

# SAFETY.CAT.COM™

## MAINTENANCE INTERVALS

Operation and Maintenance  
Manual Excerpt



# Operation and Maintenance Manual

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## **H35D S, H45D S, H55D S and H65D S Hydraulic Hammers**

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BXH1-Up (H35D S flat-top)  
BXJ1-Up (H45D S flat-top)  
FTF1-Up (H55D S flat-top)  
FTS1-Up (H65D S flat-top)  
BWM1-Up (H55D S pin-on)  
BYT1-Up (H65D S pin-on)

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## Maintenance Interval Schedule

**SMCS Code:** 6700-041; 7519

### Every 2 Service Hours or 4 Times Daily

Work Tool - Lubricate ..... 47

### Daily

Mounting Bracket - Inspect ..... 49

### Initial 50 Service Hours

Mounting Bracket Bolts - Tighten ..... 49

Side Plate Bolts - Tighten ..... 49

### Every 50 Service Hours or Weekly

Hydraulic Fittings - Inspect ..... 47

Tool - Inspect ..... 50

Tool - Remove and Install ..... 51

Tool Retaining Pins - Inspect/Replace ..... 53

Tool Bushing - Inspect/Replace ..... 54

### Every 1000 Service Hours or 1 Year

Work Tool - Inspect/Recondition ..... 47

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## Work Tool - Inspect/Recondition

**SMCS Code:** 6333-020; 6333-040; 6700-020; 6700-040

All of the seals in the hammer must be replaced on a yearly schedule or every 1000 machine service hours, whichever comes first. At this time, the membranes for the accumulators must also be replaced. Inspect all of the wear parts. You must replace all of the damaged parts or the parts that are worn. You must make sure that the accumulators are charged to the correct pressure. Refer to the Service Manual, "Specifications, Disassembly and Assembly, and the Systems Operation, Testing and Adjusting" Sections for information on the hammer.

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## Work Tool - Lubricate

**SMCS Code:** 6700-086

### NOTICE

Failure to apply down pressure on the hammer tool during lubrication could result in piston seal failure. This seal failure will allow oil to leak from the hammer tool. To avoid seal damage, always apply down pressure on the hammer tool during lubrication.

**Note:** Before you install the hammer tool, the tool shank must be well lubricated.

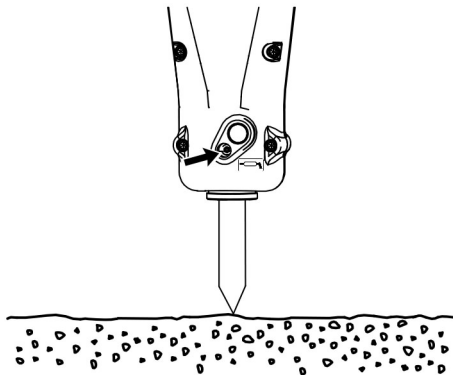


Illustration 67

g01355826

typical example

1. Lubricate the hammer. There is one fitting on the H35D S, H45D S, H55D S, and the H65D S hammer.

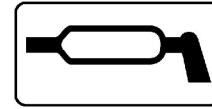


Illustration 68

g01161963

**Note:** The fitting has been marked with the film that is shown in Illustration 68.

2. Apply 10 to 15 strokes from the grease gun to the tool bushings and the hammer tool. Caterpillar strongly recommends the use of 130-6951 Grease for all applications on the hydraulic hammers. Refer to the Operation and Maintenance Manual, "Lubricating Grease" for more information.

Adjust the intervals and the amount of grease to the wear rate of hammer tool and to the working conditions.

Lack of grease or improper grease will cause the following problems:

- Abnormal wear of the tool bushing and the hammer tool
- Broken hammer tool

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## Hydraulic Fittings - Inspect

**SMCS Code:** 5057-040-X6

### WARNING

Personal injury or death can result from improperly checking for a leak.

Always use a board or cardboard when checking for a leak. Escaping air or fluid under pressure, even a pin-hole size leak, can penetrate body tissue causing serious injury, and possible death.

