



Bobcat®

Service Manual

Compact Tractor Backhoe

(BH66) S/N B4U100101 & Above
(BH76) S/N B4V300101 & Above
(BH86) S/N B4V400101 & Above
(BH86-5) S/N B4Y800101 & Above



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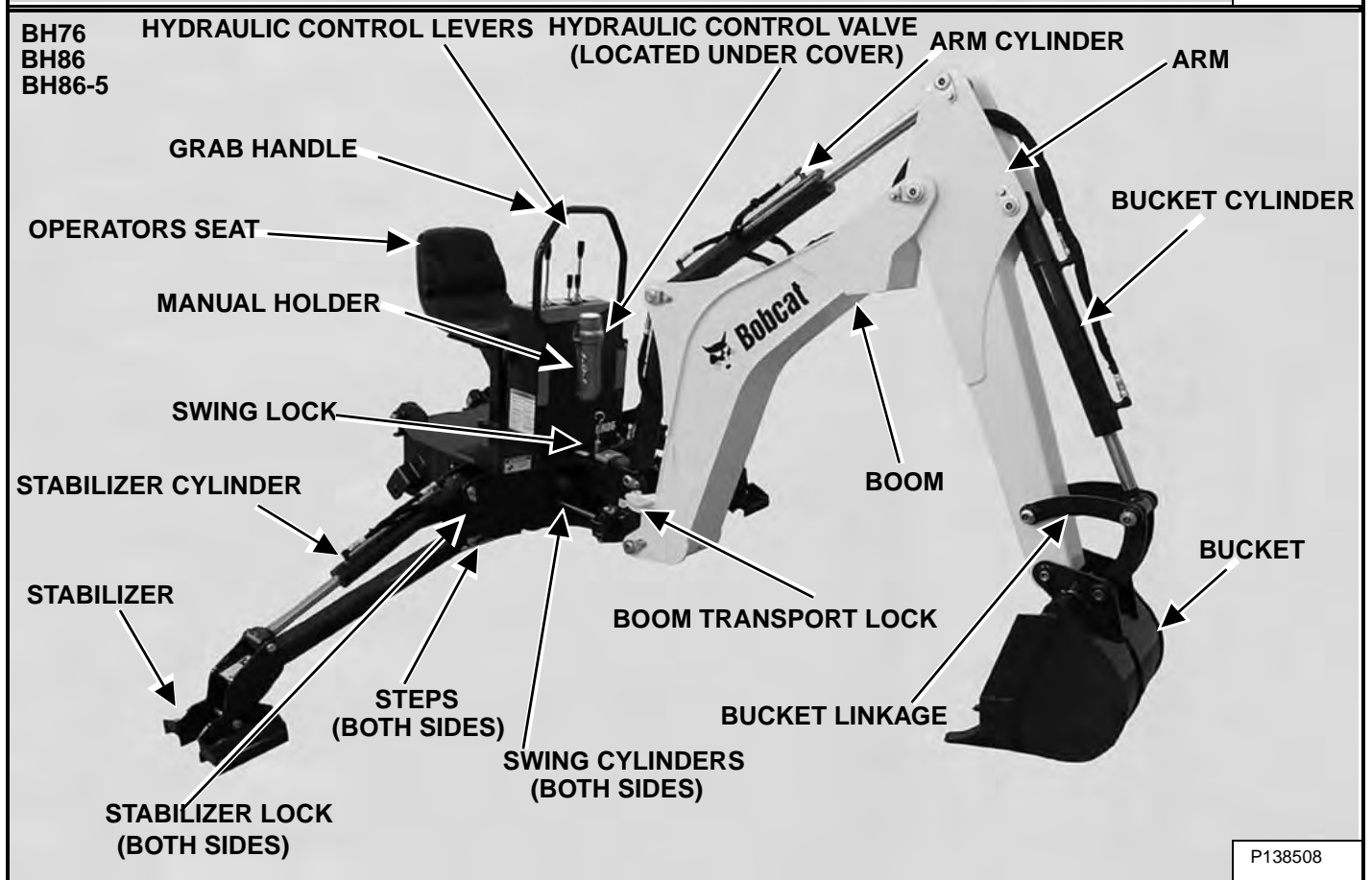
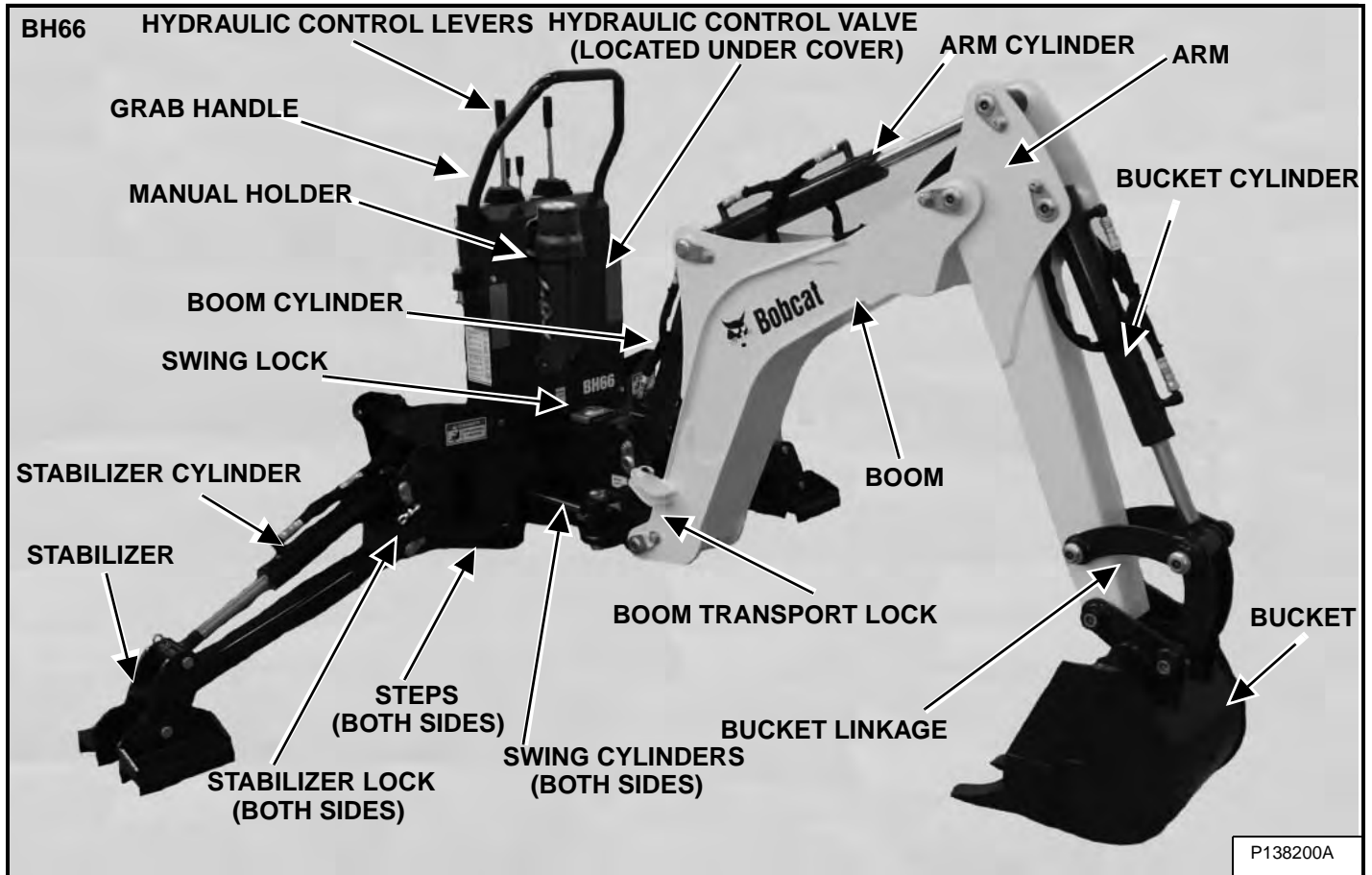
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ATTACHMENT IDENTIFICATION



BUCKET TEETH

Removal And Installation

WARNING

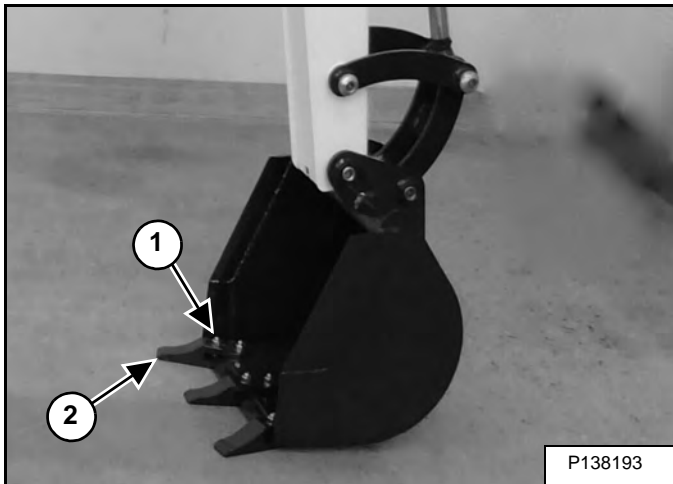
AVOID INJURY OR DEATH

Wear safety glasses to prevent eye injury when any of the following conditions exist:

- When fluids are under pressure.
- Flying debris or loose material is present.
- Engine is running.
- Tools are being used.

