

# SEA-DOO

2001



LRV

219 000 129

Operator's  
Guide

## **SAFETY WARNING**

Disregarding any of the safety precautions and instructions contained in this *Operator's Guide*, the *Safety Handbook*, the *Safety Videocassette* and on the on-product Warning Labels could cause injury, including the possibility of death. The operator has the responsibility to inform passenger(s) of safety precautions.

This *Operator's Guide*, the *Safety Handbook* and Videocassette should remain with the craft at the time of resale.

**BOMBARDIER**  
*RECREATIONAL PRODUCTS*



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SEA-DOO®

BOMBARDIER-ROTAX®

BOMBARDIER LUBE®

BOMBARDIER Formula XP-S Synthetic Injection Oil

Sea-Doo Synthetic Grease

Gelcote<sup>†</sup> is a trademark of Gelcote International

Knight's Spray-Nine<sup>†</sup> is a trademark of Korkay System Ltd

## **Doin'it on your new Sea-Doo Watercraft**

Congratulations, you are now the proud owner of a Sea-Doo personal watercraft. Whether you are an experienced boater or are new to the sport of boating, we ask you to take the time to view the *Videocassette* provided with the watercraft, to read this *Operator's Guide*, the *Safety Handbook* and on-product warning/caution labels and familiarize yourself with the contents. These guides contain pertinent information which, if followed, will provide you with the necessary knowledge to help you fully enjoy the pleasures of this craft.

We strongly recommend that any watercraft operator complete a safety boating course. Check with your local Coast Guard or Power and Sail Squadron in your area for course availability. More serious boaters may want to obtain *Chapman Piloting* by Elbert S. Maloney, available at most book stores.

When introducing your family or friends to the sport, be sure they fully understand the controls and operation of the watercraft and the importance of courteous, responsible riding.

Each operator has a responsibility to ensure the safety of his/her passenger and of other water users. Please follow all safety instructions and operate your craft with care.

We encourage you to have an Annual Safety Inspection of your watercraft. Please contact your dealer for further details.

Finally, we urge you to visit your dealer regularly for regular and safety maintenance as well as any craft accessories you may require.

Have fun and... Bon Voyage.

**PLEASE KEEP THIS *GUIDE AND SAFETY HANDBOOK* ON BOARD. THESE MANUALS SHOULD REMAIN WITH THE CRAFT AT TIME OF RESALE.**

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# FOREWORD

The *Operator's Guide* and *Safety Handbook* have been prepared to acquaint the owner/operator or passenger with this personal craft and its various controls, maintenance and safe riding instructions. Each is indispensable for the proper use of the product, and should be kept in a waterproof bag with the craft at all times.

Make sure you read and understand the content of each document.

For any questions pertaining to the warranty and its application, consult the WARRANTY section in this guide, and/or an authorized SEA-DOO dealer.

This guide uses the following symbols to emphasize particular information.

## **WARNING**

Identifies an instruction which, if not followed, may cause serious personal injuries including the possibility of death.

**CAUTION:** Denotes an instruction which, if not followed, might damage the craft and/or components.

**NOTE:** Indicates supplementary information needed to fully complete an instruction.

Although the mere reading of such information does not eliminate the hazard, the understanding and application of the information will promote its correct use.

The information and components/system descriptions contained in this guide are correct at the time of publication. Bombardier Inc. however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured.

Because of our ongoing commitment to product quality and innovation, Bombardier Inc. reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation.

The illustrations in this document show the typical construction of the different assemblies and may not represent the full detail or exact shape of the parts. However, they represent parts that have the same or similar function.

It is understood that this guide may be translated into another language. In the event of any discrepancy, the English version shall prevail.

Specifications are given in the SI metric system with the SAE U.S. equivalent in parenthesis. Where precise accuracy is not required, some conversions are rounded off for easier use.

A *Shop Manual* can be obtained for complete service, maintenance and more repair information.

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## ⚠ SAFETY MEASURES

### General

⚠ To fully appreciate the pleasures, enjoyment and excitement of boating there are some basic rules that should be observed and followed by any boater. Some rules may be new to you or covered in the PWC/Sport boat *Safety Handbook* or *Safety Video*, others may be common sense or obvious... irrespective, we ask that you please take a few minutes of your time to read these safety instructions completely before you operate your craft. **Failure to follow this safety information and safe boating rules could result in injury, including the possibility of death to you, your passenger(s), or other water users.**

⚠ Bombardier recommends not to operate under 16.

⚠ Become completely familiar with the controls and operation of the craft before embarking on your first trip or taking on a passenger(s). If you have not had the opportunity to do so with your dealer, practice driving solo in a suitable area and feel the response of each control. Be fully familiar with all controls before advancing the throttle above idle speed. As its operator, you control and are responsible for the craft's safe operation.

### Operation

⚠ Always perform the pre-operation checks as specified in this guide.

⚠ Always keep in mind that as the throttle lever is released to idle position, less directional control is available. **To turn the craft, both steering and throttle are necessary.**

⚠ The forces generated on the body of riders while turning, negotiating waves or wakes, operating in choppy waters, or falling off the watercraft, especially at higher speeds, may cause injury including the possibility of broken legs and other bones. Remain flexible and avoid sharp turns. Never place your feet and legs in the water to aid turning.

⚠ This craft has no brake. Stopping distance will vary depending on initial speed, load, wind, and water conditions. Practice stopping and docking in a safe, traffic free area to have an idea of how long it will take to stop the craft under varying conditions. **Do not release throttle when trying to steer away from objects. You need throttle to steer. Do not use the craft's reverse, if so equipped, to stop.**

⚠ Ensure that all passengers know how to swim and how to reboard the craft from the water.

⚠ The operator and passenger(s) should be properly seated and wearing an approved PFD before starting or moving the craft.

⚠ **Do not start or operate the craft if a person(s) is seated on the sun deck or swim platform, or are nearby in the water.**

⚠ The craft's jet thrust can cause injury. Always accelerate slowly.

⚠ To prevent accidental starting, always detach the safety lanyard from the craft when swimmers are boarding or nearby, or during removal of any weeds or debris from the intake grate.

⚠ Riding with a passenger(s) or pulling other boats, tubes, skies or wakeboards makes the craft handle differently and requires greater skill. Do not overload the craft or take on more passengers than designated for the particular craft. Overloading can affect maneuverability, stability and performance. Avoid adding on accessories, or equipment which may alter your control of the craft. The craft may be fitted with tow eyelets which can be used to attach a ski rope. However, do not use these eyelets or the craft's cleats to tow a parasail. Severe craft damage may occur.

⚠ In shallow water, proceed with caution and at very low speeds. Grounding or abrupt stops may result in injury. Debris may also be picked up and be thrown rearward by the jet pump onto people or property.

⚠ Respect no wake zones, the rights of other water users and the environment. As the "skipper" and owner of a craft you are responsible for damage to other boats caused by the wake of your craft. Allow no one to throw refuse overboard.

⚠ Remember, gasoline fumes are inflammable and explosive. Always adhere to the fueling procedure contained in this guide and those given to you by the marina. Always verify fuel level before use and during the ride. Apply the principle of 1/3 fuel to destination, 1/3 back and 1/3 reserve fuel supply. Do not carry spare fuel or inflammable liquids in any of the storage or engine compartments.

⚠ Combustion engine needs air to operate; consequently this craft can not be totally watertight. Any manoeuvres such as figure eights etc., that cause the upper deck to be under water may cause severe engine problems due to water ingestion. Refer to SPECIAL PROCEDURES and Limited Warranty contained in this guide.

⚠ Due to the close proximity of other racers. It is recommended that an approved personal watercraft helmet be used during racing events. Read and follow all instructions and warnings provided with the helmet.

## Maintenance

⚠ Only perform servicing procedures which are detailed in this guide. Further assistance or information can be obtained from your dealer. In many instances proper tools and training is required for certain servicing or repair procedures.

⚠ Maintain the craft and equipment in top condition at all times. Adhere to the prescribed maintenance schedules. An annual inspection of the craft is always a good recommendation that should be followed.

⚠ Always use spark plug cable grounding device when removing spark plugs.

⚠ The bilge must be kept clean of oil, water or other foreign materials.

⚠ Do not attempt to lift the craft without special equipment and training.

⚠ The engine and the corresponding components identified in this guide should not be utilized on product(s) other than for those they were designed. Maintenance procedures and specified tightening torque must be strictly adhered to. Never attempt repairs unless the appropriate tools are available. These watercraft are designed with parts dimensioned in both the metric and the imperial systems. When replacing fasteners, make sure to use only those recommended by Bombardier. If required, contact your dealer for further servicing information.

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# LIST OF DISTRIBUTORS

## NORTH AMERICA

<b>USA</b> (Except Puerto Rico)	<b>BOMBARDIER MOTOR CORPORATION OF AMERICA</b> 7575, Bombardier Court P.O. Box 8035 WAUSAU, WI. 54401 (or for P.O. Box 54402) Phone: (715) 848-4957 Fax: (715) 847-6879 <a href="http://www.bombardier.com">http://www.bombardier.com</a>
<b>CANADA</b> Alberta British Columbia Manitoba North West Territories Ontario Quebec Saskatchewan Yukon New-Brunswick Nova Scotia Prince Edward Island Nunavut Newfoundland	<b>BOMBARDIER INC.</b> RECREATIONAL PRODUCT 75, J.A. BOMBARDIER ST. SHERBROOKE, QC J1L 1W3 Phone: (819) 566-3366 Fax: (819) 566-3062 <a href="http://www.bombardier.com">http://www.bombardier.com</a>

If your SEA-DOO craft requires warranty service, you should take it to any authorized SEA-DOO dealer. Be sure to bring your warranty registration card or other valid proof of the original date of purchase. If a question or problem arises regarding warranty, first contact the service manager or owner of the SEA-DOO dealership.

To find the nearest authorized Sea-Doo dealer, dial: 1-800-882-2900.

**NOTE:** If outside North America, consult the local distributor.

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# **BOMBARDIER LIMITED WARRANTY NORTH AMERICA: SEA-DOO® WATERCRAFT**

## **1. WARRANTY COVERAGE PERIOD**

In Canada, BOMBARDIER INC. ("Bombardier"), and in the USA, Bombardier on behalf of BOMBARDIER MOTOR CORPORATION OF AMERICA (B.M.C.A.), warrants FROM THE DATE OF DELIVERY TO THE FIRST CONSUMER that each SEA-DOO watercraft sold, as NEW and UNUSED and PREDELIVERED by an authorized North American SEA-DOO watercraft dealer, will be free from any defects in material and/or workmanship for a PERIOD of:

TWELVE (12) CONSECUTIVE MONTHS, for private use owners, or

FOUR (4) CONSECUTIVE MONTHS for commercial use owners.

All genuine Bombardier accessories, installed by an authorized SEA-DOO dealer at the time of delivery of the new and unused SEA-DOO, carry the same Warranty Coverage Period as for the SEA-DOO watercraft.

## **2. WHAT BOMBARDIER WILL DO**

BOMBARDIER will repair or replace, at its option, all genuine BOMBARDIER part found defective in material and/or workmanship, under normal use, maintenance and service, with a genuine BOMBARDIER part without charge for parts and labor, at any authorized SEA-DOO dealer during the Warranty Coverage Period.

## **3. CONDITION TO HAVE WARRANTY WORK VALIDATED**

The customer must notify an authorized SEA-DOO watercraft dealer within two (2) days of the appearance of the defect in material and/or workmanship and present to the servicing authorized SEA-DOO dealer the SEA-DOO Warranty Registration Card or a proof of purchase of the NEW and UNUSED SEA-DOO watercraft and must sign the repair/work order prior to the start of the repair in order to validate a warranty repair. All parts replaced under this limited warranty become the property of BOMBARDIER.

## **4. EXCLUSIONS - ARE NOT WARRANTED**

- Normal wear and tear items;
- Labor, parts and lubricant costs of all maintenance services;
- Damage caused by failure to provide proper maintenance and/or storage, as described in the "SEA-DOO Watercraft *Operator's Guide*";
- Damage resulting from improper repairs, modifications or use of non-approved parts or, repairs done by a non-authorized SEA-DOO dealer;
- Damage resulting from abuse, misuse, neglect, racing;
- Damage resulting from accident, fire, theft, vandalism or any act of God;
- Incidental or consequential damages, or damages of any kind such as, without limitation, towing charges, telephone calls or taxi;
- Water damages caused by water ingestion;
- Damage related to gel coat finish including but not limited to cosmetic gel coat finish, blisters or fiberglass delamination caused by blisters, crazing, spider or hairline cracks; and
- Damages resulting from improper service or maintenance.

## 5. LIMITATIONS OF LIABILITY

This warranty gives you specific rights, and you may also have other legal rights which may vary from state to state, or province to province. **WHERE APPLICABLE, THIS WARRANTY IS EXPRESSLY GIVEN AND ACCEPTED IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.**

Neither the SEA-DOO distributor, any authorized SEA-DOO dealer nor any other person has been authorized to make any affirmation, representation or warranty other than those contained in this warranty, and if made, such affirmation, representation or warranty shall not be enforceable against BOMBARDIER or any other person.

In no event shall BOMBARDIER be liable for special, consequential or incidental damages, including but not limited to loss of use and transportation costs. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply.

BOMBARDIER reserves the right to modify this warranty at any time, being understood that such modification will not alter the warranty conditions applicable to the SEA-DOO watercraft sold while this warranty is in effect.

## 6. TRANSFER

If the customer sells the watercraft guaranteed under the present, he shall assign and transfer this warranty, which shall be valid for the rest of the relevant PERIOD as defined in section 1 hereinabove, to the new customer.

## 7. CONSUMER ASSISTANCE

- a) In the event of a controversy or a dispute arising in connection with this BOMBARDIER LIMITED WARRANTY, BOMBARDIER suggests that you try to resolve the issue at the dealership level. We recommend discussing the issue with the authorized dealer's service manager or owner.
- b) If further assistance is required, the DISTRIBUTOR's service department should be contacted in order to resolve the matter. In the USA, SEA-DOO products are distributed by B.M.C.A.
- c) If the issue has still not been resolved, please submit in writing your complaint to:

In Canada and USA:



BOMBARDIER INC.  
RECREATIONAL PRODUCTS  
SEA-DOO  
CUSTOMER ASSISTANCE CENTER  
75, J. A. BOMBARDIER ST.  
SHERBROOKE, QC  
J1L 1W3  
Tel: (819) 566-3366

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# **BOMBARDIER INTERNATIONAL LIMITED WARRANTY: SEA-DOO® WATERCRAFT**

## **1. WARRANTY COVERAGE PERIOD**

BOMBARDIER INC. ("Bombardier"), as manufacturer, warrants FROM THE DATE OF DELIVERY TO THE FIRST CONSUMER that each SEA-DOO watercraft sold anywhere in the world except the United States and Canada, as NEW and UNUSED and PREDELIVERED by an authorized SEA-DOO watercraft dealer, duly appointed by an authorized SEA-DOO International Distributor, will be free from any defects in material and/or workmanship for a PERIOD of:

TWELVE (12) CONSECUTIVE MONTHS, for private use owners, or

FOUR (4) CONSECUTIVE MONTHS for commercial use owners.

