



Service Repair Manual

Models

301.7CR Mini Hydraulic
Excavator

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Product: MINI HYD EXCAVATOR

Model: 301.7CR MINI HYD EXCAVATOR JH7

Configuration: 301.7CR Mini Hydraulic Excavator JH700001-UP (MACHINE) POWERED BY C1.1 Engine

Disassembly and Assembly

301.5,301.6,301.7,301.8,302 Mini Hydraulic Excavator Machine Systems

Media Number -M0092231-00

Publication Date -01/09/2018

Date Updated -11/09/2018

i07495765

Boom Cylinder - Disassemble

SMCS - 5456-015

Disassembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	152-4251	Cylinder Repair Bench	1
B	1P-2853	Spanner Wrench	1
C	280-2060	Offset Spanner Wrench	1
D	8H-8539	1 5/8" Socket	1
	5P-3588	Adapter	1

Start By:

- a. Remove boom cylinder.
-



Illustration 1

g06328511



Illustration 2

g06328514

1. Remove seals (1) from barrel end of boom cylinder (2). Remove seals (3) from rod end of boom cylinder (4).

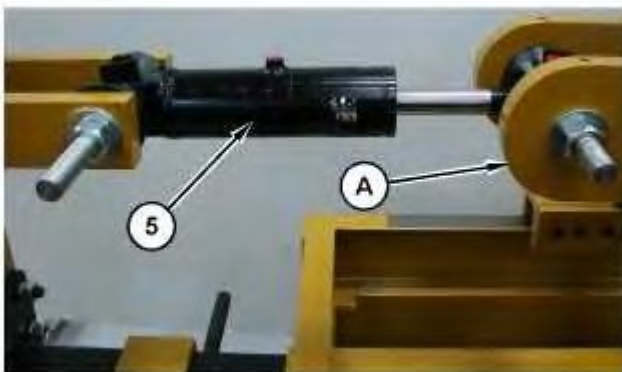


Illustration 3

g06328699

2. Mount boom cylinder (5) into Tooling (A).

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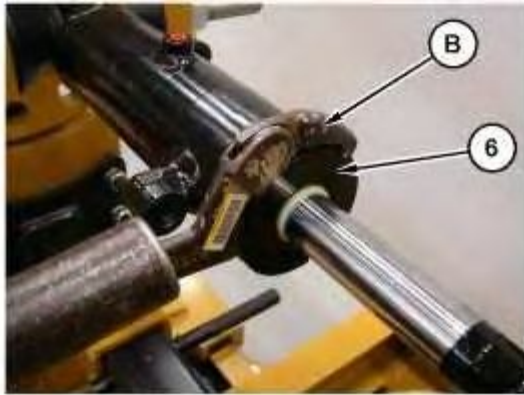


