

# GRASS ROOTS

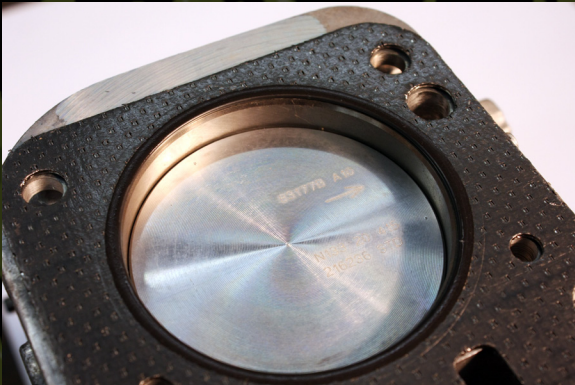
## TECH BARN

with: Jimmy Rivers

## Getting your head back on...

Over the last few months we have covered replacing different gaskets and seals to stop oil leaks. This month, we want to revisit replacing the head gasket on both the Raptor and Animal engines.

Leaking head gaskets can adversely affect engine performance, and if run undetected for an extended time, can damage the cylinder, the cylinder head, or both. Be aware of higher



than normal head temps and wisps of smoke from the deck area, as these are usually signs of a leaking gasket. On the Animal engine, the most common area to blow is on the upper part of the



cylinder. More often than not, if it is leaking, you will see a smoke trail on the deck of the cylinder just under the cylinder shield sheet metal.

Speaking of the Animal engine, let's address replacing the head gasket on it first. Before going any further, it is imperative we know what the valve lash is before removing any parts. Once disassembly has started, we will not be able to measure it. Remove the valve cover, and then the spark plug so the engine can rotate freely. Rotate the engine slowly by hand until the piston is at top dead center with both valves closed. Measure the valve lash, and record the number to refer back to after reassembly.

Remove the bolt holding the cylinder shield on with a 7mm nut driver and gently remove the shield. The exhaust header also must be removed to access one of the head bolts, so remove it and place to the side. The carburetor can stay attached to the head. There is no need to remove it. Remove the four head bolts with a 10mm socket, and slowly lift the head from the block. Be very careful not to allow the pushrods to fall out. As soon as you are able, remove the two pushrods. It is imperative that we keep



the rods separated so we can replace into their original position. I usually place one on the left side of my bench for the exhaust side, and one on the right for the intake. Left-to-left, and right-to-right is a method that has worked well for me on many different reassembly jobs.

Once the head is free, remove the gasket and gently remove any left behind gasket material from the head and the cylinder with a razor blade. Take the new gasket (Briggs part number 555698) and place onto the two dowel pins that locate the head to the block and place into position. Be mindful of the direction of

the gasket. The side with the extra hole goes to the flywheel side of the block to vent the crankcase. Lift the head slightly and place the pushrods back into their respective positions. Be sure they are into the pockets of the lifter and the rocker arm. Replace the head bolts and tighten to contact, then torque to 150 in-lbs. Spin the engine a few times by hand and check your valve lash. Reset if necessary, and replace the valve cover. Install the cylinder shield and the header, and you are finished.

The head gasket on the Raptor is pretty simple. Remove the bolts holding the blower housing to the head and if the engine is on the kart, the bolt holding on the throttle cable. Get the header brace out of the way and remove the head bolts. The shield covering the head can usually be slightly bent so the head can be re-

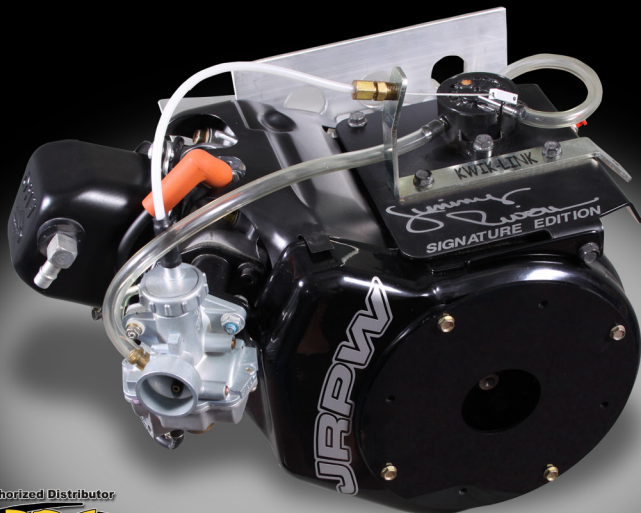
moved. Bump the head to break it loose from the gasket and lift the head off. Gingerly lift the old gasket off the block with the aid of a razor blade. Just as explained above, remove any left behind gasket material to ensure a clean surface.

Locate the head gasket (Briggs part number 555236) to the cylinder head with the aid of a couple head bolts. The bolts keep the gasket from turning out of position. There is a correct position for the gasket, and if you place it onto the head, you can quickly tell if you have it right. With the aid of the head bolts, lower them onto the top of the block; making sure the gasket is aligned properly. Make sure the plug wire is back in the right spot, and replace the head bolts. Spin them down to contact, and torque to 150 in-lbs. Replace and tighten the blower housing bolts, mount the throttle cable assembly if necessary and you are ready to hit the track again.

I hope this helps you to make needed repairs to get back into the action. Use extreme caution not to allow any dirt or other contaminants to enter the engine, and if you are unsure about something, don't be afraid to ask for help. See you next month!



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