All genuine Bombardier accessories, installed by an authorized SEA-DOO dealer at the time of delivery of the new and unused SEA-DOO watercraft, carry the same Warranty Coverage Period as for the SEA-DOO watercraft.

## **2. WHAT BOMBARDIER WILL DO**

BOMBARDIER through the local SEA-DOO International Distributor will, during the Warranty Coverage Period, repair or replace, at its option, all genuine BOMBARDIER part found defective in material and/or workmanship, under normal use, maintenance and service, with a genuine BOMBARDIER part without charge for parts and labor, at any local authorized SEA-DOO dealer.

## **3. CONDITION TO HAVE WARRANTY WORK VALIDATED**

The customer must notify a local authorized SEA-DOO dealer within two (2) days of the appearance of the defect in material and/or workmanship and present to the servicing authorized SEA-DOO watercraft dealer the SEA-DOO Warranty Registration Card or a proof of purchase of the NEW and UNUSED SEA-DOO watercraft and must sign the repair/work order prior to the start of the repair in order to validate a warranty repair. All parts replaced under this limited warranty become the property of BOMBARDIER.

## **4. EXCLUSIONS - ARE NOT WARRANTED**

- Normal wear and tear items;
- Labor, parts and lubricant costs of all maintenance services;
- Damage caused by failure to provide proper maintenance and/or storage, as described in the "SEA-DOO Watercraft *Operator's Guide*";
- Damage resulting from improper repairs, modifications or use of non-approved parts or, repairs done by a non-authorized SEA-DOO dealer;
- Damage resulting from abuse, misuse, neglect, racing;
- Damage resulting from accident, fire, theft, vandalism or any act of God;
- Incidental or consequential damages, or damages of any kind such as, without limitation, towing charges, telephone calls or taxi;
- Water damages caused by water ingestion;
- Damage related to gel coat finish including but not limited to cosmetic gel coat finish, blisters or fiberglass delamination caused by blisters, crazing, spider or hairline cracks; and
- Damages resulting from improper service or maintenance.

## 5. LIMITATIONS OF LIABILITY

This warranty gives you specific rights, and you may also have other legal rights resulting from the application of mandatory national laws which may vary from country to country. **WHERE APPLICABLE, THIS WARRANTY IS EXPRESSLY GIVEN AND ACCEPTED IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.**

In no event shall BOMBARDIER be liable for special, consequential or incidental damages, including but not limited to loss of use and transportation costs. Some countries do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply.

Neither the SEA-DOO International Distributor, the selling local SEA-DOO dealer nor any other person has been authorized to make any affirmation, representation or warranty other than those contained in this warranty, and if made, such affirmation, representation or warranty shall not be enforceable against BOMBARDIER or any other person.

Every SEA-DOO watercraft is sold with the English version of this warranty. A specific SEA-DOO International Distributor may elect to translate this warranty into local language, it is then understood and agreed that in the event of any discrepancy among the two versions, the English version shall prevail.

It is the customer's responsibility to ensure that the SEA-DOO watercraft complies with all boating regulations and standards of any country, other than the original country of sale, where the SEA-DOO watercraft is intended to be used.

BOMBARDIER reserves the right to modify this warranty at any time, being understood that such modification will not alter the warranty conditions applicable to the SEA-DOO watercraft sold while this warranty is in effect.

## 6. TRANSFER

If the customer sells the watercraft guaranteed under the present, he shall assign and transfer this warranty, which shall be valid for the rest of the relevant PERIOD as defined in section 1 hereinabove, to the new customer.

## 7. CONSUMER ASSISTANCE

- a) In the event of a controversy or a dispute arising in connection with this BOMBARDIER INTERNATIONAL LIMITED WARRANTY, BOMBARDIER suggests that you try to resolve the issue at the dealership level. We recommend discussing the issue with the authorized dealer's service manager or owner.
- b) If further assistance is required, the authorized local SEA-DOO INTERNATIONAL DISTRIBUTOR's service department should be contacted in order to resolve the matter.
- c) If the issue has still not been resolved, please submit in writing your complaint to:

BOMBARDIER RECREATIONAL PRODUCTS  
SEA-DOO  
INTERNATIONAL SERVICE DEPARTMENT  
75, J. A. BOMBARDIER ST.  
SHERBROOKE, QC  
J1L 1W3  
CANADA

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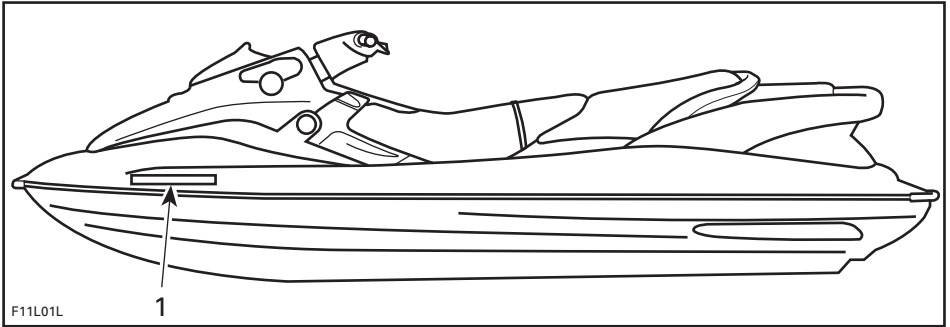
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# REGISTRATION NUMBER LOCATION

All personal craft are required by federal law to be registered and legally numbered.

Due to space availability for proper display of registration number, refer to following illustration for location. The registration number should appear on each side of the craft.

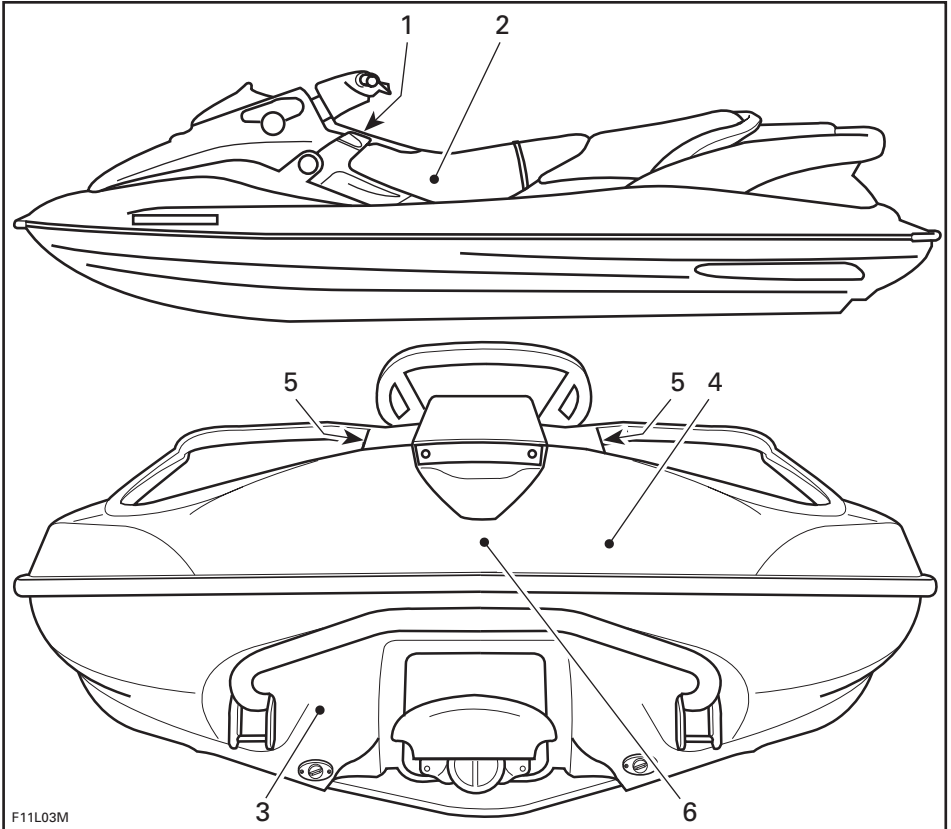


1. Registration number location

# LOCATION OF THE IMPORTANT LABELS

The following labels are on your craft. If missing or damaged, they can be replaced free of charge. See an authorized Sea-Doo dealer.

Please read the following labels carefully before operating this craft.



TYPICAL

## Label 1

### **⚠ WARNING**

**Read all warning labels, Operator Guide & safety documents before operating. Severe injury or death can result from ignoring such information or improper use of the watercraft.**

- Check throttle and steering operation before starting the engine.
- Directional control is lost when throttle is released and lost when engine shut off.
- Do not splash others or jump waves or wakes with this watercraft.
- Do not start the engine until all passengers are properly seated.
- Maximum carrying capacity: 4 persons or 750 lbs/340 kg.
- Properly attach safety tether to your PFD.
- Keep a safe distance from other water users. Observe boating regulations.
- This watercraft is not designed for night-operation.
- Do not allow riders on the rear deck/platform when the engine is running.

F11L0DY

TYPICAL

## Label 2

### **⚠ WARNING**

DO NOT BOOST BATTERY  
WHILE INSTALLED.

F00L2LY

## Label 3

### **▼ CAUTION**

TO AVOID POSSIBLE ENGINE FLOODING WHEN ROLLED OVER:



- MAKE SURE ENGINE IS OFF
- GRAB INLET GRATE AND STEP ON BUMPER RAIL
- ROLL BOAT COUNTERCLOCKWISE

F06L0DZ

TYPICAL

## Label 4

### **⚠ WARNING**

- ENGINE MUST BE OFF WHEN USING BOARDING STEP.
- KEEP AWAY FROM JET OR INTAKE GRATE.
- STAY ON CENTER OF THE STEP.
- ONLY ONE PERSON AT THE TIME ON THE STEP.
- NEVER USE THE STEP FOR PULLING, TOWING,
- DIVING OR JUMPING, BOARDING A PWC THAT IS OUT
- OF WATER OR ANY OTHER PURPOSE FOR WHICH IT
- WAS NOT DESIGNED.

F07L24Y

## Label 5

### **⚠ WARNING**

- DO NOT STORE FUEL OR FLAMMABLE LIQUIDS IN THE STORAGE COMPARTMENTS.

F11L0EY

## Label 6

### **⚠ WARNING**

- DO NOT ALLOW RIDERS ON THE REAR/PLATFORM WHEN THE ENGINE IS RUNNING.

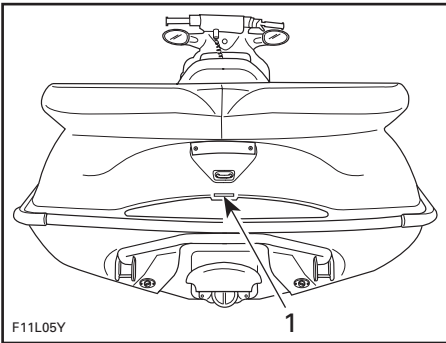
F11L0FY

# IDENTIFICATION NUMBERS

The main components of the craft (engine and hull) are identified by different serial numbers. It may sometimes become necessary to locate these numbers for warranty purposes or to trace the craft in the event of theft.

## Hull

The Hull Identification Number (H.I.N.) is located on floorboard at the rear of craft.

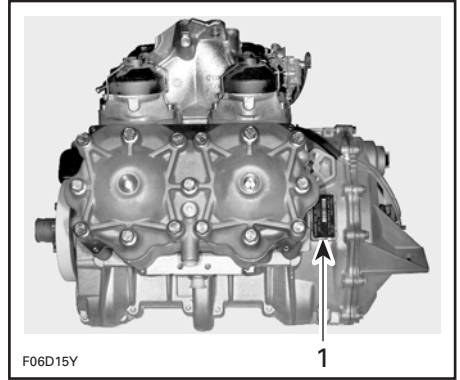


### TYPICAL

1. Hull Identification Number

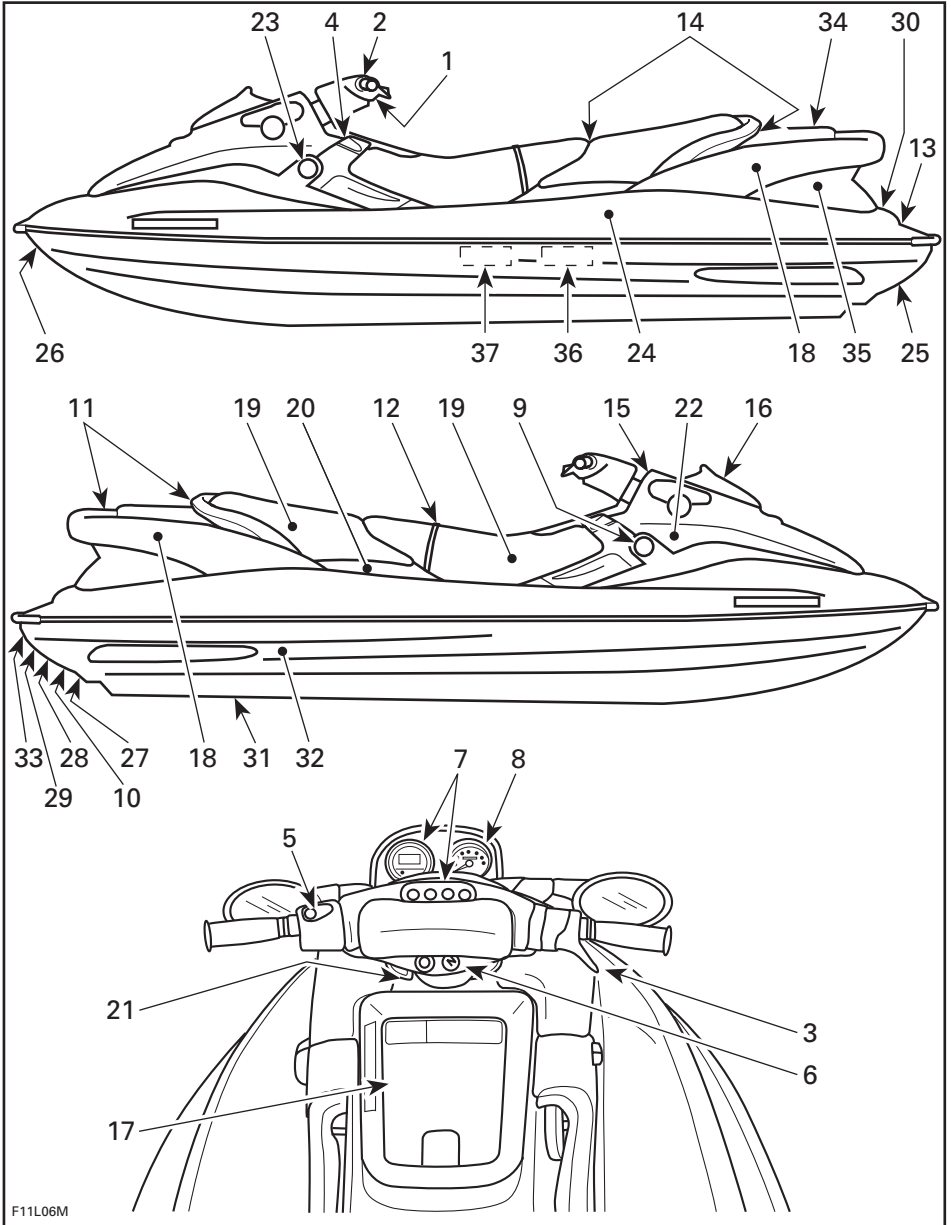
## Engine

The Engine Identification Number (E.I.N.) is located on the upper crankcase on MAGNETO side.



