

The T4 Curve Devil®

The Advent Curve Devil® is the design center for configuring the T4 Ignition.

The Curve Devil® lets you tailor your ignition settings to the exact requirements of your PWC or snowmobile and it is an indispensable development tool as well.

Imagine the benefits of having a fully configurable ignition that is field programmable, even with the ignition in the boat and on the water, for instance, between racing heats and when you're far away from your tools. The T4 Ignition and Curve Devil® take you even further; they bring several new and powerful capabilities to your fingertips.

This Feature is Important ...

You get real, professional, race-quality engine timing curves, not the three or four data points reminiscent of 1970's technology. The Curve Devil® brings you 162 data points of curve fitting. And this isn't just a numbers game. Modern high performance engines require carefully crafted timing curves for optional (or even safe) operation. Serious tuning often finds the engineers fiddling with timing of less than a degree in speed ranges as small as 50rpm. Depending on the engine the T4 Curve Devil® makes separate timing curves for each cylinder, just like the OEM ignition.

Other Features...

Other new and useful features are a multi-stage rev limiter for more precise over-rev control. And, we've added a new stutter limiter that gives you the hole shot advantage. If your engine is fitted with a throttle position sensor (TPS) the Curve Devil® can program how it works. The TPS helps control detonation in the corners or whenever you let off the throttle quickly. You get longer engine life and better overall performance.

The Features Keep Coming...

The Curve Devil® lets you electronically remove the timing added by moving the flywheel key. Using the Additionally, the Curve Offset feature lets you increase or decrease the timing over the entire curve due to weather, altitude changes.

The Curve Offset is also a valuable curve development tool. Assume for example you are developing a new race curve and there is a soft spot between 6200 and 6800rpm. Rather than redo the curve table in that area you simply set a Curve Offset of, for example +2°, then retest the engine.

The Curve Devil® user application is easy to use and even helps you keep track of each ignition configuration project you undertake. The Curve Devil® program runs on Win98, 2000, XP and Vista OS. A USB port is required for connecting to the T4 Ignition.

A handy notepad

After you've worked creating the greatest curves going, then come back to the project a day or month later you can't remember what you've done or why you've done it. The Curve Devil® includes a text area for you to document what you've done. It includes areas that describe the engine configuration, what each curve is designed to do, designer's name, customer's name and a note area for general comments. This is an invaluable tool when you are managing several projects at a time.

Feature List

- 1 stage rev limiter
- 2 Stage rev limiter
- Stutter limiter (hole shot limiter for closed course racing)
- Power valve (where applicable)
- Curve offset (for tuning)
- Operating altitude correction (high altitude operation)
- Altimeter (optional)
- Three relay channels for auxiliary fuel pump, boost control, water control etc.
- Throttle Position Sensor (TPS) control
- Min/max ignition timing limits (protect engine from ignition timing extremes)
- Configurable to support most engines

The screenshot displays the AP900 14.prj software interface. The main window is divided into several sections:

- Top Panel:** Includes 'File Edit Help' menu, 'All Timing Co' (0.0), 'Curve Select' (1), 'TDC Constant' (0), and engine configuration options like 'DPS Normal' and 'DPS Inverted'.
- Vehicle Info:** Shows 'Vehicle Make' (Yamaha), 'Model' (GP900), 'Cylinders' (2), 'Ignition Model', and 'Ignition S/N'.
- Curve Tables:** Two tables labeled 'CURVE 1' and 'CURVE 2' showing RPM vs. Cyl 1 and Cyl 2 data points.
- Rev Limiter:** A central panel with 'Stutter' (3000 RPM), 'Stage 1 Limiter' (7235 RPM), and 'Stage 2 Limiter' (7030 RPM) settings. It includes a 6x2 grid for rotation control (0-1) and a legend: '0 = No Fire, 1 = Fire, X = Disable Rotation'.
- TPS:** A table for Throttle Position Sensor settings, including 'Throttle Advance' and 'On/Off RPM' for Relay 1 and Relay 2.
- Feature Enable:** A panel on the right with checkboxes for 'Stutter Rev Limiter', 'Rev Limiter 1', 'Rev Limiter 2', 'Curve Table 1-4', 'Drag Timer', 'Timing Limits', 'Throttle Position Sensor (TPS)', 'Curve Offset', 'Operating Altitude', 'Altimeter', 'Relay 1', 'Relay 2', 'Electronic Fuel Injection (EFI)', and 'Power Valve'.
- Bottom Right:** A vertical toolbar with buttons for 'Rev Limit', 'Curve 1-4', 'Timing Limits', 'TPS', 'Altimeter', 'Relay', 'EFI Disable', and 'Power Valve'.

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