

# Tempest 3 (T3) User Guide Yamaha Super Jet Kawasaki Sxi / SXR

This switch settings User Guide for the Tempest 3 Yamaha Super Jet and Kawasaki Sxi and SXR Ignitions.

- Selecting an Advance Curve
- Setting Rev Limit RPM
- Setting Water Control On/Off RPM's

**Caution: Severe engine damage is possible if an incorrect advance curve is selected.**

**Proper engine timing is every bit as important as mixing oil with your gas. An advance curve must be correctly selected to match the engine configuration and the type of riding you plan to do.**

## Curve Selection Overview

The T3 twin cylinder Ignition contains 4 built-in curves. These four curves are collectively referred to as a 'curve set'. Advent has many curve sets designed for use with both the Yamaha and Kawasaki twin cylinder engines. Each curve set is designed for a specific engine configuration and riding requirement.

Advent supplies the ignition with the proper curve set as determined at the time of sale. If you modify your engine configuration by adding a new pipe, head or different grade of fuel, you may need a different curve set installed. Contact Advent Ignitions for more information.

NOTE: The curve set code is located on the serial number label located on the edge of your ignition. Example: D7, D14 etc.

Be sure you have the proper curve set installed before using the ignition. There are several standard curve sets provided by various dealers. Consult your dealer about the curves they provide to be sure that it's appropriate for your use.

## Selecting a Timing Curve

Referring to the set of 4 timing curve sheets provided with your ignition, select the curve that best matches your engine configuration, fuel, and riding style.

Using Figure 1 as a guide, set switch A, positions 6 and 7, to select the desired curve.

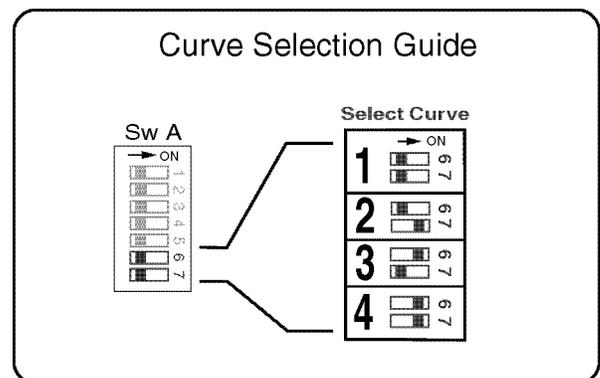


Figure 1

## Setting the Rev Limit Switches

Proper setting of the rev-limiter RPM is important to ensure that the engine is not damaged from over-revving. 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 9400 RPM.
2. Run your ski 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 rounded up to the next 100 RPM.

**Example:** If you got a reading of 7350 RPM round it to 7400 then add 300 RPM and set the switches at 7700 RPM.

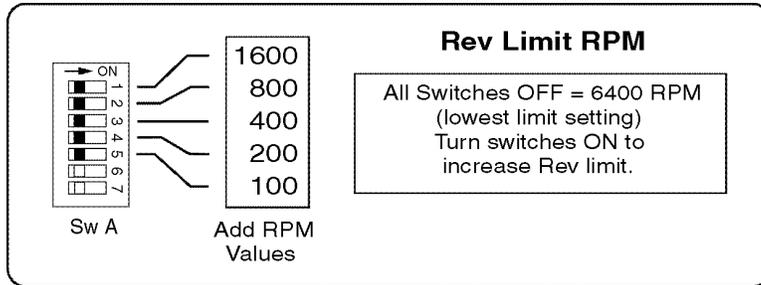


Figure 2

### Example:

To set rev-limiter at 7700 RPM, start with the minimum RPM of 6400 (A1-5 switches OFF), then turn ON switches that add up to the desired 7700 RPM.

$$\begin{array}{r} \text{Min ON RPM} \quad \text{Add RPM} \quad \text{ON RPM} \\ \hline 6400 \text{ RPM} + 1300 \text{ RPM} = 7700 \text{ RPM.} \end{array}$$

▼  
(1300 RPM = 800 + 400 + 100 switches ON)  
Sw2 Sw3 Sw5

### Programming Example:

Switch setting for 7700 RPM is (6400) + 1300. To program 1300, refer to Figure 2 and turn ON Sw2 (800), Sw3 (400), and Sw5 (100). All other switches are OFF.

**Note:** Whenever you make changes to your engine or boat hull (from the air cleaner, exhaust system to ride plate), remember to repeat this test to determine if the rev-limiter settings must be changed. If you determine that a lower setting is required, this is a strong indication that the changes have cost you power and performance and it might be advisable to re-think what you did.

# Setting water control switches

- Setting head pipe water ON / OFF RPM
- Setting stinger pipe water ON RPM

**Water Control Function Overview** - The Tempest 3 Super Jet, SXi 750 and SX-R 800 Ignitions have two independent water control channels built in. This eliminates the need for separate controllers and the extra cost and complexity of installation. The T3 water controller also provides a wider range of control than any other product.

