

GENERAL INFORMATION

1

MAINTENANCE

2

ENGINE

3

FUEL SYSTEM

4

BODY / STEERING / SUSPENSION

5

BRAKES

6

ELECTRICAL

7

WIRE DIAGRAMS

8

Product: 2006-2007 Polaris OUTLAW 500 Motorcycle Service Repair Workshop Manual

Full Download: <https://www.arepairmanual.com/downloads/2006-2007-polaris-outlaw-500-motorcycle-service-repair-workshop-manual/>

Sample of manual. Download All 201 pages at:

<https://www.arepairmanual.com/downloads/2006-2007-polaris-outlaw-500-motorcycle-service-repair-workshop-manual/>

GENERAL INFORMATION

VEHICLE IDENTIFICATION 1.2
 MODEL IDENTIFICATION 1.2
 ENGINE DESIGNATION NUMBER 1.2
 VIN IDENTIFICATION 1.2
 UNIT SERIAL NUMBER (VIN) LOCATION 1.2
 ENGINE SERIAL NUMBER LOCATION 1.2
VEHICLE INFORMATION 1.2
 PAINT CODES 1.2
 REPLACEMENT KEYS 1.2
 PUBLICATION NUMBERS 1.3
 STANDARD TORQUE SPECIFICATIONS 1.3
SPECIFICATIONS 1.4
 2006-2007 OUTLAW 500 1.5
SPECIAL TOOLS 1.6
 'WHERE USED' TABLE 1.6
 SPECIAL TOOL LISTING 1.7
MISC. NUMBERS / CHARTS 1.10
 SAE TAP / DRILL SIZES 1.10
 METRIC TAP / DRILL SIZES 1.10
 DECIMAL EQUIVALENTS 1.10
 COVERSION TABLE 1.11
 GLOSSARY OF TERMS 1.12

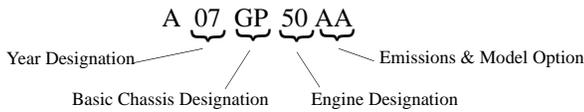
GENERAL INFORMATION

VEHICLE IDENTIFICATION

Model Identification

The machine model number must be used with any correspondence regarding warranty or service.

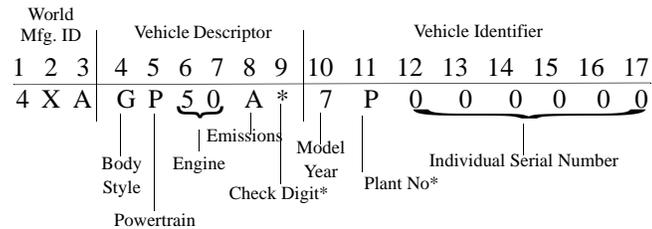
Machine Model Number Identification



Engine Designation Number

ES50PLE - Single, Water Cooled, Electric Start, 5-Speed Manual, DOHC 4 Stroke.

VIN Identification



* -This could be either a number or a letter

Unit Serial Number (VIN) Location

Whenever corresponding with Polaris about a particular issue, the machine model number and serial number are important for vehicle identification. The machine serial number is stamped on the left side of the frame tube. (1)



Engine Serial Number Location

This information can be found on the clutch housing on the right side of engine. (2)



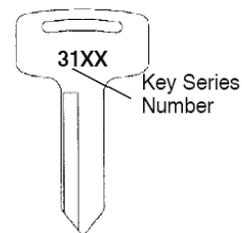
VEHICLE INFORMATION

Paint Codes

PAINTED PART	COLOR	POLARIS
Frame	Cloud Silver	P-385
Frame	Matte Black	P-458

Replacement Keys

Replacement keys can be made from the original key. To identify which series the key is, take the first two digits on the original key and refer to the chart to the right for the proper part number. Should both keys become lost, replacement of the ignition switch assembly is necessary.

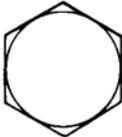
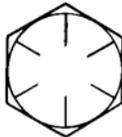


SERIES #	PART NUMBER
20	4010278
21	4010278
22	4010321
23	4010321
27	4010321
28	4010321
31	4110141
32	4110148
67	4010278
68	4010278

Standard Torque Specifications

The following torque specifications are to be used as a general guideline.

FOR SPECIFIC TORQUE VALUES OF FASTENERS, refer to exploded views in the appropriate section. There are exceptions in the steering, suspension, and engine sections.

Bolt Size	Threads/In	  		
		Grade 2	Grade 5	Grade 8
		Torque in. lbs. (Nm)		
#10 -	24	27 (3.1)	43 (5.0)	60 (6.9)
#10 -	32	31 (3.6)	49 (5.6)	68 (7.8)
		Torque ft. lbs. (Nm)*		
1/4 -	20	5 (7)	8 (11)	12 (16)
1/4 -	28	6 (8)	10 (14)	14 (19)
5/16 -	18	11 (15)	17 (23)	25 (35)
5/16 -	24	12 (16)	19 (26)	29 (40)
3/8 -	16	20 (27)	30 (40)	45 (62)
3/8 -	24	23 (32)	35 (48)	50 (69)
7/16 -	14	30 (40)	50 (69)	70 (97)
7/16 -	20	35 (48)	55 (76)	80 (110)
1/2 -	13	50 (69)	75 (104)	110 (152)
1/2 -	20	55 (76)	90 (124)	120 (166)
Metric				
6 x 1.0	72-78 In. lbs.			
8 x 1.25	14-18 ft. lbs.			
10 x 1.25	26-30 ft. lbs.			

*To convert ft. lbs. to Nm multiply foot pounds by .1.382

*To convert Nm to ft. lbs. multiply Nm by .7376.

SPECIFIC TORQUE VALUES OF FASTENERS

Refer to exploded views in the appropriate section.

GENERAL INFORMATION

SPECIFICATIONS

MODEL: 2006- 2007 OUTLAW 500

MODEL NUMBER: A06(07)GP50AA,AB

ENGINE MODEL: ES500PLE041

Category	Dimension
Length	71.5 in. / 182 cm
Width	47.5 in. / 121 cm
Height	45 in. / 114 cm
Minimum Turning Radius	67 in. / 170 cm
Wheel Base	51 in. / 130 cm
Ground Clearance	11.5 in. / 29 cm
Dry Weight	439 lbs. / 199 kg
Gross Vehicle Weight	645 lbs. / 292 kg
Oil Capacity	2 qts. / 1.9 ltr
Coolant Capacity	2.25 qts. / 2.1 ltr
Fuel Capacity	3.25 gal. / 12.3 ltr



2006 - 2007 OUTLAW 500

MODEL NUMBER: A06(07)GP50AA,AB

ENGINE MODEL: ES500PLE041

Engine	
Platform	Fuji DOHC 4 stroke
Engine Model Number	ES500PLE041
Engine Displacement	499cc
Number of Cylinders	1
Bore & Stroke (mm)	99.2 x 64.6 mm
Compression Ratio	10.8:1
Compression Pressure	130 psi
Engine Idle Speed	1600 Rpm
Cooling System	Liquid
Thermostat Opening Temperature	160°F (71°C)
Overheat Warning	High Temp Light
Lubrication	Pressurized Dry Sump
Oil Requirements	PS-4 Synthetic
Exhaust System	2 to 1 canister style
Carburetion	
Carburetor model	Mikuni BSR 42mm
Main Jet	145
Pilot Jet	37.5
Jet Needle	6GL68-40-2
Needle Jet	O-0
Pilot Screw	2.5 Turns Out (Reference Only)
Float Height	13 mm (0.51")
Fuel Delivery	Fuel Pump
Fuel Requirement	87 Octane (minimum)
Electrical	
Alternator Output	200 w @ 3000 RPM
Voltage Regulator	3-Phase
Lights : Main Headlights	Dual Beam 35 watts / 35 watts
Tail	LED
Brake	26.9 watts
Neutral / Hot / Reverse	1 watt (ea.)
Ignition System	DC/CDI Ignition
RPM Limit	9100 ± 100 / Reverse 5000 ± 100
Ignition Timing	30° ± 3° BTDC @ 3500 RPM
Spark plug / Gap	NGK DCPR8E/ .035 in./ 0.9 mm
Battery / Model / Amp Hr	Maintenance-Free 9 Amp Hr
Circuit Breakers (Amps)	Main-15 / Fan-10 / Ignition-5
Starting	Electric - Standard
Instrument Cluster	N/A

Drivetrain	
Transmission Type	Manual 5 speed
Main Sprocket - # Tooth	14
Rear Sprocket - # Tooth	38
Gear Ratio : 1st	2.43
2nd	1.61
3rd	1.29
4th	1.09
5th	0.92
Rev	2.07
Chain Size / Deflection	520 O-ring / 1/4-3/8" (6-8mm)
Clutch Type	Wet Multi Plate
Clutch Lever Freeplay	1/8" – 3/16" / 3.1 – 4.7 mm
Steering / Suspension	
Front Suspension Style / Shock	Dual A-arm / RydeFX™ Shock
Front Travel	10 in. / 25.4 cm
Rear Suspension Style / Shock	Independent A-Arm / RydeFX™ Compression Adjustable Shock
Rear Travel	11 in. / 27.94 cm
Ground Clearance	11.5 in. / 29 cm
Shock Preload Adjustment Front and Rear	Threaded shock adjustment with Spanner Wrench
Turning Radius	67 in. / 170 cm
Toe Out	0 - 1/16 in / .0 - .159 mm
Wheels / Brakes	
Front Wheel Size / Offset / Bolt Pattern	10x5 / 28.3mm - 4/156
Rear Wheel Size / Offset / Bolt Pattern	9x8 / 58.8mm - 4/110
Front Tire Make / Model / Size	Dunlop / Radial / 21x7-10
Rear Tire Make / Model / Size	Dunlop / Radial / 20x10-9
Recommended Air Pressure F / R	5 psi Front 5 psi Rear
Brake - Front	Hydraulic Disc
Brake - Rear	Hydraulic Disc

