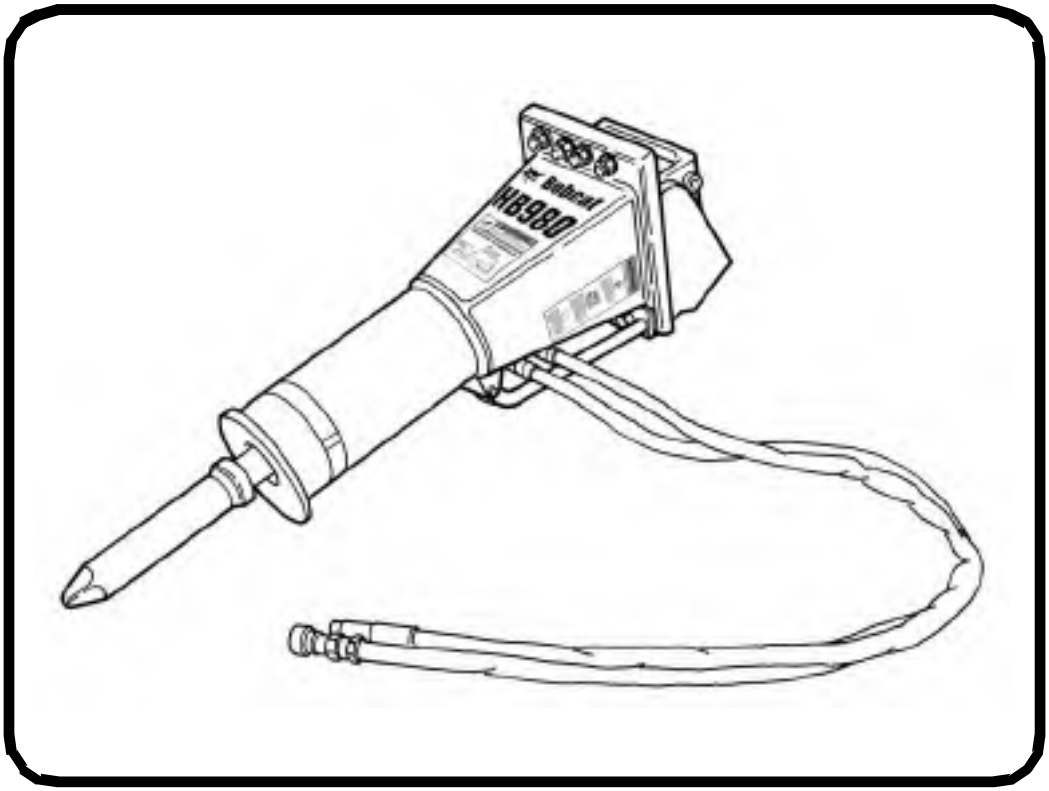
EN

Bobcat®

Operation & Maintenance Manual
HB Series Hydraulic Breaker

(Breaker HB280) S/N A5T500101 & Above
(Breaker HB380) S/N A01Q00101 & Above
(Breaker HB580) S/N A00V00101 & Above
(Breaker HB680) S/N A00W00101 & Above
(Breaker HB880) S/N A00X00101 & Above
(Breaker HB980) S/N A00Y00101 & Above



6904104enGB (02-15) (U)

Printed in Belgium
Original Instructions

OPERATOR SAFETY WARNINGS

WARNING

Operator must have instructions before operating the machine. Untrained operators can cause injury or death.

W-2001-0502

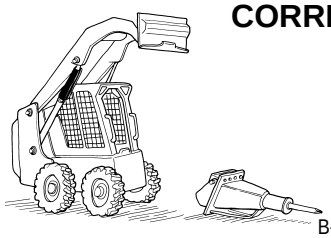
Safety Alert Symbol: **This symbol is used for important safety messages. When you see this symbol, follow the safety messages to avoid personal injury or death.**

CORRECT

P-90216

Never use the breaker without instructions. See machine signs (decals), Operation & Maintenance Manual and Operator's Handbook.

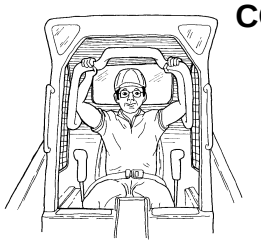
CORRECT



B-23294

Always install approved lift arm support device when servicing loader when lift arms are raised.

CORRECT

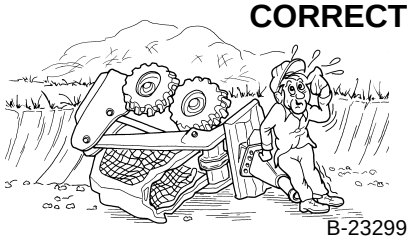


B-15570

Always use the seat bar and fasten seat belt snugly.

Always keep feet on the pedals when operating loader.

CORRECT



B-23299

Never use loader without operator cab with ROPS and FOPS approval.

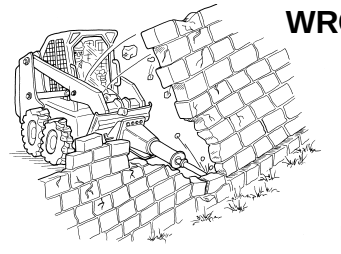
WRONG

B-23293

Do not use loader in atmosphere with explosive dust, gas, or where exhaust can contact flammable material.

Avoid cutting gas, electric, or other utility lines.

WRONG



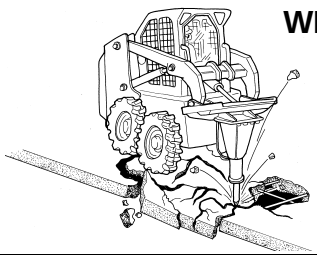
B-23291

Never demolish load bearing walls.

Keep other personnel away from work area.

Always use special applications kit.

WRONG



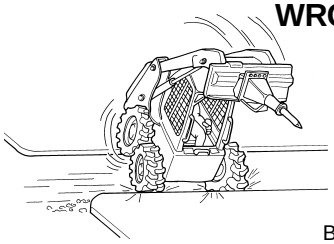
B-23292

Do not undercut machine which can cause machine to fall.

Check rules and regulations at your location.

Operator and bystanders must wear goggles, hard hats, and hearing protection.

WRONG



B-23298

Always carry attachment as low as possible.

Do not travel or turn with lift arms up.

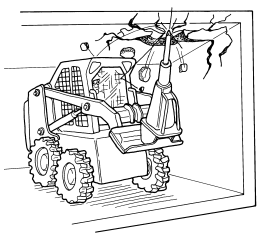
WRONG

B-23296

Never leave machine with engine running or with lift arms up.

To park, engage parking brake and put attachment on the ground.

WRONG



B-23295

Never modify equipment or add attachments not approved by Bobcat Company.

Never demolish ceilings or overhead structure.

SAFETY EQUIPMENT

The Bobcat Loader must be equipped with safety items necessary for each job. Ask your dealer about attachments and accessories.

1. **SEAT BELT: Check belt fasteners and check for damaged webbing or buckle.**
2. **SEAT BAR: When up, it must lock the loader hydraulic functions.**
3. **OPERATOR CAB (ROPS and FOPS): It must be on the loader with all fasteners tight.**
4. **OPERATOR'S HANDBOOK: Must be in the cab.**
5. **MACHINE AND ATTACHMENT SAFETY SIGNS (DECALS): Replace if damaged, clean if soiled.**
6. **SPECIAL APPLICATIONS KIT**
7. **GRAB HANDLES: Replace if damaged.**
8. **SAFETY TREADS: Replace if damaged.**
9. **LIFT ARM SUPPORT DEVICE**
10. **PARKING BRAKE**

OSW48-0509


Bobcat®

OPERATOR SAFETY WARNINGS

WARNING

Operator must have instructions before operating the machine. Untrained operators can cause injury or death.

W-2001-0502

Safety Alert Symbol: **This symbol is used for important safety messages. When you see this symbol, follow the safety messages to avoid personal injury or death.**

CORRECT

P-90216

Never use the breaker without instructions. See machine signs (decals), Operation & Maintenance Manual and Operator's Handbook.

CORRECT

B-21928

Always fasten seat belt snugly.

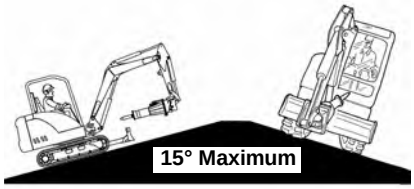
Always operate controls only from the operator's position.

CORRECT

B-23316

Never use excavator without operator cab with ROPS and TOPS approval.

CORRECT



B-23323

Never exceed a 15° degree slope when operating the excavator and breaker.

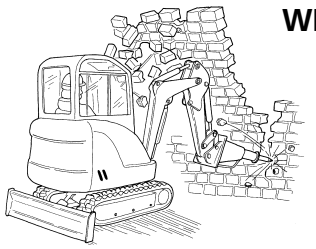
WRONG

B-2332(

Do not use excavator in atmosphere with explosive dust, gas, or where exhaust can contact flammable material.

Avoid cutting gas, electric, or other utility lines.

WRONG



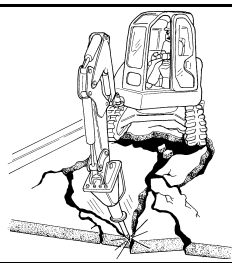
B-2331S

Never demolish load bearing walls.

Keep other personnel away from work area.

Always use special applications kit.

WRONG



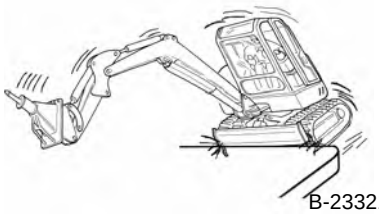
B-23317

Do not undercut machine which can cause machine to fall.

Check rules and regulations at your location.

Operator and bystanders must wear goggles, hard hats, and hearing protection.

WRONG

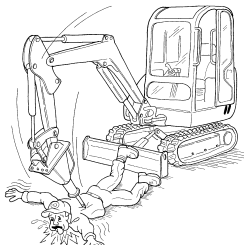


B-23321A

Always carry attachment as low as possible.

Do not travel or turn with attachment extended.

WRONG

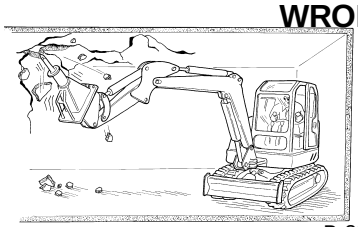


B-23318

Never leave machine with engine running or with attachment raised.

To park excavator, lower attachment fully and stop the engine.

WRONG



B-23322

Never modify equipment or add attachments not approved by Bobcat Company.

Never demolish ceilings or overhead structure.

SAFETY EQUIPMENT

The Bobcat Excavator must be equipped with safety items necessary for each job. Ask your dealer about attachments and accessories.

1. **SEAT BELT: Check belt fasteners and check for damaged webbing or buckle.**
2. **SLEW LOCK**
3. **OPERATOR CAB (ROPS and TOPS) It must be on the excavator with all fasteners tight.**
4. **OPERATOR'S HANDBOOK: Must be in the cab.**
5. **MACHINE AND ATTACHMENT SAFETY SIGNS (DECALS): Replace if damaged, clean if soiled.**
6. **SPECIAL APPLICATIONS KIT**
7. **GRAB HANDLES: Replace if damaged.**
8. **SAFETY TREADS: Replace if damaged.**

OSW49-0509


Bobcat®

OPERATOR SAFETY WARNINGS

WARNING

Operator must have instructions before operating the machine. Untrained operators can cause injury or death.

W-2001-0502

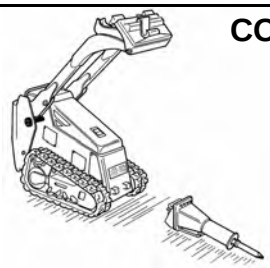
Safety Alert Symbol: **This symbol is used for important safety messages. When you see this symbol, follow the safety messages to avoid personal injury or death.**

CORRECT

P-90216

- **Never use the breaker without instructions. See attachment safety signs (decals), and Operation & Maintenance Manual.**

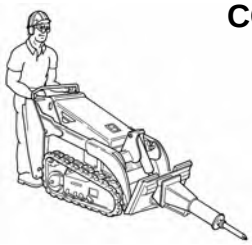
CORRECT



NA1604

- **Always install approved lift arm support device when servicing mini loader when lift arms are raised.**

CORRECT



NA1612

- **Operate only from the operator's position at the rear of the mini loader.**
- **Always keep your hands on the controls.**
- **Stay away from the tracks.**

WRONG

NA1618

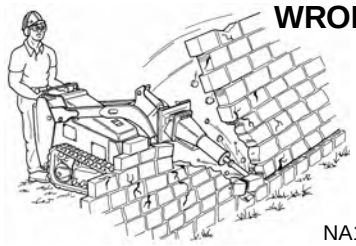
- **Never operate the breaker and mini loader near drop offs.**

WRONG

NA1607

- **Do not use mini loader in atmosphere with explosive dust, gas, or where exhaust can contact flammable material.**
- **Avoid cutting gas, electric, or other utility lines.**

WRONG



NA1606

- **Never demolish load bearing walls.**
- **Keep other personnel away from work area.**

WRONG

NA1609

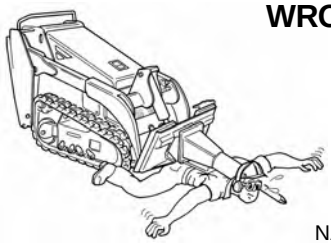
- **Do not undercut machine which can cause machine to fall.**
- **Check rules and regulations at your location.**
- **Operator and bystanders must wear goggles, hard hats, and hearing protection.**

WRONG

NA1610

- **Always carry attachment as low as possible.**
- **Do not travel or turn with lift arms up.**

WRONG



NA1603

- **Never leave machine with engine running or with lift arms up.**
- **To park, engage parking brake and put attachment on the ground.**

WRONG

NA1605

- **Never modify equipment or add attachments not approved by Bobcat Company.**
- **Never demolish ceilings or overhead structure.**

SAFETY EQUIPMENT

The Bobcat Mini Loader must be equipped with safety items necessary for each job. Ask your dealer about attachments and accessories.

1. **MACHINE AND ATTACHMENT SAFETY SIGNS (DECALS): Replace if damaged, clean if soiled.**
2. **LIFT ARM SUPPORT DEVICE: Replace if damaged.**
3. **PARKING BRAKE: Check function, adjust or repair if necessary.**
4. **REVERSE STOP PANEL: Check function.**

OSW67-0509


Bobcat®

CONTENTS

REFERENCE INFORMATION

Write the correct information for YOUR Bobcat attachment in the spaces below. Always use these numbers when referring to your Bobcat attachment.

Attachment Serial Number _____

NOTES:

_____

_____

_____

_____

_____

YOUR BOBCAT DEALER:

_____

ADDRESS:

_____

PHONE:

_____

CE

Bobcat Company
P.O. Box 128
Gwinner, ND 58040-0128
UNITED STATES OF AMERICA

Doosan Benelux SA
Drève Richelle 167
B-1410 Waterloo
BELGIUM


Bobcat®

FOREWORD

This Operation & Maintenance Manual was written to give the owner / operator instructions on the safe operation and maintenance of the Bobcat attachment. READ AND UNDERSTAND THIS OPERATION & MAINTENANCE MANUAL BEFORE OPERATING YOUR BOBCAT ATTACHMENT. If you have any questions, see your Bobcat dealer. This manual may illustrate options and accessories not installed on your Bobcat attachment.


Bobcat®

Declaration of Conformity for Interchangeable Equipment

Directive 2006/42/EC of the European Parliament and of The Council
"Machinery Directive Article 1(1)(b)"

Manufacturer

Bobcat

Bobcat Company
World Headquarters
250 East Beaton Drive
West Fargo, ND 58078-6000
UNITED STATES OF AMERICA

Technical Documentation
Doosan Benelux SA
Drève Richelle 167
B-1410 Waterloo
BELGIUM

Equipment Also Compliant to Other EC Directive(s) or Standard(s) Listed Below:

Directive 2000/14/EC - Noise Emission in the Environment by Equipment for Use Outdoors

* Complies with the provisions of the "noise emission in the environment by equipment for use outdoors" Directive 2000/14/EC procedure applied for the confomrity assessment: internal control of production (Annex 5).

SOUND LEVELS

Model	Measured dB LwA	Guaranteed dB LwA
HB280	115	118
HB380	118	121
HB580	117	121
HB680	119	122
HB880	117	121
HB980	122	125
HB1180	121	124
HB1380	120	123
HB2380	121	124

Description of Equipment

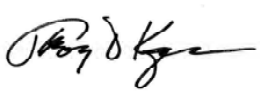
Type of Interchangeable Equipment:	Hydraulic Breaker			
Model Name: Model Code:	HB280	HB380	HB580	HB680
Lot Series:	A5T500101 & above	A01Q00101 & above	A00V00101 & above	A00W00101 & above

Model Name: Model Code:	HB880	HB980	HB1180	HB1380
Lot Series:	A00X00101 & above	A00Y00101 & above	A01R00101 & above	AC4500101 & above

Model Name: Model Code:	HB2380
Lot Series:	A5T600101 & above

Declaration of Conformance
This equipment conforms to the requirements of an interchangeable equipment as specified in Machinery Directive 2006/42/EC Article1(1)(b) and any other directives listed. This declaration applies exclusively to the interchangeable equipment and does not include any hydraulic, electrical or mechanical adaptation done by the installer. Installation shall be done in accordance with instructions and specifications included in this manual.

Authorized Signatory and Place of Declaration



Troy Kraft
Vice President Engineering

Date: December 29, 2009
Place: Bismarck, North Dakota, USA


Bobcat®

BOBCAT COMPANY IS IS0 9001 CERTIFIED

ISO 9001 is an international standard that specifies requirements for a quality management system that controls the processes and procedures which we use to design, develop, manufacture, and distribute Bobcat products.

British Standards Institute (**BSI**) is the Certified Registrar Bobcat Company chose to assess the company's compliance with the ISO 9001 at Bobcat's manufacturing facilities in Gwinner, North Dakota (U.S.A.), Pontchâteau (France), and the Bobcat corporate offices (Gwinner, Bismarck, and West Fargo) in North Dakota. **TÜV Rheinland** is the Certified Registrar Bobcat Company chose to assess the company's compliance with the ISO 9001 at Bobcat's manufacturing facility in Dobris (Czech Republic). Only certified assessors, like BSI and TÜV Rheinland, can grant registrations.

ISO 9001 means that as a company we say what we do and do what we say. In other words, we have established procedures and policies, and we provide evidence that the procedures and policies are followed.


Bobcat®

SERIAL NUMBER LOCATION

Attachment Serial Number

Figure 1

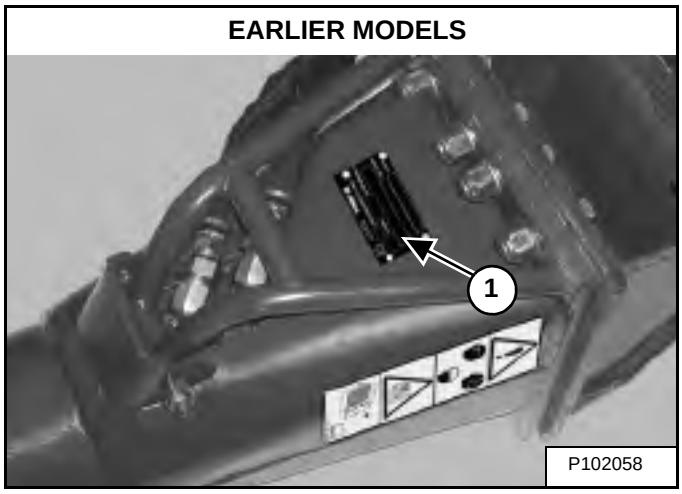


Figure 2

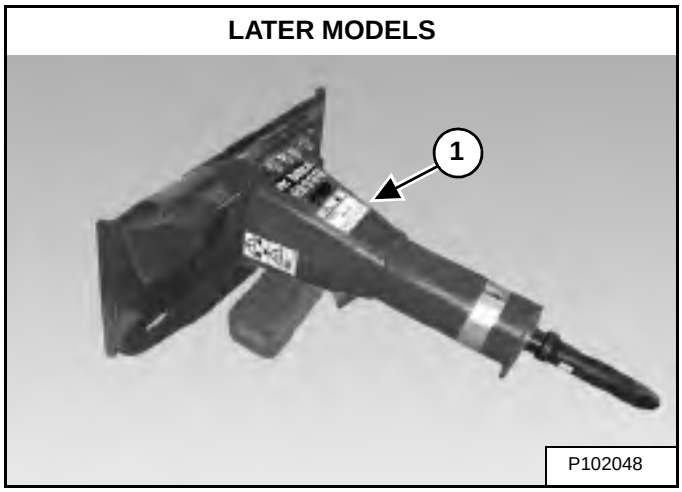
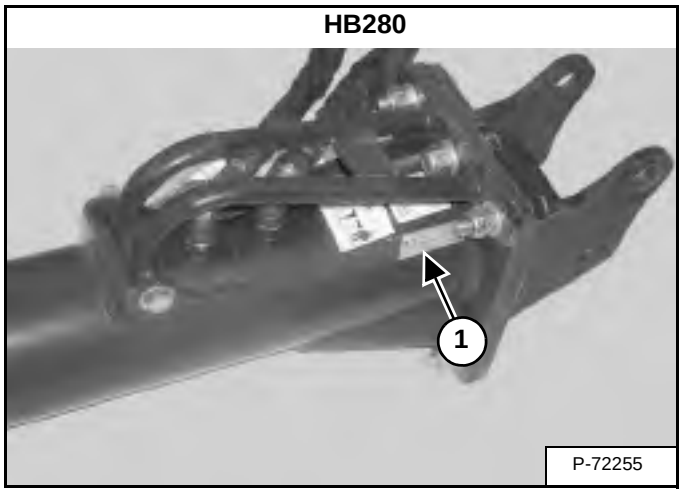


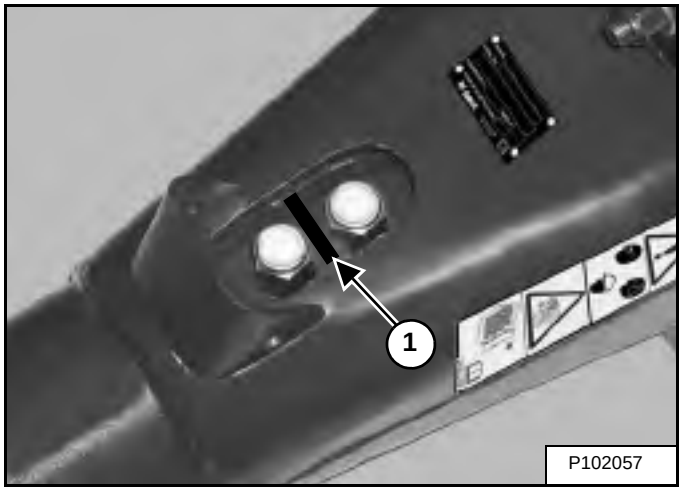
Figure 3



Always use the serial number of the breaker when requesting service information or when ordering parts. Early or later models (identification made by serial number) may use different parts, or it may be necessary to use a different procedure in doing a specific service operation.

The breaker serial number plate (Item 1) **[Figure 1]**, **[Figure 2]** or **[Figure 3]** is located on the frame.

Figure 4



NOTE: The breaker serial number (Item 1) [Figure 4] is also etched into the face of the breaker power cell between the hydraulic ports.

DELIVERY REPORT

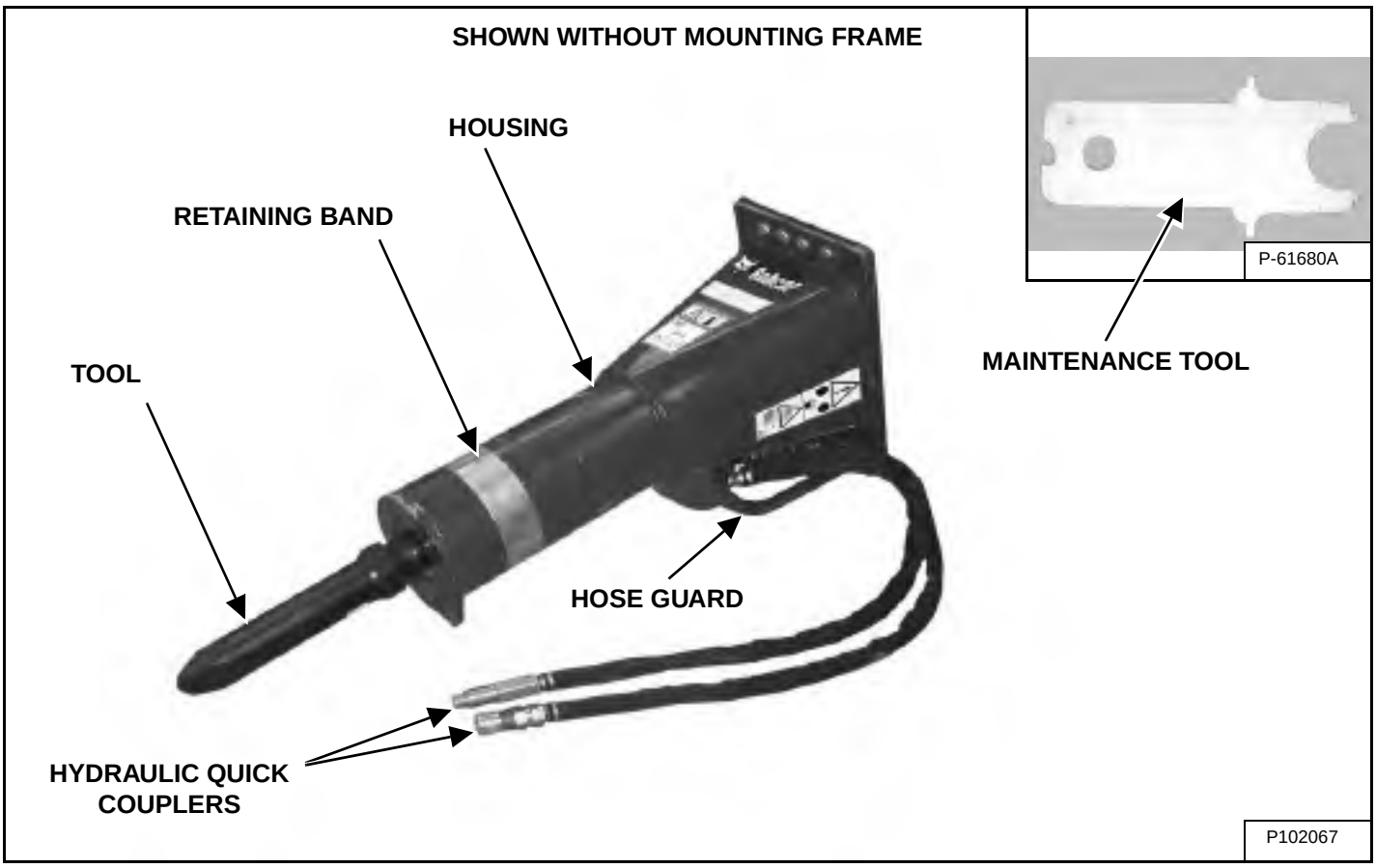
Figure 5

NA7494

The delivery report **[Figure 5]** contains a list of items that must be explained or shown to the owner or operator by the dealer when the Bobcat breaker is delivered.

The delivery report must be reviewed and signed by the owner or operator and the dealer.

ATTACHMENT IDENTIFICATION



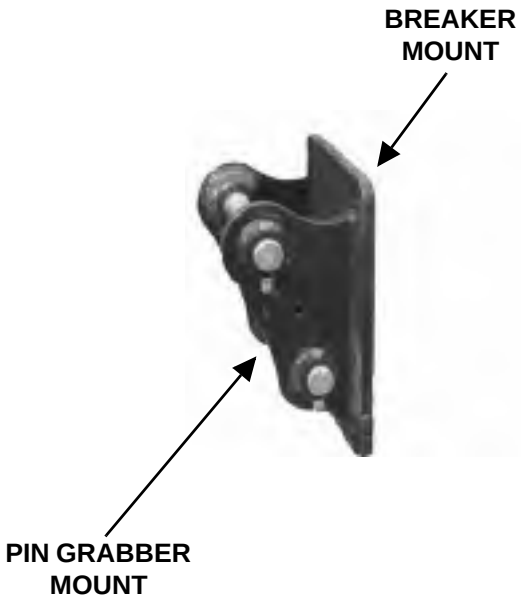
X-CHANGE™ MOUNTING FRAME

P-88735

PIN-ON MOUNTING FRAME

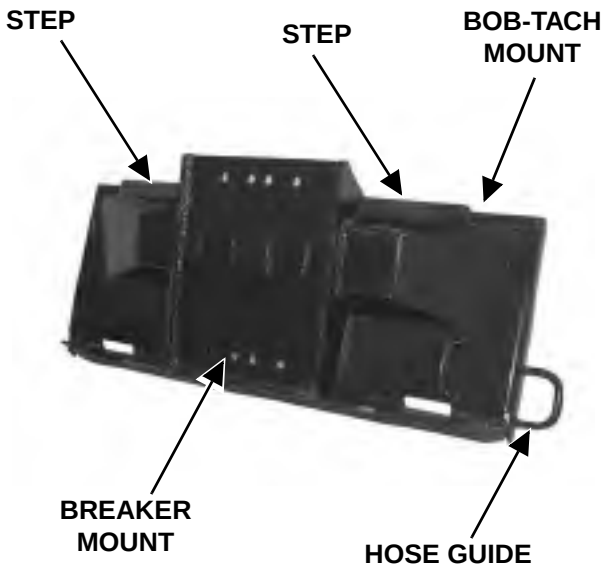
P-88736

PIN GRABBER MOUNTING FRAME



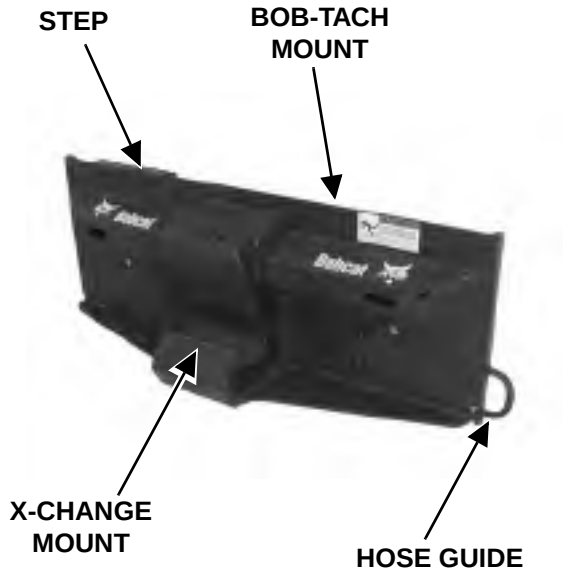
P-116237

BOB-TACH™ MOUNTING FRAME



P-88737

BOB-TACH / X-CHANGE MOUNTING FRAME



P-88738

FEATURES AND ACCESSORIES

The breaker is equipped with the following Standard items:

Standard Items

- Breaker Cradle
- Hose Guard
- Upper and Lower Shock Absorbers

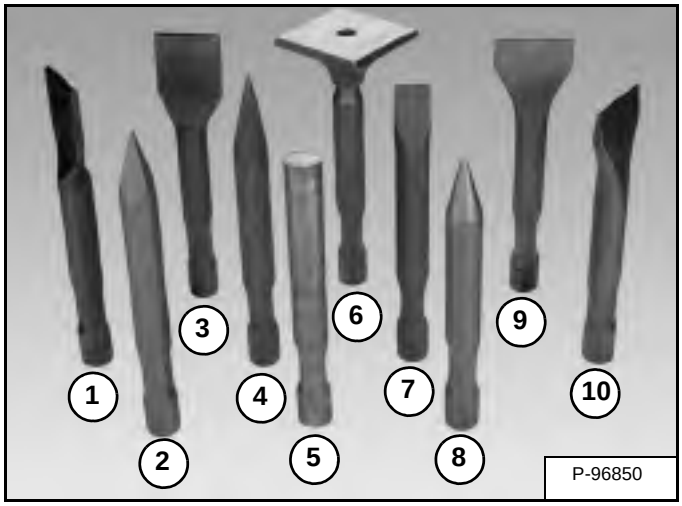
Options And Accessories

- Breaker Mounting Caps
- Loader Mounting Frames
- Excavator Mounting Frames
- Hose Kits

Available Breaker Bits

NOTE: See your Bobcat dealer for available bits for your model breaker.

Figure 6



Breaker Bit Identification **[Figure 6]**.

1. In-Line Chisel Asphalt Cutter
2. Nail Point
3. Cross-Cut Asphalt Chisel
4. In-Line Chisel
5. Blunt Tool
6. Tamping Pad
7. Cross-Cut Chisel
8. Moil (Conical) Point
9. Cross-Cut Wide Chisel
10. In-Line Asphalt Chisel

Special Applications Kit For Loaders

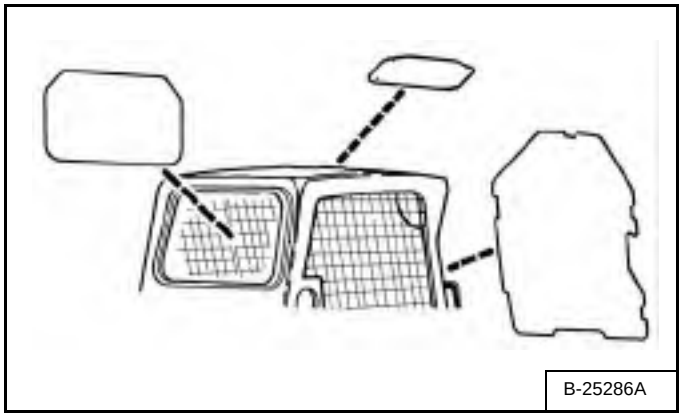
⚠ WARNING

AVOID INJURY OR DEATH

Some attachment applications can cause flying debris or objects to enter front, top or rear cab openings. Install the Special Applications Kit to provide added operator protection in these applications.

W-2737-0508

Figure 7



Available for special applications to restrict material from entering cab openings. Kit includes 12,7 mm (1/2 in) thick polycarbonate front door, top and rear windows **[Figure 7]**.

See your Bobcat dealer for available special applications kit for your model loader.

Falling-Object Guard Structure (FOGS) For Excavators

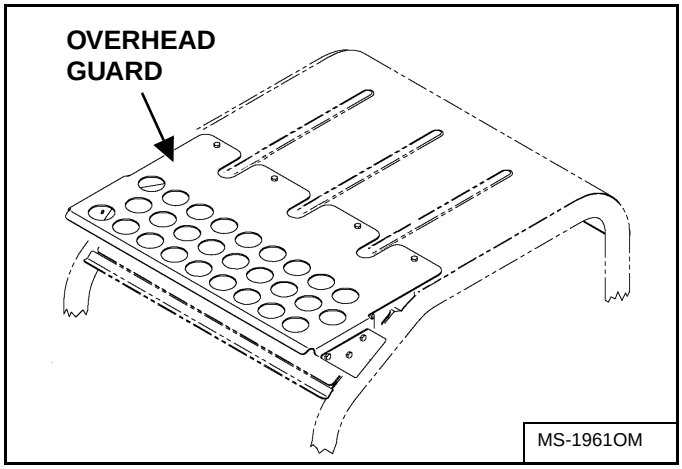
⚠ WARNING

AVOID INJURY OR DEATH

Some attachment applications can cause flying debris or objects to enter front, top or rear cab openings. Install the Special Applications Kit to provide added operator protection in these applications.

W-2737-0508

Figure 8



The Falling-Object Guard Structure (FOGS) provides additional protection from smaller objects which can fall on the canopy or cab.

For the canopy or cab to meet the Falling-Object Guard Structure (FOGS) (ISO 10262 - level 1), the excavator must have the overhead guard and the Special Applications Kit installed **[Figure 8]** and **[Figure 9]**.

See your Bobcat dealer for available Falling-Object Guard Structure kit for your model excavator.

Special Applications Kit For Excavators

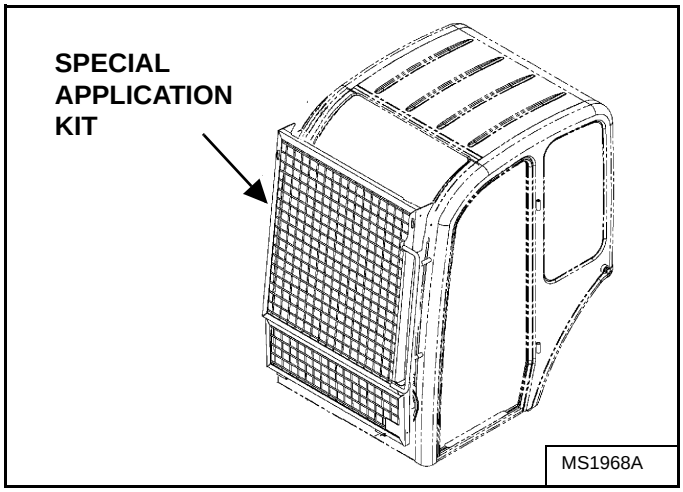
⚠ WARNING

AVOID INJURY OR DEATH

Some attachment applications can cause flying debris or objects to enter front, top or rear cab openings. Install the Special Applications Kit to provide added operator protection in these applications.

W-2737-0508

Figure 9



The Special Applications Kit **[Figure 9]** can be installed when certain attachments are used on the excavator to restrict material from entering the canopy or cab opening.

The Special Applications Kit includes an upper and lower screen guard.

See your Bobcat dealer for available special applications kit for your model excavator.

SAFETY AND TRAINING RESOURCES


Bobcat®

SAFETY INSTRUCTIONS

Safe Operation Is The Operator's Responsibility

Safety Alert Symbol

This symbol with a warning statement means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.

WARNING

Operator must have instructions before operating the machine. Untrained operators can cause injury or death.

W-2001-0502

IMPORTANT

This notice identifies procedures which must be followed to avoid damage to the machine.

I-2019-0284

DANGER

The signal word DANGER on the machine and in the manuals indicates a hazardous situation which, if not avoided, will result in death or serious injury.

D-1002-1107

WARNING

The signal word WARNING on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

W-2044-1107

The Bobcat machine and attachment must be in good operating condition before use.

Check all of the items on the Bobcat Service Schedule Decal under the 8-10 hour column or as shown in the Operation & Maintenance Manual.

Safe Operation Needs A Qualified Operator

For an operator to be qualified, he or she must not use drugs or alcoholic drinks which impair alertness or co-ordination while working. An operator who is taking prescription drugs must get medical advice to determine if he or she can safely operate a machine and the attachment.

A Qualified Operator Must Do The Following:

Understand the Written Instructions, Rules and Regulations

- The written instructions from Bobcat Company include the Delivery Report, Operation & Maintenance Manual, Operator's Handbook, Safety Manual and machine signs (decals).
- Check the rules and regulations at your location. The rules may include an employer's work safety requirements. For driving on public roads, the machine must be equipped as stipulated by the local regulations authorising operation on public roads in your specific country. Regulations may identify a hazard such as a utility line.

Have Training with Actual Operation

- Operator training must consist of a demonstration and verbal instruction. This training is given by your Bobcat dealer before the product is delivered.
- The new operator must start in an area without bystanders and use all the controls until he or she can operate the machine and attachment safely under all conditions of the work area. Always fasten seat belt before operating.

Know the Work Conditions

- Know the weight of the materials being handled. Avoid exceeding the machine load capacities. Material which is very dense will be heavier than the same volume of less dense material. Reduce the size of load if handling dense material.
- The operator must know any prohibited uses or work areas, for example, he or she needs to know about excessive slopes.
- Know the location of any underground lines.
- Wear tight fitting clothing. Always wear safety glasses when doing maintenance or service. Safety glasses, respiratory equipment, hearing protection, Special Applications Kits or a Front Window Guard are required for some work. See your Bobcat dealer about Bobcat Safety equipment for your machine.

SI ATT EMEA-0913

Use Safety Rules

- Read and follow instructions in the machine and the attachment's Operation & Maintenance Manual before operating.
- Check for underground lines before operating attachment (if applicable).
- In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.
- Check that the Bob-Tach™ levers are in the locked position and the wedges are fully engaged into the holes of the attachment (if applicable).
- Check that the attachment is securely fastened to the machine.
- Make sure all the machine controls are in the NEUTRAL position before starting the machine.
- Operate the attachment only from the operator's position.
- Operate the attachment according to the Operation & Maintenance Manual.
- When learning to operate the attachment, do it at a slow rate in an area clear of bystanders.
- DO NOT permit personnel to be in the work area when operating the machine and attachment.
- The attachment must be used ONLY on approved machines. See your Bobcat dealer for updated list of approved attachments for each machine model.
- DO NOT modify equipment or add attachments that are not approved by the manufacturer.
- DO NOT make any adjustments or repairs on the machine or attachment while the engine is running.
- Keep shields and guards in place. Replace if damaged.

Avoid Silica Dust

Cutting or drilling concrete containing sand or rock containing quartz may result in exposure to silica dust. Use a respirator, water spray or other means to control dust.

FIRE PREVENTION

Maintenance

The machine and some attachments have components that are at high temperatures under normal operating conditions. The primary source of high temperatures is the engine and exhaust system. The electrical system, if damaged or incorrectly maintained, can be a source of arcs or sparks.

Flammable debris (leaves, straw, etc.) must be removed regularly. If flammable debris is allowed to accumulate, it can cause a fire hazard. Clean often to avoid this accumulation. Flammable debris in the engine compartment is a potential fire hazard.

The operator's area, engine compartment and engine cooling system must be inspected every day and cleaned if necessary to prevent fire hazards and overheating.

All fuels, most lubricants and some coolants mixtures are flammable. Flammable fluids that are leaking or spilled onto hot surfaces or onto electrical components can cause a fire.

Operation

Do not use the machine where exhaust, arcs, sparks or hot components can contact flammable material, explosive dust or gases.

Electrical

Check all electrical wiring and connections for damage. Keep the battery terminals clean and tight. Repair or replace any damaged part or wires that are loose or frayed.

Battery gas can explode and cause serious injury. Use the procedure in the Operation & Maintenance Manual for connecting the battery and for jump starting. Do not jump start or charge a frozen or damaged battery. Keep any open flames or sparks away from batteries. Do not smoke in battery charging area.

Hydraulic System

Check hydraulic tubes, hoses and fittings for damage and leakage. Never use open flame or bare skin to check for leaks. Hydraulic tubes and hoses must be properly routed and have adequate support and secure clamps. Tighten or replace any parts that show leakage.

Always clean fluid spills. Do not use petrol or diesel fuel for cleaning parts. Use commercial non-flammable solvents.

Fueling

Stop the engine and let it cool before adding fuel. No smoking! Do not refuel a machine near open flames or sparks. Fill the fuel tank outdoors.

Ultra Low Sulfur Diesel (ULSD) poses a greater static ignition hazard than earlier diesel formulations with higher Sulfur content. Avoid death or serious injury from fire or explosion. Consult with your fuel or fuel system supplier to ensure the delivery system is in compliance with fueling standards for proper grounding and bonding practices.

Starting

Do not use ether or starting fluids on any engine that has glow plugs. These starting aids can cause explosion and injure you or bystanders.

Use the procedure in the Operation & Maintenance Manual for connecting the battery and for jump starting.

Spark Arrester Exhaust System

The spark arrester exhaust system is designed to control the emission of hot particles from the engine and exhaust system, but the muffler and the exhaust gases are still hot.

Check the spark arrester exhaust system regularly to make sure it is maintained and working properly. Use the procedure in the Operation & Maintenance Manual for cleaning the spark arrester muffler (if equipped).

FIRE PREVENTION (CONT'D)

Welding And Grinding

Always clean the machine and attachment, disconnect the battery, and disconnect the wiring from the Bobcat controllers before welding. Cover rubber hoses, battery and all other flammable parts. Keep a fire extinguisher near the machine when welding.

Have good ventilation when grinding or welding painted parts. Wear dust mask when grinding painted parts. Toxic dust or gas can be produced.

Dust generated from repairing non-metallic parts such as hoods, fenders or covers can be flammable or explosive. Repair such components in a well ventilated area away from open flames or sparks.