If fluid is injected into your skin, it must be treated immediately by a doctor familiar with this type of injury.

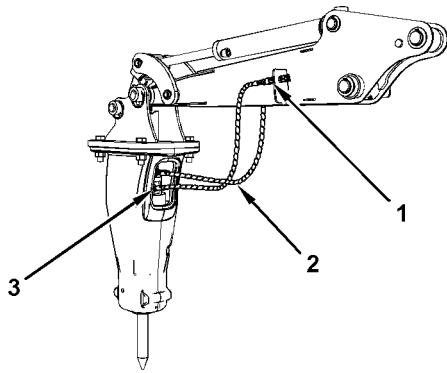


Illustration 69 g01396898  
Typical example of hydraulic fittings on an MHE arrangement for the H35D S flat-top, H45D S flat-top, H55D S flat-top and H65D S flat-top hammers

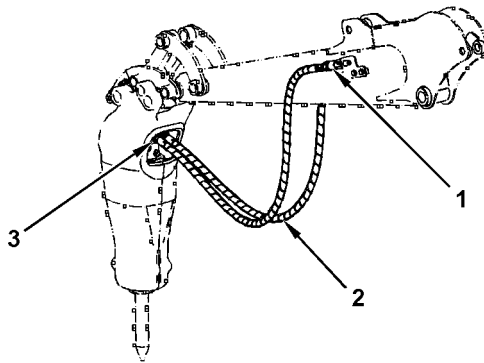


Illustration 70 g01161971  
Typical example of hydraulic fittings on an MHE arrangement or BHL arrangement for the H55D S pin-on, H55D S flat-top, H65D S pin-on or H65D S flat-top hammers

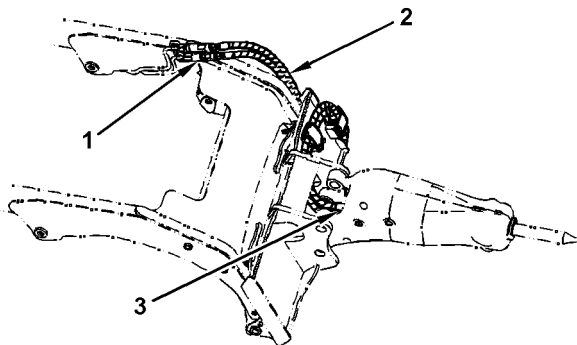


Illustration 71 g01161972  
Typical example of hydraulic fittings on an SSL or MTL for the H55D S pin-on or H65D S pin-on hammers

#### NOTICE

For maximum durability in demanding applications, always use Caterpillar High Vibration Hose Couplings. Refer to Parts Manual, SEBP4160 for additional information on Caterpillar High Vibration Hose Couplings.

1. Check the hydraulic fittings (1) and (3) for damage or leaks.
2. Check the supply hoses (2) for damage or wear.
3. Check all of the clamps on the host machine.
4. Repair any damaged parts or worn parts before you operate the hammer. Replace any damaged parts or worn parts before you operate the hammer. Repair any leaks before you operate the hammer.

**Note:** The hydraulic ports are located on the operator's side of the hammer for the MHE arrangement. The supply port is located on the top on the H35D S flat-top and H45D S flat-top hammer. The supply port is located on the right on the H55D S flat-top and H65D S flat-top hammer. The supply port is marked as the "IN" port. The return port is located on the bottom on the H35D S flat-top and H45D S flat-top hammer. The return port is located on the left on the H55D S flat-top and H65D S flat-top hammer. The return port is marked as the "OUT" port.

**Note:** The hydraulic ports are located on the top of the hammer for the SSL / MTL arrangements. The supply port is located on the right. The supply port is marked as the "IN" port. The return port is located on the left. The return port is marked as the "OUT" port.

