HAWTHORNE CAT

Previous Screen

Service Information System

Welcome: h190til

Product: NO EQUIPMENT SELECTED
Model: NO EQUIPMENT SELECTED
Configuration: NO EQUIPMENT SELECTED

Specifications

3500 Marine Engines

Media Number -SENR2373-07 **Publication Date -08-01-2013** **Date Updated -08-28-2013**

i01980486

Water Pump

SMCS - 1361

Part Number - 212-8176
S/N - 96Y1-UP

Part Number - 212-8176
S/N - 66Z1-UP

Part Number - 212-8176
S/N - 69Z1-UP

Type 1

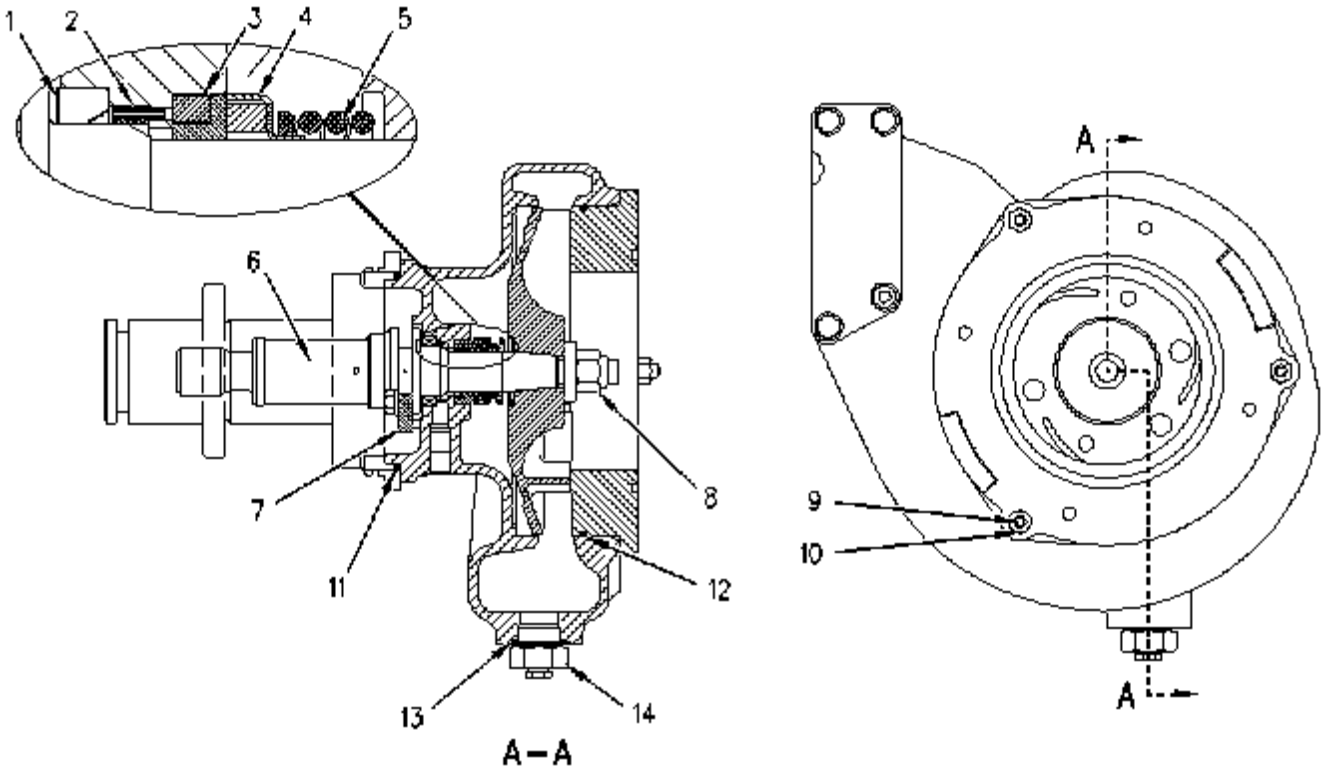

Illustration 1 g00993011
Typical example

(1) Oil seal

(2) Ring assembly

(3) Ceramic ring and rubber seal

(4) Seal assembly

(5) Spring

Follow these recommendations for installation of the seals:

Note: The seal installation tool is part of the replacement seal assembly.