W-2019-0907

Figure 10-30-1



Bucket tooth points are self sharpening and will require little attention. However, teeth can be replaced when they become badly worn or broken.

Remove the nuts and bolts (Item 1) and remove and replace the tooth (item 2) **[Figure 10-30-1]**.

CONTROL VALVE (BH66) (CONT'D)

Disassembly And Assembly

! WARNING

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- Engine is running.
- Tools are being used.

W-2019-0907

! WARNING

Hydraulic fluid escaping under pressure can have sufficient force to enter a person's body by penetrating the skin. This can cause serious injury and possible death if proper medical treatment by a physician familiar with this injury is not received immediately.

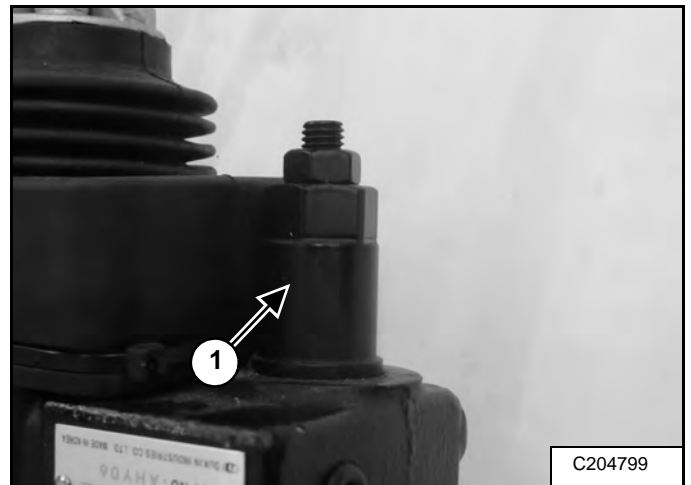
W-2145-0290

IMPORTANT

When repairing hydrostatic and hydraulic systems, clean the work area before disassembly and keep all parts clean. Always use caps and plugs on hoses, tubelines and ports to keep dirt out. Dirt can quickly damage the system.

I-2003-0888

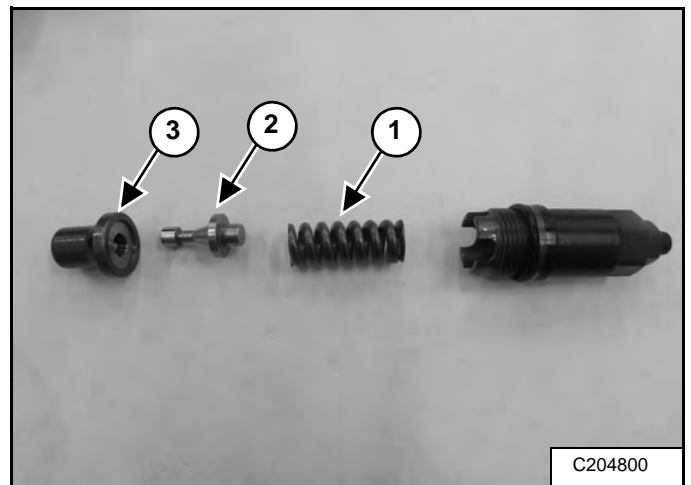
Figure 20-10-15



Remove the valve body (Item 1) [Figure 20-10-15].

Assembly: Insert the valve body (Item 1) [Figure 20-10-15] and tighten.

Figure 20-10-16



Remove the spring (Item 1), deflector (Item 2) and piston (Item 3) [Figure 20-10-16].

Assembly: Insert the spring (Item 1), deflector (Item 2) and piston (Item 3) [Figure 20-10-16].

CONTROL VALVE (BH76, BH86 AND BH86-5)

Removal And Installation

! WARNING

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W-2019-0907

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W-2145-0290

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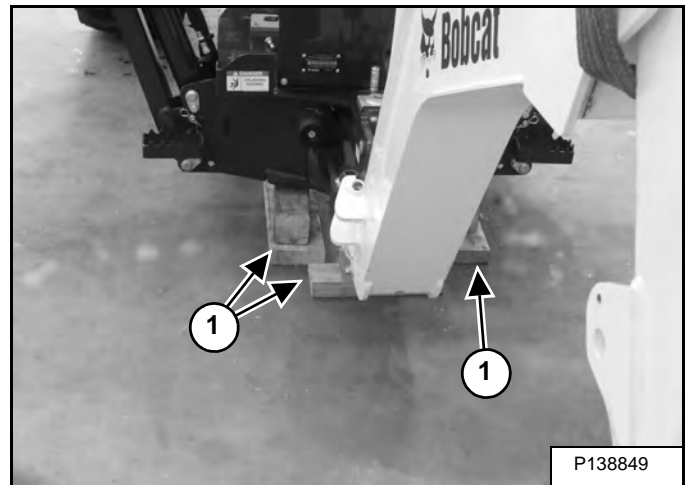
I-2003-0888

! WARNING

Check for correct function after adjustments, repairs or service. Failure to make correct repairs or adjustments can cause injury or death.

W-2004-1285

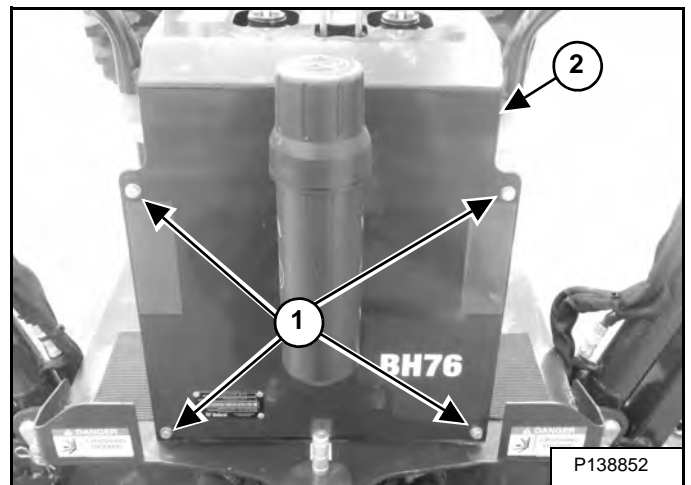
Figure 20-11-1



Place blocks (Item 1) [Figure 20-11-1] under the backhoe frame before removing the backhoe from the compact tractor.

Remove the backhoe from the compact tractor. (See the Backhoe's Operation & Maintenance Manual for the correct procedure.)

Figure 20-11-2



Remove the four bolts (Item 1) [Figure 20-11-2], nuts and washers.

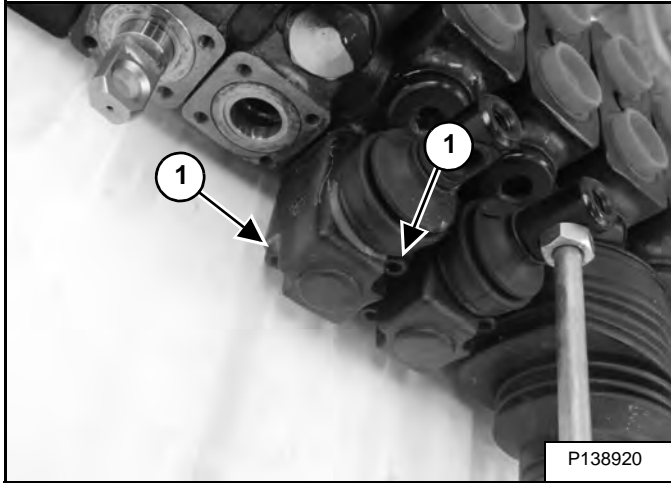
Installation: Tighten bolts to 21 - 23 N•m (180 - 200 in-lb) torque.

Remove the cover (Item 2) [Figure 20-11-2].

**CONTROL VALVE (BH76, BH86 AND BH86-5)
(CONT'D)**

Disassembly And Assembly (Cont'd)

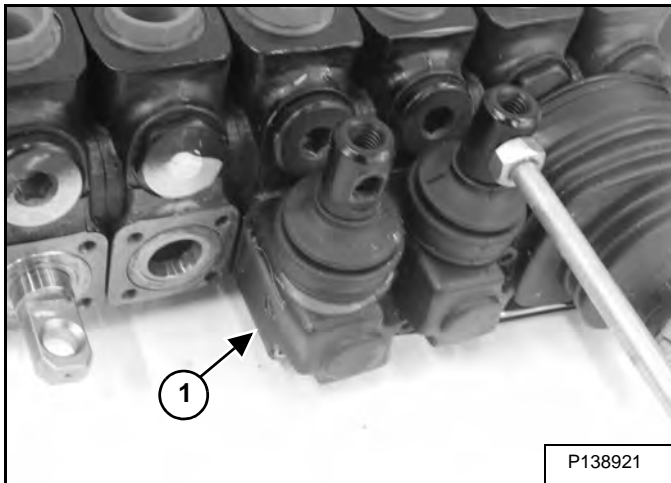
Figure 20-11-35



Remove the two screws (Item 1) [Figure 20-11-35].

Assembly: Install the two screws (Item 1) [Figure 20-11-35] and tighten.