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# Mounting Bracket Bolts - Tighten

**SMCS Code:** 7079-527-BK; 7079-527-BC

**S/N:** FTF1-Up

**S/N:** BXH1-Up

**S/N:** BXJ1-Up

**S/N:** FTS1-Up

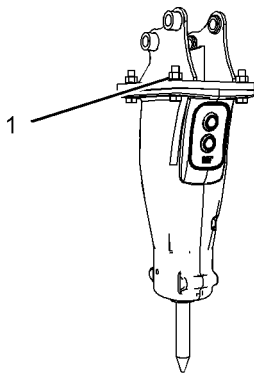


Illustration 72

g01400999

H35D S flat-top, H45D S flat-top, H55D S flat-top and H65D S flat-top

Inspect the bolts (1) for the mounting bracket. If necessary, tighten the bolts (1) for the mounting bracket to the proper torque. Refer to table 8 for the proper torque value.

Table 8

Sales Model	Bolt	Bolt Torque
H35D S flat-top	8T-4141	530 ± 70 N·m (391 ± 52 lb ft)
H45D S flat-top		
H55D S flat-top		
H55D S flat-top <sup>(1)</sup>	8T-4187	530 ± 70 N·m (391 ± 52 lb ft)
H65D S flat-top	7X-2564	530 ± 70 N·m (391 ± 52 lb ft)

<sup>(1)</sup> Some models use these bolts.

# Mounting Bracket - Inspect

**SMCS Code:** 7079

**S/N:** BWM1-Up

**S/N:** BYT1-Up

## SSL - MTL Arrangement

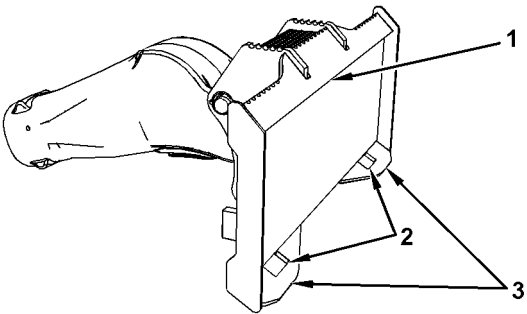


Illustration 73

g01162046

Inspect upper angled plate (1) and ensure that the plate is not bent or otherwise damaged. Inspect holes (2) for wear and for damage. Inspect lower angled plate (3) and ensure that the plate is not bent or otherwise damaged. Consult your Caterpillar dealer if any wear is suspected or any damage is suspected.

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# Side Plate Bolts - Tighten

**SMCS Code:** 6333-079-BC

Inspect the socket head bolts for the side plates for the proper torque. If necessary, tighten the socket head bolts to the proper torque. Refer to illustrations 74 and 76 and tables 9, 10 and 11 for the proper torque value.

**Note:** Tighten the socket head bolts in a cross pattern in order to ensure correct alignment of the housing and the dampening elements. Coat the threads on the socket head bolts at the time of assembly.

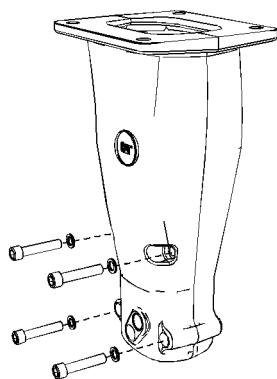


Illustration 74

g01275843

Example of the silenced housing on the H35D S flat-top and H45D S flat-top hammer

Table 9

Torque Values for Silenced Hammer		
Sales Model	H35D S flat-top	H45D S flat-top
Bolt	216 - 8310	223 - 8990
Nominal Torque	175 N·m (129 lb ft)	175 N·m (129 lb ft)
Maximum Torque	205 N·m (151 lb ft)	205 N·m (151 lb ft)
Minimum Torque	145 N·m (107 lb ft)	145 N·m (107 lb ft)

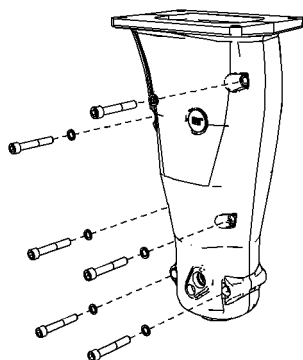


Illustration 75

g01397237

Example of the silenced housing on the H55D S flat-top and H65D S flat-top hammer

