2009 Polaris Sportsman 850 EFI/HD/EPS series

CHAPTER 1
GENERAL INFORMATION

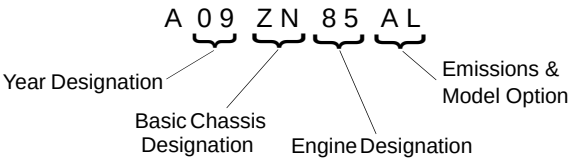
1

VEHICLE IDENTIFICATION

Model Identification

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

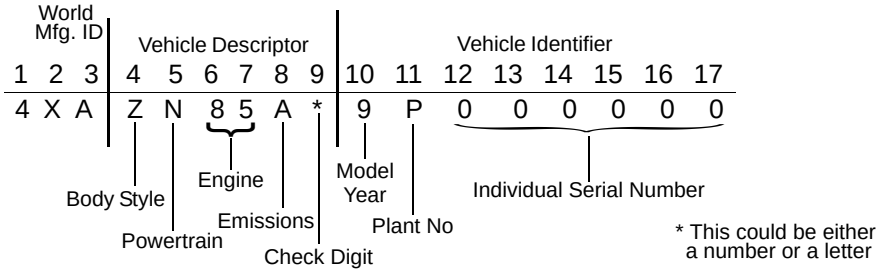
Machine Model Number Identification



Engine Designation Number

EH085OLE.....Twin Cylinder, 4-Cycle SOHC, Liquid Cooled, Electric Start

Vehicle Identification Number (VIN)



Vehicle and Engine Serial Number Locations

Whenever corresponding about a Polaris ATV, be sure to refer to the vehicle identification number (VIN) and the engine serial number.

The VIN can be found stamped on the lower frame rail on the front LH side of the ATV (see Figure 1-1).

The engine serial number can be found on top of the engine located on the valve cover (see Figure 1-2).

Figure 1-1

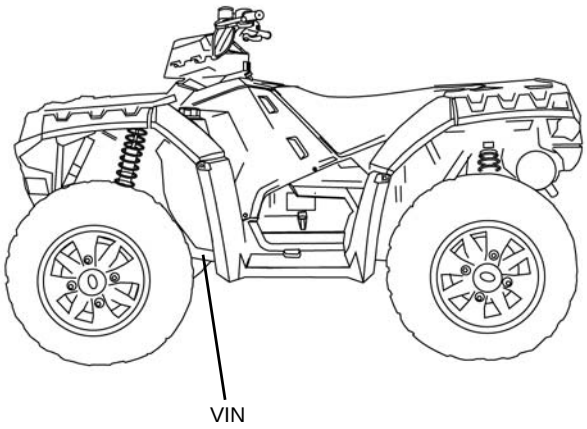
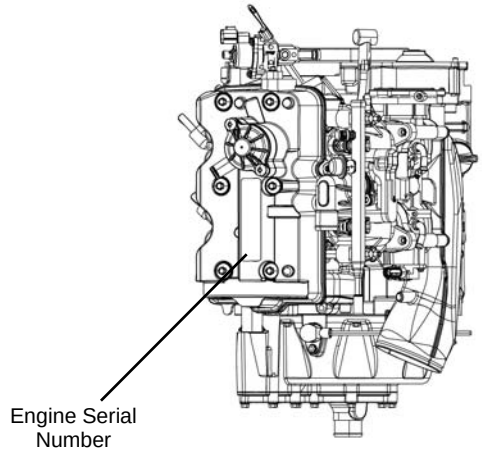


Figure 1-2



VEHICLE INFORMATION

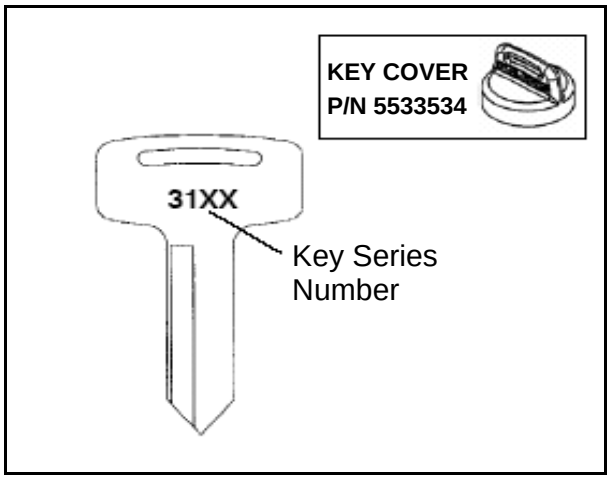
Publication Numbers

YEAR	MODEL	MODEL NO.	OWNER'S MANUAL PN	PARTS MANUAL PN
2009	SPORTSMAN XP 850	A09ZN85AL, AQ, AS, AT, AX, FL	9921854	9921857
2009	SPORTSMAN XP 850 EPS	A09ZX85AG, AL, AQ, AR, AS, AX, FS	9921976	9921977

NOTE: Additional Polaris factory publications can be found at www.polarisindustries.com or purchased from www.purepolaris.com.

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

Special Tools

Special tools may be required while servicing this vehicle. Some of the tools listed or depicted are mandatory, while other tools maybe substituted with a similar tool, if available. Polaris recommends the use of Polaris Special Tools when servicing any Polaris product. Dealers may order special tools through Polaris' official tool supplier, SPX Corporation, by phone at 1-800-328-6657 or on-line at http://polaris.spx.com/.

SPECIFICATIONS

MODEL: 2009 SPORTSMAN XP 850

MODEL NUMBER:. . . . . A09ZN85AL, AQ, AS, AT, AX, FL
ENGINE MODEL:. EH085OLE

Category	Dimension
Length	**83.25 in. / 211.5 cm**
Width	**47.6 in. / 121 cm**
Height	**50.75 in. / 129 cm**
Wheel Base	**53 in. / 135 cm**
Ground Clearance	**11.6 in. / 29.5 cm**
Turning Radius	**84 in. / 213 cm (unloaded)**
Dry Weight	**784 lbs. / 356 kg**
Front Rack Capacity	**120 lbs. / 54 kg**
Rear Rack Capacity	**240 lbs. / 109 kg**
Max. Weight Capacity	**575 lbs. / 261 kg**
Towing Capacity	**1500 lbs. / 680 kg**
Hitch Tongue Weight	**150 lbs. / 68 kg**

MODEL: 2009 SPORTSMAN XP 850 EPS

MODEL NUMBER:. . . . . A09ZX85AG, AL, AQ, AR, AS, AX, FS
ENGINE MODEL:. EH085OLE

Category	Dimension
Length	**83.25 in. / 211.5 cm**
Width	**47.6 in. / 121 cm**
Height	**50.75 in. / 129 cm**
Wheel Base	**53 in. / 135 cm**
Ground Clearance	**11.6 in. / 29.5 cm**
Turning Radius	**84 in. / 213 cm (unloaded)**
Dry Weight	**796 lbs. / 361 kg**
Front Rack Capacity	**120 lbs. / 54 kg**
Rear Rack Capacity	**240 lbs. / 109 kg**
Max. Weight Capacity	**575 lbs. / 261 kg**
Towing Capacity	**1500 lbs. / 680 kg**
Hitch Tongue Weight	**150 lbs. / 68 kg**

2009 SPORTSMAN XP 850 / XP 850 EPS

XP MODELS: A09ZN85AL,AQ,AS,AT,AX,FL
XP EPS MODELS: A09ZX85AG,AL,AQ,AR,AS,AX,FS
ENGINE MODEL: EH085OLE

Engine	
Platform	Domestic Twin Cylinder, 4-Cycle
Engine Model Number	EH085OLE011
Engine Displacement	850 cc
Number of Cylinders	2
Bore & Stroke (mm)	87 x 71.5 mm
Compression Ratio	11.0:1
Compression Pressure	210 - 250 psi
Engine Idle Speed	1200 ± 50 RPM
Cooling System / Cap.	Liquid Cooled / 2 qt. (1.9 l)
Overheat Warning	Instrument Cluster Indicator
Lubrication	Pressurized Wet Sump
Engine Oil Requirement	PS-4 Plus / 2 qt. (1.9 l)
Exhaust System	Stainless Steel Dual Header Pipe w/ Dual Outlet Silencer
Fuel System	
Fuel System Type	Bosch Multi-Port Sequential Electronic Fuel Injection
Throttle Body / Size	Mikuni Dual Bore / 40 mm
Fuel Delivery	Electronic Fuel Pump (in tank)
Fuel Pressure	43 psi
Fuel Capacity	XP: 5.25 gal. (20 l) XP EPS: 4.5 gal. (17 l)
Fuel Requirements	87 Octane (minimum)
Electrical	
Alternator Output	475 W @ 1200 RPM / Peak 575 W
Voltage Regulator	3-Phase / 32 Amp
Head Lights	Pod: 12V / 50 Watts Bumper: 12V / 50 Watts x 2
Brake Light	12V / 27 Watts
Tail Light	12V / 7 Watts
Starting System	Electric
Ignition System	Bosch EFI (ECU Controlled)
Ignition Timing	6° ± 5° BTDC @ 1200 RPM
Spark plug / Gap	REA8MCL / .035 in. (.90 mm)
Battery / Model / AH / CCA	Deka / ETX30L / 30 AH / 365
Instrumentation	Multifunction Instrument Cluster
DC Outlet	Standard
Relays (Located in Relay/Fuse Box)	Chassis / Start Solenoid / Fan / EFI / Bumper Lights
Circuit Breaker	Fan Motor: 20A
Fuses (Located in Relay/Fuse Box)	Lights: 20A / Drive: 20A / Accessory: 20A / EFI: 20A / Unswitched: 10A / EPS: 30A