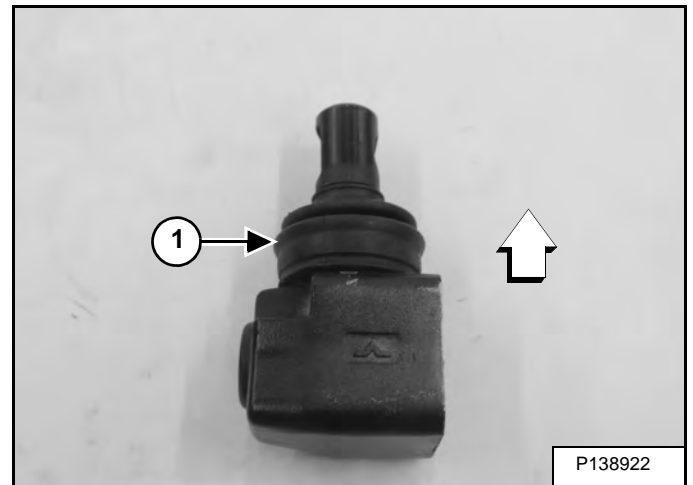
Figure 20-11-36



Remove the cap (Item 1) [Figure 20-11-36].

Assembly: Install the cap (Item 1) [Figure 20-11-36].

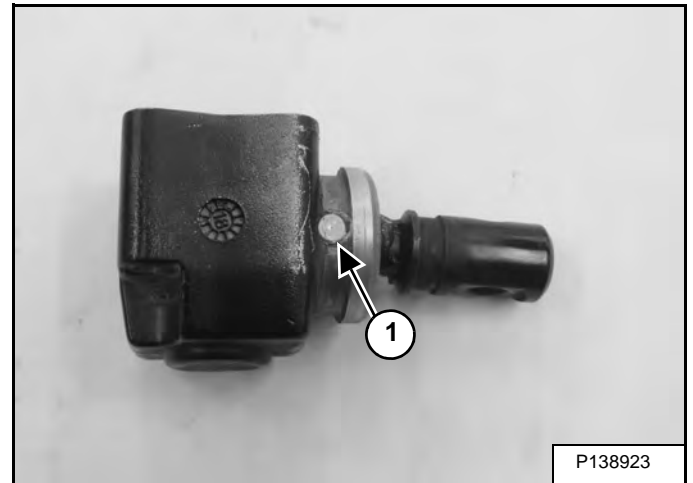
Figure 20-11-37



Remove the boot (Item 1) [Figure 20-11-37] up.

Assembly: Install the boot (Item 1) [Figure 20-11-37].

Figure 20-11-38



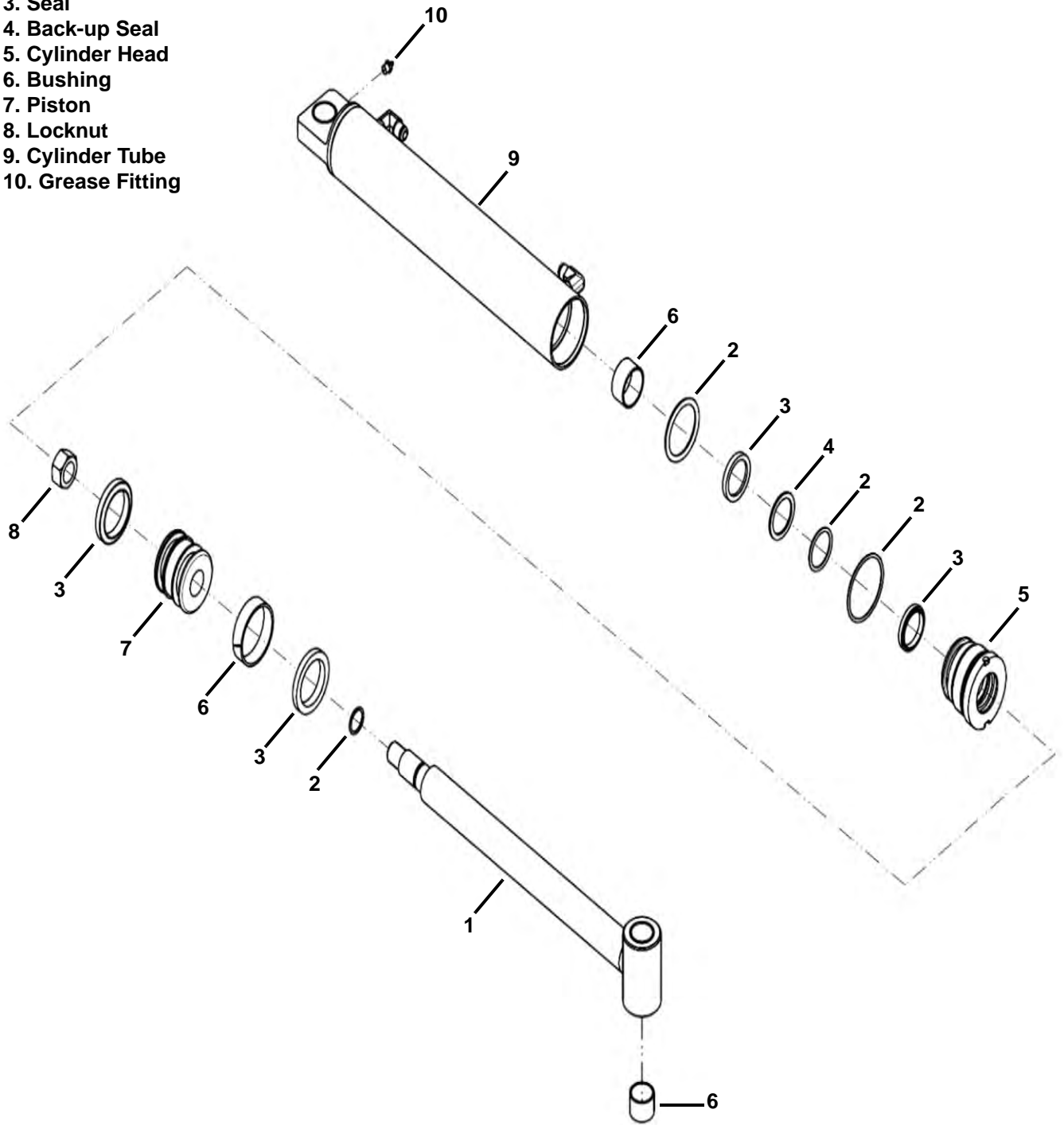
Remove the pin (Item 1) [Figure 20-11-38].

Assembly: Install the pin (Item 1) [Figure 20-11-38].

ARM CYLINDER (BH66) (CONT'D)

Parts Identification

- 1. Rod
- 2. O-ring
- 3. Seal
- 4. Back-up Seal
- 5. Cylinder Head
- 6. Bushing
- 7. Piston
- 8. Locknut
- 9. Cylinder Tube
- 10. Grease Fitting

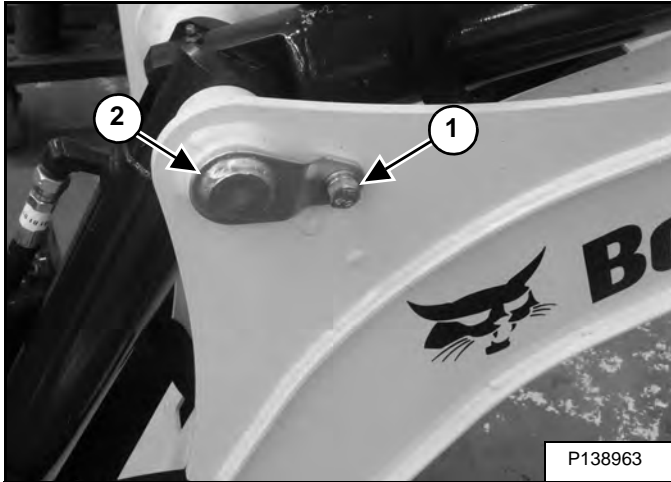


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ARM CYLINDER (BH76, BH86 AND BH86-5) (CONT'D)

Removal And Installation (Cont'd)

Figure 20-21-7



Remove the retaining bolt (Item 1) [Figure 20-21-7].

Remove the pivot pin (Item 2) [Figure 20-21-7].

Remove the arm cylinder.

BOOM CYLINDER (BH66)

Removal And Installation

! WARNING

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W-2019-0907

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W-2145-0290

IMPORTANT

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I-2003-0888

! WARNING

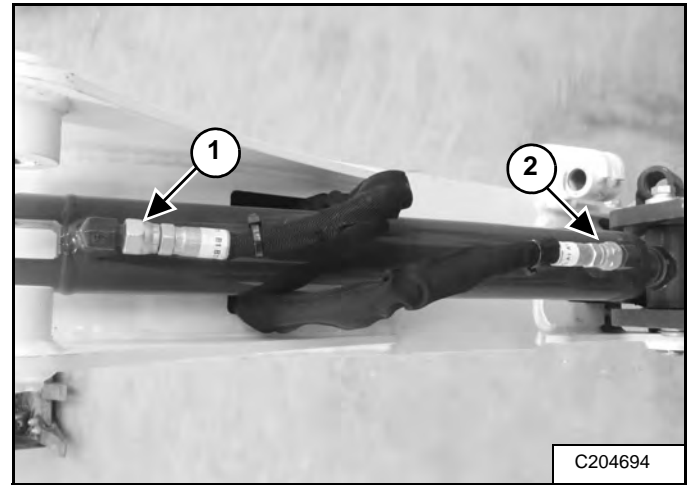
Check for correct function after adjustments, repairs or service. Failure to make correct repairs or adjustments can cause injury or death.

W-2004-1285

Remove the arm. (See Removal And Installation on Page 30-10-1.)