Table 10

Torque Values for Silenced Hammer		
Sales Model	H55D S flat-top	H65D S flat-top
Bolt	263 - 6016	174 - 6393
Nominal Torque	175 N·m (129 lb ft)	340 N·m (251 lb ft)
Maximum Torque	205 N·m (151 lb ft)	380 N·m (280 lb ft)
Minimum Torque	145 N·m (107 lb ft)	300 N·m (221 lb ft)

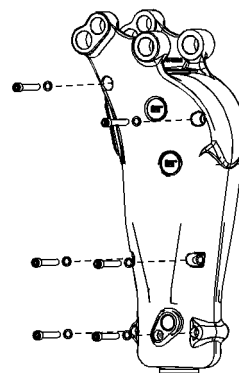


Illustration 76

g01162082

Example of the silenced housing on the H55D S pin-on and H65D S pin-on hammers

Table 11

Torque Values for Silenced Hammer		
Sales Model	H55D S pin-on	H65D S pin-on
Bolt	263 - 6016	174 - 6393
Nominal Torque	175 N·m (129 lb ft)	340 N·m (251 lb ft)
Maximum Torque	205 N·m (151 lb ft)	380 N·m (280 lb ft)
Minimum Torque	145 N·m (107 lb ft)	300 N·m (221 lb ft)

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## Tool - Inspect

**SMCS Code:** 6826-040

**Note:** Use caution when you remove the hammer tool. The tool can be very hot after the tool has been in operation. When you remove the hammer tool, wear protective gloves.

1. Remove the tool from the hammer. Refer to the Operation and Maintenance Manual, "Tool - Remove and Install".

2. If necessary, grind the burrs off the hammer tool. Make sure that you remove the burrs from the notch for the retaining pin. Remove the burrs from the retaining pin.

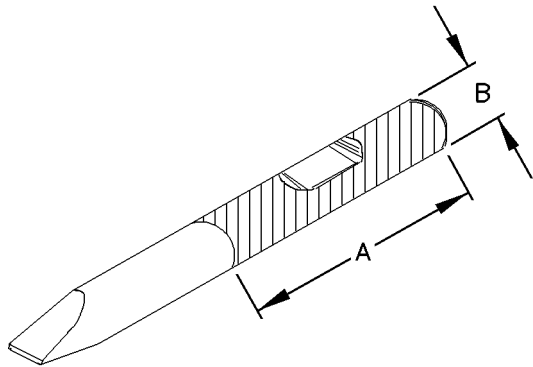


Illustration 77

g00678194

3. Check the hammer tool for wear. When you measure the wear of the tool, you must measure the part of the tool (A) that is in the tool bushings.
4. Measure the dimension (B).
5. Refer to Table 12 for the dimension of a new tool. Refer to Table 12 for the minimum diameter of a tool.

Table 12

Wear Limits for Hammer Tools		
Sales Model	Diameter of New Tool	Minimum Diameter of Tool
H35D S	40 mm (1.57 inch)	38 mm (1.50 inch)
H45D S	48 mm (1.89 inch)	46 mm (1.81 inch)
H55D S	56 mm (2.20 inch)	54 mm (2.13 inch)
H65D S	65 mm (2.56 inch)	63 mm (2.48 inch)

6. You must replace the tool if dimension (B) is smaller than the minimum diameter of the tool for your hammer.

**Note:** Do not weld on a hammer tool. Welding on the hammer tool causes cracks in the hammer tool. The cracks will cause the hammer tool to fail.

7. Inspect the hammer tool for cracks. If there are cracks in the hammer tool, you must replace the hammer tool.

## Tool - Remove and Install

**SMCS Code:** 6826-010

**Note:** Use caution when you remove the hammer tool. The tool can be very hot after the tool has been in operation. When you remove the hammer tool, wear protective gloves.

1. Position the hammer on level ground.
2. Put the host machine's transmission in neutral. The parking brake should be engaged.
3. Stop the engine.
4. Exit the host machine.

