

SEA-DOO®

OPERATOR'S GUIDE



2000

219 000 102

LRV 5688

SAFETY WARNING

Disregarding any of the safety precautions and instructions contained in this *Operator's Guide*, the *Safety Handbook* and 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
After-Sales Service
Valcourt (Quebec)
Canada JOE 2L0



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SEA-DOO®
BOMBARDIER-ROTAX®
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BOMBARDIER-ROTAX Formula XP-S Synthetic
Injection Oil
BOMBARDIER-ROTAX Injection Oil
Sea-Doo Synthetic Grease

Gelcote[†] is a trademark of Gelcote International
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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 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 passenger safety and the safety of other water users. Please follow all safety instructions and drive 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.

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.

⚠ SAFETY WARNING

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.**
- ⚠ Information in this guide is limited. It is strongly recommended that you obtain further boating information from the local Coast Guard or Power Squadron. We also recommend all operators to take a boating safety course. Please check local and federal boating laws applicable to the waterways where you intend to use the craft. Learn the local rules of the road. Always carry the regulatory required safety items on board.
- ⚠ The performance of this craft may significantly exceed that of other boats you have operated. Therefore, use of this craft by a novice or inexperienced operator, or an underage or disabled person, is not recommended.
- ⚠ Observe and follow all on-product warning labels.

- ⚠ 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.** This craft has the capability of turning more sharply than other boats, however, unless in an emergency, do not negotiate sharp, high speed turns. You and your passenger(s) could be thrown from the craft. It should also be remembered that sun, wind, alcohol or drugs, may impair your judgment and reaction time.
- ⚠ While your craft has the capacity of operating at high speeds, it is strongly recommended that high speed operation only be applied when ideal conditions exist and are permitted. Higher speed operation requires a higher degree of skill and increases the risk of severe injuries.

- ⚠ 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.
- ⚠ **Always keep a constant lookout for other water users especially when turning. Make sure to keep a safe distance from all other craft.**
- ⚠ 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. **Maintaining or increasing speed may be necessary to avoid a collision. 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, skis 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.
- ⚠ Always respect the safety and comfort of your passenger(s) and persons being towed on skis, wakeboards or other water products. The best advice is to carry an observer, proceed with only as much speed as required, and follow the observers instructions. Unless absolutely necessary, do not make tight, sharp turns.
- ⚠ Know the waters in which the craft is to be operated. Current, tides, rapids, hidden obstacles, wakes and waves etc., can affect safe operation. It is not advisable to operate the craft in rough or inclement weather.
- ⚠ Wake or wave jumping or riding the surf line can cause severe injury and damage the craft. Never attempt to splash others with your craft. You may misjudge the ability of the craft or your own riding skills and strike a boat or person.
- ⚠ 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.

LIST OF DISTRIBUTORS

NORTH AMERICA

USA (EXCEPT PUERTO RICO)	BOMBARDIER MOTOR CORPORATION OF AMERICA 7575 BOMBARDIER COURT P.O. BOX 8035 WAUSAU, WI 54402-8035 Phone: (715) 842-8886 FAX: (715) 848-3455 http://www.bombardier.com
CANADA Alberta British Columbia Manitoba North West Territories Ontario Quebec Saskatchewan Yukon New-Brunswick Nova Scotia Prince Edward Island	BOMBARDIER RECREATIONAL PRODUCTS 726, ST-JOSEPH ST. VALCOURT, QC J0E 2L0 Phone: (450) 532-2211 FAX: (450) 532-5077 http://www.bombardier.com
Newfoundland	CHARLES R. BELL P.O. BOX 1050 RIVERSIDE DRIVE CORNER BROOK, NFLD A2H 6J3 Phone: (709) 634-3533 FAX: (709) 634-2444

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.

BOMBARDIER LIMITED WARRANTY NORTH AMERICA: 2000 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, warrants FROM THE DATE OF DELIVERY TO THE FIRST CONSUMER that each 2000 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 2000 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 "2000 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 as but not limited to 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 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:

BOMBARDIER INC.
RECREATIONAL PRODUCTS
SEA-DOO
CUSTOMER ASSISTANCE CENTER
VALCOURT QC J0E 2L0
Tel: (450) 532-5000

In USA:

BOMBARDIER MOTOR
CORPORATION OF AMERICA
RECREATIONAL PRODUCTS
SEA-DOO
CUSTOMER ASSISTANCE CENTER
P.O. BOX 8035
7575 BOMBARDIER COURT
WAUSAU WI 54402-8035
Tel: (715) 848-4957

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BOMBARDIER INTERNATIONAL LIMITED WARRANTY: 2000 SEA-DOO® WATERCRAFT

1. WARRANTY COVERAGE PERIOD

BOMBARDIER INC. ("Bombardier"), as manufacturer, warrants FROM THE DATE OF DELIVERY TO THE FIRST CONSUMER that each 2000 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 2000 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 "2000 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 as but not limited to 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
VALCOURT QUEBEC J0E 2L0
CANADA

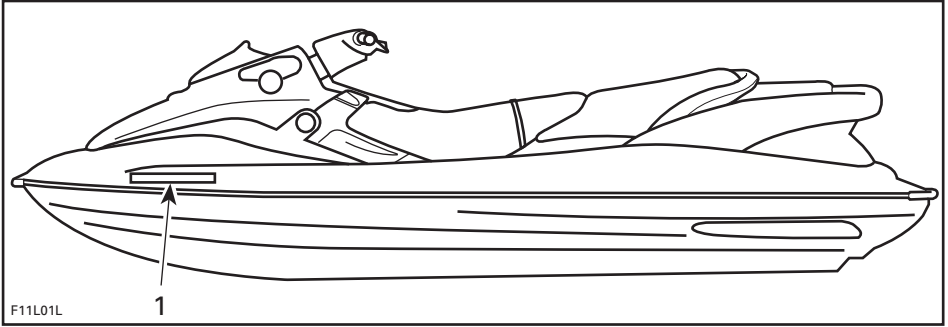
MARCH 1999

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REGISTRATION NUMBER LOCATION