Remove arm cylinder. (See Removal And Installation on Page 20-20-1.)

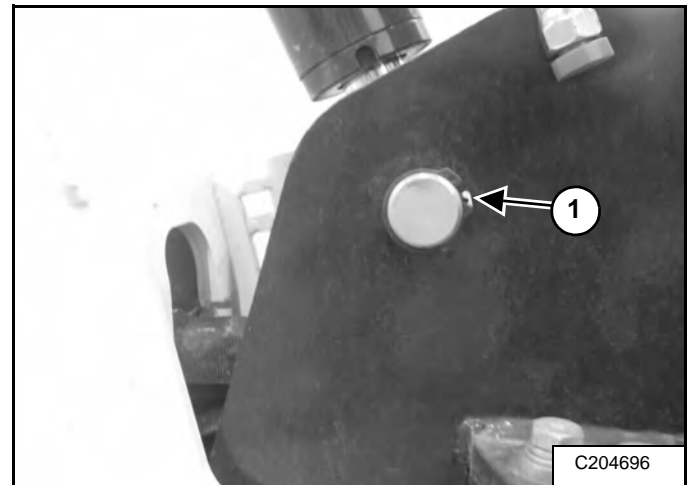
Figure 20-30-1



Remove hydraulic hoses (Items 1 and 2) [Figure 20-30-1].

NOTE: Mark hoses for correct installation.

Figure 20-30-2



Remove the snap ring (Item 1) [Figure 20-30-2].

BOOM CYLINDER (BH76, BH86 AND BH86-5)

Removal And Installation

! WARNING

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I-2003-0888

! WARNING

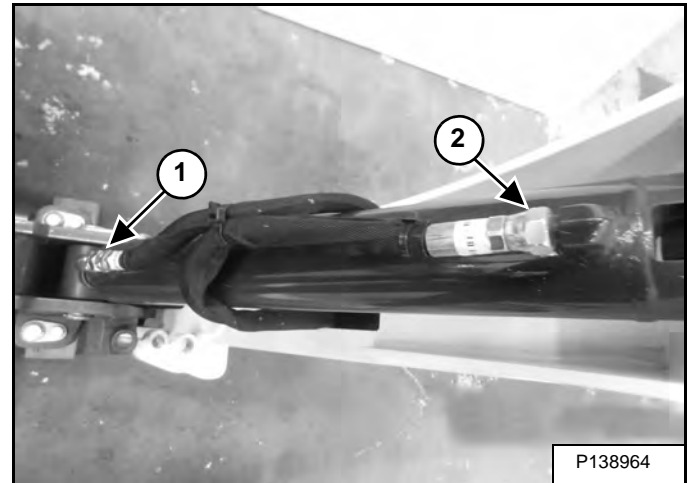
Check for correct function after adjustments, repairs or service. Failure to make correct repairs or adjustments can cause injury or death.

W-2004-1285

Remove the arm. (See Removal And Installation on Page 30-11-1.)

Remove arm cylinder. (See Removal And Installation on Page 20-21-1.)

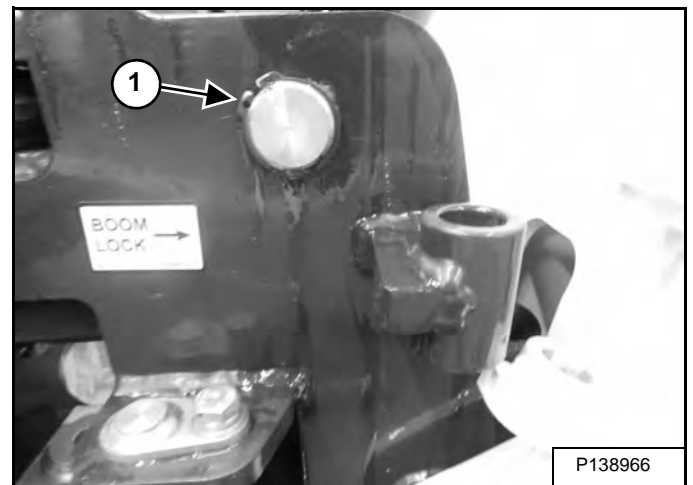
Figure 20-31-1



Remove hydraulic hoses (Items 1 and 2) [Figure 20-31-1].

NOTE: Mark hoses for correct installation.

Figure 20-31-2



Remove the snap ring (Item 1) [Figure 20-31-2].

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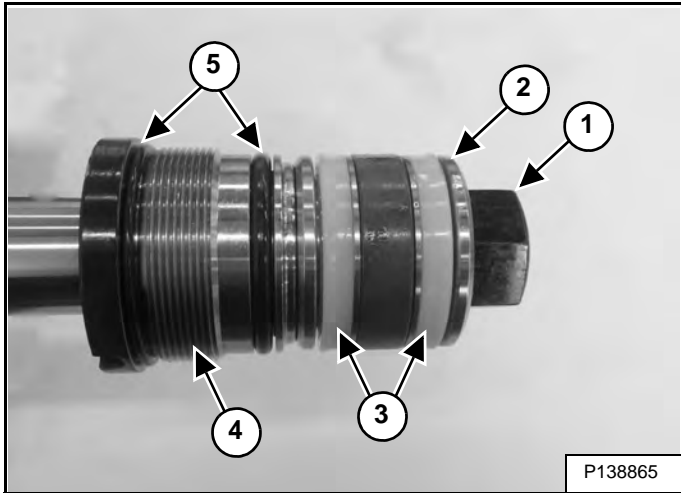
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BOOM CYLINDER (BH76, BH86 AND BH86-5) (CONT'D)

Assembly (Cont'd)

Figure 20-31-24



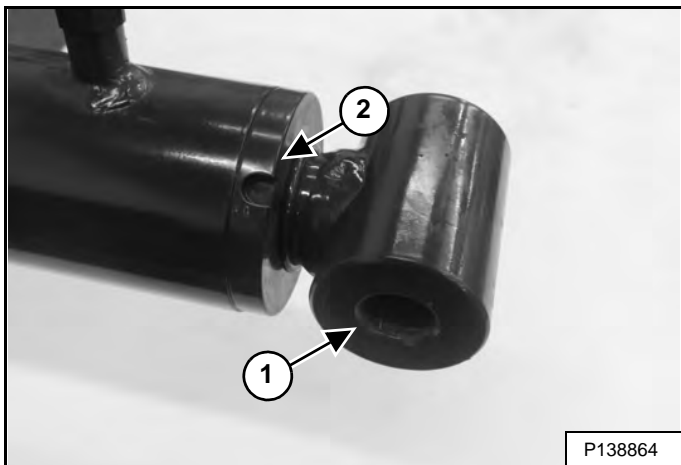
Install the piston (Item 1) and the nut (Item 2) [Figure 20-31-24] on the rod.

Tighten the nut to the specified torque. (See Torque Specifications For Hydraulic Cylinder Piston Nuts on Page SPEC-30-2.)

Apply assembly lube on the piston seals (Item 3), head threads (Item 5) and on the head O-rings (Item 4) [Figure 20-31-24].

Install the rod assembly into the cylinder case.

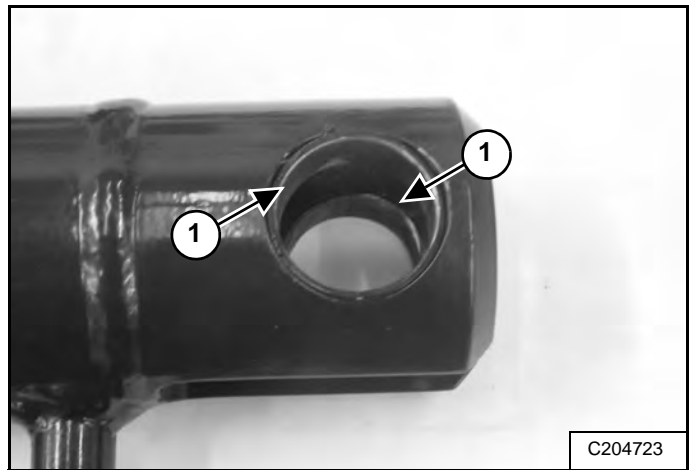
Figure 20-31-25



Install the bushing (Item 1) [Figure 20-31-25] on the rod end.

Use a spanner wrench (MEL1076) to tighten the head (Item 2) [Figure 20-31-25].

Figure 20-31-26

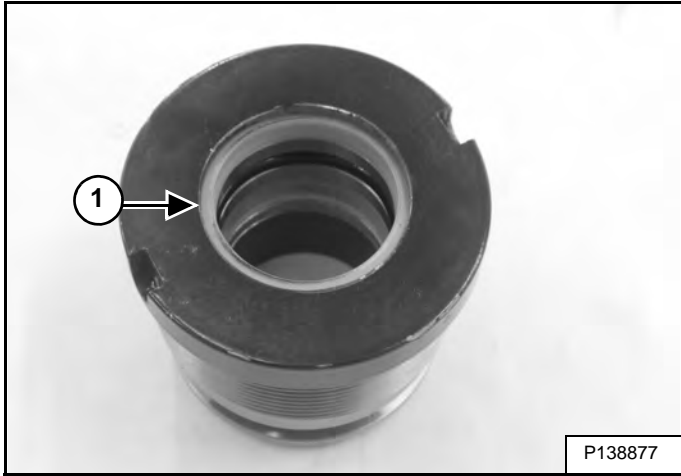


Install the bushings (Item 1) [Figure 20-31-26] on the base end.

