



**WATERCRAFT**  
SERVICE  
Bulletin



Date: **September 14 2006** Subject: **Storage Procedure for 4-TEC™ Engine Equipped Vehicles** No. **2006-15**

MODEL YEAR	MODEL	MODEL NUMBER	SERIAL NUMBER
2006	All 4-TEC engine equipped vehicles	All	All

**NOTE:** Refer to appropriate Sea-Doo *SHOP MANUAL* when servicing a Sea-Doo watercraft.

**NOTE:** Intercooler equipped models require extra maintenance. Refer to *INTERCOOLER ANTIFREEZING PROTECTION* section of this bulletin.

## PROPULSION SYSTEM

- Verify jet pump grease for water contamination. Check for the presence of water in cone and bearing; if so, replace oil seal and sleeve. Refer to *SHOP MANUAL* for proper procedure.

**CAUTION:** Use only Bombardier\* jet pump grease or equivalent, otherwise components service life could be reduced. Do not mix grease brands or types.

## FUEL SYSTEM

- Verify fuel system.
- Check fuel hoses for leaks.
- Replace damaged hoses or clamps if necessary.
- Fill up fuel tank completely. Ensure there is no water inside fuel tank.

**NOTE:** Sea-Doo Fuel Stabilizer (P/N 413 408 600) or equivalent should be added in fuel tank to prevent fuel deterioration. Follow manufacturer's instructions for proper use.

**CAUTION:** Should any water be trapped inside fuel tank, severe internal damage will occur to the fuel injection system (if so equipped).

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

## WARNING

Fuel is inflammable and explosive under certain conditions. Always work in a well ventilated area. Do not smoke or allow open flames or sparks in the vicinity. Fuel tank may be pressurized, turn cap slowly when opening. Never use an open flame to check fuel level. When fueling, keep watercraft level. Do not overfill or top off the fuel tank and leave watercraft in the sun. As temperature increases, fuel expands and might overflow. Always wipe off any fuel spillage from the watercraft. Periodically inspect fuel system. Always turn the fuel tank valve (**if so equipped**) to OFF position when storing the watercraft.

## ENGINE OIL AND FILTER CHANGE

- Change engine oil and filter.

Refer to LUBRICATION in ENGINE section of *SHOP MANUAL*.

## EXHAUST COOLING SYSTEM FLUSHING

- Flush exhaust cooling system with **fresh water** to prevent salt, sand or dirt accumulation which will clog water passages.

For proper procedure, refer to FLUSHING AND LUBRICATION in *SHOP MANUAL*.

## CLOSE LOOP COOLING SYSTEM (ENGINE)

- Replaced antifreeze for the storage period to prevent antifreeze deterioration.

- Perform an antifreeze density test.

For the coolant replacement procedure, refer to the appropriate *SHOP MANUAL*.

**CAUTION:** Improper antifreeze mixture might allow freezing of the liquid in the cooling system if vehicle is stored in area where freezing point is reached. This would seriously damage the engine. Failure to replace the antifreeze for storage may allow its degradation that could result in poor cooling when engine will be used.

## ENGINE LUBRICATION

Fogging of the engine is recommended at the end of the season and before any extended storage period to provide additional corrosion protection. The goal is to lubricate the engine intake valves, the cylinders and the exhaust valves.

To fog the engine, proceed as follows:

- Remove the two bolts that hold the fuel rail on.
- Remove the rail along with the three fuel injectors.
- Spray liberally BOMBARDIER LUBE lubricant into the intake ports. **Ensure enough BOMBARDIER LUBE is sprayed in the intake ports so when the engine is cranked the exhaust valves will be fully lubricated.**
- Crank engine several times while keeping throttle fully depressed (drown engine mode) to distribute lubricant in cylinders, on intake valves and exhaust valves.
- Carefully inspect O-rings condition before reinstalling fuel injectors. Replace O-rings with new ones if damaged. Lubricate O-rings with injection oil prior to installing.
- Reinstall the injectors.
- Apply Loctite<sup>†</sup> 243 (P/N 293 800 060) and torque the two bolts that hold the fuel rail on to 10 N•m (89 lbf•in).
- Make sure there is no leak at injectors when cranking the engine in the upcoming steps.

### WARNING

If a leak is present, immediately stop the engine. Do not start engine until the leak is repaired.

### WARNING

At preseason preparation, ensure to perform a fuel pressure test and ensure there is no leak. Also run engine and check for leaks. Refer to ENGINE MANAGEMENT section in *SHOP MANUAL*.

## THROTTLE BODY LUBRICATION

### Vehicles Without Throttle Body Quick Lubrication Kit

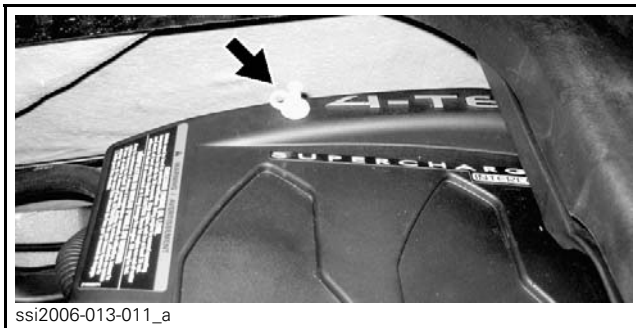
- Lubricate the throttle body to prevent corrosion on external and internal parts especially if the craft is used in salt water.
- Remove the air intake hose from throttle body.
- Open the throttle body valve by pressing slightly the throttle lever and spray BOMBARDIER LUBE lubricant (P/N 293 600 016) through the throttle body bore to lubricate valve mechanism.
- Spray generously the external parts of throttle body.
- Install air intake hose.

