

 **HP Upgrades....couple things**

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In Response To: Re: HP Upgrades.. (j Stewart)

HI:

I just thought I might offer some benefits of our experiences with these cars regarding HP bolt-ons that actually work.

#### #1 Chips:

A good chip does work quite well, provided that its properly mapped. Part of this means that its compatible with the octane level in your area of the country and the rev limiter is NOT changed unless better rod bolts have been installed. The engine will continue to make power up to 7000 RPM but its not responsible to permit those revs unless the mechanical bits have been upgraded to suit. This also includes valve springs & retainers. A good chip will add about 15-18 HP to any 993 engine; both OBDI or OBDII versions.

The chip mapping should be tailored for modifications that make a significant impact on air/fuel ratios. Aftermarket mufflers, air cleaners and such are NOT part of that. The on-board MAFS and oxygen sensors will make enough corrections to handle the subtle gains from those 2 bolt-ons. 3.8 kits, RS cams, headers, compression increases are things that must be addressed in chip mapping when these modifications are done.

#### #2 Mufflers:

Porsche did a very good job on the flow capacity of the OEM mufflers, albeit too quietly for some. Given the RPM range and stock camshaft profile in the 993-996 engines, there is little to be gained by bolting on a set of aftermarket mufflers besides a much nicer sound,... :) We have not seen any muffler add more than 5 HP and this is within the temperature variations that exist with a cold or hot day.

Do this for a more satisfying sound, not in the quest for more power. If you have a 3.8 kit, good rod bolts and RS or Sport cams, that's another thing altogether.

#### #3 Air Cleaners:

Porsche's efforts here are quite well executed for the stock engine's internal configuration. Once again, do this modification for a more sporting sound. PowerFlows do not offer any gains here and in many cases have triggered a MIL light (check engine) that will log a DTC (fault) in an OBDII-spec 993. The MAFS and airbox are very well matched to each other and even that screen inside these boxes should not be removed. This is there to straighten the airflow across the

MAFS and make sure that its not turbulent from the center to the edges. This is critical for proper air metering and thus, drivability.

Adding a series of holes in the plastic cover will enhance airflow a little and certainly make a nicer sound at full throttle. Expect no more than 5 HP with additional holes.

I hope this helps someone make an intelligent, informed decision about HP upgrades and bolt-ons. There is sure a lot of misinformation floating about out there in this regard with the dollars that are at stake.

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