

# MULL ENGINEERING

## Race Technologies Division

### YAMAHA BANSHEE BILLET IMPELLER HEAD INSTALLATION

1. Remove OE water pump by draining engine oil and coolant, remove engine clutch cover, remove the water pump housing plate, remove the water pump drive gear assy, and push impeller shaft out of clutch cover from the inside out.
2. Once impeller/shaft assy is separated from the clutch cover, break away the OE plastic impeller from the steel shaft with pliers or similar device. We found that a cut off wheel works best for this. Be careful not to damage the sealing surfaces of the shaft when cutting but small nics on the shaft where it attaches to the impeller will not be a problem. Make sure all the plastic is removed from the shaft.
3. Now with the bare shaft, test that it does not slip easily into the new impeller head. It should fit with an interference fit. For best results, put the shaft in the freezer min and the impeller in the oven at 150°F for approx 20. This is not required but will aid in the installation.
4. When you are ready to install the shaft in the new impeller head, you will place the impeller on a durable flat surface like wood or hard plastic. Carefully drive the shaft into the impeller body completely with a soft faced mallet or similar device. **\*\*Using a hard faced hammer will mushroom the shaft\*\*** Drive the shaft carefully while watching to make sure you are driving it straight. If it starts crooked, straighten it before proceeding. Make sure the shaft seats completely into the impeller.
5. Once the shaft is installed into the impeller, you need to roll the shaft on a flat surface like the edge of a table and make sure the impeller head does not wobble or have “run out”. A small amount is acceptable but too much will rub on the impeller housing. If there is excessive runout, hold the shaft on a block of wood with the impeller on top and carefully strike the back of the impeller with a soft faced mallet slightly off center to correct the run out.
6. Once the impeller is correctly installed on the shaft, it may be reinstalled reversing the steps above or by following your service manual. We recommend installing the water pump plate last to make sure it will not rub once installed. You **MUST** use a gasket to clear the new impeller. We recommend marking the inside of the steel housing plate with a sharpie installing the steel plate, kicking the bike over and removing to make sure there is not major rubbing. Minor rubbing is normal. In some installations and on some aftermarket clutch covers, it may be necessary to sand the back of the impeller to fit within the housing without rubbing.

Due to the high performance nature and/or the fact that we are not installing this product, Mull Engineering will not be liable for any damages or injuries. Please understand that this product carries no expressed or implied warranty once installed.

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