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

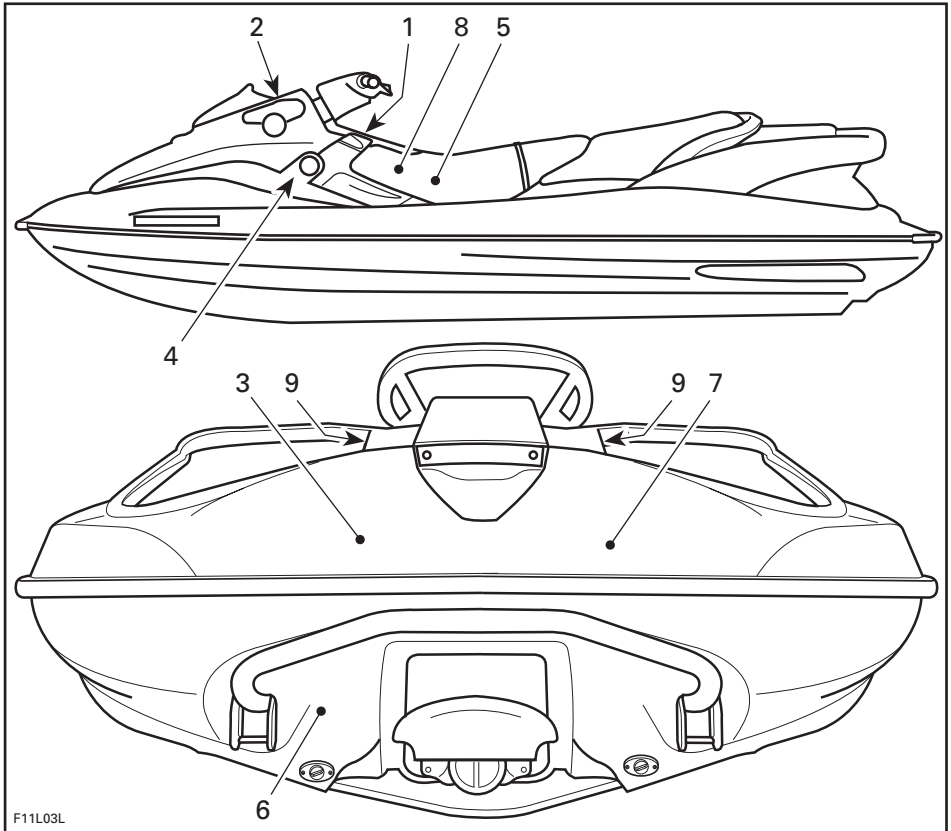
Due to space availability for proper display of registration number, refer to following illustration for location. The registration number should appear on each side of the craft.



1. Registration number location

LOCATION OF THE IMPORTANT LABELS

Please read the following labels carefully before operating this craft.



F11L03L

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 reduced when throttle is released and lost when engine is 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-time operation.
- Do not allow riders on the rear deck/platform when the engine is running.

F11L04L

TYPICAL

Label 2

▼ CAUTION

USE ONLY BOMBARDIER ROTAX SYNTHETIC TWO-STROKE OIL, ASH FREE-BIODEGRADABLE SPEC. CEC L-33A-82.

F01L830

Label 3

"THIS BOAT IS NOT REQUIRED TO COMPLY WITH THE FOLLOWING U.S. COAST GUARD SAFETY STANDARDS IN EFFECT ON THE DATE OF CERTIFICATION:

- Fuel System
- Safe Loading
- Display of Capacity Information
- Flotation
- Powered Ventilation

AS AUTHORIZED BY U.S. COAST GUARD GRANT OF EXEMPTION (CGB 88-001)."

Bombardier Corp. 7575 Bombardier Court, Wausau, WI 54401

Made in Canada/Fabrique au Canada Bombardier Inc. Rd./Enr.,1988

F02L2D0

Label 4

◆WARNING

WHILE FUELING, STOP ENGINE. FUEL TANK MAY BE PRESSURIZED, SLOWLY TURN CAP WHEN OPENING. KEEP WATERCRAFT LEVEL. DO NOT OVERFILL. CHECK OIL LEVEL. PERIODICALLY, VERIFY FUEL SYSTEM.

F01L6V0

Label 5

• WARNING

DO NOT BOOST BATTERY WHILE INSTALLED.

F00L050

Label 6

▼ 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 7

◆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.

F07L11Z

Label 8

Emission Control Information BOMBARDIER RECREATIONAL PRODUCTS

THIS ENGINE IS CERTIFIED TO OPERATE ON UNLEADED GASOLINE AND CONFORMS TO 1999 U.S. EPA REGULATIONS FOR MARINE SI ENGINES.

ENGINE FAMILY: XBCXM 58J011 C
 FEL: XXX GM/KW-HR HC + NO_x
 ENGINE DISPLACEMENT: 951.2 CC
 EXHAUST EMISSION CONTROL SYSTEM: CARB

TUNE-UP SPECIFICATIONS
 IDLE SPEED: 1500 RPM ± 200
 SPARK PLUG TYPE: NGK-BR8ES
 SPARK PLUG GAP: 0.020 IN.

F00L0J0

Label 9

◆WARNING

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

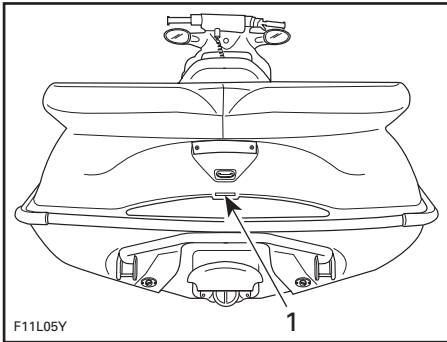
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IDENTIFICATION NUMBERS

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.