Fire Extinguishers

Know where fire extinguishers and first aid kits are located and how to use them. Inspect the fire extinguisher and service the fire extinguisher regularly. Obey the recommendations on the instructions plate.

PUBLICATIONS AND TRAINING RESOURCES

The following publications are also available for your Bobcat attachment. You can order from your Bobcat dealer.

For the latest information on Bobcat products and the Bobcat Company, visit our web site at **www.bobcat.eu**

OPERATION & MAINTENANCE MANUAL

6904104enGB

Complete instructions on the correct operation and the routine maintenance of the Bobcat Attachment.

SERVICE MANUAL

6904105enUS

Complete maintenance and overhaul instructions for your Bobcat Attachment.

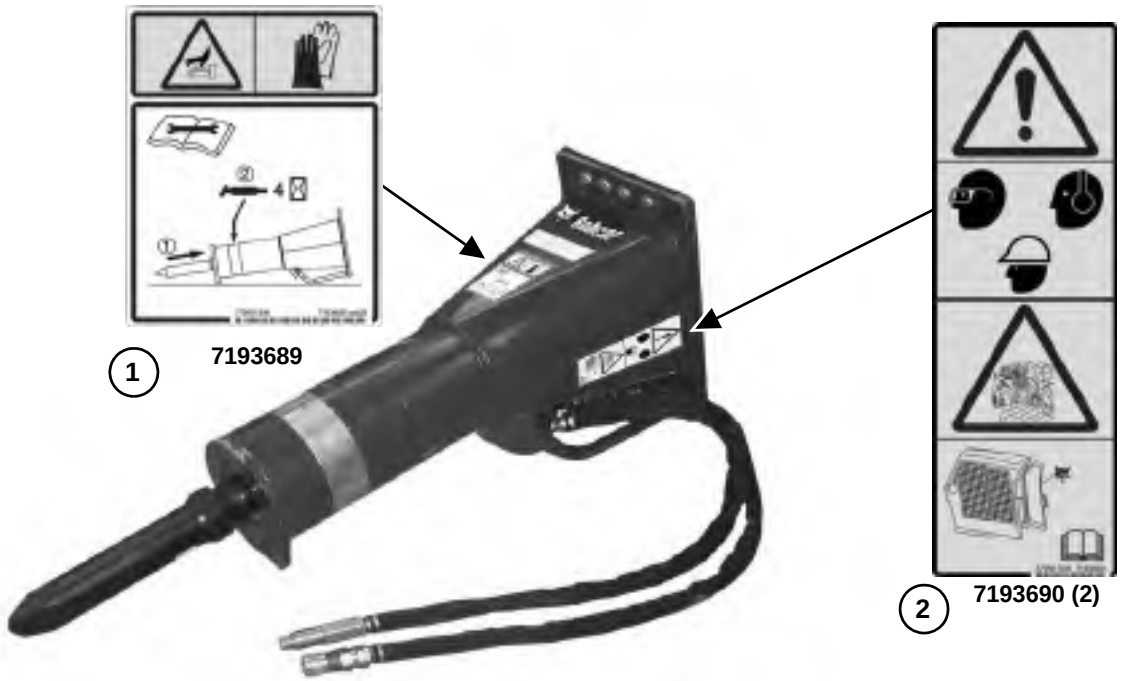
SAFETY MANUAL

#6989743

Safety Manual for operating and maintenance personnel. See your Bobcat dealer.

ATTACHMENT SIGNS (DECALS)

Follow the instructions on all the Attachment Signs (Decals) that are on the attachment. Replace any damaged attachment signs and be sure they are in the correct locations. Attachment signs are available from your Bobcat attachment dealer.

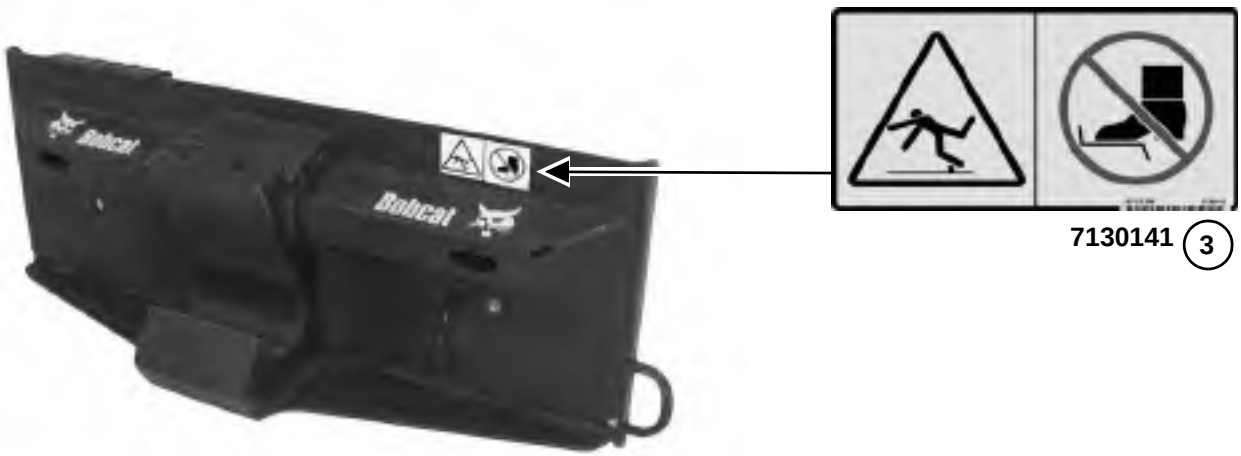


1 7193689

2 7193690 (2)

P102067

BOB-TACH / X-CHANGE MOUNTING FRAME



7130141 3

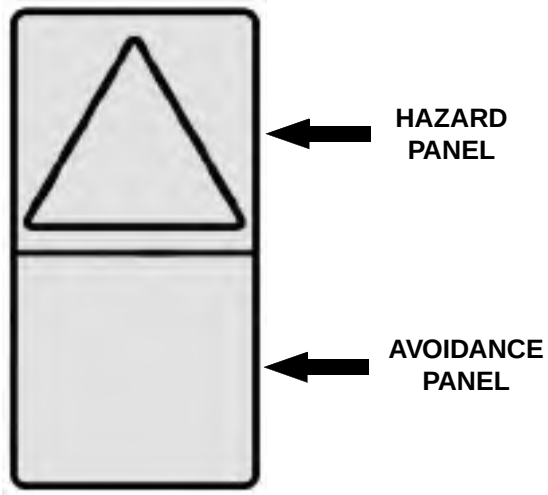
P102044

ATTACHMENT SIGNS (DECALS) (CONT'D)

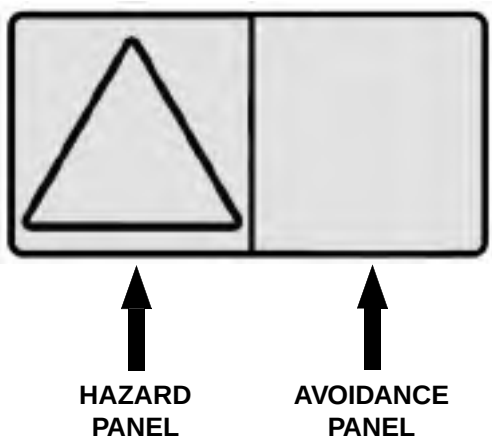
No-Text Safety Signs

Safety signs are used to alert the equipment operator or maintenance person to hazards that may be encountered in the use and maintenance of the equipment. The location and description of the safety signs are detailed in this section. Please become familiarised with all safety signs installed on the machine / attachment.

Vertical Configuration



Horizontal Configuration



The format consists of the hazard panel(s) and the avoidance panel(s):

Hazard panels depict a potential hazard enclosed in a safety alert triangle.

Avoidance panels depict actions required to avoid the hazards.

A safety sign may contain more than one hazard panel and more than one avoidance panel.

NOTE: See the numbered ATTACHMENT SIGNS (DECALS) on Page 30 for the location of each correspondingly numbered no-text decal.

1. Warning / Service Schedule (7193689)

This decal is located on the front side of the breaker frame.

⚠ WARNING

AVOID BURN INJURY

Breaker tool can be hot after use. Let breaker tool cool or use gloves when handling tool.

W-2204-0905

NOTE: (See LUBRICATING THE ATTACHMENT on Page 187.) of this manual for more illustrated and detailed information regarding service instructions for the breaker.

Grease the breaker every 4 hours of operation.

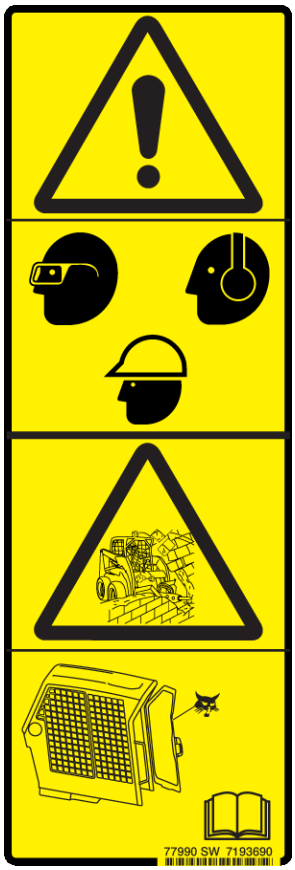
- Push the tool fully into the breaker.
- Apply grease (5 - 6 pumps) to the grease fitting at the upper end of the tool.

ATTACHMENT SIGNS (DECALS) (CONT'D)

No-Text Safety Signs (Cont'd)

2. Breaker Personal Protection Warning Decal (7193690)

This safety sign is located on both sides of the breaker frame.



⚠ WARNING

AVOID INJURY OR DEATH

- **Operator and bystanders must wear goggles, hard hat and noise protection when breaker is in operation.**
- **Special Applications Kit must be used when the breaker is used in applications where FALLING debris is present.**
- **Read and understand the Operation & Maintenance manual before operating or servicing the breaker. Wear goggles when servicing.**

W-2884-0610

3. Tripping Hazard (7130141)

This safety sign is located on the front of the Bob-Tach / X-Change mounting frame.

⚠ WARNING

DO NOT ENTER OR EXIT ON THIS SIDE

You could slip, trip or fall and become seriously injured.

W-2809-1009

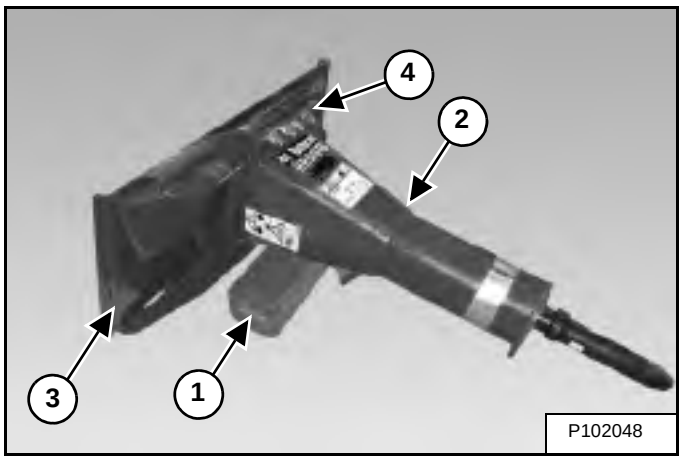
OPERATING INSTRUCTIONS

INITIAL SETUP

Assembly

Installing The Bob-Tach Mounting Frame On The Breaker

Figure 10



Install a block of wood (Item 1) under the breaker (Item 2) **[Figure 10]**.

Install the Bob-Tach mounting frame (Item 3) on the breaker (Item 2) **[Figure 10]**.

Install the eight bolts (Item 4) **[Figure 10]**, washers and nuts.

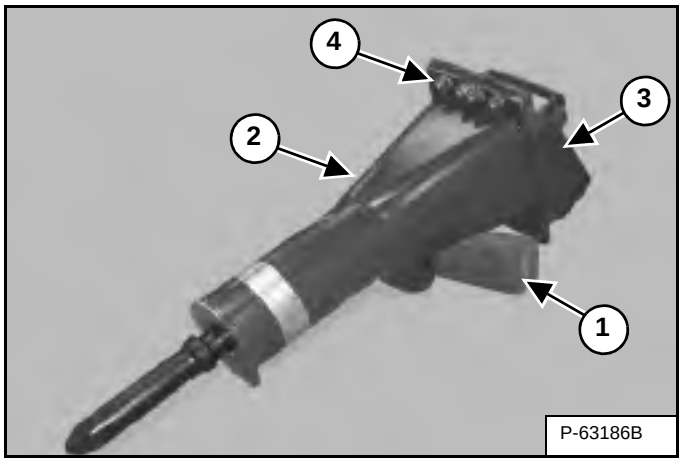
Install the hose guard.

NOTE: The bottom mounting bolts will be installed with hose guard.

Tighten the bolts and nuts in crisscross pattern to 370 N•m (270 ft-lb) torque.

Installing The X-Change Mounting Frame On The Breaker

Figure 11



Install a block of wood (Item 1) under the breaker (Item 2) **[Figure 11]**.

Install the X-Change mounting frame (Item 3) on the breaker (Item 2) **[Figure 11]**.

Install the eight bolts (Item 4) **[Figure 11]**, washers and nuts.

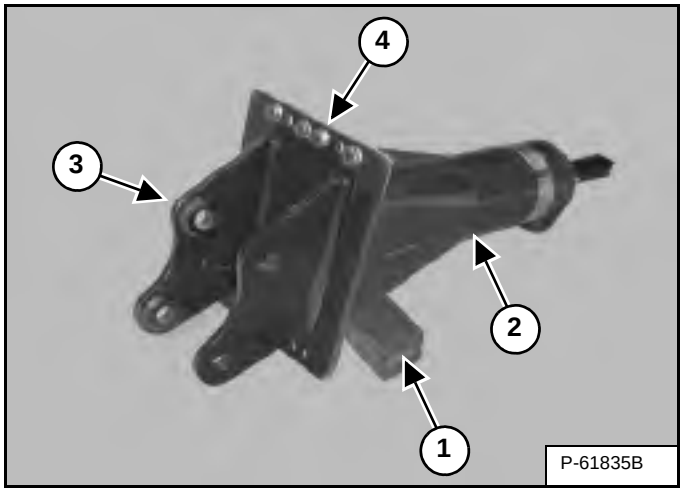
NOTE: The bottom mounting bolts will be installed with hose guard.

Tighten the bolts and nuts in a crisscross pattern to 370 N•m (270 ft-lb) torque.

Hose Installation (Cont'd)

Installing The Pin-On Mounting Frame On The Breaker

Figure 12



Install a block of wood (Item 1) under the breaker (Item 2) **[Figure 12]**.

Install the Pin-On mounting frame (Item 3) on the breaker (Item 2) **[Figure 12]**.

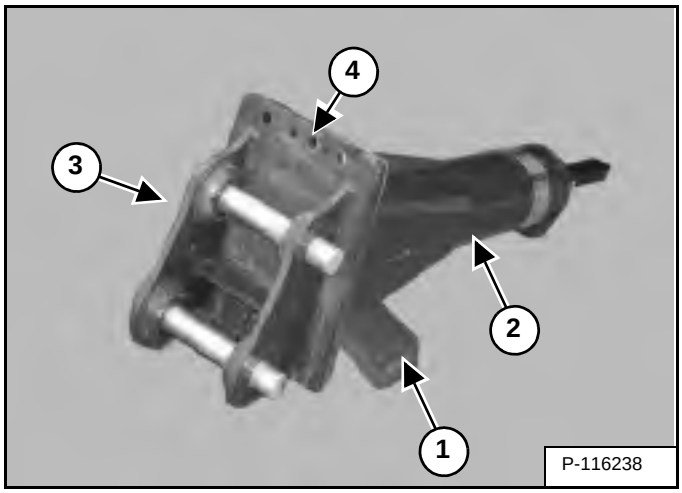
Install the eight bolts (Item 4) **[Figure 12]**, washers and nuts.

NOTE: The bottom mounting bolts will be installed with hose guard.

Tighten the bolts and nuts in a crisscross pattern to 370 N•m (270 ft-lb) torque.

Installing The Pin Grabber Mounting Frame On The Breaker

Figure 13



Install a block of wood (Item 1) under the breaker (Item 2) **[Figure 13]**.

Install the Pin-On mounting frame (Item 3) on the breaker (Item 2) **[Figure 13]**.

Install the eight bolts, washers and nuts into the mounting holes (Item 4) **[Figure 13]**.

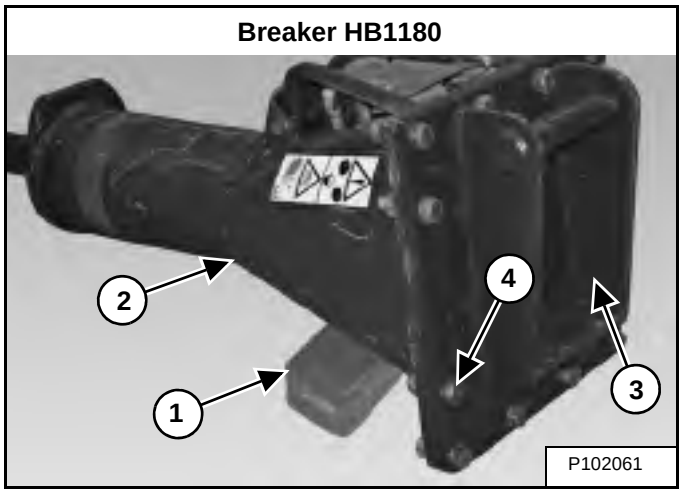
NOTE: The bottom mounting bolts will be installed with hose guard.

Tighten the bolts and nuts in a crisscross pattern to 370 N•m (270 ft-lb) torque.

Hose Installation (Cont'd)

Installing The Quick Coupler (Lehnhoff® System) Mounting Frame On The Breaker

Figure 14



Install a block of wood (Item 1) under the breaker (Item 2) **[Figure 14]**.

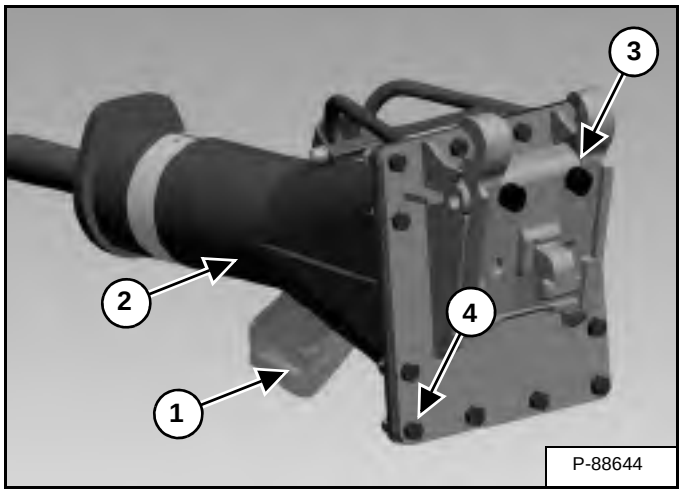
Install the quick coupler mounting frame (Item 3) on the breaker (Item 2) **[Figure 14]**.

Install the twelve bolts (Item 4) **[Figure 14]**, washers and nuts. On the top side of the mount, only install the two centre bolts, washers and nuts at this time. The additional four bolts, washers and nuts will be installed with the hose guard.

Tighten the bolts and nuts in a crisscross pattern to 370 N•m (270 ft-lb) torque.

Installing The Quick Coupler (Klac™ System) Mounting Frame On The Breaker

Figure 15



Install a block of wood (Item 1) under the breaker (Item 2) **[Figure 15]**.

Install the quick coupler mounting frame (Item 3) on the breaker (Item 2) **[Figure 15]**.

Install the bolts (Item 4) **[Figure 15]**, washers and nuts. On the top side of the mount, only install the two centre bolts, washers and nuts at this time. The additional four bolts, washers and nuts will be installed with the hose guard.

Tighten the bolts and nuts in a crisscross pattern to 370 N•m (270 ft-lb) torque.

Assembly (Cont'd)

Hose Installation

Use the following list for the correct hose installation for your model breaker and machine.

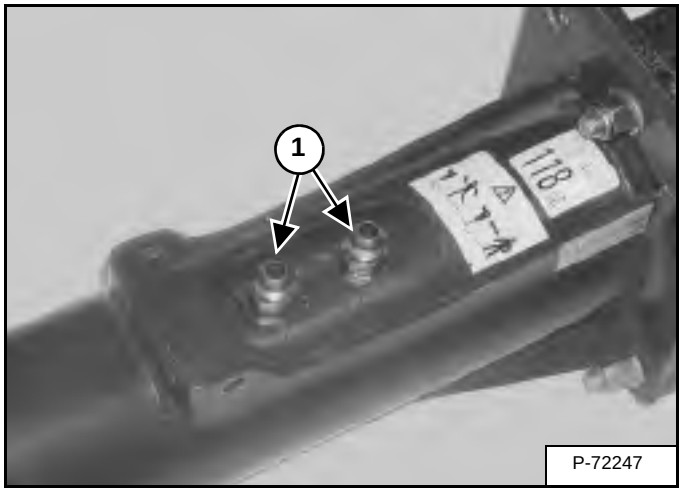
- (See HB280 (When Used On 316, E08 And E10 Model Excavators) on Page 39.)
- (See HB380, HB580, HB680, HB880 And HB980 (Earlier Model Breakers) on Page 41.)
- (See HB880 And HB980 (Later Model Breakers) on Page 42.)
- (See HB1180 (When Used On A300, S250, S300, S330, S630, S650, S740, S850, T250, T300, T320, T650 And T870 Model Loaders) on Page 45.)
- (See HB1180 (When Used On 442 And 444 Model Excavator) on Page 47.)
- (See HB880, HB980 And HB1180 (When Used On E55W, E60 And E62 Model Excavators) on Page 49.)
- (See HB1180 (When Used On E80 And E85 Model Excavators) on Page 50.)

Hose Installation (Cont'd)

HB280 (When Used On 316, E08 And E10 Model Excavators)

The breaker is supplied without the hoses and couplers installed on the breaker.

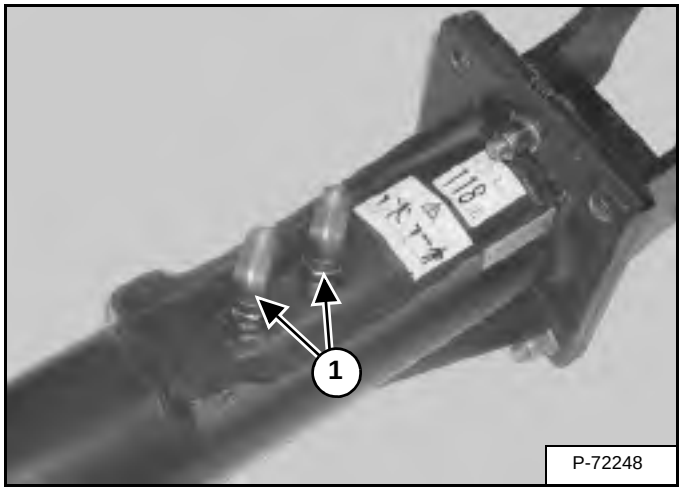
Figure 16



Install the fittings (Item 1) **[Figure 16]**.

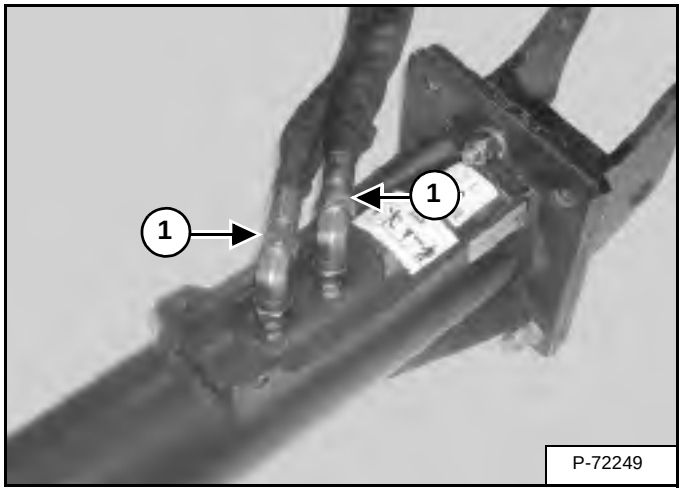
Tighten the fittings to 114 N•m (84 ft-lb) torque.

Figure 17



Install the two 90° elbows (Item 1) **[Figure 17]** in the ports.

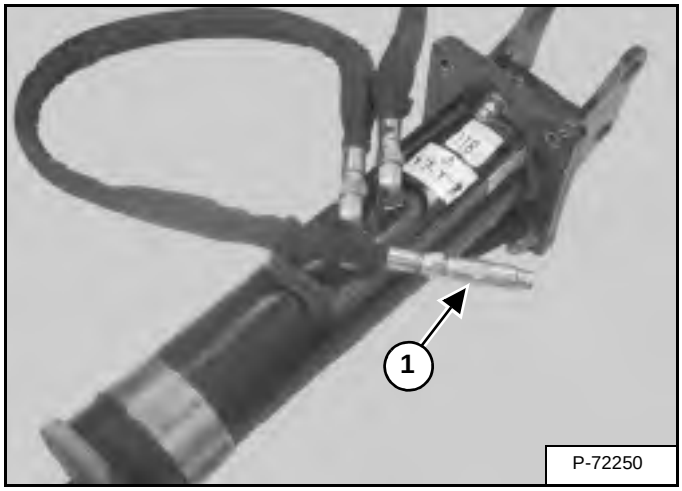
Figure 18



Install the two hoses (Item 1) **[Figure 18]** on the 90° elbows (Item 1) **[Figure 17]**.

Tighten the hoses to 114 N•m (84 ft-lb) torque.

Figure 19

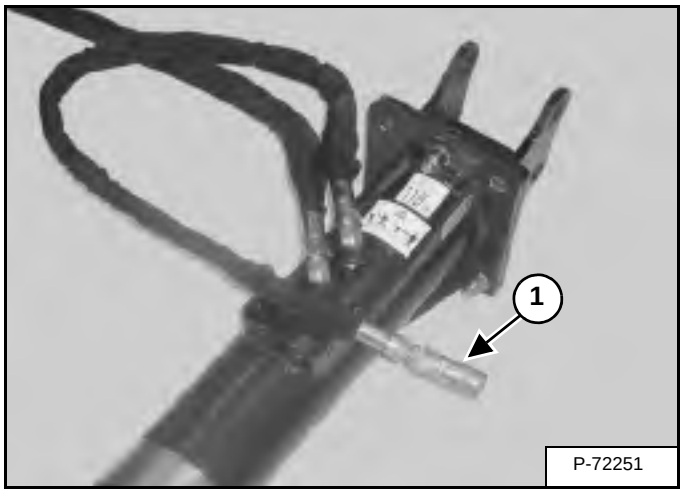


Install the male coupler (Item 1) **[Figure 19]** on the hose that connects to the *HP* port.

Hose Installation (Cont'd)

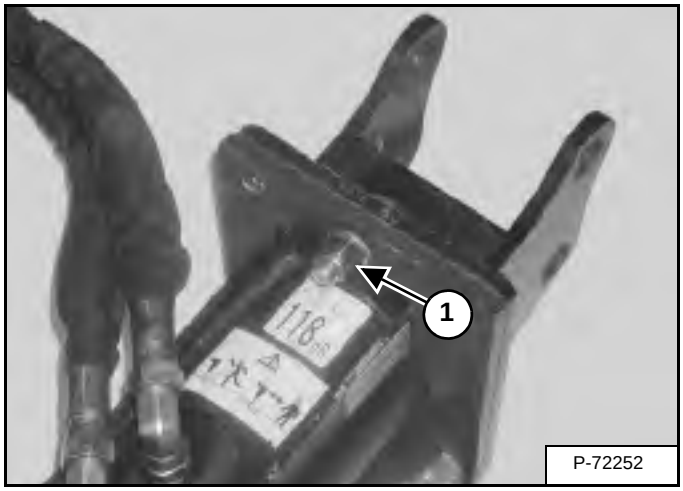
HB280 (When Used On 316, E08 And E10 Model Excavators) (Cont'd)

Figure 20



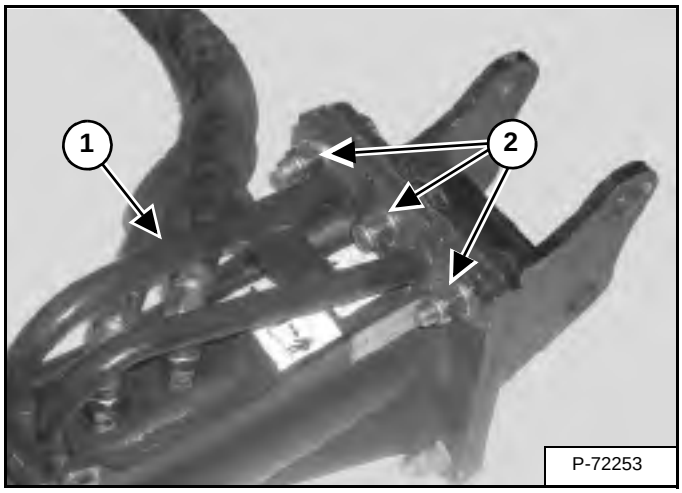
Install the female coupler (Item 1) **[Figure 20]** on the hose that connects to the *BP* port.

Figure 21



Remove the bolt (Item 1) **[Figure 21]**, washer and nut.

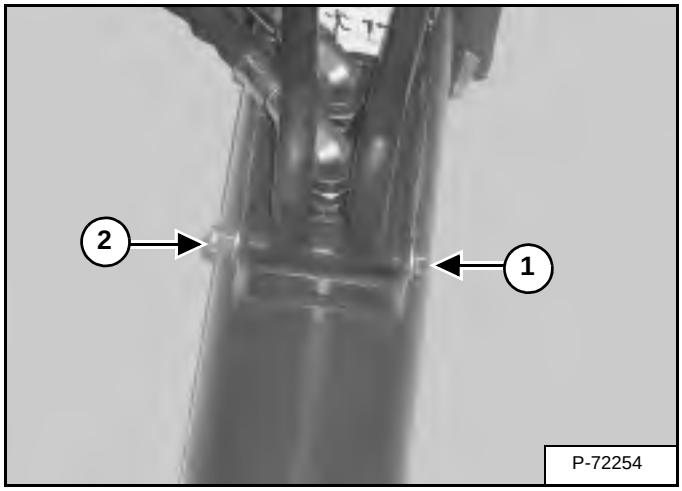
Figure 22



Install the hose guard (Item 1) using the three bolts, washers and nuts (Item 2) **[Figure 22]** provided with the breaker.

Tighten the three nuts to 370 N•m (270 ft-lb) torque.

Figure 23



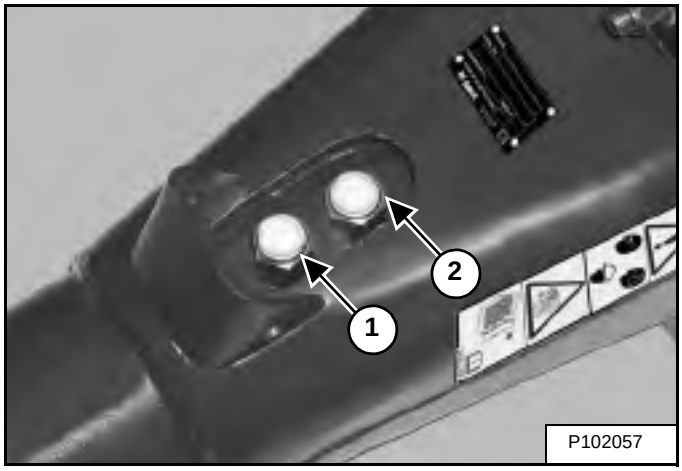
The bolt (Item 1) and nut (Item 2) **[Figure 23]** need only to be lightly tightened.

Hose Installation (Cont'd)

HB380, HB580, HB680, HB880 And HB980 (Earlier Model Breakers)

The breaker is supplied without the hoses and couplers installed on the breaker.

Figure 24

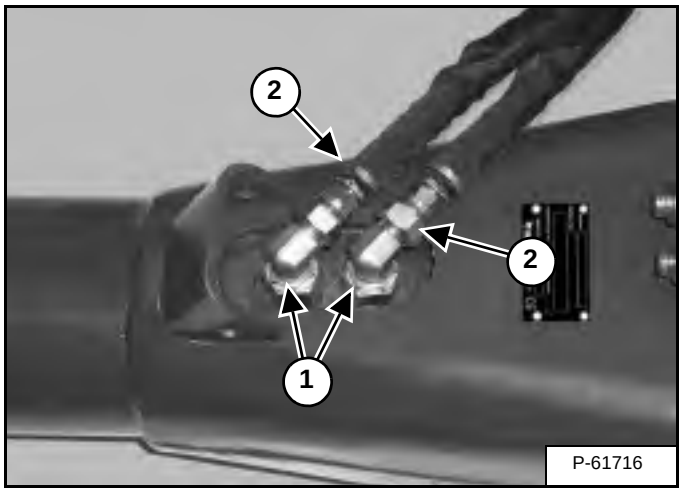


The port marked *HP* (Item 1) **[Figure 24]** will be connected to the breaker hose with the male coupler.

The port marked *BP* (Item 2) **[Figure 24]** will be connected to the breaker hose with the female coupler.

Tighten the fittings to 114 N•m (84 ft-lb) torque.

Figure 25

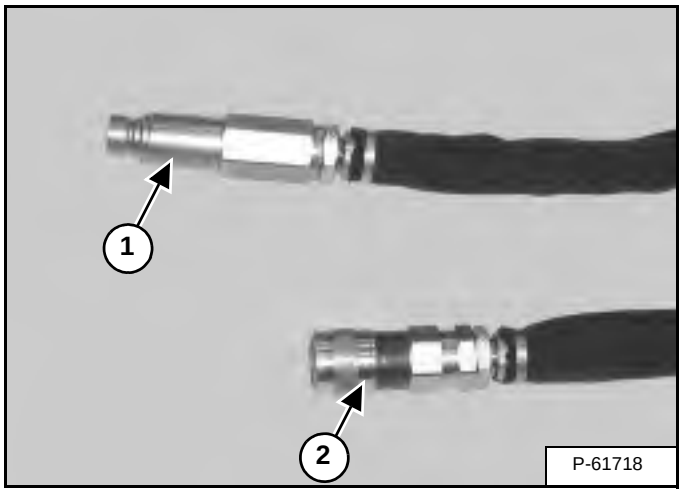


Install the two 90° elbows (Item 1) **[Figure 25]** in the ports.

Install the two hoses (Item 2) on the 90° elbows (Item 1) **[Figure 25]**.

Tighten the hoses to 114 N•m (84 ft-lb) torque.

Figure 26



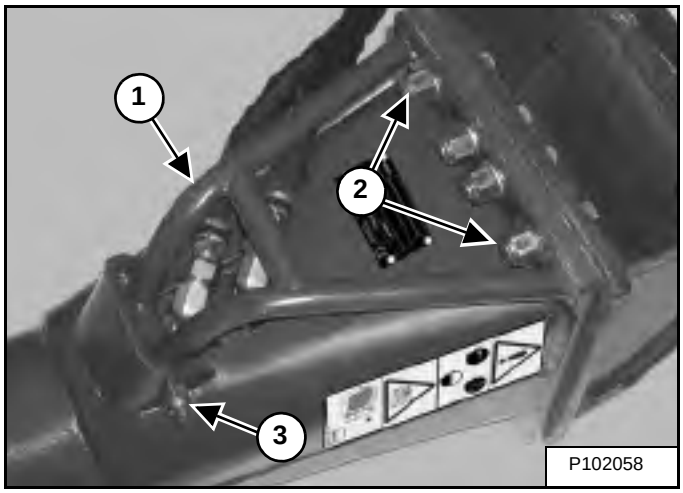
Install the male coupler (Item 1) **[Figure 26]** on the hose that connects to the *HP* port.

Install the female coupler (Item 2) **[Figure 26]** on the hose that connects to the *BP* port.

Hose Installation (Cont'd)

HB380, HB580, HB680, HB880 And HB980 (Earlier Model Breakers) (Cont'd)

Figure 27



Install the hose guard (Item 1), the three bolts (Item 2 and 3) **[Figure 27]**, washers and nuts.

Tighten the two bolts and nuts (Item 2) **[Figure 27]** to 370 N•m (270 ft-lb) torque.

The bolt and nut (Item 3) **[Figure 27]** need only to be lightly tightened.

HB880 And HB980 (Later Model Breakers)

The breaker is supplied without the hoses and couplers installed on the breaker.

NOTE: When using the HB880 or HB980 breakers on A770, S630, S650, S740, S770, T630, T650, and T770 model loaders or E60 excavator (S/N AGSZ11320 & Below), the breaker must be equipped with a diverter valve kit. See your Bobcat dealer for available kits.

Install the hose guard. (See Figure 27 on Page 42.)

Figure 28

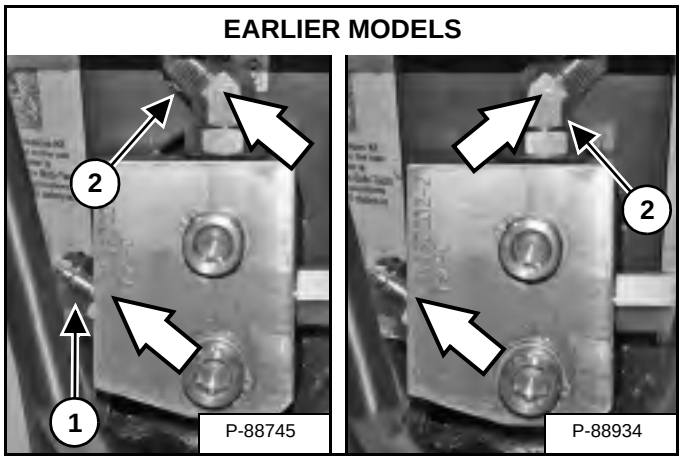
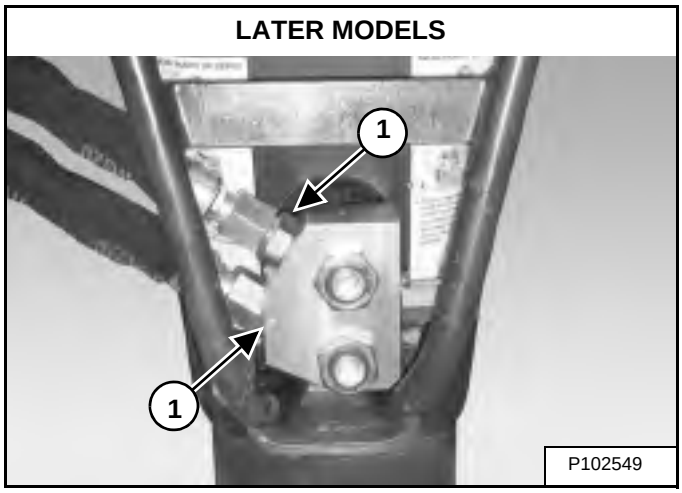


Figure 29



Install the straight fitting(s) (Item 1) **[Figure 28]** or **[Figure 29]** (if required).

Install the 45° fitting (Item 2) **[Figure 28]** (if required).

NOTE: If operating the breaker on an E60 excavator (S/N AGSZ11320 & Below), the 45° fitting (Item 2) [Figure 28] is installed facing away from the straight fitting.

Tighten the fittings to 114 N•m (84 ft-lb) torque.

Hose Installation (Cont'd)

HB880 And HB980 (Later Model Breakers) (Cont'd)

Figure 30

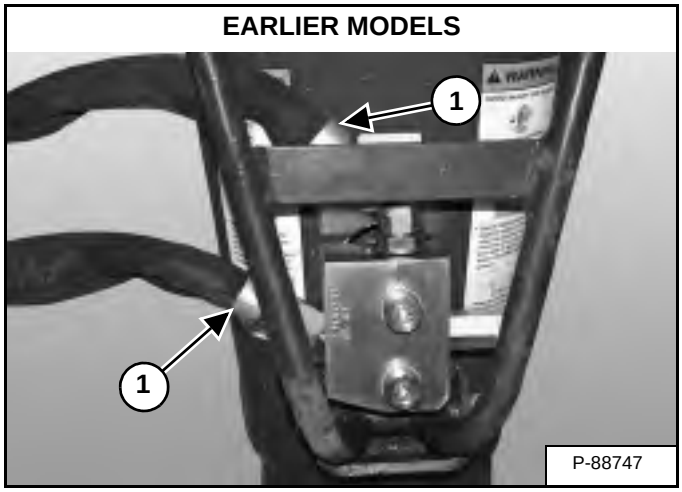
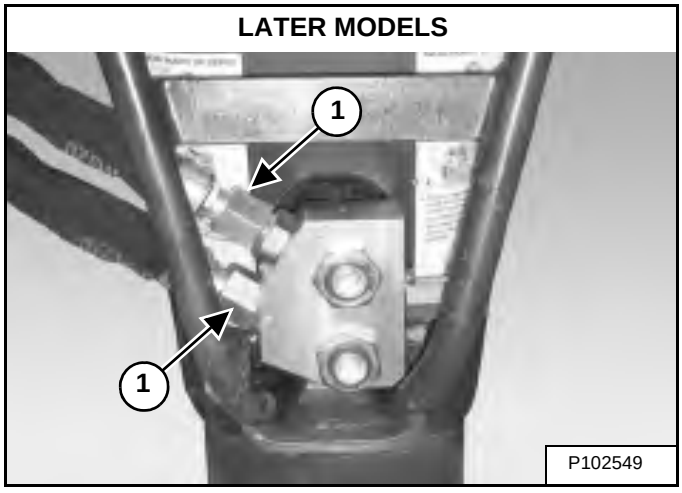


Figure 31



Install the hoses (Item 1) **[Figure 30]** or **[Figure 31]** on the fittings.

Tighten the hoses to 114 N•m (84 ft-lb) torque.

Figure 32

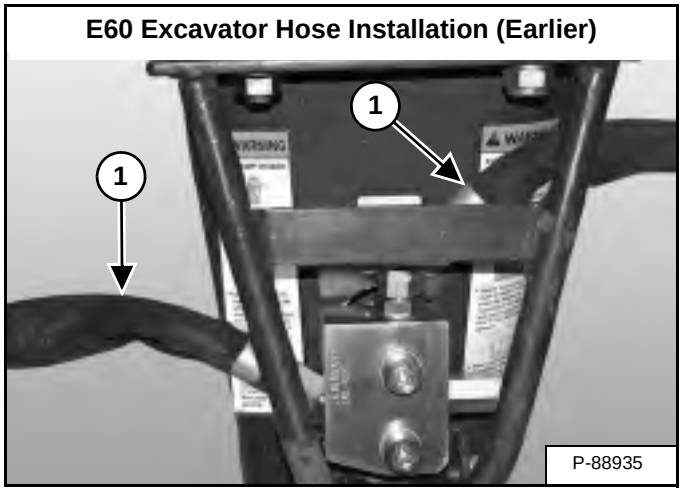


Figure 33

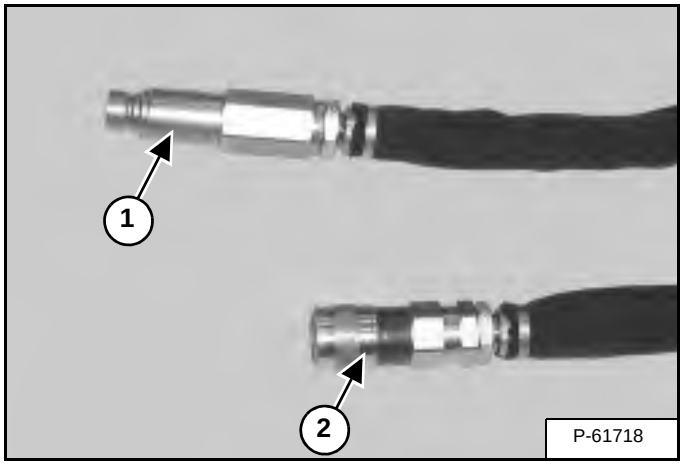
Install the hoses (Item 1) **[Figure 32]** or **[Figure 33]** on the fittings.

Tighten the hoses to 114 N•m (84 ft-lb) torque.