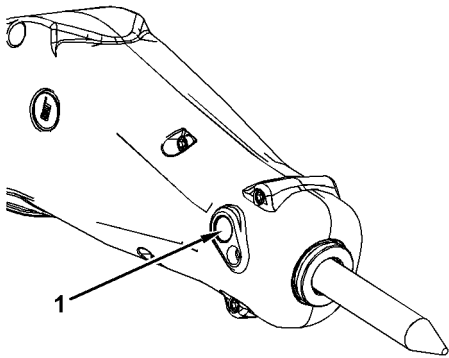


Illustration 78

typical example

g01162248

5. Remove plug (1) from the side of the hammer.

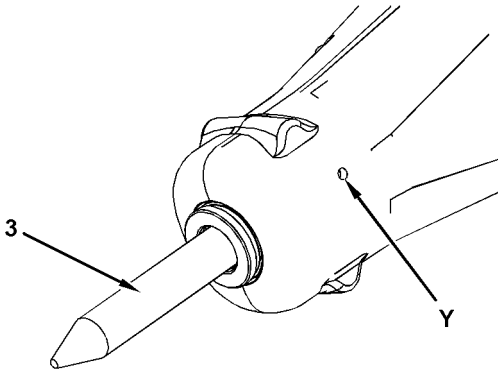


Illustration 79

typical example

g01162250



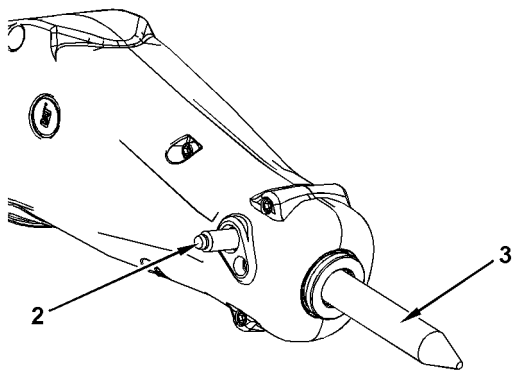


Illustration 80

g01162251

typical example

6. Insert a punch in hole (Y) and strike the punch with a mallet in order to remove retaining pin (2) and Tool (3).

**Note:** Do not hesitate in striking the punch with significant force in order to remove the retaining pin.

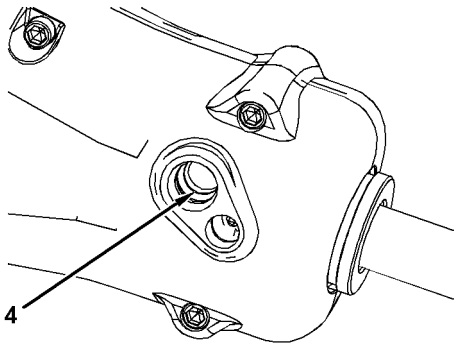


Illustration 81

g01401123

7. Remove retaining ring (4).

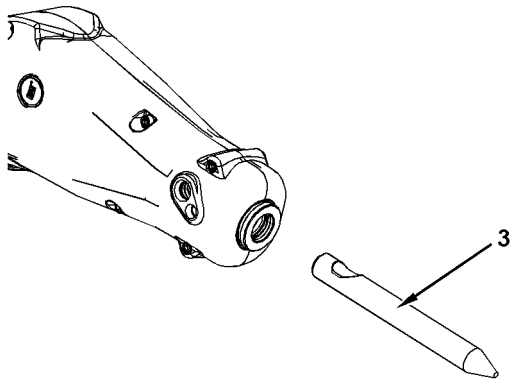


Illustration 82

g01162252

typical example

8. Remove tool (3). When you remove the hammer tool, wear protective gloves.
9. If necessary, use a suitable lifting device to remove the tool. Refer to table 14 for the weight of the tool.