Drivetrain	
Transmission Type	Automatic PVT In-Line H-L-N-R-P
Transmission Fluid Type / Fluid Capacity	Synthetic Sportsman XP Transmission Fluid / 32 oz. (946 ml)
Front Gearcase Fluid Type / Fluid Capacity	Premium LT Demand Drive Fluid / 9.3 oz. (275 ml)
Front Gearcase ADC Reservoir Fluid Type	Premium ADC Front Drive Fluid
Rear Gearcase Fluid Type / Fluid Capacity	ATV Angle Drive Fluid / 7.1 oz. (210 ml)
Clutch Type	PVT w/EBS
Belt	3211123
Steering / Suspension	
Toe Out	0-1/16 in. (0-.159 mm)
Front Suspension	Dual A-arm
Front Travel	9.2 in. / 23.4 cm
Rear Suspension	Dual A-arm w/Rolled IRS
Rear Travel	10.2 in. / 25.9 cm
Shock Preload Adjustment Front / Rear	Cam Adjustable
Wheels / Brakes	
Front Wheel Size / Bolt Pattern Tire Model / Size	14 x 6 / 4-156 Carlisle Terrathon / 26 x 8 - 14
Rear Wheel Size / Bolt Pattern Tire Model / Size	14 x 8 / 4-156 Carlisle Terrathon / 26 x 10 - 14
Tire Air Pressure	Front: 7 psi (48 kPa) Rear: 5 psi (34.5 kPa)
Brakes - Front & Rear	Single Control Hydraulic 4-Wheel Disc
Brake Fluid	Polaris DOT 4 Brake Fluid

CLUTCH CHART

Altitude		Shift Weight	Drive Spring	Driven Spring
Meters (Feet)	**0-1800 (0-6000)**	24-63 5632215	Red / Wht 7043349	Red / Wht 3235621
	1800-3700 (6000 - 12000)	24-60 5632216	Red / Wht 7043349	Red / Wht 3235621

MISC. SPECIFICATIONS AND CHARTS

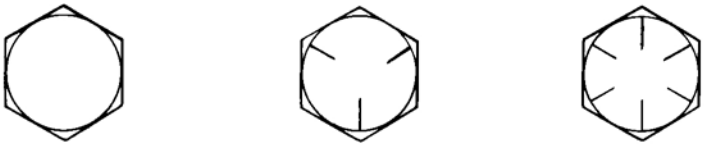
Conversion Table

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 10	= 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	= Kilopascals (kPa)
Kilopascals (kPa)	x 0.145	= Pounds - force per square inch (psi)
Kilopascals (kPa)	x 0.01	= Kilograms - force per square cm
Kilograms - force per square cm	x 98.1	= Kilopascals (kPa)
π (3.14) x R^2 x H (height)		= Cylinder Volume

°C to °F: $^{9/5}$**(°C + 32) = °F** **°F to °C:** $^{5/9}$**(°F - 32) = °C**

Standard Torque Specifications

The following torque specifications are to be used only as a general guideline. There are exceptions in the steering, suspension, and engine areas. Always consult the exploded views or each manual section for torque values of fasteners before using standard torque.



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.

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
3 x .50	#39	0.0995	3/32
3 x .60	3/32	0.0937	3/32
4 x .70	#30	0.1285	1/8
4 x .75	1/8	0.125	1/8
5 x .80	#19	0.166	11/64
5 x .90	#20	0.161	5/32
6 x 1.00	#9	0.196	13/64
7 x 1.00	16/64	0.234	15/64
8 x 1.00	J	0.277	9/32
8 x 1.25	17/64	0.265	17/64
9 x 1.00	5/16	0.3125	5/16
9 x 1.25	5/16	0.3125	5/16
10 x 1.25	11/32	0.3437	11/32
10 x 1.50	R	0.339	11/32
11 x 1.50	3/8	0.375	3/8
12 x 1.50	13/32	0.406	13/32
12 x 1.75	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	5 mm = .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	8 mm = .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	13 mm = .5118
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	16 mm = .6299″
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	

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
CVT: Centrifugal Variable Transmission (Drive Clutch System)
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.

NOTES

CHAPTER 2
MAINTENANCE

2

PERIODIC MAINTENANCE CHART

Periodic Maintenance Overview

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 Pure 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.

Break-In Period

The break-in period consists of the first 20 hours of operation. Careful treatment of a new engine and drive components will result in more efficient performance and longer life for these components.

- Drive vehicle slowly at first while varying the throttle position. Do not operate at sustained idle.
- Pull only light loads.
- Perform regular checks on fluid levels and other areas outlined on the daily pre-ride inspection checklist.
- Change both the engine oil and filter after 20 hours or one month.
- See "Owner's Manual" for additional break-in information.

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: See information provided above.**

E = **Emission Control System Service (California).**

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

⚠ WARNING

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.

Maintenance Intervals

Item		Maintenance Interval (whichever comes first)			Remarks
		Hours	Calendar	Miles (KM)	
■	Steering	-	Pre-Ride	-	Inspect and make adjustments as needed. See Pre-Ride Checklist later in this chapter.
▶	Front Suspension	-	Pre-Ride	-	
▶	Rear Suspension	-	Pre-Ride	-	
	Tires	-	Pre-Ride	-	
▶	Brake Fluid Level	-	Pre-Ride	-	
▶	Brake Lever Travel	-	Pre-Ride	-	
	Brake System	-	Pre-Ride	-	
	Wheels / Fasteners	-	Pre-Ride	-	
	Frame Fasteners	-	Pre-Ride	-	
▶	Engine Oil Level	-	Pre-Ride	-	
▶ E	Air Filter, Pre-filter	-	Daily	-	Inspect;clean often
	Coolant	-	Daily	-	Check level daily, change coolant every two years
▶	ADC Fluid	-	Daily	-	Check level daily, add as needed
▶	Power Steering Unit (if equipped)	-	Daily	-	Inspect daily, clean often
	Head Lights / Tail Lights	-	Daily	-	Check operation; apply dielectric grease if replacing
▶ E	Air Filter (main element)	-	Weekly	-	Inspect; replace as needed
▶ ■	Brake Pad Wear	10 H	Monthly	100 (160)	Inspect periodically
	Battery	20 H	Monthly	200 (320)	Check terminals; clean; test
▶ E	Engine Oil Change (Break-in Period)	20 H	1 M	-	Perform a break-in oil change at one month or 20 hours, whichever comes first
▶	Front Gearcase Fluid	25 H	Monthly	250 (400)	Inspect level
▶	Rear Gearcase Fluid	25 H	Monthly	250 (400)	Inspect level
▶	Transmission Fluid	25 H	Monthly	250 (400)	Inspect level

▶ 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.

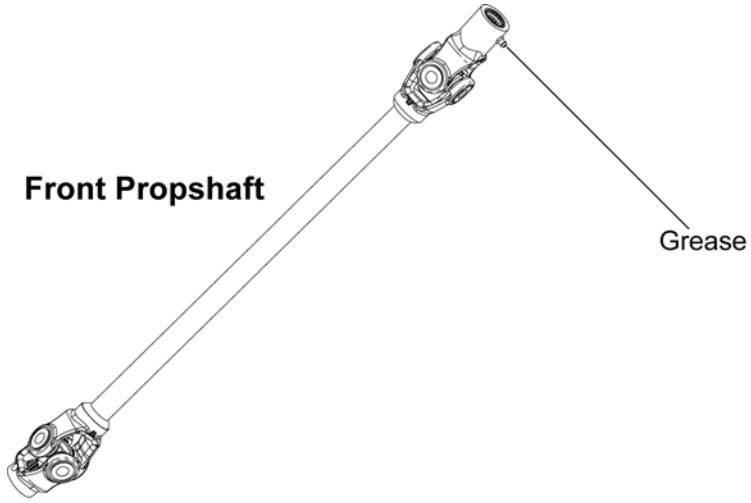
Item		Maintenance Interval (whichever comes first)			Remarks
		Hours	Calendar	Miles (KM)	
▶	General Lubrication	50 H	3 M	500 (800)	Lubricate all fittings, pivots, cables, etc.
■ E	Throttle Cable / ETC Switch	50 H	6 M	500 (800)	Inspect; adjust; lubricate; replace if necessary
E	Throttle Body Intake Duct	50 H	6 M	500 (800)	Inspect ducts for proper sealing / air leaks
	Drive belt	50 H	6 M	500 (800)	Inspect; replace as needed
	Cooling System	50 H	6 M	500 (800)	Inspect coolant strength seasonally; pressure test system yearly
▶	Radiator	50 H	6 M	500 (800)	Inspect; clean external surfaces
▶	Cooling Hoses	50 H	6 M	500 (800)	Inspect for leaks
▶	Engine Oil Change	100 H	6 M	1000 (1600)	Perform a break-in oil change at 20 hours or after one month of operation; change more frequently during cold weather operation
▶	Oil Filter Change	100 H	6 M	1000 (1600)	Replace with oil change
▶	Front Gearcase Fluid	-	12 M	1000 (1600)	Change Fluid
▶	Rear Gearcase Fluid	-	12 M	1000 (1600)	Change Fluid
▶	Transmission Fluid	-	12 M	1000 (1600)	Change Fluid
■ E	Fuel System	100 H	12 M	1000 (1600)	Check for leaks at tank cap, fuel lines, fuel pump; replace lines every two years
▶	Engine Mounts	100 H	12 M	1000 (1600)	Inspect
	Exhaust Pipe / Silencer	100 H	12 M	1000 (1600)	Inspect
■ E	Spark Plug	100 H	12 M	1000 (1600)	Inspect; replace as needed
▶	Wiring	100 H	12 M	1000 (1600)	Inspect for wear, routing, security; apply dielectric grease to connectors subjected to water, mud, etc.
■	Clutches (Drive and Driven)	100 H	12 M	1000 (1600)	Inspect; clean; replace worn parts
■	Front Wheel Bearings	100 H	12 M	1000 (1600)	Inspect; replace as needed
■	Brake Fluid	200 H	24 M	2000 (3200)	Change every two years
■	ADC Fluid	200 H	24 M	2000 (3200)	Change every two years
	Spark Arrestor (if applicable)	300 H	36 M	3000 (4800)	Clean out; or remove clean out plug
■ E	Valve Clearance	1000 H	-	10000 (16000)	Inspect; adjust
■	Toe Adjustment	-			Inspect periodically; adjust as needed
	Headlight Aim	-			Adjust as needed

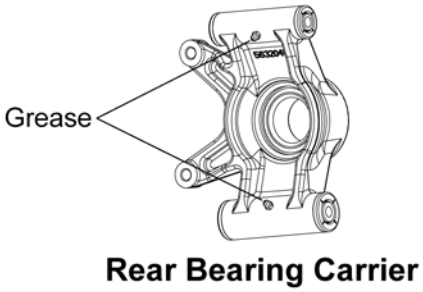
▶ Perform these procedures more often for vehicles subjected to severe use.
E Emission Control System Service (California)
■ Have an authorized Polaris dealer perform these services.

