

**Service Information System** [REDACTED][Previous Screen](#)

Product: EXCAVATOR

Model: 320B L EXCAVATOR [REDACTED]

Configuration: 320B, 320B L, 320B N, 320B S, 320B LN Excavators [REDACTED] UP (MACHINE) POWERED BY 3116 Engine

Disassembly and Assembly**446 and 446B Backhoe Loaders, Lexion 450 Combine, 3114 and 3116 Engines,
IT18F Integrated Toolcarrier, D6M Track-Type Tractor and 928F, 950F and 950G
Wheel Loaders**

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Cylinder Head - Install

SMCS - 1100-012

Installation Procedure

Table 1

Required Tools

Tool	Part Number	Part Description	Qty
A	6V-4876	Lubricant	1

NOTICE

Keep all parts clean from contaminants.**Contaminants may cause rapid wear and shortened component life.**

Note: For information on the reusability of the cylinder head, refer to Guideline For Reusable Parts And Salvage Operations, SEBF8218, "Specifications for Cylinder Head Assemblies 3114, 3116, and 3126 Engines" and Guideline For Reusable Parts And Salvage Operations, SEBF8162, "Procedure to Measure and Salvage Cylinder Head Assemblies and Related Components".

1. Thoroughly clean the mating surfaces of the cylinder head and the cylinder block.

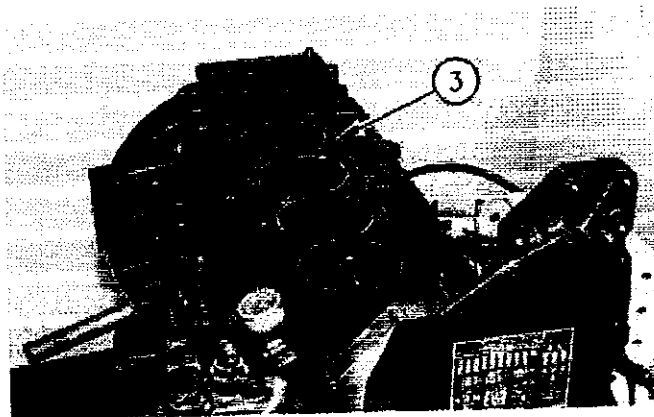


Illustration 1

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Typical example

2. Install a new cylinder head gasket (3) .

Note: For information on the cylinder head gasket for 3116 engines, refer to Special Instruction, SEHS9395, "3116 Cylinder Head Gasket Usage".

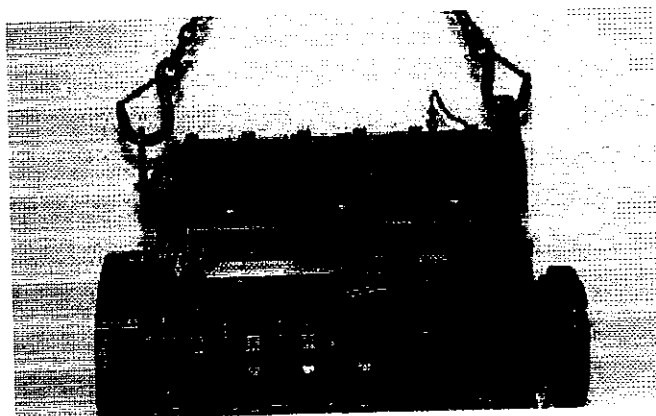


Illustration 2

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Typical example

Note: To avoid damage to the cylinder head gasket, use guide bolts of an appropriate size to install the cylinder head.

3. Attach a suitable lifting device to the cylinder head. Position the cylinder head assembly onto the dowels in the cylinder block. Lower the cylinder head onto the cylinder block.