1. Engine Identification Number

# CONTROLS, COMPONENTS AND INSTRUMENTS LOCATION



F11L06M

TYPICAL

1. Safety Lanyard
2. Handlebar
3. Throttle Lever
4. Shift Lever
5. Engine Start/Stop Button
6. Choke Lever
7. Info Center Gauge/Switches
8. Speedometer
9. Fuel Tank Valve
10. Bilge Drain Plugs
11. Rear Grab Handles
12. Seat Strap
13. Swim Platform
14. Seat Latch
15. Cover Latch
16. Front Storage Compartment
17. Glove Box
18. Side Storage Compartments
19. Underseat Storage Compartments
20. Engine Compartment
21. Mooring Cleats
22. Oil Injection Reservoir Cap
23. Fuel Tank Cap
24. Deck Drains
25. Flushing Connector
26. Bow and Stern Eyelets
27. Jet Pump Nozzle
28. Reverse Gate
29. Scupper Valves
30. Cooling System Bleed Outlet(s)
31. Jet Pump Water Intake
32. Automatic Bilge Pump
33. Boarding Step
34. Sun Deck
35. Tool Kit
36. Fuses
37. Battery
38. Fender Cleats (not shown)

# CONTROLS, COMPONENTS AND INSTRUMENTS FUNCTIONS

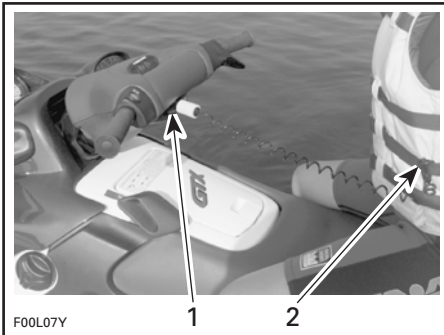
## 1) Safety Lanyard (engine cut-off cord)

The safety lanyard cap should be securely snapped onto its switch to be fully operational.

Pulling the safety lanyard cap from the switch stops the engine operation. Attach the safety lanyard to the operator's Personal Flotation Device (PFD) and snap the cap to the switch to be able to start the engine.

### WARNING

Should the safety lanyard cap become loose or fails to remain on its switch, replace it immediately.



#### TYPICAL

1. Safety lanyard cap on the switch
2. Safety lanyard secured on operator's PFD

### WARNING

Should the engine be stopped, craft directional control is not available. Always disconnect safety lanyard when craft is not in operation.

## Digitally Encoded Security System (DESS)

The safety lanyard cap specifically contains an electronic circuit that gives it a unique electronic serial number.

This safety lanyard cannot be used on another craft and conversely, the one from another craft cannot be used on your craft.

However, the DESS brings a great flexibility. You can buy additional safety lanyard and have it programmed for your craft. To have additional safety lanyard programmed, refer to an authorized Sea-Doo dealer.

### WARNING

Do not lubricate the safety lanyard post.

If the engine is stopped with the start/stop button while the safety lanyard remains on the switch, it can be restarted within approximately 10 minutes by pressing the start/stop button. After this delay, it is necessary to apply slight pressure of the safety lanyard on the switch. Two short beeps should sound indicating the system is ready again to allow engine starting.

### WARNING

While engine can be stopped using the start/stop button, good habits recommend that the safety lanyard also be disconnected when stopping.

## Monitoring System

To assist you when using the craft, a system monitors some component of the craft and sends audible signals through a beeper to inform you of a particular condition. The following chart gives the coded signals related to the safety lanyard only. For other possible codes, refer to the TROUBLE-SHOOTING section.

## 2) Handlebar

The handlebar controls the direction of the craft. Turning the handlebar to the right steers the craft to the right and inversely.

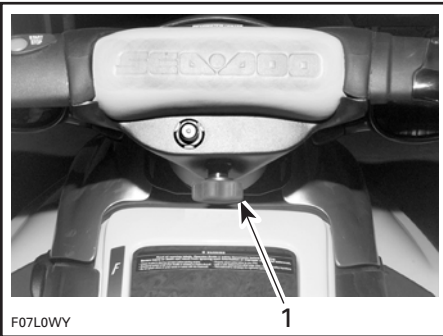
### ADJUSTMENT

#### **WARNING**

Never adjust handlebar while craft is in motion.

The handlebar height can be adjusted to suit rider preferences.

To perform this adjustment, turn the knob underneath the handlebar.



#### TYPICAL

1. Adjustment knob

## 3) Throttle Lever

When pushed, craft accelerates. When fully released, engine automatically returns to idle speed and craft is gradually stopped by water drag.

Do not depress lever unnecessarily. A fuel accelerator pump delivers fuel to the engine each time throttle lever is applied.

**CAUTION:** Engine can be flooded if throttle lever is applied several times. If engine is flooded, it will not start.

## 4) Shift Lever

A 3-position lever:

- forward
- neutral
- reverse.

#### **WARNING**

Shift lever should only be used when the engine is idling and craft is completely stopped.

#### **WARNING**

Only use reverse at slow speed and for the shortest time possible. Always ensure the path behind is clear of objects and persons including children playing in shallow water.

**CAUTION:** Never rev the engine at high RPM in reverse.

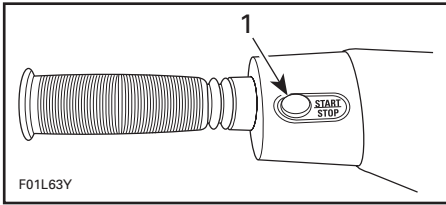
## 5) Engine Start/Stop Button

To start engine, depress and hold the button. Release immediately after engine is started.

To stop engine, fully release throttle lever then depress the button and disconnect safety lanyard from the switch.

#### **WARNING**

Directional control is lost when engine is off.



1. Engine start/stop button

With the Digitally Encoded Security System, leaving the safety lanyard for more than 10 minutes after stopping the engine will require a slight pressure or the removal and reinstallation of the safety lanyard on the switch to allow engine starting.

## 6) Choke Lever

The choke is provided to supply a richer fuel/air mixture when starting a cold engine. When the lever is completely pulled, the choke is fully applied. The use of the choke is not recommended with a warm engine.

Choke lever should be pulled and held to operate. Lever will automatically return to its normal position when released.

## 7) Info Center Gauge/ Switches

This is a LCD multifunction gauge.

The MODE button is used to change display functions.

The SET button is used to set or reset a function.

It features the following functions:

- clock/compass
- tachometer
- speedometer
- peak speed
- average speed
- trip meter
- engine hourmeter
- water temperature
- exterior temperature

- chronometer
- fuel level
- low fuel
- low oil
- low voltage
- overheating
- maintenance information.

## Multifunction Gauge Operation Display Priorities

The clock/compass function is the basic mode of the Info Center gauge. **Use the compass as a guide only. Not to be used for navigation purposes.**

The chronometer, tachometer and speedometer are the only other modes that may be chosen to replace the clock/compass mode.

If another mode is chosen, the clock/compass mode will be displayed again after 4 seconds.

The Info Center also features a red warning LED which blinks whenever one of the following circumstances occur: engine overheating, low fuel, low oil and low voltage.

For example, if the fuel level is low, the LED and the message LOW FUEL will blink.

As a self test, all LCD segments and the LED will turn on for 3 seconds each time the craft is started.

In the event of a warning message such as low fuel, hi-temp, etc., the message will blink and override all other display functions.

If more than one warning message occurs, the messages will blink and reappear every 4 seconds.

## Scrolling Functions

Press the MODE button until the desired function is displayed on the Info Center gauge.

## Reset a Function

To reset a function such as the chronometer, peak speed, distance, etc., press and hold the SET button for 2 seconds while in the appropriate mode.

## Language Option

While in the clock/compass mode, press and hold the SET button for at least 2 seconds. Language option will be displayed.

Press the MODE button to scroll language (English, French and Spanish).

Press the SET button to confirm the desired language and return to the clock/compass mode.

## English/Metric Option

Press and hold both MODE and SET buttons for at least 2 seconds. The system will be automatically changed.

## Chronometer

While in the chronometer mode, press the SET button to start and stop the chronometer.

Press the SET button for 2 seconds to reset the chronometer.

## Clock Adjustment

While in the clock/compass mode, press and hold the MODE and SET buttons for 2 seconds.

Press the MODE button to adjust the hours and the SET button to adjust the minutes.

Press again on the MODE and SET buttons to return to the normal mode (or it will return to the normal mode after 10 seconds).

## Maintenance Information

When the craft is due for a maintenance inspection, the message MAINT will blink.

To clear the warning message, press the SET button for 2 seconds during the message blinking.

## 8) Speedometer

Analog speedometer indicates the speed of craft in miles per hour (MPH) and kilometers per hour (km/h).

**NOTE:** Info center gauge also indicates craft speed.

The speed sensor mounted on the ride plate sends the signal to the speedometer and info center.

## 9) Fuel Valve

A 3-position rotating valve: OFF, ON and RESERVE:

OFF: Stop fuel supply to carburetor(s).

**CAUTION:** Turn valve to OFF position when craft is not operated.

ON: Allows fuel to flow to carburetor(s). This is the normal position for operation of craft.

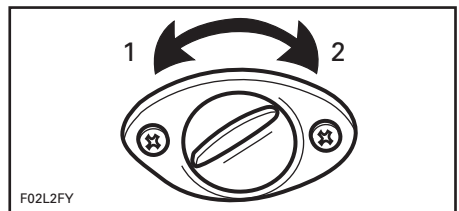
**CAUTION:** Improper opening of fuel valve may restrict flow of fuel and may lead to engine damage. Make sure valve is fully opened while running.

RES: Use when the craft has run out of fuel in the ON position.

Always refill the fuel tank at the first opportunity. After refueling, turn the fuel valve to the ON position to continue operation.

## 10) Bilge Drain Plugs

Should water be found in the bilge, it can be easily drained by unscrewing the drain plugs.



1. *Unscrew*
2. *Tighten*

Tilt the craft slightly to the rear so that the water can completely flow out of the bilge.

## 11) Rear Grab Handles

Provide a handhold for boarding when needed and a handhold for the passenger.

**CAUTION:** Never use the grab handle to tow anything or to lift the craft.

## 12) Seat Strap

The seat strap provides a handhold to assist boarding and is used as a handhold for the passenger.

## 13) Swim Platform

Provides a large anti-skid surface for easy boarding from rear of craft.

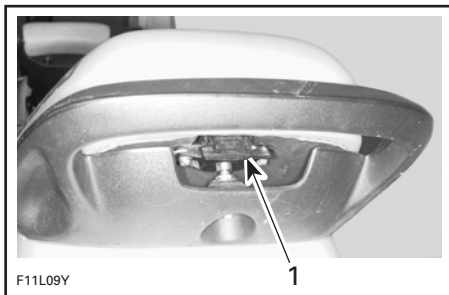
### **WARNING**

Engine must be off when using platform. Keep away from jet or intake grate.

## 14) Seat Latch

Removing the seat allows access to the engine compartment and to oil reservoir cap/dipstick.

The seat latch is located at the rear end and underneath the seat.



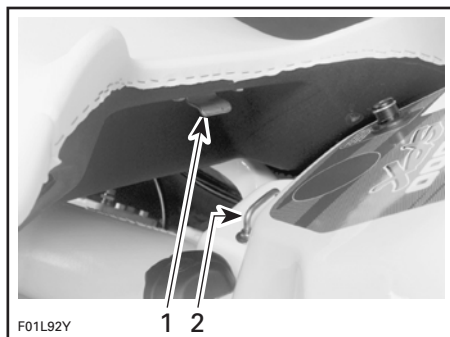
*TYPICAL*

1. Seat latch

To remove seat, it is necessary to remove the rear portion of the seat first pull the latch lever upward and hold. Lift and pull the seat rearward.

Repeat same procedure to remove the front portion of the seat.

When reinstalling the seat, insert seat front tab into body hook for each portion of the seat.



*TYPICAL*

1. Insert this tab in hook
2. Hook

Pull latch lever to insert it over the rear lock pin. Release latch lever then firmly push on rear of the seat to relatch.

### **WARNING**

Periodically verify the seat lock pin and tighten if needed. Make sure storage cover is securely latched.

## 15) Cover Latch

Pull the latch lever upward in order to open the storage compartment cover. Always relatch.

### **WARNING**

Periodically verify the seat lock pin and tighten if needed. Make sure storage cover is securely latched.

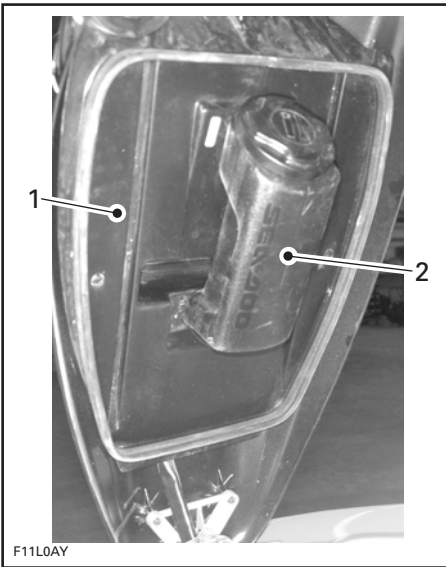
## 16) Front Storage Compartment

A convenient watertight compartment to carry personal articles. Ideal location for spare spark plugs, towrope, first aid kit, etc.

### WARNING

Never leave any heavy or breakable objects in the storage compartment. Never operate the craft with the storage compartment cover open.

Front storage compartment is provided with a holder to store an approved fire extinguisher and *Operator's Guides*. Fire extinguisher (sold separately) should not be loose in the storage compartment.



1. Front storage compartment cover
2. Extinguisher holder

## 17) Glove Box

A small, convenient watertight storage compartment for keys, wallet, maps, etc.