JETTING CHART

		AMBIENT TEMPERATURE	
		Below 40° F Below 5° C	+40° F + Above +5° C + Above
Meters (Feet)	0-1800 (0-6000)	150	145
	above 1800 (above 6000)	142.5	137.5

GENERAL INFORMATION

SPECIAL TOOLS

'Where Used' Table

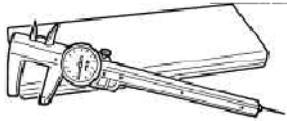
PART NUMBER	TOOL DESCRIPTION	CHAPTER TOOL USED IN
8712100 or 8712500	Tachometer	2,7
2200634	Valve Seat Reconditioning Kit	3
PU-45257	Valve Spring Compressor	3
PA-46075	Flywheel Puller	3
PA-46087	Crankcase Separator	3
2870390	Piston Support Block	3
2872105	Water Pump Mechanical Seal Puller	3
PA-45958	Cam Chain Tensioner Assembly Tool	3
PA-46076	MAG End Crankshaft Nut Remover/Installer	3
PA-46077	MAG End Crankshaft Installer	3
2871283	Crankshaft/Water Pump Seal Install Kit	3
5131135	Water Pump Install Kit	3
PA-46502	Valve Spring Compressor	3
2870975	Mity Vac™ Pressure Test Tool	3,4
2872314	Carburetor Float Adjustment Tool	4
PS-45259	Gas Fill Tool	5
PS-45261	IFP Positioning / Extraction Tool	5
PA-48282	Rear Hub Tool	5
PV-43568	Fluke™ 77 Digital Multimeter	7
2870630	Timing Light	7

*Special Tools can be ordered through a Polaris Dealer or SPX Corporation (1-800-328-6657).

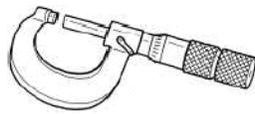
Special Tool Listing

Special Tools may be required while servicing your machine. Some of the tools listed are mandatory and other tools may be substituted with a similar tool, if available. Tools shown may not apply to a particular vehicle. Polaris recommends the use of Polaris special tools when servicing any Polaris product.

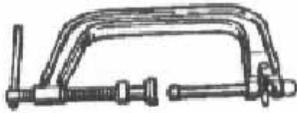
Standard Tools and Engine Tools



PU-45432 - Caliper or A Basic Caliper



Basic Micrometer



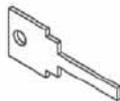
PA-46502 - Valve Spring Compressor



PA-46087 - Crankcase Separator

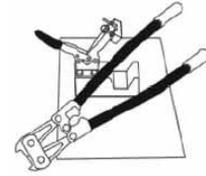


PA-46075 - Flywheel Puller



PA-45958 - Cam Chain Tensioner Tool

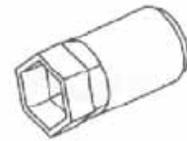
Standard Tools and Engine Tools



2870569 - Crankshaft True Kit



2870386 - Piston Pin Puller



PA-46076 Mag End Crank Nut Remover/Install



PA-46077 - Mag End Crankshaft Installer



PV-43527 Oil Filter Wrench



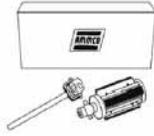
5131135 - Water Pump Install Tool



2870390 - Piston Support Block

GENERAL INFORMATION

Standard Tools and Engine Tools



2870303 - Hone Kit



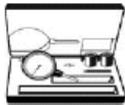
2870305 - Stone Replacement Kit



2870588 - Hone Oil (12 OZ.)



2200634 - Valve Seat Reconditioning Kit



2870459 - Dial Indicator



PV-35667-A - Cylinder Leak down Tester



2872105 - Water Pump Seal Puller

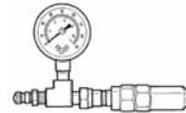


2871283 - Crank/Water Pump Seal Install Kit

Suspension Tools

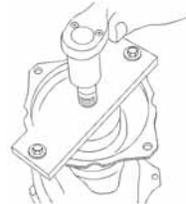


PS-45261 - Shock IFP Positioning / Extraction Tool



PS-45259 - Gas Fill Tool

Final Drive



PA-48282 Rear Hub Tool

Fuel & Brake Systems



2870975 - Mity Vac™

Electrical Tools



PV-43568 - Fluke™ 77 Multimeter



PV-39617 - Current Clamp



2870836 - Battery Hydrometer



8712500 - Tachometer



PV-39951-A - Tachometer

Electrical Tools



2870630 - Timing Light



2871745 - Static Timing Light Harness



2460761 - Hall Sensor Probe Harness



PV-39991 - Peak Reading Adapter



PV-37453 - Christie™ Se-Sulfating Multi-Battery Charger



PV-63070 - Christie™ Multi-Battery Charger

GENERAL INFORMATION

MISC. NUMBERS / CHARTS

SAE Tap / Drill Sizes

Thread Size/ Drill Size		Thread Size / Drill Size	
#0-80	3/64	1/2-13	27/64
#1-64	53	1/2-20	29/64
#1-72	53	9/16-12	31/64
#2-56	51	9/16-18	33/64
#2-64	50	5/8-11	17/32
#3-48	5/64	5/8-18	37/64
#3-56	45	3/4-10	21/32
#4-40	43	3/4-16	11/16
#4-48	42	7/8-9	49/64
#5-40	38	7/8-14	13/16
#5-44	37	1-8	7/8
#6-32	36	1-12	59/64
#6-40	33	1 1/8-7	63/64
#8-32	29	1 1/8-12	1 3/64
#8-36	29	1 1/4-7	1 7/64
#10-24	24	1 1/4-12	1 11/64
#10-32	21	1 1/2-6	1 11/32
#12-24	17	1 1/2-12	1 27/64
#12-28	4.6mm	1 3/4-5	1 9/16
1/4-20	7	1 3/4-12	1 43/64
1/4-28	3	2-4 1/2	1 25/32
5/16-18	F	2-12	1 59/64
5/16-24	I	2 1/4-4 1/2	2 1/32
3/8-16	O	2 1/2-4	2 1/4
3/8-24	Q	2 3/4-4	2 1/2
7/16-14	U	3-4	2 3/4
7/16-20	25/64		

Metric Tap / Drill Sizes

Tap Size	Drill Size	Decimal Equivalent	Nearest Fraction
3x.50	#39	0.0995	3/32
3x.60	3/32	0.0937	3/32
4x.70	#30	0.1285	1/8
4x.75	1/8	0.125	1/8
5x.80	#19	0.166	11/64
5x.90	#20	0.161	5/32
6x1.00	#9	0.196	13/64
7x1.00	16/64	0.234	15/64
8x1.00	J	0.277	9/32
8x1.25	17/64	0.265	17/64
9x1.00	5/16	0.3125	5/16
9x1.25	5/16	0.3125	5/16
10x1.25	11/32	0.3437	11/32
10x1.50	R	0.339	11/32
11 x 1.50	3/8	0.375	3/8
12x1.50	13/32	0.406	13/32
12x1.75	13/32	0.406	13/32

Decimal Equivalents

1/64	.....	.0156
1/32	.....	.0312... 1 mm= .0394"
3/64	.....	.0469
1/16	.....	.0625
5/64	.....	.0781... 2 mm = .0787"
3/32	.....	.0938
7/64	.....	.1094... 3 mm = .1181"
1/8	..... .1250	
9/64	.....	.1406
5/32	.....	.1563... 4 mm = .1575"
11/64	.....	.1719
3/16	.....	.1875... 5mm= .1969"
13/64	.....	.2031
7/32	.....	.2188
15/64	.....	.2344... 6 mm = .2362"
1/4	..... .25	
17/64	.....	.2656... 7 mm = .2756"
9/32	.....	.2813
19/64	.....	.2969
5/16	.....	.3125... 8mm= .3150"
21/64	.....	.3281
11/32	.....	.3438... 9 mm = .3543"
23/64	.....	.3594
3/8	..... .375	
25/64	.....	.3906... 10 mm = .3937"
13/32	.....	.4063
27/64	.....	.4219... 11 mm = .4331"
7/16	.....	.4375
29/64	.....	.4531
15/32	.....	.4688... 12 mm = .4724"
31/64	.....	.4844
1/2	..... .5	
33/64	.....	.5156
17/32	.....	.5313
35/64	.....	.5469... 14 mm = .5512"
9/16	.....	.5625
37/64	.....	.5781... 15 mm = .5906"
19/32	.....	.5938
39/64	.....	.6094
5/8	..... .625	
41/64	.....	.6406
21/32	.....	.6563... 17 mm = .6693"
43/64	.....	.6719
11/16	.....	.6875
45/64	.....	.7031... 18 mm = .7087"
23/32	.....	.7188
47/64	.....	.7344... 19 mm = .7480"
3/4	..... .75	
49/64	.....	.7656
25/32	.....	.7813... 20 mm = .7874"
51/64	.....	.7969
13/16	.....	.8125... 21 mm = .8268"
53/64	.....	.8281
27/32	.....	.8438
55/64	.....	.8594... 22 mm = .8661"
7/8	..... .875	
57/64	.....	.8906... 23 mm = .9055"
29/32	.....	.9063
59/64	.....	.9219
15/16	.....	.9375... 24 mm = .9449"
61/64	.....	.9531
31/32	.....	.9688... 25 mm = .9843"
63/64	.....	.9844
1	..... 1.0	

