TECHNICAL BULLETIN

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Topic

Recreational/ Sport Applications - Warning of Adjustments Required **(Ethanol)**

Issue

Engine Damage as a Result of the use of Ethanol Blended Fuels

Most recreational (Sport) vehicle manufacturers offering 2 stroke engines usually provide warnings within the owner's manual pertaining to fuels types other than recommended. The use of alternative fuel types such as Ethanol can alter the calibration of the air/fuel mixture required by the engine resulting in severe engine damage. It is advised within the owner's manual to adjust carburetion settings (larger jetting) to accommodate the requirements of this fuel which burns more completely, and cleaner, but creates a leaner air/fuel mixture to that of the original OE specified fuels.

Note: Some new vehicles have been calibrated with Ethanol type fuels already, and are not subject to any engine damage or warnings from the vehicle manufacturer.

NGK Canada's concern is that in most cases, the Spark Plug is suspected as the cause of the engine damage until an investigation actually determines the cause. The most common evidence of a spark plug and engine components that have been subjected to the use of Ethanol fuels without the proper adjustments are:

- The spark plug ground electrode strap melts and separates usually at the bend on electrode strap
- The top of the piston in most cases will have a hole melted through the surface opposite the ground electrode strap
- The missing portion of the electrode strap can be found in either of the following two locations
    - a) wedged between the piston and the cylinder wall,
    - b) on the valve seat.

Solution

All recreational/sport vehicle owners should review their owner's manual for warnings to the use of ethanol fuels and make the proper adjustments to the calibration/carburation to avoid any engine damage. If no warning exists in the owner's manual, consult the selling dealership to ensure your vehicle may use Ethanol blended fuels without encountering engine damage.

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