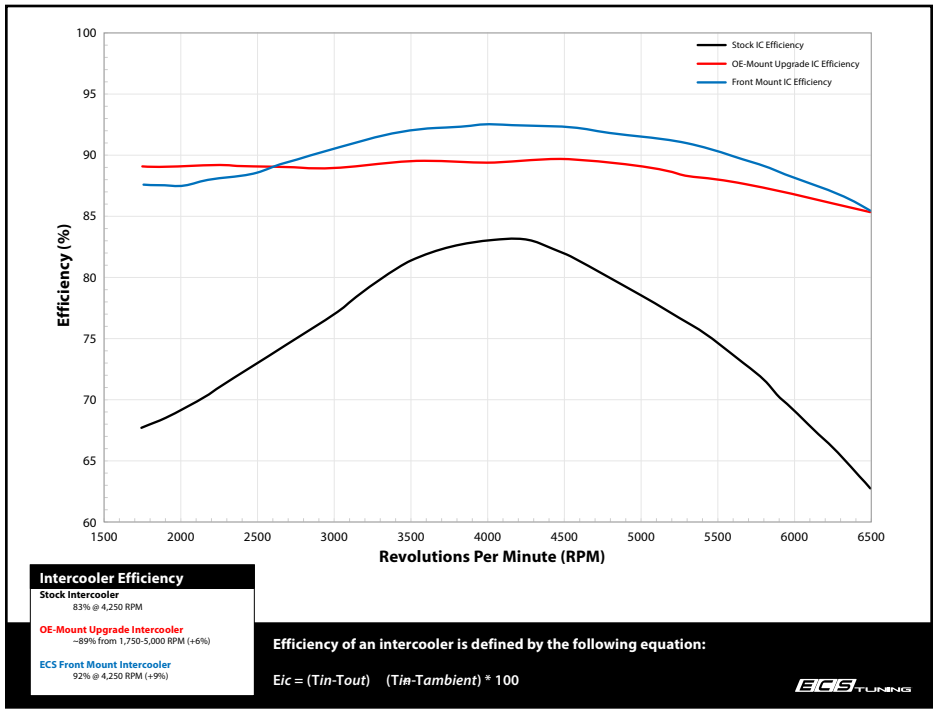
Temperature Delta

In this test we're looking at the difference (AKA: "delta") between the intercooler inlet and outlet temps during three consecutive dyno pulls. Think of this as an intercooler stress test, specifically testing its ability to remove heat from the air during consecutive dyno pulls. Here were the results:

Stock IC:	**OE-Mount Upgrade IC:**	**Front Mount IC:**
−79° F max decrease	−119° F max decrease	−145° F max decrease

Our front mount intercooler is the clear winner here with a delta of −145° F. The stock and OE-mount upgrade intercoolers are sandwiched between the radiator and condenser, and since they aren't exposed to clean, cool air they simply aren't able to match the performance of our front mount intercooler.

MK5 FRONT MOUNT INTERCOOLER TESTING RESULTS

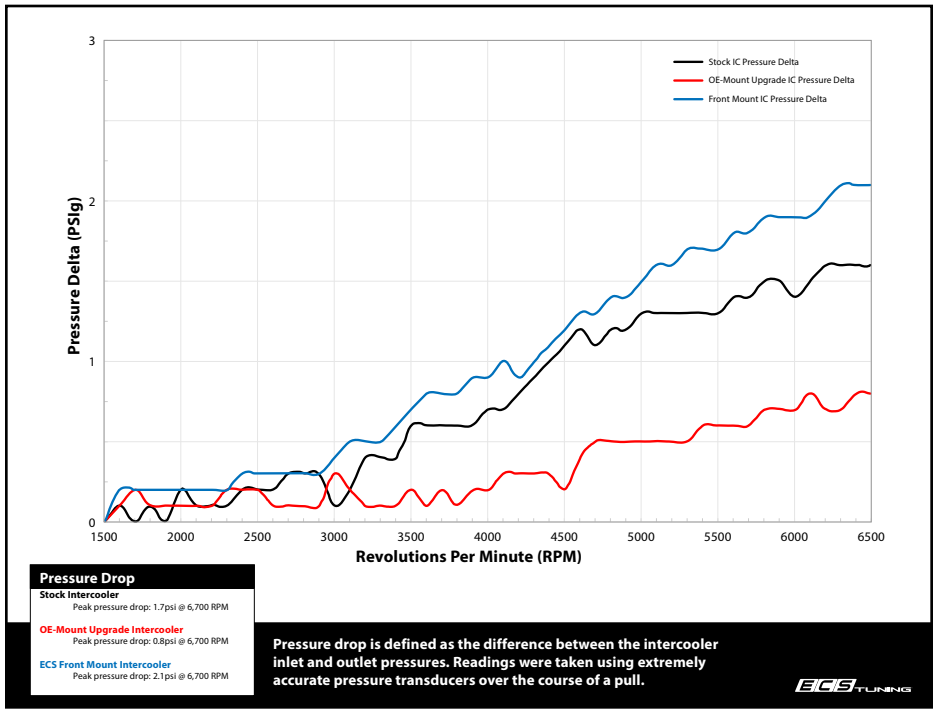


Intercooler Efficiency

This test measures the efficiency of an intercooler. It does this by tracking the temperatures of the air coming in and out of the intercooler, then those numbers are entered into the formula shown underneath the graph. Basically, we're looking at how effective the intercooler is at reducing the inlet air temp. Here were the results:

Stock IC:	**OE-Mount Upgrade IC:**	**Front Mount IC:**
83% @ 4,250 RPM	~89% @ 1,750-5,000 RPM (+6%)	92% @ 4,250 RPM

The front mount intercooler wins this test with a peak efficiency rating of 92%, as well as consistently higher efficiency across the RPM range. Compare the front mount efficiency curve with the curve for the stock intercooler and you'll see exactly why this upgrade is worth the money!



Pressure Drop

This final test measures the air pressure drop between the intercooler inlet and outlet. We took our readings with extremely accurate pressure transducers which were drilled and tapped into each end of the intercooler. We want to see low numbers in this test, this means that the intercooler is operating efficiently and is not restricting air flow. Here were the results:

Stock IC:	**OE-Mount Upgrade IC:**	**Front Mount IC:**
1.7psi peak pressure drop @ 6,700 RPM	0.8psi peak pressure drop @ 6,700 RPM	2.1psi peak pressure drop @ 6,700 RPM

Decreased overall core volume in the front mount intercooler compared to stock results in a slight pressure drop, but the front mount allows cooler air to be directed through the core so some pressure loss is to be expected.