



# Straight Shooter

INSTALLING MAC PRODUCT'S  
NEW STRAIGHT SHOT COLD  
AIR INTAKE KIT

text and photography by Ricardo Topete

**Repeat after me: "My engine is an air pump." Once you know and understand this over-simplified statement, you will have an idea why and how an internal combustion engine can make horsepower. Following this line of thinking, you can see why airflow into and out of the engine can greatly affect power output. Naturally, the more air flowing through an engine the more power will be produced.**

There are many other factors and variables that affect horsepower, such as fuel, spark, friction, rpm, et cetera, but one of the easiest ways to make more power is to increase breathing capability. This concept explains why dozens of companies offer high-flow parts such as throttlebodies, headers, exhaust systems, and superchargers. All of these products promise an increase in airflow, and consequently an increase in power output.

This month we examine a new spin on an old concept. MAC Products recently introduced a new line of cold air induction kits to supplement their already large selection of speed parts. MAC (best known for its quality exhaust, suspension and air intake kits) is a well-respected name in Mustang enthusiast circles. MAC offered to let us sample its Straight Shot Cold Air System so that we could compare and contrast it against other similar kits currently available. What makes MAC's Straight Shot different? Let's take a close look at some of the different induction kits currently on the market.

Initially, Mustangers slapped bigger high-flow air filters onto the factory induction tube in an attempt to draw more air into the engine. The logic here was to eliminate the factory paper filter and restrictive air box to gain more HP. Although an improvement over the stock setup, this method was far from ideal. Simply hanging an exposed air filter on the intake tube would subject the air charge to under-hood temps that are in excess of 200 degrees. To make matters worse, many times the air filters were usually placed within inches of the radiator and headers, which lead to even more "heat-soak."

Innovation led to a better design, and "fender-well cold air kits" were born. These

fenderwell kits replace all of the stock plastic and restrictive ducting that leads to the throttlebody. Included with these kits is a larger diameter tube, which allows more air to be drawn in with less turbulence. Also, these fenderwell systems include a high-flow filter that is installed inside the fender (hence, the name). This is done to isolate the air filter from the high under-hood temperatures. Colder air equals more power because of the denser oxygen concentration.

The fenderwell mount was clearly better, however, it did have some inherent flaws to its design. For example, since the air filter



**1 Before removing the stock air intake tract, disconnect the negative terminal from the battery, then unplug the mass air meter harness.**



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2 Remove the two air hoses going into the factory air induction tube.

3 Loosen the hose clamps holding the stock air induction tube to the back of the mass air meter and to the throttlebody. Once loose, the stock air tube can then be lifted up and out of the vehicle.

4 Remove the factory air filter housing. You will first have to remove the bolt that secures the filter box to the inner fender.

5 With this particular MAC system, the factory mass air meter will be reused. Separate the meter from the OE air box housing by removing the four attaching bolts as shown.



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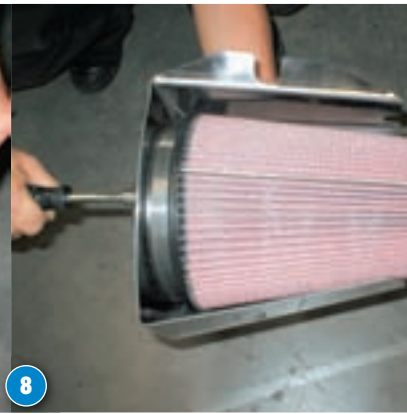
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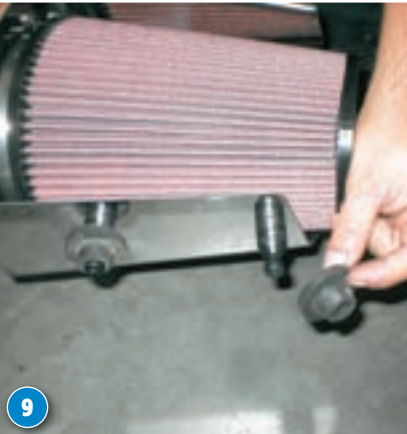
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6 Remove the screen located at the front of the mass air meter.