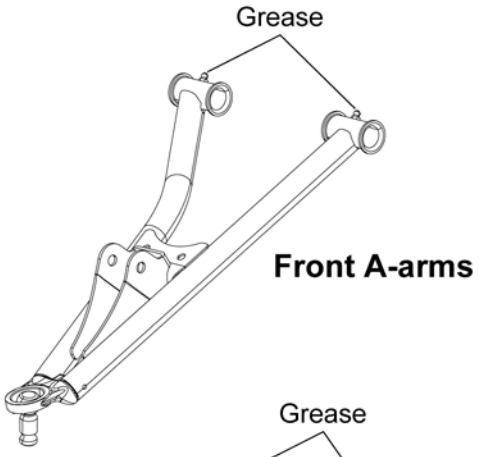
Grease Lubrication Points

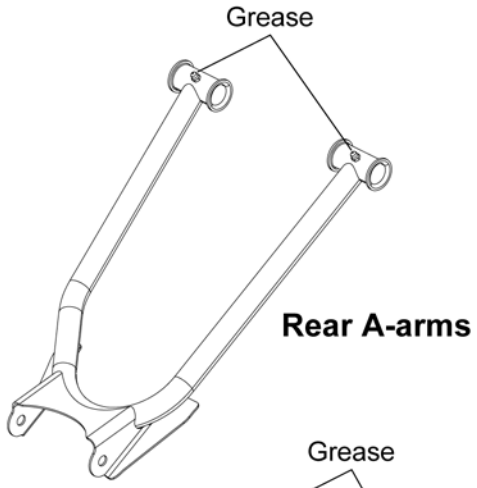
There are grease fittings on each upper and lower front and rear A-arms, each rear bearing carrier, and on the front propshaft yoke. Apply a maximum of 3 pumps of grease at each of these areas.

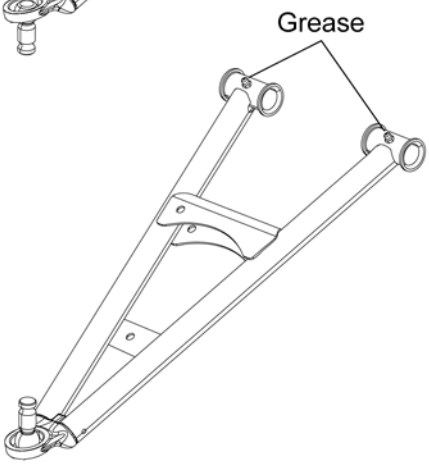
Item	Recommended Lube	Method	Frequency
Front Propshaft Yoke	Polaris Premium U-Joint Grease	Grease fittings (3 pumps maximum) every 500 miles (800 km).	Grease before long periods of storage, and after pressure washing or submerging the ATV.
Front & Rear A-Arms			
Rear Bearing Carrier			

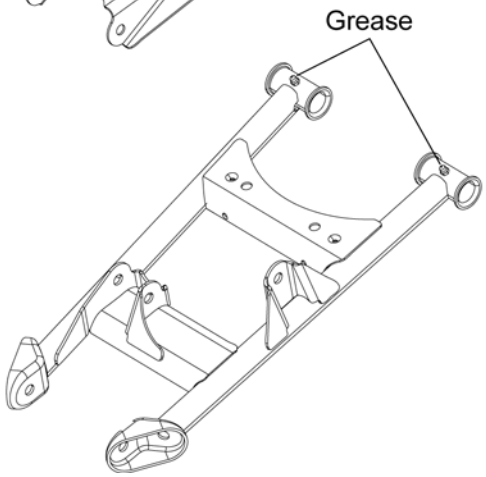








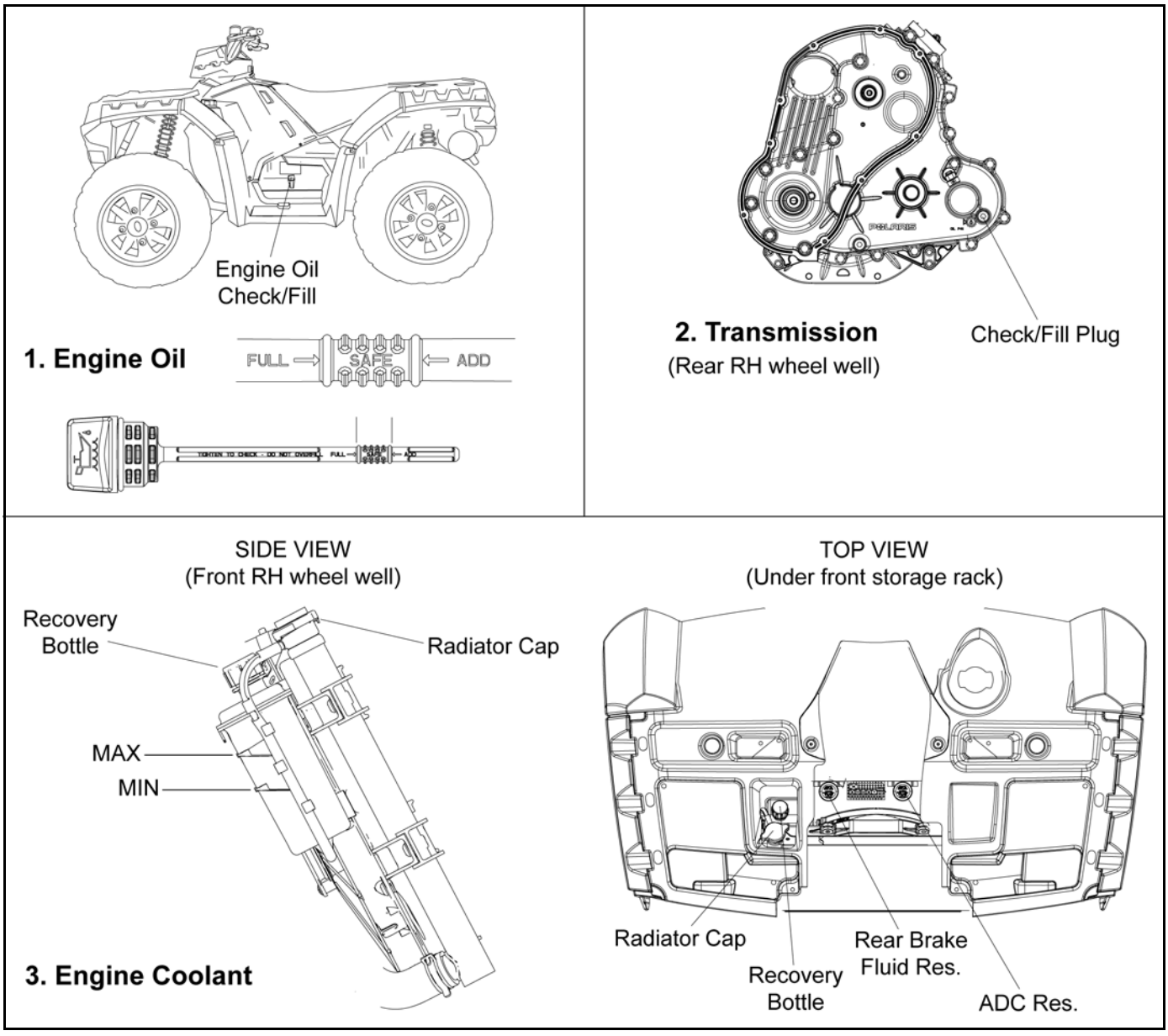




Maintenance Quick Reference

Ill. #	Item	Lube Rec.	Method	Frequency*
1	Engine Oil	Polaris PS-4 PLUS 2W-50 Performance Synthetic	Add oil to proper level on dipstick	Change after 1st month or first 20 hours of operation, 100 hours thereafter; Change more often (25 hours) in severe duty conditions or short trip cold weather operation
2	Transmission	Synthetic Sportsman XP Transmission Fluid	Add fluid until it is visible at the fill hole threads	Check level every 25 hours; change fluid yearly
3	Engine Coolant	Polaris 60/40 Coolant	Maintain coolant level in coolant reservoir bottle.	Check level daily, change coolant every 2 years

* More often under severe use, such as operated in water or under severe loads.

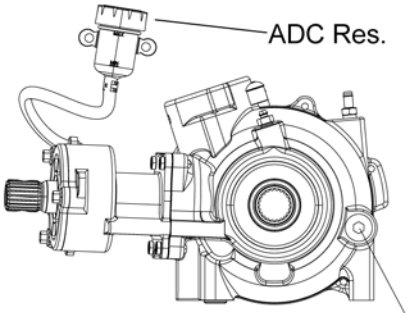


Maintenance Quick Reference, Continued.....