BUCKET CYLINDER (BH66) (CONT'D)

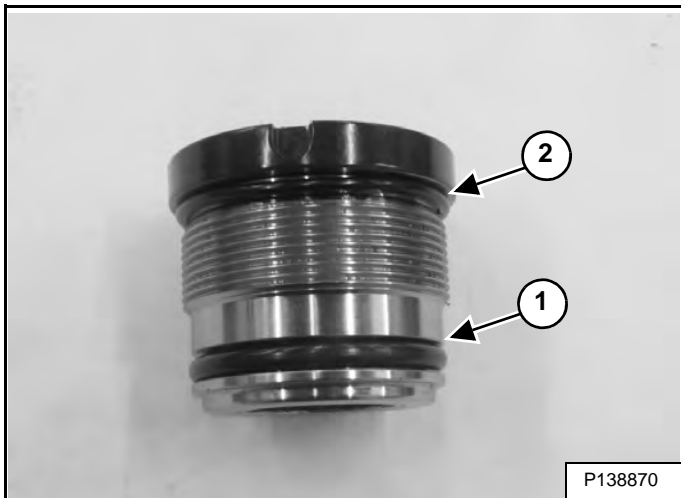
Assembly (Cont'd)

Figure 20-40-23



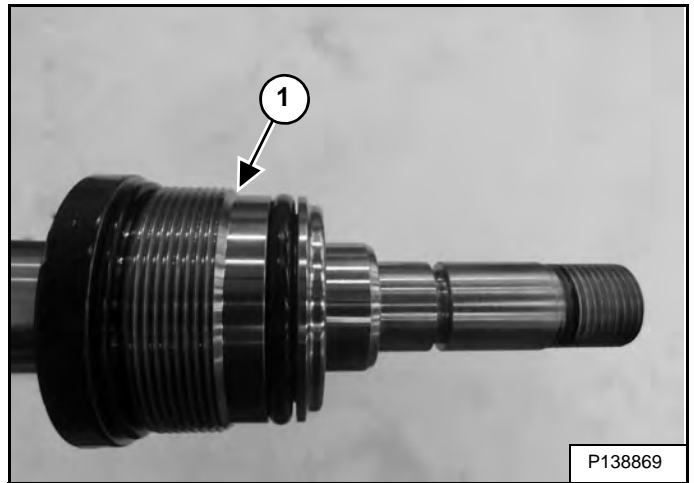
Install the wiper seal (Item 1) [Figure 20-40-23] with the wiper toward the outside of the head.

Figure 20-40-24



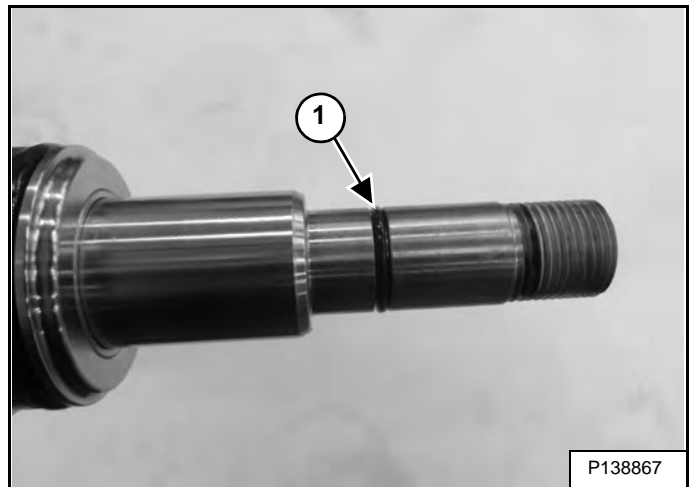
Install the large O-ring (Item 1) and small O-ring (Item 2) [Figure 20-40-24] on the head.

Figure 20-40-25



Install the head (Item 1) [Figure 20-40-25] on the rod.

Figure 20-40-26



Install the O-ring (Item 1) [Figure 20-40-26] on the rod.

**BUCKET CYLINDER (BH76, BH86 AND BH86-5)
(CONT'D)**

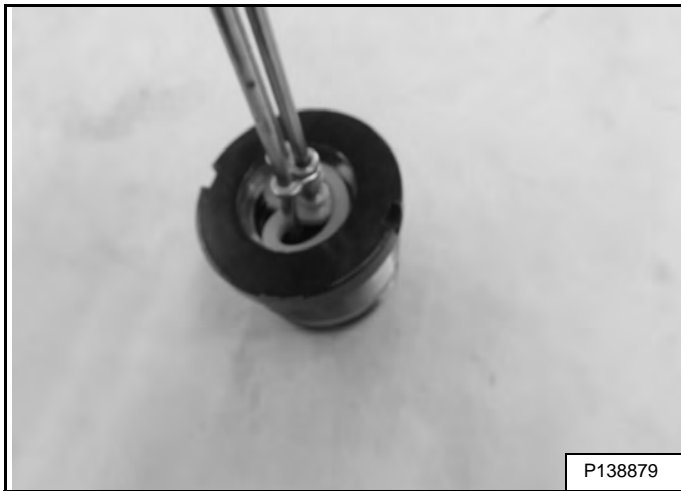
Assembly (Cont'd)

Figure 20-41-18



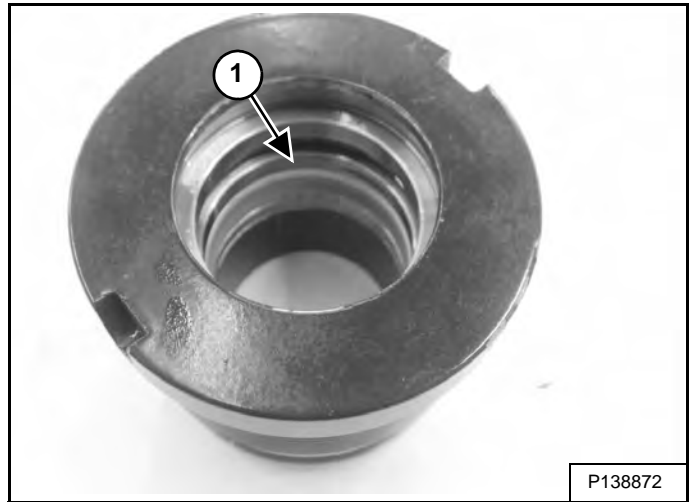
Install the seal on the rod seal tool (MEL1032) [Figure 20-41-18].

Figure 20-41-19



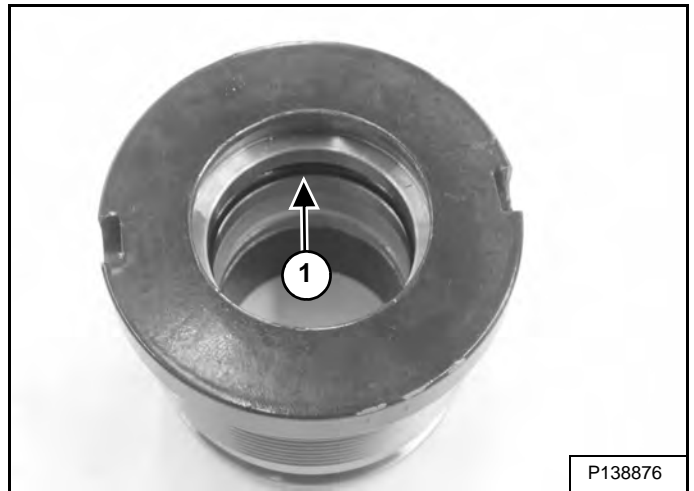
Install the rod seal in the head [Figure 20-41-19].

Figure 20-41-20



Install the back-up seal (Item 1) [Figure 20-41-20] on the head.

Figure 20-41-21



Install the O-ring (Item 1) [Figure 20-41-21] on the head.

STABILIZER CYLINDER (BH66) (CONT'D)

Assembly

Clean all parts in solvent and dry with compressed air.

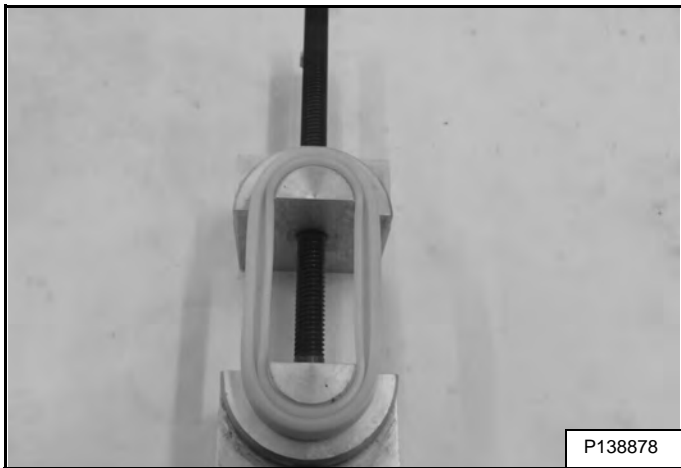
While servicing the cylinder, do not damage the parts.

Inspect for nicks, scratches, or otherwise damaged or bent parts before assembling the cylinder. Replace parts that appear damaged in any way. The cylinder may not function correctly if there is damage to any of its parts.

Destroy all the O-rings and seals and replace them with NEW O-rings and seals.

Apply clean hydraulic fluid to all O-rings and seals before installation.

