

GP1200R Ignition Programming Procedures

These Instructions
are for Tempest 3
Ignitions Only

Yamaha GP1200R

Rev. E 03-19-04

- **Selecting an Advance Curve**
- **Set Power Valve Open/Close RPM**
- **Temperature Sensors Enable/Disable**
- **Setting Rev Limit RPM**

Caution: Severe engine damage is possible if the **Advance Curve** is not properly set.

Engine Advance Curve (Timing)

Overview: Proper engine timing is every bit as important as mixing oil with your gas. Engine timing (advance) must be selected on the engines

hardware configuration and type of riding you plan to do.

Failure to properly set the ignition timing can lead directly to engine damage and costly repair bills.

Important Safety Note: Follow all instructions exactly!

Set the timing advance curve to the exact setting indicated in the following section.

The engine experts who have in-depth knowledge of your Yamaha engine have carefully designed the timing curves installed in your Tempest Ignition. Heading this list is Dan Lamey, Dan Fitzgerald and Bo DuPriest, among others. These people know what they're doing and have the tools to develop advance curves properly for the advanced engines designs used in today's watercraft.

----- Selecting an Advance Curve -----

Curve Selection Overview: The T3 Ignition has four built-in advance curves. The curve you select must be properly suited to the engine configuration and how you ride your boat. **Do not assume that the curve with the more advanced timing is the best. Selecting a curve with more timing can lead to a large engine repair bill. Please be careful!. See Figure 4 for information on selecting the correct advance curve.**

The best advance curve is the one that gives you the best performance. If you are not sure which curve to select, please consult with your local dealer or other qualified person to determine the optimum curve to use.

Figure 1 shows the advance curve selection choices available. The choices are based on the type of exhaust pipe and fuel used. Switch Block B, switches 1 & 2 are used to select the advance curve. Select the Snap RPM in the Power Valve column, then set the switches as shown to the left of that setting RPM.

Using Figure 1 as a guide, set Switch B, positions 1 and 2, to the desired curve.

Curve Selection Chart Description:

All curves installed in this T3 Ignition are intended for recreation use only. For race curves contact Advent Ignitions.

- Enhanced Stock = Yamaha stock pipe with improved advance curve, and pump gas
- RIVA Single = RIVA stinger pipe using pump gas
- Factory Triple using pump gas = Pump gas advance curve
- Factory Triple using race gas = Race gas advance curve

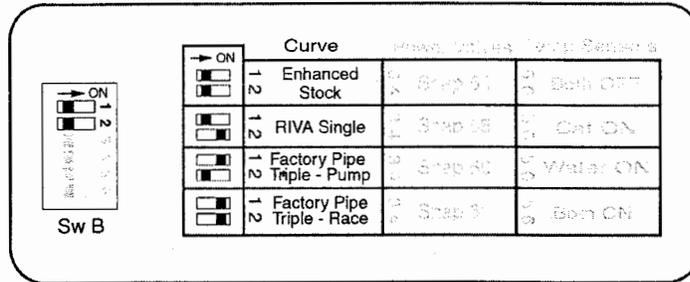


Figure 1

----- **Set the Power Valve Open/Close RPM** -----

The Yamaha T3 Ignition provides enhanced control for the Power Valve System. The Power Valves are utilized to add additional level of exhaust tuning, which helps broaden and even out the engine's power band. Without power valves, the engine performance would suffer greatly.

With the power valve system, the engine produces more power over a larger range of RPM, but only if the power valves open and close at the proper RPM. The proper open/close RPM is determined largely by the exhaust pipes installed on the engine.

The open/close RPM is called Snap because the T3 ignition causes the power valves to open and close a quickly as is possible producing the strongest increase in power with a much more pronounced effect than the Yamaha OE ignition is capable of producing.

Figure 2 shows the selection choices available for the Power Valve control settings. Switch Block B, switches 3 & 4 select one of four Snap RPM values. Select the Snap RPM in the Power Valve column then set the switches as shown to the left of that setting RPM.

Power Valve Settings Chart Description:

- Snap 56 = Opens/Closes at 5600 RPM
- Snap 58 = Opens/Closes at 5800 RPM
- Snap 60 = Opens/Closes at 6000 RPM
- Snap 61 = Opens/Closes at 6100 RPM

The recommended open/close RPM settings are as follows:

- Stock pipe Snap 61
- Riva Single Pipe Snap 60
- Factory Triple Pipes Snap 56.

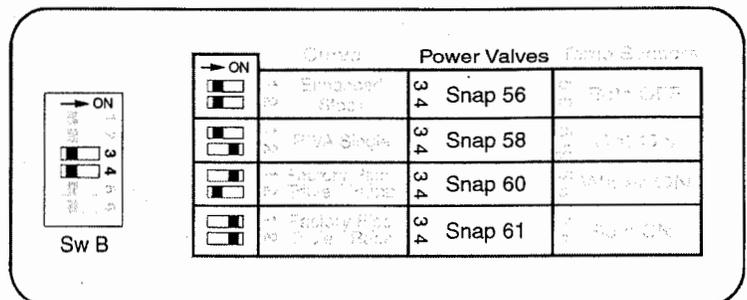


Figure 2

You can experiment with the Snap settings to see their effect on power or to select a possible better setting.

Snap setting too HIGH:

Start with a mid RPM setting such as Snap 60. Run the boat in the water through the 6000 RPM range and notice how the power behaves at the point just prior and just after the valve opens. If the power goes soft just after the valves open, the RPM setting is **too HIGH**. Move to the next lower Snap RPM choice.