Ill. #	Item	Lube Rec.	Method	Frequency*
4	Front Gearcase ADC Reservoir	Polaris Premium ADC Front Drive Fluid	Maintain fluid level in ADC Reservoir to indicated level	Check level every 25 hours; change fluid every two years
5	Front Gearcase	Polaris Premium LT Demand Drive Fluid	Add fluid until it is visible at the fill hole threads	Check level every 25 hours; change fluid yearly or 1000 mi.
6	Rear Gearcase	Polaris ATV Angle Drive Fluid (ADF)	Add fluid until it is visible at the fill hole threads	Check level every 25 hours; change fluid yearly
7	Brake Fluid	Polaris DOT 4 Brake Fluid	Maintain fluid level in both master cylinder reservoirs to indicated levels	Check level during pre-ride inspection; change fluid every two years

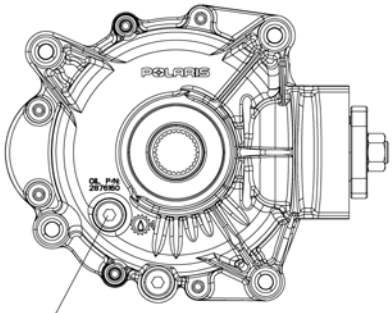
***** More often under severe use, such as operated in water or under severe loads.

4. ADC Reservoir
(see "TOP VIEW" on previous page)



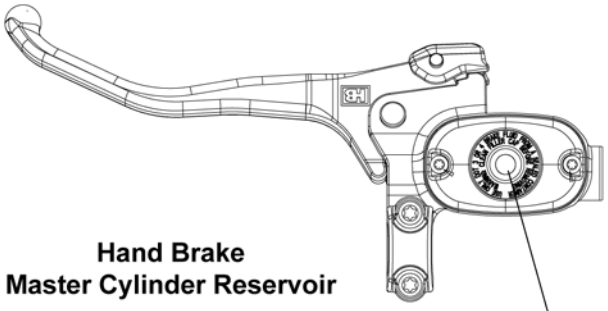
5. Front Gearcase
(Front RH wheel well)

6. Rear Gearcase
(Rear RH wheel well)



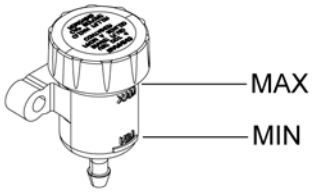
Check/Fill Plug

7. Brake Fluid



Hand Brake
Master Cylinder Reservoir

Fluid Level Indicator



Foot Brake
Master Cylinder Reservoir
(see "TOP VIEW" on previous page)

LUBRICANTS / SERVICE PRODUCTS

Polaris Lubricants,Maintenance and Service Products

Part No.	Description
Engine / Transmission Lubricant	
2870791	Fogging Oil (12 oz. Aerosol)
2876244	PS-4 PLUS 2W-50 Performance Synthetic 4-Cycle Engine Oil (Quart)
2876245	PS-4 PLUS 2W-50 Performance Synthetic 4-Cycle Engine Oil (Gallon)
Gearcase Lubricants	
2877606	Synthetic Sportsman XP Transmission Fluid (Quart)
2876251	Premium LT Demand Drive Fluid (Quart) (12 count)
2872277	Premium Demand Drive Hub Fluid (2.5 Gallon) (2 count)
2876160	ATV Angle Drive Fluid (Quart) (12 count)
2872276	ATV Angle Drive Fluid (2.5 Gallon) (2 Count)
2870465	Pump for Gallon Jug
Coolant	
2871534	60/40 Coolant (Quart) (12 count)
2871323	60/40 Coolant (Gallon) (6 count)
Grease / Specialized Lubricants	
2871312	Grease Gun Kit
2871322	Premium All Season Grease (3 oz. cartridge) (24 Count)
2871423	Premium All Season Grease (14 oz. cartridge) (10 Count)
2871460	Starter Drive Grease (12 Count)
2871515	Premium U-Joint Lube (3 oz.) (24 Count)
2871551	Premium U-Joint Lube (14 oz.) (10 Count)
2871329	Dielectric Grease (Nyogel™)

NOTE: Each item can be purchased separately at your local Polaris dealer.

Additives / Sealants / Thread Locking Agents / Misc.	
2870585	Loctite™ Primer N, Aerosol, 25 g
2871956	Loctite™ Thread Sealant 565 (50 ml.) (6 Count)
2871949	Loctite™ Threadlock 242 (50 ml.) (10 Count)
2871950	Loctite™ Threadlock 242 (6 ml.) (12 Count)
2871951	Loctite™ Threadlock 262 (50 ml.) (10 Count)
2871952	Loctite™ Threadlock 262 (6 ml.) (12 Count)
2871953	Loctite™ Threadlock 271 (6 ml.) (12 Count)
2871954	Loctite™ Threadlock 271 (36 ml.) (6 Count)
2870584	Loctite™ 680-Retaining Compound (10 ml.)
2870587	Loctite™ 518 Gasket Eliminator / Flange Sealant (50 ml.) (10 Count)
2871326	Premium Carbon Clean (12 oz.) (12 Count)
2870652	Fuel Stabilizer (16 oz.) (12 Count)
2872189	DOT 4 Brake Fluid (12 Count)
2871557	Crankcase Sealant, 3-Bond 1215 (5oz.)
2872893	Engine Degreaser (12oz.) (12 Count)

NOTE: The number count indicated by each part number in the table above indicates the number of units that are shipped with each order.

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.

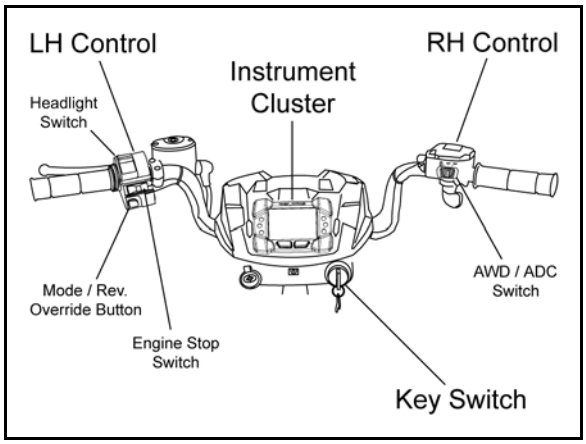
- Tires - check condition and tire pressure
- Fuel and oil - fill both to their proper level; do not overfill
- All brakes - check operation (includes auxiliary brake)
- Throttle - check for free operation
- Headlight / Taillight / Brakelight - check operation of all indicator lights and switches
- Engine stop switch (key switch) - check for proper function
- Wheels - check for loose wheel nuts
- 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 other fasteners
- Engine coolant - check for proper level at the recovery bottle

Frame, Nuts, Bolts, 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.

Controls

Check handlebar controls for proper operation, positioning and adjustment.



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 loss of consciousness or death in a short time.
- Never drain the fuel 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 where applicable.

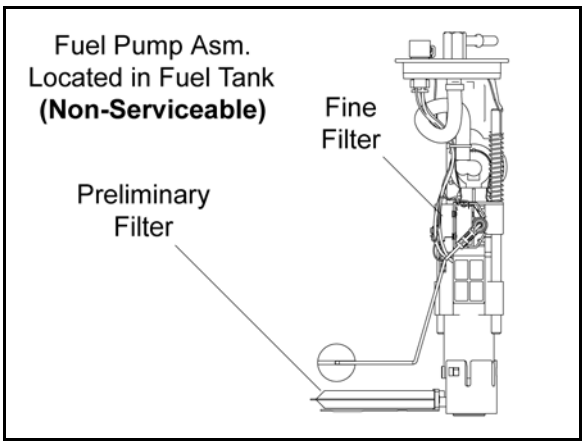
⚠ CAUTION

Make sure lines are not kinked or pinched

3. Replace all fuel lines every two years.

Fuel Filters

There are two fuel filters located within the fuel pump assembly. The fuel pump is non-serviceable. If the internal fuel pump filters require service, the fuel pump and fuel tank must be replaced as an assembly.



NOTE: See the "Electronic Parts Catalog" for more information. For all other information related to the EFI System, refer to Chapter 3.

Vent Line

1. Check the vent line from the fuel tank for signs of wear, deterioration, damage or leakage. Replace the line every two years.

2. Verify vent line is routed properly and secured with an appropriate number of cable ties.

⚠ CAUTION

Make sure lines are not kinked or pinched

Throttle Operation

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. If cable is routed properly and in good condition, no adjustment is required.

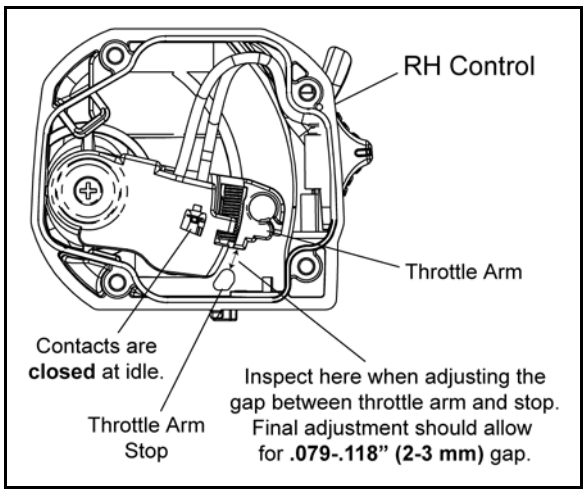
5. Replace the throttle cable if worn, kinked, or damaged.

Electronic Throttle Control Switch (ETC) / Throttle Cable Adjustment

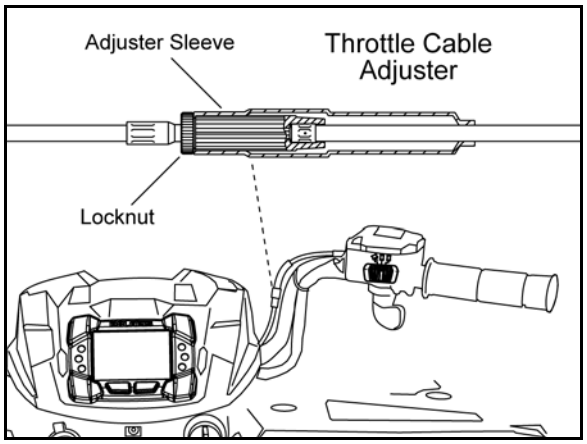
NOTE: Sportsman XP requires a new adjustment procedure.