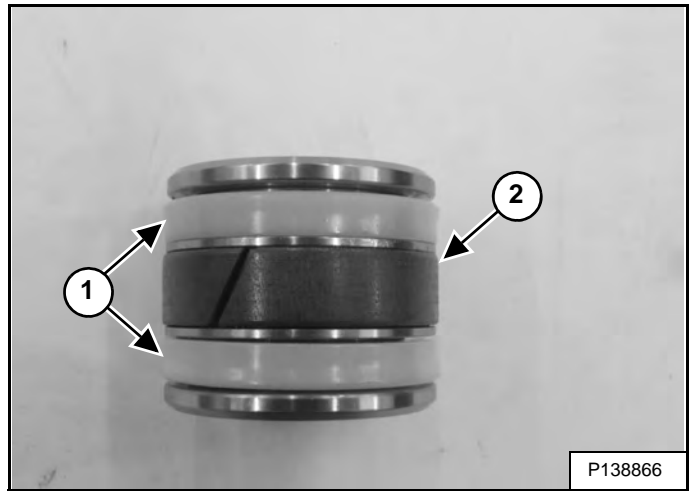
Figure 20-50-13



Install the seal on the tool (MEL1396) and stretch the seal until it fits the piston **[Figure 20-50-13]**.

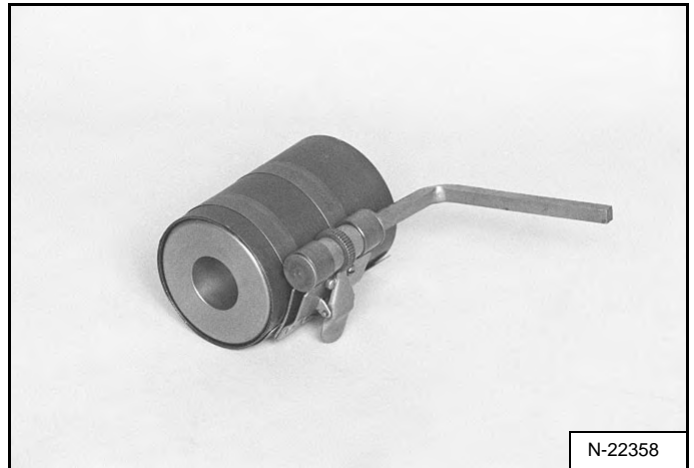
Allow the O-ring to stretch for 30 seconds before removing it from the tool.

Figure 20-50-14



Install the seals (Item 1) and the bushing (Item 2) **[Figure 20-50-14]** on the piston.

Figure 20-50-15



Use the ring compressor to compress the seals to the correct size **[Figure 20-50-15]**. Leave the piston in the piston ring compressor for three minutes.

STABILIZER CYLINDER (BH76, BH86 AND BH86-5) (CONT'D)

Assembly

Clean all parts in solvent and dry with compressed air.

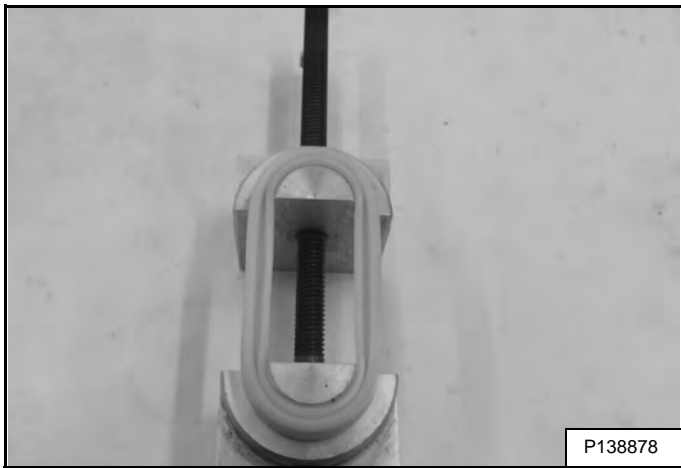
While servicing the cylinder, do not damage the parts.

Inspect for nicks, scratches, or otherwise damaged or bent parts before assembling the cylinder. Replace parts that appear damaged in any way. The cylinder may not function correctly if there is damage to any of its parts.

Destroy all the O-rings and seals and replace them with NEW O-rings and seals.

Apply clean hydraulic fluid to all O-rings and seals before installation.

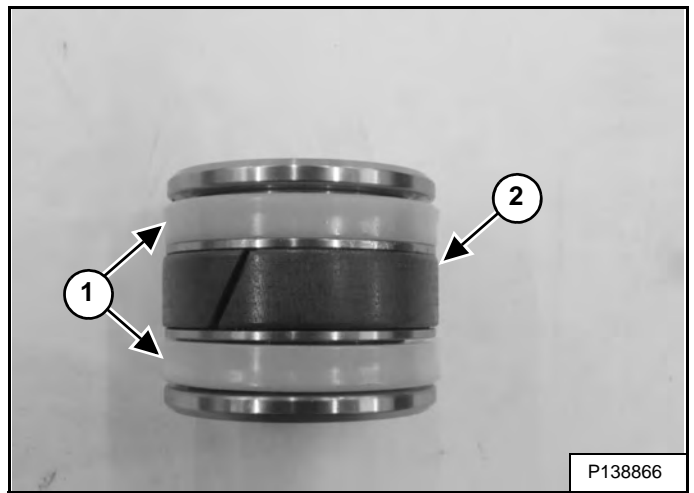
Figure 20-50-13



Install the seal on the tool (MEL1396) and stretch the seal until it fits the piston **[Figure 20-50-13]**.

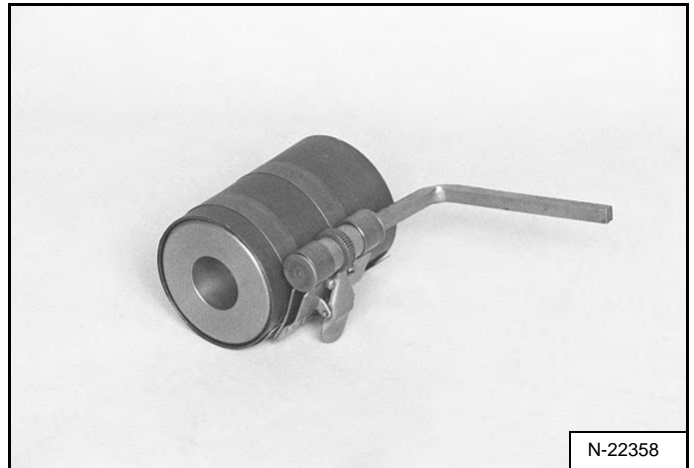
Allow the O-ring to stretch for 30 seconds before removing it from the tool.

Figure 20-50-14



Install the seals (Item 1) and the bushing (Item 2) **[Figure 20-50-14]** on the piston.

Figure 20-50-15



Use the ring compressor to compress the seals to the correct size **[Figure 20-50-15]**. Leave the piston in the piston ring compressor for three minutes.

SWING CYLINDER (BH66) (CONT'D)

Assembly

Clean all parts in solvent and dry with compressed air.

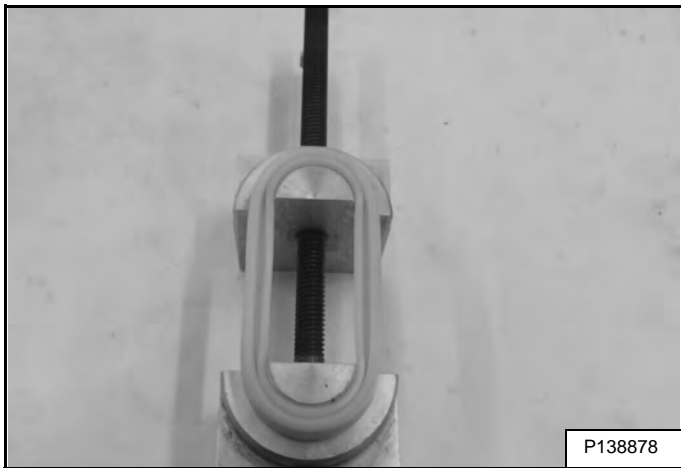
While servicing the cylinder, do not damage the parts.

Inspect for nicks, scratches, or otherwise damaged or bent parts before assembling the cylinder. Replace parts that appear damaged in any way. The cylinder may not function correctly if there is damage to any of its parts.

Destroy all the O-rings and seals and replace them with NEW O-rings and seals.

Apply clean hydraulic fluid to all O-rings and seals before installation.

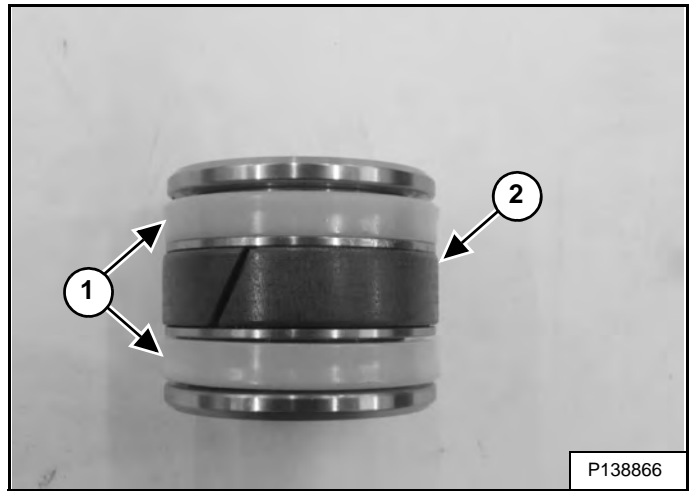
Figure 20-60-13



Install the seal on the tool (MEL1396) and stretch the seal until it fits the piston **[Figure 20-60-13]**.

