

# SERVICE & TUNING NOTES

With almost a full season of extensive testing complete, a few important issues have come to our attention concerning **Polaris 800 models**. This letter is to inform customers of these issues, in order to achieve the full performance potential of their machine.

## Plugging the Decompression Hole

The first point of attention is the decompression hole found on 2003 800 models. We have found that the exhaust valve does not completely seal the decompression port like it is intended to when in the open position. As a result, the motor bleeds off some compression, which reduces peak horsepower. At elevations above 8000 ft, it can also allow the exhaust valves to prematurely close, resulting in a loss of peak RPM and horsepower. SLP recommends plugging the two decompression holes to regain the lost performance. This service is available through SLP for \$20 per cylinder. Call for details.

## Secondary Spring Sag

The TEAM Industries secondary clutch has been working extremely well. The spring suggested for many mountain setups is the red/black, part number 50-6. We have found that some red/black springs purchased prior to January 1, 2003, "take a set", or sag, measuring below the specified rate after a few hundred miles. This can result in a loss of peak RPM, especially at elevations above 8000 ft. If customers see these symptoms, SLP now has an updated version of this spring that corrects these symptoms. Unfortunately, spring "free length" does not usually change when these springs lose tension. Therefore, customers cannot visually tell if they have a sagged spring. Customers may send their spring in to have it tested for correct tension. 50-6 springs purchased after January 1, 2003, from SLP are marked with a double black stripe. This signifies that they are new springs made using new superior wire composition.

## Helix/Spring Shim for the TEAM Industries Rapid Reaction Clutch

For customers riding at extreme elevations (8000 ft. and above), the use of SLP #50-43 Helix/Spring shim will help hold peak RPM. This shim spaces the hub of the clutch in 0.070" which raises the spring pre-load and rate by 8 to 10 pounds. It also shortens the length of the initial (steeper) angle on a compound helix (ie. 58/38.46 with a shim would become a 58/38.40). This improves backshift characteristics at high elevations in very steep conditions. It is especially beneficial when using long aggressive tracks.

## Changing Valve Springs at Elevation

Variable exhaust has been a great addition to the Polaris line in recent years. This system allows for a lot of extra low-end power. High elevation riding requires an exhaust valve spring change for proper performance. SLP recommends the use of the RMK pink spring (Part #7041704-03) when using XCs from 3-6000 ft. We also recommend using a yellow spring (Part #7041704-05) on all 800s used above 6000 ft. This spring is softer, and allows the valve to open at lower pressure. We have also had some exhaust bellows tear, crack, or leak. This can cause a loss of peak running RPM due to the exhaust valve not opening. If damaged, oil will leak to the outside of bellows, and bellows should be replaced. Exhaust valve bellows and springs are available through your local Polaris dealer.

## Gearing Vertical Escape or 159"

Gearing can have a large effect on a machine's performance and belt life. This is even more important for the new long tracks used on mountain sleds. When riding at elevations above 8000 ft, SLP recommends gearing sleds equipped with 159" tracks down to a 19:41 ratio. This will require the use of a 74 pitch chain, but will greatly enhance performance in deep snow and long hillclimbs. Top speed will only be reduced by approximately 5 mph. Gears and chains are available through your local Polaris dealer.

## Sealing Exhaust Joints

It is very important to seal all exhaust system joints completely, including the silencer to bellypan outlet connection, with Permatex 598 Ultra Black high temperature silicone sealer, available at most automotive parts stores. If all joints are not sealed properly, exhaust gases can leak from the exhaust system to the airbox, causing an over-rich condition and poor performance.

## Fine Tuning Carbs

2002 and 2003 800s are equipped with new Mikuni rack style carburetors. These new carbs have an airscrew and a fuel screw, in order to more easily adjust low speed circuits. The air screw is located on the right side of the mouth of the carb, and the fuel screw is adjusted with a white knob, located on the right side of the carb. The effect of this new air screw has been misunderstood by some customers. The air screw affects up to 3/8 throttle, with an adjustment range of 1/4 turn to 3 turns. The fuel screw/pilot jet only affects up to 1/4 throttle, and has an adjustment range of 1/4 to 5 turns. Customers dealing with poor throttle response between 1/4 and 3/8 throttle should adjust the air screw for optimal throttle response.

## Fuel Pump Relocation

Some customers have experienced unexpected engine stalls when riding at low throttle positions. Polaris has available a fuel pump relocation update that fixes this problem. This update applies to 2003 models and is available from your local Polaris dealer.

**For additional information or any other questions you may have please feel free to contact SLP's Sales or Technical Departments. Sales (208)529-0244, Technical (208)524-3397**

