

# Sport Chrono Package

*By Dave Hathaway*

Like PASM, the truth about the Sport Chrono Package has eluded many automotive a journalist, many of whom have suggested that Sport Chrono is nothing more than a \$920 stop watch, but Sport Chrono is much more than that.

This option takes control of many of the Cayman's on board systems delivering absolute sport driving characteristics. When the Sport Chrono button is pressed, many things happen including:

- The drive by wire throttle map is changed making the car feel more responsive and making 'heel-toe' downshifting easier.
- PASM is switched to Sport Program to provide more crisp handling and less body roll.
- PSM (Porsche Stability Management) intervention limits are increased to allow more aggressive driving without triggering a system response. (In normal mode PSM triggers if one wheel is about to lock up, in sport mode it triggers when two wheels are)
- The Soft Rev Limiter is replaced with a Hard Rev Limiter allowing you to get full power all the way to redline (more info below)
- The Triptronic S/ PDK transmission will switch to a more aggressive shifting map that keeps the engine ready to go. (PDK also has Sport+ mode, more info below)
- The Porsche Sport Exhaust will automatically switch to its' sport sound.

**Here is some clarification that will help you to understand some of the functions:**

## Rev-Limiter Function

**What is a Rev Limiter?** - A rev limiter is a safety device that cuts fuel, ignition or both at a specified RPM to prevent an engine from continuing to rev beyond its mechanical safety limit.

**Hard Rev Limiter** - The most basic of rev limiters, a Hard Rev Limiter does nothing until the engine reaches the predefined engine speed at which point fuel and ignition are shut off. This can be very abrupt and hard on the power train as the engine cycles on and off between full power and no power. The very first rev limiters installed were all hard rev limiters.

**Soft Rev Limiter** - Because hitting a hard rev limiter can be uncomfortable for the driver and hard on the car, manufacturers created the 'Soft Rev Limiter'. A Soft Rev Limiter reduces power output by retarding ignition timing as the engine approaches its limit. This usually begins about 500 RPMs before the hard cut off point. As the ignition timing is retarded and power drops off, the resulting feeling of power loss signals the driver that it's time to shift. If a driver ignores this, ignition timing is retarded further until the rev limit is reached at which point the resulting cut off is much 'softer' because the engine is not being cycled on and off between full power and no power. All 987/997 models come with a Soft Rev Limiter.

**How does Sport Chrono affect the Rev Limiter?** - Sport Chrono does not change the cut off RPM, which remains at 7,300 RPMs on cars with or without Sport Chrono Package. It simply removes the 'Soft' cut off that begins at 6,800 RPMs and allows the engine to produce full power from 6,800 - 7,300 RPMs. A car without Sport Chrono will start losing power at 6,800 RPMs and continue losing power progressively until 7,300 RPMs where the hard cut off will finally be reached. Sport Chrono Package will replace the car's Soft Rev Limiter with a Hard Rev Limiter during Sport Mode.

No one has ever quantified the difference in horsepower in the 6,800 - 7,300 RPM range, but it is there by design and undisputable. Anyone with Sport Chrono can attest that the engine will rush to the hard cut off in Sport mode, where in normal mode they can obviously feel the flat spot.

### **PDK Sport Plus Mode**

**Sport Plus mode in conjunction with PDK is the ultimate Sport mode in a modern Porsche, in addition to the normal Sport mode it enables:**

- Launch Control, for the best possible take off from a standing start.
- Motorsport derived gear change mapping.
- Locks out 7th gear.
- Never shifts before red line (Normal Sport mode will shift higher than non sport but "can" shift below red line if the car is not pushed hard).

### **Difference between Sport Plus and Sport Chrono Plus**

There has been misconception between Sport Chrono Plus and Sport Plus, this section defines each.

**Sport Chrono Plus:** This is a package, i.e. If you have PCM, you can order SportChrono Package Plus, this gives you a Sports Display in the PCM, which enables you to track and save your lap timings and save individual memory preferences for things like door locks and interior lighting.

**Sport Plus:** This is the additional button that comes when you have either Sport Chrono or Sport Chrono Plus packages with PDK, it provides the aforementioned benefits.

Most owners who have Sport Chrono say they love the way it makes the car feel and that they use it quite often. This feature works nicely in conjunction with many of the other options like PASM, TipTronic S and Sport Exhaust to give the Cayman a 'Jeckel & Hyde' personality. At one moment ready for a night on the town, and the next moment ready to be a track day star. Features like this help make this incredibly capable car more forgiving when also used as a daily driver.

Yes, Sport Chrono does come with an analog/digital stop watch which is useful when tracking lap times. Sport Chrono Plus with PCM interface also stores lap times and history data in the PCM interface. These features are really best appreciated on the track when lap times are of interest to you, but all of the other features are just as much fun on the street.

After research this option you will come to the conclusion that most people who did not buy it, wish they had.

**Benefits:**

- Gives the car a Jekyll & Hyde personality, firm everything up for the track or soften it all for cruising at the touch of a button.
- Two different throttle maps, useful when cruising slowly vs. spirited or track driving.
- Tiptronic / PDK shifts are much faster.
- PDK with SportPlus gets a race driven shift pattern and launch control.
- PSM threshold is higher, you can have more fun without turning it completely off.

**Drawbacks:**

- Some people don't like the idea of having two throttle control maps. It has been argued that practicing in one map will make your reflexes less familiar with the other map
- Some people consider it expensive especially when most aftermarket flashes can enable the Sport throttle map (but not the faster shifting or other benefits).

Here's the skinny: Platinum and iridium-coated plugs with a copper core won't boost horsepower or fuel economy; they'll just last longer and perform more consistently. Both platinum and iridium fine-wire plugs will outperform copper-tipped plugs, but the iridium's ability to withstand high temperatures allows for a thinner plug tip. In the real world, though, you're unlikely to see any measurable change in fuel economy using iridium instead of platinum plugs. A platinum plug will do everything an iridium plug does outside of the most severe racing applications. Iridium can give engine builders a slight edge in very high-compression, turbocharged or supercharged engines, but this edge isn't likely to translate into increased fuel economy in a street engine. Remember: Getting the heat range right is way more important than the type of metal used to coat the electrode. New spark plugs can make a difference in your Porsche's performance, but only if replaced with the appropriate OEM replacement plug.