## 18) Side Storage Compartments

Two convenient watertight compartments to carry personal articles. Ideal location for water skis or wakeboards.

Left side storage compartment is also provided with a holder. Tool kit is inserted in that holder.

### WARNING

Never leave any heavy or breakable objects in the storage compartment. Never operate the craft with the storage compartment cover open.

## 19) Underseat Storage Compartments

Convenient watertight, removable baskets to carry personal articles. Remove seat to gain access to underseat storage compartments.

### WARNING

Never leave any heavy or breakable objects in the storage compartment. Never operate the craft with the storage compartment cover open.

## 20) Engine Compartment

This is where the mechanical, electrical and fuel/oil systems are located.

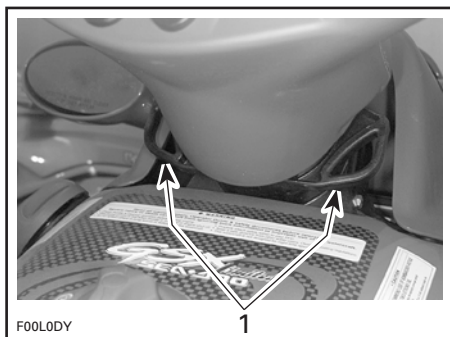
### WARNING

When starting or operating the engine, do not touch any electrical part. Never leave any object, rag, tool, etc., in the engine compartment or in the bilge.

## 21) Mooring Cleats

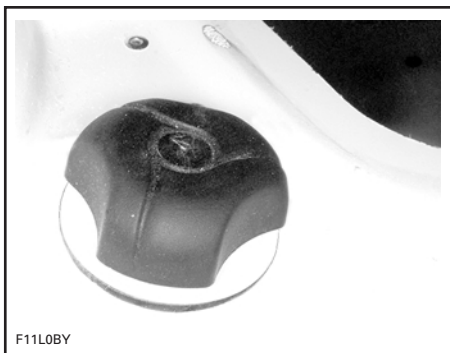
When mooring to a dock, it is recommended to secure with both front and rear cleats. The use of dock lines with sealed air fenders is recommended to protect your craft.

**CAUTION:** Never use mooring cleats to pull or lift the craft.



1. Mooring cleats

## 22) Oil Injection Reservoir Cap



TYPICAL — OIL CAP

Open the front storage compartment cover to expose oil cap.

The oil cap is located on the right hand side of the craft.

To add injection oil in the reservoir, unscrew the cap counterclockwise.

### **WARNING**

Add oil to level mark. Do not overfill. Reinstall cap and fully tighten.

## 23) Fuel Tank Cap

Unscrew the cap counterclockwise. After fueling reinstall cap and fully tighten.

### **WARNING**

Always stop the engine before refueling. Fuel is inflammable and explosive under certain conditions. Always work in a well ventilated area. Do not smoke or allow open flames or sparks in the vicinity. Fuel tank may be pressurized, slowly turn cap when opening. Keep craft level. Do not overfill or top off the fuel tank and leave craft in the sun. As temperature increases, fuel expands and might overflow. Always wipe off any fuel spillage from the craft. Never use an open flame to check fuel level.

## 24) Deck Drains

They provide drainage of water from rain, deck washing, water splashing, etc. Keep clean to avoid clogging.

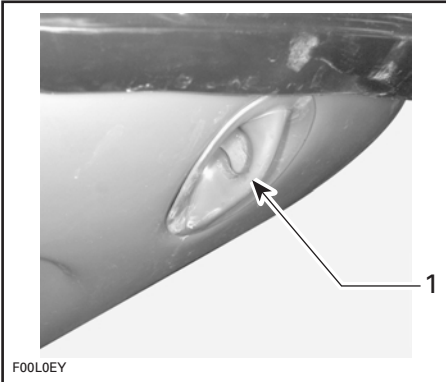
## 25) Flushing Connector

To flush engine. Refer to POST-OPERATION CARE section for proper use.

## 26) Bow and Stern Eyelets

### Bow Eyelet

Eyelets can be used for mooring, towing and as a tie-down point during transportation.

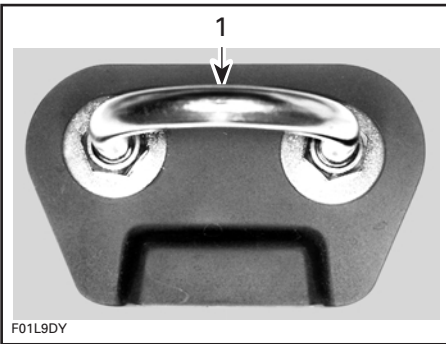


**TYPICAL**

1. Bow eyelet

This eyelet allows a rope with a hook, a closes end or an open end to be attached.

### Stern Eyelet



**TYPICAL**

1. Stern eyelet

## 27) Jet Pump Nozzle

Jet pump nozzle turns side to side via rider input at the handlebar. This provides directional control when engine is running.

### **⚠ WARNING**

Never use nozzle as a supporting point to board the craft or to lift it.

## 28) Reverse Gate

When selecting the neutral or reverse position with the shift lever, the reverse gate moves up or down to obtain the desired position.

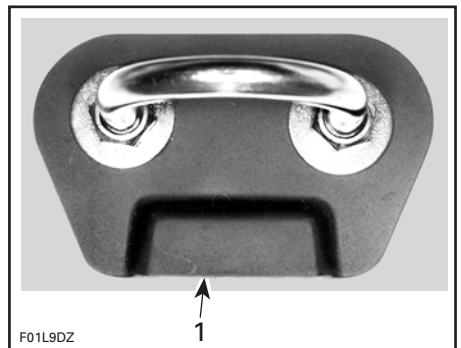
### **⚠ WARNING**

Never use gate as a supporting point to board the craft. Shift lever should only be used when the engine is idling and craft is completely stopped.

## 29) Scupper Valves

This is where water from deck drains out. Keep clean to avoid clogging.

## 30) Cooling System Bleed Outlet(s)



1. Bleed outlet

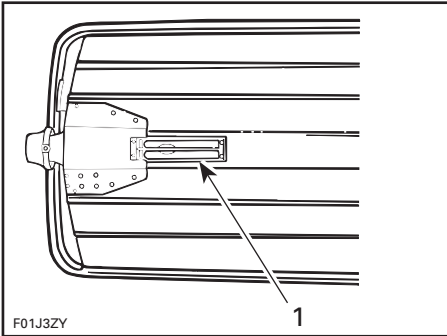
When engine is running, water should flow from the outlet. This allows air in engine cooling system to escape. It also indicates that water is circulating in the cooling system.

**NOTE:** It may be required to increase slightly the engine RPM to see the water flowing out.

**CAUTION:** Should water not flow from outlet a few seconds after engine starts, immediately stop engine and refer to **POST-OPERATION CARE** and look for cooling system flushing or refer to an authorized Sea-Doo dealer for servicing.

### 31) Jet Pump Water Intake

The water is drawn up by the impeller through this opening. Grate minimizes the entry of foreign objects into the propulsion system.



**TYPICAL**  
1. Water intake

**⚠ WARNING**  
Keep away from intake grate while engine is on. Items such as long hair, loose clothing or personal flotation device straps can become entangled in moving parts resulting in severe injury or drowning.

### 32) Automatic Bilge Pump

Bilge pump evacuates water from the bilge.

When safety lanyard cap is plugged to the switch bilge pump automatically turns on. It will stay on for 30 seconds.

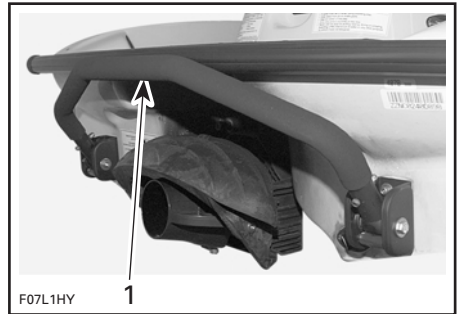
When engine is started bilge pump remains on and stays on until engine is stopped.

When engine is stopped pump remains on for 30 seconds and then automatically shuts-off.

### 33) Boarding Step

A convenient step to help reboarding the craft.

**⚠ WARNING**  
Engine should be OFF when using boarding step. Keep limbs away from jet or intake grate. Stay on center of the step. Only one person at the time on the step. Never use the step for pulling, towing, diving or jumping, boarding a PWC that is out of water or any other purpose other than a boarding step.



**TYPICAL**  
1. Boarding step

### 34) Sun Deck

A convenient space to rest or take some sun while anchored.

#### **WARNING**

Do not start or operate the craft if a person is seated on the sun deck.

### 35) Tool Kit

Contains tools needed to perform basic craft maintenance.

### 36) Fuses

Fuses are on MPEM located under seat inside engine compartment. Refer to MAINTENANCE for more details.

### 37) Battery

Battery is located under front section of seat. Refer to SPECIAL PROCEDURES.

### 38) Fender Cleats

These cleats are provided for fenders installation.

**CAUTION:** Do not use the cleats for securing baggage or as a tie-down point for trailering or mooring.



**TYPICAL**

1. Fender cleats (each side)

# FUEL AND LUBRICATION

**CAUTION:** Scrupulously follow the instructions of this section. Failure to do so may reduce the engine's life and/or performance.

## Fueling Procedure

### WARNING

Follow these safe boating fueling instructions explicitly.

Do not allow anyone to remain on the craft.

Tie craft securely to the fueling pier.

Have a fire extinguisher close at hand.

Do not insert the spout too far in filler neck.

Pour fuel slowly so that air can escape from the tank and prevent fuel flow-back.

Fill fuel tank to bottom of filler neck. **Do not overfill.** Fully tighten fuel tank cap.

### WARNING

Always stop the engine before refueling. Fuel is inflammable and explosive under certain conditions. Always work in a well ventilated area. Do not smoke or allow open flames or sparks in the vicinity. Fuel tank may be pressurized. Slowly turn cap when opening. Keep craft level. Do not overfill. Never top off the fuel tank and leave craft in the sun. As temperature increases, fuel expands and might overflow. Always wipe off any fuel spillage from the craft.

## Recommended Fuel

Use regular unleaded gasoline with 87 octane (Ron + Mon)/2 specification.

**NOTE:** Do not mix oil with fuel except at engine break-in. Refer to BREAK-IN PERIOD. Always check injection oil tank level when refueling.

**CAUTION:** Never experiment with other fuels or fuel ratios. Never use fuel containing more than 10% alcohol, (ethanol or methanol). The use of non-recommended fuel can result in craft performance deterioration and damage to critical parts in the fuel system and engine components.

## Recommended Oil

### WARNING

Add oil to level mark. Do not overfill. Reinstall cap and fully tighten.

Use only two-stroke engine injection oil sold by authorized Sea-Doo dealers.

MODEL	OIL
LRV ①	BOMBARDIER Formula XP-S synthetic injection oil (or equivalent).

① **CAUTION:** Bombardier formulation XP-S is specially formulated and tested for use in our 947 engines. Use of any other brand of two-stroke oil may void the limited warranty. Use only BOMBARDIER Formula XP-S (or equivalent).

The BOMBARDIER Formula XP-S synthetic injection oil **provides superior lubrication**, reduced engine component wear and oil deposit, thus maintaining maximum-level performance and antifriction properties. This synthetic injection oil meets the latest ASTM and JASO standards by ensuring high biodegradability and low exhaust smoke.

**CAUTION:** Never use four-stroke petroleum or synthetic motor oil and never mix these with outboard motor oil. Do not use NMMA TC-W, TC-W2 or TC-W3 outboard motor oils or other ashless type two-stroke oil. Avoid mixing different brands of API TC oil as resulting chemical reactions may cause severe engine damage.

## Oil Injection System

This craft features an oil injection system which does not require manual fuel/oil mixing.

A sufficient amount of injection oil should be maintained in the reservoir.

**NOTE:** It is recommended to carry a 1 L of spare injection oil.

The use of a funnel is recommended to pour the oil into the reservoir. Stop filling as soon as oil appears at approximately 13 mm (1/2 in) from top of reservoir. Do not overfill.

**CAUTION:** Always maintain a sufficient amount of injection oil in the oil reservoir. Check and refill every time you refuel. Do not overfill. If the engine runs out of oil, severe engine damage will occur. If the oil reservoir is found almost empty, air can enter in the system and it should be bled. Immediately refer to an authorized Sea-Doo dealer to have the oil injection system inspected.

---

# BREAK-IN PERIOD

**CAUTION:** Scrupulously follow the instructions of this section. Failure to do so may reduce the engine's life and/or performance.

## Engine

With BOMBARDIER craft engines, a break-in period is required before operating the engine at full throttle. Engine manufacturer recommendation is about 10 operating hours.

During this period, maximum throttle should not exceed 3/4, however, brief acceleration and speed variations contribute to a good break-in. Continued wide open throttle accelerations, prolonged cruising speeds and overloading the engine are detrimental during the break-in period.

To assure additional protection during the initial engine break-in, it is recommended to add the same oil as in the injection oil reservoir in the fuel tank **for the first full fuel tank filling only.**

MODEL	QUANTITY
LRV	1.67 L

To add injection oil in the fuel, proceed as follows:

Fill fuel tank with approximately 15 liters (4 gal) of gasoline; then, add the required quantity of injection oil in the fuel.

Fill up fuel tank with gasoline. Do not overfill.

**NOTE:** It is important to proceed in this order to allow a proper mixing of the oil in the gasoline. If oil is added first in an empty fuel tank, fuel lines will be filled up with injection oil leading in a no start condition of the engine(s).

**CAUTION:** Remove and clean spark plugs after engine break-in.

## 10-Hour Inspection

It is highly recommended that after the first 10 hours of operation, the craft be checked by an authorized dealer. This inspection will also provide the opportunity to discuss the unanswered questions you may have encountered during the first hours of operation.

---

**The 10-hour inspection is at the expense of the craft owner.**

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<b>10-HOUR INSPECTION CHECK LIST</b>	<b>✓</b>
Engine ignition timing if required	
Spark plug inspection, cleaning and adjustment	
Fuel system lines and fasteners/ <b>pressurization test</b>	
Carburetor adjustment including throttle/choke cables if required	
Oil lines and filter	
Oil injection pump adjustment if required	
Engine support and engine rubber mounts	
Muffler, battery and reservoir fastening devices	
Exhaust system hose clamps	
Carburetor flange screws and flame arrester bracket	
Steering system inspection	
Steering cable adjustment if required	
Reverse cable adjustment if required	
Cooling system hose condition and fasteners	
Bailer pick-ups, check for obstructions	
Digitally encoded security system	
Monitoring beeper	
Electrical connections (starter, battery, etc.)	
Jet pump oil replacement	
PTO flywheel and seal carrier lubrication (if applicable)	
Inspection of fasteners for tightness	
Inspect/clean engine drain tube	
Hull inspection	

**We recommend that this inspection chart be signed by an authorized dealer.**

\_\_\_\_\_

Date of 10-hour inspection

\_\_\_\_\_

Authorized dealer signature

\_\_\_\_\_

Dealer code

# PRE-OPERATION CHECKS

## WARNING

The pre-operation check is very important prior to operating the vehicle. Always check the proper operation of critical controls, safety features and mechanical components before starting. If not done as specified here, severe injury or death might occur. Bring all safety equipment required by local laws.

