



## **Suzuki T500 Cylinder Head User Instructions**

**Thank you for your purchase of Vintage Performance Suzuki T500 Heads.**

**To ensure you properly set-up the new heads to your engine please follow the following steps. All steps are critical to proper set-up and operation.**

VP T500 heads come with the following hardware:

- 8- M14 Flat Washers
- 8- M14 Lock Washers
- 8- High Strength M8x1.25, 45mm long ISO Shouldered bolts
- 8- 8mm Nordlock lock washers
- 4- 5/16" SS Dowel pins
- 2- -42 Viton O-Rings

### **1.st verify Cylinder/Head Alignment**

Cylinder/Head alignment method 1 (preferred)

1. Replace all factory Suzuki head flat washers, lock washers, and M8 Bolts with the ones included in this kit. This is critical for head alignment.
2. If the cylinders are stock bore, or if they have been re-bored concentric to the original bore the M8 bolts will align the head to the cylinder with the close-tolerance holes in the head.
3. The dowel pins WILL NOT be used.
4. If the cylinders have been re-bored and were not bored concentric to the original bore then use alignment method 2.

Cylinder/Head alignment method 2

1. If the bolts are unable to position the head concentric to the cylinder, then use the 4- 5/16" dowel pins to dowel pin the heads to the cylinders. VP offers dowel pinning services. This service is available from our web site. If however, you chose to perform this step yourself or locally, then please follow the instructions below:

Make a fixture plate to hold the cylinders in a milling machine:

1. Fixture plate must secure the cylinder and properly clock the cylinder to align with the milling machine axis.
2. Use a coaxial centering indicator along the inside of the bore and adjust until the machine is within .0005". Once the center is determined, use that to set the machine 'Zero' **This step must be repeated for each cylinder, do not assume if you remove this cylinder and fixture the next, that it will have the same bore center.**
3. Using a short ¼" carbide endmill create 2- .3135" +/- .0005" bores into the casting .500" Deep for the 2 dowel pins. Each hole is along the F/R centerline 2.000" +/- .0005" from the bore center. Test fit the supplied dowel pins before removing the cylinder from the machine. Dowel pins should install and remove freely from the holes.
  - a. DO NOT try to drill and ream the holes. Drill bits will walk due to the interrupted cut of the castings and the holes will not be within spec.
4. Once dowel pins are installed, use the included 8- M14 Flat Washers, the 8- M14 Lock Washers, & the 8- 8mm Nordlock lock washers.
5. DO NOT use the M8x1.25 shoulder bolts with dowel pins.

## **2<sup>nd</sup>- Check squish band clearance.**

Re assemble the motor for a dry-fit-up. You must use base and head gaskets but no sealant at this time.

1. Please follow Squish clearance instructions (seperate).
2. Squish must be .85mm-1.1mm at the outmost edge.
3. If you measure a squish clearance outside of this range, then change base gasket thickness to a thinner or thicker gasket to achieve the proper squish gap. Please contact us for a custom dome if you are still unable to achieve .85mm-1.1mm
4. Once squish gap is within spec, then perform a final assembly.

## **3<sup>rd</sup> Spark Plugs.**

Vintage Performance heads require a 3/4" reach spark plug. NGK uses the letter 'E' for 3/4" reach spark plugs. For example, if your engine used a B8HS, then you will need to source B8ES spark plugs.

## **Tuning.**

Timing adjustment may be required for optimal performance. An efficient squish band creates turbulence within the combustion chamber which creates a faster burn. Faster burns require less ignition timing advance. Dyno tune your motorcycle if possible, and follow common two cycle tuning methodology. If you are unsure, set timing to 18 degrees advance as a starting point.