Illustration 4

g06328345

3. Use Tooling (B) to loosen cylinder nut (6).



Illustration 5

g06327540

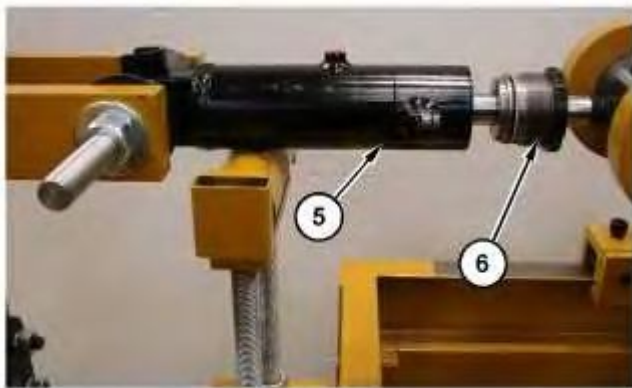


Illustration 6

g06328403

4. Remove cylinder nut (6) from cylinder barrel (5). Place support under barrel end of cylinder (5).
-

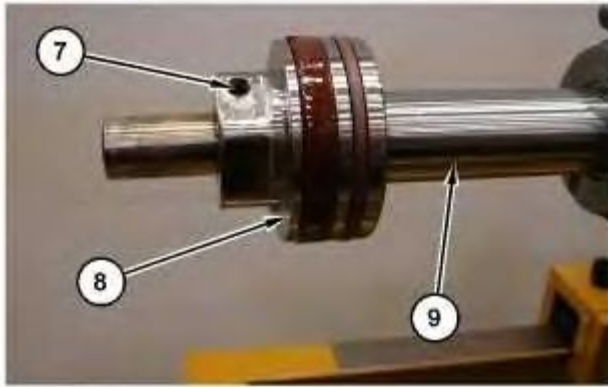


Illustration 7

g06295398

5. Back the cylinder bench out to remove rod end (9) from the cylinder barrel. Remove set screw and ball (7) from piston (8).

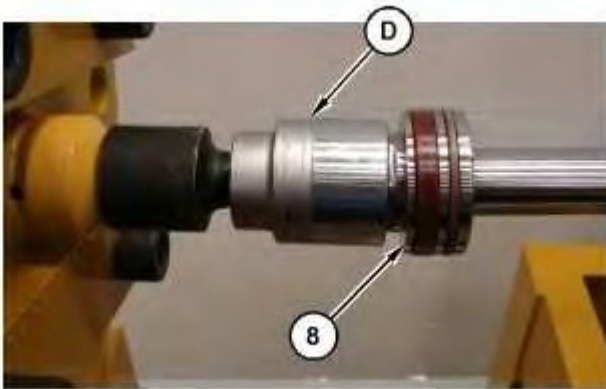


Illustration 8

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6. Use Tooling (D) to remove piston (8).

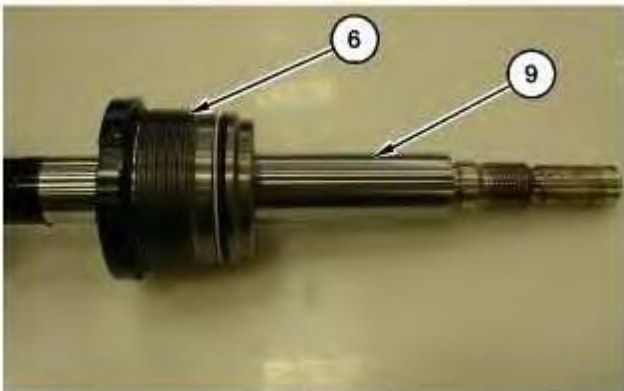


Illustration 9

g06296653

7. Remove cylinder nut (6) from rod end (9).



Illustration 10

g06295640

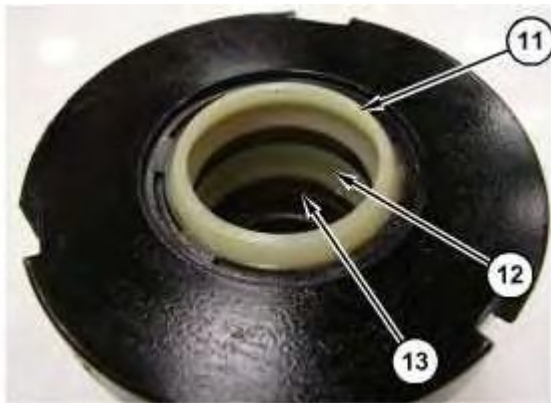


Illustration 11

g06295645

8. Remove bushing (10). Remove outer seal (11), inner seal (12), and O-ring seal (13).
-



Illustration 12

g06295654

9. Remove O-ring seal and backup ring (14). Remove O-ring seal (15).
-



Illustration 13

g06295667

10. Remove seal (16) and spacer (17).

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Configuration: 301.7CR Mini Hydraulic Excavator JH700001-UP (MACHINE) POWERED BY C1.1 Engine

Disassembly and Assembly

301.5,301.6,301.7,301.8,302 Mini Hydraulic Excavator Machine Systems

Media Number -M0092231-00

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i07495770

Boom Cylinder - Assemble

SMCS - 5456-016

Assembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	152-4251	Cylinder Repair Bench	1
B	1P-2853	Spanner Wrench	1
C	280-2060	Offset Spanner Wrench	1
D	8H-8539	1 5/8" Socket	1
	5P-3588	Adapter	1