Some of the following items may not have been previously covered in this guide, however they will be described in the MAINTENANCE or SPECIAL PROCEDURES section. Please refer to these sections to have more detailed information.

## WARNING

Engine should be off and the safety lanyard should always be removed from its switch prior to verifying any of the following. Only start craft once all items have been checked and operate properly.

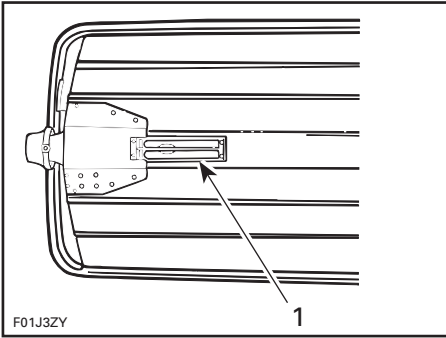
ITEM	OPERATION	✓
Hull	Inspect.	
Jet pump water intake	Inspect/clean.	
Bilge	Drain. Ensure plugs are secured.	
Battery	Inspect tightness of cables and retaining strap(s).	
Fuel tank and oil reservoir	Refill.	
Engine compartment	Verify for any fuel leak/odor.	
Fire extinguisher	Inspect condition/mounting.	
Steering and throttle systems	Check operation.	
Reverse system	Check operation.	
Safety lanyard, engine start/stop button	Check operation.	

## Hull

Inspect hull for cracks or damage.

## Jet Pump Water Intake

Remove weeds, shells, debris or anything else that could restrict the flow of water and damage cooling system or propulsion unit. Clean as necessary. If any obstruction can not be removed, refer to an authorized Sea-Doo dealer for servicing.



TYPICAL

1. Inspect this area

Inspect leading edges of the impeller, if they have nicks or bends performance will be greatly reduced.

## Bilge

Should water be present in the bilge, use bilge pump or tilt the craft to the rear and unscrew drain plugs if craft is out of the water, as the case may be, to completely empty the bilge.

Secure bilge drain plugs.

### WARNING

Make sure drain plugs are properly secured prior launching the craft in water.

## Battery

### WARNING

Verify tightness of battery cables to their posts and condition of retaining straps/fasteners. Do not boost battery while installed.

## Fuel Tank and Oil Reservoir

With the craft horizontal, fill the fuel tank to specified level.

Check the oil level and refill reservoir as necessary.

Check fuel tank/oil reservoir retaining straps/fasteners.

## Engine Compartment

### WARNING

Should any leak or gasoline odor be present, do not start the engine. Consult an authorized Sea-Doo dealer before use.

## Steering System

Assisted by another person, check steering operation for free movement. When the handlebar is horizontal, the jet pump nozzle should be in the straight ahead position. Ensure the jet pump nozzle pivots easily when handlebar is turned.

### WARNING

Check handlebar and corresponding steering nozzle operation before starting.

## Throttle System

Check throttle lever for free and smooth operation. It should return to its initial position immediately after it is released.

### **WARNING**

Check throttle lever operation before starting the engine.

**CAUTION:** Engine can be flooded if throttle lever is applied several times. If engine is flooded, it will not start.

## Shifter System

Check reverse gate operation for free movement. With shift lever in forward position, the gate should be in upward position. With the shift lever in neutral position, gate should be in middle position. With shift lever in reverse position, gate should be in downward position.

### **WARNING**

Verify the reverse gate locking operation before starting the engine.

## Safety Lanyard and Engine Start/Stop Button

If craft is equipped with shift lever, position lever in neutral. Ensure start/stop button operates properly. Start engine and stop it using button.

### **WARNING**

If engine does not shut-off when pushing engine start/stop button or by disconnecting the safety lanyard, stop the engine by applying the choke. Do not operate the craft further, see an authorized Sea-Doo dealer. Only start craft once all items have been checked and operate properly.

## Storage Compartment Covers

Ensure they are closed and latched.

# OPERATING INSTRUCTIONS

## WARNING

Always perform the PRE-OPERATION CHECKS before operating the craft. Become thoroughly familiar with all controls and the function of each. Should any control or instruction not be fully understood, refer to an authorized Sea-Doo dealer.

## Trailer

## WARNING

Always turn the fuel valve to OFF position when trailering or docking the craft.

## WARNING

Never tip this vehicle on end for transporting. We recommend that you carry the vehicle in its normal operating position.

Refer to the trailer or implement manufacturer instructions for proper capacity, operation, maintenance, accessories and warranty.

Check the regulations in your area concerning towing a trailer, especially the following rules:

- brake system
- tow vehicle weight
- mirrors.

Take the following precautions when towing the craft:

Tie the craft to both bow and stern (front/rear) eyelets so that it is firmly retained on the trailer. Use additional tie-downs if necessary.

- Ensure all storage compartment covers are properly latched.
- A SEA-DOO cover can protect the craft, particularly before driving on dirt roads, to prevent dirt entry through the air intake opening(s).

Observe trailering safety precautions.

## Launching/Loading

**CAUTION:** Before launching the craft, ensure the bilge plugs are fully screwed and after loading the craft, ensure they are removed to drain bilge.

## Principle of Operation

### Propulsion

The engine is directly coupled to a drive shaft which, in turn, rotates an impeller. This impeller is accurately adjusted in a housing where the water is drawn up from underneath the craft. Then the water flows through the impeller to a venturi. The venturi accelerates the water and produces thrust to move the craft. Depressing the throttle lever increases engine speed and therefore craft speed.



F01J3YY

TYPICAL

## WARNING

Whenever the engine is to be started, the operator and passengers should always be sitting on the craft.

## **WARNING**

Keep away from intake grate while engine is on. Items such as long hair, loose clothing or personal flotation device straps can become entangled in moving parts resulting in severe injury or drowning.

### **Shift Lever**

The shift lever should be in the forward position in order for the craft to advance.

To obtain neutral, pull shift lever halfway. The reverse gate will be in the middle position, directing half of the thrust toward the front of the craft to minimize craft movement.

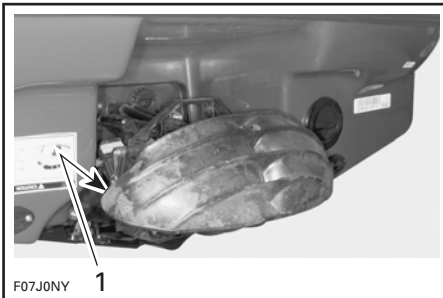
## **WARNING**

Do not use reverse to stop.



### **TYPICAL**

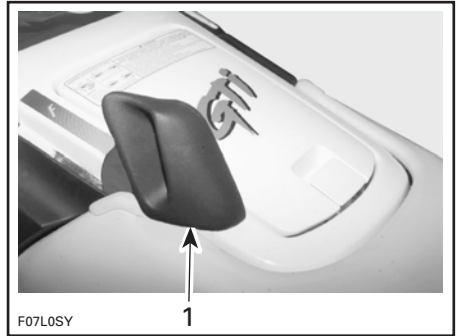
1. Shift lever in neutral position



### **TYPICAL**

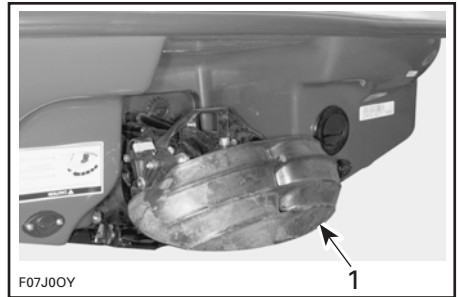
1. Reverse gate in middle position

To obtain reverse, pull shift lever completely. The reverse gate will be in downward position, directing all the thrust toward the front of the craft.



### **TYPICAL**

1. Shift lever in reverse position



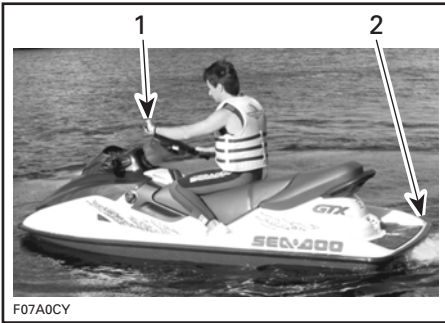
### **TYPICAL**

1. Reverse gate in downward position

**NOTE:** To obtain maximum efficiency and control from the reverse, increase engine speed to slightly above idle. Too much RPM will create water turbulence and reduce reverse efficiency.

In reverse position, turn the handlebar in the opposite direction that you want to move the rear of the craft.

For example, to steer the rear of the craft to the left side, turn the handlebar to the right side.



**TYPICAL**

1. Handlebar turned to the right side
2. Rear of craft moving to the left side

**⚠ WARNING**

Shift lever should only be used when the engine is idling and craft is completely stopped.

**⚠ WARNING**

Only use reverse at slow speed and for the shortest time possible. Always ensure the path behind is clear of objects and persons including children playing in shallow water.

**Steering**



**TYPICAL**

Turning the handlebar pivots the jet pump nozzle which controls the craft direction. Turning the handlebar to the right will turn the craft to the right and inversely. The throttle should be applied to turn the craft.

**⚠ WARNING**

Throttle should be applied and handlebar turned to change the direction of the craft. Steering efficiency will differ depending on the number of passengers load and water conditions.

Unlike a car, a craft needs some throttle to turn. Practice in a safe area applying the throttle and turning away from an imaginary object. This is a good collision avoidance technique.

**Boarding from a Dock**

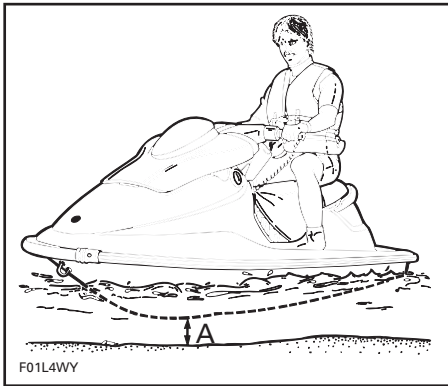
As with any craft, boarding should be done carefully and engine should not be running.

When boarding from a dock, slowly place one foot on the craft footboard nearest the dock and, at the same time, transfer the body weight to the other side in order to balance the craft while holding the handlebar. Then, bring the other foot over the seat and put it on the other footboard. Push the craft away from the dock.



**TYPICAL**

**CAUTION:** The engine should be started with at least 90 cm (3 ft) of water below the hull.



TYPICAL

A. 90 cm (3 ft)

## Boarding from the Water

### WARNING

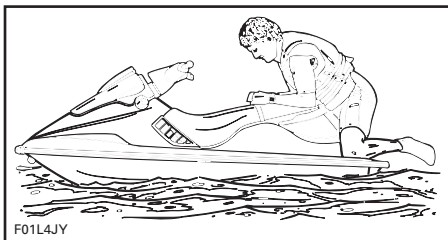
Inexperienced riders should practice how to get aboard close to shore first before venturing into deep water.

### WARNING

Engine should not be running while boarding. Never use propulsion components as a supporting point to board the craft.

Swim to the rear of the craft.

Grip the grab bar and pull yourself upward until your knee can reach the swim platform.



**NOTE:** On some models, boarding is facilitated by using a step or a ladder.

**CAUTION:** Do not leave ladder hanging when operating the craft.

## Starting

Before unloading the craft from the trailer, it can be started for about 10 seconds to verify proper operation.

### WARNING

Do not touch electrical parts or jet pump area when engine is running.

Attach the safety lanyard to your PFD and snap the cap to its switch before starting the engine.

**NOTE:** If you hear more than 2 short beeps from DESS system, it indicates a particular condition that should be corrected. Refer to the TROUBLESHOOTING section for the meaning of the coded signal.

### WARNING

Before starting the engine, the operator and passengers should always be properly seated.

**CAUTION:** Do not hold start/stop button more than 30 seconds. A rest period should be observed between the cranking cycles to let starter cool down. Pay attention not to discharge battery.

## Cold Engine

Position throttle and shift lever to idle/neutral.

Turn the fuel valve to ON position.

Firmly grip handlebar with your left hand and place both feet on the footboard.

Fully pull the choke lever with your right hand and depress the start/stop button.

Immediately after engine is started, release start/stop button and release choke lever.

If necessary, slightly apply throttle to keep engine running.

**CAUTION:** To avoid starter motor overheating, the cranking period should not exceed 5-10 seconds and a rest period should be observed between cranking cycles to let the starter cool down and its mechanism disengage.

### Warm Engine

The same procedure as a cold engine applies, except the choke does not need to be applied and throttle lever has to be slightly depressed.

### Riding

Slowly accelerate to reach deeper water. Do not apply full throttle until the engine is warm.



**CAUTION:** Avoid craft operation in weeded areas. If unavoidable, vary craft speed.

### Rough Water or Poor Visibility Operation

Avoid operation in these conditions. If you must do so, proceed with caution and prudence using minimum speed.

### Crossing Waves

Reduce speed. Always be prepared to steer and balance as necessary.

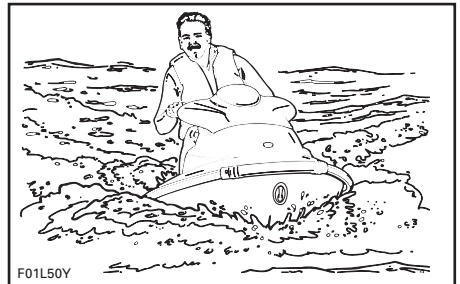
When crossing wakes, always keep a safe distance from boat ahead.

### WARNING

When crossing wakes, slow down. Operator and passenger(s) can brace themselves by posting. Do not jump waves or wakes.

### Stopping/Docking

The craft is slowed by water drag. The stopping distance will vary depending on the craft weight, speed, water surface condition, presence and direction of wind and current.



The operator should become familiarized with the stopping distance under different conditions.

Release the throttle at a sufficient distance before the expected landing area.

Reduce speed to idle. Shift to neutral, reverse or forward, as required.

### WARNING

Directional control is reduced when throttle is released and lost when engine is off.

### Beaching

**CAUTION:** It is not recommended to run the craft to the beach.

Come slowly to the beach and shut off the engine using the safety lanyard when water depth is 90 cm (3 ft) under the hull, then pull the craft to the beach. Ensure that all accessories are OFF.

## Shutting Off the Engine

To keep craft directional control, the engine should be running until the craft is at idle.

To shut off the engine, completely release throttle lever and press the engine start/stop button. Remove safety lanyard from craft.