Hose Installation (Cont'd)

HB880 And HB980 (Later Model Breakers) (Cont'd)

Figure 34

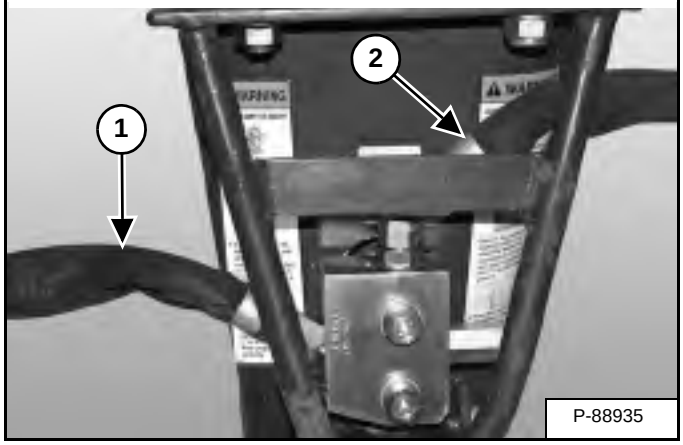


Install the male coupler (Item 1) **[Figure 34]** on the hose that connects to the valve P port (breaker HP port).

Install the female coupler (Item 2) **[Figure 34]** on the hose that connects to the valve R port (breaker BP port).

Figure 35

E80 Excavator Hose Installation



Install the male quick coupler hose (Item 1) **[Figure 35]** on the straight fitting.

Install the female quick coupler hose (Item 2) **[Figure 35]** on the 45° fitting.

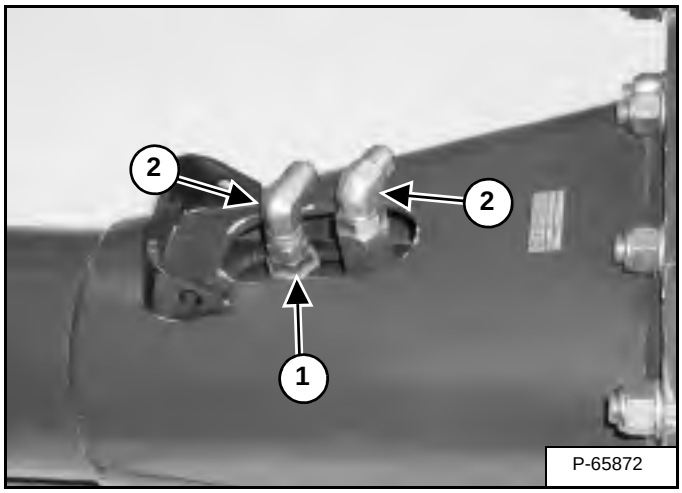
Tighten the hoses to 114 N•m (84 ft-lb) torque.

Hose Installation (Cont'd)

HB1180 (When Used On A300, S250, S300, S330, S630, S650, S740, S850, T250, T300, T320, T650 And T870 Model Loaders)

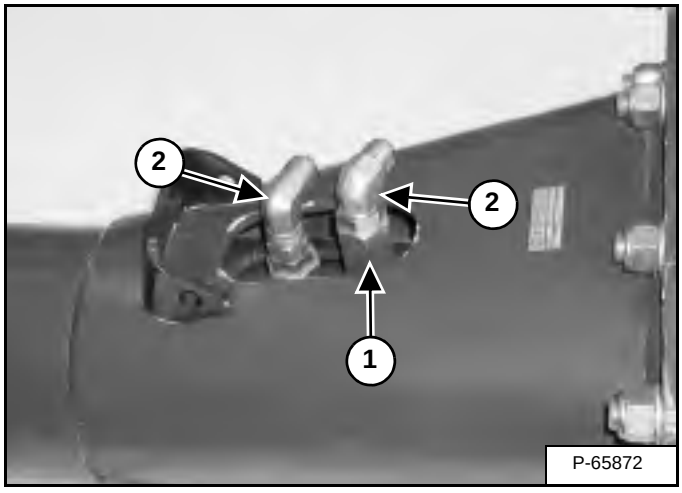
The breaker is supplied without the hoses installed on the breaker.

Figure 36



The port marked *HP* (Item 1) **[Figure 36]** will be connected to the breaker hose with the male coupler.

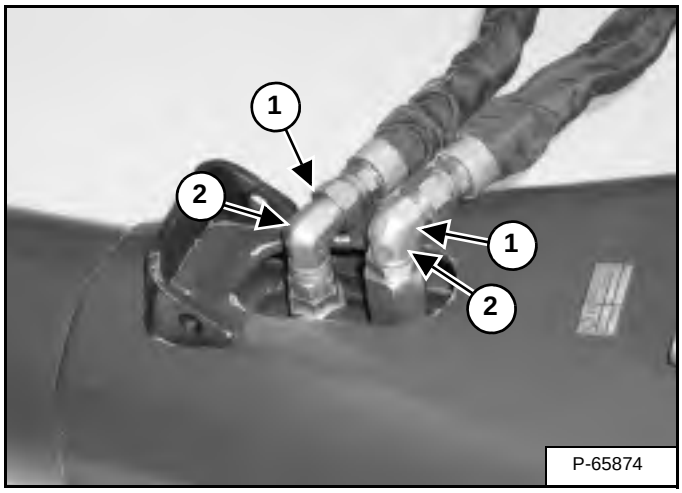
Figure 37



The port marked *BP* (Item 1) **[Figure 37]** will be connected to the breaker hose with the female coupler.

Install the two 90° elbows (Item 2) **[Figure 36]** and **[Figure 37]** in the ports.

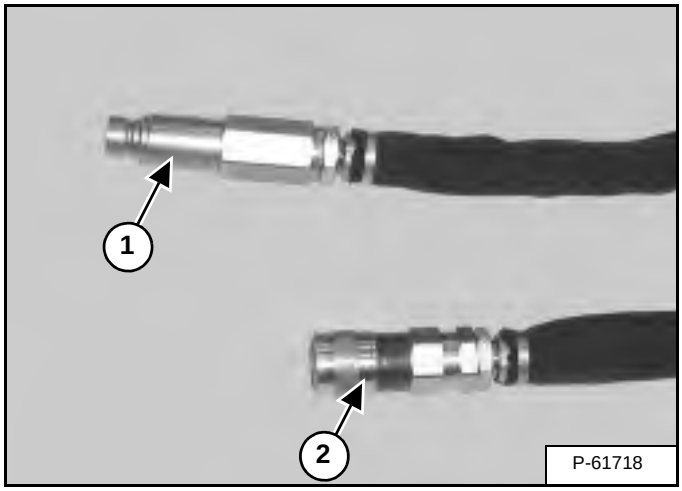
Figure 38



Install the two hoses (Item 1) on the 90° elbows (Item 2) **[Figure 38]**.

Tighten the hoses to 114 N•m (84 ft-lb) torque.

Figure 39



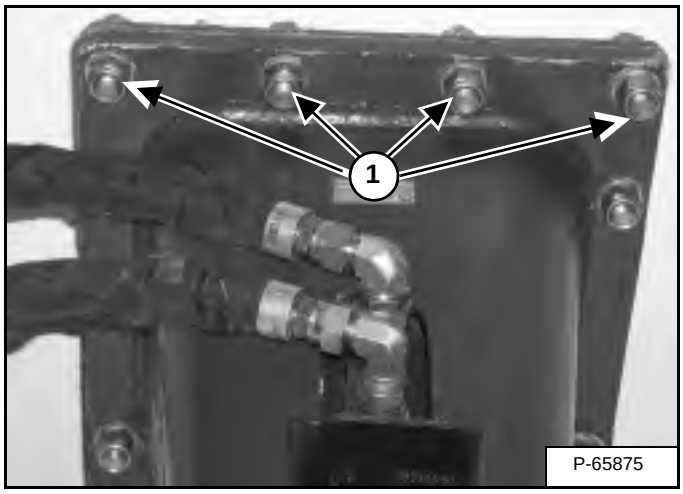
Install the male coupler (Item 1) **[Figure 39]** on the hose that connects to the *HP* port.

Install the female coupler (Item 2) **[Figure 39]** on the hose that connects to the *BP* port.

Hose Installation (Cont'd)

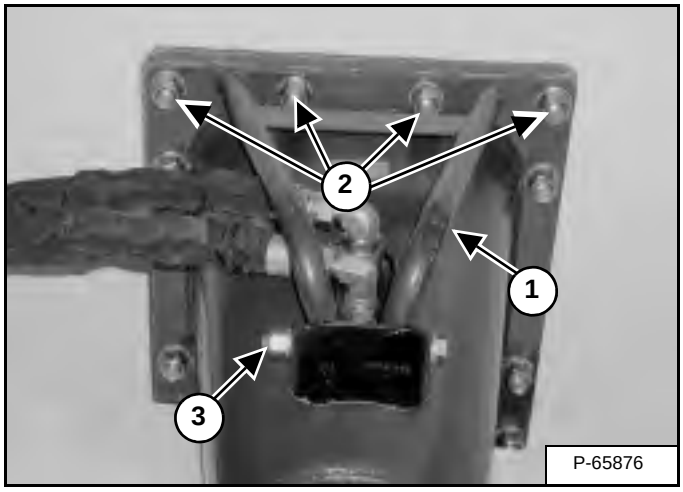
HB1180 (When Used On A300, S250, S300, S330, S630, S650, S740, S850, T250, T300, T320, T650 And T870 Model Loaders) (Cont'd)

Figure 40



Remove the four bolts (Item 1) **[Figure 40]**, washers and nuts.

Figure 41



Install the hose guard (Item 1) using the four bolts provided with the breaker, washers and nuts (Item 2) **[Figure 41]**.

Tighten the four bolts and nuts (Item 2) **[Figure 41]** to 370 N•m (270 ft-lb) torque.

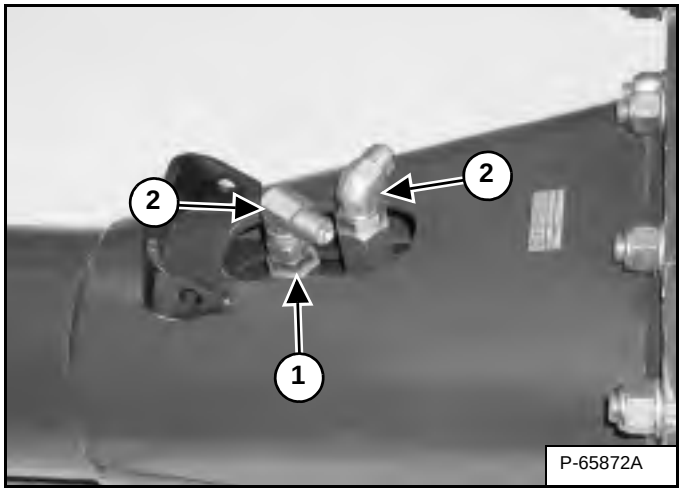
The bolt and nut (Item 3) **[Figure 41]** need only to be lightly tightened.

Hose Installation (Cont'd)

HB1180 (When Used On 442 And 444 Model Excavator)

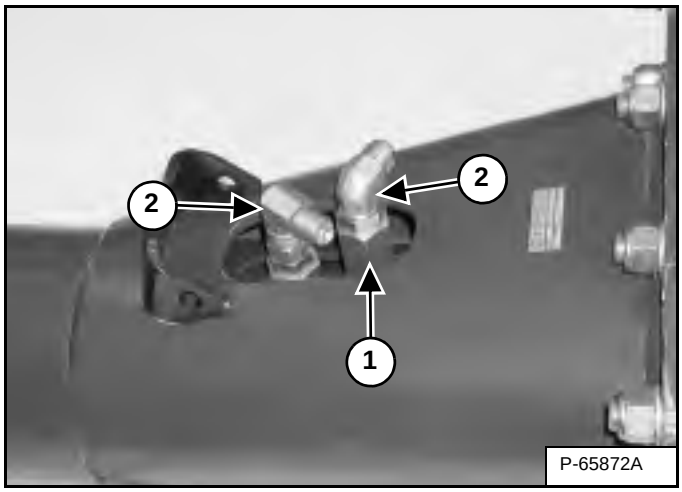
The breaker is supplied without the hoses installed on the breaker.

Figure 42



The port marked *HP* (Item 1) **[Figure 42]** will be connected to the breaker hose with the screw type quick coupler.

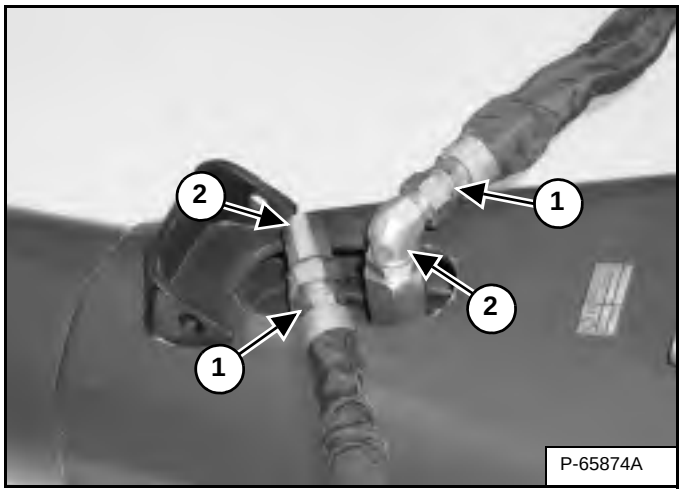
Figure 43



The port marked *BP* (Item 1) **[Figure 43]** will be connected to the breaker hose with the sleeve type quick coupler.

Install the two 90° elbows (Item 2) **[Figure 42]** and **[Figure 43]** in the ports.

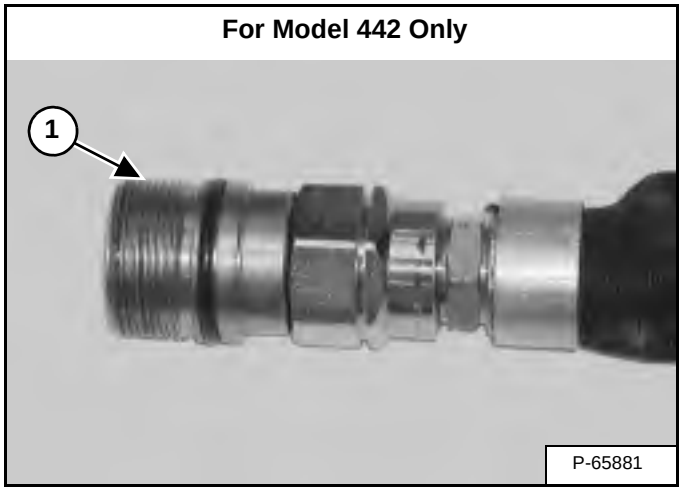
Figure 44



Install the two hoses (Item 1) on the 90° elbows (Item 2) **[Figure 44]**.

Tighten the hoses to 114 N•m (84 ft-lb) torque.

Figure 45

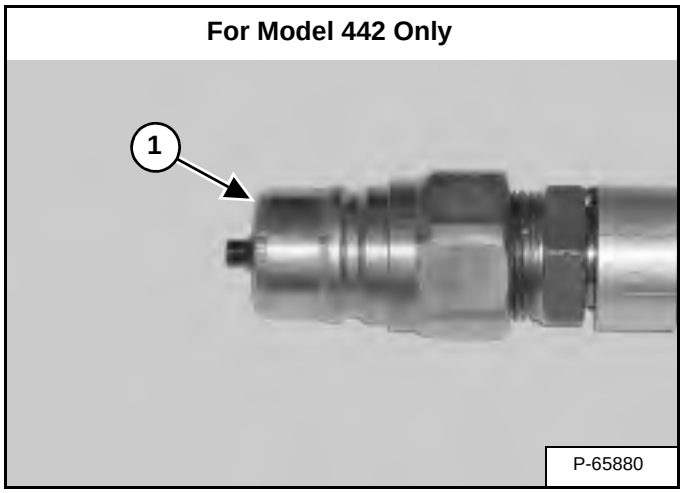


Install the screw type male coupler (Item 1) **[Figure 45]** on the hose that connects to the *HP* port.

Hose Installation (Cont'd)

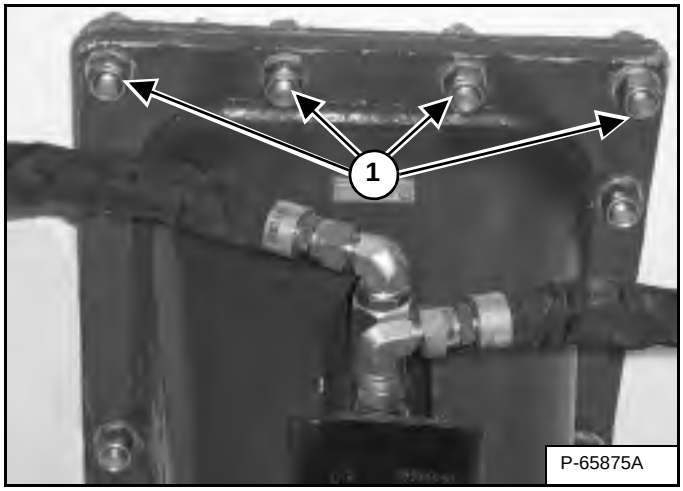
HB1180 (When Used On 442 And 444 Model Excavator) (Cont'd)

Figure 46



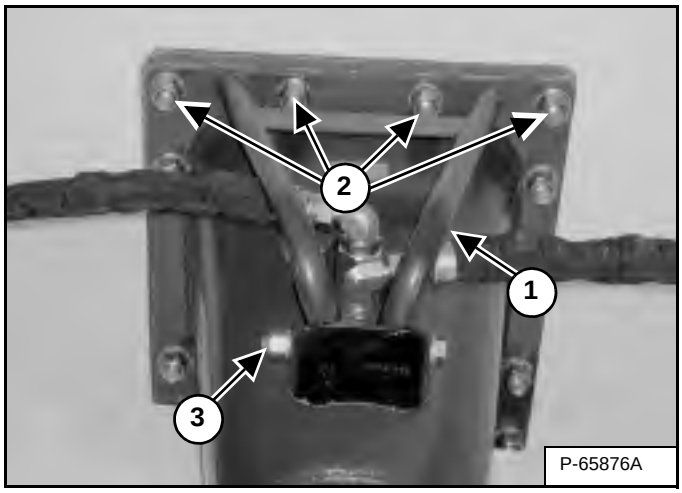
Install the sleeve type male coupler (Item 1) **[Figure 46]** on the hose that connects to the *HB* port.

Figure 47



Remove the four bolts (Item 1) **[Figure 47]**, washers and nuts.

Figure 48



Install the hose guard (Item 1) using the four bolts provided with the breaker, washers and nuts (Item 2) **[Figure 48]**.

Tighten the four bolts and nuts (Item 2) **[Figure 48]** to 370 N•m (270 ft-lb) torque.

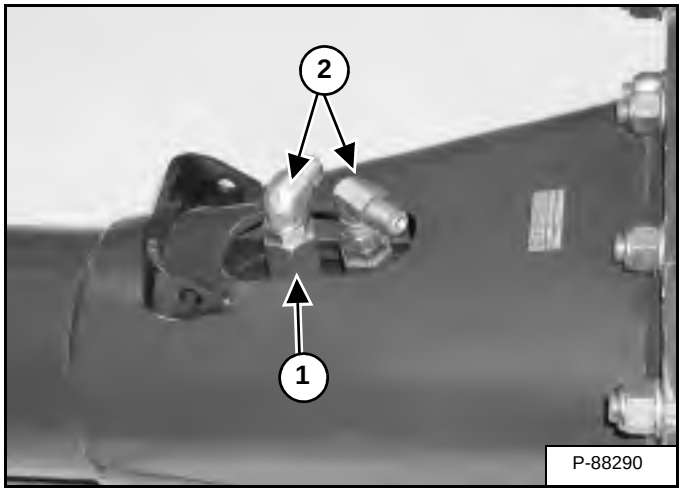
The bolt and nut (Item 3) **[Figure 48]** need only to be lightly tightened.

Hose Installation (Cont'd)

HB880, HB980 And HB1180 (When Used On E55W, E60 And E62 Model Excavators)

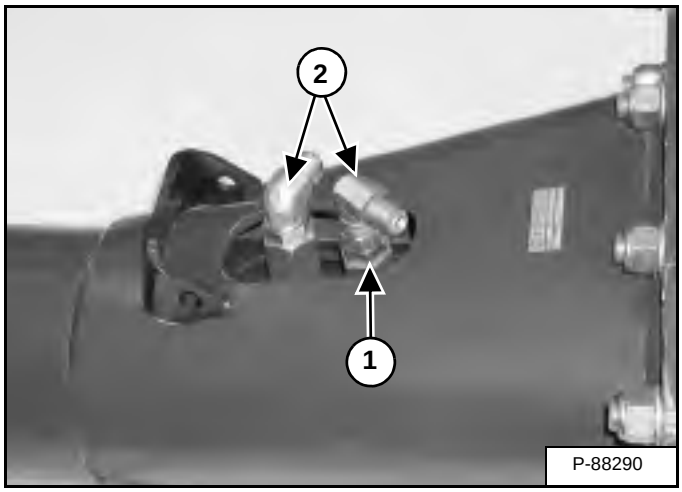
The breaker is supplied without the hoses installed on the breaker.

Figure 49



The port marked *HP* (Item 1) **[Figure 49]** will be connected to the breaker hose with the male coupler.

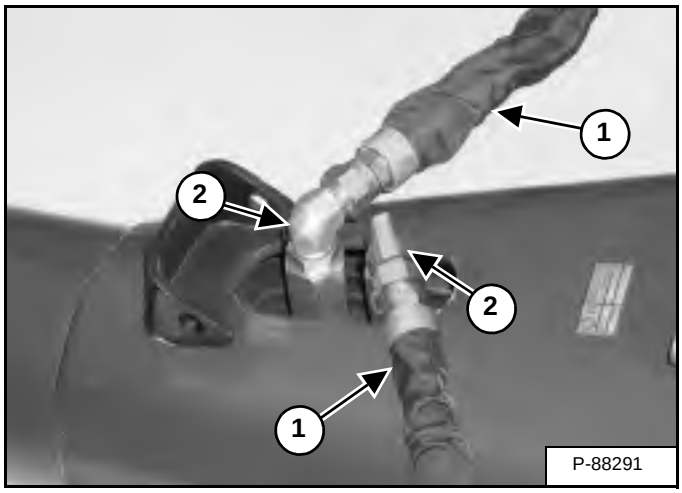
Figure 50



The port marked *BP* (Item 1) **[Figure 50]** will be connected to the breaker hose with the female coupler.

Install the two 90° elbows (Item 2) **[Figure 49]** and **[Figure 50]** in the ports.

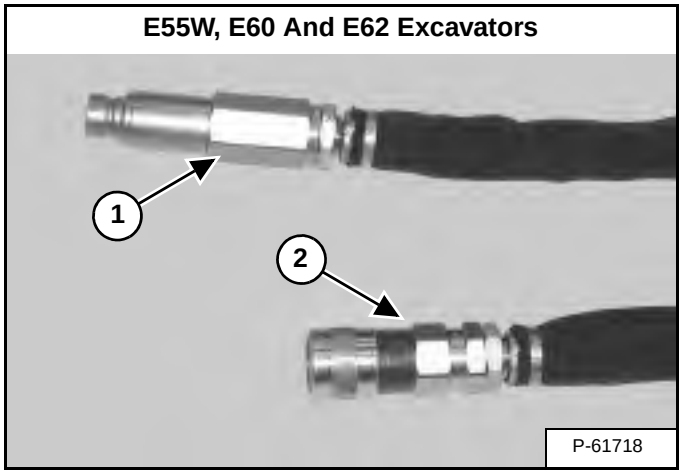
Figure 51



Install the two hoses (Item 1) on the 90° elbows (Item 2) **[Figure 51]**.

Tighten the hoses to 114 N•m (84 ft-lb) torque.

Figure 52



Install the male coupler (Item 1) **[Figure 52]** on the hose that connects to the *HP* port.

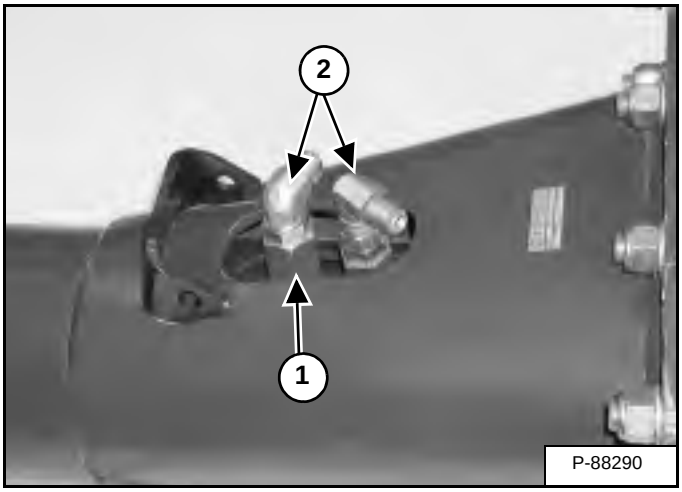
Install the female coupler (Item 2) **[Figure 52]** on the hose that connects to the *BP* port.

Hose Installation (Cont'd)

HB1180 (When Used On E80 And E85 Model Excavators)

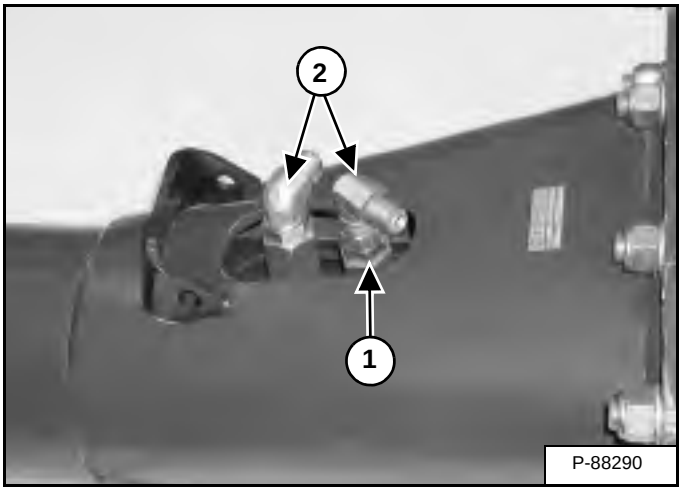
The breaker is supplied without the hoses installed on the breaker.

Figure 53



The port marked *HP* (Item 1) **[Figure 53]** will be connected to the breaker hose with the male coupler.

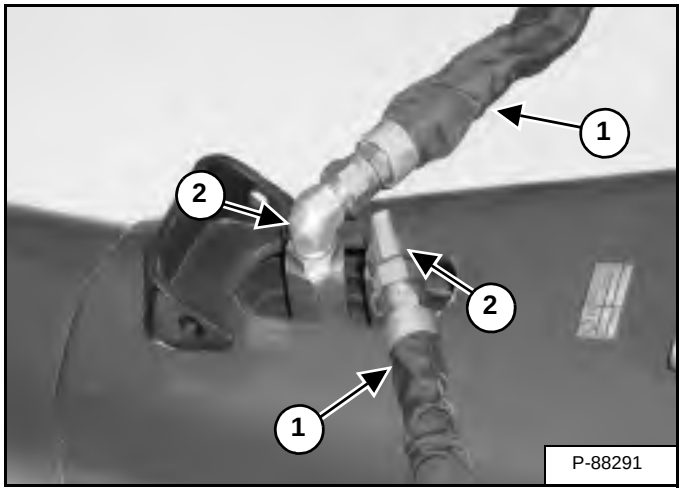
Figure 54



The port marked *BP* (Item 1) **[Figure 54]** will be connected to the breaker hose with the female coupler.

Install the two 90° elbows (Item 2) **[Figure 53]** and **[Figure 54]** in the ports.

Figure 55



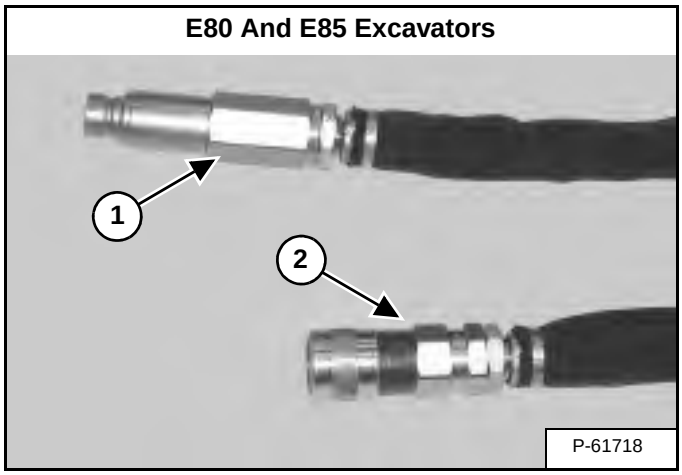
Install the two hoses (Item 1) on the 90° elbows (Item 2) **[Figure 55]**.

Tighten the hoses to 114 N•m (84 ft-lb) torque.

Hose Installation (Cont'd)

HB1180 (When Used On E80 And E85 Model Excavators) (Cont'd)

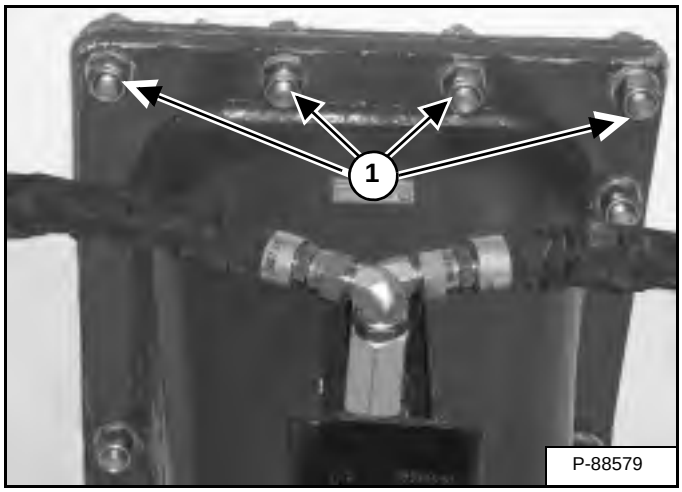
Figure 56



Install the male coupler (Item 1) **[Figure 56]** on the hose that connects to the *HP* port.

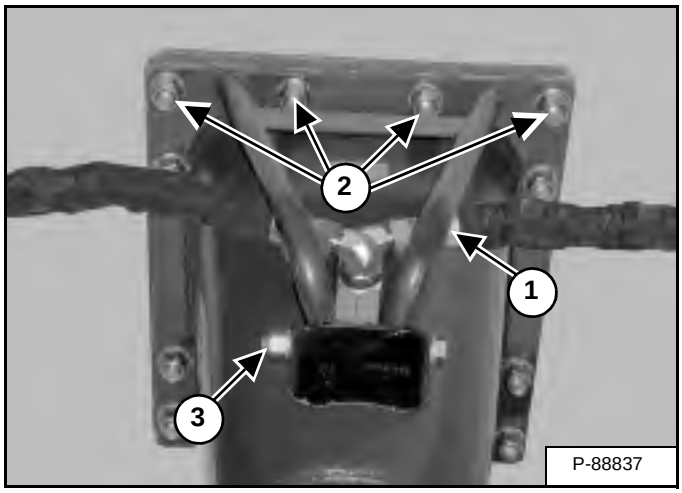
Install the female coupler (Item 2) **[Figure 56]** on the hose that connects to the *BP* port.

Figure 57



Remove the four bolts (Item 1) **[Figure 57]**, washers and nuts.

Figure 58



Install the hose guard (Item 1) using the four bolts provided with the breaker, washers and nuts (Item 2) **[Figure 58]**.

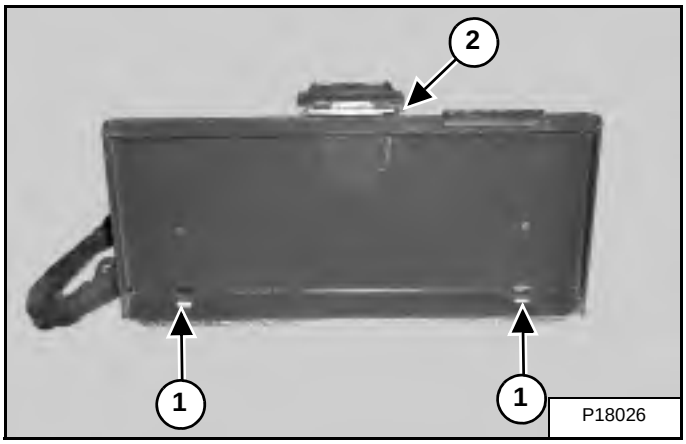
Tighten the four bolts and nuts (Item 2) **[Figure 58]** to 370 N•m (270 ft-lb) torque.

The bolt and nut (Item 3) **[Figure 58]** need only to be lightly tightened.

DAILY INSPECTION

Attachment Mounting Frame

Figure 59



Inspect the Bob-Tach wedge mounts (Item 1), mounting flange (Item 2) **[Figure 59]** and all welds on the breaker mount for wear and damage each time the breaker is removed from the machine.

Bob-Tach

Hand Lever Bob-Tach

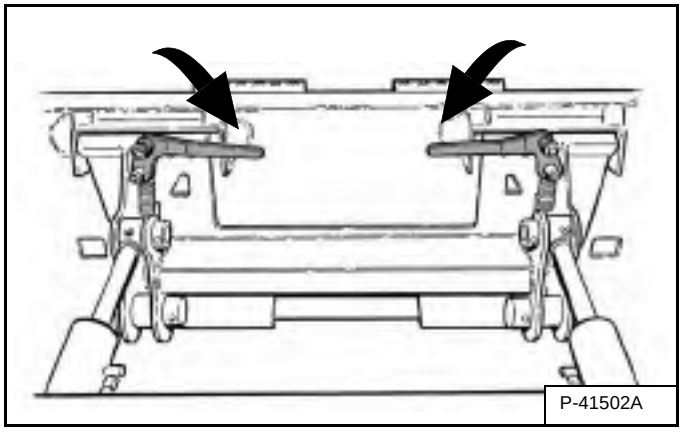
⚠ WARNING

AVOID INJURY OR DEATH

The Bob-Tach wedges must extend through the holes in the attachment mounting frame. Levers must be fully down and locked. Failure to secure wedges can allow attachment to come off.

W-2715-0208

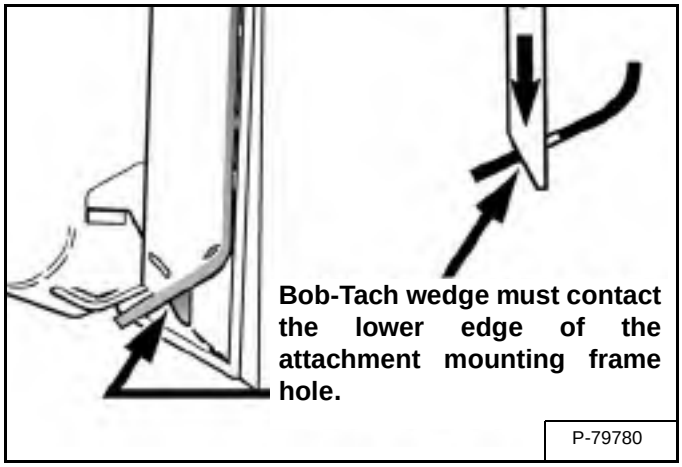
Figure 60



Push down on the Bob-Tach levers until they are fully engaged in the locked position **[Figure 60]** (wedges fully extended through the attachment mounting frame holes).

The levers and wedges must move freely **[Figure 60]**.

Figure 61



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach **[Figure 61]**.

NOTE: If the wedge does not contact the lower edge of the hole, the attachment will be loose and can come off the Bob-Tach.

Inspect the mounting frame on the attachment. (See the machine's Operation & Maintenance Manual for inspecting the Bob-Tach). Replace any parts that are damaged, bent or missing. Keep all fasteners tight. Look for cracked welds. Contact your Bobcat dealer for repair or replacement parts.

Lubricate the wedges. (See the machine's Operation & Maintenance Manual for the correct procedure.)

DAILY INSPECTION (CONT'D)

Bob-Tach (Cont'd)

Power Bob-Tach

⚠ WARNING

AVOID INJURY OR DEATH

The Bob-Tach wedges must extend through the holes in the attachment mounting frame. Levers must be fully down and locked. Failure to secure wedges can allow attachment to come off.

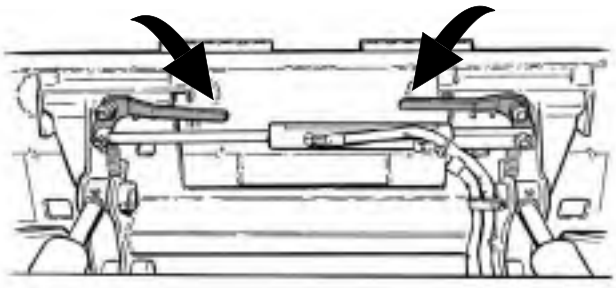
W-2715-0208

Figure 62

Loader Switch

B-15993A

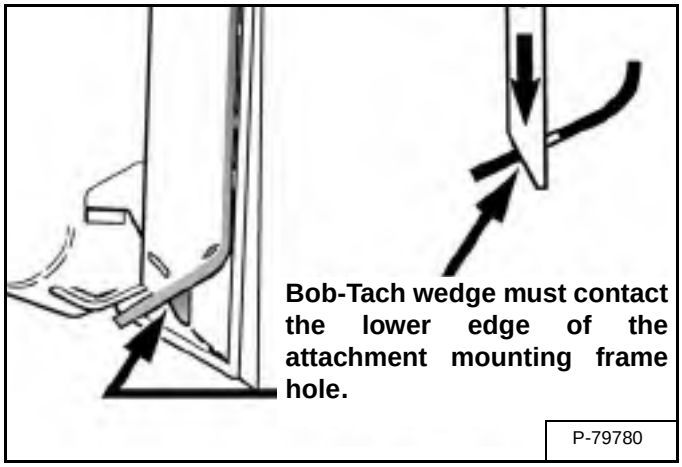
Figure 63



P-41500A

Push and hold the BOB-TACH "WEDGES DOWN" switch (Item 1) **[Figure 62]** until the levers are fully engaged in the locked position **[Figure 63]** (wedges fully extended through the attachment mounting frame holes).

Figure 64



Bob-Tach wedge must contact the lower edge of the attachment mounting frame hole.

P-79780

The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach **[Figure 64]**.

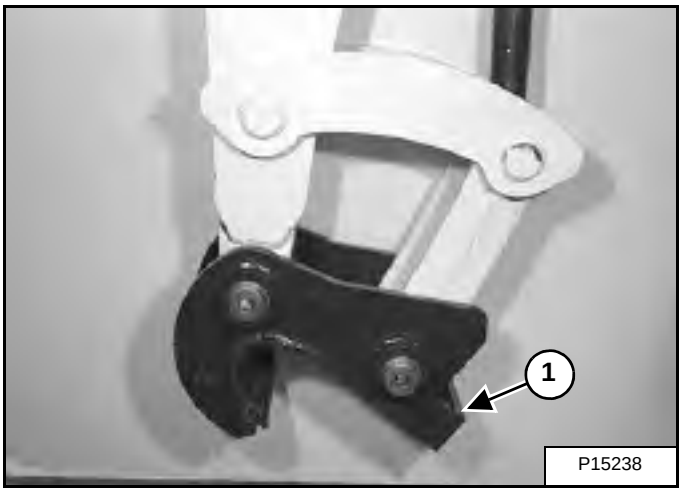
NOTE: If the wedge does not contact the lower edge of the hole, the attachment will be loose and can come off the Bob-Tach.

Inspect the mounting frame on the attachment. (See the machine's Operation & Maintenance Manual for inspecting the Bob-Tach). Replace any parts that are damaged, bent or missing. Keep all fasteners tight. Look for cracked welds. Contact your Bobcat dealer for repair or replacement parts.

Lubricate the wedges. (See the machine's Operation & Maintenance Manual for the correct procedure.)

X-Change

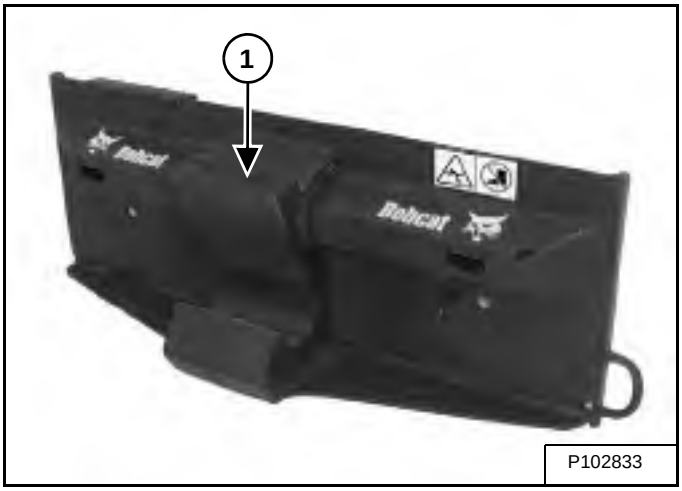
Figure 65



Inspect the X-Change (Item 1) **[Figure 65]** for damage or wear. Clean all dirt and debris from the X-Change latch (if equipped).

Bob-Tach / X-Change Mounting Frame

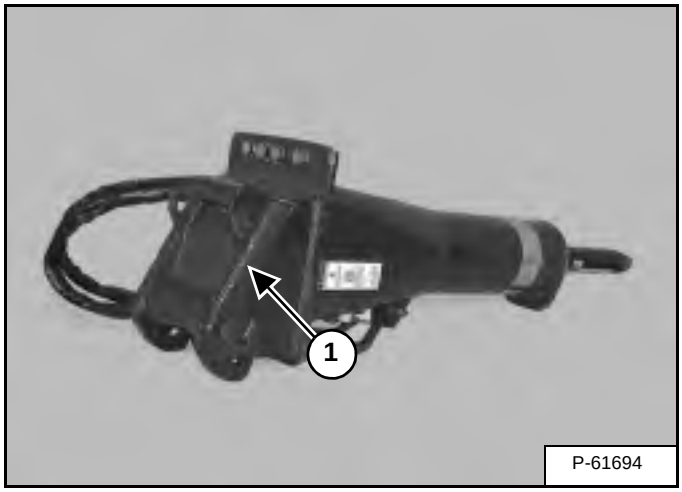
Figure 66



Inspect the Bob-Tach / X-Change (Item 1) **[Figure 66]** for damage or wear. Clean all dirt and debris from the Bob-Tach / X-Change latch (if equipped).

X-Change Mount

Figure 67

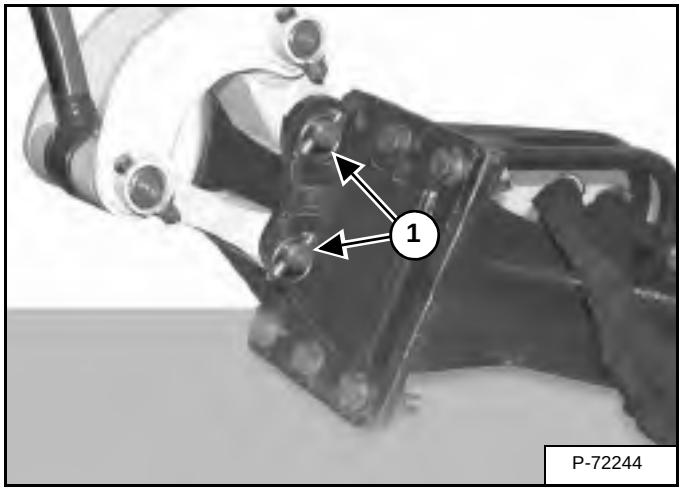


Inspect the X-Change mount (Item 1) **[Figure 67]** and all welds on the breaker mount for wear or damage each time the breaker is removed from the machine.

Repair or replace damaged parts.

