Installation help instructions for ATP FLAME TS2 Total Loss Ignition.

Please read through these instructions before beginning the installation. You will need to supply yourself with a water proof switch as this is not supplied

Use resistor rated plugs for example BR8ES

For clarity, we have fitted this ignition with the engine out but it can be done just as easily with the engine in situ. Only use new TS2 software with this unit, older software can corrupt the unit. Program lead remains the same. Aftermarket & Recon HT coils can effect performance-
We highly recommend OEM.

Your kit includes:
1 x Twin Spark Brain Unit
1 x T/L Flywheel
1 x Stator plate with pick up assembly
2 x Extra Pick up shim
1 x OEM Cable Bung
1 X Instructions
1 x Programming lead (optional extra)

Flywheel, Stator, Pick up

1. Remove flywheel cover, flywheel and OEM Stator assembly
2. Remove rubber grommet from the OEM stator Wiring harness
3. Fit pick up to stator plate as shown

4. You will need to check the air gap between the flywheel and pick up which should be 1 to 1.5mm. To do this place a small piece of plasticine on the top of the pick up, put the flywheel on and with a soft hammer give it a tap to make sure it is seated correctly. Remove flywheel, gently peel off the plasticine and measure accurately with digital callipers. This will tell you your air gap measurement. If this is above 1 to 2 mm then you will need to shim the pick up to bring the air gap to within these measurements

. **Super- lightweight 1mm airgap & no more**

5. Tuck the wires behind the stator ensuring they cannot come out or get trapped behind the stator or get close to the Crankshaft

6. Secure stator plate loosely at this time with the 2 supplied bolts, the OEM ones are too short. Fix stator bolts in the middle of the groove it runs in.

7. We recommend that you install a new woodruff key at this point

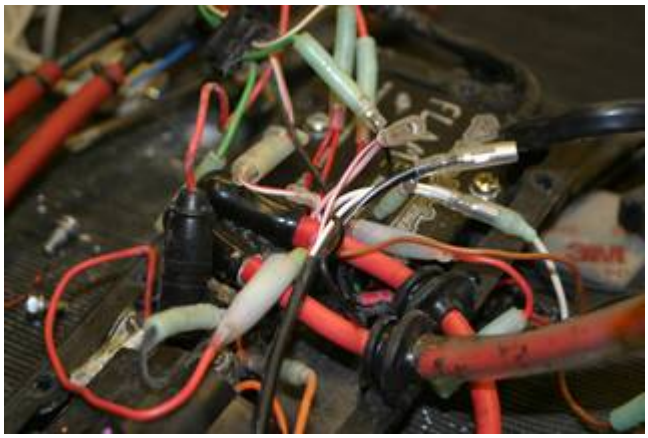
8. Slide the ATP Flywheel onto the end of the crank. Ensure that the woodruff key has not become dislodged. At this point do not bolt flywheel in place

Electrics

9- Remove your OEM electric box, disconnect all wiring, remove the CDI, Regulator/rectifier these will not be used. At this point remove, clean and use dielectric grease on your starter solenoid connections. Inspect your electric box seal for any signs of leakage or and other issue which may prevent the seal from working.

10 - Fit new Flame into your electric box. The OEM grommet for the ebox is only available in the format we have supplied, rather than cut your stator wiring harness and use the grommet we supply. Then use a drill to make new small holes ensure you seal off any holes in the grommet with black silicone or similar to create a waterproof seal. Connect wires as follows:

Brown of Pick up to Brown & White on Flame
White of Pick up to Red & White on Flame
Black of Pick up to any ground point in e-box- the other end of this is connected to the ground post within the electric box.
Use bullet connectors provided and use corrosion block on all connections in e-box.



Once all connections have been fitted, double check them.

Setting the initial timing.

A- Now you need to find top dead centre using a DTI as shown. Fabricate a pointer i.e thick wire and position the tip of the wire so it is pointing to the 1st timing mark. This pointer can easily be made with a piece of wire and a small bolt

We now need to find the engines' T.D.C on the front cylinder. Please note these timing marks will now be 180 degrees from what the picture shows. We moved the marks to make installation easier and as yet have not updated the above two photos.