Table 13

Weights of Small Hammer Tools		
Sales Model	H35D S	H45D S
Moil Tool	3.4 kg (7.5 lb)	5.8 kg (12.8 lb)
Chisel Tool	3.5 kg (7.7 lb)	5.9 kg (13 lb)
Parallel Spade Tool	3.5 kg (7.7 lb)	5.9 kg (13 lb)
Transverse Spade Tool	3.5 kg (7.7 lb)	5.9 kg (13 lb)
Compacting Plate	8.5 kg (18.7 lb)	9.9 kg (21.8 lb)

Table 14

Weights of Small Hammer Tools		
Sales Model	H55D S	H65D S
Moil Tool	9.10 kg (20 lb)	13.6 kg (30 lb)
Chisel Tool	9.32 kg (20.5 lb)	14 kg (30.9 lb)
Parallel Spade Tool	9.69 kg (21.4 lb)	12.9 kg (28.4 lb)
Transverse Spade Tool	9.74 kg (21.5 lb)	12.9 kg (28.4 lb)
Compacting Plate	23 kg (50.7 lb)	26.2 kg (57.8 lb)

10. After you have removed the tool, inspect the hammer tool for wear. Refer to the Operation and Maintenance Manual, "Tool - Inspect" for information on inspecting the hammer tool.
11. After you have removed the tool, inspect the seal in the lower tool bushing for wear. You must replace the seal if the seal is worn or if the seal is damaged.

## Installation of Tool

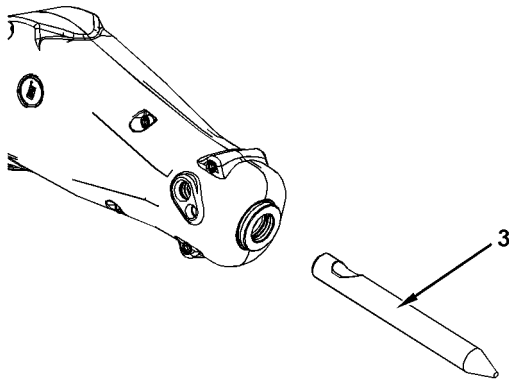


Illustration 83  
typical example

g01162252

1. Clean tool (3).
2. Apply lubricant 130-6951 Grease (Hammer Paste) to tool (3).
3. Install tool (3).

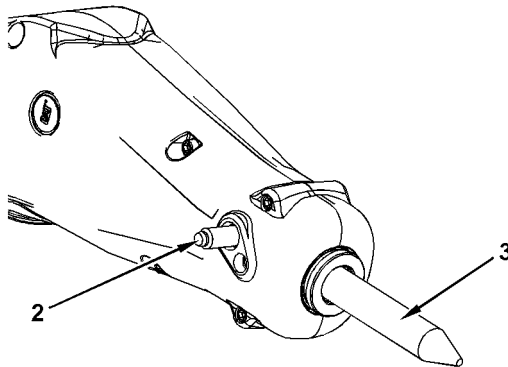


Illustration 84  
typical example

g01162251

4. Apply lubricant 130-6951 Grease (Hammer Paste) to pin (2).

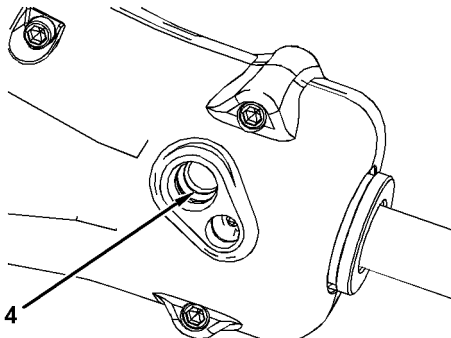


Illustration 85

g01401123

5. Install retaining ring (4).
6. Install pin (2) to tool (3).

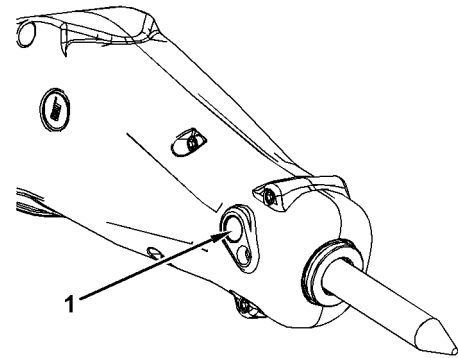


Illustration 86  
typical example

g01162248

7. Install plug (1).

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## Tool Retaining Pins - Inspect/Replace

