



DRI YAMAHA RAPTOR 660 NATIONAL KIT ASSEMBLY TIPS

2001-2006 Models

SPECIAL NOTE: DRI does not recommend working on the engine of your Yamaha Raptor 660 without the assistance of the Genuine OEM Yamaha Service Manual.

ASSEMBLY: It is strongly recommended to follow all instructions in OEM Yamaha Service Manual, specifically for torque values and cam timing set.

Also consult the DRI Tech Sheet for *4-Stroke Top End Assembly*.

SPECIAL NOTE: It is also advisable to read DRI TECH Sheet *4-Stroke Upgrade Components*

BREAK-IN: Read and follow instructions for DRI TECH Sheet *4-Stroke Engine Break In*.

*NOTE: Engine will run better after it has 3-5 hours on it.

VALVE SETTINGS: Valves should be checked initially every 3-4 hours for first 12-hour period after initial set-up and every 20 hours after that. Consult your camshaft specification card for correct clearances. Stock clearances no longer apply after camshaft has been upgraded to a DRI camshaft.

DRI CAM SETTINGS (Clearances must be set and checked with engine cold)

Cam Profile Number	Intake	Exhaust
280 X3	.005" - .007"	.007" - .009"
280 X14	.005" - .007"	.007" - .009"

PISTON RINGS: Piston ring installation is a very delicate procedure and should be performed by a trained professional. All rings **MUST** have gap checked.

*DRI recommends consulting their 4-STROKE PISTON RING ASSEMBLY TIPS install sheet before attempting to install your rings.

COMPRESSION RELEASE: DRI recommends using the factory compression release system that is attached to the camshaft. Install and adjust exactly as per the instructions in the OEM Yamaha Service Manual. When installing with X3 or X14 Hard faced camshaft it is necessary to check that compression release will properly disengage. Call DRI Technical support if questions arise.

SPARK PLUG: Use NGK DPR8EA-9 Gap: .031" - .035".

AIR INTAKE: DRI recommends using a Pro Flow Air Cleaner kit, with K&N Filter. For best performance it is recommended to use stock air box with lid removed.

EXHAUST: For maximum performance use Fat Boy 4 Complete Stainless Exhaust System. Turndown and /or spark arrestor screen are optional. Always install using new exhaust gaskets.

FUEL: Use VP C-12 Fuel. Motor Octane 108 or Sonoco Standard (105 motor Octane)



OIL: Maxima Premium 4 10W40*Consult Yamaha OEM Service Manual for oil capacity specifications.

CARBURETION: It is recommended when installing these engine kits to upgrade the carburetion. DRI recommends an Edelbrock Single Carburetor Kit. (Carburetors are available from DRI in thumb or twist. Call for additional details)*Using the stock carburetor is not recommended.

TOP END SERVICE

For maximum performance top end should be serviced at least every 20 hours. For standard usage top end should be serviced at least every 50 hours.

A top end service includes checking, valves, valve sealing, piston clearance, cam chain and tensioner, lower rod bearing etc.

Piston clearance should be kept between .003" - .0035" not recommended to exceed .005"

Ring end gap should be kept .015" - .020" not to exceed .025"

Consult DRI or a qualified technician for additional assistance.

CRANKSHAFT: For Standard usage stock rod should be sufficient. Under serious performance conditions an upgraded connecting rod is required. Contact DRI for additional details.

GEARING: OEM Gearing 13 x 40. Sand Riding (20" paddles) 14 x 40, MX (18" Tires 15 x 39-40). Trail Riding (20" Tire) Low-Medium Speed 14x40- High Speed 15 x 40

IGNITION: It is recommended to use a Vortex X10 CDI unit with this engine kit

CLUTCH: The clutch must be kept in excellent condition for maximum performance to be delivered. DRI recommends upgrading inner hub and pressure plate to a Hinson 6-Spring Kit and installing a Hinson Billet Outer Clutch Basket. Call DR Tech department with any questions regarding clutch performance or upgrades.

TRANSMISSION: Raptor transmissions must be kept in good condition for reliable riding. DRI recommends upgrading all 2001 transmissions to the 2002 and newer transmission (call DRI for details). On serious performance engines it is recommended to upgrade transmission to a YUKON Gear Set.

RADIATOR: Stock radiator works OK for stock engines. A High capacity radiator is recommended for modified 660 engines and all big bore engines. Heating issues will result if radiator is not upgraded

STARTER CLUTCH: The stock Raptor starter clutch is prone to premature failure. DRI recommends upgrading starter clutch assembly to a Heavy Duty unit. It is also important that the starter gear is kept in good condition.



HOUR METER: It is recommended to install an hour meter on your machine. This device can come in very handy keeping track of packing life, valve adjustments, oil changes, top end service, etc. A number of manufacturers offer them for under \$ 50.00. Installation is simple

NOTES

1. Valve clearance and Deck height must be checked. Valve to Piston clearance should be minimum .060", Piston to Head clearance should be .040" minimum.
2. Must use special modified DRI steel head gasket for 105.00mm piston and larger.

DRI is not responsible for any engine component (gears, rod, etc.) fatigue or failure due to increased horsepower and torque.