Conversion Table

Unit of Measure	Multiplied by	Converts to
ft. lbs.	x 12	= in. lbs.
in. lbs.	x .0833	= ft. lbs.
ft. lbs.	x 1.356	= Nm
in. lbs.	x.0115	= kg-m
Nm	x .7376	= ft. lbs.
kg-m	x 7.233	= ft. lbs.
kg-m	x 86.796	= in. lbs.
kg-m	x 9.807	= Nm
in.	x 25.4	=mm
mm	x .03937	= in.
in.	x 2.54	= cm
mile (mi.)	x 1.6	= km
km	x .6214	= mile (mi.)
Ounces (oz.)	x 28.35	= Grams (g)
Fluid Ounces (fl. oz.)	x 29.57	= Cubic Centimeters (cc)
Cubic Centimeters (cc)	x .03381	= Fluid Ounces (fl. oz.)
Grams (g)	x 0.035	= Ounces (oz.)
lb.	x .454	= kg
kg	x 2.2046	= lb.
Cubic inches (cu. in)	x 16.387	= Cubic centimeters (cc)
Cubic centimeters (cc)	x 0.061	= Cubic inches (cu. in)
Imperial pints (Imp pt.)	x 0.568	= Liters (l)
Liters (l)	x 1.76	= Imperial pints (Imp pt.)
Imperial quarts (Imp qt.)	x 1.137	= Liters (l)
Liters (l)	x 0.88	= Imperial quarts (Imp qt.)
Imperial quarts (Imp qt.)	x 1.201	= US quarts (US qt.)
US quarts (US qt.)	x 0.833	= Imperial quarts (Imp qt.)
US quarts (US qt.)	x 0.946	= Liters (l)
Liters (l)	x 1.057	= US quarts (US qt.)
US gallons (US gal)	x 3.785	=Liters (l)
Liters (l)	x 0.264	= US gallons (US gal)
Pounds - force per square inch (psi)	x 6.895	= Kilo pascals (kPa)
Kilo pascals (kPa)	x 0.145	= Pounds - force per square inch (psi)
Kilo pascals (kPa)	x 0.01	= Kilograms - force per square cm
Kilograms - force per square cm	x 98.1	= Kilo pascals (kPa)
$\delta(3.14) \times R^2 \times H$ (height)		= Cylinder Volume

°C to °F: $9 (°C + 40) + 5 - 40 = °F$

°F to °C: $5 (°F + 40) + 9 - 40 = °C$

GENERAL INFORMATION

Glossary of Terms

ABDC: After bottom dead center.

ACV: Alternating current voltage.

Alternator: Electrical generator producing voltage alternating current.

ATDC: After top dead center.

BBDC: Before bottom dead center.

BDC: Bottom dead center.

BTDC: Before top dead center.

CC: Cubic centimeters.

Center Distance: Distance between center of crankshaft and center of driven clutch shaft.

Chain Pitch: Distance between chain link pins (No. 35 = 3/8" or 1 cm). Polaris measures chain length in number of pitches.

CI: Cubic inches.

Clutch Buttons: Plastic bushings which aid rotation of the movable sheave in the drive and driven clutch.

Clutch Offset: Drive and driven clutches are offset so that drive belt will stay nearly straight as it moves along the clutch face.

Clutch Weights: Three levers in the drive clutch which relative to their weight, profile and engine RPM cause the drive clutch to close and grip the drive belt.

Crankshaft Run-Out: Run-out or "bend" of crankshaft measured with a dial indicator while crankshaft is supported between centers on V blocks or resting in crankcase. Measure at various points especially at PTO.

DCV: Direct current voltage.

Dial Bore Gauge: A cylinder measuring instrument which uses a dial indicator. Good for showing taper and out-of-round in the cylinder bore.

Electrical Open: Open circuit. An electrical circuit which isn't complete.

Electrical Short: Short circuit. An electrical circuit which is completed before the current reaches the intended load. (i.e. a bare wire touching the chassis).

End Seals: Rubber seals at each end of the crankshaft.

Engagement RPM: Engine RPM at which the drive clutch engages to make contact with the drive belt.

ft.: Foot/feet.

Foot Pound: Ft. lb. A force of one pound at the end of a lever one foot in length, applied in a rotational direction.

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

gal.: Gallon.

ID: Inside diameter.

in.: Inch/inches.

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

kg/cm²: Kilograms per square centimeter.

kg-m: Kilogram meters.

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

l or ltr: Liter.

lbs/in²: Pounds per square inch.

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

m: Meter/meters.

Mag: Magneto.

Magnetic Induction: As a conductor (coil) is moved through a magnetic field, a voltage will be generated in the windings. Mechanical energy is converted to electrical energy in the stator.

mi.: Mile/miles.

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

Nm: Newton meters.

OD: Outside diameter.

Ohm: The unit of electrical resistance opposing current flow.

oz.: Ounce/ounces.

Piston Clearance: Total distance between piston and cylinder wall.

psi.: Pounds per square inch.

PTO: Power take off.

PVT: Polaris Variable Transmission (Drive Clutch System)

qt.: Quart/quarts.

Regulator: Voltage regulator. Regulates battery charging system output at approx. 14.5 DCV as engine RPM increases.

Reservoir Tank: The fill tank in the liquid cooling system.

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

RPM: Revolutions per minute.

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.

Stator Plate: The plate mounted under the flywheel supporting the battery charging coils.

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

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.

WOT: Wide open throttle.

CHAPTER 2

MAINTENANCE

PERIODIC MAINTENANCE CHART	2.3
PERIODIC MAINTENANCE OVERVIEW	2.3
MAINTENANCE CHART KEY	2.3
PRE-RIDE MAINTENANCE INTERVAL	2.4
RECOMMENDED PRE-RIDE FLUID LEVEL CHECKS	2.4
0 - 50 HOUR MAINTENANCE INTERVAL	2.5
50 - 100 HOUR MAINTENANCE INTERVAL	2.6
100 - 300 HOUR MAINTENANCE INTERVAL	2.7
MAINTENANCE REFERENCES	2.8
LUBRICANTS AND SERVICE PRODUCTS	2.9
POLARIS LUBRICANTS, MAINTENANCE AND SERVICE PRODUCTS	2.9
GENERAL VEHICLE INSPECTION AND MAINTENANCE	2.10
PRE-RIDE / DAILY INSPECTION	2.10
FRAME, NUTS, BOLTS, AND FASTENERS	2.10
FUEL SYSTEM AND AIR INTAKE	2.10
FUEL SYSTEM	2.10
FUEL LINES	2.10
VENT LINES	2.11
FUEL VALVE	2.11
CARBURETOR DRAINING	2.11
CARBURETOR PILOT SCREW ADJUSTMENT	2.12
IDLE SPEED ADJUSTMENT	2.12
THROTTLE INSPECTION	2.12
THROTTLE CABLE / ELECTRONIC THROTTLE CONTROL (ETC) ADJUSTMENT	2.13
CHOKE ADJUSTMENT	2.13
AIR FILTER AND PRE-FILTER SERVICE	2.13
AIR BOX DRAIN TUBE	2.14
CRANKCASE BREATHER FILTER INSPECTION	2.14
ENGINE AND TRANSMISSION	2.14
ENGINE OIL LEVEL CHECK	2.14
ENGINE OIL AND FILTER SERVICE	2.15
OIL PUMP PRIMING PROCEDURE	2.16
COMPRESSION TEST	2.16
EXHAUST PIPE / SPARK ARRESTOR	2.16
ENGINE MOUNT LOCATIONS	2.17
LIQUID COOLING SYSTEM	2.17
COOLING SYSTEM OVERVIEW	2.17
COOLANT STRENGTH / TYPE	2.18
COOLING SYSTEM HOSES	2.18
RADIATOR	2.18
RECOVERY BOTTLE COOLANT LEVEL INSPECTION	2.18
COOLING SYSTEM PRESSURE TEST	2.19
RADIATOR SCREEN REMOVAL	2.19
FINAL DRIVE	2.19
CLUTCH ADJUSTMENT	2.19
REVERSE LOCK-OUT LEVER INSPECTION AND CABLE ADJUSTMENT	2.19
SPROCKET INSPECTION	2.19
DRIVE CHAIN INSPECTION / REPLACEMENT	2.20
DRIVE CHAIN TENSION	2.20
DRIVE CHAIN ADJUSTMENT	2.21
REAR DRIVESHAFT BOOT INSPECTION	2.21
REAR DRIVESHAFT BOOT "PRESSURE EQUALIZING"	2.22

MAINTENANCE

ELECTRICAL AND IGNITION SYSTEM	2.22
BATTERY MAINTENANCE	2.22
BATTERY INSPECTION / REMOVAL	2.23
BATTERY TERMINALS / BOLTS	2.23
OFF SEASON STORAGE	2.23
ENGINE- TO- FRAME GROUND	2.23
CHARGING PROCEDURE	2.23
SPARK PLUG INSPECTION	2.24
IGNITION TIMING	2.24
STEERING AND SUSPENSION	2.24
STEERING	2.24
CONTROLS	2.25
WHEEL ALIGNMENT	2.25
STEERING INSPECTION / TIE ROD ENDS AND HUBS	2.26
TOE ALIGNMENT ADJUSTMENT	2.27
CAMBER AND CASTER	2.27
SUSPENSION SPRING PRELOAD ADJUSTMENT	2.27
REAR SHOCK COMPRESSION ADJUSTMENT	2.29
BRAKE SYSTEM	2.29
BRAKE SYSTEM INSPECTION	2.29
HOSE / FITTING INSPECTION	2.30
BRAKE PAD INSPECTION	2.30
BRAKE TESTING	2.30
WHEELS AND TIRES	2.30
WHEELS	2.30
WHEEL, HUB, AND SPINDLE TORQUE TABLE	2.30
WHEEL REMOVAL: FRONT OR REAR	2.30
TIRE PRESSURE	2.31
TIRE INSPECTION	2.31

PERIODIC MAINTENANCE CHART

Periodic Maintenance Overview

Careful periodic maintenance will help keep your vehicle in the safest, most reliable condition. Inspection, adjustment and lubrication of important components are explained in the periodic maintenance chart.