1. Slide the boot back far enough to expose the inline cable adjuster sleeve and loosen the adjuster locknut.
2. Remove the (4) screws and cover from the RH control.
3. With handlebars centered and wheels pointing forward, slowly turn the adjuster sleeve counter-clockwise (out) just until the gap is removed between the throttle arm and the throttle arm stop (see illustration below).

NOTE: While moving the adjuster sleeve, "flip" the throttle lever slightly to remove slack in the cable.



4. Turn the cable adjuster sleeve clockwise (in) 1.5 - 2 turns; tighten locknut and reinstall boot. After this adjustment there should be .079-.118" (2-3 mm) gap between throttle arm and throttle arm stop.



5. Reinstall the RH control cover and ensure the O-ring is properly in place. Securely tighten the (4) screws.
6. Place the vehicle in PARK and start the engine. Turn the handlebars from full left to full right while listening for any change in engine speed. If engine speed changes, loosen the locknut and turn the adjuster sleeve clockwise (in) an additional 1/2 turn and repeat this step.

Air Filter / Pre-Filter Service

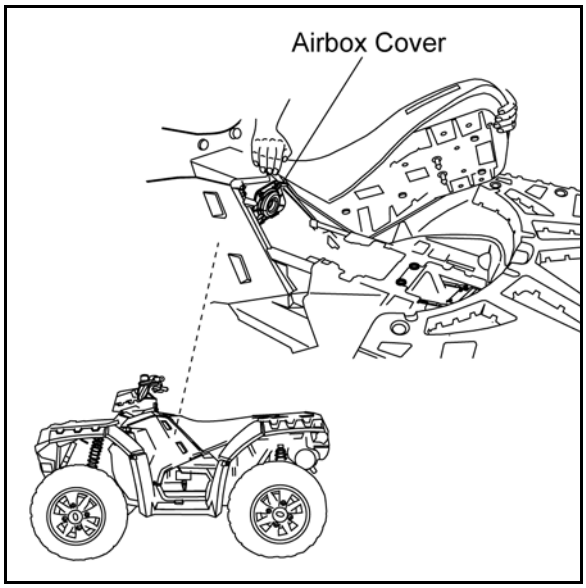
It is advisable to replace the filter when it is dirty. However, in an emergency, it is permissible to clean the main filter if you observe the following practices.

- Never immerse the filter in water since dirt can be transferred to the clean air side of the filter.
- If compressed air is used never exceed a pressure of 40 PSI. Always use a dispersion type nozzle to prevent filter damage and clean from the inside to the outside.

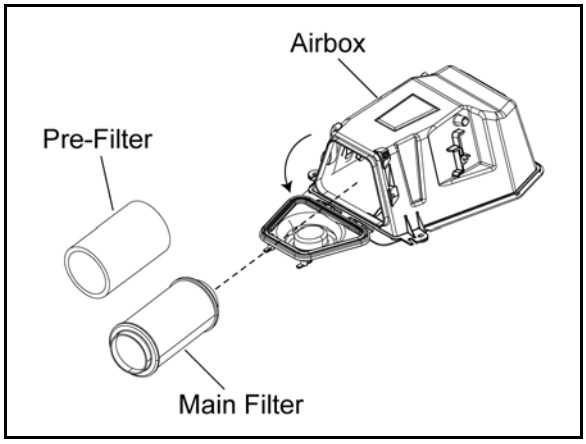
It is recommended that the air filter and pre filter be replaced annually. When riding in extremely dusty conditions, replacement is required more often.

Removal:

1. Remove the seat to access the airbox cover.



2. Unscrew the two knobs retaining the airbox cover and open the cover.



3. Remove the air filter assembly from the airbox.

Cleaning:

4. Slip the pre-filter screen off of main element. Clean the pre-filter with hot soapy water.
5. Rinse and dry thoroughly.
6. Inspect pre-filter screen for tears or damage.
7. Inspect main filter and replace if necessary. If the filter has been soaked with fuel or oil it must be replaced.

Installation:

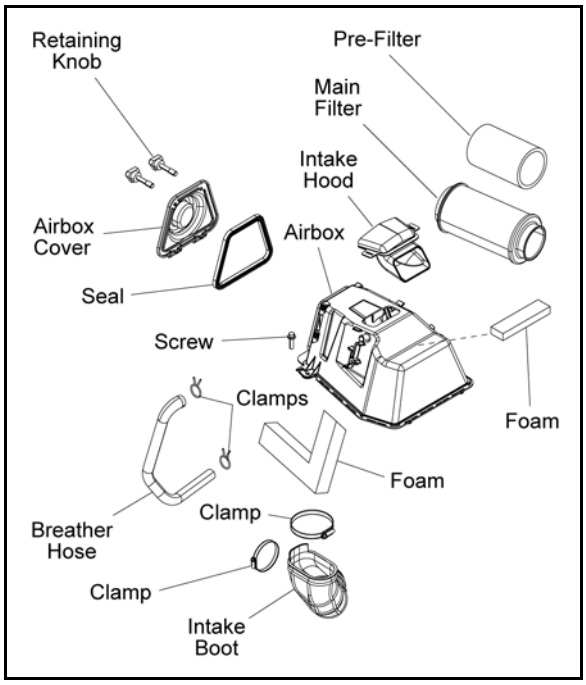
8. Inspect airbox cover seal for damage. It should adhere tightly to the cover and seal all the way around. Replace seal as needed.
9. Reinstall pre-filter screen over main filter. Be sure the screen covers entire surface of main filter without folds, creases, or gaps.

NOTE: Apply a small amount of general purpose grease to the sealing edges of the filter before reinstalling.

10. Install air filter assembly into the airbox and position it correctly before closing the airbox cover.

NOTE: Proper placement of the air filter is important to prevent air leaks.

11. Close airbox cover and secure cover by tightening the retaining knobs.
12. Check the intake boot for cracks, deterioration, abrasion, or leaks. Replace as needed.



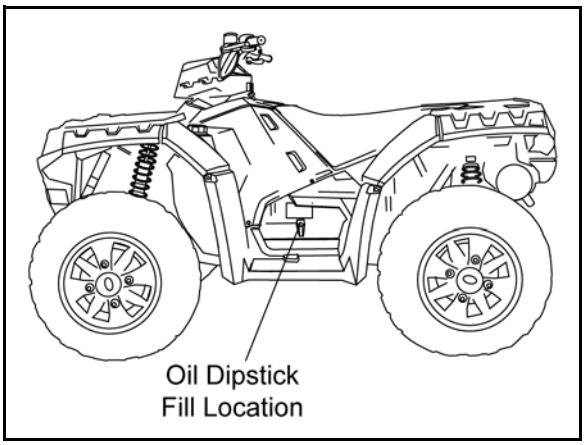
ENGINE

Engine Oil Level

Polaris recommends the use of Polaris PS-4 PLUS synthetic engine oil. Always use PS-4 PLUS engine oil. Oil may need to be changed more frequently if Polaris engine oil is not used.

> **CAUTION**
>
> Mixing brands or using a non-recommended engine oil may cause serious engine damage. Always use the recommended engine oil. Never substitute or mix engine oil brands.

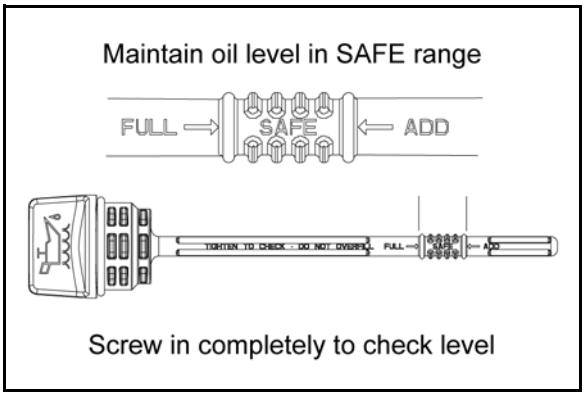
1. Locate the engine oil dipstick on the left side of the ATV.



2. Position the ATV on a level surface.
3. Stop engine and remove the dipstick. Wipe it dry with a clean cloth.
4. Reinstall and tighten the dipstick.

NOTE: The dipstick must be screwed in completely to ensure an accurate measurement.

5. Remove the dipstick and check the oil level.

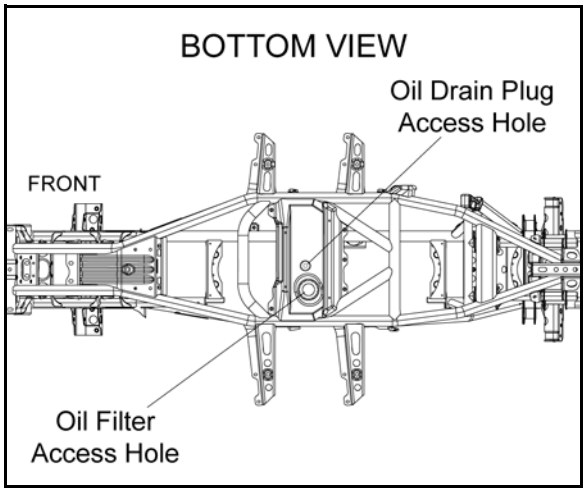


6. Maintain the oil level in the safe range. Do not overfill.

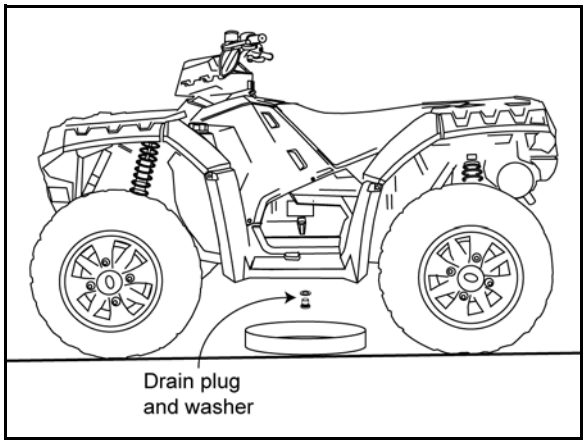
Engine Oil and Filter Change

Always change engine oil and filter at the intervals outlined in the Periodic Maintenance Chart. Always change the oil filter whenever changing the engine oil.

