

**g:** Gram. Unit of weight in the metric system.

**Head Volume:** Cylinder head capacity in cc, head removed from engine with spark plug installed.

**Heat Exchanger:** A device used to transfer heat. Mounted under running boards, they dissipate engine heat to the atmosphere.



**Hex Head Bolt:** Standard type of wrench-applied hexagon head, characterized by clean, sharp corners trimmed to close tolerances. Recommended for general commercial applications.

**Hi-Fax:** Trademark of Himont Advanced Materials. The special slide material which fits onto the bottom of the suspension rails.

**High Tension Wire:** The heavy insulated wire which carries the high secondary voltage from the coil to the spark plug.

**Holed Piston:** Piston in which a hole has formed on the dome. Possible causes: 1) detonation; 2) pre-ignition.

**Ignition Coil:** A type of transformer which increases voltage in the primary windings (approx. 200V) to a higher voltage in the secondary windings (approx. 14KV - 32KV) through inductions. Secondary voltage is high enough to arc the air gap at the spark plug.

**Ignition Generating Coil:** Exciter coil, primary charge coil. Stator plate coil which generates primary ignition voltage. CDI system uses one ignition generating coil. Twin cylinder E.T. ignition systems use two ignition generating coils. Coil is mounted at the top of the stator plate.

**Inch Pound:** In. lb. 12 in. lbs. = 1 ft. lb.

**Kg/cm<sup>2</sup>:** Kilograms per square centimeter.

**Keystone Ring:** A piston ring with bevel on upper inside surface.

**Kilogram/meter:** A force of one kilogram at the end of a lever one meter in length, applied in a rotational direction.

**L Ring:** A wide face piston ring with an "L" shaped cross section. Leg of "L" goes up when installing on piston.

**Labyrinth Seal:** A pressure type center seal identified by series of grooves and lands. Polaris engines use this type of seal to separate the cylinders in the crankcase halves.

**Left Side:** Always referred to based on normal operating position of the driver.

**Lighting Coil:** Large coil mounted at the bottom of the stator plate. Generates voltage for lights, battery charging, etc.

**mm:** Millimeter. Unit of length in the metric system. 1mm = .040".

**Magnetic Induction:** As a conductor (coil) is moved through a magnetic field, a voltage will be generated in the windings. This is how mechanical energy in our engines is converted to electrical energy in the lighting coil, ignition generating coils and trigger coil.

**No. 1 Cylinder:** Cylinder on flywheel side of engine.

**No. 2 Cylinder:** Cylinder on PTO side of engine.

**Ohm:** The unit of electrical resistance opposing current flow.



**Oval Head Screw:** Fully specified as "oval countersunk", this head is identical to the standard flat head, but possesses a rounded upper surface for attractiveness of design.



**Pan Head Screw:** Provides a low, large diameter head, but with characteristically high outer edges along the outer edge of the head where driving action is most effective. Slightly different head contour when supplied with Phillips Recess. See dotted line.

**Piston Clearance:** Total distance between piston and cylinder wall.

**Piston Erosion:** Piston dome melts. Usually occurs at the exhaust port area. Possible causes: 1) lean fuel/air mixture; 2) improper spark plug heat range.

**Pre-Ignition:** A problem in combustion where the fuel/air mixture is ignited before normal spark ignition. Piston looks melted at area of damage. Possible causes: 1) too hot a spark plug; 2) spark plug not properly torqued; 3) "glowing" piece of head gasket, metal burr or carbon in the combustion chamber; 4) lean fuel/air mixture.

**Primary Circuit:** This circuit is responsible for the voltage build up in the primary windings of the coil. Parts of this circuit include the exciter coil, points and condenser, wires from the stator plate to the small primary winding in the ignition coil. In the CDI system the parts include the exciter coil, the trigger coil, the wires from stator plate to CDI box and to the low resistance primary windings in the ignition coil.

**Primary Clutch:** Drive clutch on engine.

**Primary Compression:** Pressure built up in the crankcase of a two stroke engine.

## TOOLS / PUBLICATIONS

### Glossary of Terms (continued)

**psi.:** Pounds per square inch.

**R & R:** Remove and replace.

**RFI:** Radio frequency interference. Caused by high voltage from the ignition system. There are special plug caps and spark plugs to help eliminate this problem. Required in Canada.

**RPM:** Revolutions per minute.

**Relay Coils:** Electromagnetic device in an EFI system which controls circuit connection with input from another circuit.

**Resistance:** In the mechanical sense, friction or load. In the electrical sense, ohms. Both result in energy conversion to heat.

**Right Side:** Always referred to based on normal operating position of the driver.



**Round Head Screw:** The familiar head most universally used for general application. Good slot depth, ample underhead bearing surface and finished appearance are characteristic of this head.

**Running Time:** Ignition timing when fully advanced or at specified RPM.

**Secondary Circuit:** This circuit consists of the large secondary coil windings, high tension wire and ground through the spark plug air gap.

**Secondary Clutch:** Driven clutch on chaincase or jackshaft.

**Seized Piston:** Galling of the sides of a piston. Usually there is a transfer of aluminum from the piston onto the cylinder wall. Possible causes: 1) improper lubrication; 2) excessive temperatures; 3) insufficient piston clearance; 4) stuck piston rings.

**Select Monitor:** Diagnostic tool which provides static and dynamic displays of the function of critical components in an EFI system. It also has the capability to display the contents of the ECU memory.

**Spark Plug Reach:** Length of threaded portion of spark plug. Polaris uses 3/4" (2 cm) reach plugs.

**Static Timing:** Ignition timing when engine is at zero RPM.

**Stator Plate:** The plate mounted under the flywheel supporting the primary ignition components and lighting coil.

**Surge Tank:** The fill tank in the liquid cooling system.

**TDC:** Top dead center. Piston's most outward travel from crankshaft.

**Throttle Body:** The air flow metering device in an EFI system.

**Transfer:** The movement of fuel/air from the crankcase to the combustion chamber in a two stroke engine.

**Trigger Coil:** Pulser coil. Generates the voltage for triggering (closing) the thyristor and timing the spark in CDI systems. Small coil mounted at the top of the stator plate next to the ignition generating coil.

**V Regulator:** Voltage regulator. Maintains maximum lighting coil output at approx. 14.5 ACV as engine RPM increases.

**Venturi:** An area of air constriction. A venturi is used in carburetors to speed up air flow which lowers pressure in venturi to below atmospheric pressure, causing fuel to be pushed through jets, etc., and into the venturi to be mixed with air and form a combustible air/fuel mixture.

**Volt:** The unit of measure for electrical pressure of electromotive force. Measured by a voltmeter in parallel with the circuit.

**Watt:** Unit of electrical power. Watts = amperes x volts.

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