Pin-On Attachment

Figure 68

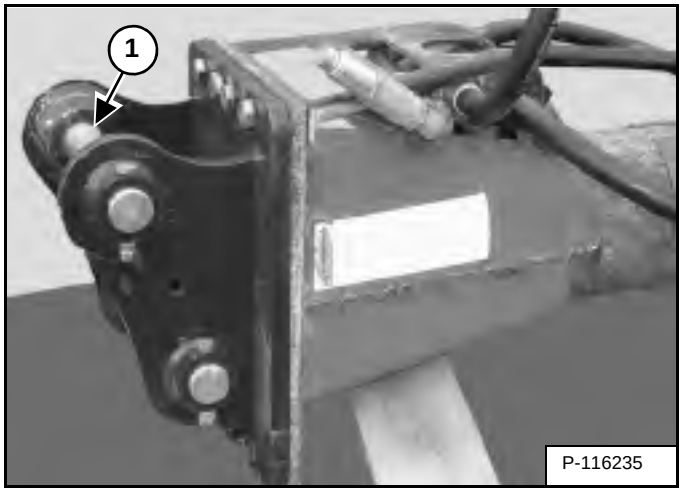


Inspect the Pin-On mount for wear or damage. Inspect the pivot pins (Item 1) **[Figure 68]** and mounts (on the attachment) for wear or damage.

Repair or replace damaged parts.

Pin Grabber Quick Coupler

Figure 69

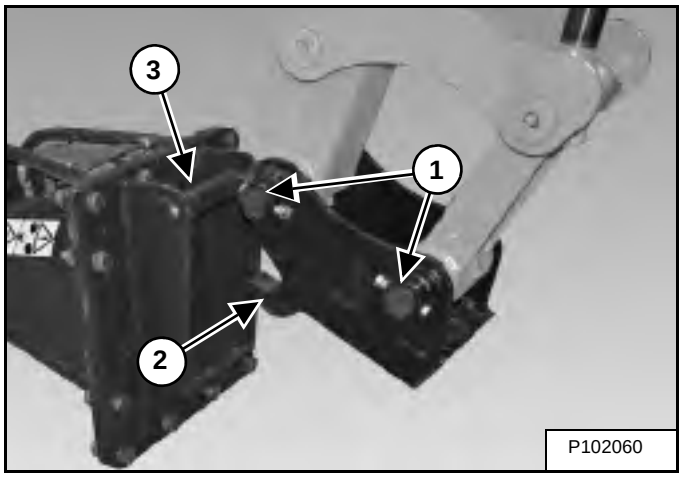


Inspect the Pin Grabber mount for wear or damage. Inspect the pins (Item 1) **[Figure 69]** and mount (on the attachment) for wear or damage.

Repair or replace damaged parts.

Quick Coupler (Lehnhoff® System)

Figure 70

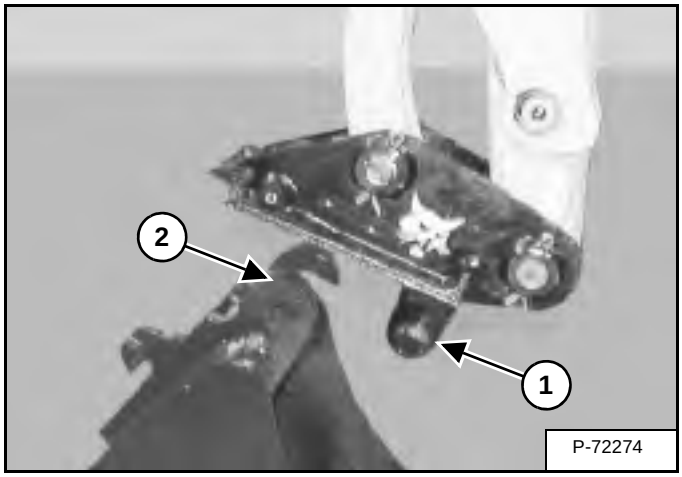


Inspect the quick coupler for wear or damage. Inspect the quick coupler pins (Item 1), hooks (Item 2), shaft (Item 3) **[Figure 70]** (on the attachment) and all hardware for wear or damage.

Repair or replace damaged parts.

Quick Coupler (Klac™ System)

Figure 71

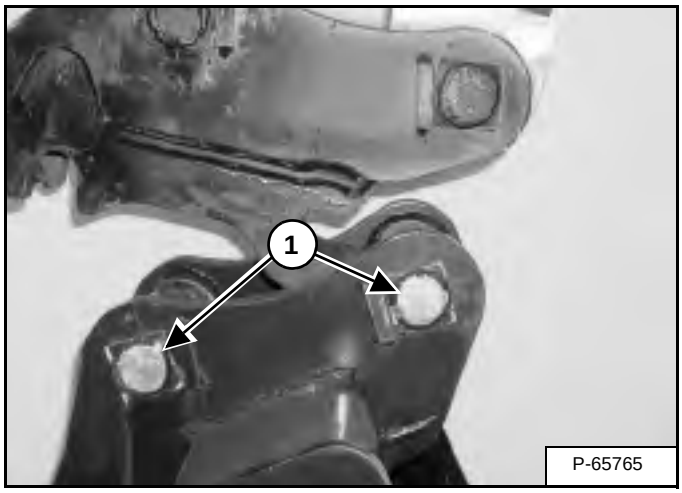


Inspect the attachment quick coupler for wear or damage. Inspect the mounting pins (Item 1) and hooks (Item 2) **[Figure 71]** (on the attachment) for wear or damage.

Repair or replace damaged parts.

Manual Spring Loaded Coupler (442 And 444 Only)

Figure 72



Inspect the manual spring loaded coupler and mount for wear or damage. Inspect the pivot pins (Item 1) **[Figure 72]** and mounts (on the attachment) for wear or damage.

Repair or replace damaged parts.

OPERATING PROCEDURE WITH LOADERS

Approved Loader Models And Requirements

Figure 73

LOADER MODEL	BACKHOE MODEL REQUIRED	HB SERIES BREAKER				
		580	680	880	980	1180
463		X	X			
553			X	X		
A300					X	X
A770					*X	X
S70		X	X			
S100			X	X		
S130	725S		**X	X	X	
S150				X	X	
S160				X	X	
S175				X	X	
S185				X	X	
S205				X	X	
S220					X	X
S250					X	X
S300					X	X
S330					X	X
S450				X	X	
S510				X	X	
S530				X	X	
S550				X	X	
S570				X	X	
S590				X	X	
S630					*X	X
S650					*X	X
S740					*X	X
S770					*X	X
S850						X
T110				X	X	
T140	725S		**X	X	X	
T190				X	X	
T250					X	X
T300					X	X
T320					X	X
T450				X	X	
T550				X	X	
T590				X	X	
T650					*X	X
T770					*X	X
T870						X

X = Approved

[Figure 73] lists the loader and backhoe combination approved for use with each breaker.

Approved Loader Models And Requirements (Cont'd)

NOTE: * When using the HB980 breaker on A770, S630, S650, S740, S770, T650, and T770 model loaders, the breaker must be equipped with a diverter valve kit. See your Bobcat dealer for available kits.

NOTE: ** Loader models S130 and T140 must be equipped with a 725S backhoe when using the HB680 breaker.

Warranty on this attachment is void if used on a non-approved carrier. See your Bobcat dealer for an updated list of approved carriers.

⚠ WARNING

Never use attachments or buckets which are not approved by the Bobcat Company. Attachments and buckets for safe loads of specified densities are approved for each model. Unapproved attachments and buckets can cause injury or death.

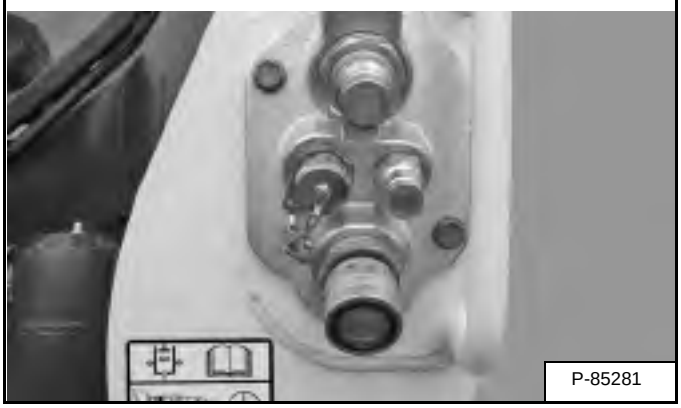
W-2662-0108

Figure 74

EARLIER MODELS

P-75687

LATER MODELS



P-85281

The loader must be equipped with auxiliary hydraulics **[Figure 74]**.

Special Applications Kit

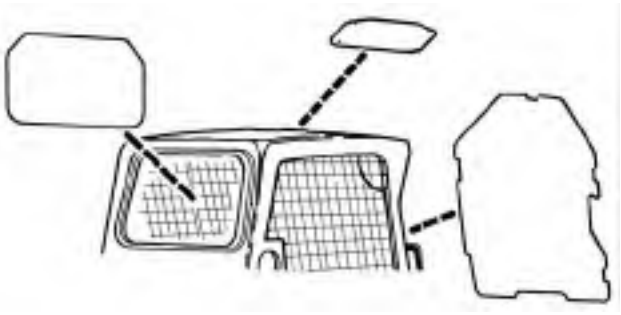
⚠ WARNING

AVOID INJURY OR DEATH

Some attachment applications can cause flying debris or objects to enter front, top or rear cab openings. Install the Special Applications Kit to provide added operator protection in these applications.

W-2737-0508

Figure 75



B-25286A

Available for special applications to restrict material from entering cab openings. Kit includes 12,70 mm (1/2 in) thick polycarbonate front door, top and rear windows **[Figure 75]**.

See your Bobcat dealer for available special applications kit for your model loader.

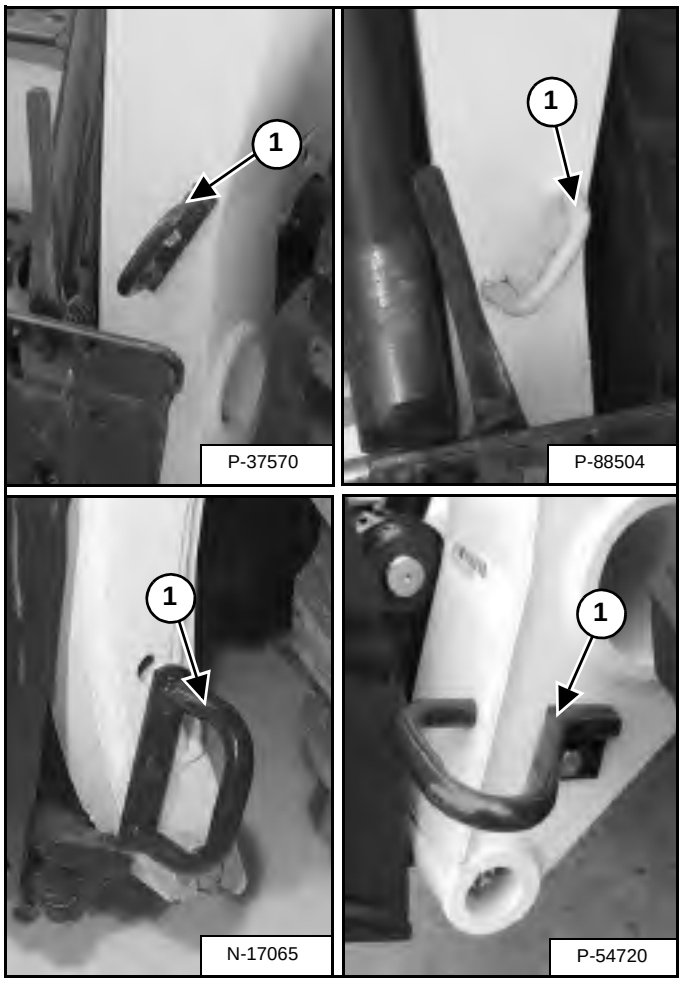
Special Applications Kit Inspection And Maintenance

- Inspect for cracks or damage. Replace if required.
- Pre-rinse with water to remove gritty materials.
- Wash with a mild household detergent and warm water.
- Use a sponge or soft cloth. Rinse well with water and dry with a clean soft cloth or rubber squeegee.
- Do not use abrasive or high alkaline cleaners.
- Do not clean with metal blades or scrapers.

Machine / Attachment Setup

Hose Guide Installation (Earlier Version)

Figure 76



Install the correct hose guide (Item 1) **[Figure 76]** on the loader.

NOTE: Hose guide styles vary between loader models. Hose guides are not included with the attachment. See your Bobcat dealer for available hose guide kits.

Entering And Exiting The Loader

Entering

⚠ WARNING

AVOID INJURY OR DEATH

When operating the machine:

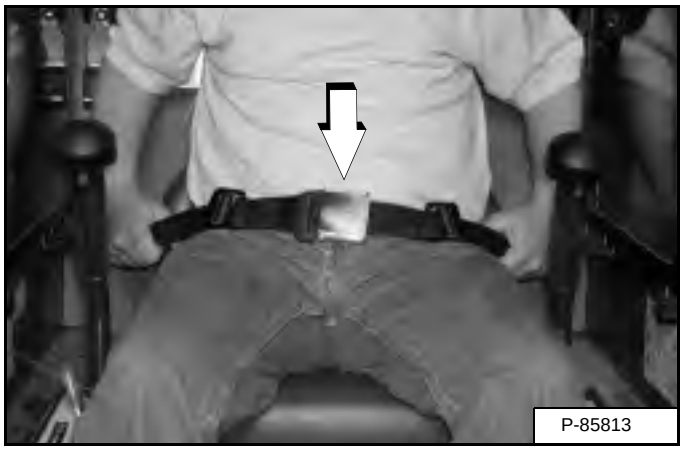
- **Keep the seat belt fastened snugly.**
- **The seat bar must be lowered.**
- **Keep your feet on the pedal controls or footrests and hands on the controls.**

W-2261-0909

Figure 77

Use the breaker steps, grab handles (on cab) and the safety treads (on top of the loader lift arms and frame) to enter and exit the loader **[Figure 77]**.

Figure 78



Enter the loader. Fasten the seat belt and adjust it so the buckle is centred between your hips **[Figure 78]**.

Figure 79

Lower the seat bar and engage the parking brake **[Figure 79]**.

Put the foot pedals or hand controls in neutral position.

NOTE: Keep your hands on the steering levers and your feet on the foot pedals (or footrests) while operating the loader.

See the loader's Operation & Maintenance Manual and Operator's Handbook for detailed information on operating the loader.

Entering And Exiting The Loader (Cont'd)

Exiting

Lower the lift arms and put the attachment flat on the ground.

Stop the engine and engage the parking brake.

Lift the seat bar and make sure the lift and tilt functions are deactivated.

Remove the key.

Exit the loader.

⚠ WARNING

AVOID INJURY OR DEATH

Before you leave the operator's position:

- **Lower the lift arms, put the attachment flat on the ground.**
- **Stop the engine and engage the parking brake.**
- **Move all pedals, handles, joysticks, and other controls until they are LOCKED or in the NEUTRAL position.**

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

W-2722-0208

Installation

Hand Lever Bob-Tach

NOTE: The attachment mounting frame for the attachment has a top flange that is designed to receive the top edge of the Bob-Tach and the lower part of the frame is designed to receive the Bob-Tach wedges.

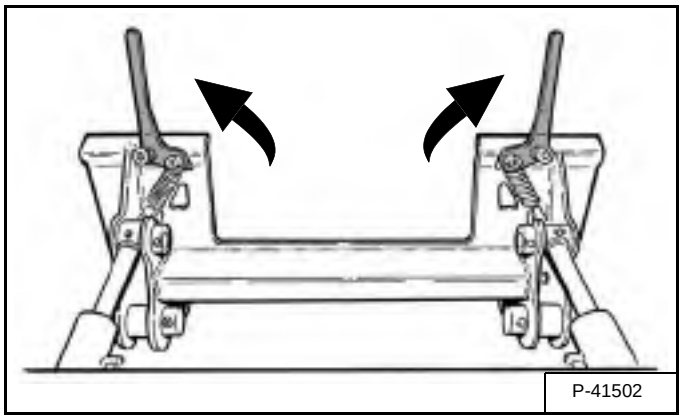
⚠ WARNING

Warnings on the machine and in the manuals are for your safety. Failure to obey warnings can cause serious injury or death.

W-2744-0608

Always inspect the loader's Bob-Tach and the attachment mounting frame before installation. See the loader's Operation & Maintenance Manual. (See DAILY INSPECTION on Page 52.)

Figure 80

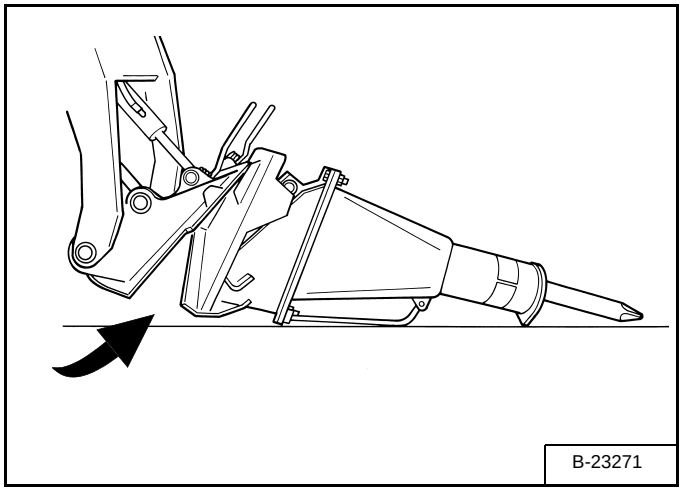


Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) **[Figure 80]**.

Enter the loader. (See Entering And Exiting The Loader on Page 60.)

Start the engine, press the PRESS TO OPERATE LOADER button and release the parking brake.

Figure 81



Lower the lift arms and tilt the Bob-Tach forward.

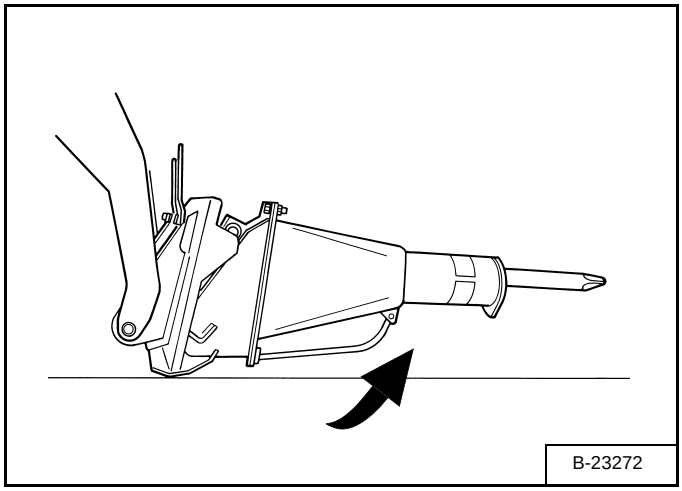
Drive the loader slowly forward until the top edge of the Bob-Tach is completely under the top flange of the attachment mounting frame **[Figure 81]**.

NOTE: Be sure the Bob-Tach levers do not hit the attachment.

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 82



Tilt the Bob-Tach backward until the attachment is slightly off the ground **[Figure 82]**. This will cause the attachment mounting frame to fit up against the front of the Bob-Tach.

NOTE: When leaving the operator's seat to install an attachment, tilt the attachment until it is slightly off the ground.

Stop the engine and exit the loader. (See Entering And Exiting The Loader on Page 60.)

⚠ WARNING

AVOID INJURY OR DEATH

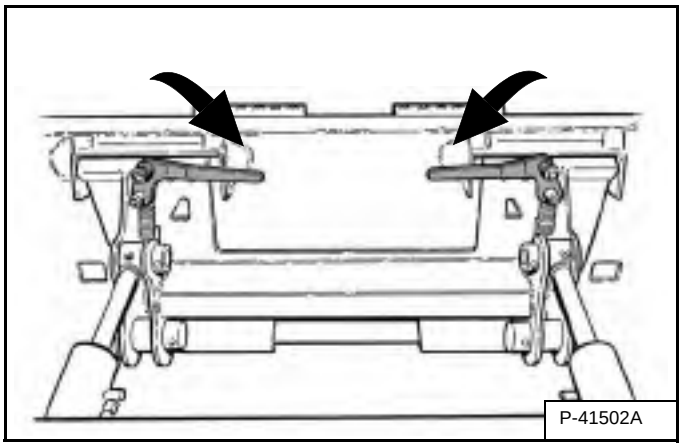
Before you leave the operator's seat:

- **Lower the lift arms and put the attachment flat on the ground.**
- **Stop the engine.**
- **Engage the parking brake.**
- **Raise the seat bar.**
- **Move all controls to the NEUTRAL / LOCKED position to make sure the lift, tilt and traction drive functions are deactivated.**

The seat bar system must deactivate these functions when the seat bar is up. See your Bobcat dealer for service if controls do not deactivate.

W-2463-1110

Figure 83

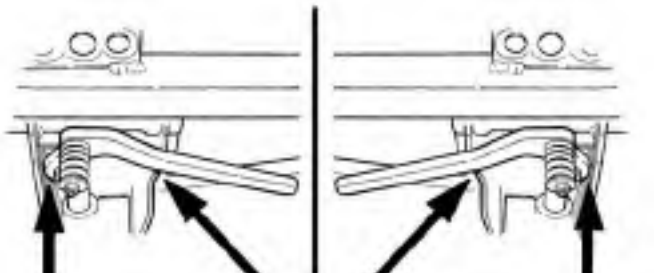


Push down on the Bob-Tach levers until they are fully engaged in the locked position **[Figure 83]** (wedges fully extended through the attachment mounting frame holes).

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 84



Frame Contact Points

P-94955

Both levers must contact the frame as shown when locked **[Figure 84]**.

If both levers do not engage in the locked position, see your Bobcat dealer for maintenance.

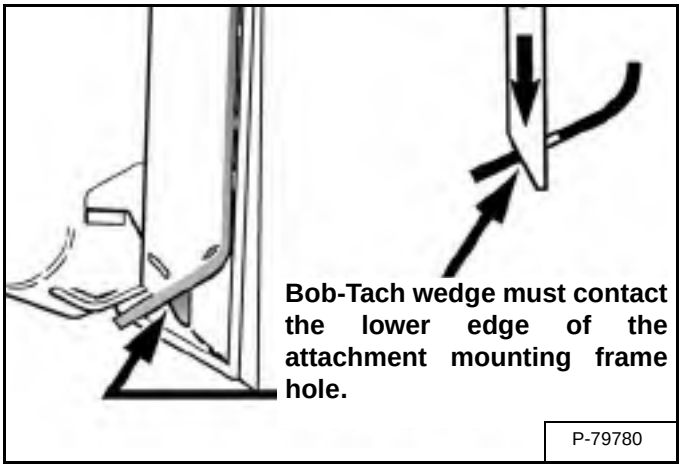
⚠ WARNING

AVOID INJURY OR DEATH

The Bob-Tach wedges must extend through the holes in the attachment mounting frame. Levers must be fully down and locked. Failure to secure wedges can allow attachment to come off.

W-2715-0208

Figure 85



Bob-Tach wedge must contact the lower edge of the attachment mounting frame hole.

P-79780

The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach **[Figure 85]**.

Connect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 82.)

Installation (Cont'd)

Power Bob-Tach

⚠ WARNING

Warnings on the machine and in the manuals are for your safety. Failure to obey warnings can cause serious injury or death.

W-2744-0608

This loader may be equipped with a Power Bob-Tach.

Enter the loader. (See Entering And Exiting The Loader on Page 60.)

Start the engine, press the PRESS TO OPERATE LOADER button and release the parking brake.

Figure 86

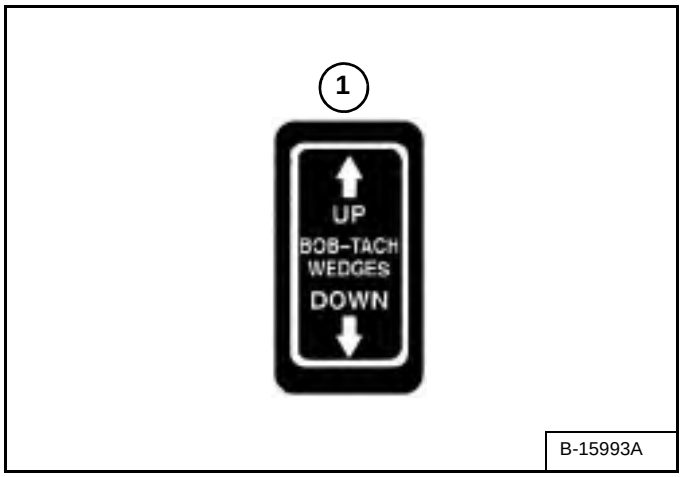
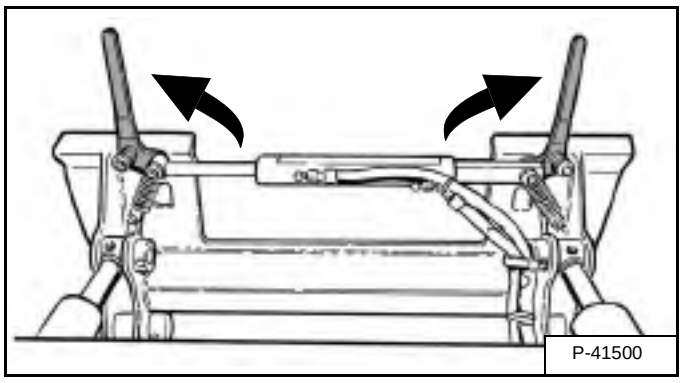
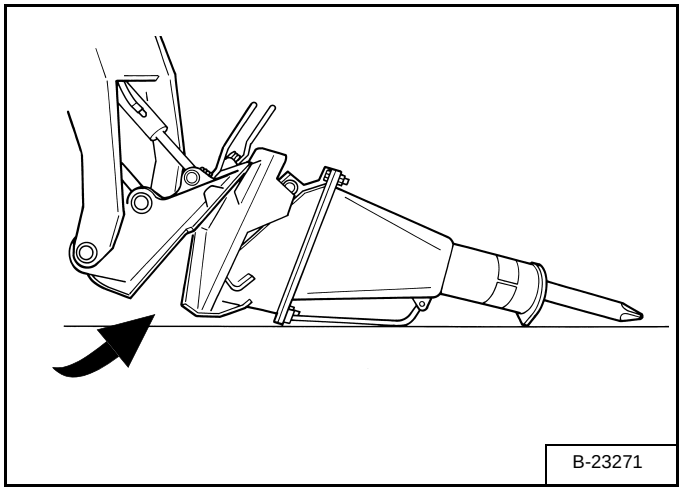


Figure 87



Push and hold the BOB-TACH "WEDGES UP" switch (Item 1) **[Figure 86]** until the levers are fully raised (wedges fully raised) **[Figure 87]**.

Figure 88



Lower the lift arms and tilt the Bob-Tach slightly forward.

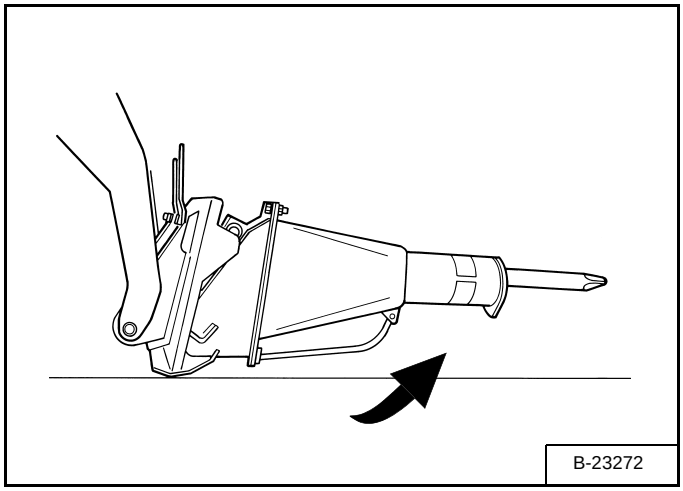
Drive the loader slowly forward until the top edge of the Bob-Tach is completely under the top flange of the attachment mounting frame **[Figure 88]**.

NOTE: Be sure the Bob-Tach levers do not hit the attachment.

Installation (Cont'd)

Power Bob-Tach (Cont'd)

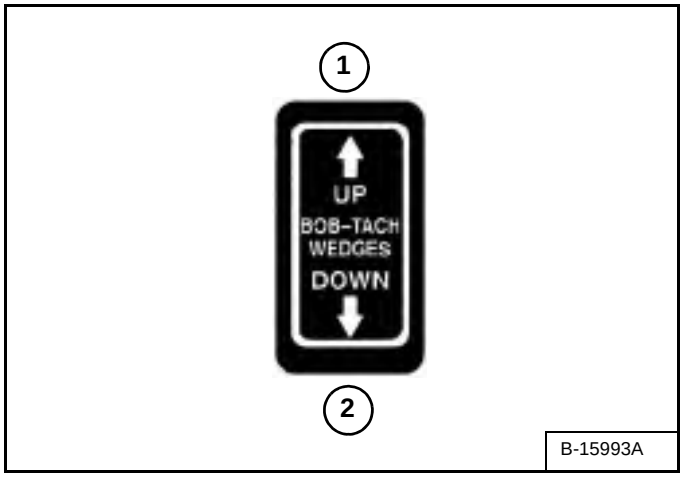
Figure 89



Lower the lift arms and tilt the Bob-Tach forward slightly.

Tilt the Bob-Tach backward until the attachment is slightly off the ground **[Figure 89]**. This will cause the attachment mounting frame to fit up against the front of the Bob-Tach.

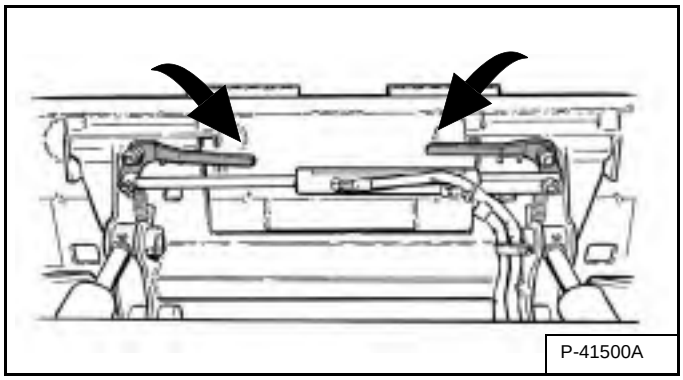
Figure 90



NOTE: The Power Bob-Tach system has continuous pressurised hydraulic fluid to keep the wedges in the engaged position and prevent attachment disengagement. Because the wedges can slowly lower, the operator may need to reactivate the switch (BOB-TACH "WEDGES UP") to be sure both wedges are fully raised before installing the attachment.

Push and hold the BOB-TACH "WEDGES UP" switch (Item 1) **[Figure 90]** until the levers are fully raised (wedges fully raised).

Figure 91

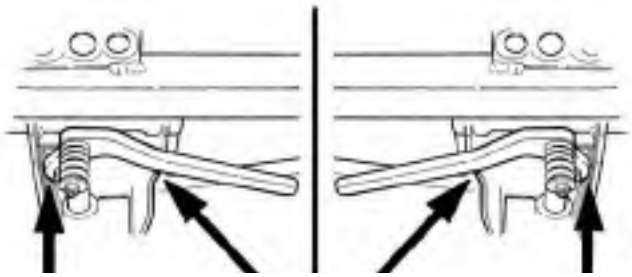


Push and hold the BOB-TACH "WEDGES DOWN" switch (Item 2) **[Figure 90]** until the levers are fully engaged in the locked position **[Figure 91]** (wedges fully extended through the attachment mounting frame holes).

Installation (Cont'd)

Power Bob-Tach (Cont'd)

Figure 92



Frame Contact Points

P-94955

Both levers must contact the frame as shown when locked **[Figure 92]**.

If both levers do not engage in the locked position, see your Bobcat dealer for maintenance.

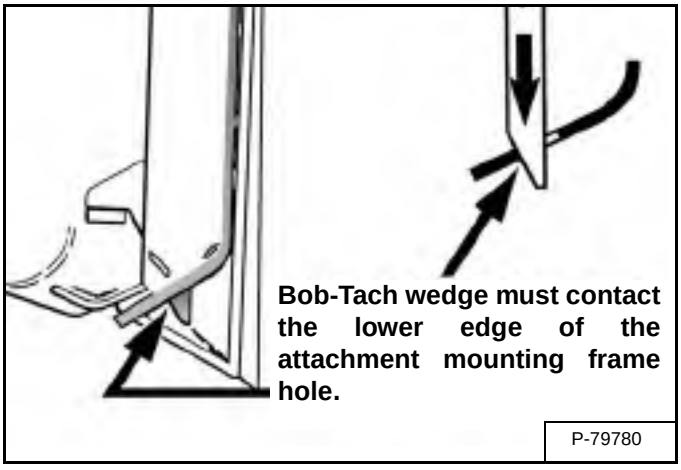
⚠ WARNING

AVOID INJURY OR DEATH

The Bob-Tach wedges must extend through the holes in the attachment mounting frame. Levers must be fully down and locked. Failure to secure wedges can allow attachment to come off.

W-2715-0208

Figure 93



Bob-Tach wedge must contact the lower edge of the attachment mounting frame hole.

P-79780

The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach **[Figure 93]**.

Lower the lift arms and put the attachment flat on the ground.

Stop the engine and exit the loader. (See Entering And Exiting The Loader on Page 60.)

⚠ WARNING

AVOID INJURY OR DEATH

Before you leave the operator's seat:

- **Lower the lift arms and put the attachment flat on the ground.**
- **Stop the engine.**
- **Engage the parking brake.**
- **Raise the seat bar.**
- **Move all controls to the NEUTRAL / LOCKED position to make sure the lift, tilt and traction drive functions are deactivated.**

The seat bar system must deactivate these functions when the seat bar is up. See your Bobcat dealer for service if controls do not deactivate.

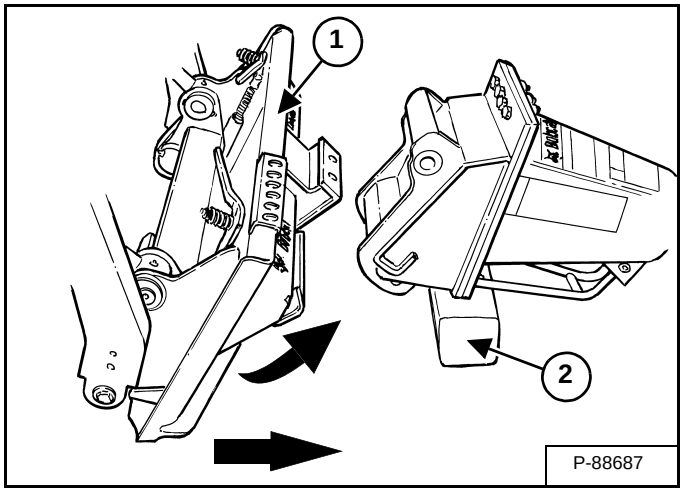
W-2463-1110

Connect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 82.)

Installation (Cont'd)

Bob-Tach / X-Change Mounting Frame (Pin-On)

Figure 94



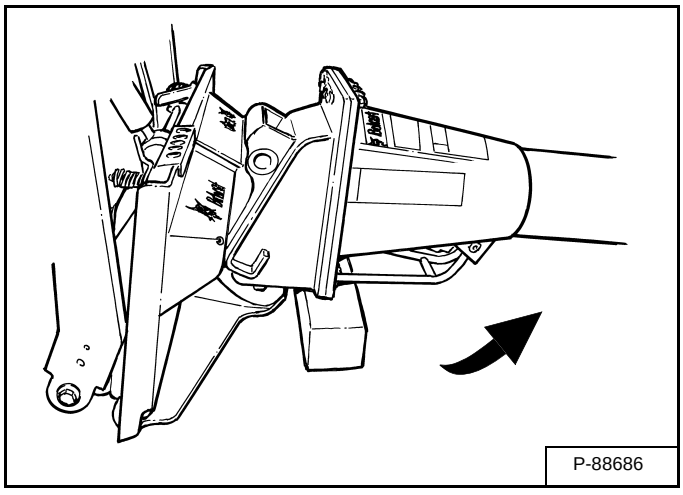
Install the breaker mount (Item 1) **[Figure 94]** on the loader.

Place the breaker on a block (Item 2) **[Figure 94]**.

Tilt the Bob-Tach forward.

Drive the loader forward until the breaker mount frame engages the breaker **[Figure 94]**.

Figure 95

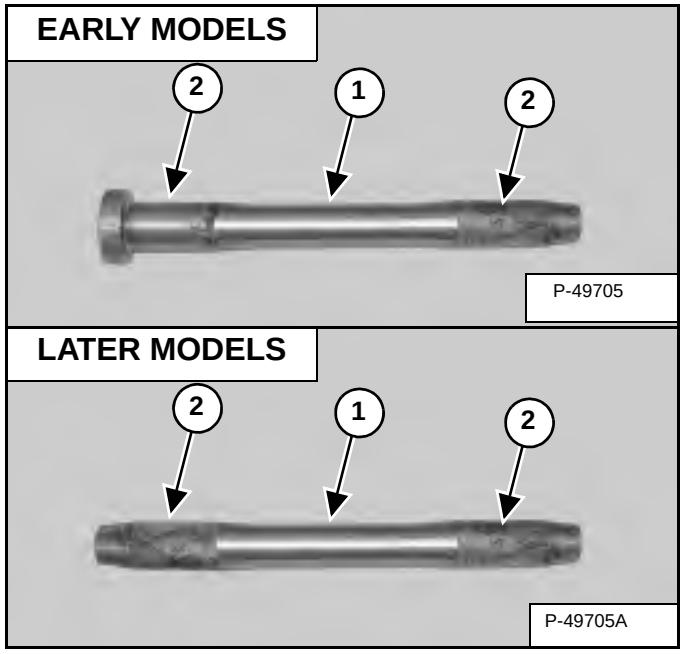


Tilt the Bob-Tach backward until the breaker is slightly off the ground **[Figure 95]**.

Stop the engine.

Exit the loader. (See Entering And Exiting The Loader on Page 60.)

Figure 96



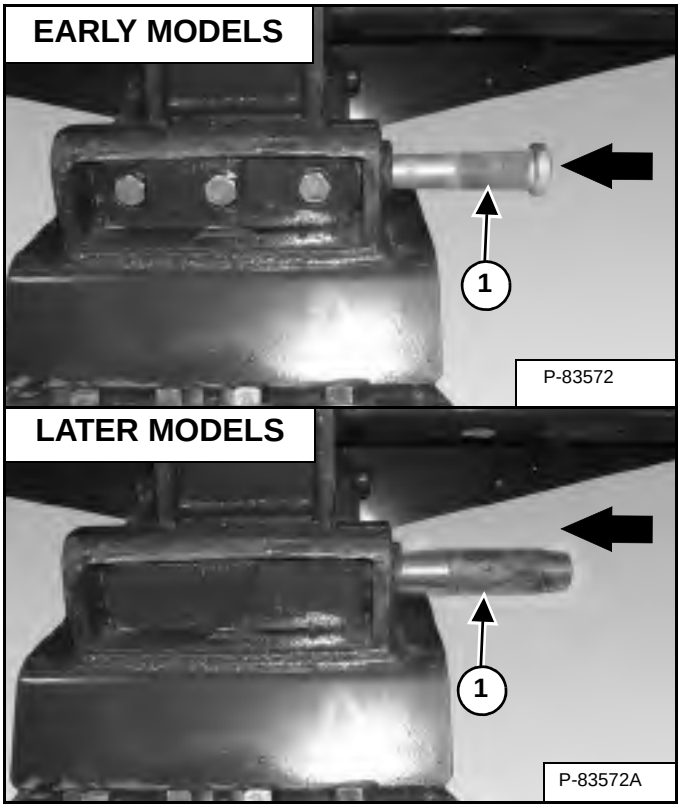
Inspect the pin (Item 1) **[Figure 96]** for wear or damage. Replace the pin as needed.

Apply a light coat of grease to the ends of the pin (Item 2) **[Figure 96]**.

Installation (Cont'd)

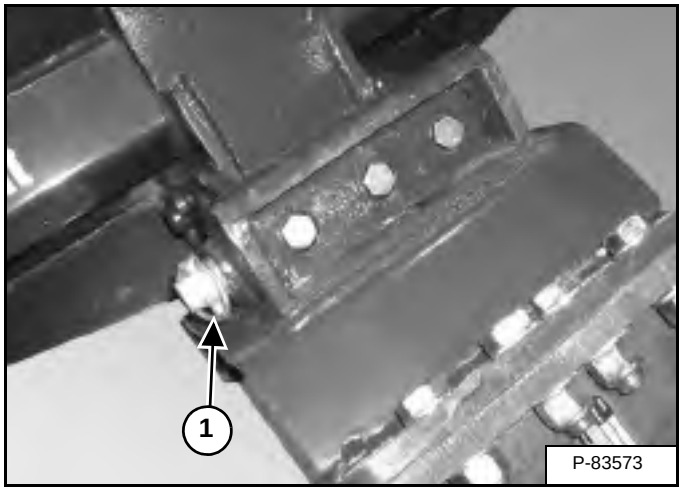
Bob-Tach / X-Change Mounting Frame (Pin-On) (Cont'd)

Figure 97



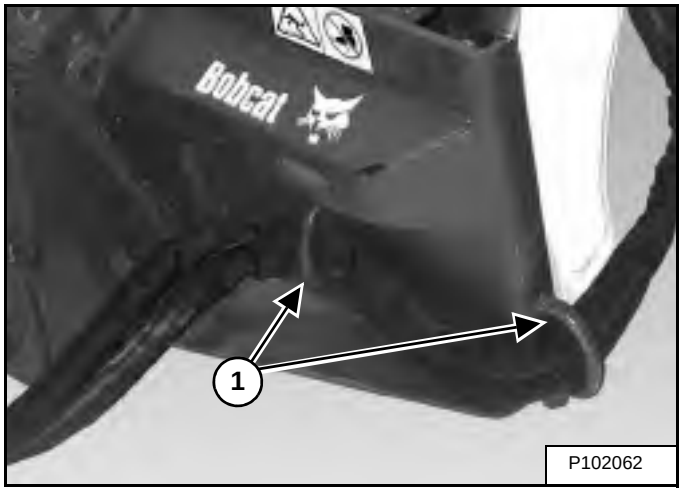
Drive the pin (Item 1) **[Figure 97]** through the breaker mount and X-Change.

Figure 98



Install the retainer pin (Item 1) **[Figure 98]**.

Figure 99



Relieve hydraulic pressure. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Route the hydraulic hoses through the hose guides (Item 1) **[Figure 99]** on the breaker mounting frame.

Connect the hose couplers to the loader quick couplers. (See Hydraulic Quick Couplers on Page 82.)

Turn the hoses so they are not twisted or kinked.

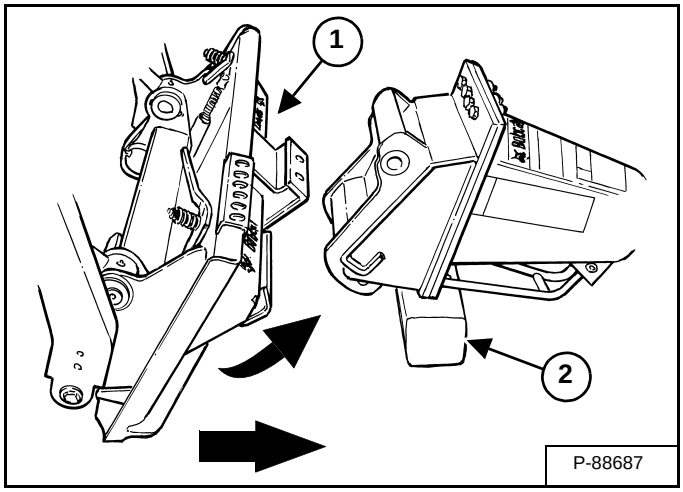
The hoses should route smoothly through the hose guides to the breaker.

The hoses must not contact the tyres or tracks.

Installation (Cont'd)

Bob-Tach / X-Change Mounting Frame (Bolt-On)

Figure 100



Install the breaker mount (Item 1) **[Figure 100]** on the loader.

Place the breaker on a block (Item 2) **[Figure 100]**.