Inspect, clean, lubricate, adjust and replace parts as necessary. When inspection reveals the need for replacement parts, use genuine Polaris parts available from your Polaris dealer.

NOTE: Service and adjustments are critical. If you're not familiar with safe service and adjustment procedures, have a qualified dealer perform these operations.

Maintenance intervals in the following chart are based upon average riding conditions and an average vehicle speed of approximately 10 miles per hour. Vehicles subjected to severe use must be inspected and serviced more frequently.

Severe Use Definition

- Frequent immersion in mud, water or sand
- Racing or race-style high RPM use
- Prolonged low speed, heavy load operation
- Extended idle
- Short trip cold weather operation

Pay special attention to the oil level. A rise in oil level during cold weather can indicate contaminants collecting in the oil sump or crankcase. Change oil immediately if the oil level begins to rise. Monitor the oil level, and if it continues to rise, discontinue use and determine the cause or see your dealer.

Maintenance Chart Key

The following symbols denote potential items to be aware of during maintenance:

■ = CAUTION: Due to the nature of these adjustments, it is recommended this service be performed by an authorized Polaris dealer.

▶ = SEVERE USE ITEM --If vehicle is subjected to severe use, decrease interval by 50%
(Severe Use is defined as frequent vehicle immersion in mud, water or sand, racing or race-style high rpm use, prolonged low speed - heavy load operation or extended idle. More preventative maintenance is required under these conditions. Fluid changes, cable, chain and chassis lubrication are required more frequently. For engine oil, short trip cold weather riding also constitutes severe use. Pay special attention to oil level. A rising oil level in cold weather can indicate contaminants collecting in the oil sump or crankcase. Change oil immediately and monitor level. If oil level begins to rise, discontinue use and determine cause.)

E= Emission Control System Service (California).

NOTE: Inspection may reveal the need for replacement parts. Always use genuine Polaris parts.

 WARNING
<p>Improperly performing the procedures marked ■ could result in component failure and lead to serious injury or death. Have an authorized Polaris dealer perform these services.</p>

MAINTENANCE

Pre-Ride Maintenance Interval

Periodic Maintenance Chart

Item	Maintenance Interval (whichever comes first)			Remarks	
	Hours	Calendar	Miles (KM)		
■ Steering	-	Pre-Ride	-	Make adjustments as needed.	
▶ Front / Rear Suspension	-	Pre-Ride	-		
Tires	-	Pre-Ride	-		
▶ Brake Fluid Level	-	Pre-Ride	-		
▶ Brake Lever Travel	-	Pre-Ride	-		
Brake Systems	-	Pre-Ride	-		
Wheels / Fasteners	-	Pre-Ride	-		
Frame Fasteners	-	Pre-Ride	-		
▶ E Engine / Trans Oil Level	-	Pre-Ride	-		
Drive Chain	-	Pre-Ride	-		
Throttle	-	Pre-Ride	-		Check operation
▶ Clutch	-	Pre-Ride	-		Check operation and adjustment
Engine Stop Switch	-	Pre-Ride	-		Check operation
▶ E Air Filter / Pre-Filter	-	Pre-Ride	-	Inspect; clean often	
▶ E Air Box Sediment Tube	-	Pre-Ride	-	Drain deposits when visible	
Coolant	-	Pre-Ride	-	Check level daily, change coolant every 2 years	
Head Lamp / Tail Lamp	-	Pre-Ride	-	Check operation; apply dielectric grease if replacing	
▶ A-arm Ball Joint	-	Pre-Ride	-	Check freeplay daily; have dealer replace if wheel moves excessively	
Rear Shaft Assembly	-	Pre-Ride Post-Ride	-	Check pre-ride for tears, punctures, leaking. Check post-ride for bulging / ballooning. Replace if damaged. Burp if bulging.	

▶ Perform these procedures more often for vehicles subjected to severe use.

E Emission Control System Service (California)

■ Have an authorized Polaris dealer perform these services.

Recommended Pre-Ride Fluid Level Checks

ITEM	TYPE	NOTES	SEE PAGES
Engine / Trans Oil	Polaris PS-4 Synthetic Engine Oil	Add to proper level on dipstick	2.14
Coolant / Level	Polaris Premium 60/40 Pre-mixed Antifreeze/Coolant or a 50/50 mixture high quality antifreeze/ coolant and distilled water	Allow engine and cooling system to cool completely and check level in radiator. Fill to top of filler neck. If reservoir was empty or extremely low, fill radiator before filling reservoir tank to full line	2.18
Brake Fluid	Polaris DOT 3 or DOT 4 Brake Fluid	Fill to indicated level inside reservoir. Use the sight glass to ensure the proper fluid level.	2.29

NOTE: Quick Reference Lubricants and maintenance product part numbers are listed on page 2.9

0 - 50 Hour Maintenance Interval

Periodic Maintenance Chart

	Item	Maintenance Interval (whichever comes first)			Remarks
		Hours	Calendar	Miles (KM)	
▶ E	Air Filter, Main Element	-	Weekly	-	Inspect; replace as needed
▶ E	Engine / Trans Oil Change (Break-In)	1 H	-	-	Perform a break-in oil change at 1 hour or 1 tank of gas
▶ E	Engine / Trans Oil Change	10 H	-	100 (160)	Check pre-ride level
▶ E	Oil Filter Change	10 H	-	100 (160)	Replace with oil change
▶ ■	Brake Pad Wear	10 H	Monthly	100 (160)	Inspect periodically
	Battery	20 H	Monthly	200 (320)	Check terminals; clean; test
▶ E	Engine Breather Filter (in air box)	20 H	Monthly	200 (320)	Inspect; replace if necessary
■	Valve Lash	50 H	-	-	Check clearance. Re-shim only if out of specification.
▶	General Lubrication	50 H	3M	500 (800)	Lubricate all grease fittings, pivots, cables, etc.
▶	Drive Chain	50 H	6M	500 (800)	Inspect daily; adjust and lubricate as needed
▶ ■	Front / Rear Suspension	50 H	6M	500 (800)	Inspect; tighten fasteners; grease (especially after washing or driving in high water levels) See page 2.6
	Carburetor Float Bowl	50 H	6M	500 (800)	Drain bowl periodically and prior to storage
■ E	Throttle Cable / ETC Switch	50 H	6M	500 (800)	Inspect; adjust; lubricate; replace if necessary
■ E	Choke Cable	50 H	6M	500 (800)	Inspect; adjust; lubricate; replace if necessary
	Clutch cable	50 H	6 M	500 (800)	Inspect, lubricate, adjust
E	Carburetor Air Intake / Flange	50 H	6M	500 (800)	Inspect ducts for proper sealing / air leaks
	Cooling System	50 H	6M	500 (800)	Inspect coolant strength seasonally; pressure test system yearly
■	Steering	50 H	6 M	500 (800)	Lubricate

▶ Perform these procedures more often for vehicles subjected to severe use.

E Emission Control System Service (California)

■ Have an authorized Polaris dealer perform these services.

MAINTENANCE

50 - 100 Hour Maintenance Interval

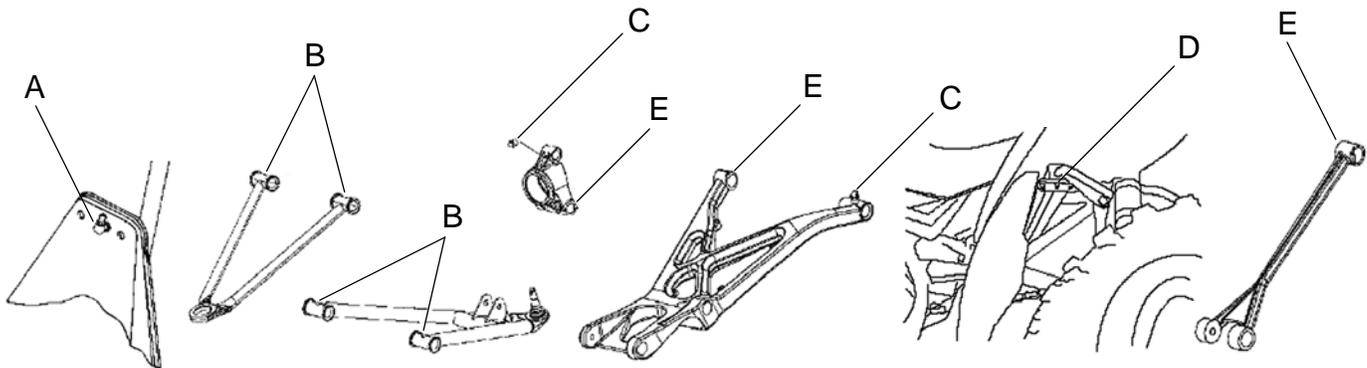
Periodic Maintenance Chart

Item	Maintenance Interval (whichever comes first)			Remarks
	Hours	Calendar	Miles (Km)	
Upper Steering Post (A)	50 H	3 M	500 (800)	Inspect; tighten fasteners; grease after washing ATV or driving in water
Front A-arms (B)	50 H	3 M	500 (800)	Inspect; tighten fasteners; grease (also after washing ATV or driving in water)
Rear Control Arm Bushings (C)	50 H	3 M	500 (800)	Inspect; tighten fasteners; grease (also after washing ATV or driving in water)
▶ E Stabilizer Bar (D)	50 H	6 M	500 (800)	Grease
■ E Rear Control Arm Needle Bearings (E)	100 H	12 M	1000 (1600)	Disassemble, clean, inspect bearings and seals, grease, reassemble

▶ Perform these procedures more often for vehicles subjected to severe use.