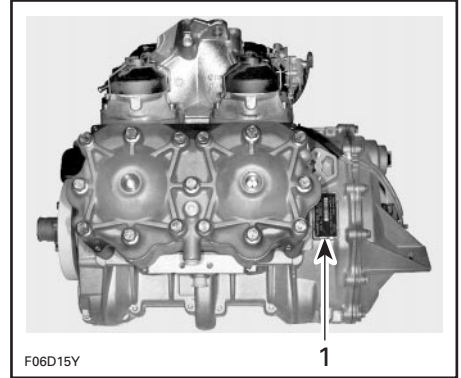


TYPICAL

1. Hull Identification Number

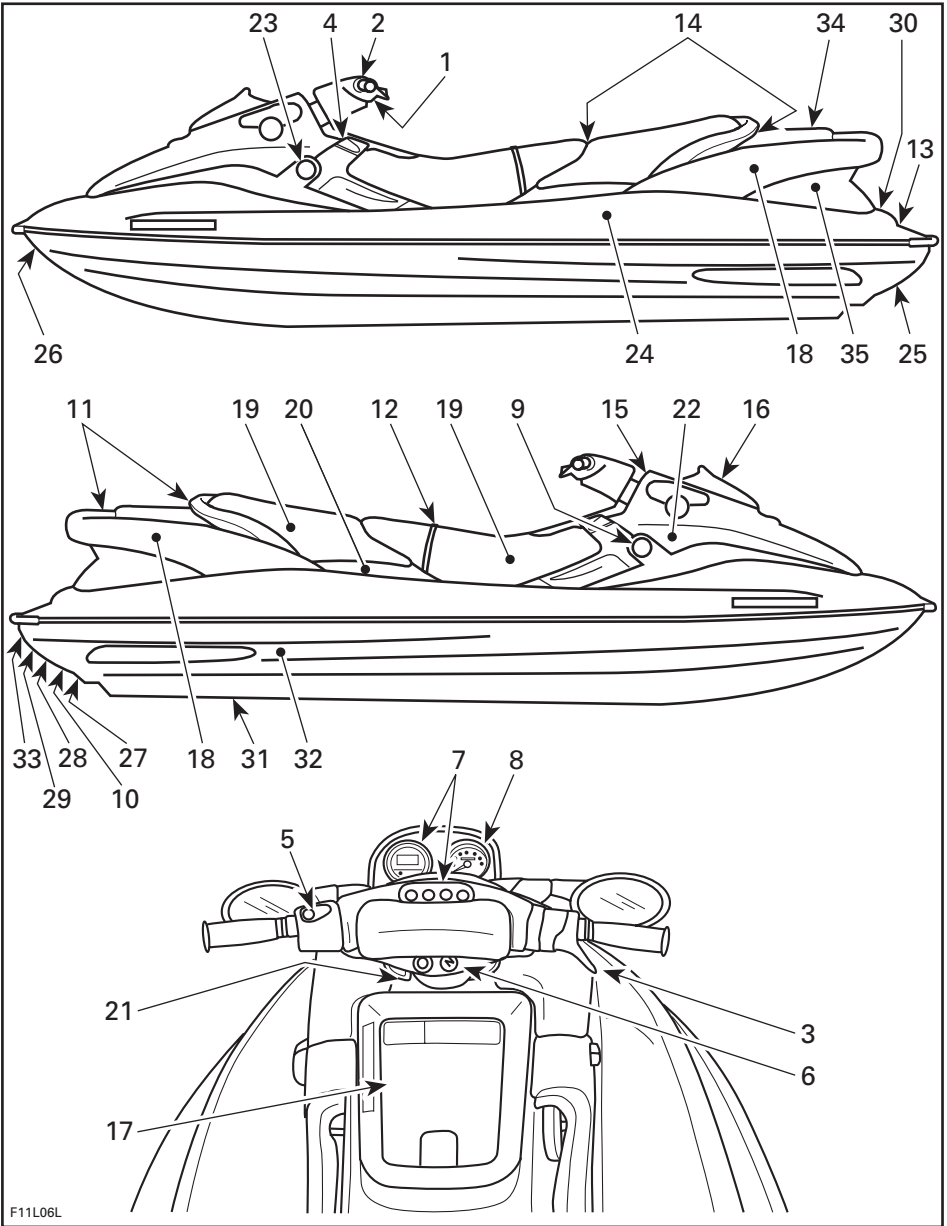
Engine

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



1. Engine Identification Number

CONTROLS AND COMPONENT LOCATION



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

COMPONENTS FUNCTIONS

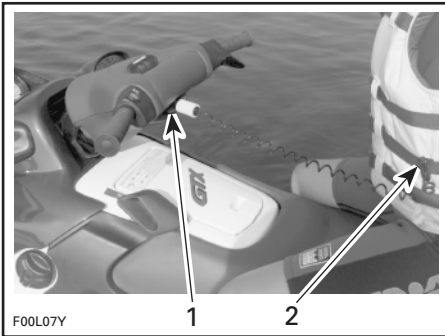
1) Safety Lanyard

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 leaving craft.

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.

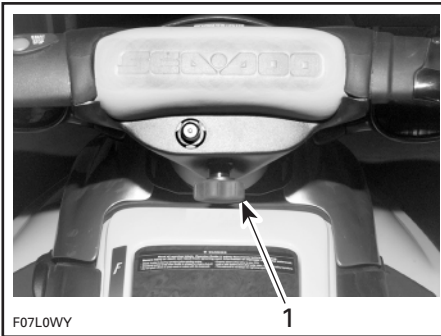
WARNING

Check handlebar and corresponding steering nozzle operation before starting.

ADJUSTMENT

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.

WARNING

Check throttle lever operation before starting the engine.

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 obstacles, swimmers and children playing in shallow water.

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

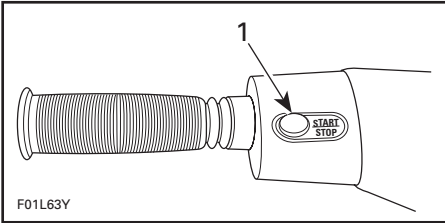
5) Engine Start/Stop Button

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 not available when engine is stopped.