7 Mate the supplied MAC flange adapter and gasket to the stock mass air meter.

8 Mount and secure the MAC filter and "Velocity Stack" to the supplied heat shield. This will all be done utilizing the hardware contained within the Straight Shot kit.

9 Remove the two rubber "feet" from the factory air box and transfer them to the bottom of the MAC heat shield. These, along with the grommet for the top of the shield, are important, as they will isolate and quiet vibrations.

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**10** Take the mass air meter and flange adapter and connect to the heat shield assembly using the supplied silicone connector and clamps.

**12** Install the MAC heat shield and mass-air assembly into the car. Be sure to plug in the mass air sensor harness at this time.

**11** Remove the "grommet" from the top of the factory air box and install it onto the MAC heat shield.

**13** Install the MAC air tube and silicone connectors to the throttlebody and to the back of the mass air meter. Reconnect the two air tubes to the intake kit using the sleeves supplied by MAC.

is located inside the fender and space is limited, a compact air filter must be used. The smaller filter could potentially cause a restriction on heavy breathing Mustangs. Also, the additional bends in the tubing required to place the air filter in the fender could cause additional air turbulence. The combinations of these two factors are known to be HP killers. In addition, some Mustangs have been known to have rough idle and minor drivability issues due to the extra bends in the air-stream, which are in front of the mass air meter. This turbulence would cause the mass air meter to not "read" the proper amount of air the engine is ingesting. Lastly, installation was made more difficult due to the fact that the filter now rests completely out of sight in the fender.

The Straight Shot Performance Air System developed by MAC has borrowed some design cues from both above-mentioned air intake kits in order to arrive at the best possible design. For instance, in order to maximize airflow, the Straight

Shot utilizes a large diameter (between 3-3.5 inches depending on the model) and a smooth air tube leading to the throttlebody. Furthermore, the Straight Shot makes use of a massive air filter since clearance is not an issue as it normally would be in a fender mount kit. MAC goes one step further and includes a unique velocity stack into the air filter design—something not typically found on other cold air kits. Lastly, MAC provides a heat shield that surrounds the air filter and isolates it from the extreme under-hood temperatures so that cooler air from the inner fender can be drawn in.

All of these features are in the name of maximum performance. In the cosmetic department, the Straight Shot is dressed up to ensure that it looks as well as it performs. The heat shield and air tubes are made out of a highly polished stainless steel, and includes blue silicone connectors along with all the necessary hardware for a simple installation. Access to the air filter for cleaning purposes is a snap, as the heat shield can be easily removed.



**14 Do a final check of the installation and you're done.**

Follow along as Elisseos Patronas, a GTR High Performance installer, shows us how simple it really is. This is a job that should be well within the scope of most enthusiasts, as it only requires the most basic hand tools and less than an hour of your time. GTR High Performance chose to demonstrate this on a 2004 Mustang GT that already sported a host of typical bolt-on upgrades, such as power pulleys, Plasma Booster ignition upgrade, catalytic crossover pipe, larger throttlebody, C&L intake plenum, and DiabloSport Predator computer tuner. Notice the lack of a performance intake kit, as the stock induction was still in use. GTR felt that this vehicle represented quite well what the average daily-driver Mustang has or aspires to have. ■

### MAC STRAIGHT SHOT APPLICATIONS

(complete to throttlebody)

Year	Model
1996-2004	4.6L 2V
1996-2002	Cobra/Bullitt/GT
2003-2004	Cobra to M/air
1996-1998	3.8L
1994-1995	3.8L
1999-2004	3.8L
1986-1988	5.0L speed density
1989-1993	5.0L mass air

### › SOURCES

#### GTR HIGH PERFORMANCE

(909) 987-4386  
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