**NOTE:** A throttle body optional quick lubrication kit can be purchased (P/N 295 501 048) to facilitate maintenance by creating a direct access to the throttle body valve mechanism.

### Vehicles With Throttle Body Quick Lubrication Kit

Late production vehicles are equipped with a throttle body quick lubrication kit. Their location may be different depending on the model, but they all can be easily located with the seat removed.

<sup>†</sup> Loctite is a registered trademark of Loctite Corporation.

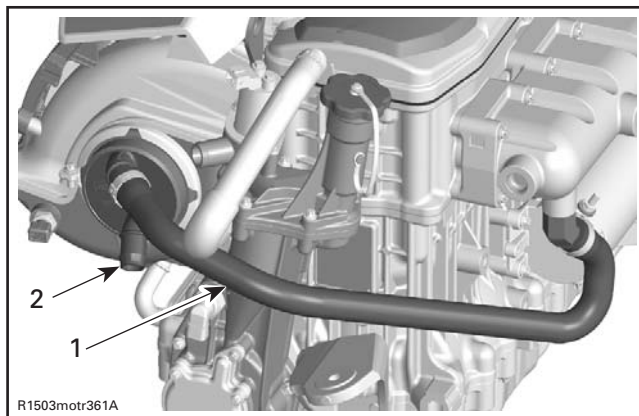


- Lubricate the throttle body to prevent corrosion on external and internal parts especially if the craft is used in salt water.
- Remove the throttle body lubrication fitting cap.
- Open the throttle body valve by pressing slightly the throttle lever and spray BOMBARDIER LUBE lubricant (P/N 293 600 016) through the fitting to lubricate valve mechanism.
- Spray generously the external parts of throttle body.
- Close the throttle body lubrication fitting cap.

## INTERCOOLER AND EXHAUST MANIFOLD ANTIFREEZE PROTECTION

The intercooler and manifold are not self draining; they need the following protection.

- With the vehicle leveled, remove both intercooler hoses [1] and [2].



- Let the intercooler drain and at the same time position the bottom hose as low as possible into the bilge to drain as much water from the exhaust manifold, then reconnect the bottom hose.

- Connect an extra piece of hose to the upper intercooler nipple and pour approximately 200 mL (6.76 oz U.S.) of antifreeze into the intercooler.
- Then pour approximately 300 mL (10.14 oz U.S.) of antifreeze into the upper Intercooler hose, toward the exhaust manifold.
- Reconnect the intercooler upper hose.

**CAUTION:** Failure to pour antifreeze into the intercooler and exhaust manifold, may cause severe damage to these components.

**CAUTION:** Use only undiluted antifreeze (100% concentration). The premixed antifreeze available from BRP is NOT suitable for this particular application. Its concentration will be reduced when mixed with remaining water trapped in water jackets.

**NOTE:** Antifreeze must be compatible with internal combustion aluminum engines. It is recommended to use biodegradable antifreeze. This will contribute to protect the environment. Recreational vehicle (RV) antifreeze can be used.

**NOTE:** The engine will not have to run during this operation but should have been ran before, to exhaust as much water as possible, from cooling system components.

## BATTERY

- Remove
- Clean
- Charge
- Store

Refer to CHARGING SYSTEM in *SHOP MANUAL*.

## WATERCRAFT CLEANING

- Clean the bilge with hot water and mild detergent or with bilge cleaner. Rinse thoroughly. Lift front end of watercraft to completely drain bilge. If any repairs are needed to body or to the hull, touch up paint and Gelcote<sup>††</sup> repair kits are available. Replace damaged labels/decals.
- Wash the body with soap and water solution (use mild detergent only). Rinse thoroughly with fresh water. Remove marine organisms from the hull. Apply a nonabrasive wax.

†† Gelcote is a registered trademark of Gelcote International.

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

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

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

## ANTICORROSION TREATMENT

- Wipe off any residual water in the engine compartment.
- Spray BOMBARDIER LUBE lubricant over all metallic components in engine compartment.
- Lubricate the throttle cable with BOMBARDIER LUBE lubricant.
- Apply an anticorrosion product (P/N 219 700 304) on drive shaft. Refer to PROPULSION is appropriate *SHOP MANUAL*.

**NOTE:** The seat should be partially left opened during storage. This will avoid engine compartment condensation and possible corrosion.

## CHECK LIST

OPERATION	✓
Propulsion System	
Fuel System	
Engine Oil and Filter Change	
Exhaust Cooling System Flushing	
Close Loop Cooling System (engine)	
Engine Lubrication	
Throttle Body Lubrication	
Intercooler and Exhaust Manifold Antifreeze Protection	
Battery	
Watercraft Cleaning	
Anticorrosion Treatment	