1. Install ring assembly (2) and oil seal (1) into the pump housing. Install the oil seal dry. Do not lubricate the sealing lip. Use the correct installation tool and use a slow, even motion to press the seal into the pump housing.
2. Install shaft (6) through the oil seal.
3. Install the shaft's thrust washer (7).
4. Lubricate the outside diameter of the ceramic ring and rubber seal (3) with clean water.
5. Orient the polished face of the ceramic ring toward seal assembly (4). Use the installation tool and hand pressure to seat the ceramic ring and the rubber seal into the pump housing.
6. Remove spring (5) from the seal assembly. Lubricate the inside diameter of the seal assembly with clean water.

7. Use the seal installation tool and hand pressure to install the seal assembly onto the shaft until the face of the seal assembly makes light contact with the face of the ceramic ring and rubber seal.

8. Install the spring onto the seal assembly.

(6) Shaft

Width of shaft's groove for thrust washer ... 8.75 ± 0.05 mm (0.345 ± 0.002 inch)

(7) Thrust washer

Thickness ... 8.50 ± 0.05 mm (0.3346 ± 0.0020 inch)

(8) Nut

Torque ... 200 ± 25 N·m (150 ± 18 lb ft)

(9) Stud

Torque ... 35 ± 5 N·m (26 ± 4 lb ft)

(10) Nut

Torque ... 27 ± 4 N·m (20 ± 3 lb ft)

(11) O-ring seal

Lubricate the O-ring seal with clean engine oil.

(12) O-ring seal

Lubricate the O-ring seal with clean engine coolant.

(13) O-ring seal

Lubricate the O-ring seal with glycerin.

(14) Adapter

Torque ... 100 ± 10 N·m (75 ± 7 lb ft)

Maximum leakage per minute for the water seal at 138 kPa (20 psi) of air pressure ... 20 cc (1.22 cu in)

Maximum leakage per minute for the oil seal at 138 kPa (20 psi) of air pressure ... 24 cc (1.46 cu in)