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 Tank 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.

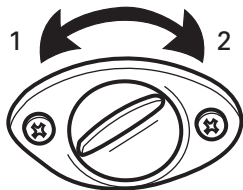
Always refill the fuel tank at the first opportunity. After refueling, turn the fuel valve to the ON position to continue operation.

10) Bilge Drain Plugs

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

WARNING

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



F02L2FY

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.

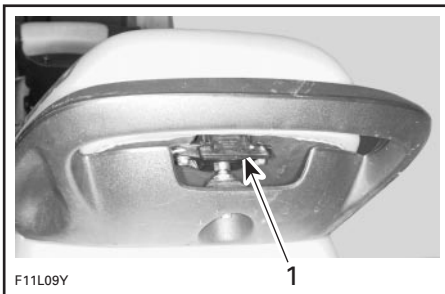
13) Swim Platform

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

14) Seat Latch

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

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



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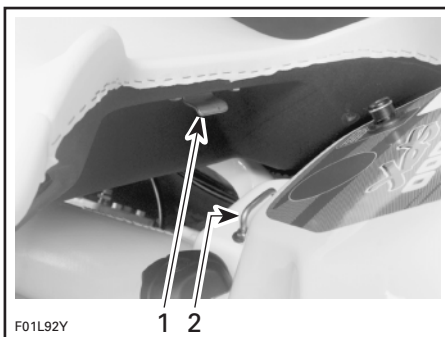
TYPICAL

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.



F01L92Y

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 seat is securely latched.

15) Cover Latch

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

NOTE: Verify periodically the lock pin tightness of storage cover. Tighten if needed and make sure storage cover latches properly.

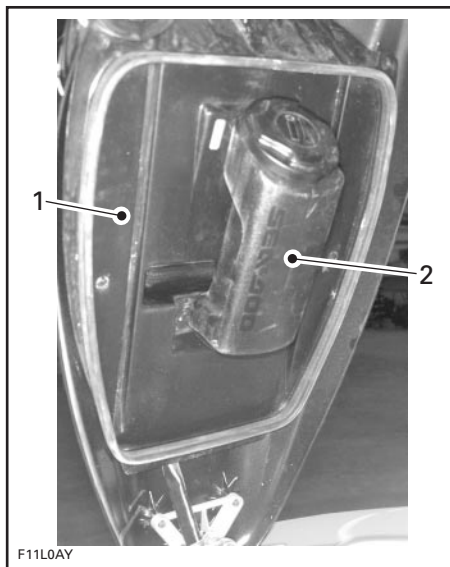
16) Front Storage Compartment

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 Guide*. 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 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.

20) Engine Compartment

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

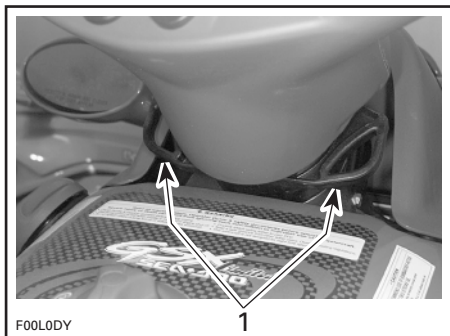
WARNING

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 tank, unscrew the cap counterclockwise. 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

Never use a lit match or 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.

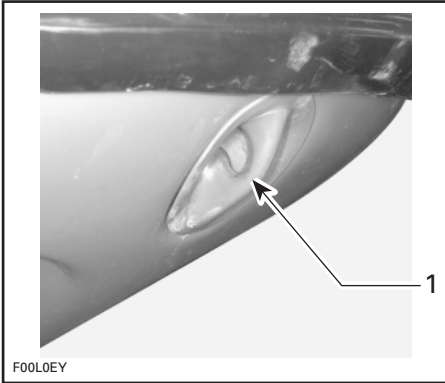
25) Flushing Connector

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.

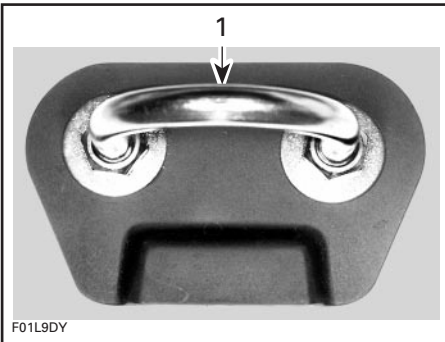


TYPICAL

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.

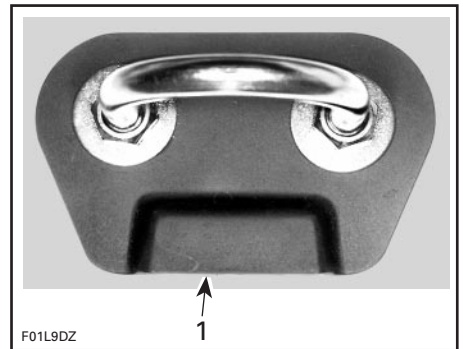
WARNING

Never use gate as a supporting point to board the craft. Do not reverse while at speed.

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

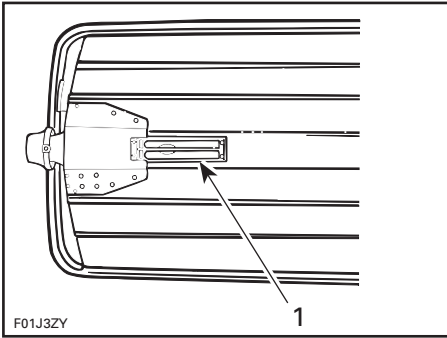
When engine is running, water should flow from the outlet. This allows air in engine cooling system to escape. It also indicates that water is circulating in the cooling system.

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

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.