Illustration 1

g06295667

1. Install seal (16) and spacer (17).



Illustration 2

g06295654

2. Install O-ring seal and backup ring (14). Install O-ring seal (15).



Illustration 3

g06295640

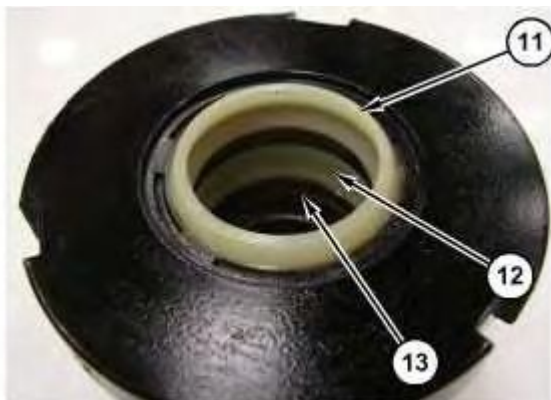


Illustration 4

g06295645

3. Install bushing (10). Install O-ring seal (13). Install inner seal (12), and outer seal (11).

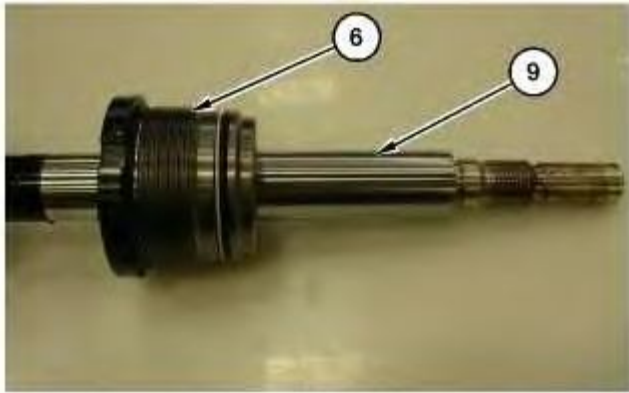


Illustration 5

g06296653

4. Install cylinder nut (6) onto rod end (9). Apply oil on seals and rod end for assembly.

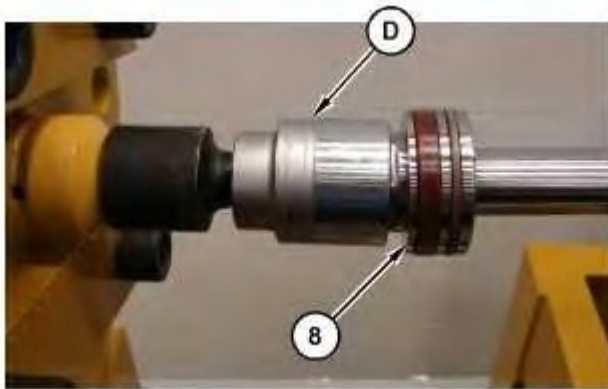


Illustration 6

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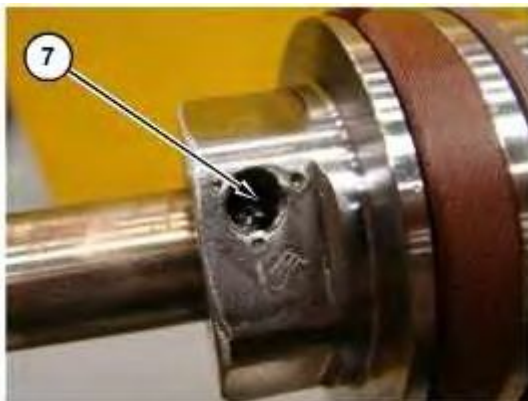


Illustration 7

g06295757

5. Mount the rod end onto Tooling (A).

Install piston (8). Use Tooling (D) to tighten piston (8). Tighten piston (8) to a torque of $500 \pm 25 \text{ N}\cdot\text{m}$ ($370 \pm 18 \text{ lb ft}$).