E Emission Control System Service (California)

■ Have an authorized Polaris dealer perform these services.



100 - 300 Hour Maintenance Interval

Periodic Maintenance Chart

Item		Maintenance Interval (whichever comes first)			Remarks
		Hours	Calendar	Miles (Km)	
▶ E	Oil Tank Vent Hose	100 H	12M	1000 (1600)	Inspect routing, condition
■ E	Fuel System	100 H	12M	1000 (1600)	Check for leaks at tank cap, lines, fuel valve, filter, pump, carburetor. Replace lines every two years
■ E	Fuel filter	100 H	12 M	1000 (1600)	Replace yearly
	Coolant System Pressure Test	100 H	12 M	1000 (1600)	Pressure test system annually
▶	Radiator	100 H	12M	1000 (1600)	Inspect; clean external surfaces; change coolant every 2 years
▶	Cooling Hoses	100 H	12M	1000 (1600)	Inspect for leaks
▶	Engine Mounts	100 H	12M	1000 (1600)	Inspect
	Exhaust Pipe	100 H	12M	1000 (1600)	Inspect
■ E	Spark Plug	100 H	12M	1000 (1600)	Inspect; replace as needed
■ E	Ignition Timing	-	12M	-	Inspect
▶	Wiring	100 H	12M	1000 (1600)	Inspect for wear, routing, security; apply dielectric grease to connectors subjected to water, mud, etc.
■	Clutch Plates	100 H	12M	1000 (1600)	Inspect; replace worn parts
■	Brake Fluid	200 H	24M	2000 (3200)	Change every two years
■	Front Wheel Bearings	300 H	36M	3000 (4800)	Inspect; replace as needed
	Spark Arrestor	300 H	36M	3000 (4800)	Clean out as required
E	Idle Speed	-			Adjust as needed
■	Toe Adjustment	-			Inspect periodically; adjust when parts are replaced
	Headlight Aim	-			Adjust as needed

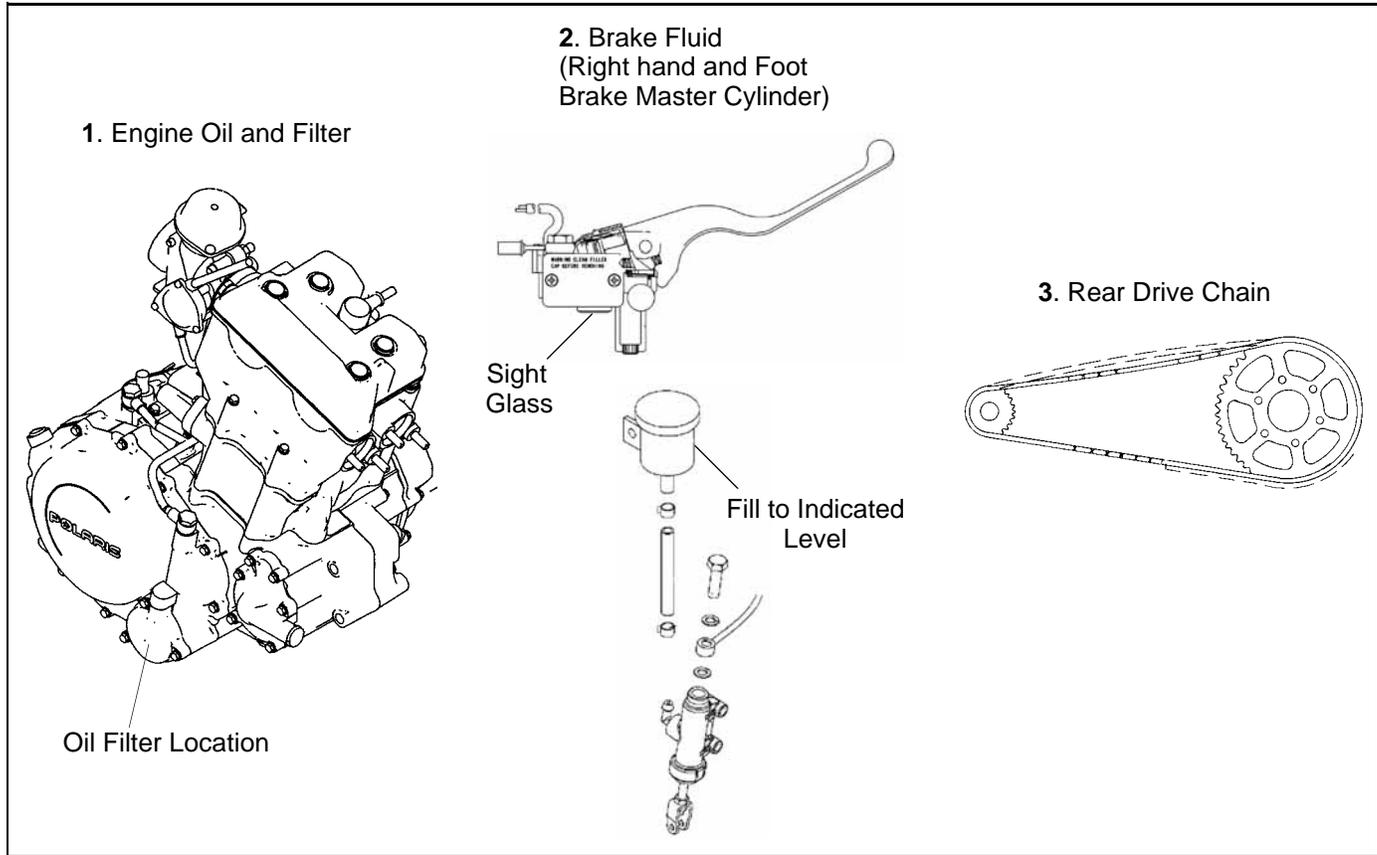
▶ Perform these procedures more often for vehicles subjected to severe use.

E Emission Control System Service (California)

- Have an authorized Polaris dealer perform these services.

MAINTENANCE

Maintenance References



III. #	Item	Lube Rec.	Method	Frequency*
1.	Engine Oil / Transmission	Polaris PS-4 Synthetic	Check dipstick and add to proper level.	Perform break-in oil / filter change at one hour; change oil every 10hrs / 100mi. **
2.	Brake Fluid	Polaris DOT 3 or DOT 4 Brake Fluid	Fill master cylinder reservoirs to indicated level inside reservoir.	As required. Change fluid every 2 years or 200 hours. ***
3.	Drive Chain	Polaris Chain Lube	Apply to chain link plates and rollers.	As required *

* More often under severe use, such as operation in mud, water, sand or under severe loads.

** Every 10 hours of operation (refer to Maintenance Schedule for additional information). Change more often in extremely dirty conditions such as continuous operation in water, mud or sand, continuous hot, cold, or short trip cold weather operation.

NOTE: Excessive clutch plate residue will accelerate oil change intervals.

*** Every 24 months or 200 hours of operation (refer to Maintenance Schedule for additional information). More often under severe conditions such as continuous operation in water, mud or sand.

LUBRICANTS AND SERVICE PRODUCTS

Polaris Lubricants, Maintenance and Service Products

PART NO.	DESCRIPTION
ENGINE LUBRICANT	
2874414	Engine Oil (Quart) PS 4 Synthetic (4-Cycle)
2874415	Engine Oil (Gallon) PS 4 Synthetic (4-Cycle)
GREASE / SPECIALIZED LUBRICANTS	
2871322	Premium All Season Grease (3 oz. cartridge)
2871423	Premium All Season Grease (14 oz. cartridge)
2876006	Rear Shaft Grease
2871460	Starter Drive Grease
2871312	Grease Gun Kit
2871329	Dielectric Grease
2872073	Chain Lube (Aerosol)
COOLANT	
2871323	60/40 Coolant (Gallon)
2871534	60/40 Coolant (Quart)
ADDITIVES / SEALANTS / THREAD LOCKING AGENTS / MISC.	
2870791	Fogging Oil (12 oz. Aerosol)
2871326	Premium Carbon Clean (12 oz.)
2870652	Fuel Stabilizer (16 oz.)
2870585	Loctite™ Primer N, Aerosol, 25 g
2870990	DOT 3 Brake Fluid
2872189	DOT 4 Brake Fluid
2871956	Loctite™ Thread Sealant 565 (50 ml.)
2871949	Loctite™ Threadlock 242 (50 ml.)
2871950	Loctite™ Threadlock 242 (6 ml.)
2871951	Loctite™ Threadlock 262 (50 ml.)
2871952	Loctite™ Threadlock 262 (6 ml.)
2871953	Loctite™ Threadlock 271 (6 ml.)
2871954	Loctite™ Threadlock 271 (36 ml.)
2870584	Loctite™ RC 680–Retaining Compound (10 ml.)
2870587	Loctite™ 518 Gasket Eliminator / Flange Sealant (50 ml.)
2871957	Black RTV Silicone Sealer (3 oz. tube)
2871958	Black RTV Silicone Sealer (11 oz. cartridge)
8560054	Silicone Sealer (14 oz. cartridge)
2871557	Crankcase Sealant, 3–Bond 1215
2872893	Engine Degreaser

MAINTENANCE

GENERAL VEHICLE INSPECTION AND MAINTENANCE

Pre-Ride / Daily Inspection

Perform the following pre-ride inspection daily, and when servicing the vehicle at each scheduled maintenance.