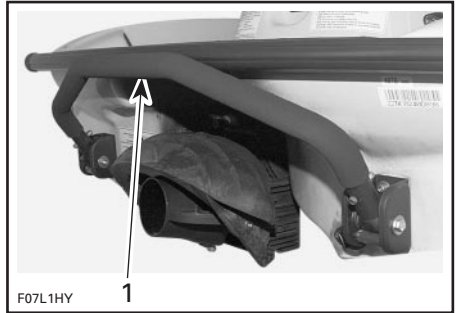
When engine is stopped pump remains on for 30 seconds and then automatically shuts-off.

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(s) is seated on the sun deck or swim platform.

35) Tool Kit

Contains tools needed to perform basic craft maintenance.

FUEL AND LUBRICATION

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

The tank design makes provision for fuel expansion of about 5%. If this area is filled, fuel will expand and may come out through fuel vent. 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. 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

We recommend the use of BOMBARDIER-ROTAX® Formula XP-S synthetic injection oil available at authorized Sea-Doo dealers.

This fully synthetic oil provides outstanding lubrication and cleanliness, less friction and wear for greater engine performance and durability.

CAUTION: The 947 engine requires the use of BOMBARDIER-ROTAX Formula XP-S synthetic injection oil (or a suitable equivalent of synthetic oil).

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

Engine

With BOMBARDIER-ROTAX® 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 BOMBARDIER-ROTAX injection oil 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.

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

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

Date of 10-hour inspection

Authorized dealer signature

Dealer code

DAILY PRE-OPERATION CHECKS

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

Safety lanyard should always be removed from its switch prior to verifying any of the following.

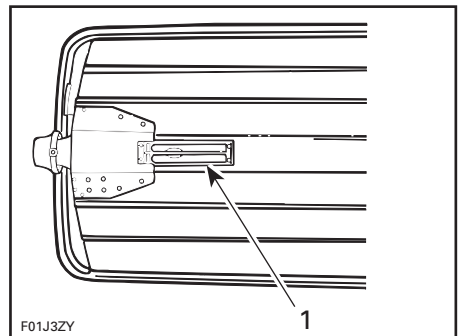
ITEM	OPERATION	✓
Hull	Inspect.	
Jet pump water intake	Inspect/clean.	
Bilge	Drain. Ensure plugs are secured.	
Battery	Inspect tightness of cables and retaining strap(s).	
Fuel tank and oil reservoir	Refill.	
Engine compartment	Verify for any fuel leak/odor.	
Fire extinguisher	Inspect condition/mounting.	
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.

Battery

WARNING

Verify tightness of battery cables to their posts and condition of retaining straps/fasteners.

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.

Throttle System

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

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 DAILY 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.

Trailing

⚠ WARNING

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

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

Before launching the craft, ensure the bilge plugs are fully screwed and after loading the craft, ensure they are remove 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.



TYPICAL

⚠ WARNING

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

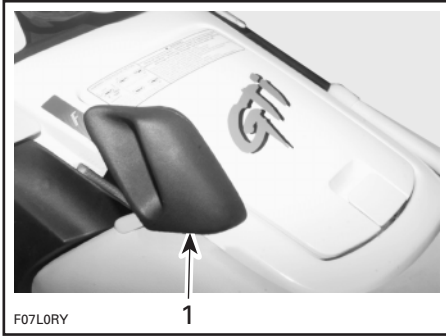
Shift Lever

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.

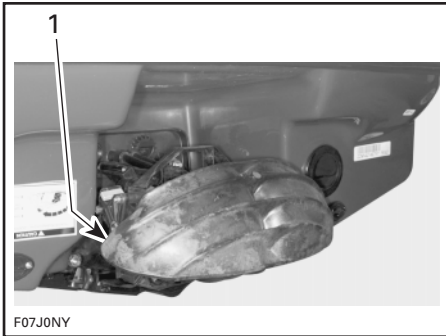
⚠ WARNING

When the craft is in neutral position, the drive shaft and impeller are turning.



TYPICAL

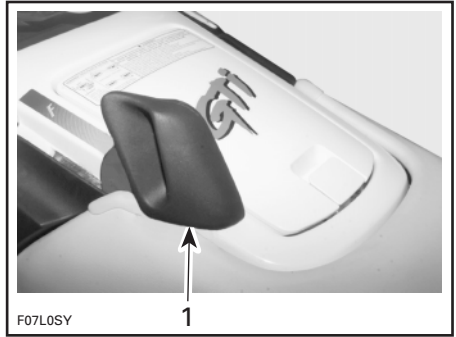
1. Shift lever in neutral position



TYPICAL

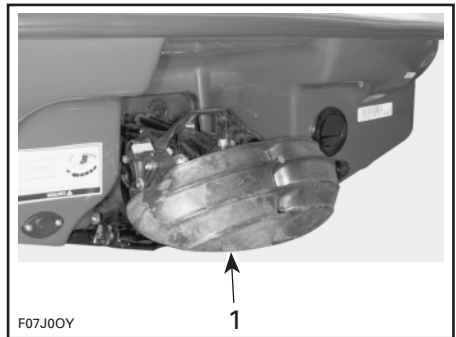
1. Reverse gate in middle position

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



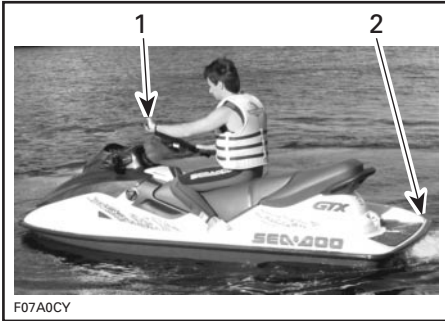
TYPICAL

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.

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

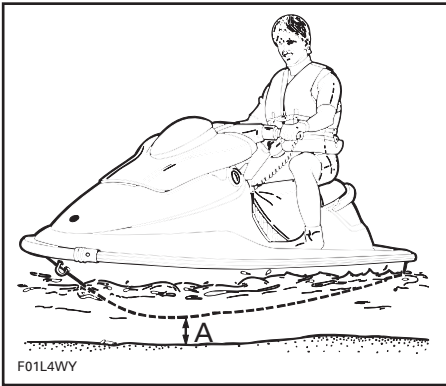
As with any craft, boarding should be done carefully and engine should not be running.