Install ball and set screw (7). Tighten set screw (7) to a torque of 17 ± 2 N·m (150 ± 18 lb in).

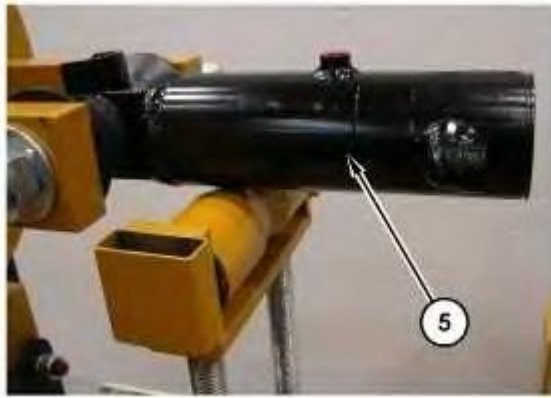


Illustration 8

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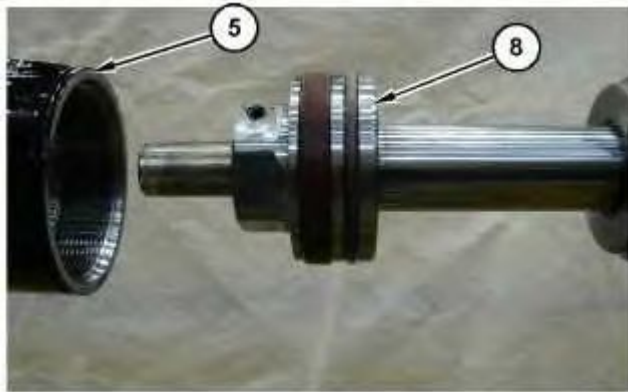


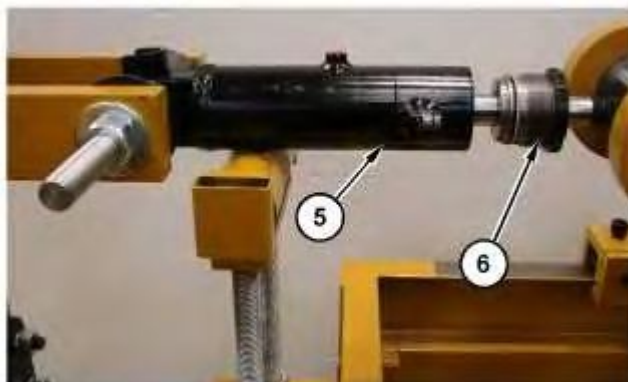
Illustration 9

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6. Mount barrel end of cylinder (5) on Tooling (A).

Align barrel assembly (5) and the rod assembly for installation. Apply hydraulic oil inside barrel assembly and on piston (8).

Install the piston and rod assembly inside the barrel assembly.



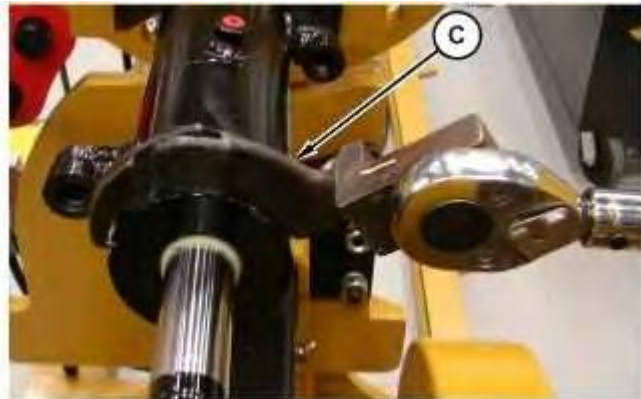


Illustration 11

7. Install cylinder nut (6) into barrel assembly (5). Apply hydraulic oil to seals before installation.

Use Tooling (C) to tighten cylinder nut (6) to a torque of 226 N·m (167 lb ft).