Snap setting too LOW:

Start with a mid RPM settings such as Snap 60. Run the boat in the water through the 6000 RPM range and notice how the power behaves at the point just prior and just after the valve opens. If the power goes soft just after the valves open, the RPM setting is **too LOW**. Move to the next higher Snap RPM choice.

When the Snap function is properly set, you will feel a noticeable increase in power through the valves opening and closing. This is the optimum setting.

----- **Set the Temperature Sensors On/Off** -----

The Yamaha T3 Ignition provides On/Off control for both the Catalytic Converter and Stinger water temperature sensors.

Figure 3 shows the selection choices available for the Temp sensor settings. Switch Block B, switches 5 & 6 control whether the two temperature sensors are ON or OFF. Select the condition (ON or OFF) of the two temperature sensors and set the switches as shown to the left of that setting configuration.

Temperature Sensors Status Chart Description:

Both OFF = Cat and Water sensors both OFF (preferred setting)

Cat ON = Cat sensor ON, Water sensor OFF

Water ON = Water sensor ON, Cat sensor OFF

Both ON = Cat and Water sensors both ON

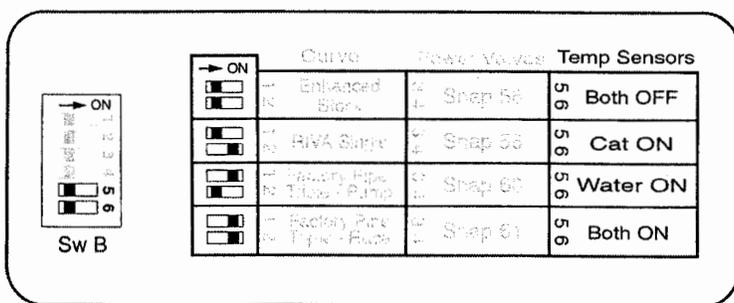


Figure 3

Examples:

Catalytic Converter sensor ON = Sw5 OFF, Sw6 ON

Both OFF = Sw5 OFF, Sw6 OFF (preferred setting)

----- Ignition Coil Selection Switch -----

The T3 Ignition is designed to work with the stock Yamaha ignition coils or replacement coils that can produce higher energy spark.

The high energy coils are intended for very high compression applications. Under this extreme pressure, the spark can be extinguished by the pressure and result in misfiring at high RPM's.

Only in special race configurations will it be necessary to use the high energy coils. So save your money and use the stock coils. You will not see any additional performance with the high energy coils.

Figure 4 shows the selection choices available for the Coil Settings (Switch Block A, switch 6).

Coil Selection Chart Description:

Stock Coils = Sw 6 OFF

High Power Coils = Sw 6 ON

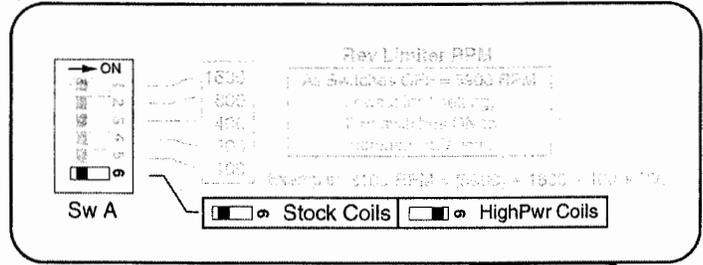


Figure 4

----- Setting the Rev Limiter Switches -----

Proper setting of the Rev Limiter RPM is important to ensure that the engine is not damaged from over-reving. The following procedure is recommended for determining the ideal limiter setting.

1. Turn all five rev limiter-setting switches to the ON position (Switch A, positions 1 through 5). This sets the limit to its maximum setting of 9000 RPM.
2. Run your Yamaha on smooth water at the highest speed you can attain.
3. Note the RPM reading on your tachometer.
4. Return to shore and set the limiter RPM to the tachometer reading plus 200 RPM.

Figure 5 shows the selection choices available for the Rev Limiter settings (Switch Block A, Switch 1 through Switch 5).

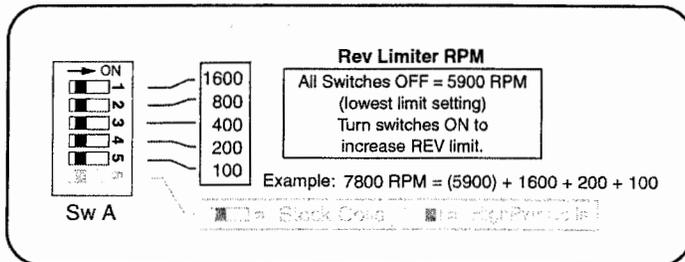


Figure 5

More Examples of setting the Rev Limit RPM

Programming Example as shown on label:

Rev Limit RPM = 8200

8200 (Desired Limit RPM)

-5900 (Minimum Rev Limit Value, Sw 1 through 5 OFF)

(Program this RPM: $2300 = 1600 + 400 + 200 + 100$)

Another Example:

Rev Limit RPM = 8200

8201 (Desired Limit RPM)

-5900 (Minimum Rev Limit Value, Sw 1 through 5 OFF)

(Program this RPM: $2300 = 1600 + 400 + 200 + 100$)

**T3 Ignition programming is now complete.
Continue installation procedures on WHITE sheet.**



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