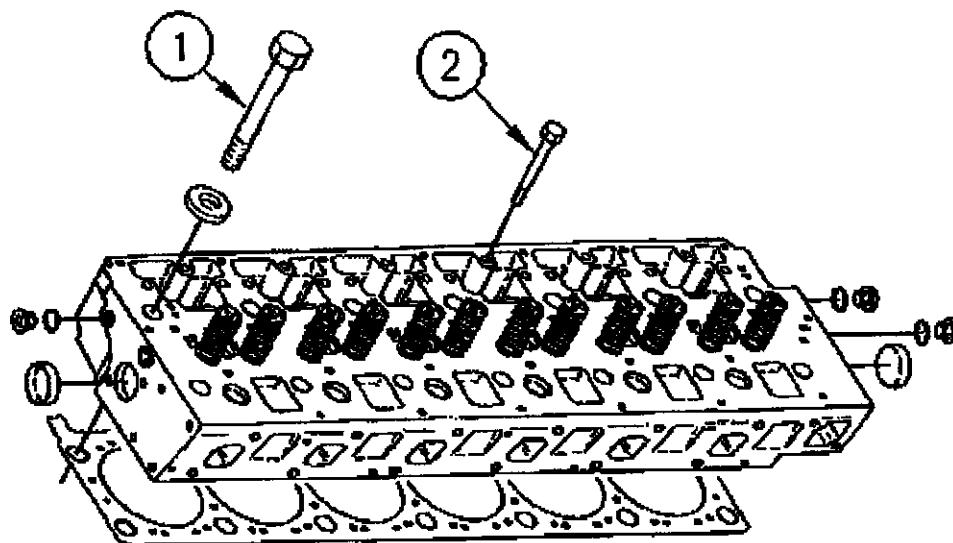


Illustration 3

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4. Inspect the condition of cylinder head bolts (1) and (2) . For information on the reusability of the bolts, refer to Guideline For Reusable Parts And Salvage Operations, SEBF8301, "Inspection and Reuse of Critical Fasteners Used in All Engines". Replace cylinder head bolts (1) and (2) , if necessary.
5. Lubricate cylinder head bolts (1) and (2) and both sides of the washers with Tooling (A) . Install cylinder head bolts (1) and (2) . Follow Step 6 for the correct tightening procedure.

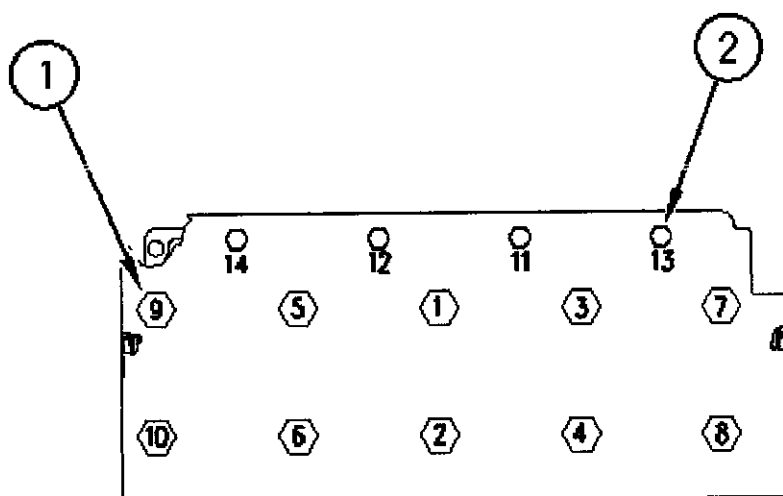


Illustration 4

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3114 Cylinder head

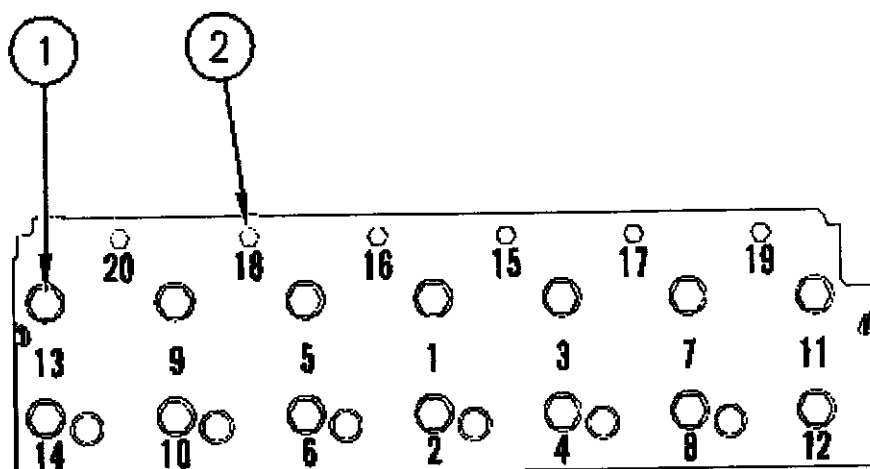


Illustration 5

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6. Tighten the cylinder head bolts according to the following procedure:
7. Tighten bolts (1) through bolt (14) in a numerical sequence to a torque of 300 ± 15 N·m (221 ± 11 lb ft).
8. Loosen bolts (1) through bolt (14) to a torque of 0 N·m.
9. Tighten bolts (1) through bolt (14) again in a numerical sequence to a torque of 130 ± 15 N·m (96 ± 11 lb ft).
10. Retighten bolts (1) through bolt (14) again in a numerical sequence to a torque of 130 ± 15 N·m (96 ± 11 lb ft).
11. Turn bolts (1) through bolt (14) by numerical sequence an additional 90° ($1/4$ turn).
12. Tighten bolt (15) through bolt (20) in a numerical sequence to a torque of 55 ± 7 N·m (41 ± 5 lb ft).

End By:

- a. Install the exhaust manifold. Refer to Disassembly and Assembly, "Exhaust Manifold - Remove and Install".
- b. Install the inlet manifold. Refer to Disassembly and Assembly, "Inlet Manifold - Install".
- c. Install the water temperature regulator housing. Refer to Disassembly and Assembly, "Water Temperature Regulator Housing- Remove and Install".
- d. Install the unit injectors. Refer to Disassembly and Assembly, "Unit Injector - Install".
- e. Install the fuel control linkage. Refer to Disassembly and Assembly, "Fuel Injection Control Linkage - Install".
- f. Install the governor. Refer to Disassembly and Assembly, "Governor - Install".
- g. Install the fuel filter base. Refer to Disassembly and Assembly, "Fuel Filter Base - Remove and Install".