- Tires – check condition and pressures
- Chain - Check tension, lubricate, adjust as needed
- Fuel and oil tanks – fill both tanks to their proper level; Do not overfill oil tank
- All brakes – check operation and adjustment (includes auxiliary brake)
- Throttle – check for free operation
- Headlight/Taillight/Brakelight – check operation of all indicator lights and switches
- Engine stop switch – check for proper function
- Wheels – check for loose wheel nuts and axle nuts; check to be sure axle nuts are secured by cotter pins
- Air cleaner element – check for dirt or water; clean or replace
- Steering – check for free operation, noting any unusual looseness in any area
- Loose parts – visually inspect vehicle for any damaged or loose nuts, bolts or fasteners
- Engine coolant – check for proper level at the recovery bottle

Frame, Nuts, Bolts, and Fasteners

Periodically inspect the torque of all fasteners in accordance with the maintenance schedule. Check that all cotter pins are in place. Refer to specific fastener torques listed in each chapter.

FUEL SYSTEM AND AIR INTAKE

Fuel System

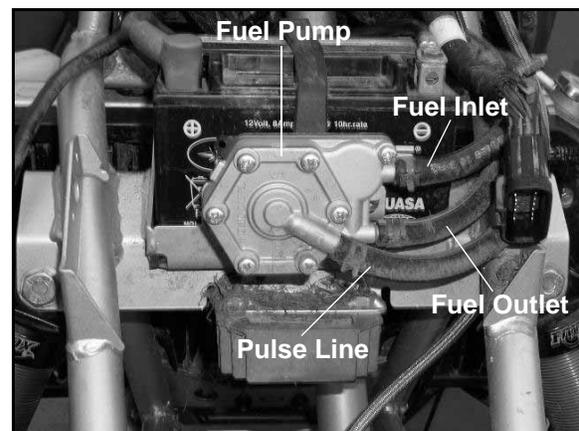


WARNING

Gasoline is extremely flammable and explosive under certain conditions.

- Always stop the engine and refuel outdoors or in a well ventilated area.
- Do not smoke or allow open flames or sparks in or near the area where refueling is performed or where gasoline is stored.
- Do not overfill the tank. Do not fill the tank neck.
- If you get gasoline in your eyes or if you swallow gasoline, seek medical attention immediately.
- If you spill gasoline on your skin or clothing, immediately wash it off with soap and water and change clothing.
- Never start the engine or let it run in an enclosed area. Engine exhaust fumes are poisonous and can result in loss of consciousness or death in a short period of time.
- Never drain the float bowl when the engine is hot. Severe burns may result.

Fuel Lines



1. Check fuel lines for signs of wear, deterioration, damage, or leakage. Replace if necessary.
2. Be sure fuel lines are routed properly and secured with cable ties.



CAUTION

Make sure lines are not kinked or pinched.

3. Replace all fuel lines every two years.

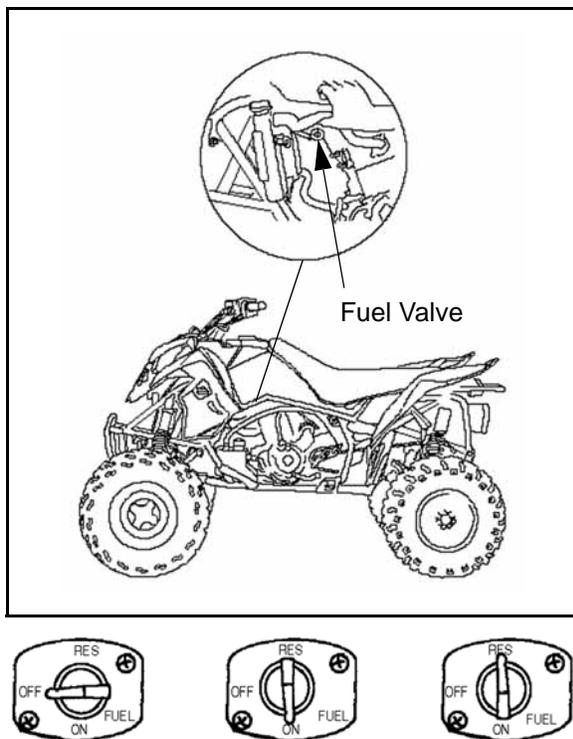
Vent Lines

Check engine, fuel tank, oil tank, and carburetor vent lines for signs of wear, deterioration, damage, or leakage. Replace every two years.

Be sure vent lines are routed properly and secured with cable ties.



Fuel Valve



The fuel system strains the fuel through screens located in the fuel valve. There is no fuel filter to service. To service the fuel valve:

1. Shut off fuel supply at fuel valve. Remove line clamps and fuel lines from the tank.
2. Remove the tank and drain remainder of fuel into a appropriate container.
3. Remove fuel valve by loosening the screws holding the valve to the tank.
4. Inspect the valve for damage or debris. Replace the valve if problems are found.
5. Reverse the procedures to install the fuel valve.

6. Turn valve on, start engine and inspect for leaks.

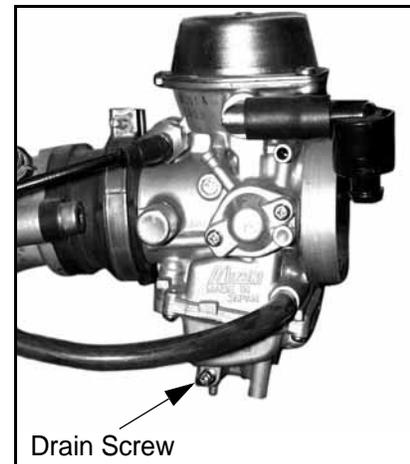
Carburetor Draining

The carburetor float bowl should be drained periodically, or before extended periods of storage, to remove moisture or sediment from the bowl.

NOTE: The bowl drain screw is located on the bottom left side of the float bowl.

1. Turn fuel valve to the "Off" position.
2. Place a clean container beneath the bowl drain spigot or bowl drain hose.
3. Turn drain screw out two turns and allow fuel in the float bowl and fuel line to drain completely.
4. Inspect the drained fuel for water or sediment.
5. Tighten drain screw.
6. Turn fuel valve to "On".
7. Start machine and check for leaks.

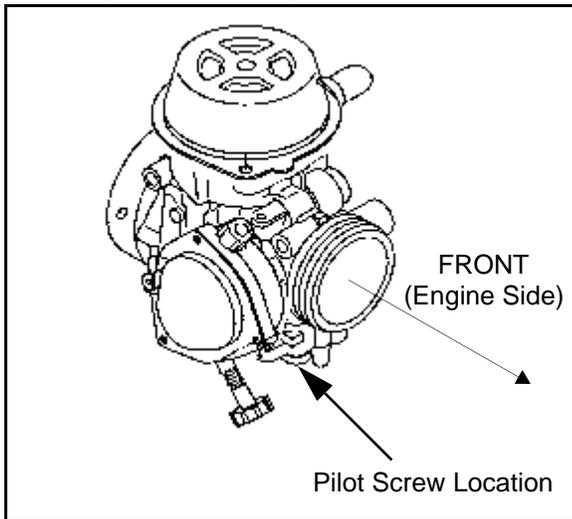
NOTE: All tubes attached to the carburetor must be checked for pinching or blockage, as this will effect engine performance.



MAINTENANCE

Carburetor Pilot Screw Adjustment

NOTE: The pilot screw is covered by a brass welsch plug per EPA requirements. Removal will be required to perform these procedures.



1. Start the engine and warm it up to operating temperature (about 10 minutes).
2. With engine off, turn pilot screw in (clockwise) until lightly seated. Turn screw out the specified number of turns.

**Pilot Screw Initial Setting:
Outlaw 500 - 2.5 Turns Out**

NOTE: Do not tighten the pilot screw forcefully against the seat or the screw and/or seat will be permanently damaged.

CAUTION

The pilot screw is calibrated at the factory to meet EPA / CARB regulations for air quality standards and is sealed with a brass plug to prevent tampering. Removal of the tamper proof plug is not permitted. For service purposes, cleaning of the pilot circuit can be done only by a certified repair shop to ensure air quality standards are not exceeded.

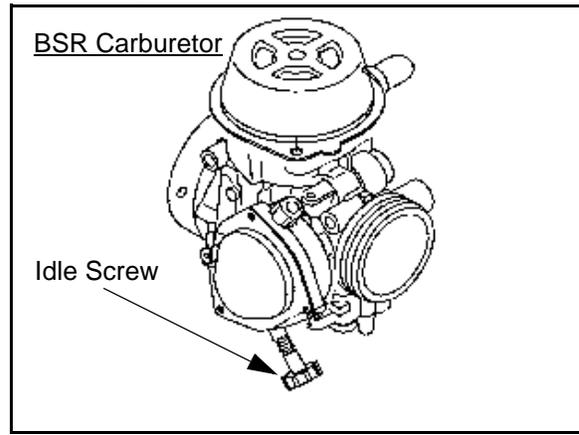
3. Connect an accurate tachometer that will read in increments of + or - 50 RPM such as the PET 2100DX (PN 8712100DX) or the PET 2500 (PN 8712500). Start engine.
4. Set idle speed to 1600 RPM.
5. Slowly turn mixture screw clockwise using the pilot screw or an appropriate sized screwdriver until engine begins to miss.

6. Slowly turn mixture screw counterclockwise until idle speed increases to maximum RPM. Continue turning counterclockwise until idle RPM begins to drop.
7. Center the pilot screw between the points in Step 5 and 6.
8. Readjust idle speed to specification.

NOTE: Always check throttle cable freeplay after adjusting idle speed and adjust if necessary.