1. Position the ATV on a level surface.
2. Place the transmission in park.
3. Start engine and allow it to run for two to three minutes until the engine is warm.
4. Stop the engine.
5. Clean the area around the drain plug.



6. Place a drain pan beneath the engine crankcase.
7. Using a 6 mm Hex socket, remove the drain plug and allow the engine oil to drain completely.



> **⚠ WARNING**
>
> Hot oil can cause serious burns to skin. Do not allow hot oil to contact skin.

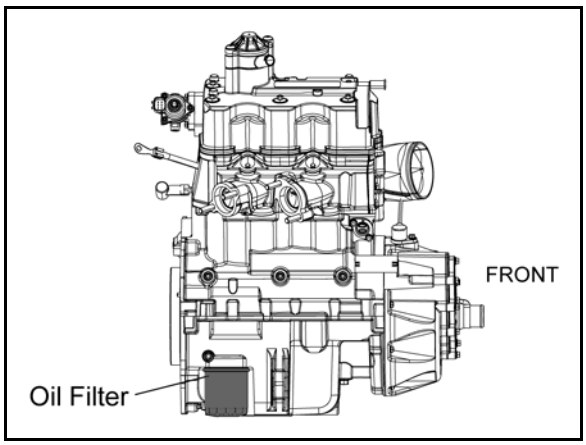
8. Replace the sealing washer on the drain plug.

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

9. Reinstall drain plug and torque to **12 ft. lbs. (16 Nm)**.

= T
Engine Drain Plug: **12 ft. lbs. (16 Nm)**

10. Locate oil filter through access hole in the skid plate. Place shop towels beneath the oil filter. Using oil filter wrench **(PV-43527)** turn oil filter counterclockwise to remove it.



11. Use a clean dry towel to clean the filter sealing surface on the crankcase.
12. Check to make sure the O-ring on the new oil filter is in good condition. Lubricate O-ring on new filter with a film of fresh engine oil.
13. Install new oil filter and turn by hand until filter gasket contacts the sealing surface, then turn it and additional 1/2 turn.

= T
Oil Filter Torque: Turn by hand until filter gasket contacts sealing surface, then turn an additional 1/2 turn.

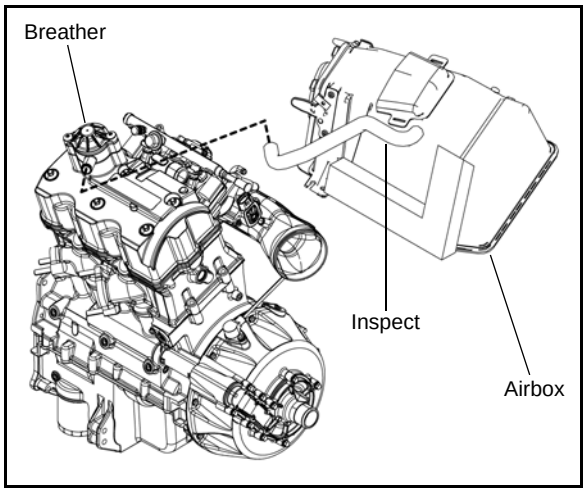
14. Remove dipstick and fill engine with 1.75 qts. (1.66 L) of the recommended engine oil.

=
Recommended Engine Oil: PS-4 PLUS Synthetic 4-Cycle Engine Oil (PN 2876244) (Quart)

15. Start the engine and allow it to idle for one to two minutes.
16. Stop the engine and check for leaks.
17. Re-check the oil level on the dipstick and add oil as necessary to bring the level to the upper mark on the dipstick.
18. Dispose of used oil and filter properly.

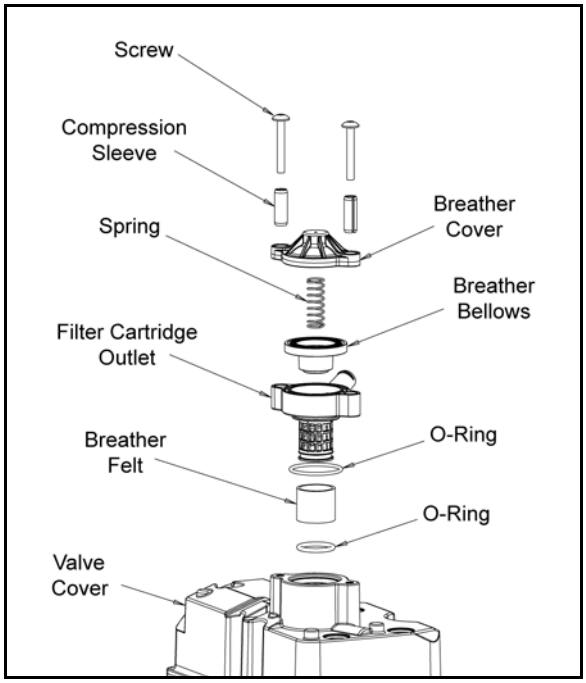
Engine Breather Hose

Be sure engine breather hose is routed properly and secured in place. **CAUTION:** Make sure line is not kinked or pinched.



Engine Breather Assembly

The engine breather assembly is located on top of the valve cover. Inspect and service the breather components as required.

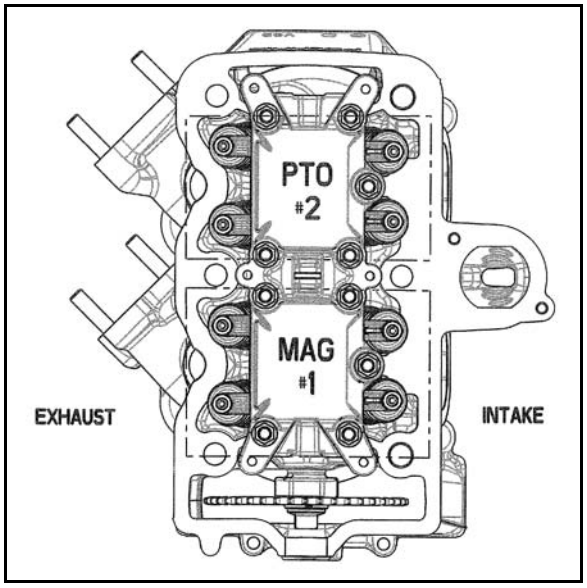


Valve Clearance Adjustment

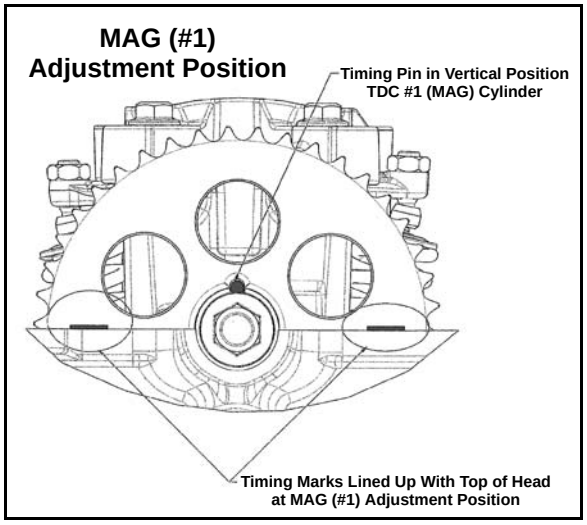
1. Remove the seat and both upper side panels.
2. Disconnect the shift linkage from the shift lever.
3. Remove the (2) screws retaining the lower portion of the air box.
4. Remove the hose from the breaker valve located on top of the valve cover.
5. Remove the push rivets retaining the right-hand portion of the rear cab to gain access to the bolts retaining the upper right-hand frame support.
6. Remove the (4) bolts retaining the frame support. Pull the support forward and down to remove it from the vehicle.
7. Remove the (2) Torx-head screws retaining the upper portion of the air box to the front cab.
8. Carefully disconnect the ECU by pulling the tab out while pulling down on the connector.
9. Loosen the hose clamp retaining the intake boot to the intake plenum and remove the boot.
10. Lift up on the air box and turn it sideways to gain access to the valve cover bolts.
11. Remove the spark plug wires and spark plugs.
12. Remove the (6) valve cover bolts and valve cover.