Type 2

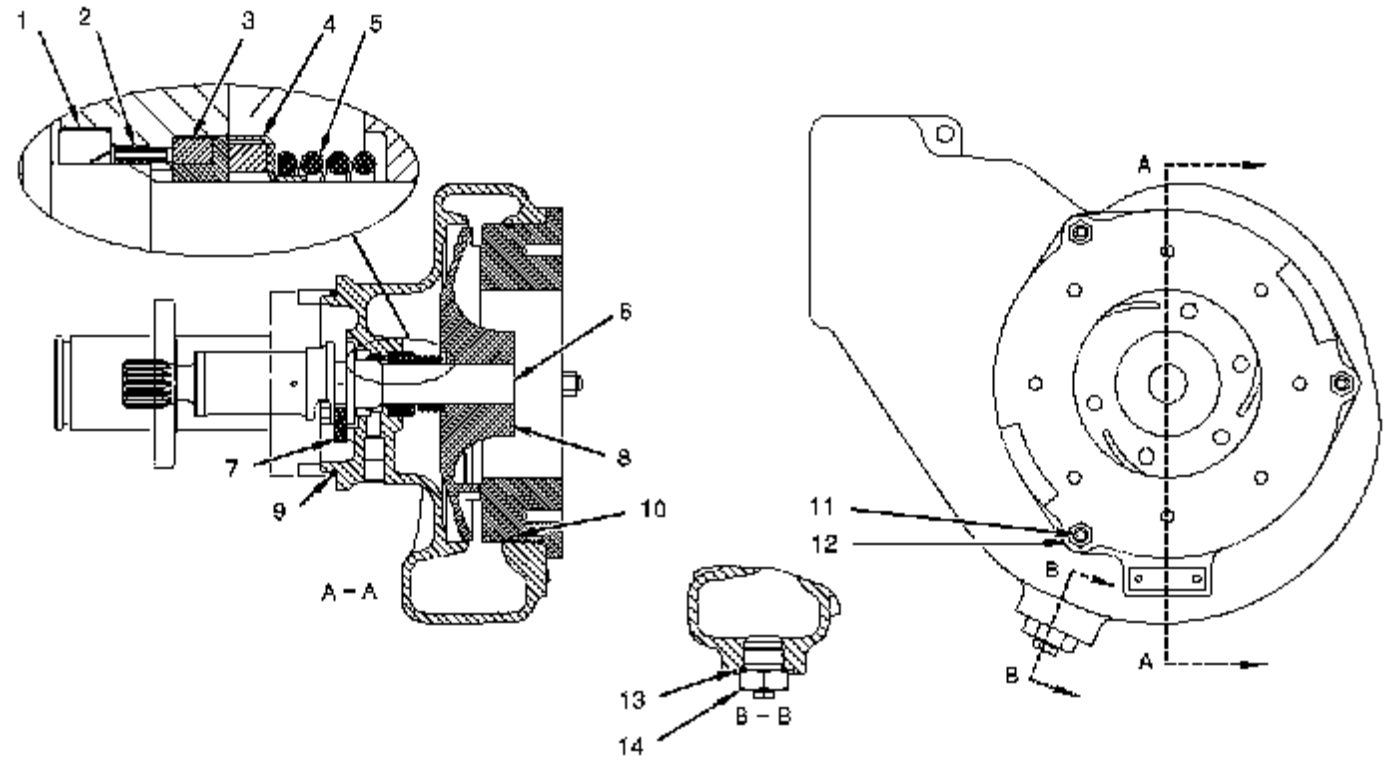

Illustration 2 g01026565
Typical example

(1) Oil seal

(2) Ring assembly

(3) Ceramic ring and rubber seal

(4) Seal assembly

(5) Spring

(6) Shaft

Shaft's outer diameter for impeller ... 25.400 ± 0.013 mm (1.0000 ± 0.0005 inch)
Width of shaft's groove for thrust washer ... 8.75 ± 0.05 mm (0.345 ± 0.002 inch)

(7) Thrust washer

Thickness ... 8.50 ± 0.05 mm (0.3346 ± 0.0020 inch)

(8) Impeller

Diameter of impeller's bore ... 25.342 ± 0.013 mm (0.9977 ± 0.0005 inch)

(9) O-ring seal

(10) O-ring seal

(11) Stud

Torque ... 35 ± 5 N·m (26 ± 4 lb ft)

(12) Nut

Torque ... 27 ± 4 N·m (20 ± 3 lb ft)

(13) O-ring seal

(14) Adapter

Torque ... 100 ± 10 N·m (75 ± 7 lb ft)

Assembly Procedure

Follow this procedure for assembly:

Note: The seal installation tool is part of the replacement seal assembly.

1. Install ring assembly (2) and oil seal (1) into the pump housing. Install the oil seal dry. Do not lubricate the sealing lip. Use the correct installation tool and use a slow, even motion to press the seal into the pump housing.
2. Install shaft (6) through the oil seal and through the ring assembly.
3. Install thrust washer (7).
4. Lubricate the outside diameter of the ceramic ring and rubber seal (3) with clean water or with **207-1600** Rubber Lubricant.
5. Orient the polished face of the ceramic ring toward seal assembly (4). Use the installation tool and hand pressure to seat the ceramic ring and the rubber seal into the pump housing.
6. Remove spring (5) from the seal assembly. Lubricate the inside diameter of the seal assembly with clean water or with **207-1600** Rubber Lubricant.
7. Use the seal installation tool and hand pressure to install the seal assembly onto the shaft until the face of the seal assembly makes light contact with the face of the ceramic ring and rubber seal.
8. Install the spring onto the seal assembly.
9. Lubricate the shaft with clean engine oil. Place the shaft onto a fixture that will absorb the load and press impeller (8) onto the shaft until the face of the impeller is flush with the face of the shaft.
10. Lubricate the bore for O-ring seal (9) with clean engine oil.
11. Lubricate the bore for O-ring seal (10) with clean engine coolant.
12. Tighten studs (11) according to the specified torque.
13. Tighten nuts (12) according to the specified torque.
14. Lubricate the bore for O-ring seal (13) with glycerin.
15. Tighten adapter (14) according to the specified torque.

Maximum leakage per minute for the water seal at 138 kPa (20 psi) of air pressure ... 20 cc (1.22 cu in)

Maximum leakage per minute for the oil seal at 138 kPa (20 psi) of air pressure ... 24 cc (1.46 cu in)