Idle Speed Adjustment

NOTE: Adjusting the idle speed effects throttle cable freeplay and electronic throttle control (ETC) adjustment. Always check throttle cable freeplay after adjusting idle speed and adjust if necessary.



1. Start engine and warm it up thoroughly.
2. Adjust idle speed by turning the idle adjustment screw in (clockwise) to increase or out (counterclockwise) to decrease RPM.

**Idle Speed
1600 ± 100 RPM**

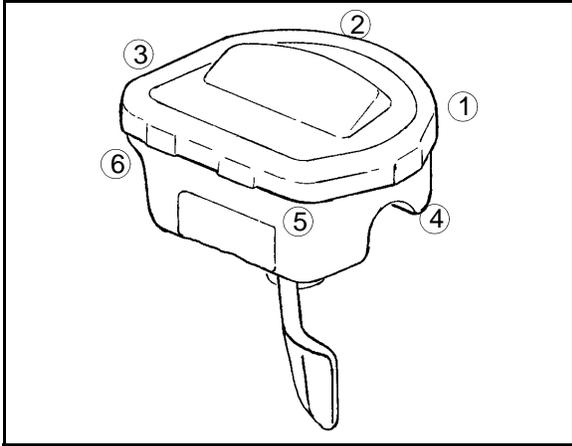
Throttle Inspection

Check for smooth throttle opening and closing in all handlebar positions. Throttle lever operation should be smooth and lever must return freely without binding.

1. Place the gear selector in neutral.
2. Set parking brake.
3. Start the engine and let it idle.
4. Turn handlebars from full right to full left. If idle speed increases at any point in the turning range, inspect throttle cable routing and condition. Adjust cable tension as needed until lock-to-lock turning can be accomplished with no rise in engine rpm.
5. Replace the throttle cable if worn, kinked, or damaged.
6. Inspect ETC cover seal and switch cavity by removing the cover. Verify that no dirt, water or mud is present.

To remove the ETC cover:

1. Use a medium flat blade screwdriver and insert blade into the pocket of the cover starting on the #1 position
2. Twist screwdriver slightly while lifting on the cover to release snap.
3. Repeat procedure at the other five locations as shown.



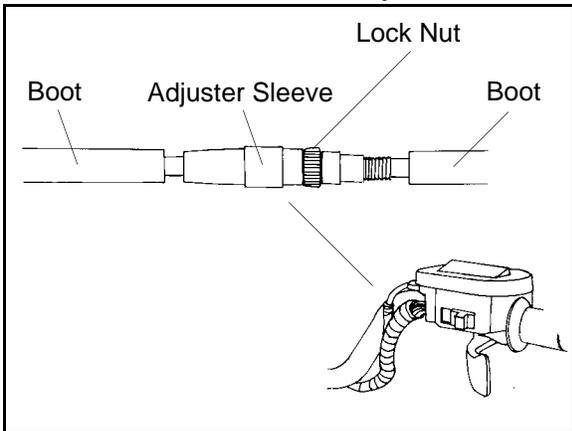
NOTE: Do not attempt to remove cover until all latch points are released.

Throttle Cable / Electronic Throttle Control (ETC) Adjustment

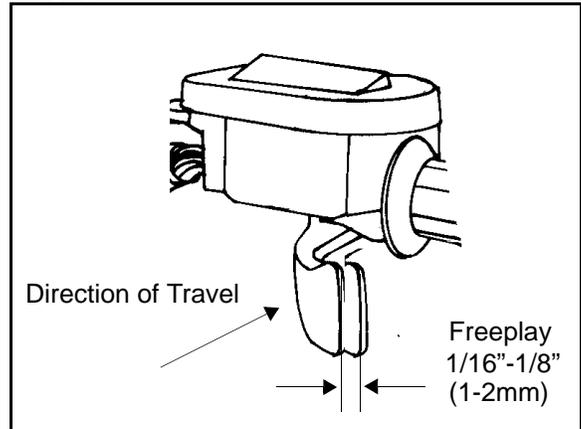
1. Slide boot off throttle cable adjuster and jam nut.
2. Place shift selector in neutral and set parking brake.
3. Start engine and set idle to 1600 RPM.

NOTE: Be sure the engine is at operating temperature. See Idle Speed Adjustment.

4. Loosen lock nut on in-line cable adjuster.



5. Turn adjuster until $1/16''$ to $1/8''$ (1-2mm) freeplay is achieved at thumb lever. After making adjustments, quickly actuate the thumb lever several times and reverify freeplay.



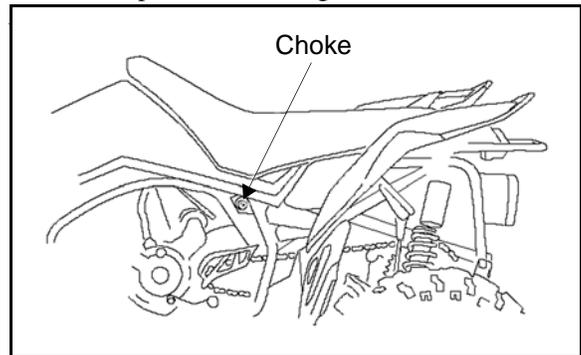
6. Tighten lock nut securely and slide boot completely in place to ensure a water-tight seal.
7. Turn handlebars from left to right through the entire turning range. If idle speed increases, check for proper cable routing. If cable is routed properly and in good condition, repeat adjustment procedure.

Choke Adjustment

If the choke knob does not stay out when pulled, adjust the choke tension by tightening (clockwise) the jam nut under the rubber boot between the choke knob and nut. Firmly grasp the rubber boot and tighten until the choke slides freely but stays out when pulled.

Verify free play of $1/16-3/16''$ (1.6-4.76 mm) and smooth operation of choke cable.

If smooth choke operation is not obtainable, inspect choke cable for kinks or sharp bends in routing.



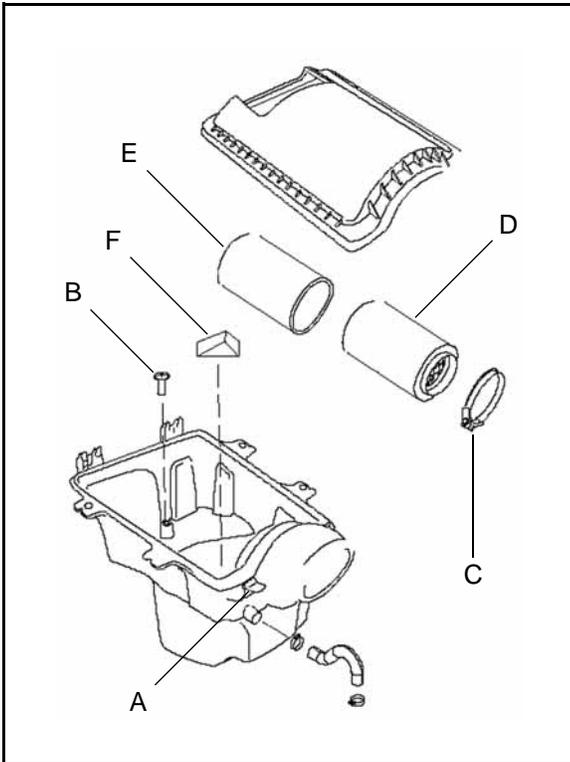
Air Filter and Pre-filter Service

It is recommended that the air filter and pre-filter be inspected frequently. When riding in extremely dusty conditions, replacement is required more often.

MAINTENANCE

The pre filter should be cleaned before each ride using the following procedure:

1. Unlatch and remove the seat.
2. Release the two air box cover clips (A) and rotate the cover rearward to remove it.
3. Remove the air filter retaining screw (B).
4. Loosen the filter clamp (C).
5. Remove the main air filter (D).
6. Remove the pre-filter (E) from the main filter element.
7. Remove the breather filter (F).



Cleaning:

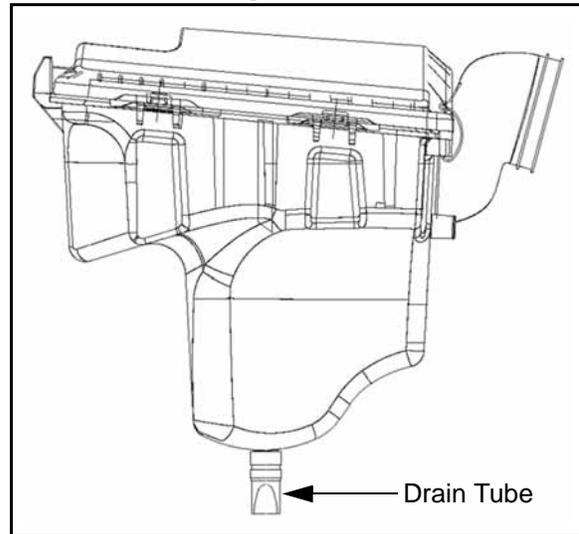
8. Wash the pre-filter (E) and breather filter (F) in soapy water, then rinse and let dry.
9. Wash the main filter element (D) without removing it from the internal filter cage. Rinse and let dry. When dry, apply a commercially available foam filter oil thoroughly on the element.

Installation:

10. Check the hoses for cracks, deterioration, abrasion, or leaks. Replace as needed.
11. Reinstall crankcase breather filter, pre-filter and air filter into air box. Install the air filter retaining screw.
12. Reinstall the air box cover and secure the cover with the two clips.

Air Box Drain Tube

Periodically check the air box drain tube located on the bottom side of the air box. Be sure the drain tube is not obstructed by mud or sand. Whenever deposits are visible, clean out the tube.



NOTE: The drain tube will require more frequent inspection if the vehicle is operated in severe conditions.