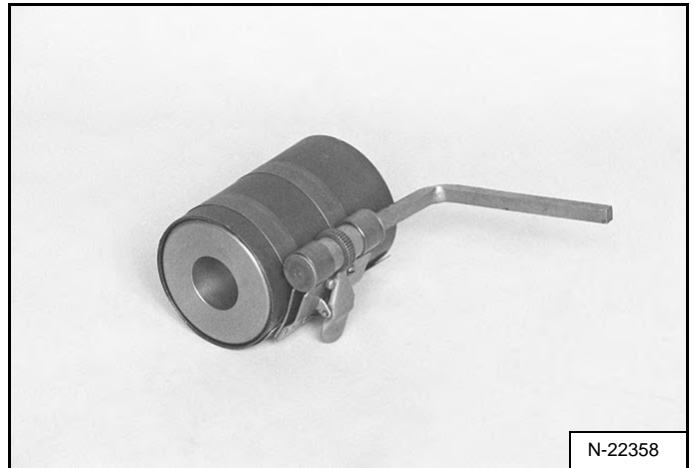
Allow the O-ring to stretch for 30 seconds before removing it from the tool.

Figure 20-60-14



Install the seals (Item 1) and the bushing (Item 2) **[Figure 20-60-14]** on the piston.

Figure 20-60-15



Use the ring compressor to compress the seals to the correct size **[Figure 20-60-15]**. Leave the piston in the piston ring compressor for three minutes.

SWING CYLINDER (BH76, BH86 AND BH86-5) (CONT'D)

Assembly

Clean all parts in solvent and dry with compressed air.

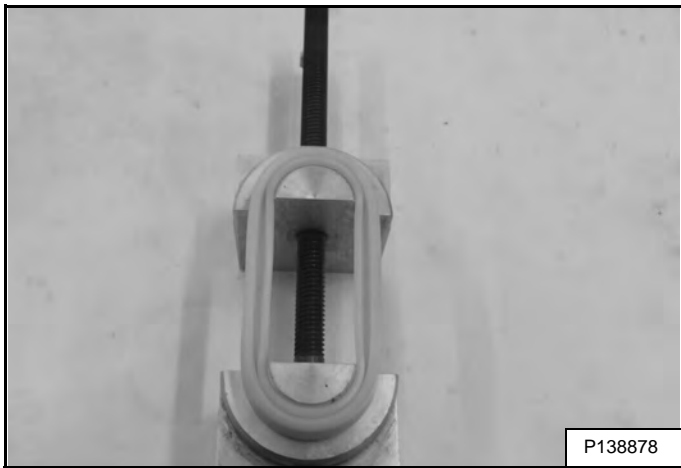
While servicing the cylinder, do not damage the parts.

Inspect for nicks, scratches, or otherwise damaged or bent parts before assembling the cylinder. Replace parts that appear damaged in any way. The cylinder may not function correctly if there is damage to any of its parts.

Destroy all the O-rings and seals and replace them with NEW O-rings and seals.

Apply clean hydraulic fluid to all O-rings and seals before installation.

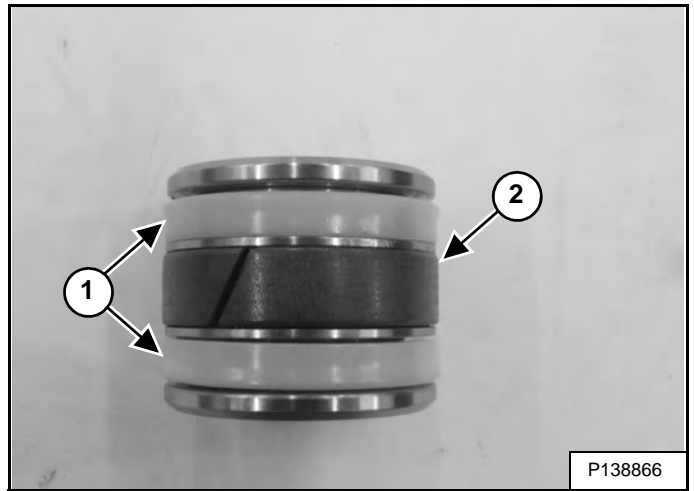
Figure 20-61-13



Install the seal on the tool (MEL1396) and stretch the seal until it fits the piston **[Figure 20-61-13]**.

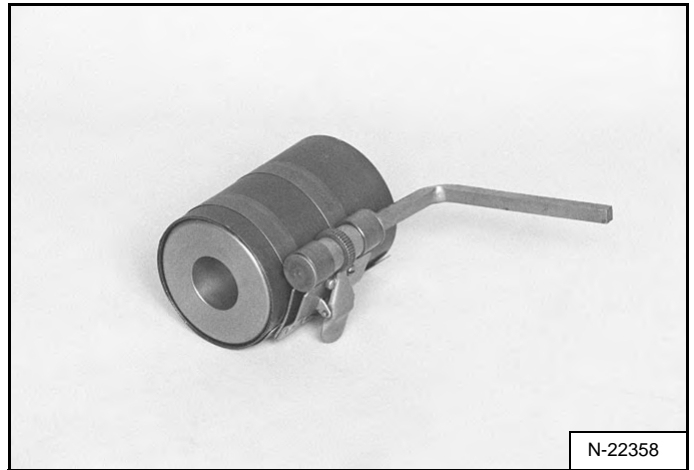
Allow the O-ring to stretch for 30 seconds before removing it from the tool.

Figure 20-61-14



Install the seals (Item 1) and the bushing (Item 2) **[Figure 20-61-14]** on the piston.

Figure 20-61-15



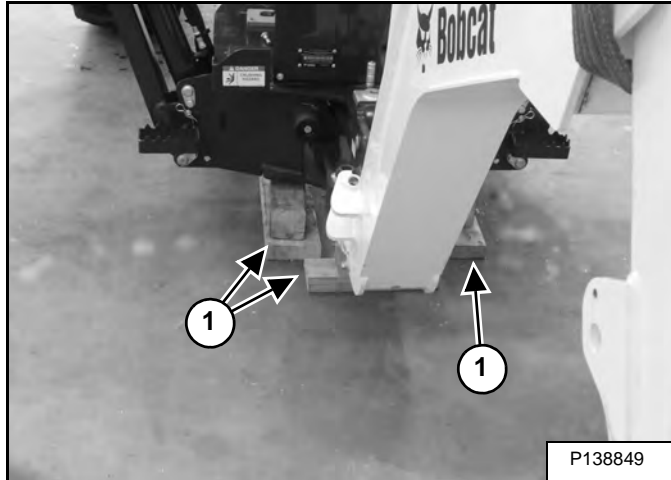
Use the ring compressor to compress the seals to the correct size **[Figure 20-61-15]**. Leave the piston in the piston ring compressor for three minutes.

ARM (BH76, BH86 AND BH86-5)

Removal And Installation

Remove the backhoe from the compact tractor. (See the Backhoe's Operation & Maintenance Manual for the correct procedure.)

Figure 30-11-1



NOTE: Place blocking (Item 1) [Figure 30-11-1] under the frame of the backhoe when removing the backhoe from the compact tractor. This will help stabilize the backhoe as individual components are removed.

WARNING

AVOID INJURY OR DEATH

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W-2019-0907

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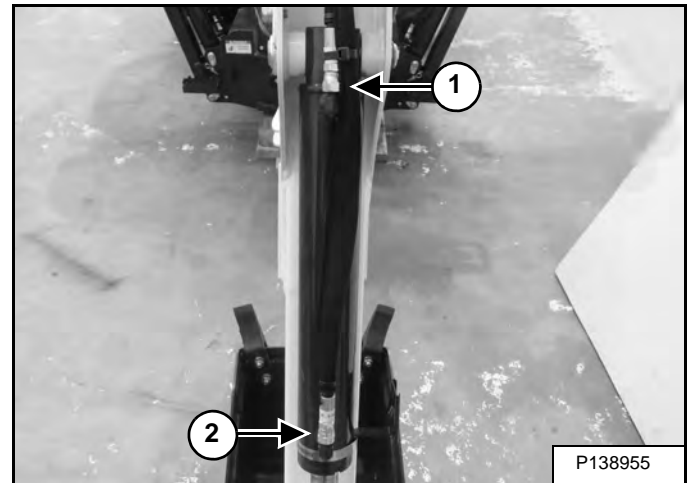
W-2145-0290

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I-2003-0888

Figure 30-11-2

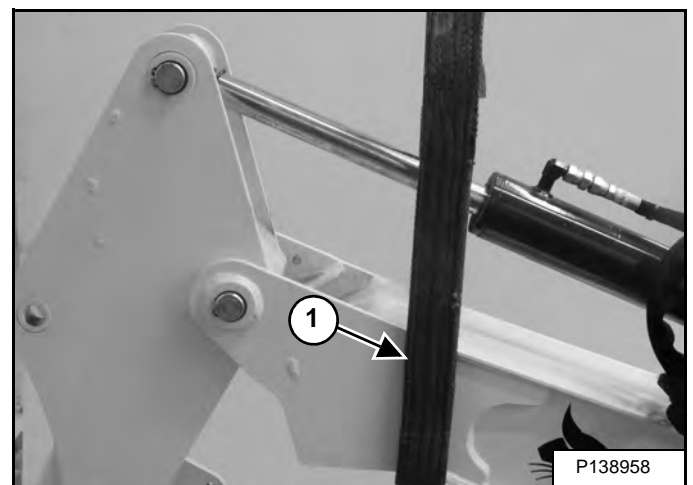


Remove the hydraulic hoses (Items 1 and 2) [Figure 30-11-2] from the bucket cylinder.