**SMCS Code:** 6826-040; 6826-510

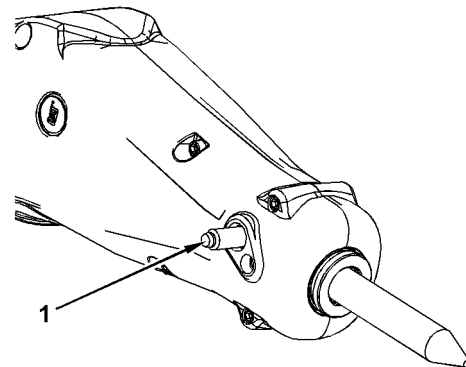


Illustration 87  
typical example

g01162425

1. Remove pin (1) from the hammer. Refer to Operation and Maintenance Manual, "Tool - Remove and Install" for additional information on removing the pin.



Illustration 88

g01162427

typical example

2. Inspect the pin for wear or for cracks.
3. If the pin is cracked, you must replace the pin.

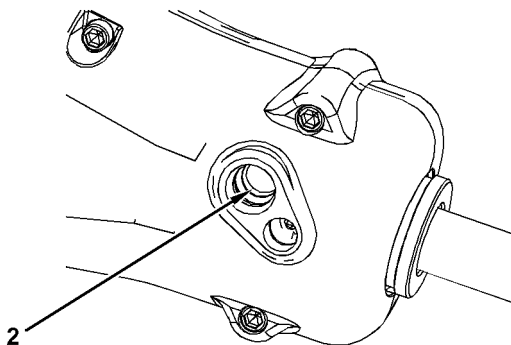


Illustration 89

g01162431

typical example

4. Inspect the retaining ring (2) for wear or for damage. The retaining ring is located inside the hammer housing. Replace the retaining ring if the retaining ring is worn or if the retaining ring is damaged. Refer to Service Manual, RENR4478 for additional information on replacing the retaining ring.

# Tool Bushing - Inspect/Replace

**SMCS Code:** 6826-040-GY; 6826-528

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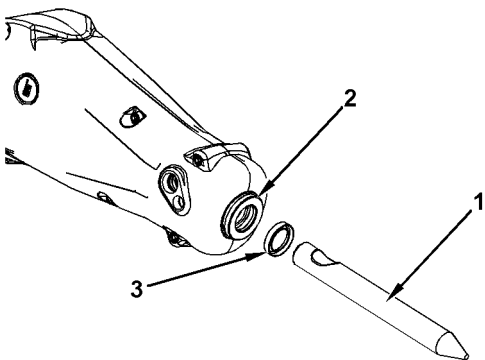


Illustration 90

g01162452

typical example

1. Remove tool (1). Refer to Operation and Maintenance Manual, "Tool - Remove and Install" for information on the removal procedure.
2. Clean the inside of tool bushing (2). Inspect the inside bore of the tool bushing for wear.

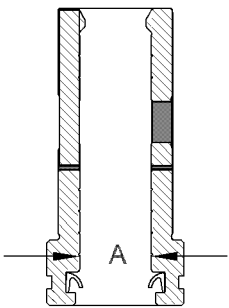


Illustration 91

g01277588

typical example

3. You must replace the tool bushing if the tool bushing has too much wear. Refer to Table 15 for the dimensions.

Table 15

Tool Bushing Wear Limits	
Sales Model	Maximum Dimension (A)
H35D S	43 mm (1.7 inch)
H45D S	51 mm (2 inch)
H55D S	59 mm (2.3 inch)
H65D S	68 mm (2.7 inch)

4. Inspect seal (3). Replace seal (3) if the seal is worn or if the seal is damaged.
5. Install tool (1). Refer to Operation and Maintenance Manual, "Tool - Remove and Install" for information on the installation procedure.