13. Remove PVT cover so the engine can be rotated (see "Drive Belt Removal" procedure within this chapter).

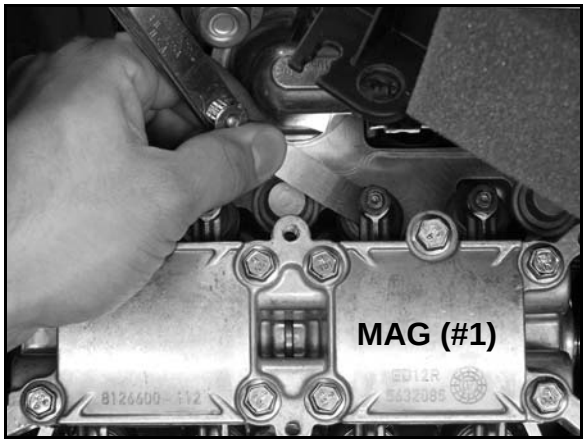
MAG & PTO ADJUSTMENT PROCEDURE



14. Turn the drive clutch counter-clockwise until the cam sprocket is in the **MAG (#1) Adjustment Position**.



15. Set the MAG cylinder valve lash by placing the feeler gauge blade between the lash adjuster and valve as shown.



16. Loosen the jam nut and turn the lash adjuster until the valve lash is correct.

17. Set the intake and exhaust valve lash to specification.

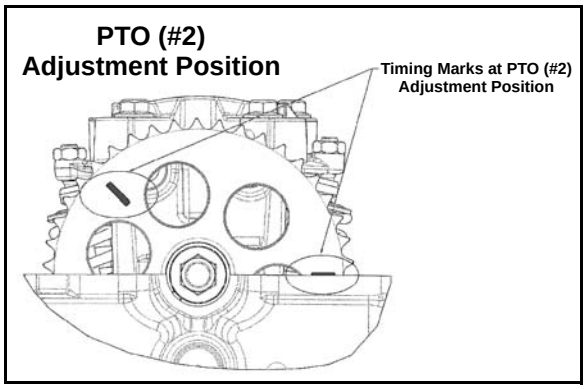
= In. / mm.
Intake Valve Clearance: **.006 in. (.15 mm)**

= In. / mm.
Exhaust Valve Clearance: **.009 in. (.23 mm)**

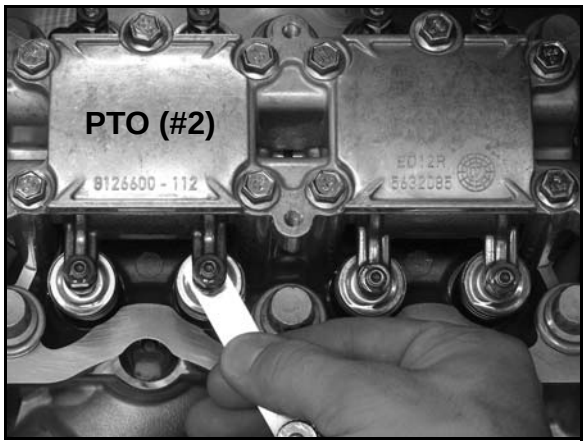
18. Hold adjuster and torque the jam nut using a torque wrench w/10 mm crow's foot adaptor. Verify clearance is still correct after tightening the jam nut.

= T
Rocker Jam Nut: **71-89 in. lbs. (8-10 Nm)**

19. Turn the drive clutch counter-clockwise to rotate the cam sprocket **225°** to the **PTO (#2) Adjustment Position**.



20. Set the PTO cylinder valve lash by placing the feeler gauge blade between the lash adjuster and valve as shown.



21. Repeat steps 16-18.

22. Clean sealing surfaces of the cylinder head and valve cover.

23. Inspect the condition of the valve cover bolt rubber isolators. If rubber has become hardened or cracked, replace them.

24. Install a new valve cover seal and install the valve cover. Torque the cover bolts to specification.

= T
Valve Cover Bolts: **89 in. lbs. (10 Nm)**

25. Install the upper right-hand frame support and torque the (4) mounting bolts to specification.

= T
Upper Right-Hand Frame Support Bolts: **36 ft. lbs. (49 Nm)**

26. Reassemble vehicle by reversing this procedure. Start the engine to ensure proper valve adjustment was performed.

Compression and Leakdown Tests

NOTE: This engine does NOT have decompression components. Compression readings will vary in proportion to cranking speed during the test.

Smooth idle generally indicates good compression. Low engine compression is rarely a factor in running condition problems above idle speed. Abnormally high compression can be caused by worn or damaged exhaust cam lobes.

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

Measured Cylinder Compression
210-250 psi (full throttle)

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

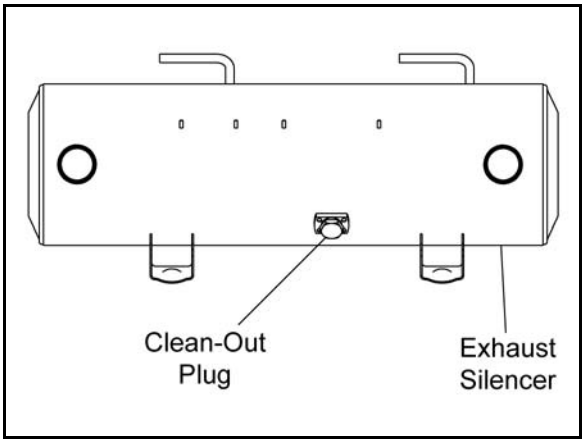
Exhaust Silencer Cleaning

⚠ 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 exhaust silencer.
Wear eye protection.
Do not stand behind or in front of the vehicle while purging the carbon from the silencer.
Never run the engine in an enclosed area.
Exhaust contains poisonous carbon monoxide.
Do not go under the machine while it is inclined.
Set the hand brake and block the wheels to prevent roll back.
Failure to heed these warnings could result in serious personal injury or death.

The exhaust silencer must be periodically purged of accumulated carbon as follows:

1. Remove the clean out plug on the bottom of the silencer.

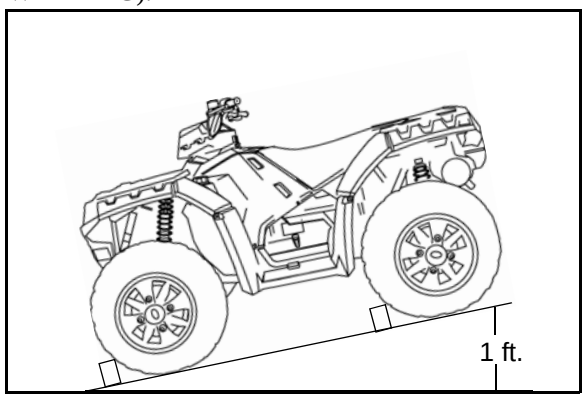


2. Place the transmission in park, and start the engine.
3. Purge accumulated carbon from the exhaust system by momentarily revving the engine several times.
4. If some carbon is expelled, cover the exhaust outlets and lightly tap on the silencer around the clean out plug with a rubber mallet while revving the engine several more times.

⚠ CAUTION

Wear protective gloves when covering the exhaust outlets. Serious burns could result from contact with exhaust components.

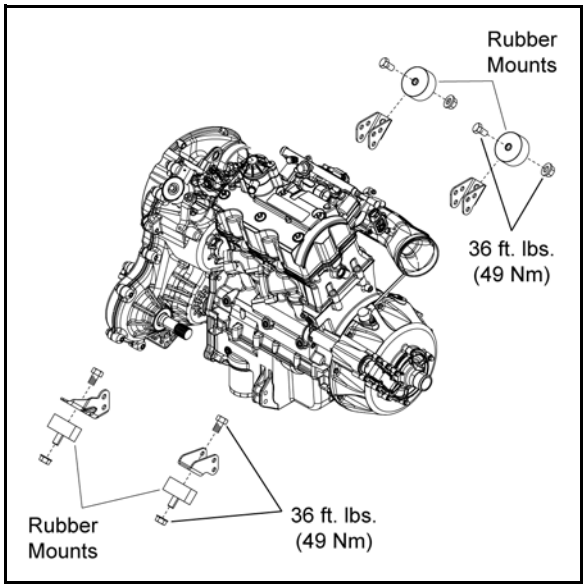
5. If particles are still suspected to be in the silencer, back the machine onto an incline so the rear of the machine is 1 ft. (30.5 cm) higher than the front. Place the transmission in park and block the wheels. Repeat steps 3 and 4 (see WARNING).



6. If particles are still suspected to be in the silencer, drive the machine onto the incline so the front of the machine is 1 ft. (30.5 cm) higher than the rear. Place the transmission in park and block the wheels. Repeat Steps 3 and 4 (see WARNING).
7. Stop the engine and allow the silencer to cool. Reinstall the clean out plug.

Engine Mount Fastener Torque

Check engine mounting fasteners and ensure they are tight. Also inspect the condition of the rubber mounts. If rubber mounts are cracked or show signs of fatigue, replace them.



TRANSMISSION AND GEARCASES

Transmission Lubrication

NOTE: It is important to follow the transmission maintenance intervals described in the Periodic Maintenance Chart. Regular fluid level inspections should be performed as well.

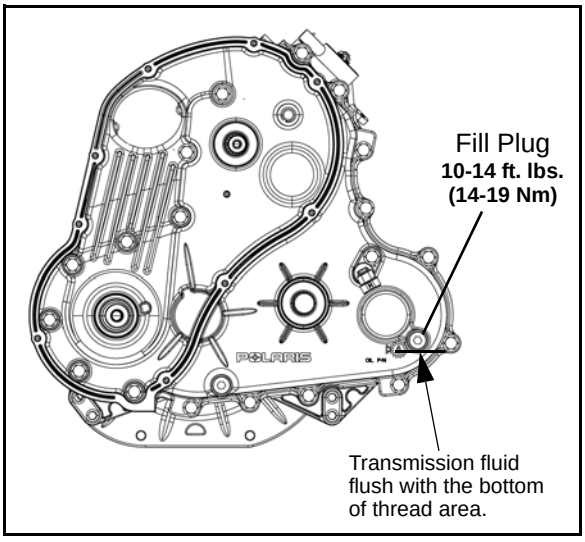
The transmission fluid level should be checked and changed in accordance with the maintenance schedule.

- Be sure vehicle is positioned on a level surface when checking or changing the fluid.
- Check vent hose to be sure it is routed properly and unobstructed.

Transmission Fluid Level Check

The fill plug is located on the right-hand side of the transmission. Access the fill plug through the rear right-hand wheel well. Maintain the fluid level even with the bottom threads of the fill plug hole.