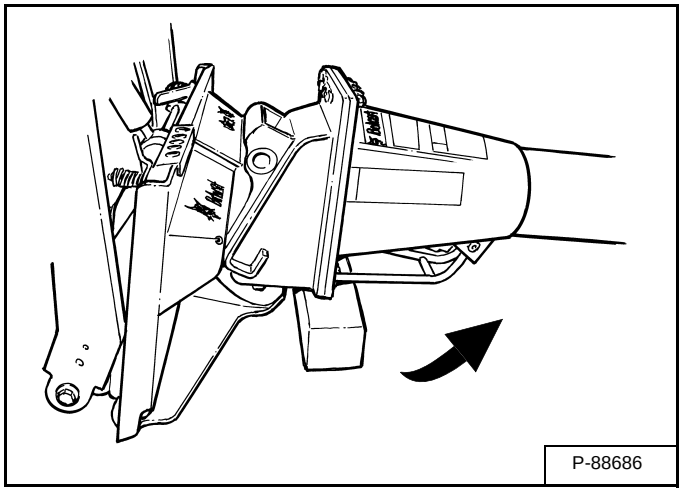
Enter the loader. (See Entering And Exiting The Loader on Page 60.)

Start the engine, press the PRESS TO OPERATE LOADER button and release the parking brake.

Tilt the Bob-Tach forward.

Drive the loader forward until the breaker mount frame engages the breaker **[Figure 100]**.

Figure 101

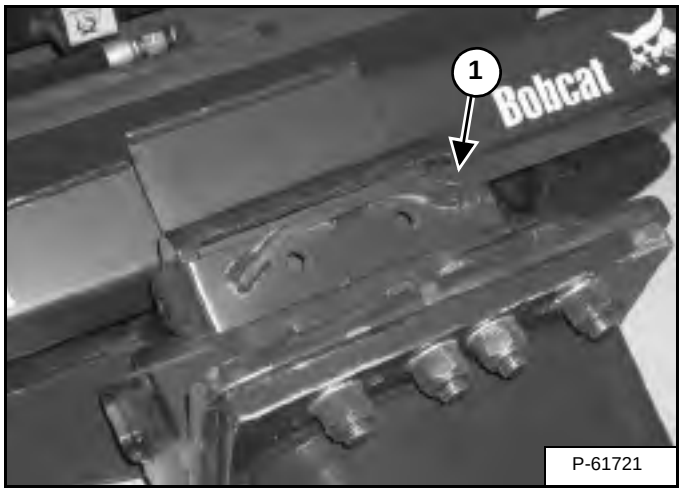


Tilt the Bob-Tach backward until the breaker is slightly off the ground **[Figure 101]**.

Stop the engine.

Exit the loader. (See Entering And Exiting The Loader on Page 60.)

Figure 102

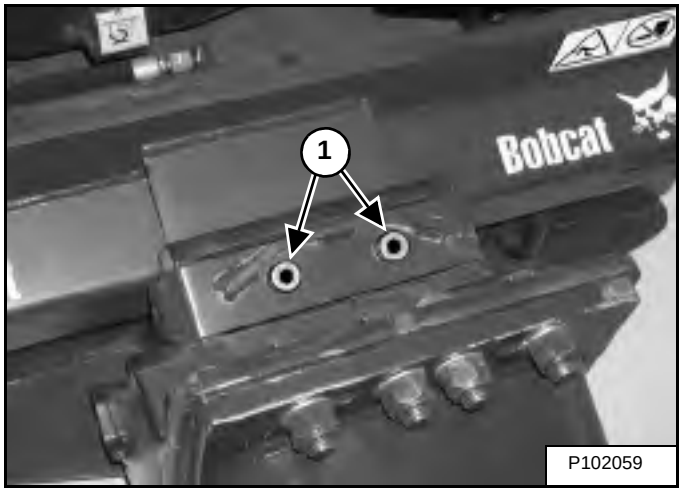


Install the plate (Item 1) **[Figure 102]**.

Installation (Cont'd)

Bob-Tach / X-Change Mounting Frame (Bolt-On) (Cont'd)

Figure 103



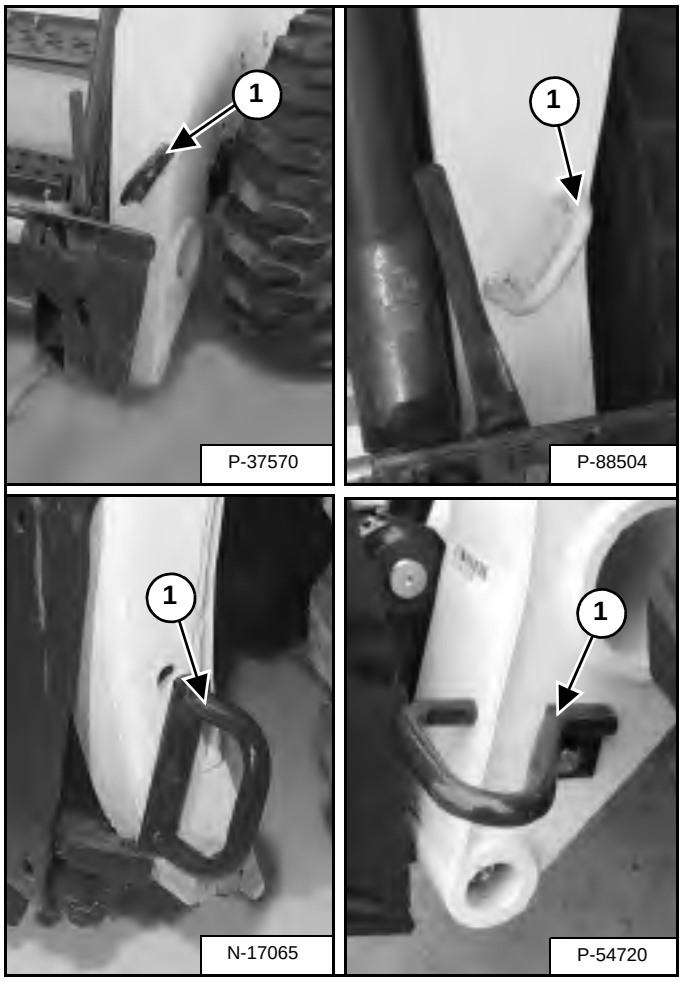
Install the bolts (Item 1) **[Figure 103]**.

Tighten the bolts to 170 - 190 N•m (125 - 140 ft-lb) torque. Retorque the bolts after every eight hours of operation.

NOTE: Do not over torque the bolts (Item 1) [Figure 103]. Over torquing may cause bolt or thread damage or could result in the bolts breaking during operation.

Hose Routing (Earlier Version)

Figure 104



Route hoses through hose guide (Item 1) **[Figure 104]** and connect quick couplers to the loader. (See For First Time Installation on Page 81.)

NOTE: Hose guide styles vary between loader models. Hose guides are not included with the attachment. See your Bobcat dealer for available hose guide kits.

Installation (Cont'd)

Pin-On X-Change On Backhoe

Position the breaker so the hydraulic hoses will be toward the loader during operation and are facing up.

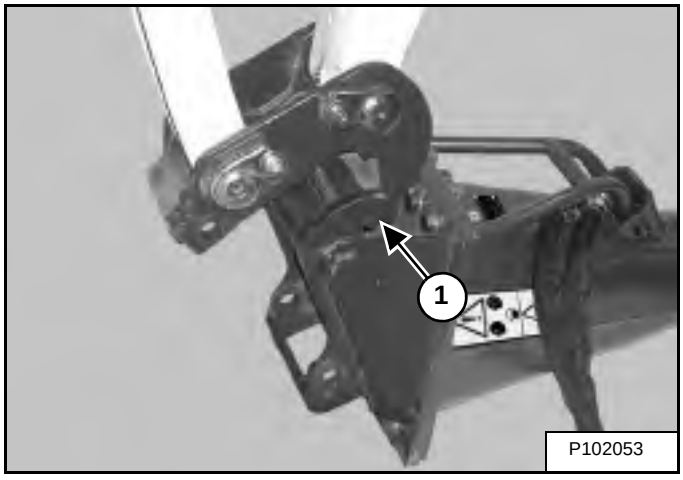
Enter the loader, fasten the seat belt and start the engine. (See Entering And Exiting The Loader on Page 60.)

See the loader's Operation & Maintenance Manual to correctly operate the loader.

Fully retract the bucket cylinder.

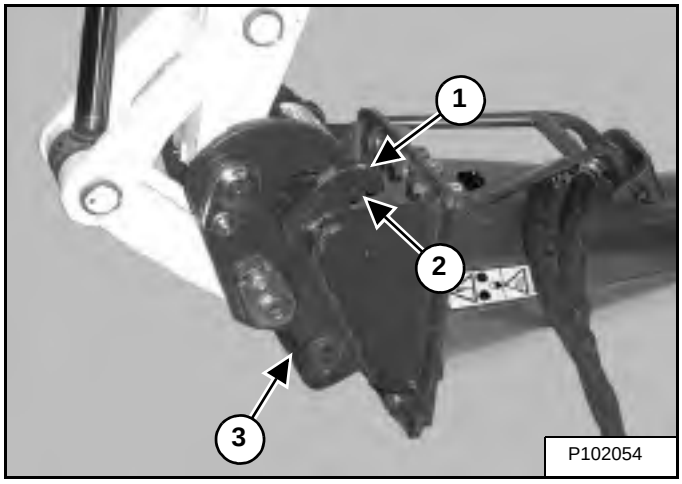
Move the arm toward the breaker mounting frame.

Figure 105



Raise the boom until the pins (Item 1) **[Figure 105]** engage the hooks on the mounting frame.

Figure 106



Raise the boom and extend the bucket cylinder until the X-Change contacts the attachment back **[Figure 106]**.

With the arm vertical, lower the boom until the hooks (Item 1) of the mounting frame disengage the pins (Item 2) of the X-Change and the plate (Item 3) **[Figure 106]** fully engages in the mounting frame.

⚠ WARNING

Keep all bystanders 6 m (20 ft) away from equipment when operating. Contact with moving parts, a trench cave-in or flying objects can cause injury or death.

W-2119-0910

Stop the engine.

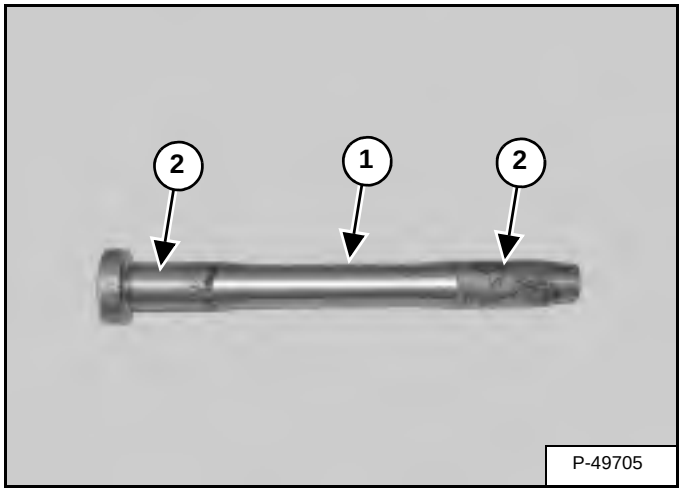
Relieve hydraulic pressure. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the loader. (See Entering And Exiting The Loader on Page 60.)

Installation (Cont'd)

Pin-On X-Change On Backhoe (Cont'd)

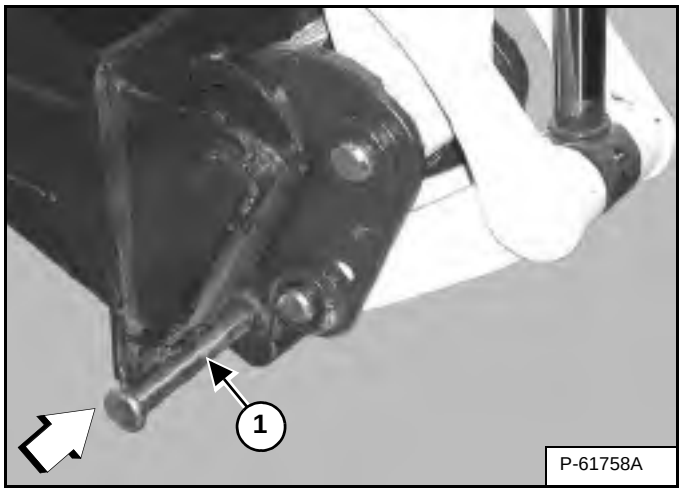
Figure 107



Inspect the pin (Item 1) **[Figure 107]** for wear or damage. Replace the pin as needed.

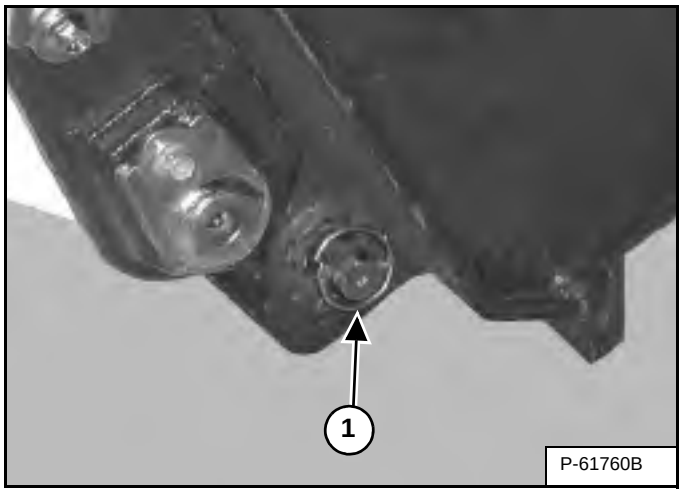
Apply a light coat of grease to the ends of the pin (Item 2) **[Figure 107]**.

Figure 108



Drive the pin (Item 1) **[Figure 108]** through the breaker mount and X-Change.

Figure 109

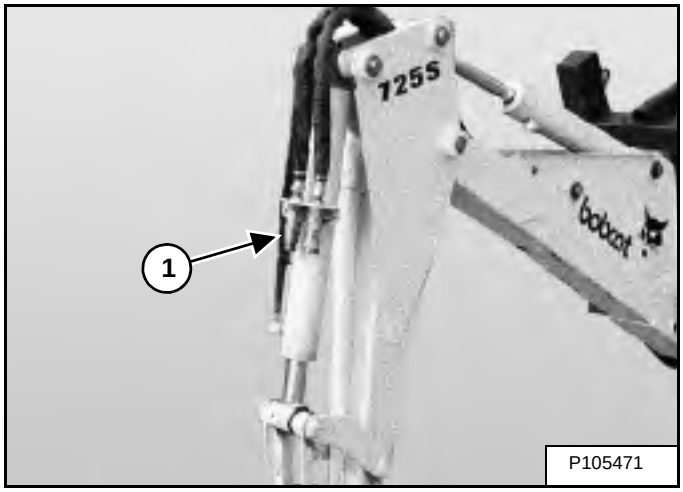


Install the retainer pin (Item 1) **[Figure 109]**.

Installation (Cont'd)

Pin-On X-Change On Backhoe (Cont'd)

Figure 110



Route the hoses up to the auxiliary couplers (Item 1) **[Figure 110]**. (See Hydraulic Quick Couplers on Page 82.)

Relieve the auxiliary hydraulic pressure. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Turn the hoses so the hoses are not twisted or kinked. The hoses should route smoothly to the breaker.

Check for proper installation.

Lift the attachment and fully extend and retract the bucket cylinder.

Bolt-On X-Change

WARNING

AVOID INJURY OR DEATH

Never use attachments or buckets which are not approved by Bobcat Company. Buckets and attachments for safe loads of specified densities are approved for each model. Unapproved attachments can cause injury or death.

W-2052-0907

Place the breaker on blocks.

Figure 111

Position the breaker so the hydraulic hoses will be toward the loader during operation and are facing up **[Figure 111]**.

Enter the loader. (See Entering And Exiting The Loader on Page 60.)

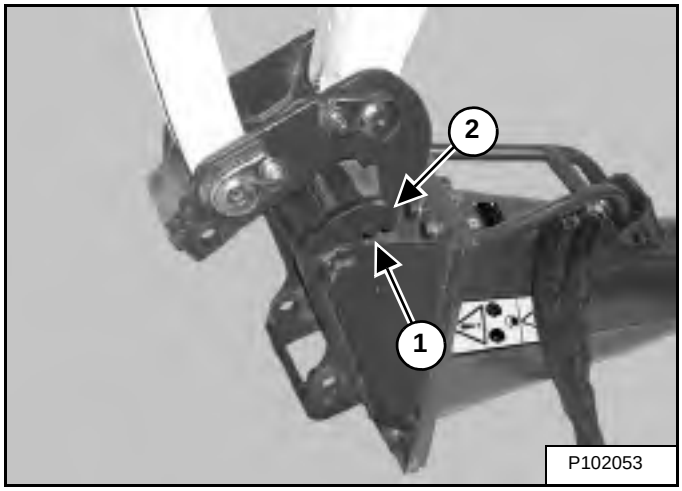
See the loader's Operation & Maintenance Manual to correctly operate the loader.

Fully retract the bucket cylinder.

Installation (Cont'd)

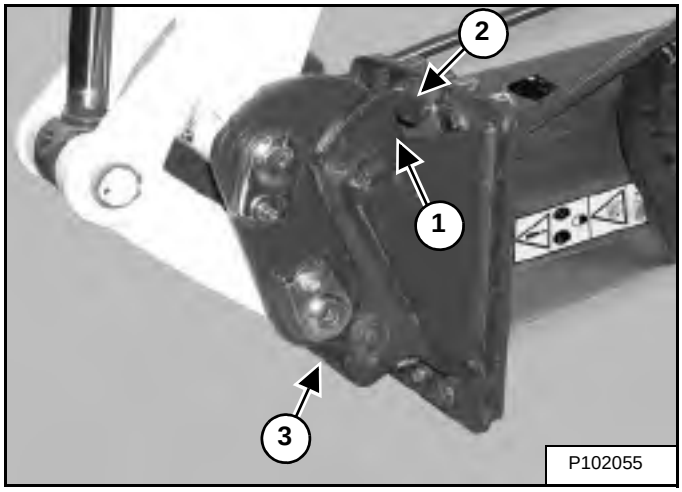
Bolt-On X-Change On Backhoe (Cont'd)

Figure 112



Move the arm toward the breaker. Raise the boom until the pins (Item 1) engage the hooks (Item 2) **[Figure 112]** on the mount.

Figure 113



Raise the boom, and extend the bucket cylinder until the X-Change contacts the attachment back **[Figure 113]**.

With the arm vertical, lower the boom until the hooks (Item 1) of the breaker disengage the pins (Item 2) of the X-Change and the plate (Item 3) **[Figure 113]** fully engages in the mounting frame.

Stop the engine.

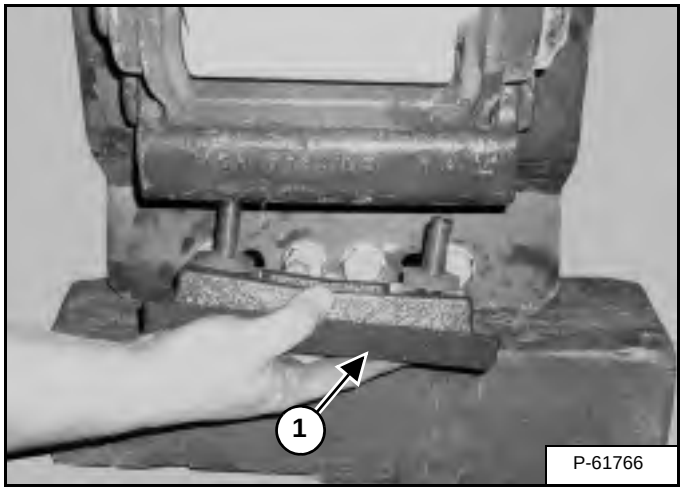
Relieve hydraulic pressure. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the loader. (See Entering And Exiting The Loader on Page 60.)

Installation (Cont'd)

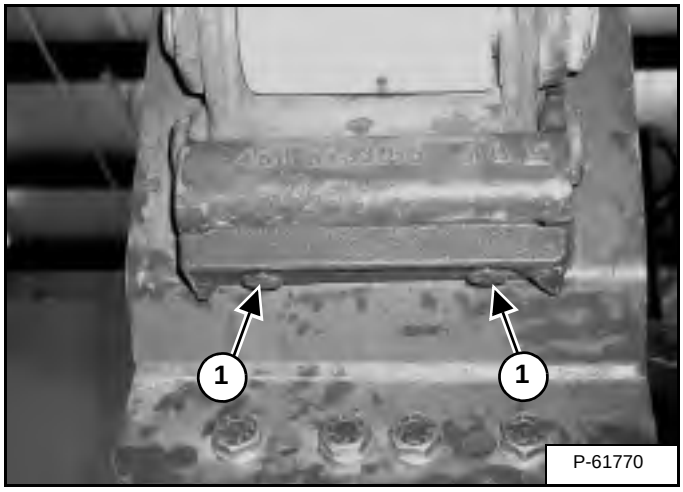
Bolt-On X-Change On Backhoe (Cont'd)

Figure 114



Install the plate (Item 1) **[Figure 114]** into the X-Change.

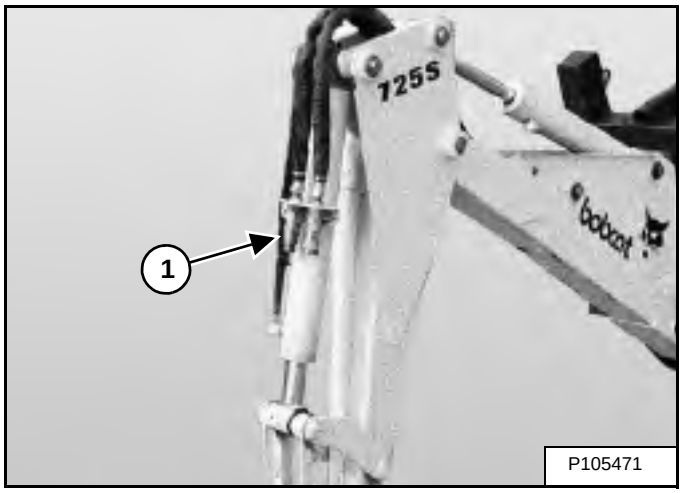
Figure 115



Install the two bolts (Item 1) **[Figure 115]**. Tighten the bolts to 170 - 190 N•m (125 - 140 ft-lb) torque. Retorque the bolts after every eight hours of operation.

NOTE: Do Not over torque the bolts (Item 1) [Figure 115]. Over torquing may cause bolt or thread damage or could result in the bolts breaking during operation.

Figure 116



Route the hoses up to the auxiliary couplers (Item 1) **[Figure 116]**. (See Hydraulic Quick Couplers on Page 82.)

Hydraulic pressure in the auxiliary hydraulic system can make it difficult to connect or disconnect the auxiliary hydraulic lines from the quick couplers.

Relieve auxiliary hydraulic pressure. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Turn the hoses so they are not twisted or kinked. The hoses should route smoothly to the breaker.

Check for proper installation.

Lift the attachment and fully extend and retract the bucket cylinder.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Quick Coupler On Backhoe (Klac™ System)

NOTE: Installation and removal of the bucket is shown. The procedure is the same for other attachments. Disconnect any hydraulic lines that are operated by hydraulic power before removing any attachments (breaker, auger etc.).

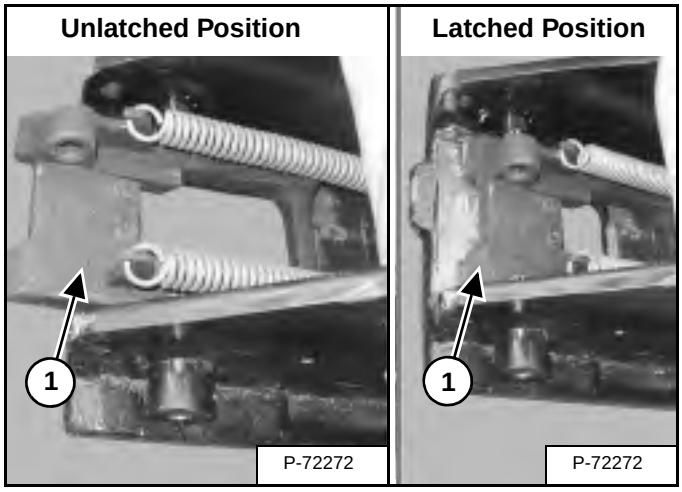
⚠ WARNING

AVOID INJURY OR DEATH

Never use attachments or buckets which are not approved by Bobcat Company. Buckets and attachments for safe loads of specified densities are approved for each model. Unapproved attachments can cause injury or death.

W-2052-0907

Figure 117



Fully retract the bucket cylinder.

Stop the engine and exit the loader. (See Entering And Exiting The Loader on Page 60.)

Inspect the quick coupler to make sure the latch is in the unlatched position (Item 1) **[Figure 117]**.

If in the latched position, see **[Figure 118]** for additional information.

If the latch is in the unlatched position, proceed to **[Figure 119]**.

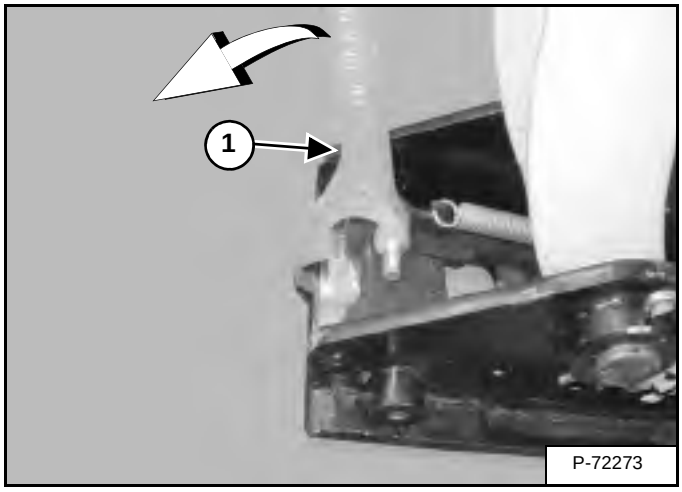
⚠ WARNING

AVOID INJURY

Keep fingers and hands out of pinch points when latching and unlatching the attachment quick coupler.

W-2541-1106

Figure 118

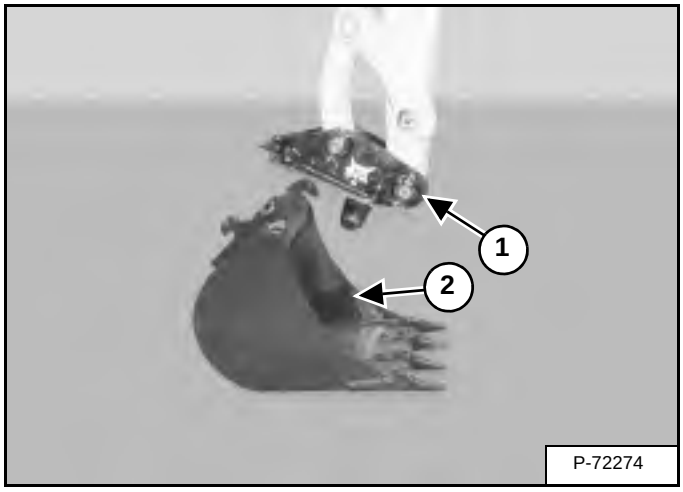


To unlatch the quick coupler, install the tool (Item 1) **[Figure 118]** and pull the handle. The latch will move completely forward. The latch will lock in the unlatched position.

Installation (Cont'd)

Quick Coupler On Backhoe (Klac™ System) (Cont'd)

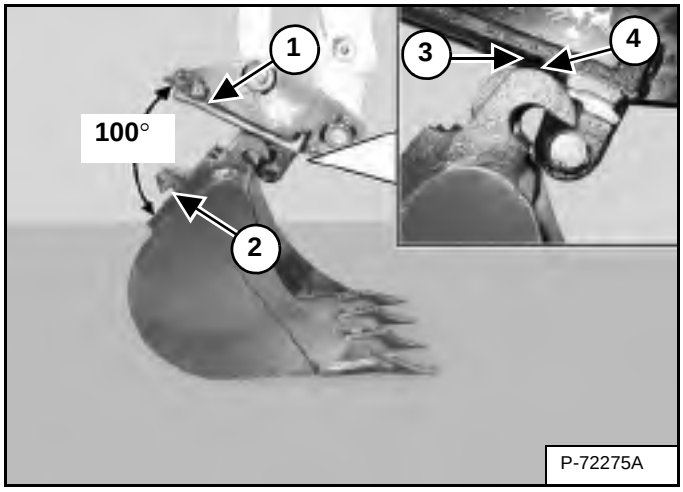
Figure 119



Enter the loader, fasten the seat belt and start the engine. (See Entering And Exiting The Loader on Page 60.)

Position the quick coupler (Item 1) to the attachment (Item 2) **[Figure 119]**.

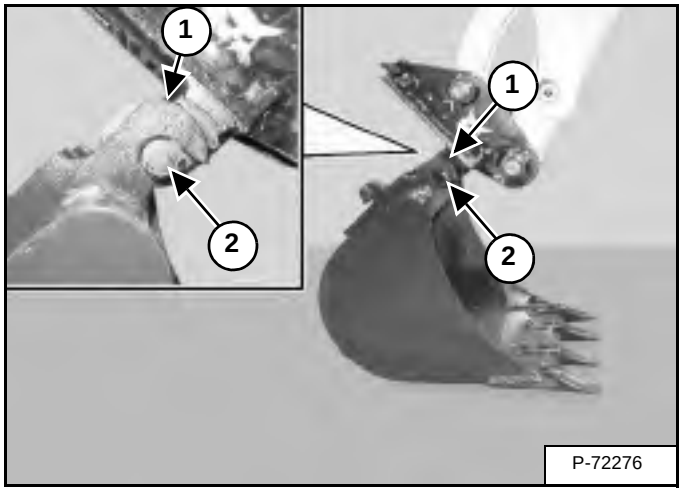
Figure 120



There must be at least 100° between the quick coupler surface (Item 1) and the attachment mounting surface (Item 2) **[Figure 120]**. Extend the arm out to get the required angle for proper installation.

NOTE: There must be proper clearance (100° minimum) so that there is not an interference between the hook (Item 3) and the quick coupler (Item 4) [Figure 120]. Possible damage to the attachment hooks or the quick coupler could occur without proper clearance.

Figure 121

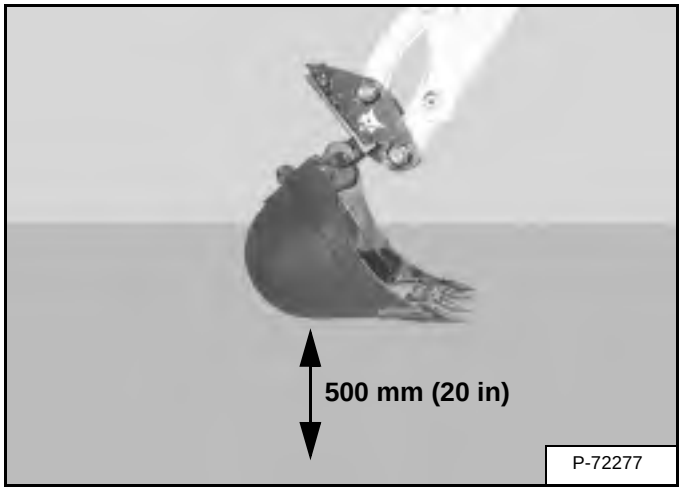


Raise the boom and extend the arm until the hooks of the attachment (Item 1) engage the pins (Item 2) **[Figure 121]** of the quick coupler.

Installation (Cont'd)

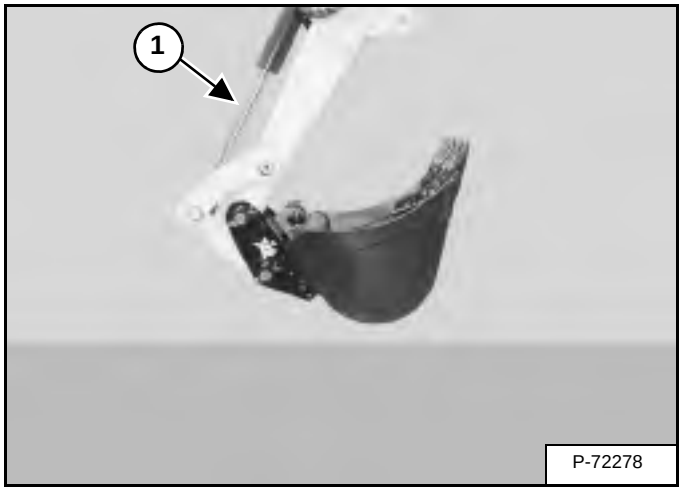
Quick Coupler On Backhoe (Klac™ System) (Cont'd)

Figure 122



Raise the boom until there is approximately 500 mm (20 in) of clearance between the bottom of the attachment and the ground **[Figure 122]**.

Figure 123

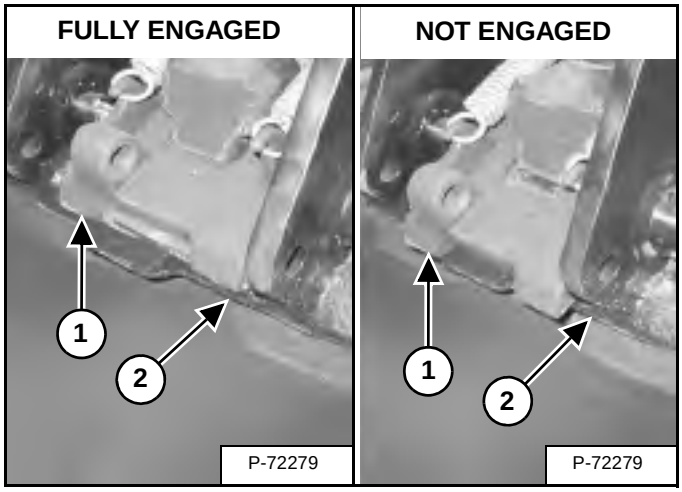


Extend the bucket cylinder (Item 1) **[Figure 123]** fully.

Lower the attachment until it is flat on the ground.

Stop the engine and exit the loader. (See Entering And Exiting The Loader on Page 60.)

Figure 124



Visually inspect the quick coupler latch (Item 1) to the bucket mount (Item 2) **[Figure 124]**. The latch must be fully engaged.

⚠ WARNING

AVOID INJURY

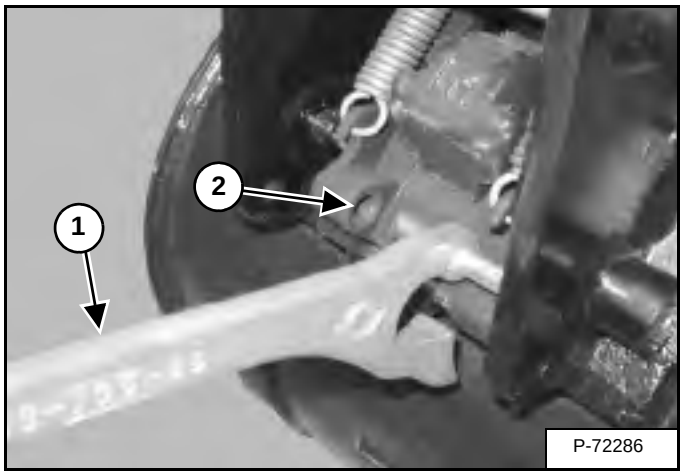
Keep fingers and hands out of pinch points when latching and unlatching the attachment quick coupler.

W-2541-1106

Installation (Cont'd)

Quick Coupler On Backhoe (Klac™ System) (Cont'd)

Figure 125



If the latch is not engaged, install the tool (Item 1) in the hole (Item 2) **[Figure 125]** of the quick coupler and push down to unlatch the quick coupler. Remove the tool.

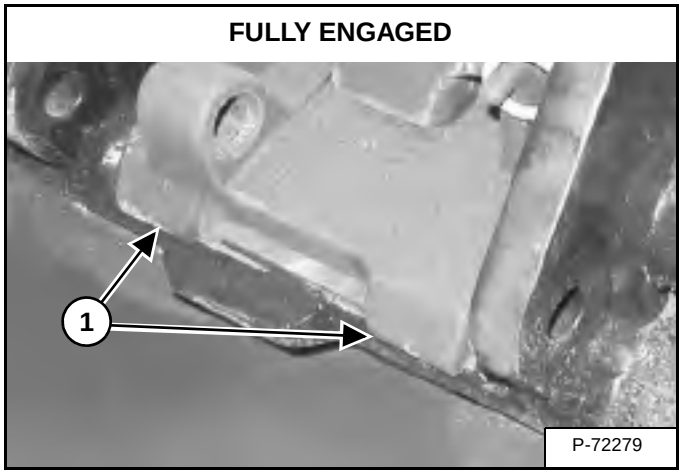
Enter the loader. (See Entering And Exiting The Loader on Page 60.)

Fasten the seat belt and start the engine.

Raise the attachment 500 mm (20 in) off of the ground and fully extend the bucket cylinder. Lower the attachment until it is flat on the ground.

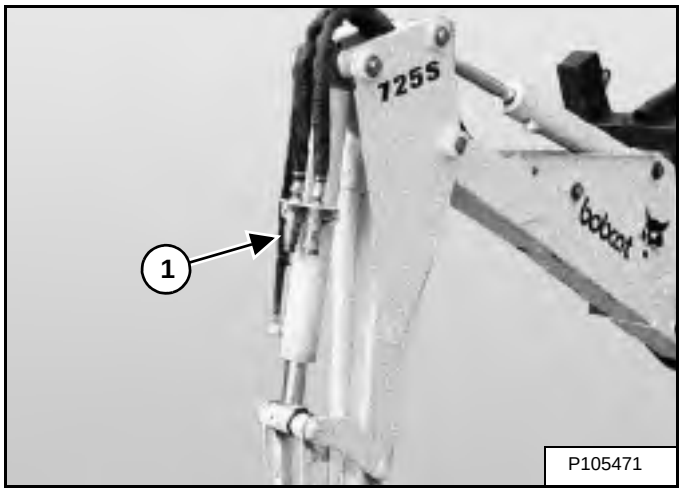
Stop the engine and exit the loader. (See Entering And Exiting The Loader on Page 60.)

Figure 126



Again, visually inspect the quick coupler to make sure the latch (Item 1) **[Figure 126]** is fully engaged. If it is not fully engaged, remove the attachment and inspect both the quick coupler and the attachment for damage or debris.

Figure 127



Route the hoses up to the auxiliary couplers (Item 1) **[Figure 127]**. (See Hydraulic Quick Couplers on Page 82.)

Hydraulic pressure in the auxiliary hydraulic system can make it difficult to connect or disconnect the auxiliary hydraulic lines from the quick couplers.

Relieve auxiliary hydraulic pressure. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Turn the hoses so they are not twisted or kinked. The hoses should route smoothly to the breaker.

Check for proper installation.

Lift the attachment and fully extend and retract the bucket cylinder.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

For First Time Installation

New attachments and new loaders are factory equipped with flush face couplers. If installing an attachment equipped with poppet style couplers, the attachment couplers will have to be changed to match the loader. See your Bobcat dealer for parts information.

IMPORTANT

- **Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.**
- **Contain and dispose of any oil leakage in an environmentally safe manner.**

I-2278-0608

With the loader engine off and using the hose guides (if equipped), route the attachment hydraulic hoses to the loader. Connect the attachment hydraulic quick couplers to the loader couplers. (See Hydraulic Quick Couplers on Page 82.)

Check that the attachment hydraulic hoses are not twisted or contacting any moving parts of the loader or attachment.

NOTE: It may be necessary to loosen the quick couplers on the attachment hydraulic hoses to remove any twists in the hoses.

⚠ 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

Loosen the quick coupler connections on the attachment hydraulic hoses while connected to the loader. Do not remove the quick couplers.

Rotate the attachment hydraulic hoses as needed so the hoses are not twisted or contacting any moving parts of the loader or attachment.

With the twist(s) removed from the hydraulic hoses, tighten the attachment quick coupler connections while the couplers are still connected to the loader. This will help hold the hydraulic hoses in position while tightening.

Tighten the quick couplers connections to 63 N•m (46 ft-lb) torque before starting the loader.

Enter the loader. (See Entering And Exiting The Loader on Page 60.)

Start the engine, press the PRESS TO OPERATE LOADER button and release the parking brake.

Engage auxiliary hydraulics. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

⚠ WARNING

AVOID INJURY OR DEATH

Diesel fuel or hydraulic fluid under pressure can penetrate skin or eyes, causing serious injury or death. Fluid leaks under pressure may not be visible. Use a piece of cardboard or wood to find leaks. Do not use your bare hand. Wear safety goggles. If fluid enters skin or eyes, get immediate medical attention from a doctor familiar with this injury.

W-2072-EN-0909

Check the attachment hydraulic quick coupler connections for leaks.

Hydraulic Quick Couplers

IMPORTANT

- **Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.**
- **Contain and dispose of any oil leakage in an environmentally safe manner.**

I-2278-0608

New attachments and new loaders are factory equipped with flush face couplers. If installing an attachment equipped with poppet style couplers, the attachment couplers will have to be changed to match the loader. See your Bobcat dealer for parts information.

NOTE: Make sure the quick couplers are fully engaged. If the quick couplers do not fully engage, check to see that the couplers are the same size and type.

Figure 128

EARLIER MODELS

Figure 129

LATER MODELS

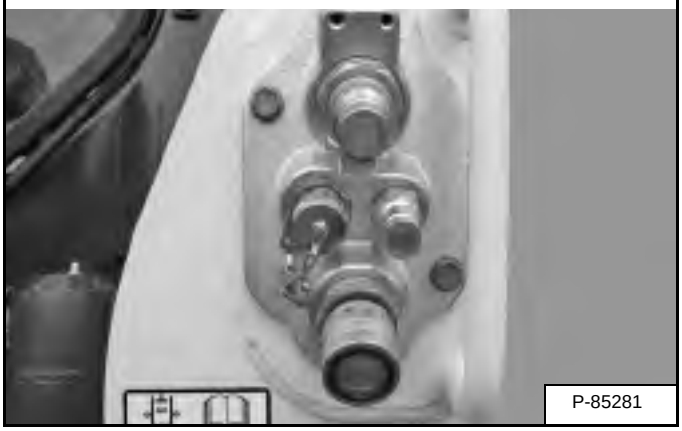
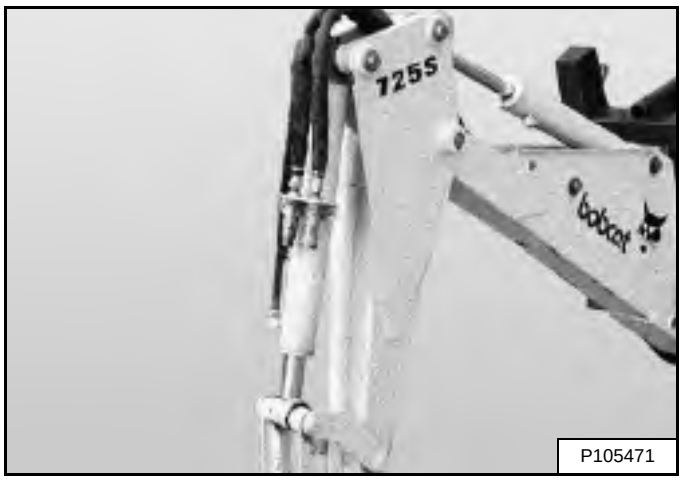


Figure 130



⚠ WARNING

AVOID BURNS

Hydraulic fluid, tubes, fittings and quick couplers can get hot when running machine and attachments. Be careful when connecting and disconnecting quick couplers.

W-2220-0396

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Hydraulic Quick Couplers (Cont'd)

To Connect:

Remove any dirt or debris from the surface of both the male and female couplers, and from the outside diameter of the male coupler. Visually check the couplers for corroding, cracking, damage, or excessive wear. If any of these conditions exist, the coupler(s) must be replaced **[Figure 128]**, **[Figure 129]** or **[Figure 130]**.

Install the male coupler into the female coupler. Full connection is made when the ball release sleeve slides forward on the female coupler **[Figure 128]**, **[Figure 129]** or **[Figure 130]**.

