

POLARIS[®]
WATERCRAFT



2003 OCTANE SERVICE MANUAL UPDATE

Part Number 9918113

2003 Polaris OCTANE Service Manual Update Packet

Part Number: 9918113

This packet was developed to update the 2002 Polaris OCTANE Service Manual, PN 9918096, with the 2003 OCTANE specifications and planned changes.

Due to the OCTANE's limited build and race designation, this update packet will only provide the basic model-specific specifications for the 2003 OCTANE. All information regarding vehicle inspection, component tear-down and replacement, and troubleshooting procedures can be found in the 2002 OCTANE Service Manual, PN 9918096.

The 2003 OCTANE update packet does provide a wiring diagram for the 2003 OCTANE.

2003 PWC Publication Part Numbers

Model	Model Number	Owner's Manual	Parts Book	Microfiche
OCTANE	W035402DA	9918124	9918110	9118111

- D = 49 State Domestic (No CARB Exemption).
- C = 50 State Domestic (CARB Exemption).
- A or B = Color Option.
- I = International

2003 Polaris PWC Emission Certification

The Polaris OCTANE is exempt from EPA and CARB emission certification. The engine, hull, and components were designed and built by Polaris solely for use in competition by qualified International Jet Sports Boating Association (IJSBA) competition members.

The carburetors are designed not to allow the engine to maintain idle speed. ANY modification to the stock carburetors, or throttle control system designed to override these designs constitute a violation of the EPA Clean Air Act.

Additionally, under the agreement, the OCTANE Personal Watercraft is sold without a warranty.

The Polaris OCTANE is a limited-build, race-only watercraft. Polaris reserves the right to change specifications at any time without incurring obligations.

Emission Control Information Decals

The emission control information decal is located on the flywheel cover.

OCTANE Emission Decal

POLARIS INDUSTRIES, INC. P.N. 7171194
EMISSION CONTROL INFORMATION

THIS 777cc POLARIS OCTANE ENGINE IS EXCLUDED FROM COVERAGE UNDER THE U.S. EPA REGULATIONS FOR MARINE SI ENGINES, PURSUANT TO SECTION 216 (10) OF THE CLEAN AIR ACT. THIS ENGINE IS AUTHORIZED SOLELY FOR USE IN COMPETITION WITH NUMEROUS COMPETITION FEATURES, INCLUDING NO IDLE STOP AND NO IDLE ADJUSTMENT MECHANISM.

2003 OCTANE**W035402DA**

Length: 90 in. (228.6 cm)
Width: 29.5 in. (74.93 cm)
Height: 29 in. (73.66 cm)
Dry Weight: . 330 lbs. (149.7 kg)
Category: RACE
Riders: 1 (225 lbs. / 102kg)
Fuel Capacity: 4.5 US Gallons (MAX) 17L (MAX)
Oil Capacity: N/A (PRE-MIX)

2003 OCTANE UPDATE

2003 OCTANE	
Model Number	W035402DA
Engine	
Platform	Polaris Liberty™ Marine 777
Engine Model Number	W77-DCSP-02A
Engine Displacement	777cc
Number of Cylinders	2
Cylinder Lining Material	Iron
Bore & Stroke (mm)	84 x 70
Compression Ratio (Effective)	(6.7:1)
Cooling System	Water Cooled
Thermostat Opening Temperature	N/A
Overheat Warning	Overboard Water Outlets
Induction Type	Case Reed
Lubrication	Pre-Mix
Oil Requirements	Polaris TC-W3 Racing Oil
RPM Limiter	7200 RPM
Exhaust System	Factory Pipe - Water Cooled / Injected
Sound Reduction	N/A
Carburetion	
Fuel Delivery	2 - 40mm Keihin w/Accelerator Pump
Fuel Requirement	87 Non-Oxygenated / 89 Oxygenated
Idle Speed (In Water)	N/A
Electrical	
Ignition System	Digital CDI / Flywheel Magneto
Magneto Generator Output	5A / 60 Watts @ 4500 RPM
Spark Plug	NGK BR9ES
Spark Plug Gap	.024 - .028 (.6 - .7mm)
Timing Degrees BTDC	20° @3000 RPM
Battery	12 Volts / 19 Amps
Circuit Breaker	15A Battery
Starting	Electric Motor - One Button Start / One Button Stop
Propulsion	
Jet Pump Type	Aggressor Pump, Single Stage Axial Flow / 12 Vane Stainless Steel Stator
Impeller Rotation	Counter Clockwise (From Aft)
Coupling Type	Spider Coupler
Minimum Depth For Operation	2 ft. (60cm.)
Impeller Type	Progressive Pitch, Radial Camber / Stainless Steel
Impeller Diameter	5.511 in. (140mm)
Reverse System	N/A
Hull / Body	
Hull Design	Double Concave Wamper - V
Hull Material	FRC (Fiberglass Reinforced Composite)
Top Deck Material	FRC (Fiberglass Reinforced Composite)