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

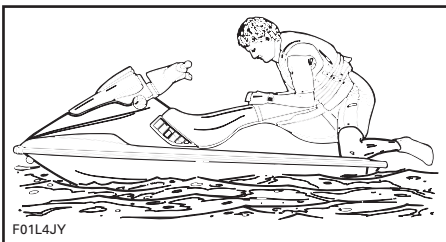
Inexperienced riders should practice how to get aboard close to shore first before venturing into deep water.

⚠ WARNING

Engine(s) 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.

Starting the Engine

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 moving, the operator and passengers should always be properly seated.

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.



F07A0DY

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 should do so, proceed with caution and prudence using minimum speed.

Crossing Waves

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

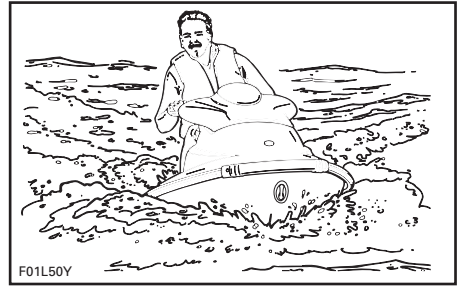
When crossing wakes, always keep a safe distance from boat ahead.

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

No directional control is available when the throttle is closed or engine is shut off.

Beaching

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

Come slowly to the beach and shut off the engine(s) 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 an unattended craft.

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

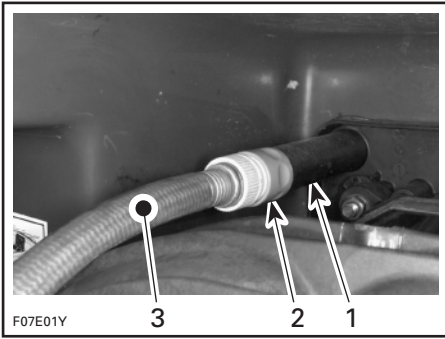
Perform this operation in a well ventilated area.

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.

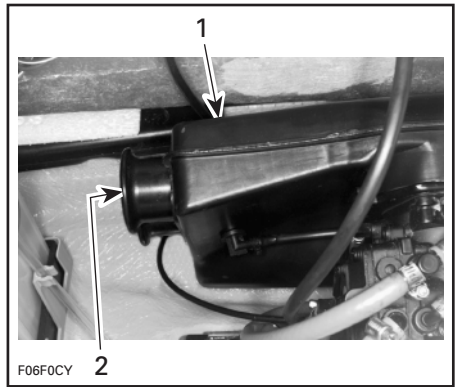
CAUTION: Never flush a hot engine. Always start the engine before opening the water tap. Open water tap immediately after engine is started to prevent overheating.

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.

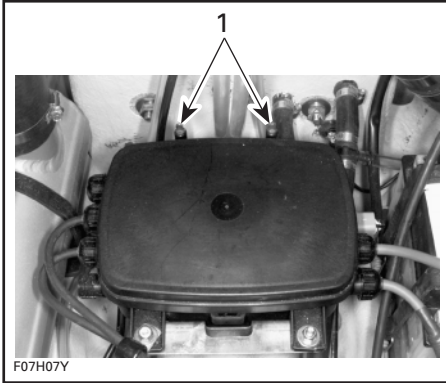
Crank the engine a few turns to distribute the oil on cylinder wall.

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.

NOTE: Repeat the same procedure for the other engine (if applicable).



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

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

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.

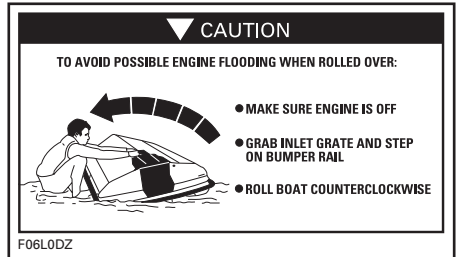
CAUTION: Inspect water intake grate for damage. Refer to an authorized Sea-Doo dealer for repair as necessary.

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).

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.

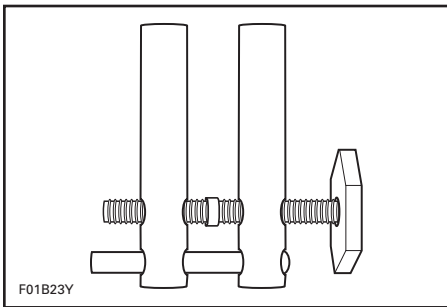
Start engine normally.

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).

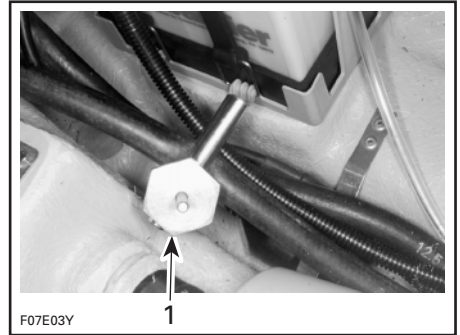
When towing your craft in water, pinch the water supply hose from the impeller housing to the engine with a large hose pincher (P/N 529 032 500) shown in the following illustration.



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

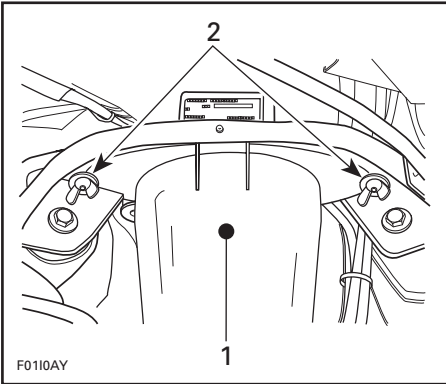
Use SEA-DOO synthetic grease or equivalent and lubricate PTO flywheel, see MAINTENANCE Periodic Inspection Chart.

Proceed as follows:

Remove seat(s) to expose engine compartment.