Illustration 12



Illustration 13

8. Install seals (1) into barrel end of boom cylinder (2). Install seals (3) into rod end of boom cylinder (4).

End By:

- a. Install boom cylinder.

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Disassembly and Assembly

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i07396608

Boom - Remove and Install

SMCS - 6501-010

Removal Procedure

Start By:

- a. Remove stick
 - b. Remove stick cylinder
 - c. Remove boom cylinder
 - d. Raise cab
1. Drain hydraulic fluid. Refer to Operation and Maintenance Manual. Hydraulic Oil Drain, for the correct draining and filling procedures.



Illustration 1

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2. Disconnect hydraulic lines (1) that control the boom , stick, and bucket from the main control valve (2).

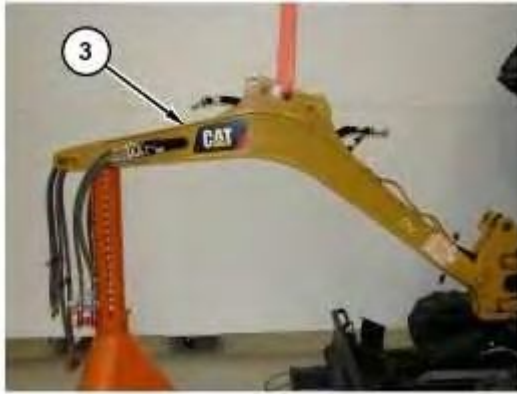


Illustration 2

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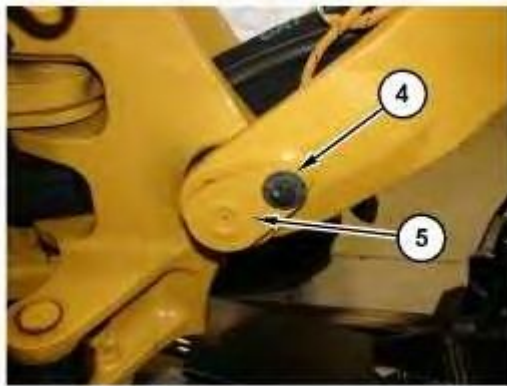


Illustration 3

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3. Attach a suitable lifting device to a strap to lift boom assembly (3). The weight of boom assembly (3) is approximately 79 kg (174 lb)
4. Remove retaining bolt (4) from pin assembly (5). Remove pin assembly (5).
5. Carefully feed hydraulic lines (1) through the frame and support assembly. Remove boom assembly (3).

Installation Procedure

1. Install boom assembly (3) in the reverse order of removal.

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Date Updated -11/09/2018

i07397621

Boom Swing Cylinder - Remove and Install

SMCS - 5105-010-BM

Removal Procedure



Cylinders equipped with lock valves can remain pressurized for very long periods of time, even with the hoses removed.

Failure to relieve pressure before removing a lock valve or disassembling a cylinder can result in personal injury or death.

Ensure all pressure is relieved before removing a lock valve or disassembling a cylinder.



Personal injury can result from hydraulic oil pressure and hot oil.

Hydraulic oil pressure can remain in the hydraulic system after the engine has been stopped. Serious injury can be caused if this pressure is not released before any service is done on the hydraulic system.

Make sure all of the work tools have been lowered to the ground, and the oil is cool before removing any components or lines. Remove the oil filler cap only when the engine is stopped, and the filler cap is cool enough to touch with your bare hand.



Illustration 1

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1. Extend boom swing cylinder (1) to full stroke, placing boom and support assembly (2) to the far left side.
2. Remove pin assembly (3).

