



**WATERCRAFT**  
**SERVICE**  
 Bulletin



Date: **September 25, 2007** Subject: **Storage Procedure for 4-TEC Engine Equipped Vehicles** No. **2007-13**

YEAR	MODEL	MODEL NUMBER	SERIAL NUMBER
2007	All 4-TEC® Engine Equipped Vehicles	All 4-TEC Engine Equipped Vehicles	All

**NOTE:** Refer to appropriate *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 presence of water in cone and bearing; if so, replace oil seal and sleeve. Refer to *SHOP MANUAL* for proper procedure.

**CAUTION:** Use only XP-S 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.

**NOTE:** Salt water use may cause clamps to prematurely corrode therefore, they would require a closer look and a more frequent preventive replacement.

Fill up fuel tank completely. Ensure there is no water inside fuel tank.

**NOTE:** BRP 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 fuel injection system.

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

### WARNING

Fuel is flammable and explosive under certain conditions. Always work in a well ventilated area. Do not smoke or allow open flames or sparks in 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 fuel tank and leave watercraft in direct sunlight; as temperature increases, fuel expands and might overflow. Always wipe off any fuel spillage from watercraft. Periodically inspect fuel system. Always turn fuel tank valve (**if so equipped**) to OFF position when storing watercraft.

## ENGINE OIL AND FILTER CHANGE

Change engine oil and filter.

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

**NOTE:** Salt water use may cause clamps to prematurely corrode therefore, they would require a closer look and a more frequent preventive replacement.

## CLOSE LOOP COOLING SYSTEM (ENGINE)

Replace antifreeze for storage period to prevent antifreeze deterioration.

Perform an antifreeze density test.

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

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

## ENGINE LUBRICATION

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

To fog engine, proceed as follows:

Remove two bolts that hold fuel rail on.

Remove rail along with three fuel injectors.

Spray liberally XP-S LUBE lubricant into the intake ports. **Ensure enough XP-S LUBE is sprayed in intake ports so when engine is cranked, 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 injectors.

Apply Loctite<sup>†</sup> 243 (P/N 293 800 060) and torque two bolts that hold fuel rail on to 10 N•m (89 lbf•in).

Make sure there is no leak at injectors when cranking engine in upcoming steps.

### **WARNING**

If a leak is present, immediately stop 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

### Watercraft Without Throttle Body Quick Lubrication Kit

Lubricate throttle body to prevent corrosion on external and internal parts especially if watercraft is used in salted water.

Remove air intake hose from throttle body.

Open throttle body valve by slightly pressing throttle lever and spray XP-S Lube (P/N 293 600 016) through throttle body bore to lubricate valve mechanism.

Spray generously external parts of throttle body.

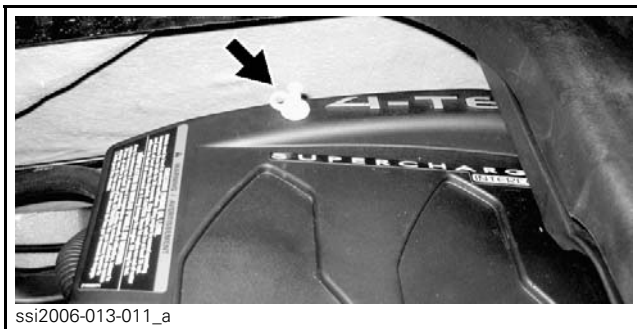
Install air intake hose.

**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 throttle body valve mechanism.

### Watercraft With Throttle Body Quick Lubrication Kit

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

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



Lubricate throttle body to prevent corrosion on the internal parts especially if watercraft is used in salted water.

Remove throttle body lubrication fitting cap.

Open throttle body valve by slightly pressing throttle lever and spray XP-S Lube (P/N 293 600 016) through fitting to lubricate valve mechanism.

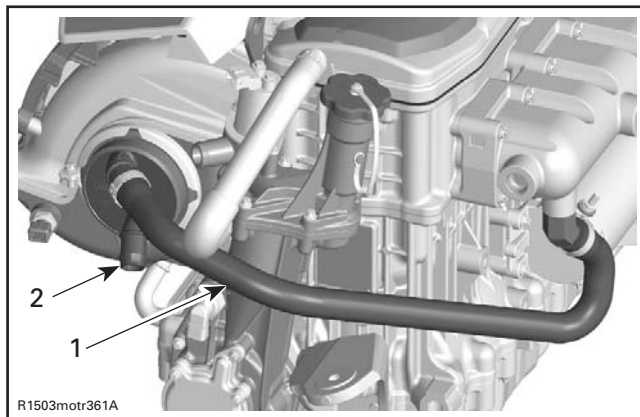
Spray generously external parts of throttle body.

Close throttle body lubrication fitting cap.

## INTERCOOLER AND EXHAUST MANIFOLD ANTIFREEZE PROTECTION

Intercooler and manifold are not self draining; they need following protection.

With watercraft leveled, remove both intercooler hoses [1] and [2].



Let intercooler drain and, at the same time, position both hoses as low as possible in the bilge to drain the water from them.

Connect an extra piece of hose to upper intercooler nipple and pour approximately 200 mL (6.76 oz U.S.) of antifreeze into intercooler.

Then pour approximately 300 mL (10.14 oz U.S.) of antifreeze into upper intercooler hose, toward exhaust manifold.

Reconnect intercooler upper hose.

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

**CAUTION:** Use only **undiluted antifreeze (100% concentration)**. 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 environment. Recreational vehicle (RV) antifreeze can be used.

**NOTE:** 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 and store.

Refer to CHARGING SYSTEM in *SHOP MANUAL*.

## WATERCRAFT CLEANING

Clean 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 hull, touch up paint and Gelcoate<sup>†</sup> repair kits are available. Replace damaged labels/decals.

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

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

<sup>†</sup> Gelcoate is a registered trademark of Gelcoate International.

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

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

## ANTICORROSION TREATMENT

Wipe off any residual water in engine compartment.

Spray XP-S LUBE lubricant over all metallic components in engine compartment.

Lubricate throttle cable with XP-S Lube.

Apply an anticorrosion product (P/N 219 700 304) on drive shaft. Refer to *PROPULSION* is appropriate *SHOP MANUAL*.

**NOTE:** Seat should be partially left open 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	