### **WARNING**

Should the engine be shut off, craft directional control is not available. Never leave the safety lanyard on its switch when craft is not in operation to avoid unauthorized use by children or others.

# POST-OPERATION CARE

## WARNING

Allow engine to cool before performing any maintenance.

### General Care

Remove the craft from the water every day to prevent marine organisms growth.

Should any water be present in the hull, unscrew the drain plugs and tilt the craft to the rear in order to allow water to flow out.

Wipe up any remaining fluid in the engine compartment (bilge, engine, battery, etc.) with clean dry rags (this is particularly important in salt water use).

### Additional Care for Foul Water or Salt Water

When the craft is operated in foul water and particularly in salt water, additional care should be taken to protect the craft and its components. Rinse trailer and craft's bilge area with fresh water.

**CAUTION:** Failure to perform proper care such as: craft rinsing, cooling system flushing and anticorrosion treatment, when craft is used in salt water, will result in damage to the craft and its components. Never leave the craft stored in direct sunlight.

### Cooling System Flushing and Engine Internal Lubrication

#### General

Flushing the cooling system with fresh water is essential to neutralize corroding effects of salt or other chemical products present in water. It will help to remove sand, salt, shells or other particles in water jackets (engine, exhaust manifold, tuned pipe) and/or hoses.

Engine lubrication and flushing should be performed when the craft is not expected to be used further the same day or when the craft is stored for any extended time.

Proceed as follows:

## WARNING

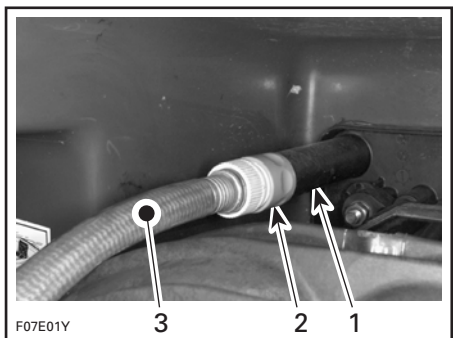
Perform this operation in a well ventilated area.

Clean jet pump by spraying water in its inlet and outlet and then apply a coating of BOMBARDIER LUBE lubricant or equivalent.

### Flushing

To flush engine, connect a garden hose to connector located at the rear of craft on jet pump support.

**NOTE:** A quick connect adapter can be used (P/N 295 500 473). No hose pincher is required to flush engine.



#### TYPICAL

1. Flushing connector
2. Quick connect adapter (not mandatory)
3. Garden hose

Start the engine then immediately open the water tap.

## WARNING

Do not touch any electrical parts or jet pump area when engine is running.

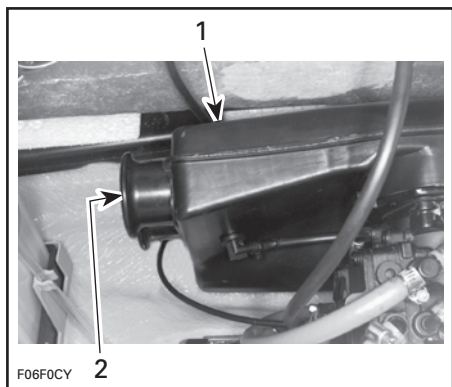
**CAUTION:** Never flush a hot engine. Always start the engine before opening the water tap. Open water tap immediately after engine is started to prevent overheating.

Run the engine about 3 minutes at a fast idle around 3500 RPM.

**CAUTION:** Never run engine longer than 5 minutes. Drive line seal has no cooling when craft is out of water.

## Lubrication

Spray BOMBARDIER LUBE lubricant or equivalent, through hole of air intake silencer keeping engine at fast idle during one minute.



### TYPICAL

1. Air intake silencer
2. Spray BOMBARDIER LUBE here

**NOTE:** After approximately half a minute, close fuel valve to run engine out of fuel while lubricating.

**CAUTION:** When engine begins to run irregularly because of fuel starvation, immediately stop water flow before engine dies.

Close the water tap then stop the engine.

## Final Steps

Disconnect the garden hose.

Remove spark plug cables and connect them on the grounding device.

## WARNING

Always use spark plug cable grounding device when removing spark plugs.

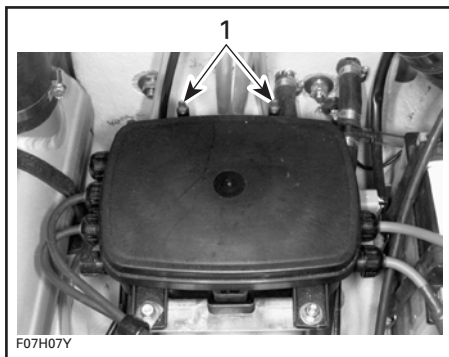
Remove both spark plugs and spray BOMBARDIER LUBE lubricant or equivalent into each cylinder.

Crank the engine a few turns to distribute the oil on cylinder wall.

Apply anti-seize lubricant on spark plug threads then reinstall them.

Properly reconnect spark plug cables to spark plugs.

Wipe up any residual water from the engine.



### TYPICAL

1. Grounding device

## Anticorrosion Treatment

To prevent corrosion, spray a corrosion inhibitor (salt water resistant) such as BOMBARDIER LUBE lubricant or equivalent over metallic components in engine compartment.

Apply dielectric grease (salt water resistant) on battery posts and cable connectors.

**CAUTION:** Never leave rags or tools in the engine compartment or in the bilge.

# SPECIAL PROCEDURES

## Engine Overheating

**CAUTION:** If the monitoring beeper continuously sounds, **stop engine immediately.**

Perform **Jet Pump Water Intake and Impeller Cleaning** procedure described in this section.

Flush cooling system, refer to POST-OPERATION CARE.

If engine still overheats, refer to an authorized Sea-Doo dealer for servicing.

## Jet Pump Water Intake and Impeller Cleaning

### **⚠ WARNING**

Keep away from intake grate while engine is on. Items such as long hair, loose clothing or personal flotation device straps can become entangled in moving parts resulting in severe injury or drowning.

Weeds, shells or debris can get caught on the intake grate, drive shaft and/or impeller. A clogged water intake may cause troubles such as:

1. **Cavitation:** Engine speed is high but craft moves slowly due to reduced jet thrust, jet pump components may be damaged.
2. **Overheating:** Since the jet pump operation controls the flow of water to cool the engine, a clogged intake will cause the engine to overheat and damage engine internal components.

A weed clogged area can be cleaned as follows:

### **⚠ WARNING**

Always remove safety lanyard cap from switch to prevent accidental engine starting before cleaning the jet pump area.

Press the start/stop button for short period without starting engine. Most of the time, this will remove the blockage.

If system is still blocked move the craft out of the water and remove blockage manually.

**CAUTION:** Inspect water intake grate for damage. Refer to an authorized Sea-Doo dealer for repair as necessary.

## Capsized Craft

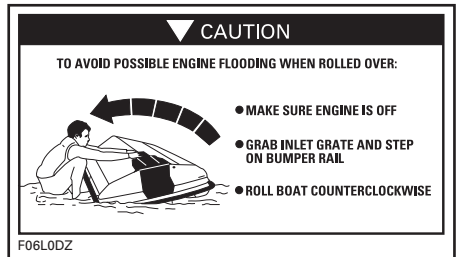
If the craft turns over, it will remain capsized.

To return the craft upright, grab the inlet grate, step on rub rail and use your weight to rotate it **counterclockwise** (seen from rear).

### **⚠ WARNING**

When boat is capsized, do not attempt to restart the engine. Operator and passengers should always wear approved personal flotation devices.

**CAUTION:** Always refer to decal located on stern of craft.



## Submerged Craft

If the craft is submerged and engine is water-flooded, it is strongly recommended that the craft be serviced by an authorized Sea-Doo dealer.

## Flooded Engine

In the event the engine cannot be serviced within a few hours, remove spark plug cables and connect them on the grounding device.

### **WARNING**

Never crank engine with spark plugs removed unless spark plug cables are connected to the grounding device.

Remove spark plugs and dry them with a clean and dry cloth.

Cover spark plug holes with a rag.

Ensure choke lever is completely pushed in.

Crank engine for approximately 10 seconds to allow water to escape from spark plug openings.

Spray BOMBARDIER LUBE lubricant or equivalent into spark plug holes.

Crank engine again.

Reinstall spark plugs.

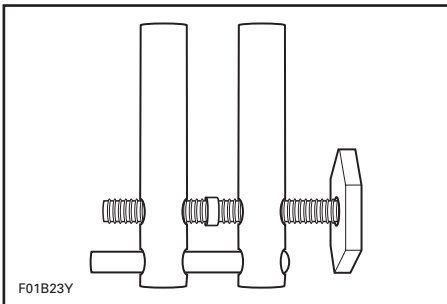
Start engine normally.

## Towing the Craft in Water

Special precautions should be taken when towing a craft in water.

Maximum recommended towing speed is 24 km/h (15 MPH).

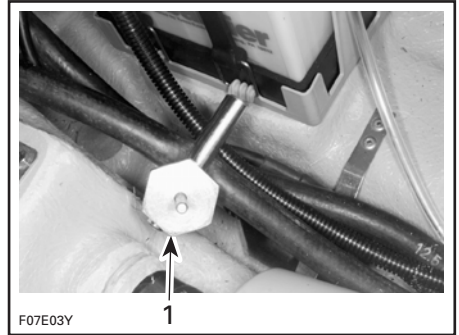
When towing your craft in water, pinch the water supply hose from the impeller housing to the engine with a large hose pincher (P/N 529 032 500) shown in the following illustration.



This will prevent the cooling system from filling which may lead to water being injected into and filling the exhaust system. Without the engine running there isn't any exhaust pressure to carry the water out the exhaust outlet.

**CAUTION:** Failure to do this may result in damage to the engine. If you must tow a stranded craft in water and do not have a hose pincher be sure to stay well below the maximum towing speed of 24 km/h (15 MPH).

Snugly install the hose pincher on the water supply hose as shown.



*TYPICAL*

1. Hose pincher

**CAUTION:** When finished towing the craft, hose pincher should be removed before operating it. Failure to do so will result in damage to the engine.

## Low-Charge Battery Condition

See your authorized Sea-Doo dealer to have it charged or replaced.

### **WARNING**

Do not charge or boost the battery while installed on the craft.

# MAINTENANCE

## WARNING

Only perform procedures as detailed in this guide. It is recommended that the assistance of an authorized Sea-Doo dealer be periodically obtained on other components/systems not covered in this guide. Unless otherwise specified, engine should not be running and the safety lanyard should be removed from its switch for all maintenance procedures.

## Lubrication

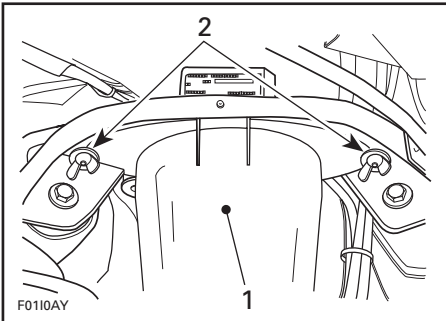
Use SEA-DOO synthetic grease or equivalent and lubricate PTO flywheel, see MAINTENANCE Periodic Inspection Chart.

Proceed as follows:

Remove seat(s) to expose engine compartment.

### PTO Flywheel

Remove the wing nuts, washers and pull out PTO flywheel guard.

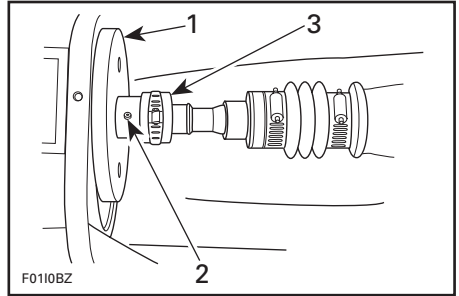


#### TYPICAL

1. Flywheel guard
2. Wing nuts

Using a grease gun, carefully lubricate PTO flywheel at grease fitting until PTO flywheel boot begins to expand.

**CAUTION:** Immediately stop lubricating as soon as PTO flywheel boot begins to expand to prevent damage or slipping.



1. PTO flywheel
2. Grease fitting
3. PTO flywheel boot

Reinstall and secure PTO flywheel guard.

## Anticorrosion Protection

### Throttle/Choke Cables

Lubricate the throttle and choke cables with BOMBARDIER LUBE lubricant or equivalent every 25 hours (or every 10 hours in salt water use).

### Electrical Connections

As necessary, apply dielectric grease on battery posts and all exposed cable connectors.

**CAUTION:** Do not lubricate connectors of the Multi-Purpose Electronic Module.

### Additional Lubrication

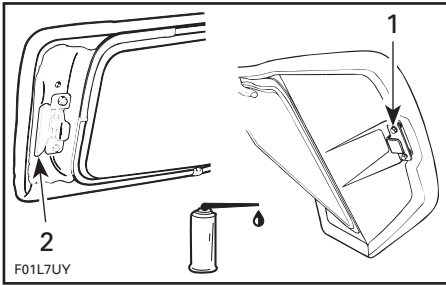
BOMBARDIER LUBE lubricant or equivalent will help prevent corrosion and maintain proper operation of moving mechanisms.

Lubrication of the following items should be performed every 50 hours in fresh water use but every 10 hours in salt water use.

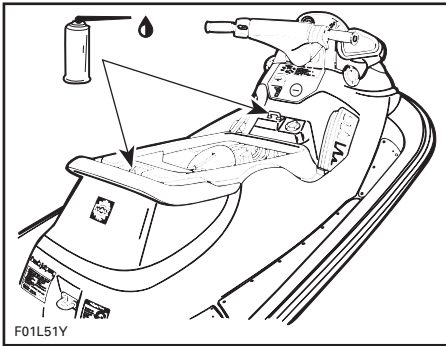
## Choke Lever

Fully pull choke lever and lubricate the metallic portion.

## Storage Opening Mechanism, Tab, Hook and Lock Pin



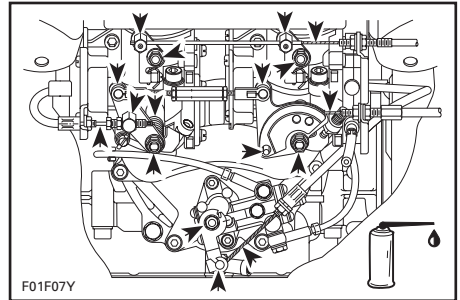
1. Front tab
2. Rear mechanism



TYPICAL

## Carburetors and Oil Injection Pump

Lubricate springs, shafts and exposed portion of cables. Grease carburetor linkage with synthetic grease.



TYPICAL

## Reverse Gate(s)

Lubricate pivoting points and mechanism of each side.

## Storage Compartment Cover Cylinders

Lubricate rod of cylinders.

## Periodic Inspection

Routine maintenance is necessary for all mechanized products. A periodic inspection contributes to the product's life span.