PTO Flywheel

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

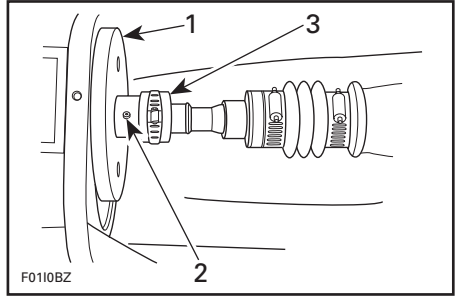


TYPICAL

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

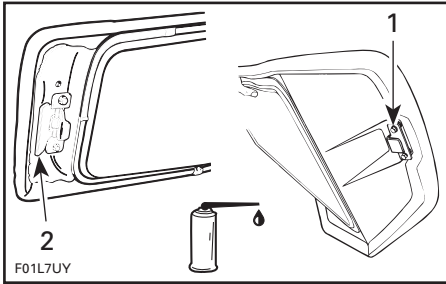
BOMBARDIER LUBE lubricant or equivalent will help prevent corrosion and maintain proper operation of moving mechanisms.

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

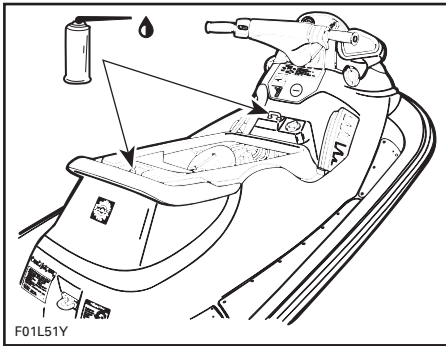
Choke Lever

Fully pull choke lever and lubricate the metallic portion.

Storage Opening Mechanism, Tab, Hook and Lock Pin



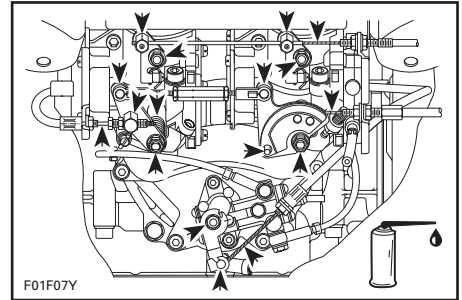
1. Front tab
2. Rear mechanism



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				To be performed by
	Every 10 hours	Every 25 hours	Every 50 hours	Every 100 hours or seasonally	
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 fuel system pressurization	✓	✓	✓	✓	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) through-out its full range of motion. It should operate smoothly. Refer to an authorized Sea-Doo dealer if adjustment is necessary.

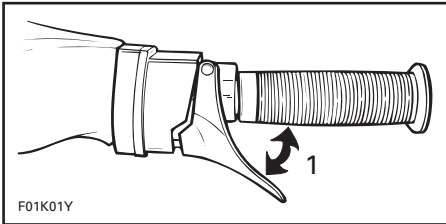
NOTE: Do not activate throttle lever unnecessarily, when engine is (are) not running. Carburetors are equipped with fuel accelerator pumps. These pumps deliver fuel to the engine each time throttle lever is moved forward.

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(s)

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

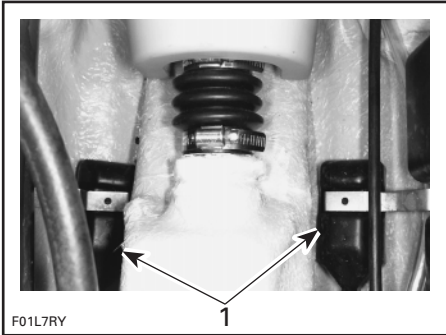
Remove any obstruction from deck drains and scupper valve.

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.



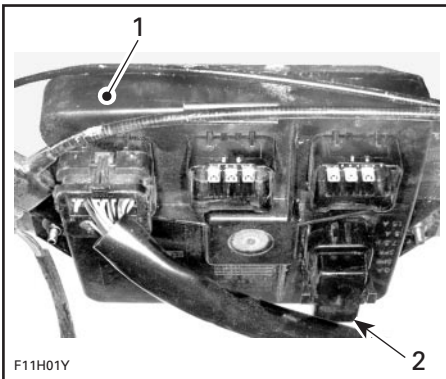
TYPICAL

1. Vacuum bailer pick-ups

Fuses

Locate MPEM under seat inside engine compartment of craft.

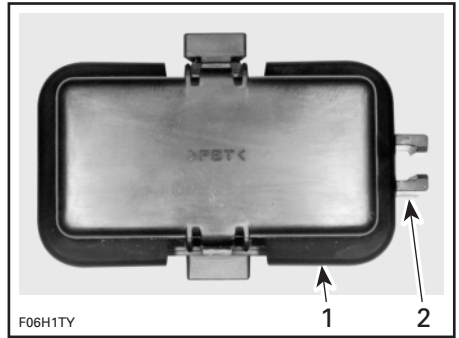
Remove fuse cover from the MPEM.



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.

CAUTION: Do not use a higher rated fuse as this can cause severe damage. If a fuse is regularly burnt, refer to an authorized Sea-Doo dealer.

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[†] 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

Storage

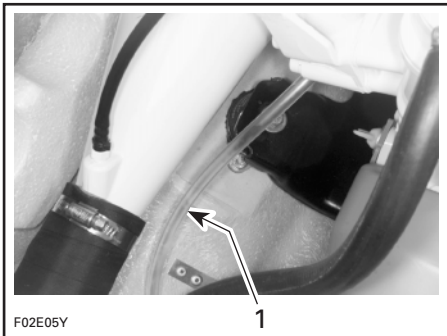
It is recommended that the craft be serviced by an authorized Sea-Doo dealer for storage but the following operations can be performed by you with a minimum of tools.

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.



TYPICAL

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	120

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.