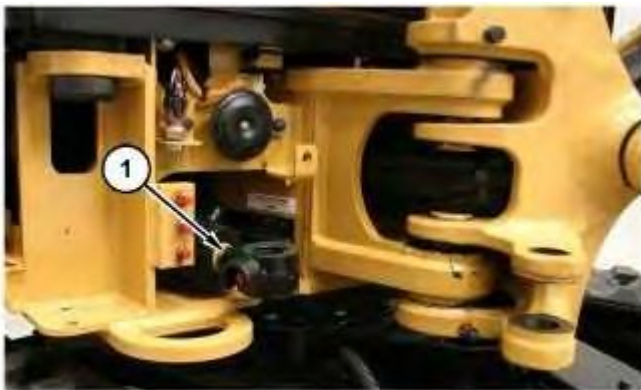


Illustration 2

g06310972

3. Retract boom swing cylinder (1) completely.
4. Raise cab assembly and lock into place.



Illustration 3

g06310977



Illustration 4

g06310983

5. Disconnect lube line (4). Disconnect hydraulic fittings (5) and (6).

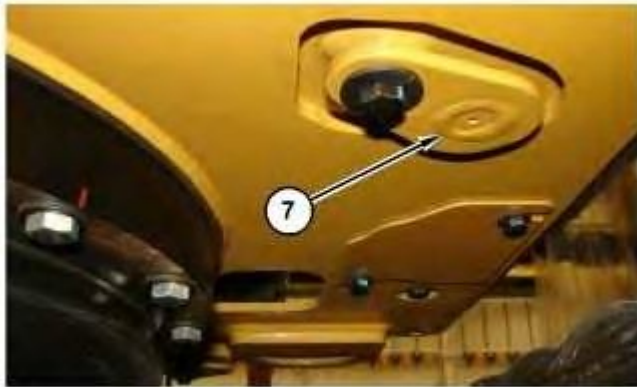


Illustration 5

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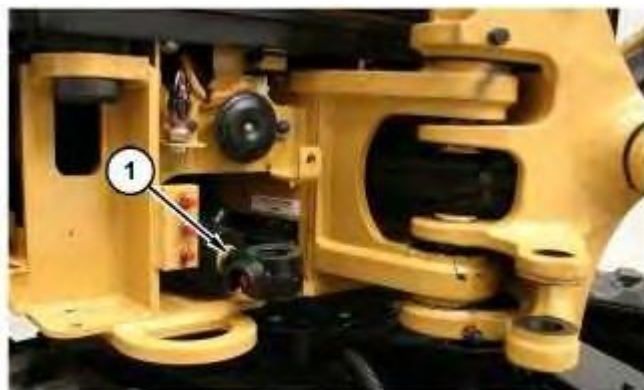


Illustration 6

g06310972

6. Remove pin assembly (7). Remove boom swing cylinder (1).

Installation Procedure

1. Install boom cylinder (1) in the reverse order of removal.

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i07495771

Boom Swing Cylinder - Disassemble

SMCS - 5105-015-BM

Disassembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	152-4251	Cylinder Repair Bench	1
B	1P-2853	Spanner Wrench	1
C	280-2060	Offset Spanner Wrench	1
D	8H-8539	1 5/8" Socket	1
	5P-3588	Adapter	1

Start By:

- a. Remove the boom swing cylinder.
-



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Illustration 1

g06295269



Illustration 2

g06295274

1. Remove seals (1) from barrel end of boom swing cylinder (2). Remove seals (3) from rod end of boom swing cylinder (4).

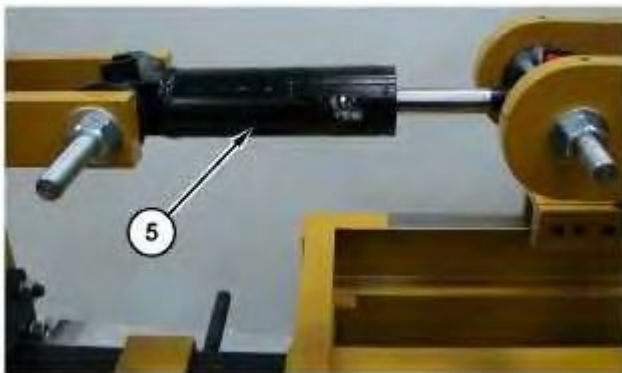


Illustration 3

g06327530

2. Mount boom swing cylinder (5) into Tooling (A).
-

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