The following maintenance chart gives guidelines for regular craft servicing scheduled to be performed by you and/or by an authorized Sea-Doo dealer. The schedule should be adjusted according to operating conditions and use.

## Periodic Inspection Chart

DESCRIPTION	FREQUENCY				
	First 10 hours	Every 25 hours	Every 50 hours	Every 100 hours or seasonally	To be performed by
Lubrication/corrosion protection	①		✓		OPERATOR
Engine ignition timing				✓	DEALER
Spark plug replacement			✓		DEALER
Throttle/choke cables, inspection/lubrication	①	✓			OPERATOR
Carburetor adjustment including choke/throttle cable adjustments				✓	DEALER
Oil injection pump adjustment				✓	DEALER
Fuel filter and oil filter inspection		✓			DEALER
Fuel filter and oil filter replacement				✓	DEALER
Fuel tank straps	✓				OPERATOR
Oil tank straps	✓				OPERATOR
Engine head bolts, retorque				✓	DEALER
Engine counterbalance shaft oil level (if applicable)				✓	DEALER
Steering system			✓		DEALER
Reverse system/reverse cable adjustment				✓	DEALER
Fastener tightening (flame arrester, carburetor(s), engine mount, exhaust system, etc.)			✓		DEALER
Muffler, battery and reservoir fastening devices			✓		OPERATOR
Fuel lines, check-valve and <b>fuel system pressurization</b>	✓	✓	✓	✓	DEALER
Fuel vent line pressure relief valve inspection		✓			DEALER
Inspect/clean engine drain tube	①	✓			DEALER
Battery condition			✓		DEALER
Electrical connections (battery, starter, etc.)		✓			DEALER
Monitoring beeper			✓		DEALER
Jet pump reservoir oil level/oil condition		✓		Replace	DEALER
Jet pump cover pusher inspection				✓	DEALER
Impeller condition and impeller/wear ring clearance			✓②		DEALER
Drive shaft boot and spline condition (if applicable)			✓②		DEALER
PTO flywheel and seal carrier lubrication (if applicable)	✓				OPERATOR
Water intake grate condition			✓②		OPERATOR
Hull condition				✓	OPERATOR
Cooling system flushing		✓③			OPERATOR

**NOTE:** Some items are included in the PRE-OPERATION CHECKS and not necessarily repeated in this chart.

① Every 10 hours in salt water use.

② These items have to be initially checked after 25 hours. Thereafter, servicing to be made as specified in this chart.

③ Daily flushing in salt water or foul water use.

## Throttle and Choke Cable Inspection

### Throttle Cable

Activate the throttle lever(s) throughout its full range of motion. It should operate smoothly. Refer to an authorized Sea-Doo dealer if adjustment is necessary.

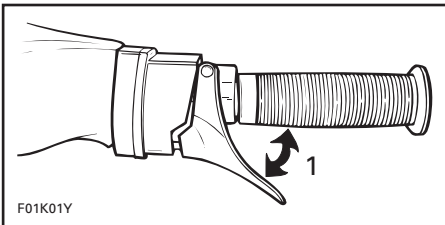
**NOTE:** Do not activate throttle lever unnecessarily, when engine is (are) not running. Carburetors are equipped with fuel accelerator pumps. These pumps deliver fuel to the engine each time throttle lever is moved forward.

#### **WARNING**

Do not alter or tamper with throttle cable adjustment or routing.

#### **WARNING**

If throttle lever does not automatically return, do not operate craft and see your authorized Sea-Doo dealer.



1. *Should move freely*

### Choke Cable

Ensure choke cable operates smoothly and without any hesitation from fully opened to fully closed. When the choke lever is fully pulled, choke should be fully applied. Refer to an authorized Sea-Doo dealer if necessary.

## Carburetor Adjustment

Carburetor adjustment is very important to allow good engine operation and therefore craft performance. Carburetor adjustment requires technical knowledge and experience to have the correct mixture supplied to the engine. This critical adjustment should be performed by an authorized Sea-Doo dealer once a year or more often if necessary.

**CAUTION:** Serious engine damage can occur with improper carburetor adjustment.

## Fuel and Oil Filters

These filters should be replaced by an authorized Sea-Doo dealer. Fuel system pressurization should be conducted at the same time. Refer to MAINTENANCE Periodic Inspection Chart.

**CAUTION:** An obstructed oil filter will cause oil starvation resulting in serious engine damage.

## Steering Alignment

When the handlebar is directed in straight ahead position, the jet pump nozzle should be in the same direction allowing the craft to run in a straight line.

Refer to an authorized Sea-Doo dealer if an adjustment is necessary.

#### **WARNING**

Ensure the handlebar and jet pump nozzle operate freely from side to side and are not stressing the steering cable or brackets.

## Reverse Gate

#### **WARNING**

Ensure the shifter and reverse gate operate freely and are not stressing the reverse cable.

Refer to an authorized Sea-Doo dealer if an adjustment is necessary.

## Deck Drains

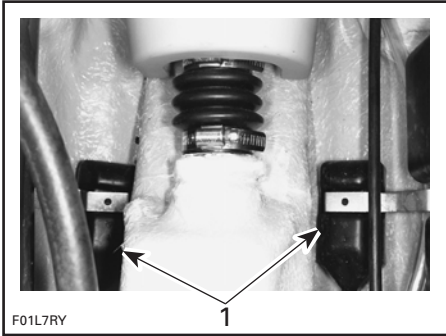
Remove any obstruction from deck drains and scupper valve.

## Vacuum Bailer Pick-Ups

They are located each side of the drive shaft tunnel.

Two pick-ups use a low pressure area in the jet pump to siphon the water out of the bilge when the engine is operating.

Inspect each pick-up screen for obstructions, clean as necessary.



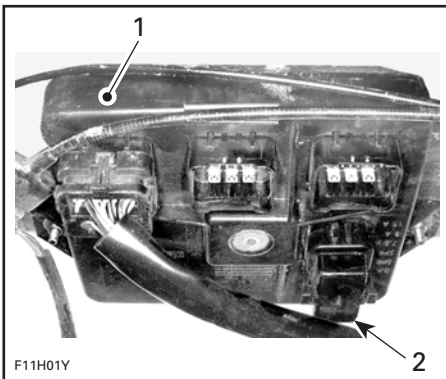
TYPICAL

1. Vacuum bailer pick-ups

## Fuses

Locate MPEM under seat inside engine compartment of craft.

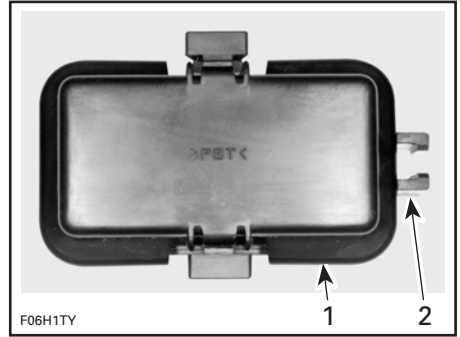
Remove fuse cover from the MPEM.



TYPICAL

1. MPEM
2. Fuse cover

Use the tabs of the fuse cover to remove and reinstall fuses.



1. Fuse cover
2. Fuse tabs

If a fuse is burnt, replace by one of the same rating.

## WARNING

Do not use a higher rated fuse as this can cause severe damage. If a fuse has burnt out, source of malfunction should be determined and corrected before restarting. See an authorized Sea-Doo dealer for servicing.

## General Inspection and Cleaning

### Inspection

Check engine compartment for any damage and fuel/oil injection systems for leaks. Ensure all hose clamps are properly secured and no hose is cracked, kinked or presenting any other damage.

## WARNING

If any gasoline leak and/or odor are present, do not start the engine. Have the craft serviced by an authorized Sea-Doo dealer.

Inspect muffler, battery, fuel tank and oil reservoir fastening devices. Visually check electrical connections for corrosion and tightness.

Inspect hull and jet pump water intake grate for damage. Replace or have damaged parts repaired.

## **Cleaning**

The bilge should be cleaned by your dealer to remove any fuel/oil/electrolyte deposits and mildew.

Occasionally, wash the body with water and soap (only use mild detergent). Remove any marine organisms from engine and/or hull. Apply non-abrasive wax such as silicone wax.

**CAUTION:** Never clean fiberglass and plastic parts with strong detergent, degreasing agent, paint thinner, acetone, etc.

Stains may be removed from seats and fiberglass with Knight's Spray-Nine<sup>†</sup> from Korkay System Ltd or the equivalent.

Respect the environment by ensuring fuel, oil or cleaning solutions do not drain into the waterways.

# STORAGE AND PRE-SEASON PREPARATION

## WARNING

Because fuel and oil are flammable, have an authorized Sea-Doo dealer inspect the fuel and oil systems integrity as specified in the periodic inspection chart.

## Storage

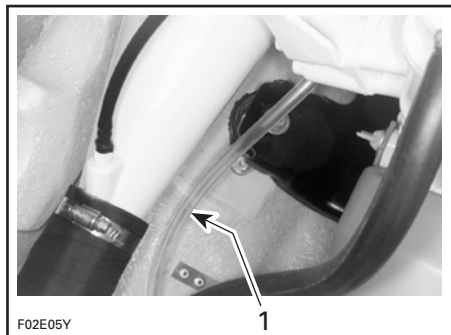
It is recommended that the craft be serviced by an authorized Sea-Doo dealer for storage but the following operations can be performed by you with a minimum of tools.

**CAUTION:** Do not run the engine during the storage period.

## Engine Draining

Check engine drain hose. Make sure there is no sand or other particles in it and that it is not obstructed so that water can exit the engine. Clean hose and fitting as necessary.

**CAUTION:** Water in engine drain hose should be free to flow out, otherwise water could be trapped in engine. Should water freeze in engine, severe damage will occur. Check engine drain hose for obstructions.



F02E05Y

1. Engine drain hose

## Craft Rinsing

Thoroughly rinse craft's hull with fresh water.

## Propulsion System

Lubricant in jet pump reservoir should be drained and reservoir cleaned. Refill with SEA-DOO synthetic polyolester oil (75W90 GL5 type C gear lube) or equivalent. Refer to an authorized Sea-Doo dealer for this operation.

**CAUTION:** Use only SEA-DOO jet pump oil or equivalent synthetic gear oil, otherwise component service life could be reduced. Do not mix oil brands or types.

IMPELLER SHAFT RESERVOIR	
MODEL	CAPACITY (mL)
LRV	115

Grease lubrication point(s) of propulsion system as explained in MAINTENANCE section.

## Fuel System

SEA-DOO fuel stabilizer (or equivalent), can be added in fuel tank to prevent fuel deterioration and carburetor gumming. Follow manufacturer's instructions for proper use.

**CAUTION:** Fuel stabilizer should be added prior to engine lubrication to ensure carburetor protection against varnish deposits.

## WARNING

Fuel is flammable and explosive under certain conditions. Always work in a well ventilated area. Always wipe off any fuel spillage from the craft. Always turn the fuel valve to OFF position when storing the craft.

## Cooling System Flushing and Engine Internal Lubrication

Refer to procedure in POST-OPERATION CARE.

### Battery

Contact your authorized Sea-Doo dealer or refer to the appropriate *Shop Manual* for proper storage procedure.

### Anticorrosion Treatment

Wipe off any residual water in the engine compartment.

Spray BOMBARDIER LUBE lubricant or equivalent over metallic components in engine compartment.

Lubricate the throttle cable with BOMBARDIER LUBE lubricant or equivalent.

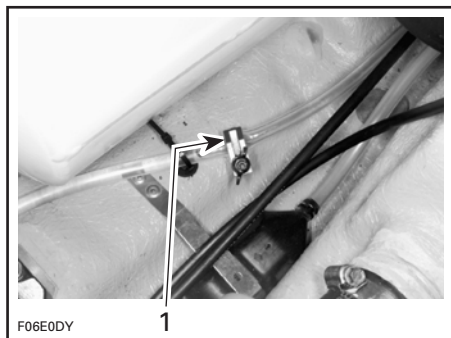
The front and rear portion of the seat should be partially left opened and storage baskets should be removed during storage. This will avoid engine compartment condensation and possible corrosion.

### Antifreezing Protection

In cool regions (where freezing point may be encountered), cooling system should be filled with an equal part of water and antifreeze solution.

**CAUTION:** Always use ethylene glycol antifreeze containing corrosion inhibitors specifically recommended for aluminum engines.

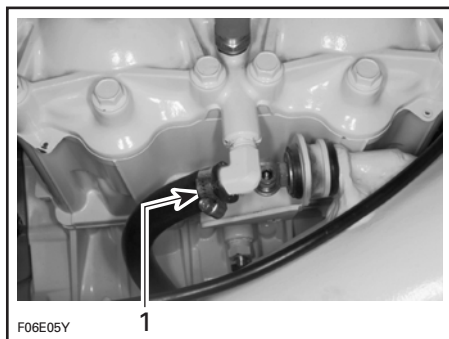
Install a hose pincher to engine drain hose.



TYPICAL

1. Hose pincher installed on engine drain hose

Disconnect engine water outlet hose.



TYPICAL

1. Disconnect engine water inlet hose

Temporarily install a short piece of hose to engine water outlet at cylinder head.

Insert a funnel into hose and pour antifreeze mixed with water in engine until the colored solution appears in the engine drain hose.

Most of the antifreeze will drain out when removing the hose pincher(s). Use a container to recover it. **DISPOSE OF ANTIFREEZE AS PER YOUR LOCAL LAWS AND REGULATIONS.**

**NOTE:** Although antifreeze will mainly drain out, the antifreeze has mixed with the water that was possibly trapped in the cylinder water jackets and thus preventing freezing problems.

At pre-season preparation, drain the remaining antifreeze from cooling system prior using the craft.

The following steps should be performed to provide the craft enhanced protection.

Lubricate the throttle cable with BOMBARDIER LUBE lubricant or equivalent.

Clean the bilge with hot water and detergent or with bilge cleaner. Rinse thoroughly. Lift front end of craft to completely drain bilge. If any repairs are needed to body or to the hull contact your dealer. For paint touch up to mechanical parts use Bombardier spray paint. For small gel coat repairs, a Bombardier repair kit is available. See ACCESSORIES AND SERVICE PRODUCTS section. Replace damaged labels/decals.

**NOTE:** Bilge cleaning should be done prior to anticorrosion treatment.

Wash the body with soap and water solution (only use mild detergent). Rinse thoroughly with fresh water. Remove marine organisms from the hull. Apply a good quality marine wax.

**CAUTION:** Never clean apparent fiberglass and plastic parts with strong detergent, degreasing agent, paint thinner, acetone, etc.

If the craft is to be stored outside, cover it with an opaque tarpaulin to prevent sun rays and grime from affecting the plastic components, craft finish as well as preventing dust accumulation.