NOTE: Check that the attachment hydraulic hoses are not twisted or contacting any moving parts of the loader or attachment. (See For First Time Installation on Page 81.) for proper adjustment.

To Disconnect:

Relieve hydraulic pressure. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Push the couplers together, retract the sleeve on the female coupler until the couplers disconnect.

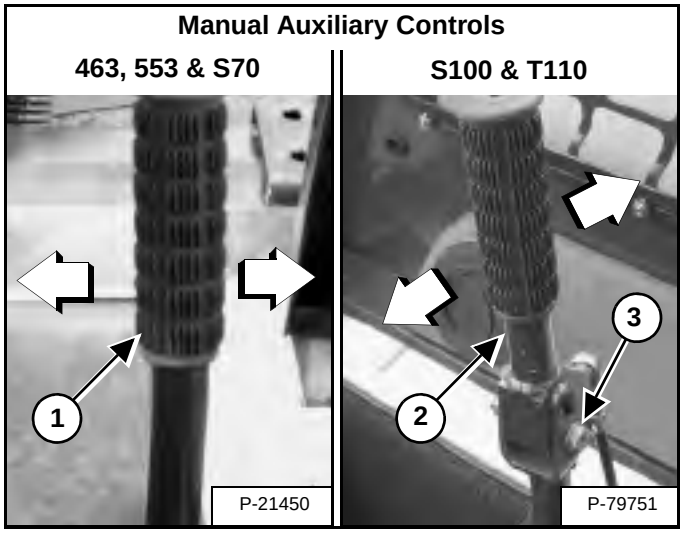
Control Functions

Enter the loader. Fasten the seat belt, lower the seat bar and start the engine. Release the parking brake.

Engage auxiliary hydraulics. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

NOTE: The auxiliary hydraulics must be activated prior to attachment operation.

Figure 131



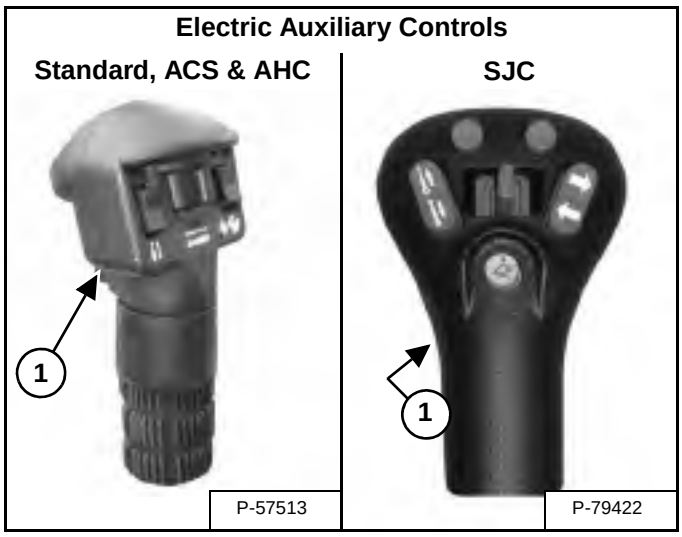
To start the breaker, move the right steering lever (Item 1) or the right steering lever handle (Item 2) **[Figure 131]** to the right.

For continuous hydraulic flow, move the right steering lever (Item 1) or right steering handle (Item 2) **[Figure 131]** fully to the right.

To stop the breaker, move the right steering lever (Item 1) or the right steering lever handle (Item 2) **[Figure 131]** to the centre position.

NOTE: Remove the auxiliary control lockout bolt and nut (Item 3) [Figure 131] (S100 and T110) before using the auxiliary control for the first time.

Figure 132



Continuous Flow

Push the front button (Item 1) **[Figure 132]** on the right steering lever once for continuous flow to the front auxiliary quick couplers (hydraulic breaker starts).

Push the button (Item 1) **[Figure 132]** a second time to disengage continuous flow (detent) (hydraulic breaker stops).

NOTE: See the loader's Operation & Maintenance Manual for more information on operation of the Auxiliary Hydraulic System for your model loader.

Operation With The Loader

NOTE: Special Application Kits are available for the loaders. Special Application Kits must be used in applications where falling debris is present. See your Bobcat dealer for availability.

⚠ WARNING

AVOID INJURY OR DEATH

- **Operator and bystanders must wear goggles, hard hat and noise protection when the breaker is in operation.**
- **DO NOT demolish overhead materials or ceilings.**
- **Keep all bystanders 6 m (20 ft) away from equipment when operating.**

W-2627-0910

For the first time use on a rebuilt breaker, use low engine rpm and feather the hydraulics to fill the internal passages of the breaker with hydraulic fluid. If the breaker is used without first flooding the hydraulic passages, internal damage may result.

In cold weather conditions, warm the loader hydraulic fluid to operating temperature before operating the breaker.

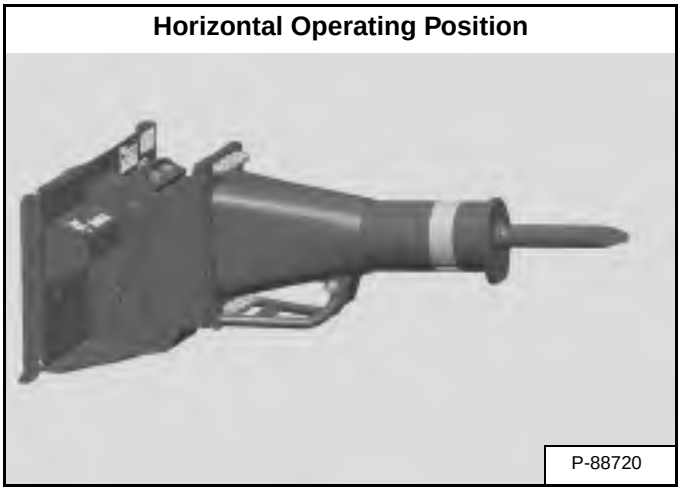
Figure 133

Vertical Operating Position

When operating in the vertical position **[Figure 133]**, on flat material, keep the tool vertical or curled back a small amount to direct the impact force downward and slightly toward the loader.

Figure 134

Horizontal Operating Position



When operating in the horizontal position **[Figure 134]**, work near the edge.

Operation With The Loader (Cont'd)

Tips / Recommendations

⚠ WARNING

AVOID INJURY OR DEATH

- **Operator and bystanders must wear goggles, hard hat and noise protection when the breaker is in operation.**
- **DO NOT demolish overhead materials or ceilings.**
- **Keep all bystanders 6 m (20 ft) away from equipment when operating.**

W-2627-0910

IMPORTANT

Avoid Blank (No Load) Firing. Disengage auxiliary hydraulics when breaker is not in use.

I-2205-0800

IMPORTANT

Do not use the breaker bit as a pry bar to move broken material. Excess prying force can cause damage to the breaker or machine.

I-2074-0409

Use the following procedures as a guide when operating the breaker:

NOTE: With experience, the operator will become more effective at breaking.

- Break off small pieces to prevent damage to the equipment from falling material.
- Keep the tool perpendicular to the work surface.
- Apply penetrating force by raising the front of the loader slightly off the ground.
- Apply penetrating force for no more than 15 seconds.
- Move the tool to a different location whenever the tool penetrates but does not crack the material.
- Strike the material several places along a line where you want it to break.
- Deep tool penetration is not necessary, 152 - 254 mm (6 - 10 in) is usually enough to break the material.
- Concrete reinforced with rebar will hold together when concrete is broken. Use a chisel point tool to cut the rebar.
- Excessive sideways force can cause tool binding, poor breaking and wear of the tool shank, cylinders and breaker attachment.
- Always direct the force toward the point of the tool in contact with the material.

Removal

Hand Lever Bob-Tach

Lower the lift arms and put the attachment flat on the ground. Lower or close the hydraulic equipment (if equipped).

NOTE: In muddy conditions or to prevent the attachment from freezing to the ground, put the attachment on planks or blocks before removing the attachment from the loader.

Stop the engine and release auxiliary hydraulic pressure (if applicable). (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the loader. (See Entering And Exiting The Loader on Page 60.)

⚠ WARNING

AVOID INJURY OR DEATH

Before you leave the operator's seat:

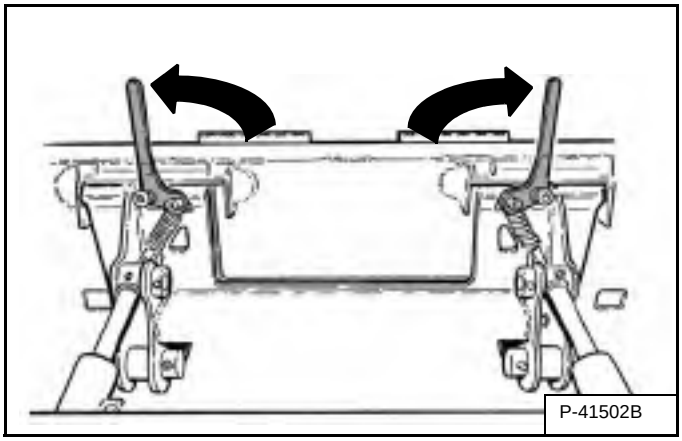
- **Lower the lift arms and put the attachment flat on the ground.**
- **Stop the engine.**
- **Engage the parking brake.**
- **Raise the seat bar.**
- **Move all controls to the NEUTRAL / LOCKED position to make sure the lift, tilt and traction drive functions are deactivated.**

The seat bar system must deactivate these functions when the seat bar is up. See your Bobcat dealer for service if controls do not deactivate.

W-2463-1110

Disconnect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 82.)

Figure 135



Pull the Bob-Tach levers up **[Figure 135]** until they are fully raised (wedges fully raised).

⚠ WARNING

Bob-Tach levers have spring tension. Hold lever tightly and release slowly. Failure to obey warning can cause injury.

W-2054-1285

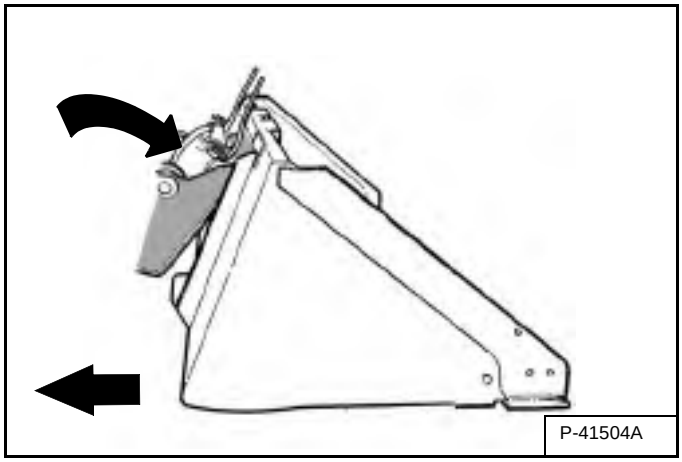
Enter the loader. (See Entering And Exiting The Loader on Page 60.)

Start the engine, press the PRESS TO OPERATE LOADER button and release the parking brake.

Removal (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 136



Tilt the Bob-Tach forward and drive the loader backward, away from the attachment **[Figure 136]**.

Power Bob-Tach

Lower the lift arms and put the attachment flat on the ground. Lower or close the hydraulic equipment (if equipped).

NOTE: In muddy conditions or to prevent the attachment from freezing to the ground, put the attachment on planks or blocks before removing the attachment from the loader.

Stop the engine and release auxiliary hydraulic pressure (if applicable). (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the loader. (See Entering And Exiting The Loader on Page 60.)

⚠ WARNING

AVOID INJURY OR DEATH

Before you leave the operator's seat:

- **Lower the lift arms and put the attachment flat on the ground.**
- **Stop the engine.**
- **Engage the parking brake.**
- **Raise the seat bar.**
- **Move all controls to the NEUTRAL / LOCKED position to make sure the lift, tilt and traction drive functions are deactivated.**

The seat bar system must deactivate these functions when the seat bar is up. See your Bobcat dealer for service if controls do not deactivate.

W-2463-1110

Disconnect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 82.)

Enter the loader. (See Entering And Exiting The Loader on Page 60.)

Start the engine, press the PRESS TO OPERATE LOADER button and release the parking brake.

Removal (Cont'd)

Power Bob-Tach (Cont'd)

Figure 137

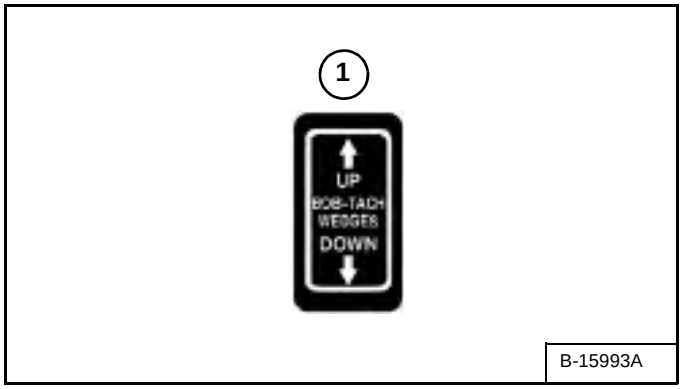
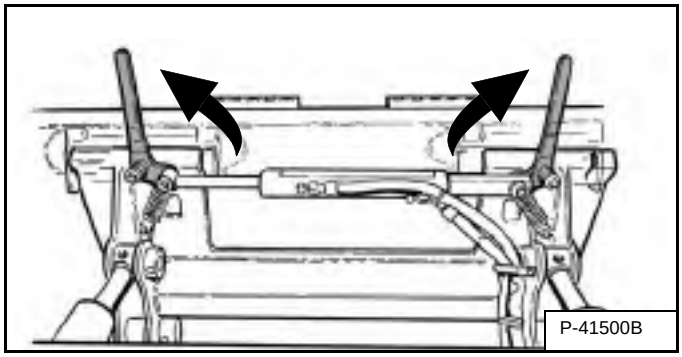
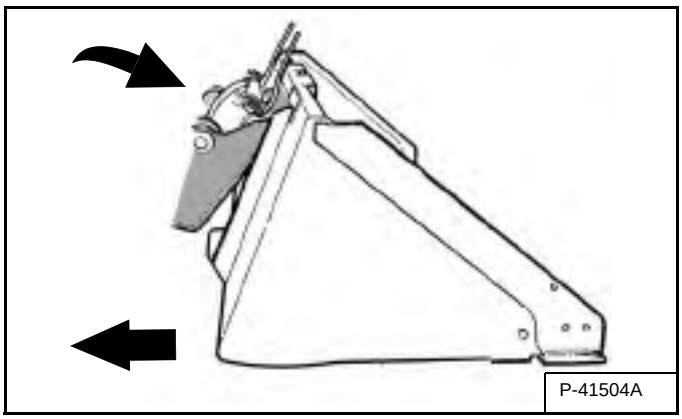


Figure 138



Push and hold the BOB-TACH "WEDGES UP" switch (Item 1) **[Figure 137]** (Front Panel) until the levers **[Figure 138]** are fully raised (wedges fully raised).

Figure 139



Tilt the Bob-Tach forward and drive the loader backward, away from the attachment **[Figure 139]**.

NOTE: The Power Bob-Tach system has continuous pressurised hydraulic fluid to keep the wedges in the engaged position and prevent attachment disengagement. Because the wedges can slowly lower, the operator may need to reactivate the switch (BOB-TACH "WEDGES UP") when removing an attachment to be sure both wedges are fully raised.

Removal (Cont'd)

Bob-Tach / X-Change Mounting Frame (Pin-On)

Park the loader on a flat and level surface.

Lower the breaker fully to the ground.

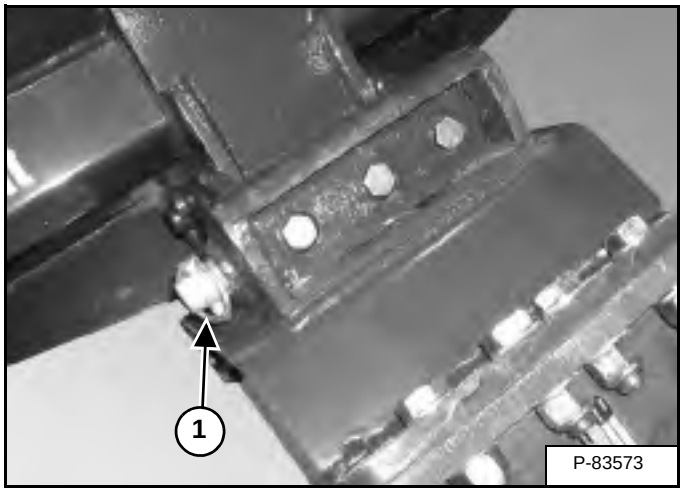
Stop the engine.

Relieve hydraulic pressure. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the loader. (See Entering And Exiting The Loader on Page 60.)

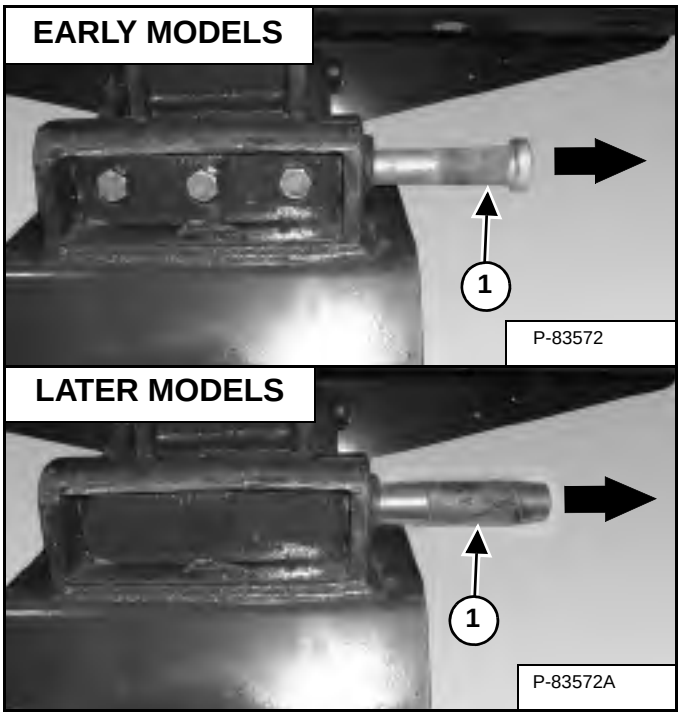
Disconnect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 82.)

Figure 140



Remove the retainer pin (Item 1) **[Figure 140]**.

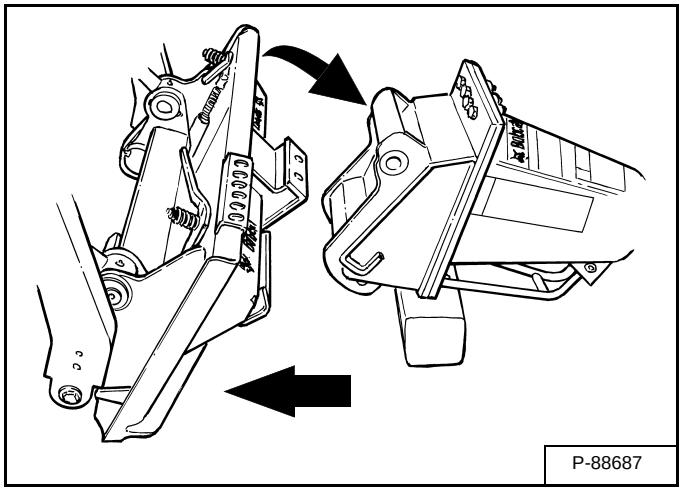
Figure 141



Drive the pin (Item 1) **[Figure 141]** out of the breaker and X-Change Mount.

Move to the operator's position and start the engine.

Figure 142



Tilt the Bob-Tach forward while backing the loader away from the breaker **[Figure 142]**.

NOTE: In muddy conditions or to prevent the attachment from freezing to the ground, put the attachment on planks or blocks before removing the attachment from the loader.

Removal (Cont'd)

Bob-Tach / X-Change Mounting Frame (Bolt-On)

Park the loader on a flat and level surface.

Lower the breaker fully to the ground.

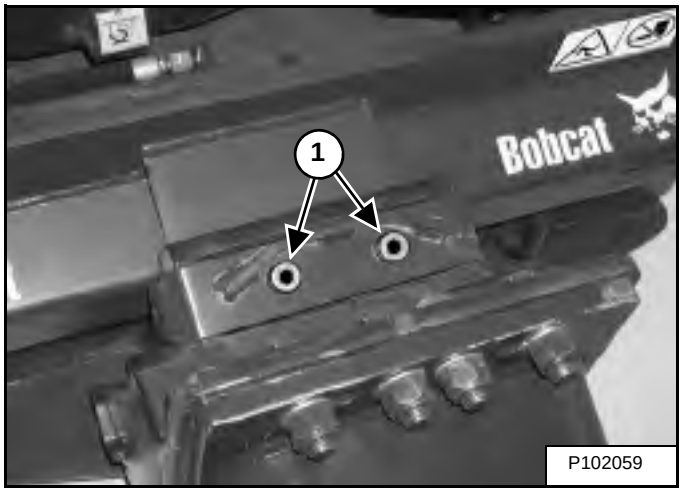
Stop the engine.

Relieve hydraulic pressure. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the loader. (See Entering And Exiting The Loader on Page 60.)

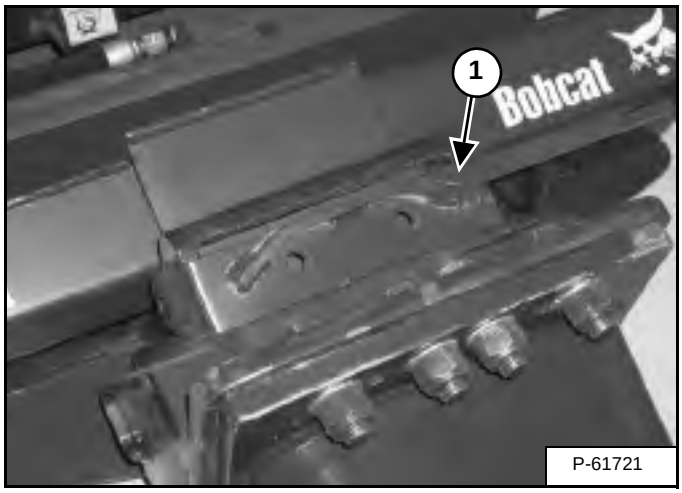
Disconnect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 82.)

Figure 143



Remove the bolts (Item 1) **[Figure 143]**.

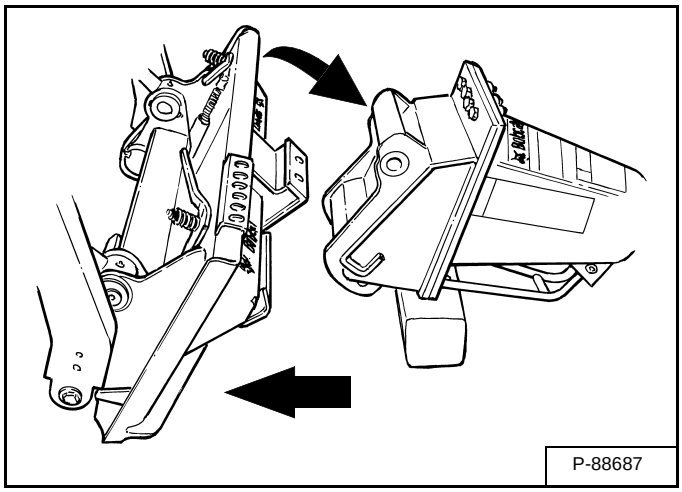
Figure 144



Remove the plate (Item 1) **[Figure 144]**.

Move to the operator's position and start the engine.

Figure 145



Tilt the Bob-Tach forward while backing the loader away from the breaker **[Figure 145]**.

NOTE: In muddy conditions or to prevent the attachment from freezing to the ground, put the attachment on planks or blocks before removing the attachment from the loader.

Removal (Cont'd)

Pin-On X-Change

Select a flat and level surface.

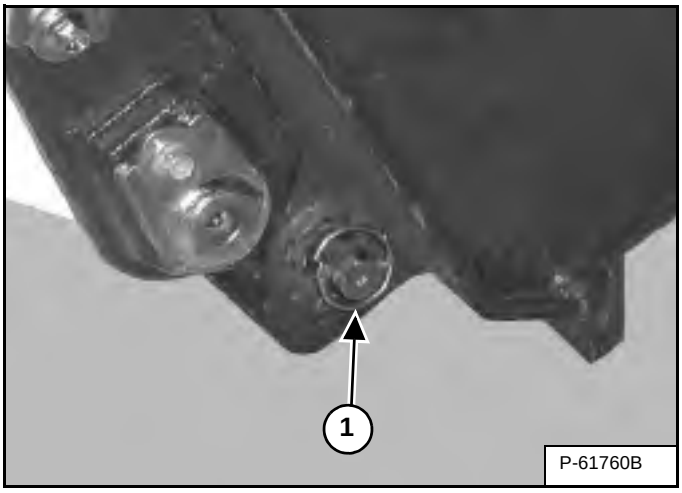
Position the arm vertically, lower the breaker to the ground. Stop the engine.

Relieve hydraulic pressure. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the loader. (See Entering And Exiting The Loader on Page 60.)

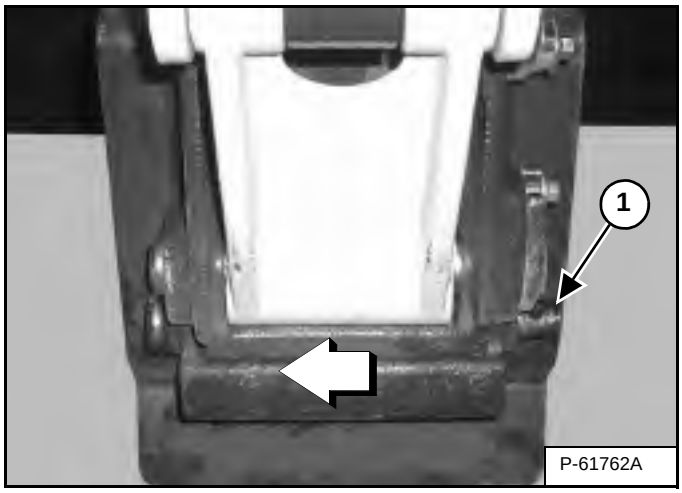
Disconnect the auxiliary couplers. (See Hydraulic Quick Couplers on Page 82.)

Figure 146



Remove the retainer pin (Item 1) **[Figure 146]**.

Figure 147



Drive the pin (Item 1) **[Figure 147]** out of the breaker and X-Change Mount.

⚠ WARNING

AVOID INJURY OR DEATH

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

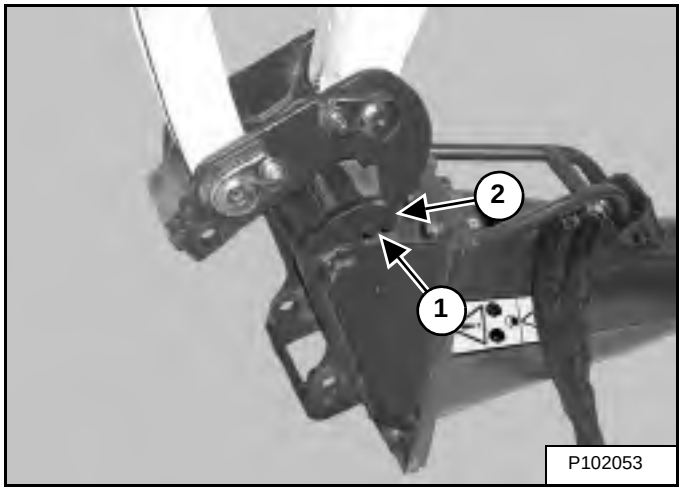
- **When fluids are under pressure.**
- **Flying debris or loose material is present.**
- **Engine is running.**
- **Tools are being used.**

W-2019-0907

Removal (Cont'd)

Pin-On X-Change (Cont'd)

Figure 148



Enter the loader. (See Entering And Exiting The Loader on Page 60.)

Start the engine.

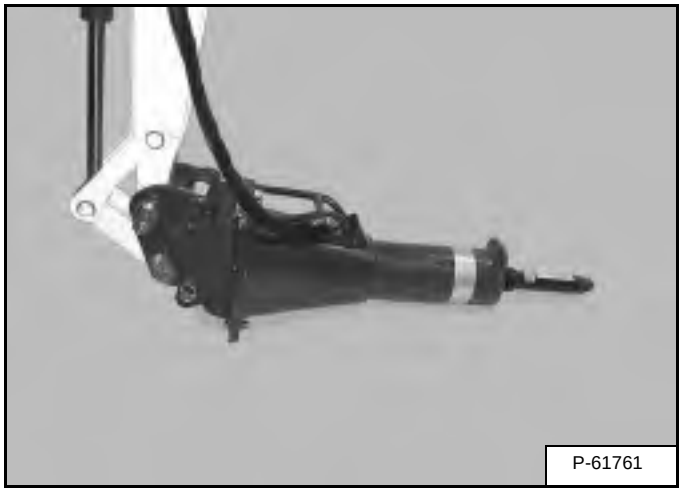
Lift the boom approximately 305 mm (12 in) and fully retract the bucket cylinder to disengage the breaker **[Figure 148]**.

Lower the boom until the X-Change pins (Item 1) are clear of the hooks (Item 2) **[Figure 148]**.

Move the arm toward the loader until the X-Change pins are clear of the breaker.

Bolt-On X-Change

Figure 149



Select a flat and level surface.

Position the arm vertically and put the breaker on the ground **[Figure 149]**.

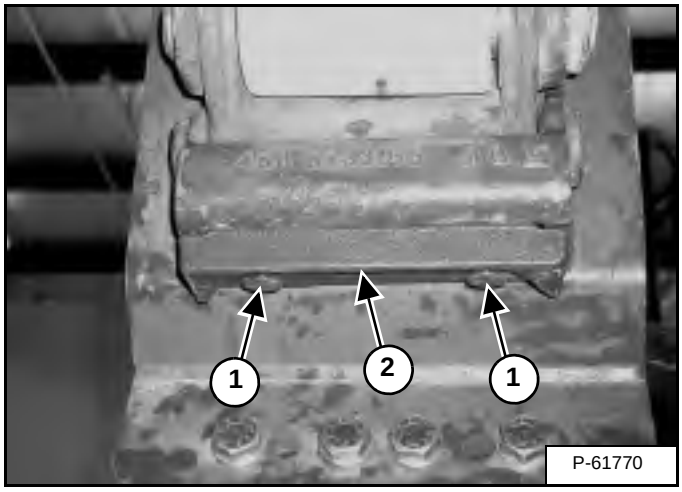
Stop the engine.

Relieve hydraulic pressure. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the loader. (See Entering And Exiting The Loader on Page 60.)

Disconnect the auxiliary couplers. (See Hydraulic Quick Couplers on Page 82.)

Figure 150

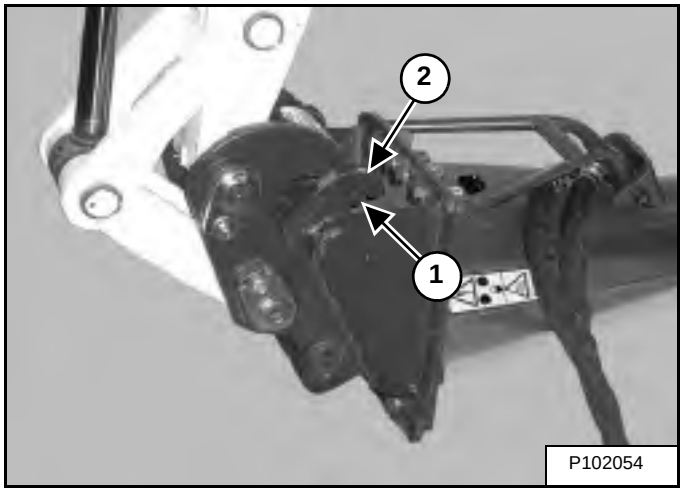


Remove the two bolts (Item 1) and plate (Item 2) **[Figure 150]**.

Removal (Cont'd)

Bolt-On X-Change (Cont'd)

Figure 151

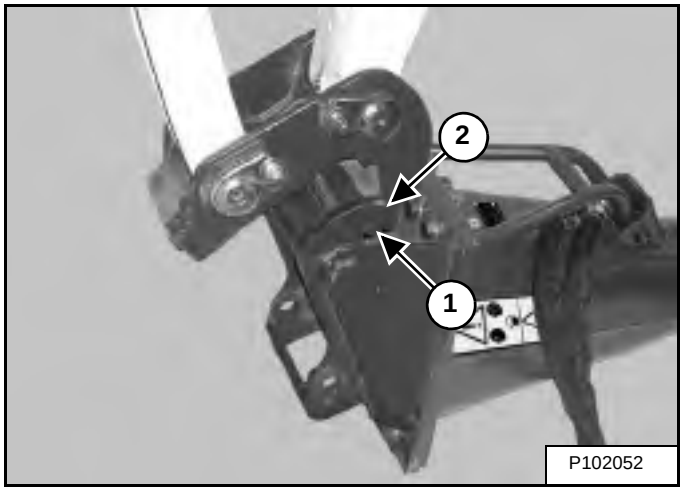


Enter the loader. (See Entering And Exiting The Loader on Page 60.)

Start the engine.

Raise the boom approximately 305 mm (12 in) until the X-Change pins (Item 1) engage the hooks (Item 2) **[Figure 151]** on the breaker.

Figure 152



Fully retract the bucket cylinder and lower the boom and arm until the breaker is on the ground, and the X-Change pins (Item 1) are disengaged from the hooks (Item 2) **[Figure 152]**.

Move the arm toward the loader until the X-Change pins are clear of the breaker.

Removal (Cont'd)

Quick Coupler (Klac™ System)

Park the loader on a level surface.

Position the attachment flat on the ground.

Stop the engine and exit the loader. (See Entering And Exiting The Loader on Page 60.)

NOTE: Installation and removal of the bucket is shown. The procedure is the same for other attachments. Disconnect any hydraulic lines that are operated by hydraulic power before removing any attachments (breaker, auger etc.).

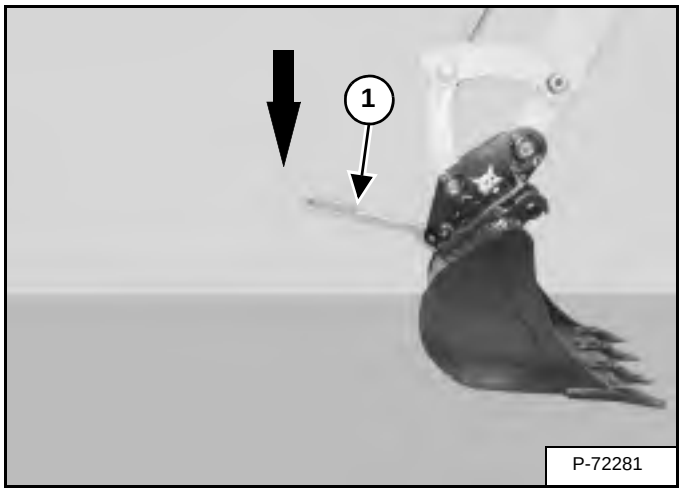
⚠ WARNING

AVOID INJURY

Keep fingers and hands out of pinch points when latching and unlatching the attachment quick coupler.

W-2541-1106

Figure 153



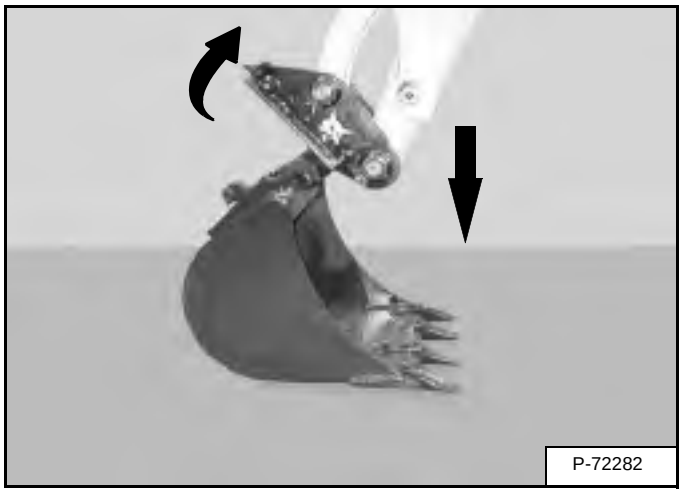
Install the quick coupler tool (Item 1) **[Figure 153]** into the hole in the quick coupler.

Push down on the tool (Item 1) **[Figure 153]** to unlock the latch.

Remove the tool.

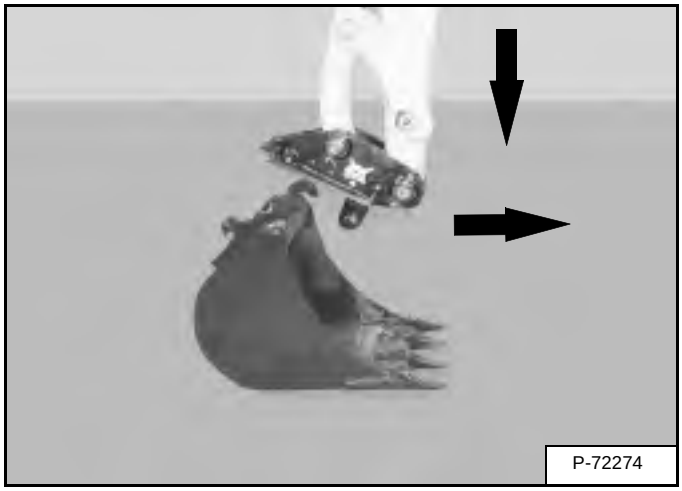
Enter the loader, fasten the seat belt and start the engine. (See Entering And Exiting The Loader on Page 60.)

Figure 154



Retract the bucket cylinder fully and lower the boom **[Figure 154]**.

Figure 155



Continue to lower the boom and move the arm toward the loader away from the attachment **[Figure 155]**.

OPERATING PROCEDURE WITH EXCAVATORS

Approved Excavator Models And Requirements

Figure 156

EXCAVATOR MODEL	HB SERIES BREAKER						
	280	380	580	680	880	980	1180
316	X						
319		X	X				
320		X	X	X			
321		X	X	X			
322		X	X	X			
323		X	X	X			
325				X	X		
328				X	X		
329					X	X	
331					X	X	
331E					X	X	
334					X	X	
335						X	X
337						X	X
341						X	X
425				X			
428				X			
430					X	X	
435						X	X
442							X
444							X
E08	X						
E10	X						
E14		X	X				
E16		X	X				
E17		X	X				
E19		X	X				
E20		X	X				
E25				X			
E26				X			
E32					X	X	
E35					X	X	
E45						X	X
E50						X	X
E55						X	X
E55W					X	X	X
E60					*X	*X	X
E62							X
E80							X
E85							X

X = Approved

The chart **[Figure 156]** shows the hydraulic breaker models approved for use with each excavator model.

Warranty on this attachment is void if used on a non-approved carrier. See your Bobcat dealer for a current list of approved carriers.

NOTE: * When using the HB880 or HB980 breakers on E60 excavator (S/N AGSZ11320 & Below), the breaker must be equipped with a diverter valve kit. See your Bobcat dealer for available kits.

WARNING

Never use attachments or buckets which are not approved by the Bobcat Company. Attachments and buckets for safe loads of specified densities are approved for each model. Unapproved attachments and buckets can cause injury or death.

W-2662-0108

Approved Excavator Models And Requirements (Cont'd)

Figure 157

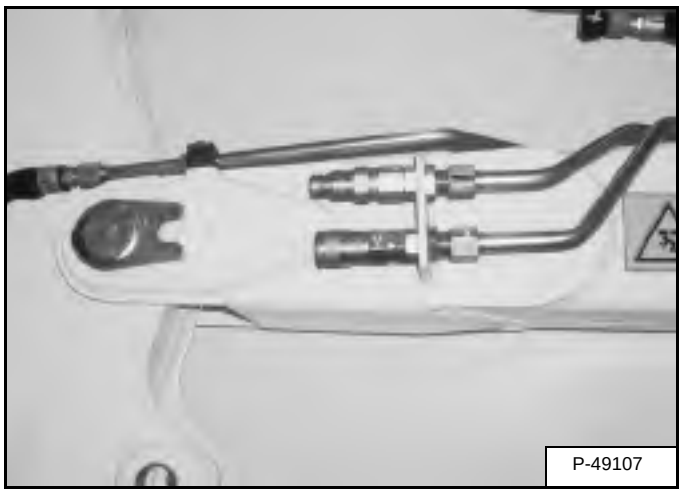
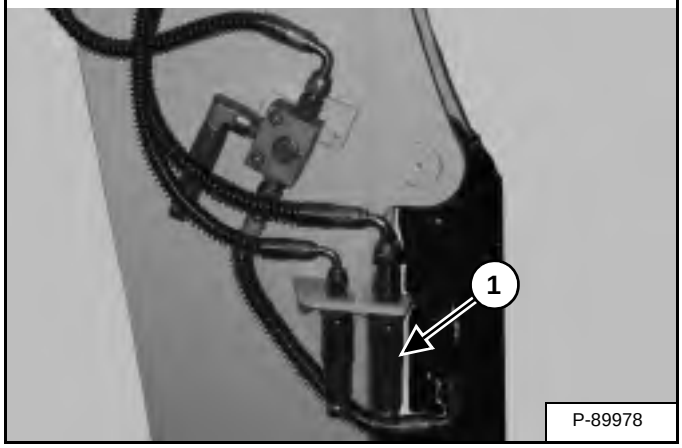


Figure 158

E55W, E60, E62, E80 And E85



The excavator must be equipped with front auxiliary hydraulics **[Figure 157]** or **[Figure 158]**.

Primary auxiliary male coupler (Item 1) **[Figure 158]**. Primary auxiliaries will be used for breaker operation.

NOTE: The male flush face coupler is located on the right side of the arm (shown) [Figure 158], the female coupler is located on the left side of the arm on E55W, E60, E62, E80 and E85 excavators.

NOTE: Special Application Kits are available for excavators. Special Application Kits must be used in applications where falling debris is present. See your Bobcat dealer for availability.

NOTE: Make sure the direct to tank valve (if equipped) on the excavator is in the proper position for breaker operation. (See the excavator's Operation & Maintenance Manual for detailed information.)

Falling-Object Guard System (FOGS)

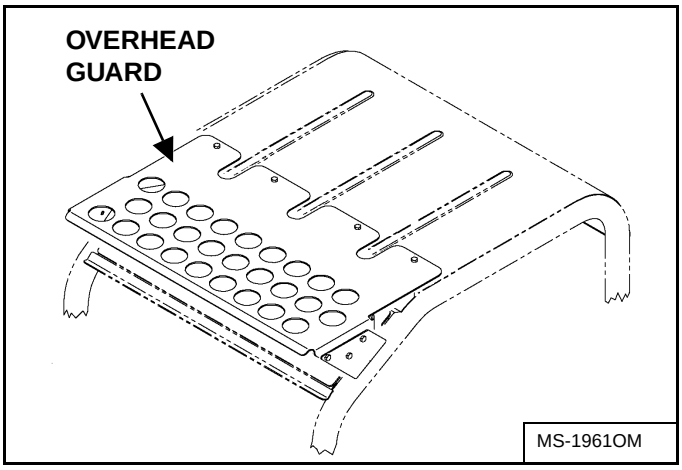
⚠ WARNING

AVOID INJURY OR DEATH

Some attachment applications can cause flying debris or objects to enter front, top or rear cab openings. Install the Special Applications Kit to provide added operator protection in these applications.

W-2737-0508

Figure 159



For the canopy or cab to meet the Falling-Object Guard Structure (FOGS) (ISO 10262 - level 1), the excavator must have the overhead guard and the Special Applications Kit installed **[Figure 159]** and **[Figure 160]**.