Personal Watercraft Service Tools

Tool	Part Number (Must Order From Polaris Tool Vendor)
Piston Pin Puller	2870386
Piston Pin Puller Adapter (Works with 2870386)	2871445
Piston Support Block	2870390
C-Clip Installation Tool	2870773
Piston Pin Puller (800 / 1200cc Engines)	PU-45255
Piston Pin Puller Adapter (800 / 1200cc Engines)	PU-45248
Timing Adjustment Tool	2872290
EMM Laptop Communication Cable	2872454
Deutsch-to-Packard Comm. Adapter	PW-45776
Polaris FICHT Diagnostic Software <i>All years and all DI™ models.</i>	2874492
EMM Service Power Connector	2872456
TPS Jumper Tool	2872603
Bump Stop Tool	2872604
Fuel Injector Jumper	2872623
Impeller Removal Tool (Rubber Coupler Remover)	2871036
Steel Coupler Removal Tool	2871037
Pump Alignment Tool	2871343
Through-Hull Fitting Tool	2871425
Static Timing Tool	2871745
Heavy Duty Flywheel Puller	2871043
Fuel Pump Ring Spanner Wrench	2872621

OCTANE Fuel and Oil Premix Guidelines

CAUTION: The OCTANE *is not* equipped with oil injection. Oil *must* be added to the fuel. Serious engine damage will occur if oil is not pre-mixed with the fuel using the correct ratio.

The engine break-in period is considered to be the first full tank of fuel. During this period, the pre-mix ratio should be 32:1 fuel-to-oil.

After the break in period, the pre-mix ratio should be 40:1 fuel-to-oil.

PRE-MIX FORMULA = 128oz. (1 US Gallon) ÷ 40 (Ratio) = 3.2oz. of oil for every 1 US GALLON.

Two-Cycle Engine Pre-Mix Table		
Gallons of Fuel	Oil @ 32:1	Oil @ 40:1
5	20oz.	16oz.
10	40oz.	32oz.

