

INTERCOOLER SPLITTER & SHROUD

FITTING A LARGER TOP-MOUNT INTERCOOLER TO A WRX IS A NECESSARY MODIFICATION FOR THOSE CHASING POWER. HOWEVER, MORE OFTEN THAN NOT, THE BIGGER TOP-MOUNT WILL RENDER THE FACTORY SHROUD REDUNDANT, AS IT IS TOO SMALL TO SUIT THE NEW INTERCOOLER'S REQUIREMENTS. HERE, WE SHOW YOU HOW TO MAKE YOUR OWN SPLITTER.



STEP 1
After fitting the larger intercooler, the standard intercooler splitter and shroud was removed with the help of a Philips head screwdriver.



STEP 2
The length and height of the intercooler was measured.



STEP 3
With a large ruler (or any long flat object), that emulated the line of the bonnet, we measured the distance between the bottom of the intercooler and the large ruler.



STEP 4
The procedure in Step Three was repeated to measure the distance between the top of the intercooler and the roof.



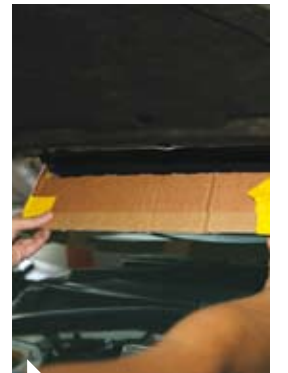
STEP 5
The height of the bonnet scoop was measured.



STEP 6
With the bonnet just slightly opened, the distance between the top of the cooler to the underside entrance of the scoop was measured.



STEP 7
With all the measurements recorded, the layout of the splitter was sketched on paper. The hypotenuse of the triangles was worked out using good old high school mathematics.



STEP 8
A rough prototype was made out of cardboard to test if all the measurements were correct. In our case, the measurements were changed slightly.



STEP 9
After we were satisfied with the measurements, the template was drawn onto 2mm sheet aluminium.



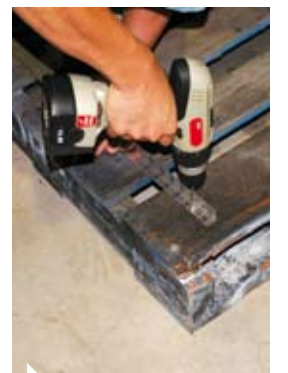
STEP 10
With a jigsaw and aluminium blade, the template was carefully cut out.



STEP 11
The rough edges were filed down and the edges and surface were then sanded down.



STEP 12
With a 1.5mm 90degree aluminium length, to be used as brackets, the desired lengths were marked out.



STEP 13
It was easier to drill holes in the aluminium length before being cut to bracket size pieces.

**STEP 14**

The aluminium length was cut to bracket-sized pieces according to the markings.

**STEP 15**

The points to be fastened by the brackets were marked.

**STEP 16**

The points where brackets would connect to the factory screw locations were marked.

**STEP 17**

All the marked points were drilled.

**STEP 18**

With some matt black paint, lay a few coats of paint on the unit.

**STEP 19**

The brackets were put in place and pop riveted. The side pieces and front piece were joined first. The middle piece was secured into place by the brackets and pop rivets. Finally, the back piece was fixed into position.

**STEP 20**

All the sharp edges were lined with a strip of rubber (electrical tape could have also been used as a substitute).

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**ASSESSMENT**

Top-mount intercoolers inherently have heat soak issues along with less cooling capabilities than a front mount. High school physics dictates to us that air travel follows the path of least resistance. So, installing a larger top-mount without the use of a splitter will mean the majority of the air flow will run towards the back of the intercooler resulting in an inefficient airflow and reduced cooling. Fuji Heavy Industries has attempted to tackle the problem, but only in the form of the STI, as it comes with a splitter from the factory. Also, on newer turbocharged Subarus, the intercooler is tilted, resulting in a more even air-flow over the total surface area of the cooler. But, for those that can't afford an STI or own an older model without the intercooler tilt, a splitter will assist in maximising efficiency of the intercooler. ■ **ESTM**

PARTS REQUIRED

2mm sheet aluminium
1.5mm 90 degree aluminium
Pop rivets
Black spray paint
Cardboard
Gaff tape

TOOLS REQUIRED

Jigsaw
Drill
Clamps
Ruler
Screwdriver
Sandpaper