## Programming Water ON/OFF RPM

**Installation** – The Super Jet / SXI and SX-R provides connection of two water control solenoids.

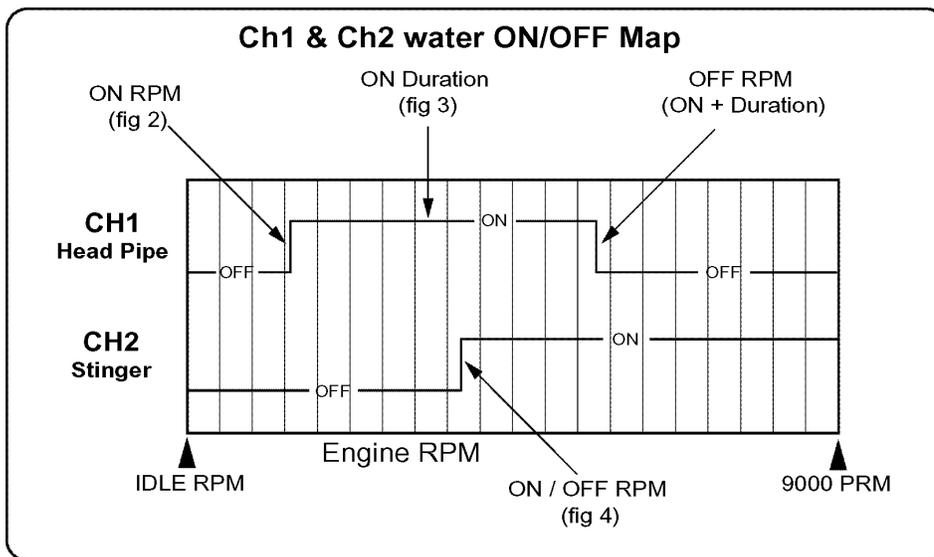


Chart 1

**Channel 1** is for head pipe water control. Ch 1 is fully programmable over a wide range of engine operating RPM. Ch 1 can be turned ON as low as 1200 RPM and turned OFF as high as 9000 RPM. See top graph of Chart 1.

**Channel 2** is intended for stinger pipe water control. User may choose between four programmable ON RPM settings. Water remains ON above this RPM and turns OFF when the RPM drops below this setting. See bottom graph of Chart 1.

## Programming Channel 1 ON RPM

Referring to Chart 1, the top graph shows Ch 1 turning ON at a low RPM. Switch B positions 1, 2, 3 & 4 set the ON RPM (see Figure 2). The switches can be set between 1200 RPM and 2700 RPM in 100-RPM increments.

### Example:

To set water ON at 2500 RPM, start with the minimum RPM of 1200 (switch B, 1-4 switches OFF) then turn ON switches that add up to the desired 2500 RPM.

$$\frac{\text{Min ON RPM} + \text{Add RPM} + \text{ON RPM}}{1200 \text{ RPM} + 1300 \text{ RPM} = 2500 \text{ RPM.}}$$

▼  
(1300 RPM = 800 + 400 + 100 switches ON)  
Sw2 Sw3 Sw4

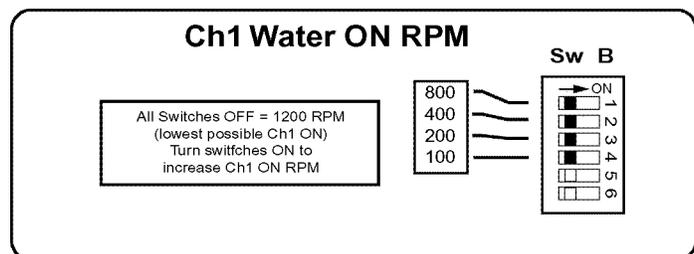


Figure 2

## Programming Channel 1 OFF RPM

Switch C does not actually set the OFF RPM but rather the range of RPMs the water is ON which is called Water ON Duration.

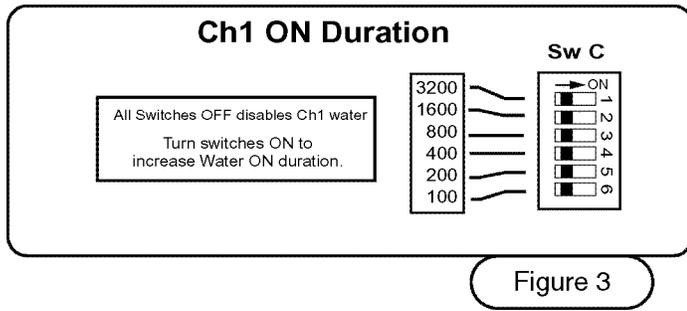


Figure 3

### Example:

If switch C is set to 4800 RPM, the water will be ON over a 4800 RPM range starting at the ON RPM value set by switch B, then remains ON for the next 4800 RPM. See Chart 1, top chart.

If switch B (water ON) is set at 2500 RPM, switch C (duration) at 4800 RPM, the water will turn OFF at 7300 RPM.

$$\text{ON RPM} + \text{Duration} = \text{OFF RPM}$$

$$2500 \text{ RPM} + 4800 \text{ RPM} = 7300 \text{ RPM.}$$

$$(4800 \text{ RPM} = 3200 + 1600 \text{ switches ON})$$

Sw1      Sw2

## Programming Channel 2 ON RPM

Channel 2 controls the stringer water supply. Unlike Ch 1, which has both ON and OFF setting, Channel 2 has ON setting only. See bottom graph in Chart 1. The stringer water control is designed to keep the water OFF to reduce the amount of water that accumulates in the water box while the engine is running at low RPM.

Figure 3 shows the four choices of water ON settings of Ch 2 water control. The four RPM settings shown are standard. Other settings may be provided.

Whatever setting you choose, Ch 2 water will turn ON at that RPM and remain ON to the maximum RPM achieved by the engine. The water will turn OFF only if the engine RPM falls below the chosen ON RPM setting.

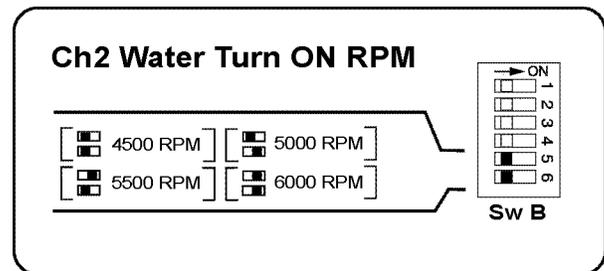


Figure 4

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