1. Position vehicle on a level surface.
2. Remove the fill plug and check the fluid level.



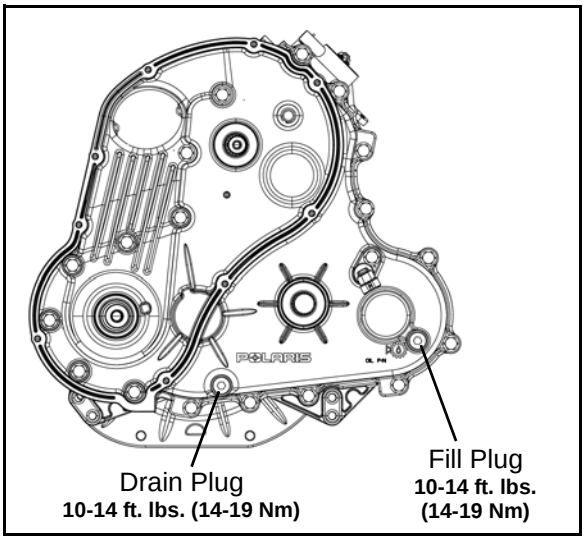
3. If fluid level is not even with the bottom threads, add the recommended fluid as needed. Do not overfill.
4. Reinstall the fill plug and torque to specification.

= T
Drain/Fill Plug Torque: **10-14 ft. lbs. (14-19 Nm)**

Transmission Fluid Change

Access the drain plug through the rear right-hand wheel well. The plastic skid plate can be removed for better access to the drain plug.

1. Remove the fill plug (refer to "Transmission Fluid Level Check").
2. Place a drain pan under the transmission drain plug.
3. Remove the drain plug and allow fluid to drain completely.



4. Clean the drain plug magnetic surface.
5. Reinstall drain plug with a new O-ring and torque to specification.
6. Add the recommended amount of fluid through the fill plug hole. Maintain the fluid level at the bottom of the fill plug hole when filling the transmission. Do not overfill.

=
Recommended Transmission Lubricant: Synthetic Sportsman XP Transmission Fluid (PN 2877606) (Quart) **Capacity:** 32 oz. (946 ml)

7. Reinstall fill plug with a new O-ring and torque to specification.

= T
Drain/Fill Plug Torque: **10-14 ft. lbs. (14-19 Nm)**

8. Check for leaks. Dispose of used fluid properly.

Front Gearcase Lubrication

NOTE: It is important to follow the front gearcase maintenance intervals described in the Periodic Maintenance Chart. Regular fluid level inspections should be performed as well.

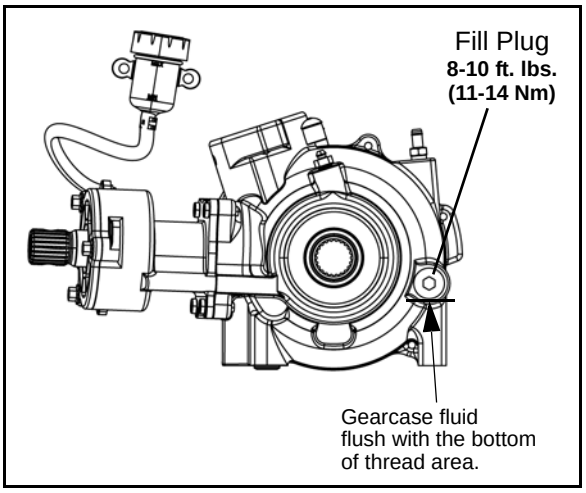
The front gearcase fluid level should be checked and changed in accordance with the maintenance schedule.

- Be sure vehicle is positioned on a level surface when checking or changing the fluid.
- Check vent hose to be sure it is routed properly and unobstructed.

Front Gearcase Fluid Level Check

The fill plug is located on the right side of the front gearcase. Access the fill plug through the front right-hand wheel well or through the front lower bumper. Maintain the fluid level even with the bottom threads of the fill plug hole.

1. Position vehicle on a level surface.
2. Remove the fill plug and check the fluid level.



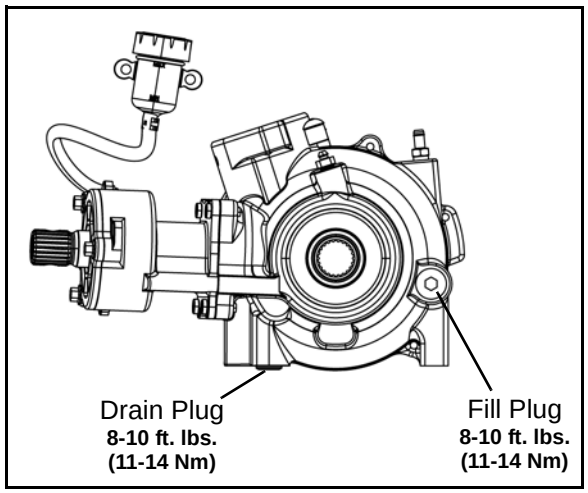
3. If fluid level is not even with the bottom threads, add the recommended fluid as needed. Do not overfill.
4. Reinstall the fill plug and torque to specification.

= T
Drain / Fill Plug Torque: **8-10 ft. lbs. (11-14 Nm)**

Front Gearcase Fluid Change:

The drain plug is located on the bottom side of the front gearcase. Access the drain plug through the access hole in the front skid plate.

1. Remove the fill plug (refer to "Front Gearcase Fluid Level Check").
2. Place a drain pan under the front gearcase drain plug.
3. Remove the drain plug and allow fluid to drain completely.



4. Clean the drain plug magnetic surface.
5. Reinstall drain plug with a new O-ring and torque to specification.
6. Add the recommended amount of fluid through the fill hole. Maintain the fluid level even with the bottom threads of the fill plug hole.

=
Recommended Front Gearcase Fluid: Premium LT Demand Drive Fluid (PN 2876251) (Quart) **Capacity:** 9.3 oz. (275 ml)

7. Reinstall fill plug with a new O-ring and torque to specification.

= T
Drain / Fill Plug Torque: **8-10 ft. lbs. (11-14 Nm)**

8. Check for leaks. Dispose of used fluid properly.

Front Gearcase ADC Fluid

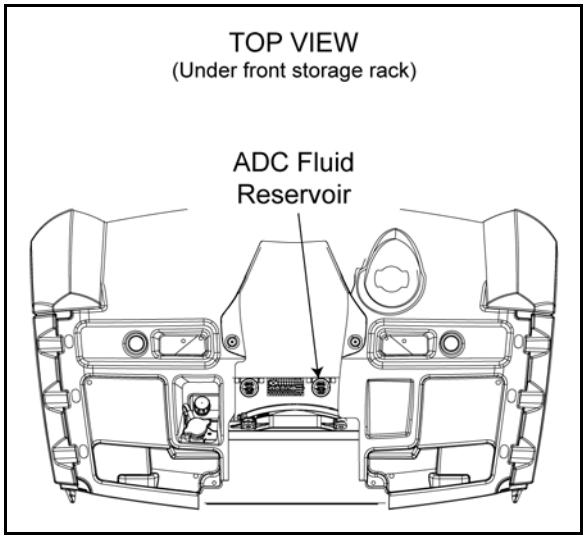
NOTE: It is important to follow the front gearcase maintenance intervals described in the Periodic Maintenance Chart. Regular fluid level inspections should be performed as well.

The front gearcase ADC fluid level should be checked and changed in accordance with the maintenance schedule.

Front Gearcase ADC Fluid Level Check

The ADC fluid reservoir is located underneath the front rack as shown below. Maintain the fluid level between the "MIN" and "MAX" levels indicated on the reservoir.

1. Disengage the anchors and remove front rack assembly.
2. Check the fluid level of the ADC reservoir.



3. If fluid level is below the minimum mark on the reservoir, remove the cap and add the recommended fluid.
4. Reinstall the cap and front rack assembly.

Front Gearcase ADC Fluid Change:

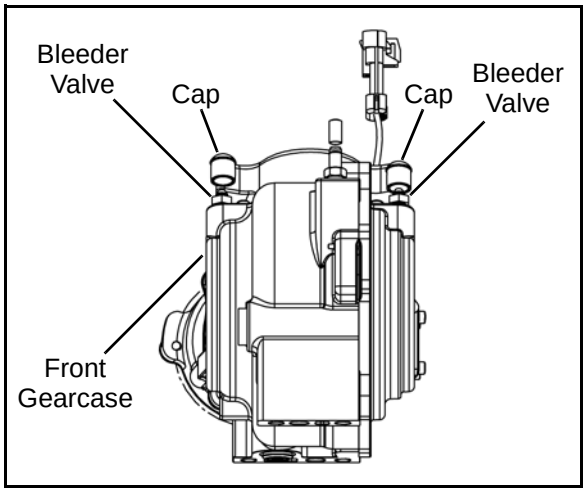
1. Position the vehicle on a level surface and allow the vehicle to sit for at least 30 minutes.
2. Thoroughly clean the areas around the ADC reservoir and bleeder valves.
3. Remove the reservoir cap and diaphragm assembly.
4. Make sure the fluid inside the reservoir is free of debris. If any debris is found, use a clean shop towel or suction device to remove it from the reservoir.

NOTE: Debris in the reservoir may result in inadequate bleeding and reduced performance of the system.

5. Begin the bleeding process by filling reservoir to the "MAX" level with clean ADC Front Drive Fluid.

=
Recommended ADC Fluid: Premium ADC Front Drive Fluid (PN 2876144) (Quart)

6. Locate bleeder valves found on each side of the front gearcase and remove the protective caps.



7. Attach a clean clear hose to one of the bleeder valves.
8. Slowly loosen the valve (counter-clockwise) and allow fluid and trapped air to flow from the fitting.

IMPORTANT: Do not allow ADC fluid in reservoir to drop below the "MIN" fill line. Close bleeder valve before the fluid level drops below the "MIN" fill line. Refilling an empty reservoir will result in air pockets becoming trapped.

9. Close the valve when clean (bubble-free) fluid begins to flow from the valve.
10. Repeat steps 7-9 on the remaining bleeder valve.
11. Torque the bleeder valves to specification and reinstall the protective caps.

= T
Bleeder Valve Torque: **80 in. lbs. (9 Nm)**

12. Fill reservoir to a level midway between "MAX" and "MIN" fill lines. Verify no debris is found in reservoir fluid.
13. Install the reservoir cap and diaphragm securely and wipe clean any fluid residue.