

## EMS 3D Scans the "Boss"

Steeda Motorsports has long been a provider of premium aftermarket Ford performance parts and accessories. For 2012 Ford has brought back the mighty "Boss" based on the new 5.0 Liter engine. The new Boss produces 444 horsepower and 380 lb-ft of torque. To do this Ford uses CNC ported heads, revised camshafts and a high flow "runners in the box" intake taken from the 302R racecar.

### The Problem

Steeda wanted to offer some of their cold air intakes and other accessories for the new Boss engine and also allow customer with standard 5.0L engines the ability to upgrade to Boss intake system and cold air system as well. To do this they needed to design some new parts but the new Boss intake manifold is quite complex in shape. As room under the hood with this new intake system is at a premium everything has to fit just right.

### The Solution

Steeda contacted EMS who had previously sold them a Z Corp 3D Printer and knew EMS offered 3D scanning services. Steeda uses their 3D Printer for all types of product development include form, fit and function. Steeda wanted EMS to 3D scan the Boss intake so they could design their parts around this new system. To do this EMS used their high accuracy, high resolution Konica-Minolta Range 7 - 3D Scanner. The challenge with this intake is it is very dark but yet has some very shiny aluminum inserts. The Range 7 - 3D Scanner is unique in its ability to 3D Scan both dark and shiny surfaces, something that is not possible with most 3D Scanners without spraying the part with paint or dust. Steeda required the part to be 3D scanned as is without surface treatment.

Once the 3D scanning was done, EMS created a solid model of the intake including key mounting points on the engine block and the front air intake. EMS uses RapidForm which is the only 3D scanning software that can create feature based solid model geometry from 3D scan data.

### Conclusion

When it comes to 3D scanning complex automotive parts especially those that are shiny or black, EMS has the right hardware, software and expertise to get the job done.

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2012 Mustang Boss 302 Intake



3D Scanning the Boss intake



3D Scan data of the Boss intake