Crankcase Breather Filter Inspection

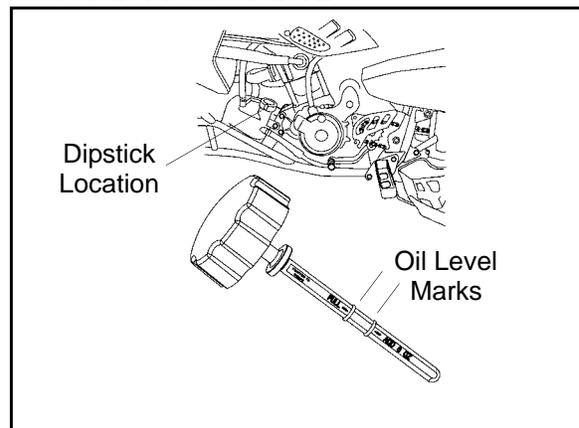
Outlaw ATV engines are equipped with a crankcase breather filter in the air box. The filter is similar in appearance to a small foam block, and is visible on the left side (See Illustration to the left, Reference F).

The air breather filter should be inspected or replaced whenever the air filter is inspected.

ENGINE AND TRANSMISSION

Engine Oil Level Check

Check the oil level before each use of the vehicle. The dipstick is located on the left side of the ATV.



1. Position the ATV on a level surface.
2. Start the engine and let it idle for one minute.
3. Stop the engine and remove the dipstick. Wipe it dry with a clean cloth.
4. Reinstall the dipstick completely.

NOTE: The dipstick must be screwed completely in to keep the angle and depth of the stick consistent.

5. Remove the dipstick and check the oil level. Maintain the oil level in the safe range, between the full and add marks. Do not overfill.
6. Reinstall the dipstick.

Engine Oil and Filter Service

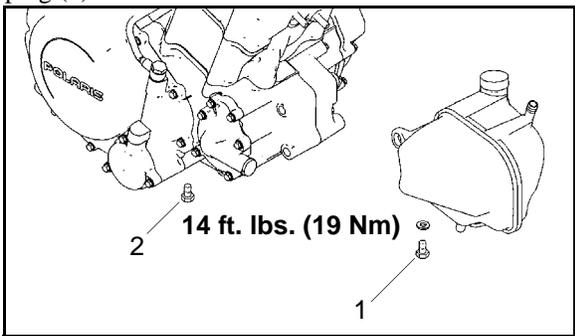
IMPORTANT: Polaris PS-4 Engine Oil is recommended for use in the Predator. PS-4 was specifically designed for the Predator's engine and clutching system. Other oils do not contain the needed additives to prolong engine life and provide proper lubrication to the Predator clutch and transmission components.

1. Place the vehicle on a level surface.
2. Clean the area around the oil tank and crankcase drain plugs with clean shop towels.

⚠ WARNING

Hot oil can cause serious burns to the skin.
Do not allow hot oil to contact skin.

3. Run the engine for two to three minutes until warm, then stop the engine.
4. Place a drain pan beneath the oil tank and remove the drain plug (1).

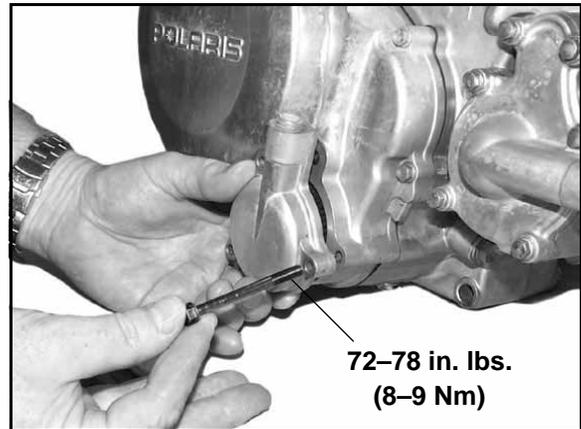


5. Allow the oil to drain completely.
6. Replace the sealing washer and reinstall the plug. Torque to **14 ft. lbs. (19 Nm)**.

NOTE: The sealing surfaces on drain plugs, oil tank and crankcase should be clean and free of burrs, nicks or scratches.

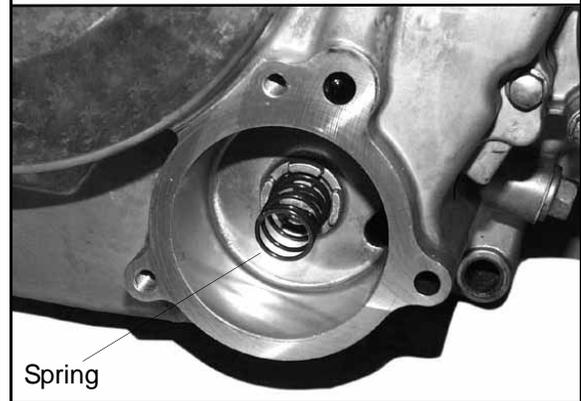
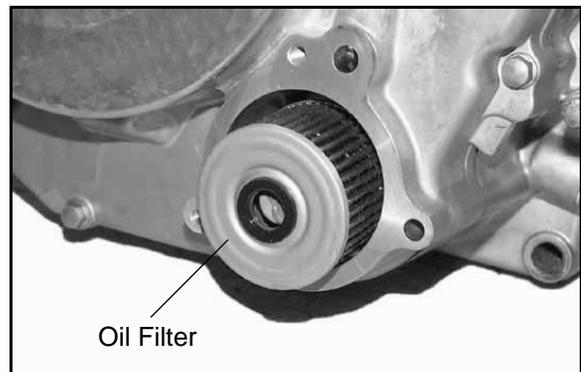
7. Place a drain pan beneath the crankcase and remove the drain plug (2).

8. Allow the oil to drain completely.
9. Replace the sealing washer and reinstall the plug. Torque to **14 ft. lbs. (19 Nm)**.
10. Place shop towels beneath the oil filter cover.
11. Remove the three cover bolts and remove the cover.



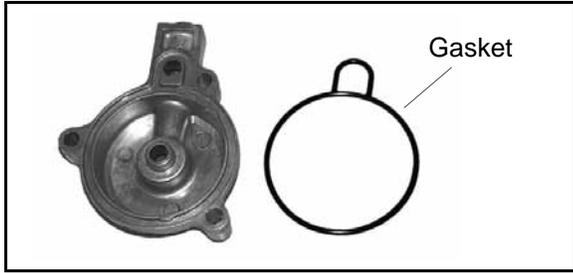
NOTE: A spring located behind the filter may pop out as the filter is removed. The spring must be reinstalled with the new filter.

12. Pull out the oil filter.



13. Using a clean dry cloth, clean the filter sealing surfaces.

14. Replace the gasket in the cover.



15. Lubricate the gasket on the new filter with a film of fresh engine oil.
16. Reinstall the spring and install the new filter with the open end facing outward.
17. Install the cover and torque the bolts to **72–78 in. lbs. (8–9 Nm)**.

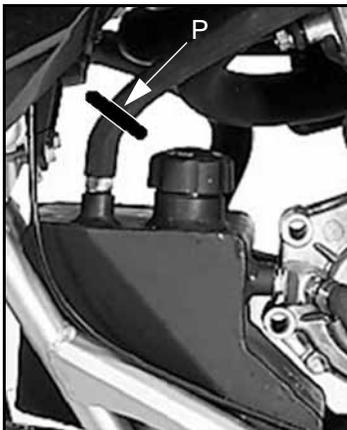
NOTE: The long bolt must be placed in the forward hole.

18. Remove the dipstick and fill the oil tank with 2.25 quarts (1.9 l) of Polaris PS-4 Engine Oil (PN 2874414).
19. Place gear selector in neutral and set parking brake.
20. Start the engine and let it idle for one to two minutes. Stop the engine and inspect for leaks.
21. Re-check the oil level on the dipstick and add oil as necessary to bring the level to the upper mark on the dipstick.
22. Dispose of used filter and oil properly.

Oil Pump Priming Procedure

NOTE: The oil pump priming procedure should be performed as a safeguard against loss of pump prime when repairing oil tank, lines or engine.

1. Clamp or pinch off vent line approximately 2" from oil tank (P), between the end of oil tank vent fitting and the vent line.



2. Run engine for 5-10 seconds at IDLE.

3. Shut off engine. Remove the vent line clamp. The oil pump should now be properly primed and ready for field operation.

NOTE: If the system is primed properly you should hear some air release. If you do not, the system has not primed. Repeat the process if necessary.

Compression Test

NOTE: This engine has built-in decompression components. Compression readings will vary in proportion to cranking speed during the test. Average compression (measured) is about 85-90 psi @ 400 RPM during a compression test.

A cylinder leakdown test is the best indication of engine condition. Follow manufacturer's instructions to perform a cylinder leakage test. (Never use high pressure leakage testers, as crankshaft seals may dislodge and leak).

**Cylinder Compression w / decompression
Standard: 85-90 PSI @ 400 RPM**

**Cylinder Leakdown
Service Limit: 10%
(Inspect for cause if leakage exceeds 10%)**

Exhaust Pipe / Spark Arrestor

WARNING

- Do not perform clean out immediately after the engine has been run, as the exhaust system becomes very hot. Serious burns could result from contact with exhaust components.
- To reduce fire hazard, make sure that there are no combustible materials in the area when purging the spark arrestor.
- Wear eye protection.
- Do not stand behind or in front of the vehicle while purging the carbon from the spark arrestor.
- Never run the engine in an enclosed area. Exhaust contains poisonous carbon monoxide gas.
- Do not go under the machine while it is inclined. Set the hand brake and block the wheels to prevent roll back.

Failure to follow these warnings could result in serious personal injury or death.