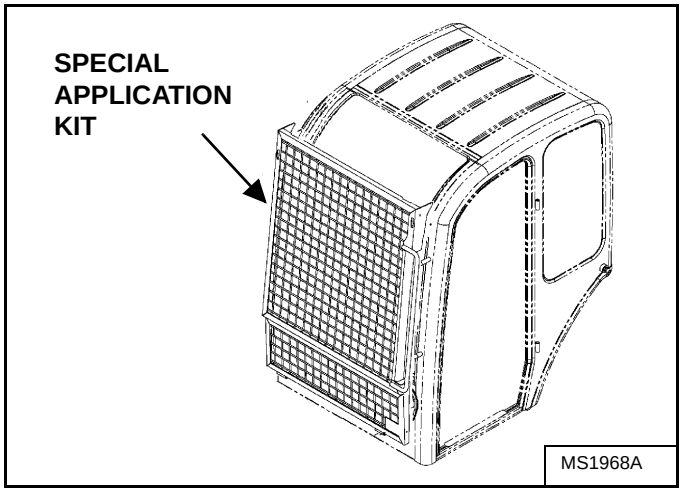
See your Bobcat dealer for available Falling-Object Guard Structure kit for your model excavator.

Falling-Object Guard System (FOGS) Inspection And Maintenance

Inspect the Falling-Object Guard Structure (FOGS) **[Figure 159]** and all hardware. Repair or replace all damaged or missing parts.

Special Applications Kit

Figure 160



The Special Applications Kit includes an upper and lower screen guard **[Figure 160]**.

See your Bobcat dealer for available special applications kit for your model excavator.

Special Applications Kit Inspection And Maintenance

Inspect the Special Applications Kit **[Figure 160]** and all hardware. Repair or replace all damaged or missing parts.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Entering And Exiting The Excavator

Entering

⚠ WARNING

AVOID INJURY OR DEATH

When operating the machine:

- **Keep the seat belt fastened snugly.**
- **The control console(s) must be lowered.**
- **Keep your feet and arms inside the cab.**

W-2777-1208

Figure 161

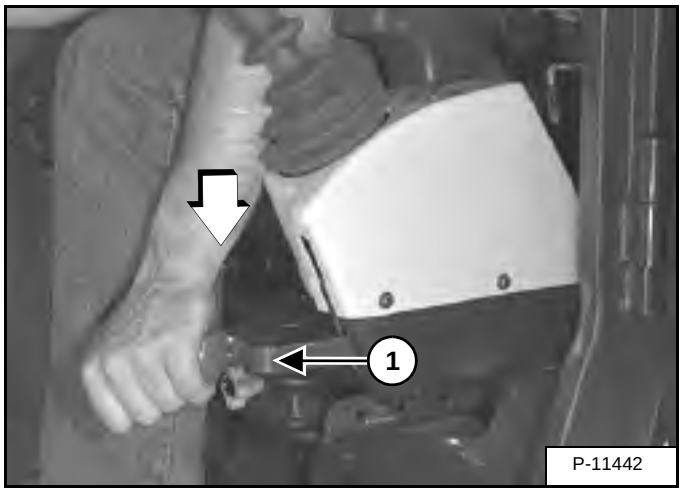
Use the grab handles, tracks and the safety treads to enter and exit the excavator **[Figure 161]**.

NOTE: Maintain three-point contact at all times while entering or exiting the excavator. Do not jump.

Figure 162

Fasten the seat belt snugly. Adjust the seat belt so the belt is over the operator's hips **[Figure 162]**.

Figure 163



Lower the left control lever (Item 1) **[Figure 163]** console before starting the engine.

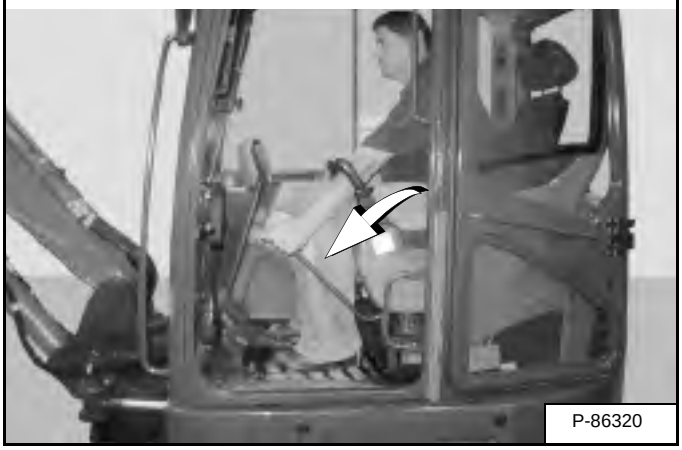
OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Entering And Exiting the Excavator (Cont'd)

Entering (Cont'd)

Figure 164

E55W, E60, E62, E80 And E85 Excavators



Lower the control console **[Figure 164]**.

NOTE: There is a control lock switch in the left console which deactivates the hydraulic control levers (joysticks and traction system) when the control console lock lever is raised. The console must be in the locked down position for the hydraulic control levers (joysticks and traction system) to operate.

NOTE: If the control lock switch does not deactivate the control levers when the console lock lever is raised, see your Bobcat dealer for service.

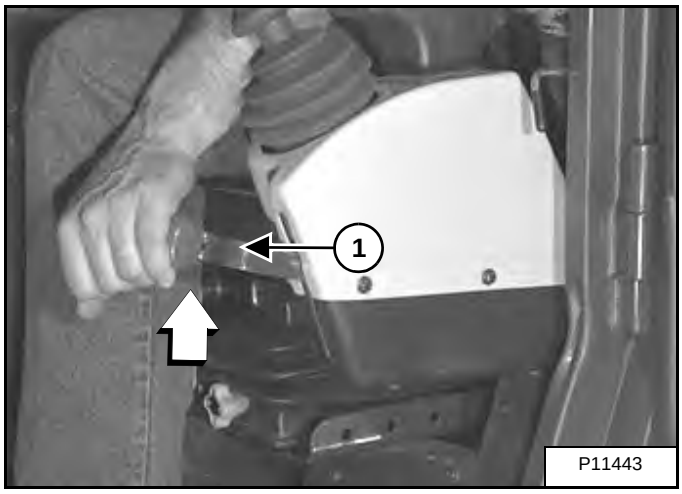
Exiting

Lower the work equipment to the ground.

Lower the blade to the ground.

Stop the engine and remove the key.

Figure 165



Lift up on the lever (Item 1) **[Figure 165]** to release and raise the control console.

Entering And Exiting the Excavator (Cont'd)

Exiting (Cont'd)

Figure 166

E55W, E60, E62, E80, And E85 Excavators

Raise the control console **[Figure 166]**.

Exit the excavator.

See the excavator's Operation & Maintenance Manual and Operator's Handbook for detailed information on operating the excavator.

⚠ WARNING

AVOID INJURY OR DEATH

Before leaving the machine:

- **Lower the work equipment to the ground.**
- **Lower the blade to the ground.**
- **Stop the engine and remove the key.**

W-2196-0595

Installation

Pin-On X-Change

Position the breaker so the hydraulic hoses will be toward the excavator during operation and are facing up.

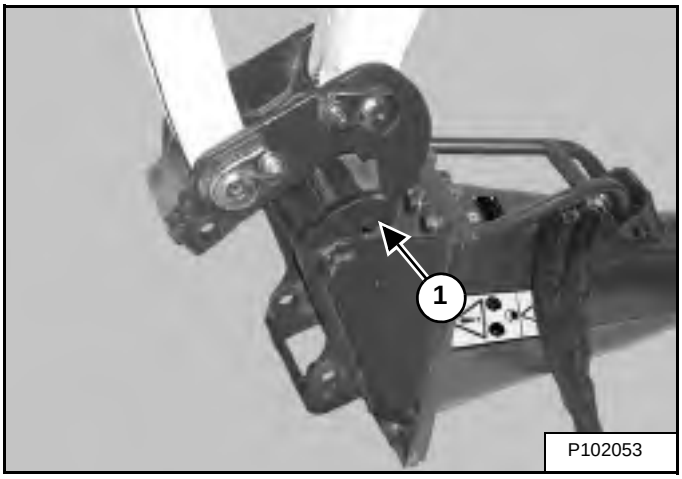
Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting The Excavator on Page 99.)

See the excavator's Operation & Maintenance Manual to correctly operate the excavator.

Fully retract the bucket cylinder.

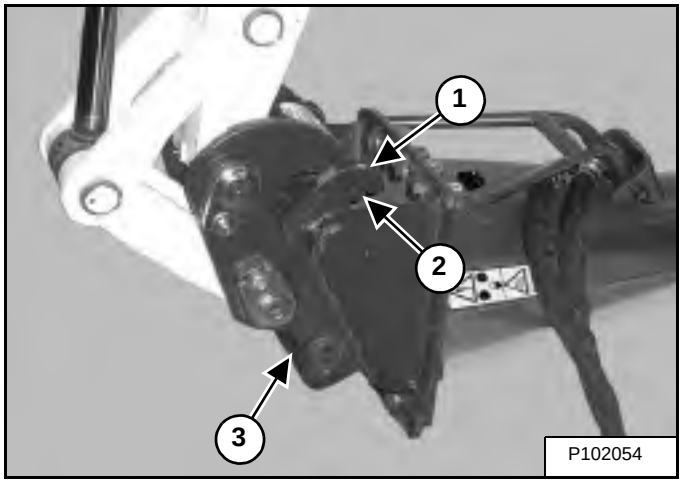
Move the arm toward the breaker mounting frame.

Figure 167



Raise the boom until the pins (Item 1) **[Figure 167]** engage the hooks on the mounting frame.

Figure 168



Raise the boom and extend the bucket cylinder until the X-Change contacts the attachment back **[Figure 168]**.

With the arm vertical, lower the boom until the hooks (Item 1) of the mounting frame disengage the pins (Item 2) of the X-Change and the plate (Item 3) **[Figure 168]** fully engages in the mounting frame.

⚠ WARNING

Keep all bystanders 6 m (20 ft) away from equipment when operating. Contact with moving parts, a trench cave-in or flying objects can cause injury or death.

W-2119-0910

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

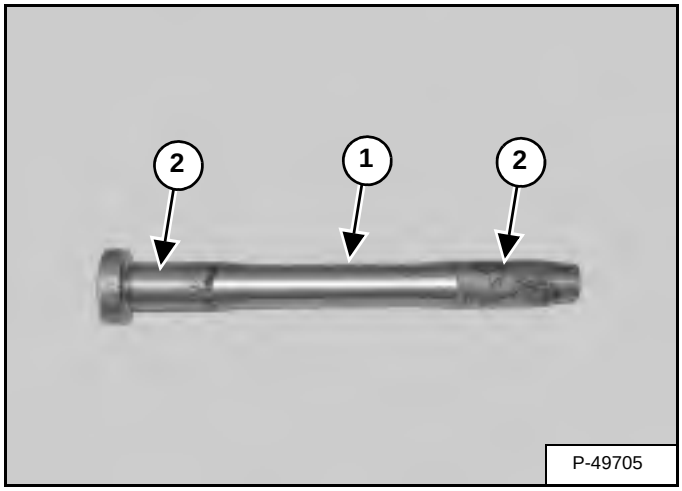
Pin-On X-Change (Cont'd)

Stop the engine.

Relieve hydraulic pressure. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

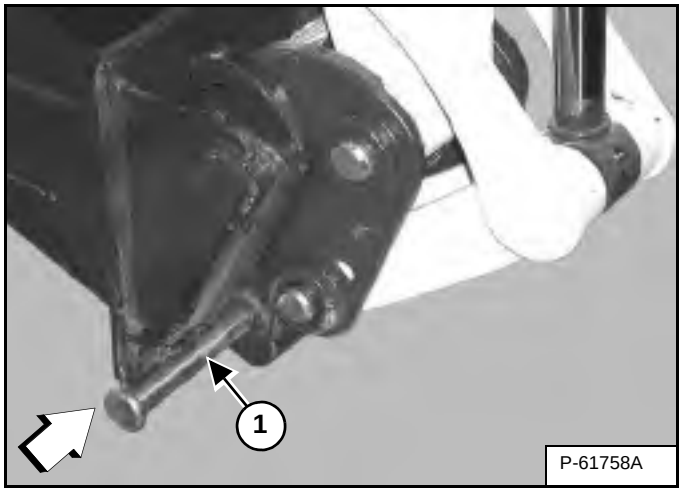
Figure 169



Inspect the pin (Item 1) **[Figure 169]** for wear or damage. Replace the pin as needed.

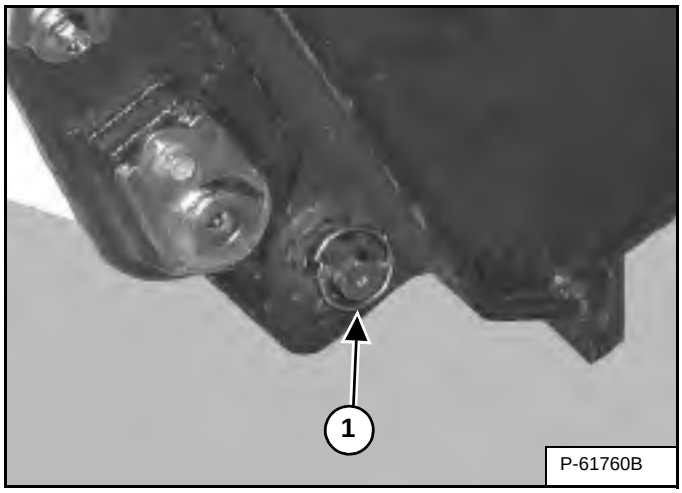
Apply a light coat of grease to the ends of the pin (Item 2) **[Figure 169]**.

Figure 170



Drive the pin (Item 1) **[Figure 170]** through the breaker mount and X-Change.

Figure 171



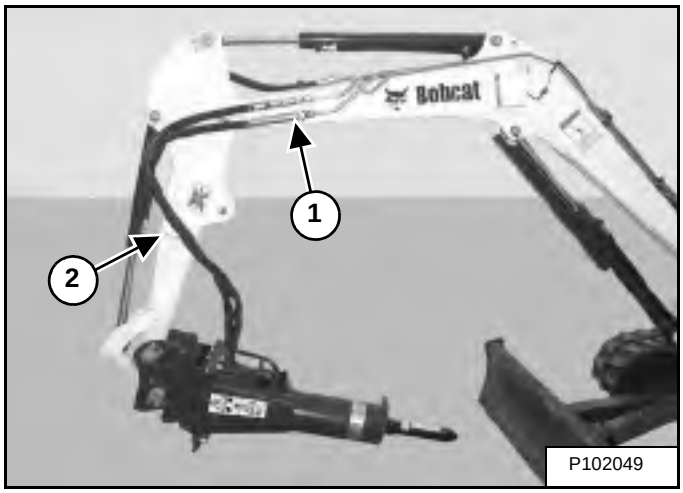
Install the retainer pin (Item 1) **[Figure 171]**.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Pin-On X-Change (Cont'd)

Figure 172



Route the hoses up to the auxiliary couplers (Item 1) **[Figure 172]**. (See Hydraulic Quick Couplers on Page 128.)

NOTE: Do not route the hoses through the retainer (Item 2) [Figure 172] on the excavator arm.

Relieve the auxiliary hydraulic pressure. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Turn the hoses so they are not twisted or kinked. The hoses should route smoothly to the breaker.

Check for proper installation.

Lift the attachment and fully extend and retract the bucket cylinder.

Bolt-On X-Change

⚠ WARNING

AVOID INJURY OR DEATH

Never use attachments or buckets which are not approved by Bobcat Company. Buckets and attachments for safe loads of specified densities are approved for each model. Unapproved attachments can cause injury or death.

W-2052-0907

Place the breaker on blocks.

Figure 173

Position the breaker so the hydraulic hoses will be toward the excavator during operation and are facing up **[Figure 173]**.

Enter the excavator. (See Entering And Exiting The Excavator on Page 99.)

See the excavator's Operation & Maintenance Manual to correctly operate the excavator.

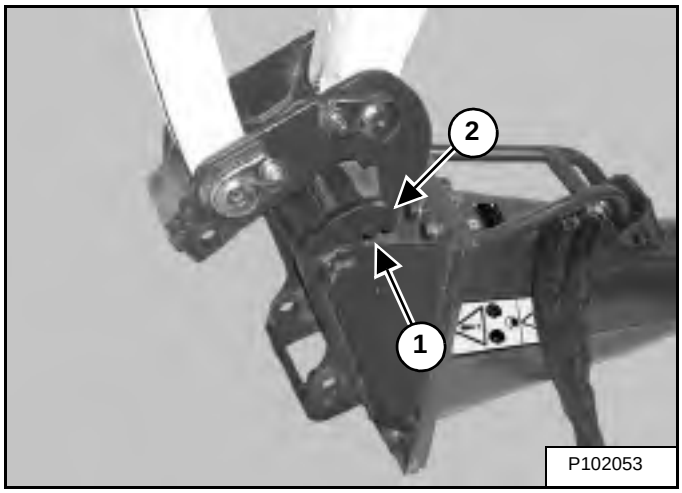
Fully retract the bucket cylinder.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

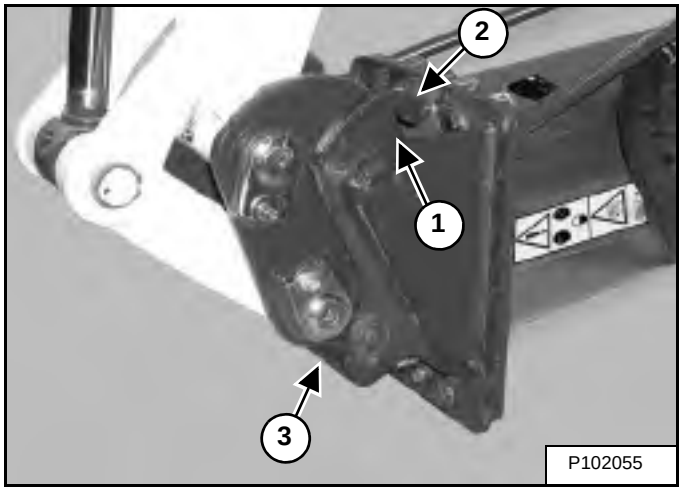
Bolt-On X-Change (Cont'd)

Figure 174



Move the arm toward the breaker. Raise the boom until the pins (Item 1) engage the hooks (Item 2) **[Figure 174]** on the mount.

Figure 175



Raise the boom, and extend the bucket cylinder until the X-Change contacts the attachment back **[Figure 175]**.

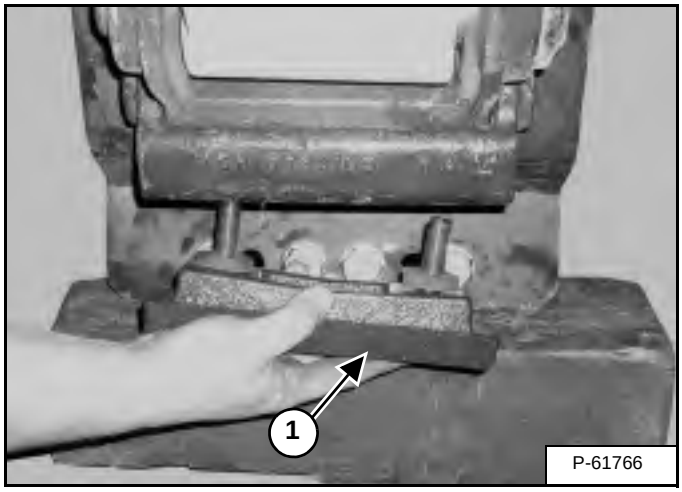
With the arm vertical, lower the boom until the hooks (Item 1) of the breaker disengage the pins (Item 2) of the X-Change and the plate (Item 3) **[Figure 175]** fully engages in the mounting frame.

Stop the engine.

Relieve hydraulic pressure. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Figure 176



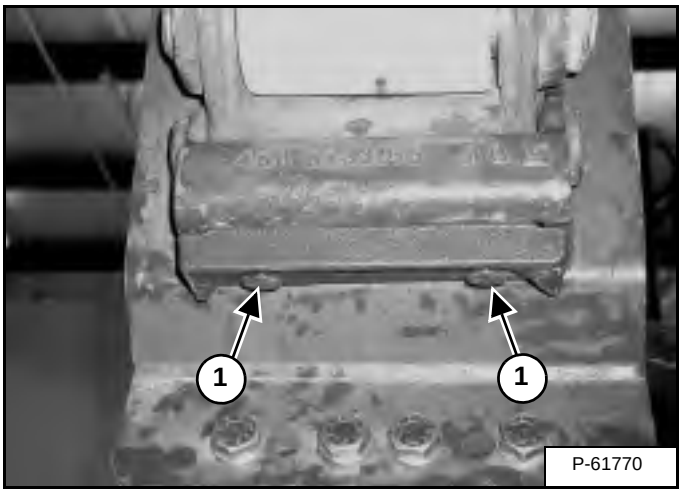
Install the plate (Item 1) **[Figure 176]** into the X-Change.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Bolt-On X-Change (Cont'd)

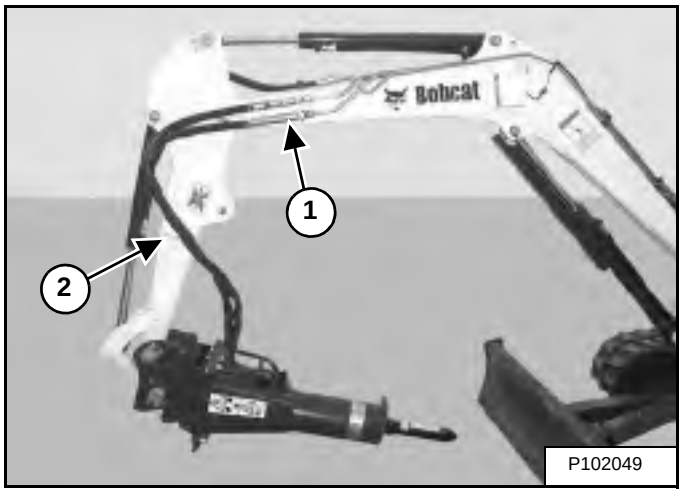
Figure 177



Install the two bolts (Item 1) **[Figure 177]**. Tighten the bolts to 170 - 190 N•m (125 - 140 ft-lb) torque. Retorque the bolts after every eight hours of operation.

NOTE: Do Not over torque the bolts (Item 1) [Figure 177]. Over torquing may cause bolt or thread damage or could result in the bolts breaking during operation.

Figure 178



Route the hoses up to the auxiliary couplers (Item 1) **[Figure 178]**. (See Hydraulic Quick Couplers on Page 128.)

NOTE: Do Not route the hoses through the retainer (Item 2) [Figure 178] on the excavator arm.

Hydraulic pressure in the auxiliary hydraulic system can make it difficult to connect or disconnect the auxiliary hydraulic lines from the quick couplers.

Relieve auxiliary hydraulic pressure. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Turn the hoses so they are not twisted or kinked. The hoses should route smoothly to the breaker.

Check for proper installation.

Lift the attachment and fully extend and retract the bucket cylinder.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

X-Change System

Figure 179

Position the breaker so the hydraulic hoses will be toward the excavator during operation and are facing up **[Figure 179]**.

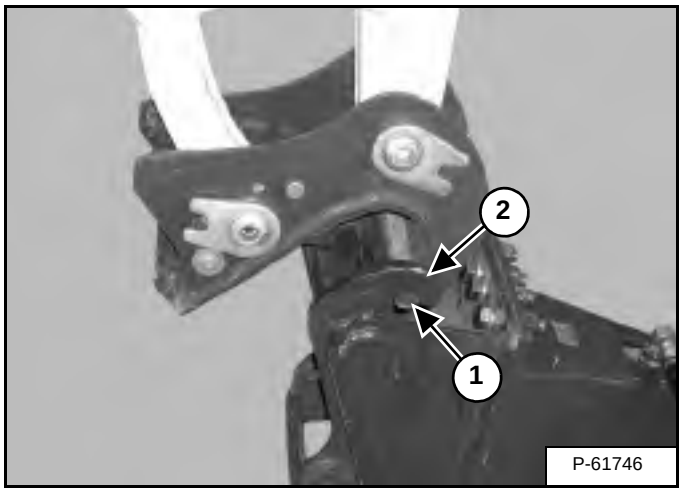
Enter the excavator. (See Entering And Exiting The Excavator on Page 99.)

Refer to the excavator's Operation & Maintenance Manual to correctly operate the excavator.

Fully retract the bucket cylinder.

Move the arm toward the breaker mounting frame.

Figure 180



Raise the boom until the pins (Item 1) engage the hooks (Item 2) **[Figure 180]** on the mounting frame.

⚠ WARNING

AVOID INJURY OR DEATH

Never use the X-Change pins only to lift the attachment. The attachment can disengage and fall.

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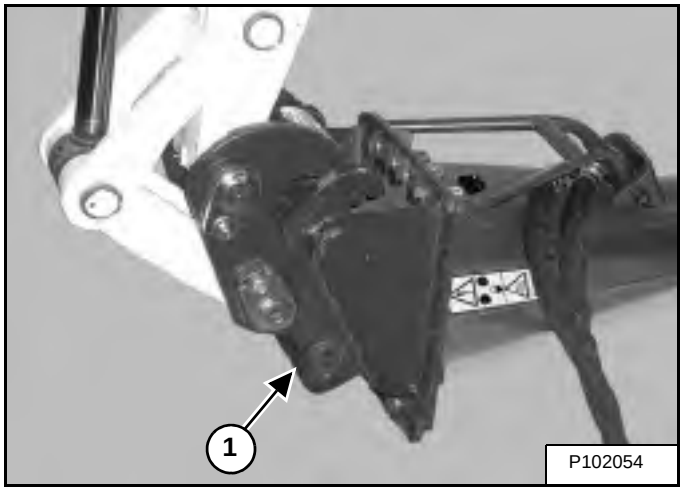
OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

X-Change System (Cont'd)

Figure 181



Raise the boom and extend the bucket cylinder until the X-Change seats in the mating area of the mounting frame **[Figure 181]**.

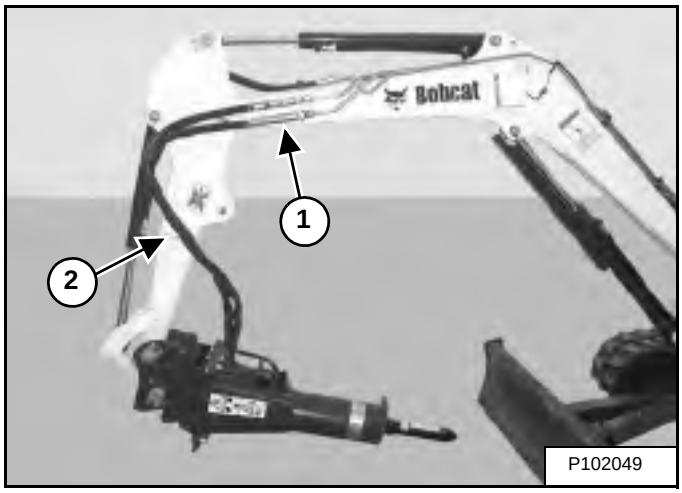
Continue to extend the bucket cylinder to raise the point of the breaker off the ground.

With the arm vertical, lower the boom to the ground until the hooks of the breaker frame disengage the pins of the X-Change and the plate fully engages in the mounting frame (Item 1) **[Figure 181]** locking the breaker frame to the X-Change.

Stop the engine.

Exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Figure 182



Route the hoses up to the auxiliary couplers (Item 1) **[Figure 182]**. (See Hydraulic Quick Couplers on Page 128.)

NOTE: Do Not route the hoses through the retainer (Item 2) [Figure 182] on the excavator arm.

Hydraulic pressure in the auxiliary hydraulic system can make it difficult to connect or disconnect the auxiliary hydraulic lines from the quick couplers.

Relieve auxiliary hydraulic pressure. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Turn the hoses so they are not twisted or kinked. The hoses should route smoothly to the breaker.

Check for proper installation.

Lift the attachment and fully extend and retract the bucket cylinder.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Pin-On Attachment (442 And 444 Excavators)

⚠ WARNING

Keep all bystanders 6 m (20 ft) away from equipment when operating. Contact with moving parts, a trench cave-in or flying objects can cause injury or death.

W-2119-0910

Position the breaker so the hydraulic hoses will be toward the excavator during operation and are facing up.

Enter the excavator. (See Entering And Exiting The Excavator on Page 99.)

See the excavator's Operation & Maintenance Manual to correctly operate the excavator.

Move the arm toward the breaker mounting frame.

Retract the bucket cylinder so the bucket link is up and out of the way.

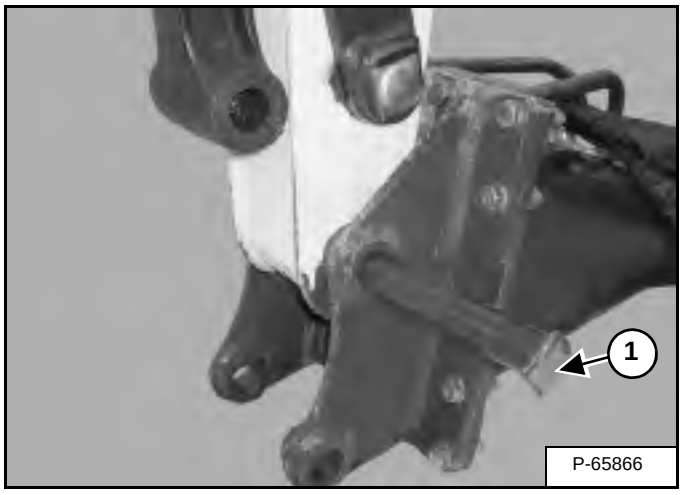
Raise the boom and position the boom to the breaker mounting frame.

The boom will be aligned with the top mounting frame pin hole.

Stop the engine.

Exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

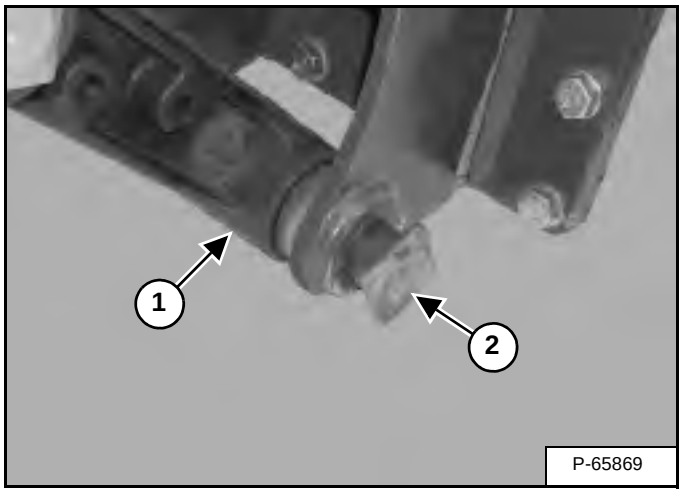
Figure 183



Install the pin (Item 1) **[Figure 183]**.

Enter the excavator, fasten seat belt and start the engine.

Figure 184



Extend the bucket cylinder until the bucket link (Item 1) **[Figure 184]** aligns with the bottom hole on the breaker frame.

Stop the engine.

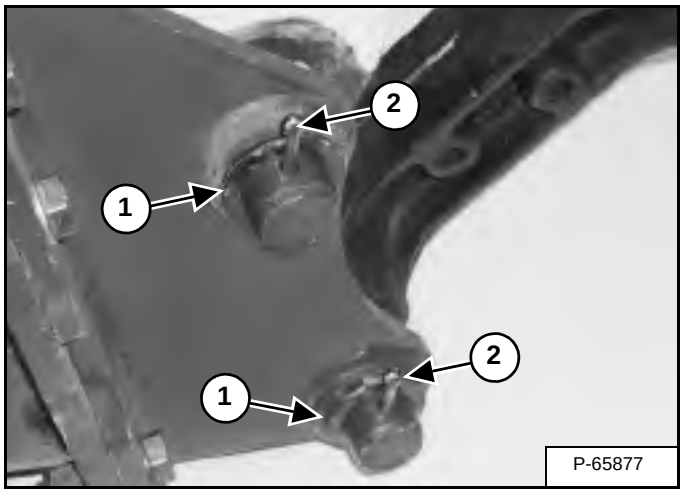
Exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Install the pin (Item 2) **[Figure 184]** into the bottom hole of the breaker mounting frame and the bucket link.

Installation (Cont'd)

Pin-On Attachment (442 And 444 Excavators) (Cont'd)

Figure 185

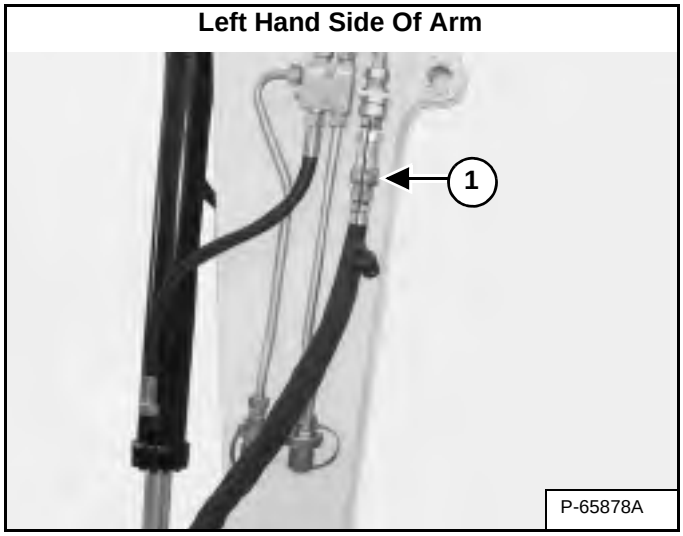


On the opposite side of the pins, install the washers (Item 1) and the retainer pins (Item 2) **[Figure 185]**.

Spread the ends of the two retainer pins (Item 2) **[Figure 185]** so that they will be retained in the pin.

Figure 186

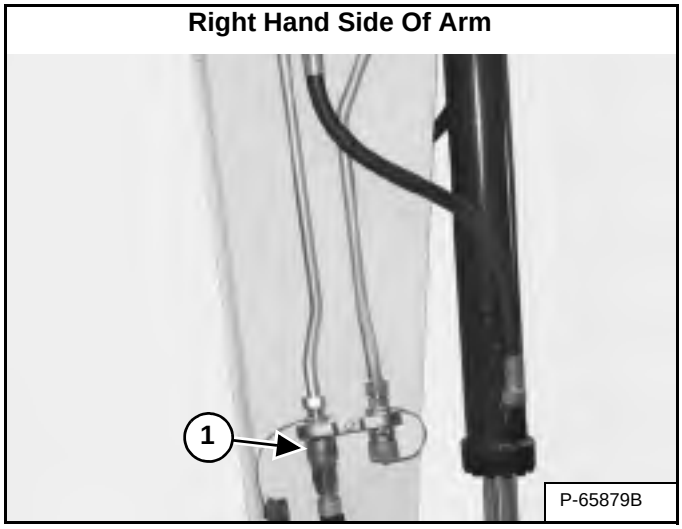
Left Hand Side Of Arm



Route the hoses (from the *HB* port on the breaker) up the arm and connect the auxiliary coupler (Item 1) **[Figure 186]** to the return to tank coupler.

Figure 187

Right Hand Side Of Arm



Route the hose (from the *HP* port on the breaker) up the arm and connect to the auxiliary coupler (Item 1) **[Figure 187]**.

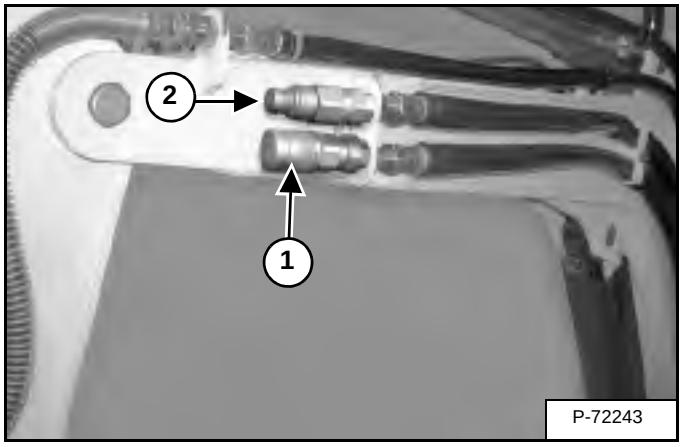
OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Pin-On Attachment (316, E08, E10, E20, E25, E26, E32, E35, E45, E50 And E55 Excavators)

NOTE: Before installing attachments requiring auxiliary hydraulics, quick couplers must be installed on the 316, E08 and E10 excavator.

Figure 188



Install the male quick coupler (Item 1) on the bottom auxiliary hydraulic line and the female quick coupler (Item 2) **[Figure 188]** on the top hydraulic line.

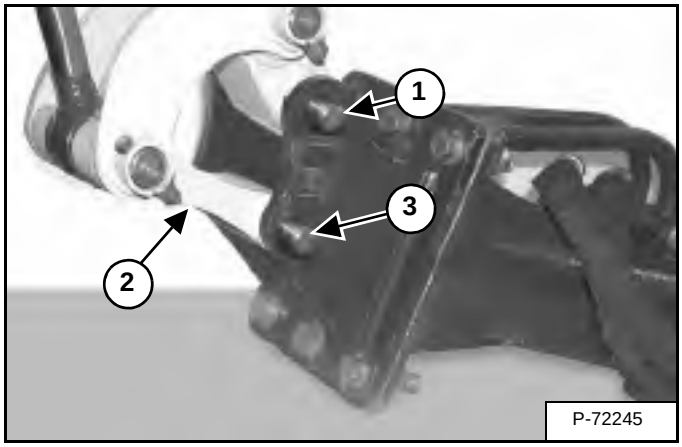
⚠ WARNING

Keep all bystanders 6 m (20 ft) away from equipment when operating. Contact with moving parts, a trench cave-in or flying objects can cause injury or death.

W-2119-0910

Position the breaker so the hydraulic hoses will be toward the excavator during operation and are facing up.

Figure 189



See the excavator's Operation & Maintenance manual to correctly operate the excavator.

Move the arm toward the breaker mounting frame.

Retract the bucket cylinder so the bucket link is up and out of the way.

Raise the boom and position the boom to the breaker mounting frame.

The boom will be aligned with the top mounting frame pin hole.

Stop the engine.

Exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Install the pivot pin (Item 1) **[Figure 189]**.

Enter the excavator. (See Entering And Exiting The Excavator on Page 99.)

Start the engine.

Extend the bucket cylinder until the link (Item 2) **[Figure 189]** aligns with the bottom hole on the breaker frame.

Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

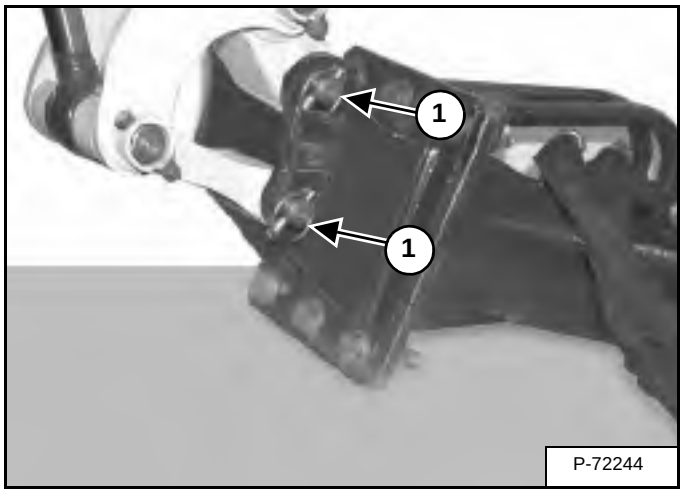
Install the pivot pin (Item 3) **[Figure 189]**.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

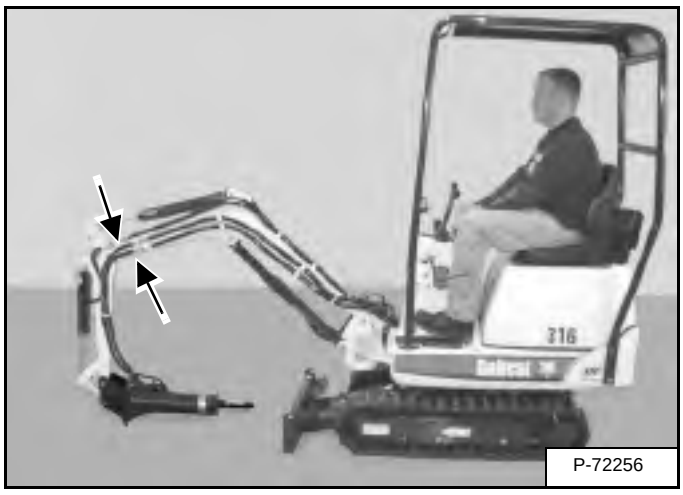
Pin-On Attachment (316, E08, E10, E25, E26, E32, E35, E45, E50 And E55 Excavators) (Cont'd)

Figure 190



Install the retaining clips (Item 1) **[Figure 190]**.

Figure 191



Route the hoses up the arm and connect to the auxiliary couplers **[Figure 191]**. (See Hydraulic Quick Couplers on Page 128.)

⚠ WARNING

AVOID INJURY OR DEATH

Never use attachments or buckets which are not approved by Bobcat Company. Buckets and attachments for safe loads of specified densities are approved for each model. Unapproved attachments can cause injury or death.

W-2052-0907

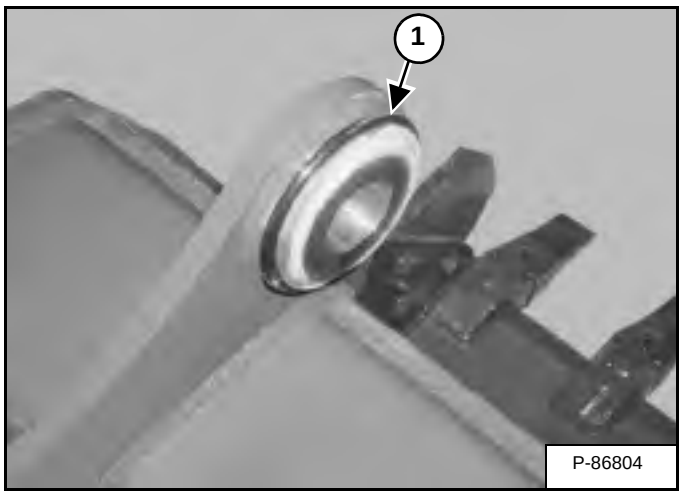
OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Pin-On Attachment (E55W, E60, E62, E80 And E85 Excavators)

NOTE: Removal and installation of the bucket is shown. The procedure is the same for other attachments. Disconnect any hydraulic lines that are operated by hydraulic power before removing any attachments (breaker, direct drive auger, etc.).

Figure 192

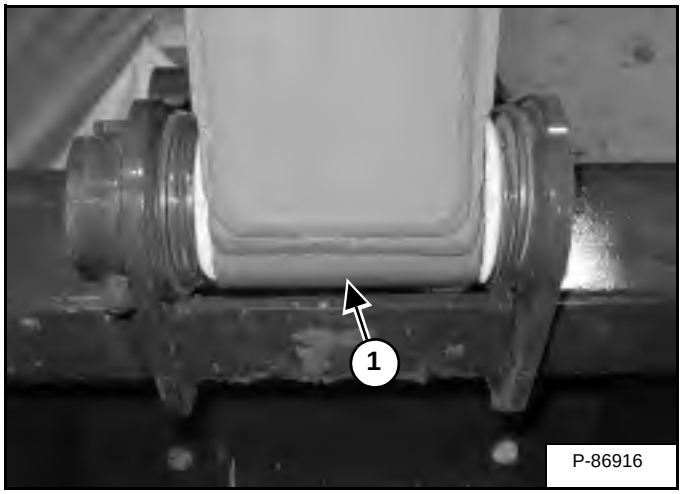


Before installing the attachment, make sure the four O-rings (Item 1) **[Figure 192]** are positioned over the attachment boss (as shown) so they are not damaged during installation.

Enter the excavator. (See Entering And Exiting The Excavator on Page 99.)

Start the engine.