**CAUTION:** The craft should never be left in water for storage. Never leave the craft stored in direct sunlight.

## Pre-Season Preparation

Use the following chart.

Since technical skills and special tools are required, some operations should be performed by an authorized Sea-Doo dealer.

### **WARNING**

Observe all WARNINGS and CAUTIONS mentioned throughout this guide which are pertinent to the item being checked. When component conditions seem less than satisfactory, replace with genuine BOMBARDIER parts or approved equivalents.

## Pre-Season Preparation Chart

NOTE: It is highly recommended that the dealer perform the annual safety inspection and factory campaigns in addition to the pre-season preparation all at the same time.

OPERATIONS	TO BE PERFORMED BY
Lubrication/corrosion protection	OPERATOR
Battery condition/charging and reinstallation	DEALER
Battery, starter connections and routing ②	DEALER
Spark plug replacement ①	OPERATOR
Jet pump oil inspection	DEALER
Propulsion system inspection	DEALER
Oil filter replacement	DEALER
Fuel tank straps	OPERATOR
Oil tank straps	OPERATOR
Oil injection tank filling	OPERATOR
Flame arrester inspection ②	DEALER
Fuel filter replacement	DEALER
Fuel line condition ②	DEALER
Filler neck, fuel tank and fuel cap condition ②	DEALER
Check valves, fasteners, <b>fuel system pressurization</b> ②	DEALER
Throttle ② and choke cable inspection/adjustment	DEALER
Oil injection pump adjustment and bleeding	DEALER
Engine ignition timing	DEALER
Carburetor adjustment	DEALER
Steering system adjustment/inspection ②	DEALER
Reverse cable adjustment	DEALER
Inspection of bailer pick-ups	DEALER
Inspection of cooling system hoses	DEALER
Monitoring beeper	DEALER
Digitally encoded security system	DEALER

① Before installing new spark plugs, it is suggested to burn the excess BOMBARDIER LUBE lubricant or equivalent by starting the engine using the old spark plugs.

② Safety item covered in the annual safety inspection.

# TROUBLESHOOTING

The following chart is provided to help in diagnosing the probable source of simple troubles. You may be able to solve many of these problems rather quickly, but others may require the skills of a mechanical technician. In such cases, consult an authorized Sea-Doo dealer for servicing.

## Monitoring Beeper Coded Signals

CODED SIGNALS	POSSIBLE CAUSE	REMEDY
2 short beeps (while installing safety lanyard on switch).	<ul style="list-style-type: none"> <li>• Confirms safety lanyard signal operation.</li> </ul>	Engine can be started.
1 long beep (while installing safety lanyard on craft switch or when pressing start/stop button).	<ul style="list-style-type: none"> <li>• Safety lanyard on switch for more than 10 minutes without starting engine.</li> <li>• Bad connection.</li> <li>• Wrong safety lanyard.</li> <li>• Defective safety lanyard.</li> <li>• Salt water in safety lanyard cap.</li> <li>• Improper operation of MPEM or defective wiring harness.</li> </ul>	<p>Remove and reinstall safety lanyard on switch.</p> <p>Reinstall safety lanyard cap correctly over switch.</p> <p>Use a safety lanyard that has been programmed for the craft.</p> <p>Use another programmed safety lanyard.</p> <p>Clean safety lanyard cap to remove salt water.</p> <p>Refer to an authorized Sea-Doo dealer.</p>
8 short beeps.	<ul style="list-style-type: none"> <li>• Defective MPEM.</li> </ul>	Refer to an authorized Sea-Doo dealer.
Continuously beeps.	<ul style="list-style-type: none"> <li>• Engine overheats.</li> </ul>	See ENGINE OVERHEATING.

## Engine Will Not Start

OTHER OBSERVATION	POSSIBLE CAUSE	REMEDY
Engine does not turn over.	<ul style="list-style-type: none"> <li>• Safety lanyard removed.</li> <li>• Burnt fuse.</li> <li>• Discharged battery.</li> <li>• Battery connections, corroded or loose.</li> <li>• Water flooded engine.</li> </ul>	<p>Install cap over switch.</p> <p>Check wiring then replace fuse.</p> <p>Refer to an authorized Sea-Doo dealer.</p> <p>Refer to an authorized Sea-Doo dealer.</p> <p>Refer to <b>Submerged Craft</b> in SPECIAL PROCEDURES.</p>
Engine turns slowly.	<ul style="list-style-type: none"> <li>• Discharged or weak battery.</li> </ul>	Refer to an authorized Sea-Doo dealer.
Engine turns normally.	<ul style="list-style-type: none"> <li>• Close fuel valve.</li> <li>• Fuel tank empty o water-contaminated.</li> <li>• Fuel filter clogged or water-contaminated.</li> <li>• Fouled/defective spark plugs.</li> <li>• Misuse of choke.</li> <li>• Fuel flooded engine.</li> </ul>	<p>Turn fuel valve to ON position.</p> <p>Refill. Siphon and fill with fresh fuel.</p> <p>Clean, check fuel tank for water.</p> <p>Replace.</p> <p>Use only with cold engine. Replace spark plugs.</p> <p>Replace spark plugs.</p>

## Engine Misfires, Runs Irregularly

OTHER OBSERVATION	POSSIBLE CAUSE	REMEDY
Weak spark.	<ul style="list-style-type: none"> <li>Fouled/defective/worn spark plugs.</li> <li>Faulty rev limiter.</li> <li>Too much oil supplied to engine.</li> </ul>	Replace.  Refer to an authorized Sea-Doo dealer.  Improper oil pump adjustment, refer to an authorized Sea-Doo dealer.
Lean fuel mixture.	<ul style="list-style-type: none"> <li>Fuel: Level too low, stale or water-contaminated.</li> <li>Fuel filter, clogged or water-contaminated.</li> <li>Fuel valve partially open.</li> </ul>	Siphon and/or refill.  Refer to an authorized Sea-Doo dealer.  Turn fuel valve to ON position.
Rich fuel mixture (high fuel consumption).	<ul style="list-style-type: none"> <li>Flame arrester dirty/clogged.</li> <li>Partially closed choke.</li> </ul>	Clean or replace.  Refer to an authorized Sea-Doo dealer.

## Engine Overheats

OTHER OBSERVATION	POSSIBLE CAUSE	REMEDY
Monitoring beeper sounds continuously.	<ul style="list-style-type: none"> <li>Clogged jet pump water intake.</li> <li>Clogged coolant system.</li> </ul>	Clean.  Flush cooling system with coupler hose.

## Engine Continually Backfires

OTHER OBSERVATION	POSSIBLE CAUSE	REMEDY
Weak spark.	<ul style="list-style-type: none"> <li>Fouled/defective/worn spark plugs.</li> </ul>	Replace.
Overheated engine.	<ul style="list-style-type: none"> <li>See ENGINE OVERHEATS.</li> <li>Faulty rev limiter.</li> </ul>	Refer to an authorized Sea-Doo dealer.

## Engine Pinging or Knocking

OTHER OBSERVATION	POSSIBLE CAUSE	REMEDY
	<ul style="list-style-type: none"> <li>Poor quality gasoline/low octane.</li> <li>Spark plug heat range too high.</li> <li>Ignition timing.</li> </ul>	Use well known quality and recommended gasoline.  Use recommended spark plugs.  Refer to an authorized Sea-Doo dealer.

## Engine Lacks Acceleration or Power

OTHER OBSERVATION	POSSIBLE CAUSE	REMEDY
	<ul style="list-style-type: none"> <li>Weak spark/incorrect fuel mixture.</li> <li>Water in fuel or injection oil.</li> </ul>	Refer to ENGINE MISFIRES, RUNS IRREGULARLY.  Siphon and replace.
Overheated engine.	<ul style="list-style-type: none"> <li>See ENGINE OVERHEATS.</li> </ul>	

## Craft Can Not Reach Top Speed

OTHER OBSERVATION	POSSIBLE CAUSE	REMEDY
Cavitation.	Jet pump water intake clogged. Damaged impeller.	Clean. Replace. Refer to an authorized Sea-Doo dealer.

## Abnormal Noise From Propulsion System

OTHER OBSERVATION	POSSIBLE CAUSE	REMEDY
Cavitation.	<ul style="list-style-type: none"><li>• Weeds or debris jammed around impeller.</li><li>• Damaged impeller shaft or drive shaft.</li></ul>	Clean and check for damage. Refer to an authorized Sea-Doo dealer.

# SPECIFICATIONS

ENGINE		LRV
Engine type		Rotax 947, 2-stroke
Induction type		Reed valve
Exhaust system		Water cooled/water injected with regulator
Exhaust valve		RAVE
Lubrication	Type	Oil injection
	Oil type	BOMBARDIER Formula XP-S synthetic injection oil (or equivalent) ①
Number of cylinders		2
Displacement		951.2 cm <sup>3</sup> (58 in <sup>3</sup> )
Rev limiter setting		7200 RPM ± 50
COOLING		
Type		Water cooled, total loss type. Direct flow from propulsion unit
ELECTRICAL		
Magneto generator output		180 W @ 6000 RPM
Ignition system type		Digital DC-CDI
Spark plug	Make and type	NGK, BR8ES
	Gap	0.5 - 0.6 mm (.020 - .024 in)
Starting system		Electric starter with reduction gear
Battery		12 V, 19 A•h
Fuse	MPEM	5 A
	Electrical system	2 x 15 A
	VTS system	N.A.
CARBURETION		
Fuel type		Regular unleaded gasoline
Carburetor		BN 46i (diaphragm). Fuel accelerator pump. Quantity: 2

N.A.: Not Applicable.

① Refer to load limit.

<b>PROPULSION</b>		<b>LRV</b>
Propulsion system		BOMBARDIER Formula pump
Jet pump type		Axial flow, single stage
Transmission		Direct drive
Jet pump oil type		SEA-DOO synthetic polyolester oil SAE 75W90 GL5
Pivoting angle of direction (nozzle)		~23°
Minimum required water level for jet pump		90 cm (3 ft)
<b>DIMENSIONS</b>		
Number of passengers ①		4
Overall length		396 cm (156.0 in)
Overall width		155 cm (61.0 in)
Overall height		108 cm (42.5 in)
Weight		432 kg (960 lb)
Load limit (passengers + luggage)		338 kg (750 lb)
<b>CAPACITIES</b>		
Fuel tank		95 L (25 U.S. gal)
Fuel reserve		19 L (5.0 U.S. gal)
Oil injection tank		6 L (203 U.S. oz)
Impeller shaft reservoir	Capacity	115 mL (3.9 U.S. oz)
	Oil level	Up to plug

① Refer to load limit.

BOMBARDIER INC. reserves the right to make changes in design and specifications and/or to make additions to, or improvements in its products without imposing any obligation upon itself to install them on its products previously manufactured.

# SI\* METRIC INFORMATION

BASE UNITS			
DESCRIPTION	UNIT		SYMBOL
length .....	meter .....		m
mass .....	kilogram .....		kg
force .....	newton .....		N
liquid .....	liter .....		L
temperature .....	Celsius .....		°C
pressure .....	kilopascal .....		kPa
torque .....	newton-meter .....		N•m
land velocity .....	kilometer per hour .....		km/h
navigation velocity .....	knot .....		kn
PREFIXES			
PREFIX	SYMBOL	MEANING	VALUE
kilo .....	k .....	one thousand .....	1000
centi .....	c .....	one hundredth of .....	0.01
milli .....	m .....	one thousandth of .....	0.001
micro .....	μ .....	one millionth of .....	0.000001
CONVERSION FACTORS			
TO CONVERT	TO ①	MULTIPLY BY	
in .....	mm .....	25.4	
in .....	cm .....	2.54	
in <sup>2</sup> .....	cm <sup>2</sup> .....	6.45	
in <sup>3</sup> .....	cm <sup>3</sup> .....	16.39	
ft .....	m .....	0.3	
oz .....	g .....	28.35	
lb .....	kg .....	0.45	
lbf .....	N .....	4.4	
lbf•in .....	N•m .....	0.11	
lbf•ft .....	N•m .....	1.36	
lbf•ft .....	lbf•in .....	12	
PSI .....	kPa .....	6.89	
imp. oz .....	U.S. oz .....	0.96	
imp. oz .....	mL .....	28.41	
imp. gal .....	U.S. gal .....	1.2	
imp. gal .....	L .....	4.55	
U.S. oz .....	mL .....	29.57	
U.S. gal .....	L .....	3.79	
knot .....	MPH .....	1.15	
MPH .....	km/h .....	1.61	
Fahrenheit .....	Celsius .....	(°F - 32) ÷ 1.8	
Celsius .....	Fahrenheit .....	(°C x 1.8) + 32	
hp .....	kW .....	.75	

\* The international system of units abbreviates SI in all languages.

① To obtain the reverse sequence, divide by the given factor. Example: to convert millimeters to inches, divide by 25.4.

NOTE: Conversion factors are rounded off to 2 decimals for easier use.

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## ABBREVIATIONS USED IN THIS MANUAL

	DESCRIPTION
AC	Alternate current
CDI	Capacitor discharge ignition
DC	Direct current
DESS	Digitally encoded security system
E.I.N.	Engine identification number
HP	Horse power
LED	Light emitting diode
MAG	Magneto
MPEM	Multi-purpose electronic module
MPH	Mile per hour
N.A.	Not applicable
OPT	Optional
P/N	Part number
PFD	Personal flotation device
PTO	Power take off
RAVE	Rotax adjustable variable exhaust
RPM	Revolution per minute
STD	Standard
VROI	Variable rate oil injection





AFFIX  
PROPER  
POSTAGE

**BOMBARDIER**  
Recreational Products  
Sea-Doo Warranty  
Valcourt (Quebec)  
Canada J0E 2L0

**WATERCRAFT MODEL No.** \_\_\_\_\_

**HULL IDENTIFICATION NUMBER (H.I.N.)** \_\_\_\_\_

**ENGINE IDENTIFICATION NUMBER (E.I.N.)** \_\_\_\_\_

**Owner:** \_\_\_\_\_  
NAME

\_\_\_\_\_  
No. STREET APT

\_\_\_\_\_  
CITY STATE/PROVINCE ZIP/POSTAL CODE

**Purchase Date** \_\_\_\_\_  
YEAR MONTH DAY

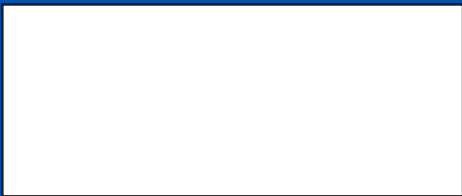
**Warranty Expiry Date** \_\_\_\_\_  
YEAR MONTH DAY

To be completed by the authorized Sea-Doo dealer at the time of the sale.

DEALER IMPRINT AREA

**Please verify with your selling dealer to ensure your SEA-DOO watercraft has been registered with Bombardier.**

# SEA-DOO



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*RECREATIONAL PRODUCTS*

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