



DRI YAMAHA RAPTOR 250/280 NATIONAL KIT ASSEMBLY TIPS

2008-2009 Models

SPECIAL NOTE: DRI does not recommend working on the engine of your Yamaha Raptor 250 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
40B	.005"	.008"

****Install cam using NEW cam bolt and loctite bolt in place****

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.

SPARK PLUG: Use NGK DR7EA Gap: .031" - .035".

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

***Is is recommended to remove the stock back fire screen built in to the stock air boot system on airbox. This will help enhance air flow, improving performance slightly.**

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.

SPECIAL NOTE: It is also advisable to read DRI INSTRUCTIONS Sheet for *Yamaha Raptor 250 Fat Boy 4*

FUEL: Use VP Racing Fuel type C-12 (www.vpracingfuels.com). Motor Octane 108 or Sonoco Race Fuel type "The Standard" (www.racegas.com) 105 motor Octane

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



CARBURETION: It is recommended and necessary when installing the 250/ and 280cc engine kits to either re-jet stock carburetor or upgrade the carburetion to Keihin FCR (call DRI for details)

If stock carburetor must be used, start with the following settings for ambient temperature of 60° - 90° Sea Level Elevation

Pilot Jet #27.50

Needle Stock with spacer installed to richen equivalent of I clip position

Main Jet #160-#170

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 .0015" -.003" 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 38. Sand Riding (20" paddles) 13 x 38, MX (18" Tires 14 x 36-38). Trail Riding (20" Tire) Low-Medium Speed 14x38- High Speed 14 x 36

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. Call DR Tech department with any questions regarding clutch performance or upgrades.

TRANSMISSION: DRI recommends staying with the stock oem transmission assembly.

RADIATOR: Stock radiator works OK for stock engines. A High capacity radiator is strongly recommended for modified/hi compression 700 engines and all big bore engines. Heating issues will result if radiator is not upgraded

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 manufactures offer them for under \$ 50.00. Installation is simple

NOTES

1. Piston to Valve clearance and Piston to Head (Deck height) must be checked. Piston to valve clearance should be minimum .060", Piston to Head clearance should be .040" minimum.
2. Must use special modified DRI steel head gasket for 78.00mm piston (280cc) and larger.

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