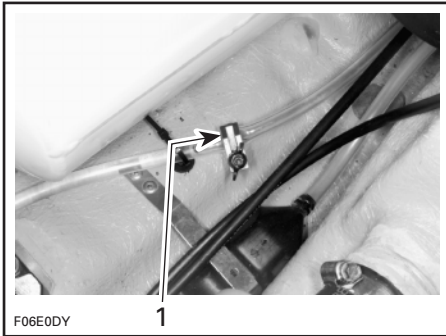
The front and rear portion of the seat should be partially left opened and storage baskets should be removed during storage. This will avoid engine compartment condensation and possible corrosion.

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.

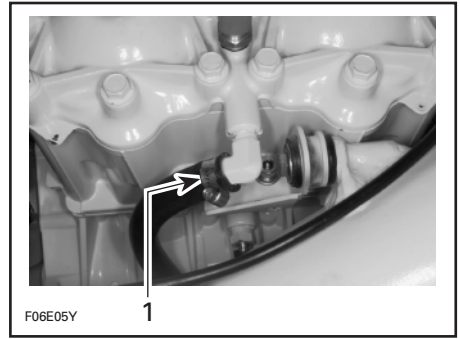
Install a hose pincher to engine drain hose.



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, fuel system pressurization 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

CODING SIGNALS	POSSIBLE CAUSE	REMEDY
2 short beeps (while installing safety lanyard on switch).	<ul style="list-style-type: none"> Confirms safety lanyard signal operation. 	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"> Safety lanyard on switch for more than 10 minutes without starting engine. Bad connection. Wrong safety lanyard. Defective safety lanyard. Salt water in safety lanyard cap. Improper operation of MPEM or defective wiring harness. 	<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"> Defective MPEM. 	Refer to an authorized Sea-Doo dealer.
Continuously beeps.	<ul style="list-style-type: none"> Engine overheats. 	See ENGINE OVERHEATING.

Engine Will Not Start

OTHER OBSERVATION	POSSIBLE CAUSE	REMEDY
Engine does not turn over.	<ul style="list-style-type: none"> Safety lanyard removed. Burnt fuse. Discharged battery. Battery connections, corroded or loose. Water flooded engine. 	<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 Submerged craft in SPECIAL PROCEDURES.</p>
Engine turns slowly.	<ul style="list-style-type: none"> Discharged or weak battery. 	Refer to an authorized Sea-Doo dealer.
Engine turns normally.	<ul style="list-style-type: none"> Close fuel valve. Fuel tank empty or water-contaminated. Fuel filter clogged or water-contaminated. Fouled/defective spark plugs. Misuse of choke. Fuel flooded engine. 	<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"> Fouled/defective/worn spark plugs. Faulty rev limiter. Too much oil supplied to engine. 	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"> Fuel: Level too low, stale or water-contaminated. Fuel filter, clogged or water-contaminated. Fuel valve partially open. 	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"> Flame arrester dirty/clogged. Partially closed choke. 	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"> Clogged jet pump water intake. Clogged coolant system. 	Clean. Flush cooling system with coupler hose.

Engine Continually Backfires

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

Engine Pinging or Knocking

OTHER OBSERVATION	POSSIBLE CAUSE	REMEDY
	<ul style="list-style-type: none"> Poor quality gasoline/low octane. Spark plug heat range too high. Ignition timing. 	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"> Weak spark/incorrect fuel mixture. Water in fuel or injection oil. 	Refer to ENGINE MISFIRES, RUNS IRREGULARLY. Siphon and replace.
Overheated engine.	<ul style="list-style-type: none"> See ENGINE OVERHEATS. 	

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">• Weeds or debris jammed around impeller.• Damaged impeller shaft or drive shaft.	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	XP-S synthetic injection oil
Number of cylinders		2
Displacement		951.2 cm ³ (58 in ³)
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.

PROPULSION		LRV
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)
DIMENSIONS		
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		371 kg (825 lb)
Load limit (passengers + luggage)		338 kg (750 lb)
CAPACITIES		
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	120 mL (4.0 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 ²	cm ²	6.45	
in ³	cm ³	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	kW75	

* 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.

ABBREVIATIONS USED IN THIS MANUAL

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

OTHER PUBLICATIONS AVAILABLE

PUBLICATION	P/N
<i>Shop Manual</i>	219 100 104
<i>Specification Booklet</i>	219 100 108

CRAFT MODEL No. _____

HULL IDENTIFICATION NUMBER (H.I.N.) _____

ENGINE IDENTIFICATION NUMBER (E.I.N.) _____

Purchase Date _____
 | | | |
 year month day

Warranty Expiry Date _____
 | | | |
 year month day

To be completed by the dealer at the time of the sale

DEALER IMPRINT AREA

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



AFFIX
PROPER
POSTAGE

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

CHANGE OF ADDRESS

If your address has changed, be sure to fill out and mail the card provided on this page.

Such notification is likewise necessary for your own safety even after expiration of the original warranty, since Bombardier will be in a position to contact you if correction to your craft becomes necessary.

NOTE: This card is strictly for change of address only.

CHANGE OF ADDRESS



----- ✂
CHANGE OF ADDRESS

CRAFT IDENTIFICATION NUMBERS

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Model Number Hull Identification Number (H.I.N.)

OLD ADDRESS: _____
NAME

NO. STREET APT

CITY STATE/PROVINCE ZIP/POSTAL CODE

NEW ADDRESS: _____
NAME

NO. STREET APT

CITY STATE/PROVINCE ZIP/POSTAL CODE

STOLEN UNITS

In the event that your craft is stolen, you should notify your area’s distributor warranty department of such.

Please provide your name, address, phone number, Hull Identification Number and date it was stolen.

Bombardier will provide a list of stolen units to all authorized Sea-Doo dealers on a monthly basis to aid in recovery of such units to their owners.



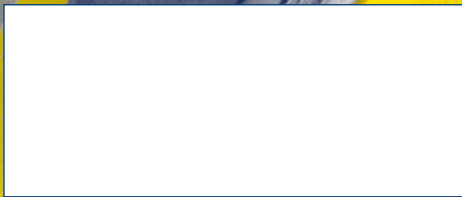
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