NOTE: Mark hydraulic hose for correct installation.

Installation: Hydraulic hose (Item 1) is installed at the base end of the bucket cylinder and hydraulic hose (Item 2) [Figure 30-11-2] is installed at the rod end of the bucket cylinder.

Figure 30-11-3



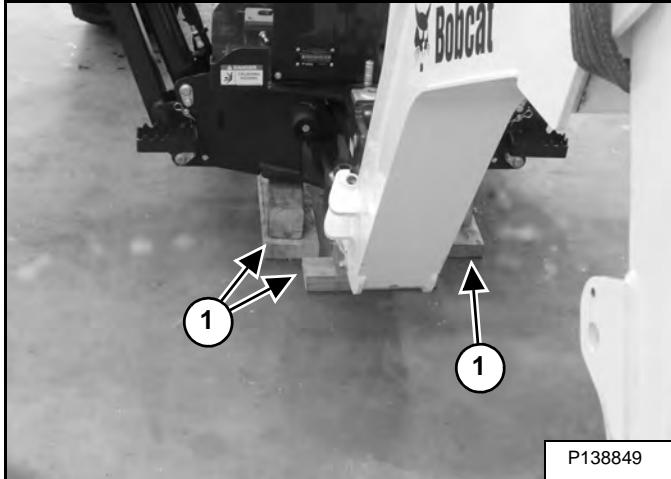
Install a support strap (Item 1) [Figure 30-11-3] under the boom.

STABILIZER

Removal And Installation

Remove the backhoe from the compact tractor. (See the Backhoe's Operation & Maintenance Manual for the correct procedure.)

Figure 30-40-1



NOTE: Place blocking (Item 1) [Figure 30-40-1] under the frame of the backhoe when removing the backhoe from the compact tractor. This will help stabilize the backhoe as individual components are removed.

WARNING

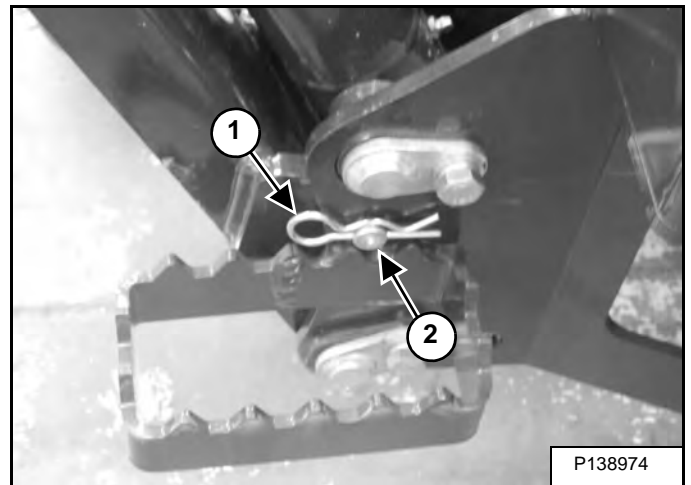
AVOID INJURY OR DEATH

Wear safety glasses to prevent eye injury when any of the following conditions exist:

- When fluids are under pressure.
- Flying debris or loose material is present.
- Engine is running.
- Tools are being used.

W-2019-0907

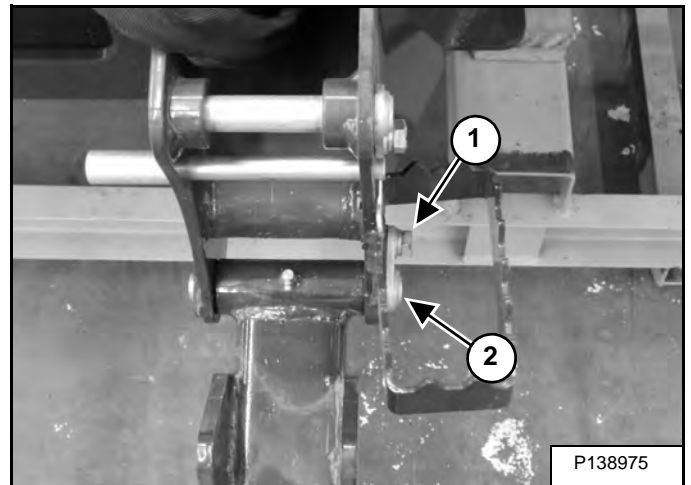
Figure 30-40-2



Remove the retaining pin (Item 1), the stabilizer lock pin (Item 2) [Figure 30-40-2] and lower the stabilizer to the ground.

Remove the stabilizer cylinder. (See Removal And Installation on Page 20-51-1.) or (See Removal And Installation on Page 20-50-1.)

Figure 30-40-3



Remove the retaining bolt (Item 1) and pivot pin (Item 2) [Figure 30-40-3].

Remove stabilizer.

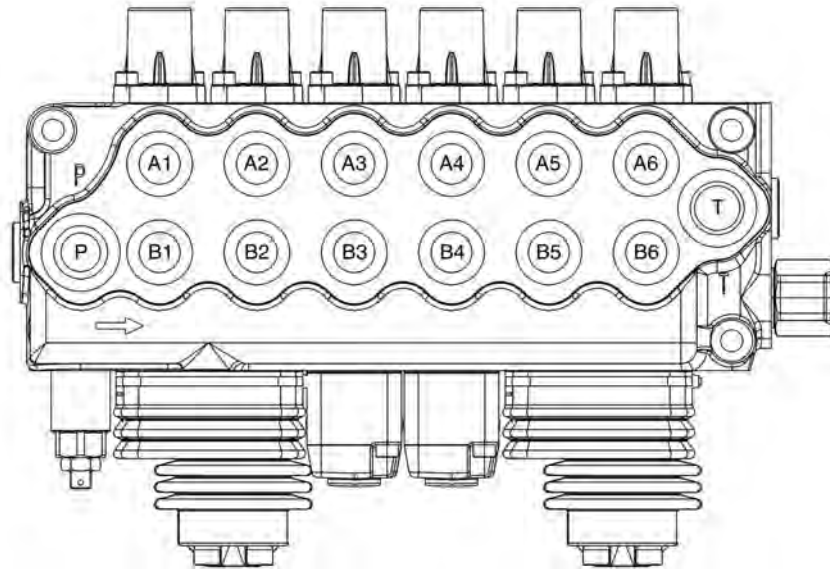
SPECIFICATIONS

(BH66 BACKHOE) ATTACHMENT SPECIFICATIONS	SPEC-10-1
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Performance	SPEC-10-2
Controls	SPEC-10-2
(BH76 BACKHOE) ATTACHMENT SPECIFICATIONS	SPEC-11-1
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(BH86 BACKHOE) ATTACHMENT SPECIFICATIONS	SPEC-12-1
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(BH86-5 BACKHOE) ATTACHMENT SPECIFICATIONS	SPEC-13-1
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Port Seal Fitting	SPEC-40-2

Certain specification(s) are based on engineering calculations and are not actual measurements. Specification(s) are provided for comparison purposes only and are subject to change without notice. Specification(s) for your individual Bobcat equipment will vary based on normal variations in design, manufacturing, operating conditions, and other factors.

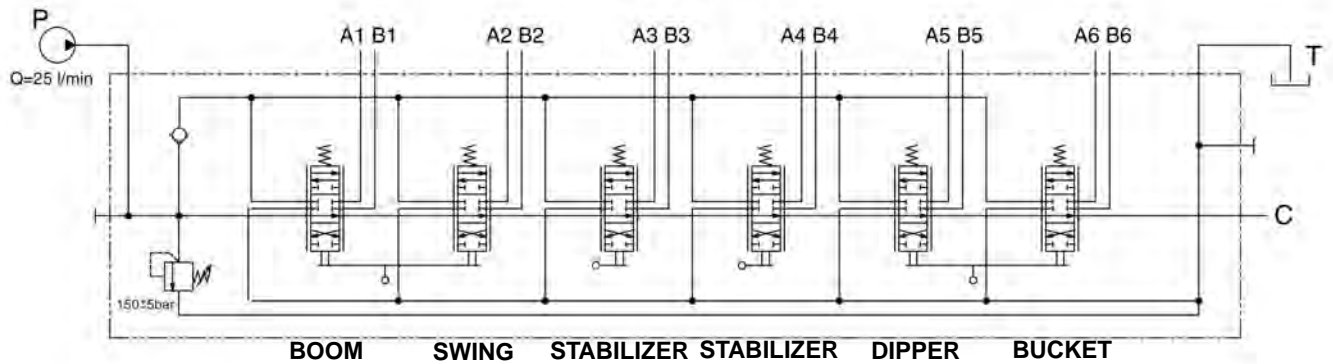
SCHEMATIC(S)

Hydraulic Schematic (BH66)



NA18930

HYDRAULIC CIRCUIT



BOOM SWING STABILIZER STABILIZER DIPPER BUCKET

NA18931

SYSTEM RELIEF PRESSURE

15 MPa
(150 bar)
(2176 psi)

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