PWC Service Guidelines - Safety Warnings

- Clean inside and outside of watercraft prior to servicing. Clean all parts before installing. Always use a service apron to prevent damage to footwell and top-deck fiberglass.
 - Watch for sharp edges which can cause personal injury. Protect hands and arms when working with sharp components.
 - Always use a soft-faced hammer and extreme care when removing difficult or stuck components.
 - Some fasteners are installed with locking agents or lubricants. Use of impact drivers will aid in fastener removal.
 - Always follow torque specifications located throughout manual. Fasteners secured with either too little or too much torque may fail and cause severe property damage, injury or death.
 - Always follow torque sequence patterns when found in this manual. Tighten each fastener evenly and to the specified torque value, and with specified locking agent.
 - Always use new gaskets, o-rings and seals, clips, cir-clips, and snap rings when assembling components.
 - Never re-use Nylok™ or Flex Lock™ nuts when assembling components.
 - Never re-use Oetiker™ clamps when removed from fuel lines. Replace with small gear clamps.
 - Always use Polaris-authorized lubricants, greases, and locking agents when assembling components. Failure to do so may cause severe engine or vehicle damage.
 - Always disconnect the black (-) negative cable first from the battery when removing the battery. When installing the battery, attach the red (+) positive cable first, then the black (-) negative cable.
 - Wear appropriate clothing, eye protection, and rubber gloves when working with batteries. Battery acid contains sulfuric acid and is extremely poisonous. Serious burns can result when in contact with skin, clothing, eyes or internal body components.
 - If battery acid is ingested, drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Call a physician immediately.
 - Flush eyes for 15 minutes with water and seek prompt medical attention if acid comes in contact with eyes. Thoroughly wash affected external body parts that come in contact with battery acid with water.
 - Keep hands, arms, legs, feet and hair away from rotating parts, hot engine and exhaust components, drive pump and impeller and engine induction when engine is running.
 - Never attempt engine or driveline inspections and/or repairs without first removing lanyard and battery cables.
 - Gasoline is highly flammable and explosive under certain conditions. Always exercise extreme care when handling gasoline. Do not smoke or allow open flames in or near the area where refueling is performed or where gasoline is stored.
 - Always refuel the watercraft outdoors and in a well-ventilated area. Do not fill the tank to the fuel cap.
 - If you get gasoline or oil on your skin or clothing, wash it off immediately with soap and water and change clothing.
 - The engine exhaust from this product contains chemicals known to cause cancer, birth defects or other reproductive harm. Only run engine outdoors or in a well-ventilated area.
 - Never run the engine for more than 15 seconds without cooling water supply.
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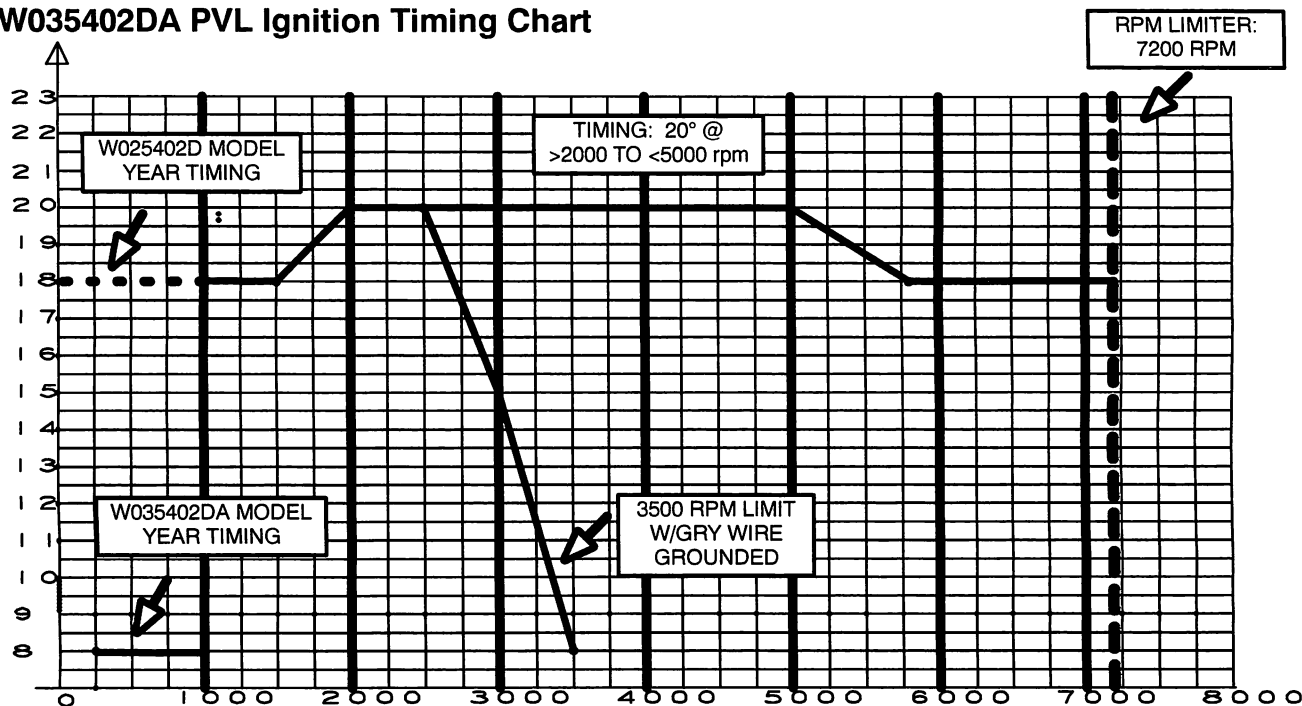
W035402DA OCTANE 2003 Planned Changes

The most significant changes between the 2002 and 2003 Polaris OCTANE are:

- Handlepole is three (3) inches shorter than the 2002 model.
- The 2003 model engine (W77-DCSP-02A) is manufactured with a different flywheel and CDI controller.

Model Year	CDI Controller PN	Flywheel PN	Specification Notes
W035402DA	4010558	4010189	GEN III PVL Ignition System. (No Static Advance.)
W025402D	4010568	4010569	10° Static Advance at 0 RPM. Hi-Start Time Flywheel (Correction from 2002 OCTANE Service Manual.)

W035402DA PVL Ignition Timing Chart



NOTE: Part numbers are always subject to change. Always reference the most current parts manual for component part numbers.

Additionally, parts cannot be interchanged between model years unless interchanged as a set. A 2002 model year CDI will not work with a 2003 model year flywheel and vice-versa.