A. Place dial gauge into front spark plug hole and hold firmly into position. Rotate flywheel with other hand until the gauge shows T.D.C. Move the flywheel back and forwards slightly to make sure it is set accurately

B. The other red and black from wiring harness now need to be connected to positive and negative battery. You will see small electrical arc from battery this is perfectly normal. Opposite to the connection block on the ignition unit you will see a red LED

C. Rotate flywheel clockwise you will notice the LED will light up. This indicates the rear cylinder we do not need to concern ourselves with this. Continue to rotate flywheel the LED will light up again this now indicates the timing on the front cylinder.

D. Here is an example- if you look at the pointer and see it is pointing at 40 degrees before TDC. Be aware each dot on the flywheel represents 2 degrees. As our timing needs to be set at **40 degrees** . To make any required adjustments to get the 40° remove the flywheel and move the stator. Move the stator anticlockwise to advance the timing and clockwise to retard. Continue doing this until the LED lights up with the pointer at 40 degrees. Each time the stator is removed and the pointer disturbed you must find TDC again and reposition pointer at 0 degrees.

Important note: NEVER rotate the flywheel anti clockwise to get the LED to light, this reading will be meaningless. Always rotate clockwise if you miss the light, continue to rotate the flywheel until you get the front cylinder reading needed. Once this is done the static timing is complete

E. Remove flywheel and tighten the stator without moving it. Replace the flywheel, it is advisable to lightly tap flywheel with a SOFT rubber mallet/hammer and torque flywheel bolt to 75 foot pounds.

F. If you have followed these instructions correctly our static timing should now set at 40 degrees. Using a new flywheel cover gasket replace flywheel cover

G. Note: The flywheel must be re-torqued after the 1st days use.

H. Once all connections have been fitted and double checked, seal your electric box. Ensure the edit lead is fed through the fuse cap and is in a position easily accessed once fuse cap is refitted, this is to allow access to the program lead through the fuse cap. You will need to cut off some of the plastic surround the fuse channel to allow some room, please see picture

I. 

NOTE: You must ensure the metal end of the edit lead is not allowed to touch any other connection within the electric box.

Hint, Tips, Notes

- ✓ Ignition will stop on the stop button; the ignition will go to sleep when no engine movement has been detected for a set period.
- ✓ Ignition will turn on again within 2 seconds of engine movement

When in edit mode light will change to red, sleep mode will enable whilst editing 5 minutes after the last key strike. To wake up hit the space bar twice. To put to sleep sooner rotate the flywheel so magnets pass over pick up then leave. - Use good quality dielectric grease on all connections.

- ✓ Use heat shrink on your HT leads making sure to cover the area where they enter the coil this is to help stop water tracking down into the HT coil.
- ✓ Battery should be charged after each days skiing
- ✓ **NEVER** crank the engine without the HT leads being grounded; this will fry your coil.
- ✓ It is also recommended that if you need to crank the engine that you permanently hold in the stop button, this will prevent the spark and protect you ignition (this also applies to OEM Ignition).
- ✓ Regularly spray all cables and connectors with a good quality dielectric spray.
- ✓ The engine should not / cannot be started with the edit lead plugged in.
- ✓ If at any point before or during this installation you need help please contact ATP.

Edit light RED

Rotary switch - This is a generic waterproof switch and is to be fitted to the dash of your ski. To reach EPIC/Flame in the electric box you will need to make up some extension leads, feed these though the grommet for the over heat sensor and use appropriate connectors.

The switch does not directly fit onto EPIC/Flame.

Connect the Pink and Black from EPIC/Flame to the Red and White of the Rotary switch, it doesn't matter which way around you connect them.

When the rotary switch is turned all the way to the left it is on curve A, all the way to the right curve B.

Sleep NOTHING

Pick up signal GREEN

DISCLAIMER

You the purchaser accept ALL responsibility for any conceivable damage caused whilst installing this product. Inexperienced persons may wish to peruse professional guidance from a qualified person whom ATP deem capable before attempting installation of this product. These instructions have been prepared as guidelines for experienced users of the tools and materials needed for the installation of this product. The owners and Manufactures of Air Time Products cannot and will not be held accountable for any conceivable damage, loss or injury resulting from the installation, use, misuse or misapplication of this product. For competition use only

Warranty- Air Time Products warrants this product against manufacturer's defects for a term of 90 days from original date of purchase if used in normal use and fitted correctly. If the unit is found to be defective due to manufacturer error or process within this time it will be repaired or replaced if returned pre paid by the original purchaser, a copy of or the original proof of purchase must accompany the returned item.