Figure 193

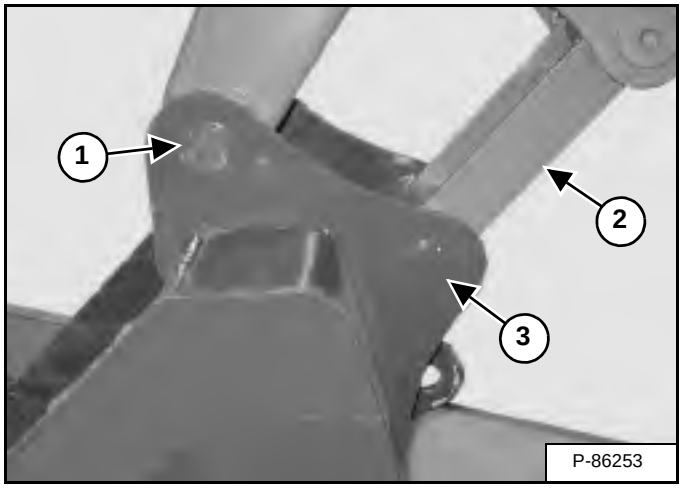


Install the arm (Item 1) **[Figure 193]** into the attachment.

Stop the engine.

Exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Figure 194



Align the arm mounting hole with the attachment and install the pin (Item 1) **[Figure 194]**.

Enter the excavator. (See Entering And Exiting The Excavator on Page 99.)

Start the engine.

Extend the bucket cylinder until the bucket link (Item 2) aligns with the bottom hole (Item 3) **[Figure 194]** on the breaker frame.

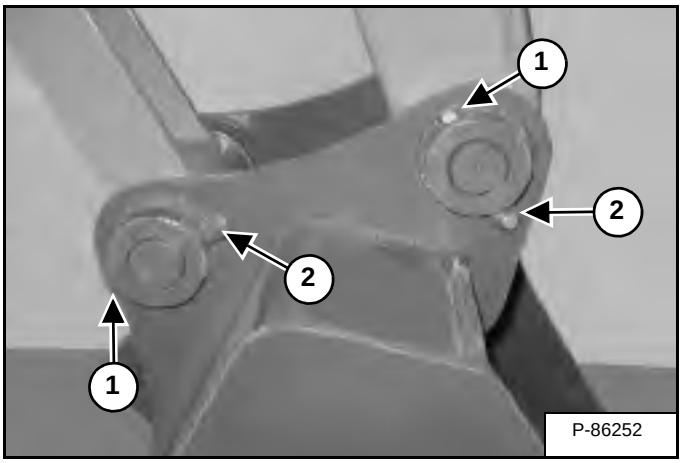
Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Align the bucket link mounting hole with the attachment and install the pin (Item 3) **[Figure 194]**.

Installation (Cont'd)

Pin-On Attachment (E55W, E60, E62, E80 And E85 Excavators) (Cont'd)

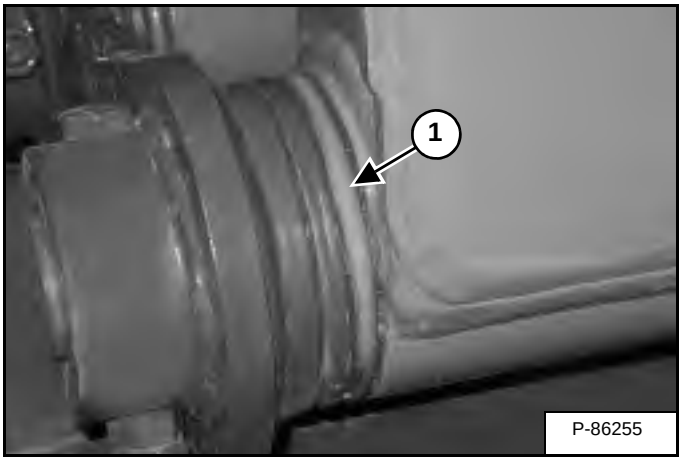
Figure 195



Install the two retainer bolts (Item 1) and jam nuts (Item 2) **[Figure 195]** and tighten the jam nuts.

NOTE: The two retaining bolts (Item 1) [Figure 195] should rotate after the two jam nuts are installed. Install the first jam nut until the bolt is finger loose on the mount. Install the second jam nut and tighten the second jam nut against the first jam nut.

Figure 196



Reposition the four O-rings (Item 1) **[Figure 196]** next to the arm.

Install grease in the grease fittings on the arm and bucket link pins.

Always use a good quality lithium based multipurpose grease when lubricating the excavator. Apply the lubricant until extra grease shows.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Pin Grabber Quick Coupler

NOTE: Installation and removal of the breaker is shown. The procedure is the same for other attachments. Disconnect any hydraulic lines that are operated by hydraulic power before removing any attachments (breaker, auger, etc.).

⚠ WARNING

AVOID INJURY OR DEATH

Never use attachments or buckets which are not approved by Bobcat Company. Buckets and attachments for safe loads of specified densities are approved for each model. Unapproved attachments can cause injury or death.

W-2052-0907

Start the engine.

⚠ WARNING

AVOID INJURY OR DEATH

The quick coupler locking clasps must be fully engaged and locked to the attachment pins. Failure to fully engage the locking clasps can allow attachment to come off.

W-2978-0813

Figure 197

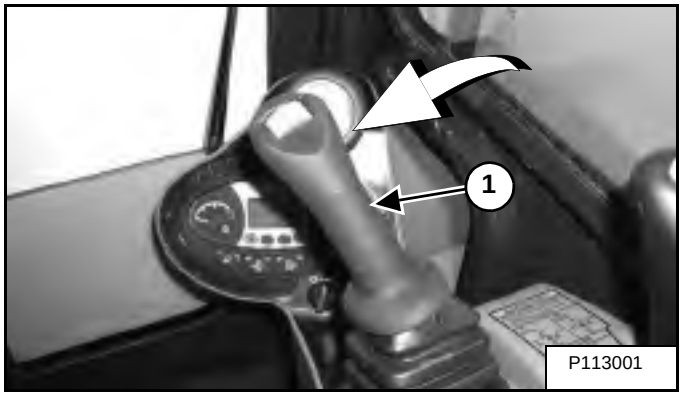
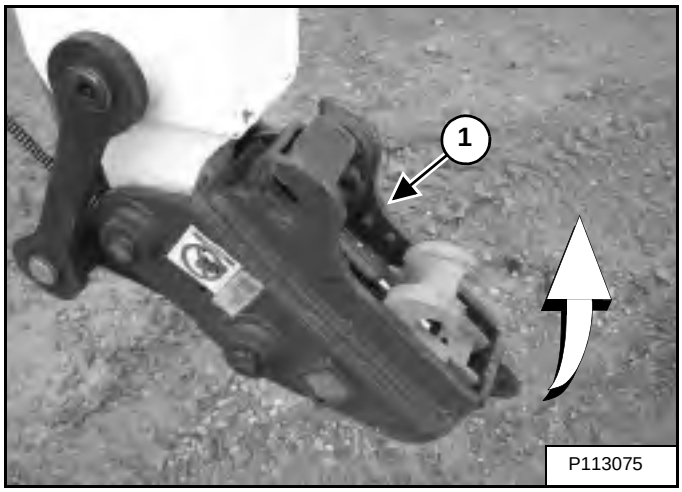


Figure 198



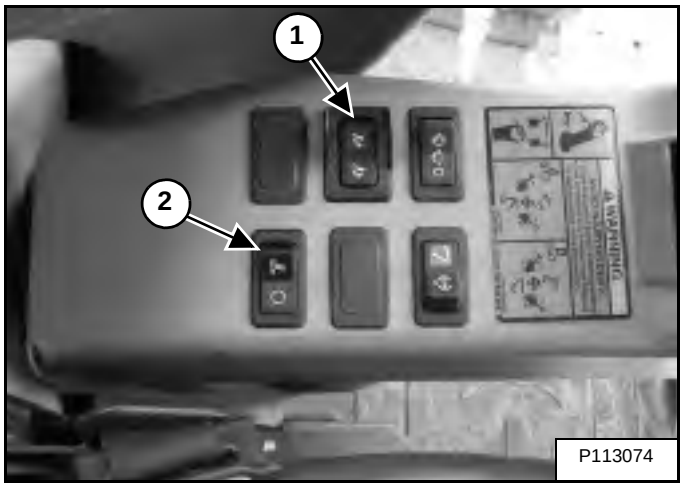
Move the right joystick (Item 1) **[Figure 197]** to the left (IN) and curl the coupler (Item 1) **[Figure 198]** toward the cab fully.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Pin Grabber Quick Coupler (Cont'd)

Figure 199

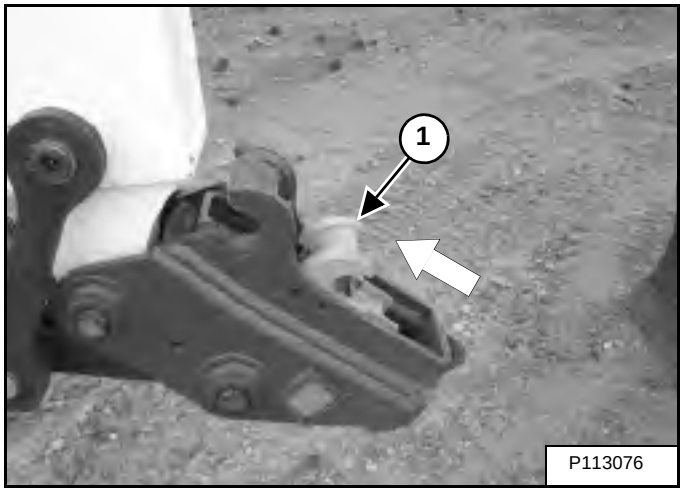


Press the coupler ON / OFF switch (Item 1) **[Figure 199]** to the left (ON) position to enable the pin grabber quick coupler feature. The switch will illuminate when in the ON position and a buzzer will sound.

Press and release the INTENT switch (Item 2) within five seconds. (The buzzer will continue to sound and the light (Item 1) **[Figure 199]** will stay ON.)

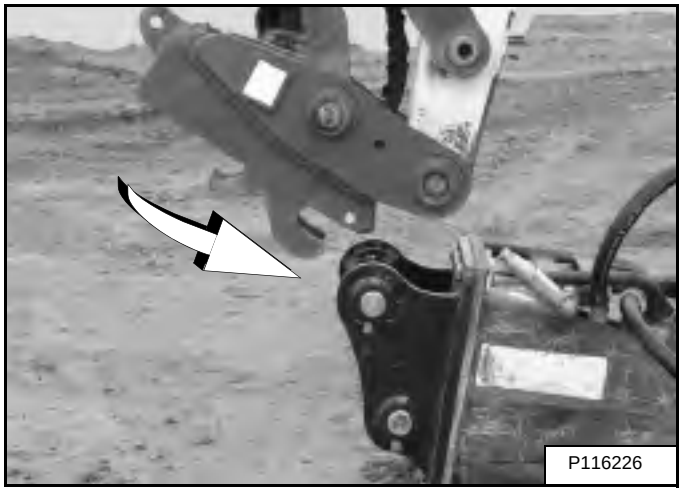
NOTE: If pin grabber quick coupler, the switch and / or the buzzer do not operate correctly, see troubleshooting chart.

Figure 200



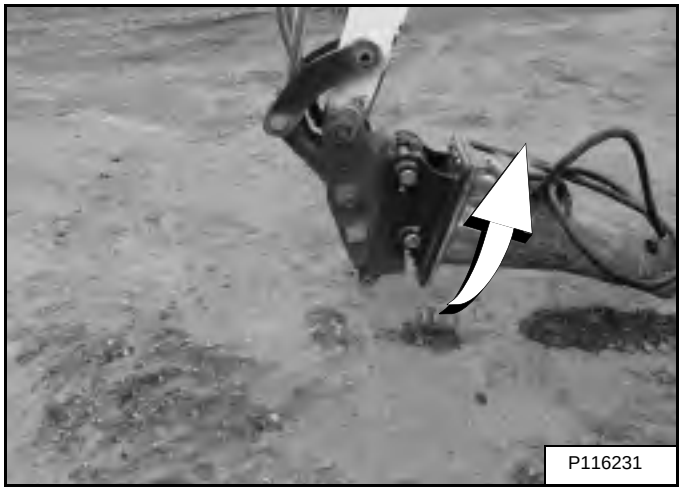
Continue to curl the quick coupler until the locking clasp (Item 1) **[Figure 200]** moves in fully.

Figure 201



Roll the coupler out. Move the arm toward the attachment. Reposition the boom, arm and coupler until the coupler (Item 1) **[Figure 201]** is position over the attachment pin. Raise the attachment up slightly.

Figure 202



Curl the quick coupler in fully **[Figure 202]**.

Press the coupler ON / OFF switch (Item 1) **[Figure 199]** to the right, (OFF) position. The switch light and buzzer will turn OFF.

Continue to curl the attachment in for an additional ten seconds to allow the locking clasp to move and lock to the attachment pins.

With the attachment as low to the ground as possible, curl the attachment out and in several times to ensure the attachment is secured to the coupler.

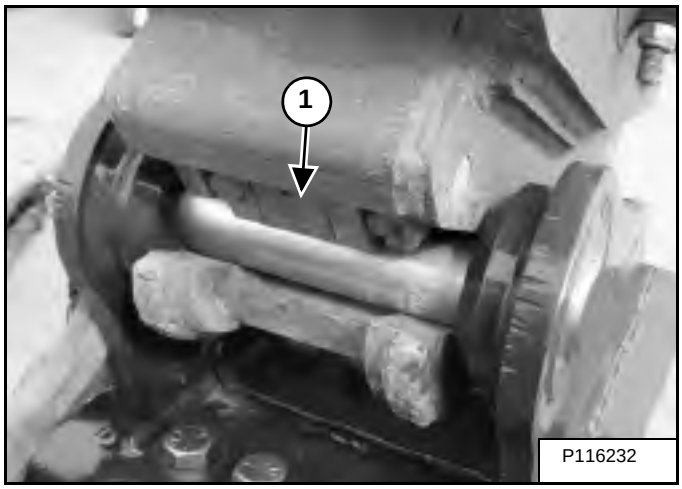
Lower the attachment flat to the ground.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Pin Grabber Quick Coupler (Cont'd)

Figure 203



Visually check that the green locking clasp (Item 1) **[Figure 203]** is FULLY ENGAGED AND LOCKED.

⚠ WARNING

Keep all bystanders 6 m (20 ft) away from equipment when operating. Contact with moving parts, a trench cave-in or flying objects can cause injury or death.

W-2119-0910

⚠ WARNING

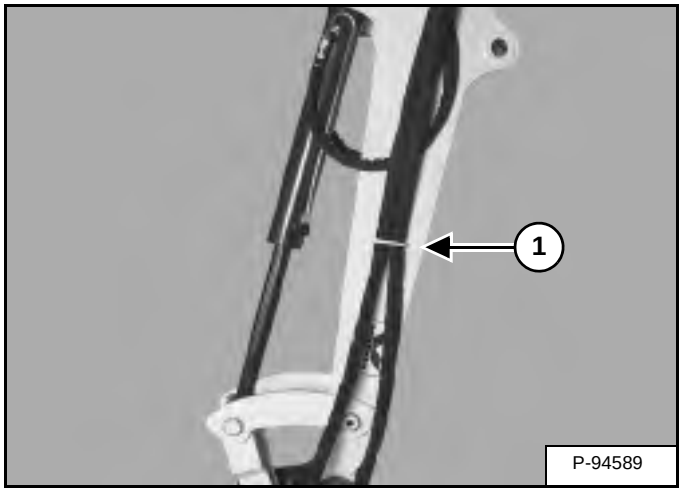
AVOID INJURY OR DEATH

The quick coupler locking clasps must be fully engaged and locked to the attachment pins. Failure to fully engage the locking clasps can allow attachment to come off.

W-2978-0813

Hose Routing

Figure 204



Route the auxiliary hoses through the hose guide (Item 1) **[Figure 204]** and up to the auxiliary couplers.

Connect hydraulic quick couplers. (See Hydraulic Quick Couplers on Page 128.)

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Quick Coupler (Klac™ System)

NOTE: Installation and removal of the bucket is shown. The procedure is the same for other attachments. Disconnect any hydraulic lines that are operated by hydraulic power before removing any attachments (breaker, auger etc.).

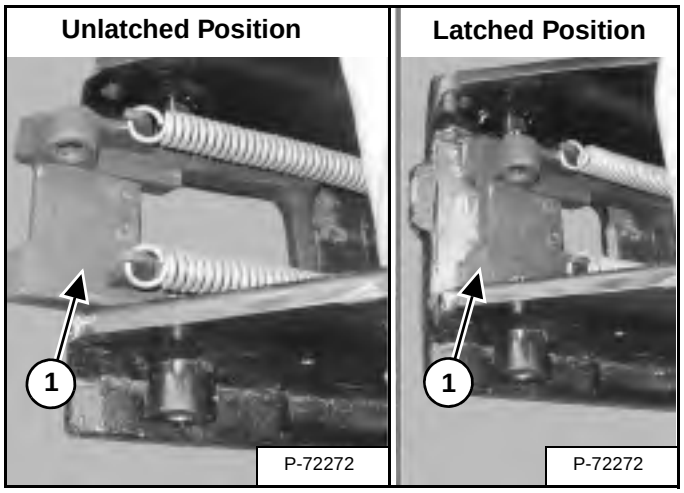
⚠ WARNING

AVOID INJURY OR DEATH

Never use attachments or buckets which are not approved by Bobcat Company. Buckets and attachments for safe loads of specified densities are approved for each model. Unapproved attachments can cause injury or death.

W-2052-0907

Figure 205



Fully retract the bucket cylinder.

Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Inspect the quick coupler to make sure the latch is in the unlatched position (Item 1) **[Figure 205]**.

If in the latched position, see **[Figure 206]** for additional information.

If the latch is in the unlatched position, proceed to **[Figure 207]**.

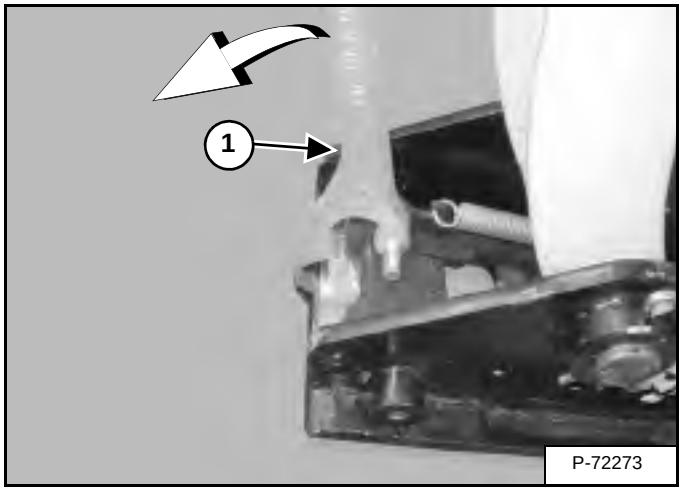
⚠ WARNING

AVOID INJURY

Keep fingers and hands out of pinch points when latching and unlatching the attachment quick coupler.

W-2541-1106

Figure 206

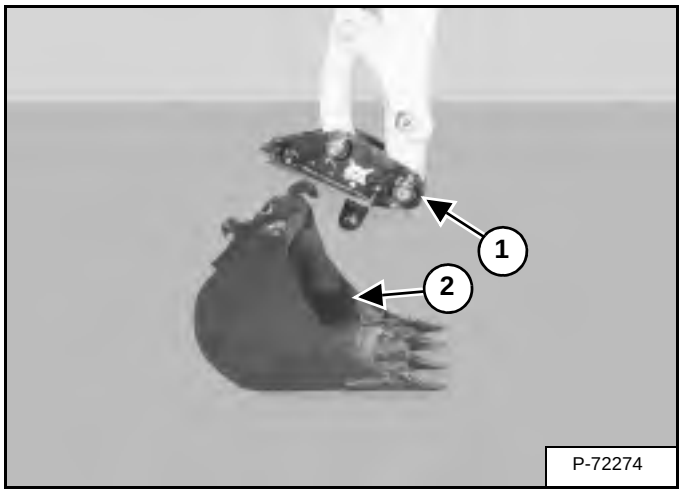


To unlatch the quick coupler, install the tool (Item 1) **[Figure 206]** and pull the handle. The latch will move completely forward. The latch will lock in the unlatched position.

Installation (Cont'd)

Quick Coupler (Klac™ System) (Cont'd)

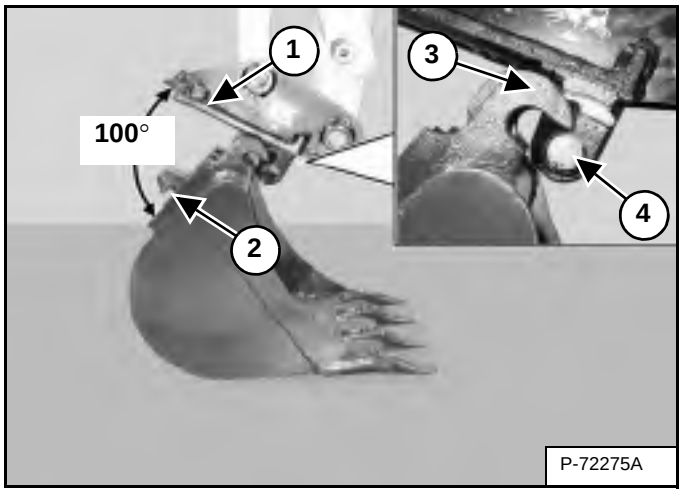
Figure 207



Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting The Excavator on Page 99.)

Position the quick coupler (Item 1) to the attachment (Item 2) **[Figure 207]**.

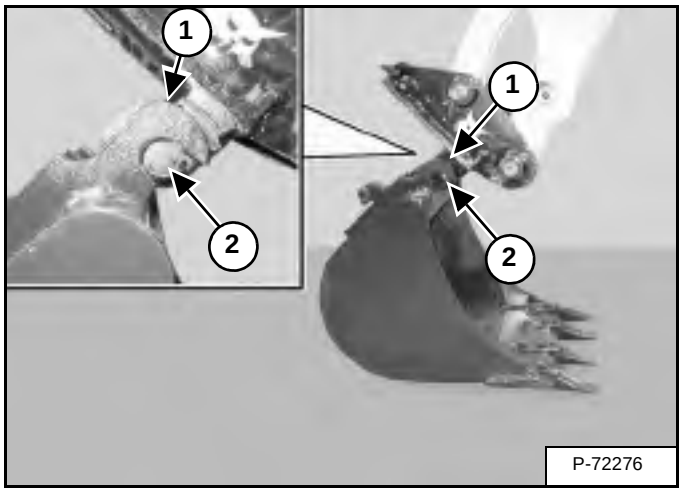
Figure 208



There must be at least 100° between the quick coupler surface (Item 1) and the attachment mounting surface (Item 2) **[Figure 208]**. Extend the arm out to get the required angle for proper installation.

NOTE: There must be proper clearance (100° minimum) so that there is not an interference between the hook (Item 3) and the quick coupler (Item 4) [Figure 208]. Possible damage to the attachment hooks or the quick coupler could occur without proper clearance.

Figure 209



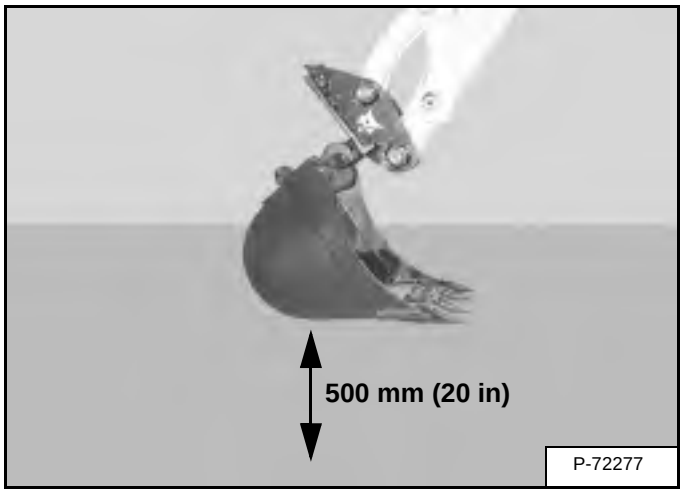
Raise the boom and extend the arm until the hooks of the attachment (Item 1) engage the pins (Item 2) **[Figure 209]** of the quick coupler.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

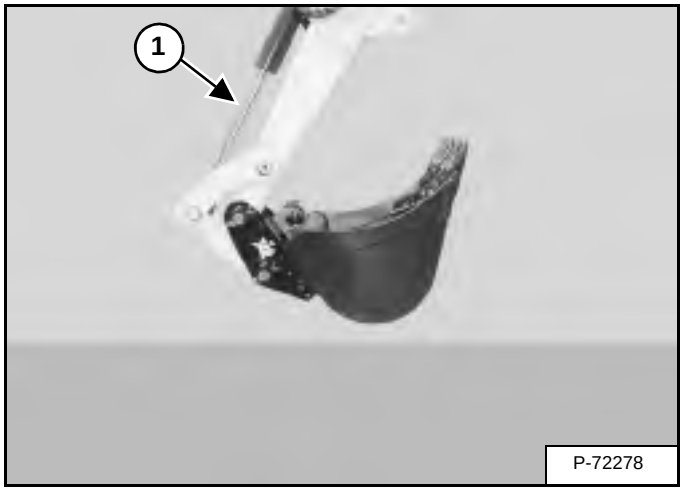
Quick Coupler (Klac™ System) (Cont'd)

Figure 210



Raise the boom until there is approximately 500 mm (20 in) of clearance between the bottom of the attachment and the ground **[Figure 210]**.

Figure 211

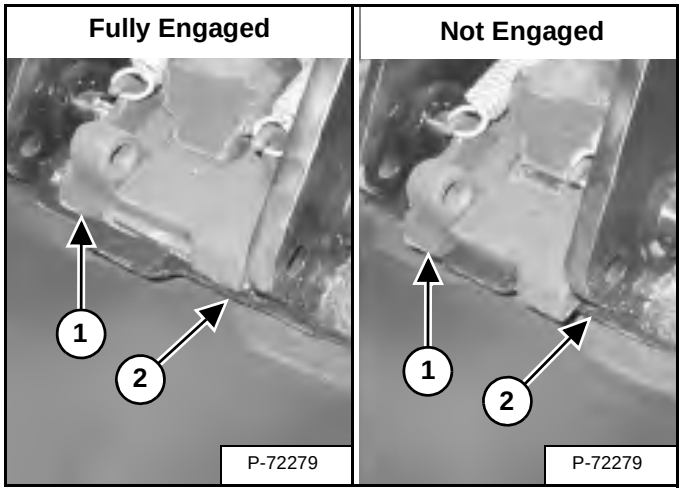


Extend the bucket cylinder (Item 1) **[Figure 211]** fully.

Lower the attachment until it is flat on the ground.

Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Figure 212



Visually inspect the quick coupler latch (Item 1) to the bucket mount (Item 2) **[Figure 212]**. The latch must be fully engaged.

⚠ WARNING

AVOID INJURY

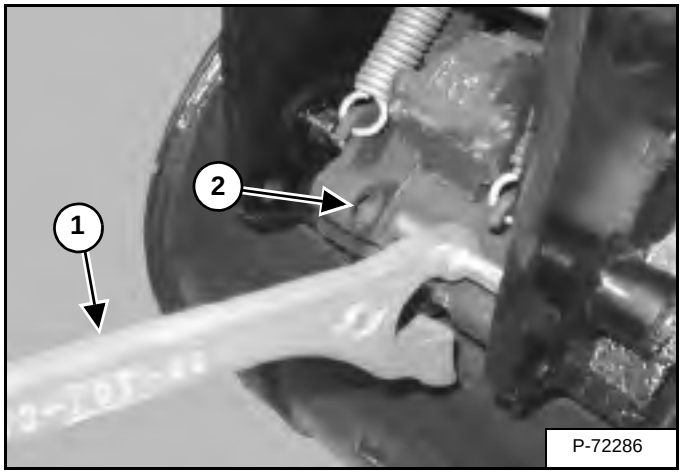
Keep fingers and hands out of pinch points when latching and unlatching the attachment quick coupler.

W-2541-1106

Installation (Cont'd)

Quick Coupler (Klac™ System) (Cont'd)

Figure 213



If the latch is not engaged, install the tool (Item 1) in the hole (Item 2) **[Figure 213]** of the quick coupler and push down to unlatch the quick coupler. Remove the tool.

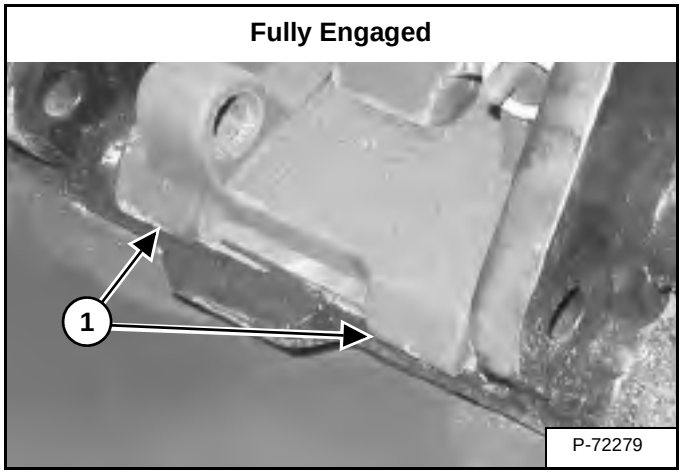
Enter the excavator. (See Entering And Exiting The Excavator on Page 99.)

Fasten the seat belt and start the engine.

Raise the attachment 500 mm (20 in) off of the ground and fully extend the bucket cylinder. Lower the attachment until it is flat on the ground.

Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Figure 214



Again, visually inspect the quick coupler to make sure the latch (Item 1) **[Figure 214]** is fully engaged. If it is not fully engaged, remove the attachment and inspect both the quick coupler and the attachment for damage or debris.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Quick Coupler (Lehnhoff® System)

NOTE: Installation and removal of a bucket is shown. The procedure for other attachments is similar. Disconnect all hydraulic connections before removing the attachment (breaker, auger, etc.).

⚠ WARNING

AVOID INJURY OR DEATH

Never use attachments or buckets which are not approved by Bobcat Company. Buckets and attachments for safe loads of specified densities are approved for each model. Unapproved attachments can cause injury or death.

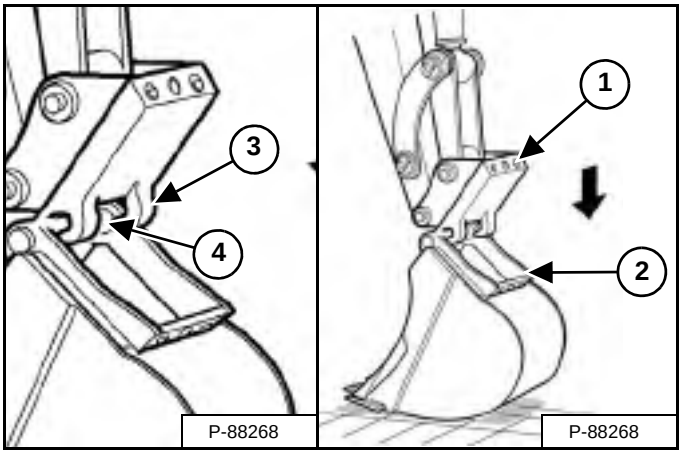
W-2052-0907

Enter the excavator. (See Entering And Exiting The Excavator on Page 99.)

Position the excavator so the excavator arm is above the attachment.

Fully retract the bucket cylinder.

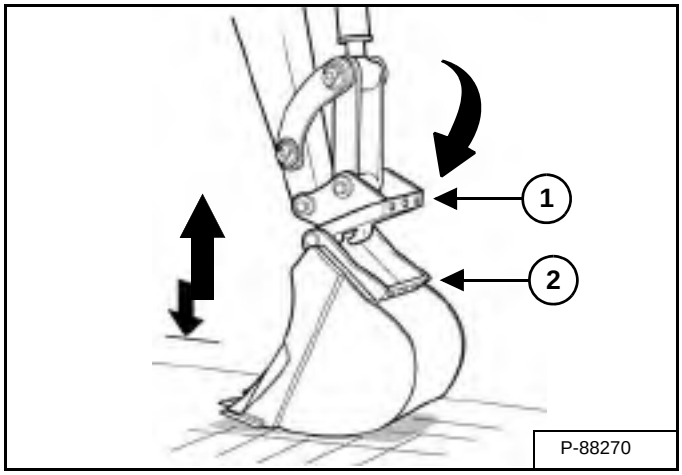
Figure 215



Lower the coupler (Item 1) onto the attachment (Item 2) **[Figure 215]**.

Engage the coupler hooks (Item 3) onto the mounting shaft (Item 4) **[Figure 215]**.

Figure 216



Extend (curl in) the bucket cylinder and slightly raise the boom until the coupler (Item 1) contacts the back of the attachment mount (Item 2) **[Figure 216]**.

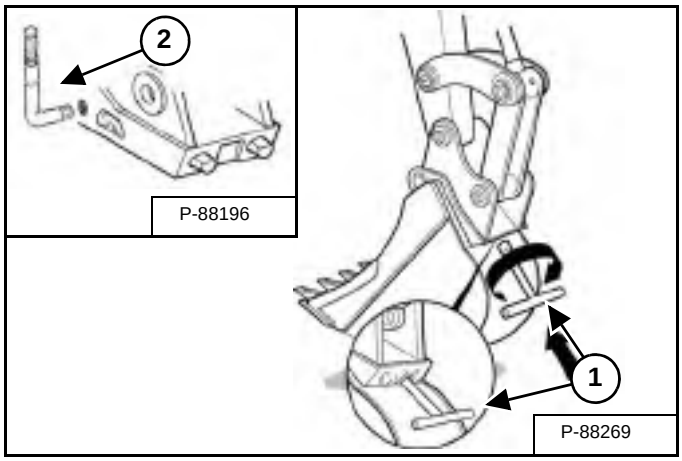
Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

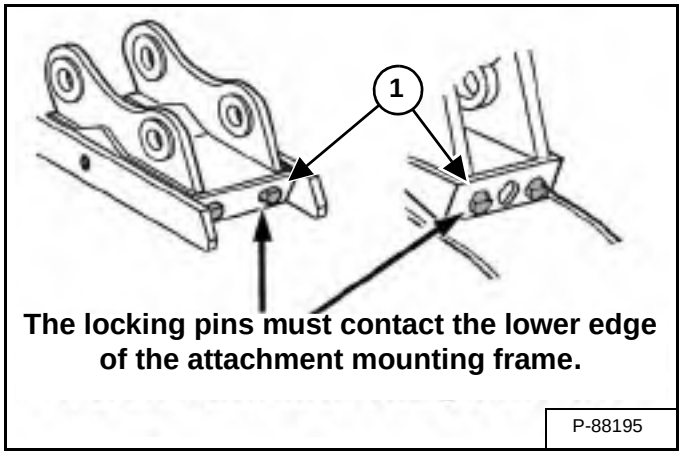
Quick Coupler (Lehnhoff® System) (Cont'd)

Figure 217



Install the supplied wrench (Item 1) or (Item 2) **[Figure 217]** and turn clockwise until the locking pins are fully engaged.

Figure 218



The locking pins (Item 1) **[Figure 218]** must extend through the holes in the attachment mounting frame, securely fastening the attachment to the coupler.

If both locking pins do not engage in the locked position, see you Bobcat dealer for maintenance.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Manual Spring Loaded Coupler (442 And 444 Only)

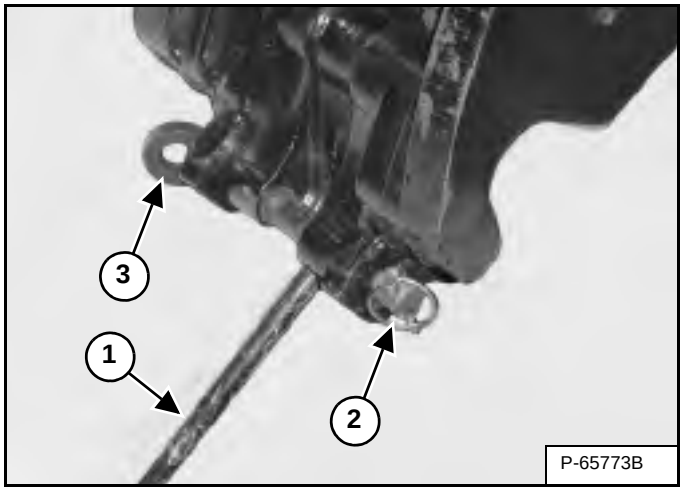
NOTE: Removal and installation of the bucket is shown. The procedure is the same for other attachments. Disconnect any hydraulic lines that are operated by hydraulic power before removing any attachments (breaker, direct drive auger, etc.).

⚠ WARNING

Never use attachments or buckets which are not approved by the Bobcat Company. Attachments and buckets for safe loads of specified densities are approved for each model. Unapproved attachments and buckets can cause injury or death.

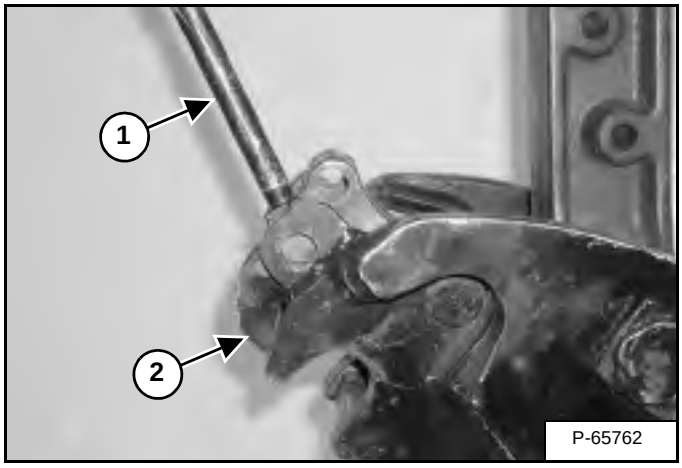
W-2662-0108

Figure 219



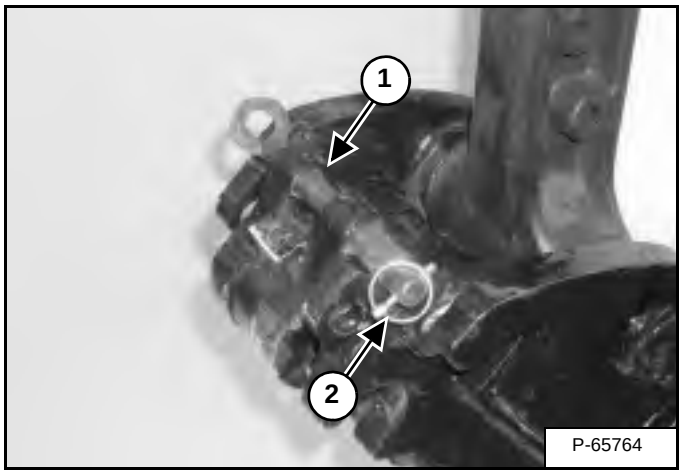
Insert the release bar (Item 1) into the manual spring loaded coupler. Remove the retainer pin (Item 2). Rotate the release bar (Item 1) upward slightly and remove the lock pin (Item 3) **[Figure 219]**.

Figure 220



Using the release bar (Item 1), rotate the locking hooks (Item 2) **[Figure 220]** upward to the unlock position.

Figure 221



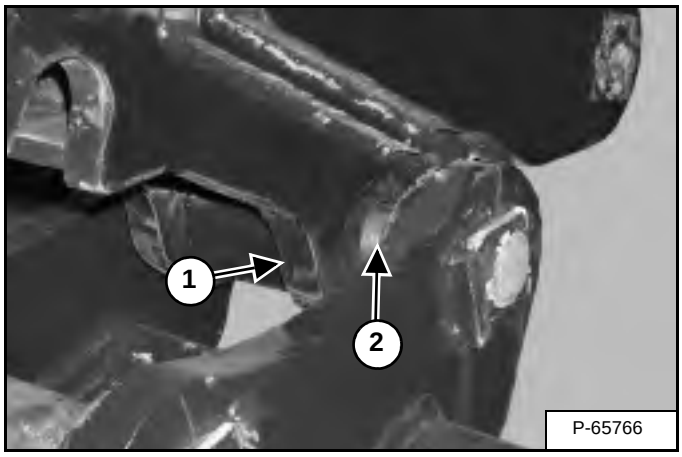
Install the lock pin (Item 1) and retainer pin (Item 2) **[Figure 221]** to hold the locking hooks in the open position. Remove the release bar.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Manual Spring Loaded Coupler (442 And 444 Only) (Cont'd)

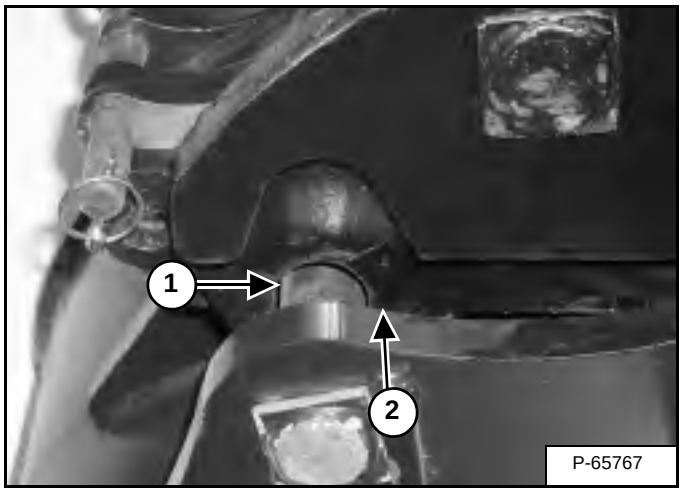
Figure 222



Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting The Excavator on Page 99.)

Position the front hooks (Item 1) over the front pin (Item 2) **[Figure 222]** of the attachment.

Figure 223

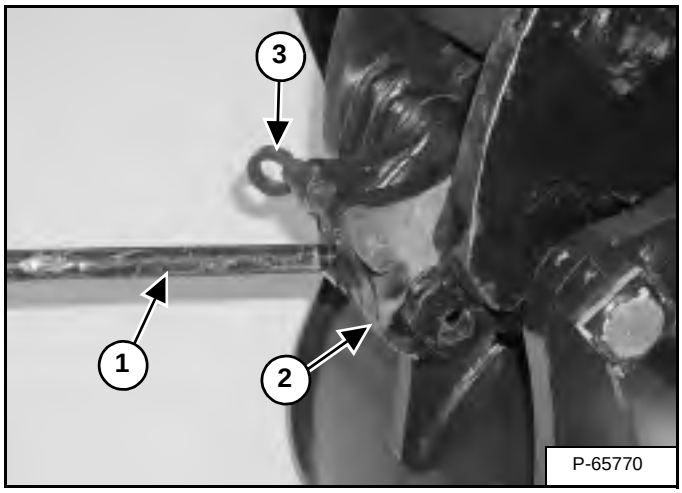


Extend the bucket cylinder (curl in) the coupler until the rear pin of the attachment (Item 1) is firmly seated in the coupler (Item 2) **[Figure 223]**.

Continue to curl the coupler and attachment until the weight of the attachment is supported by the coupler.

Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Figure 224



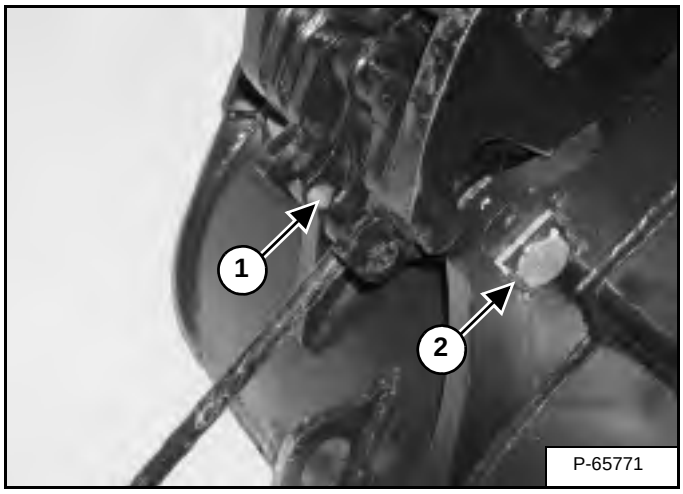
Reinsert the release bar (Item 1) and rotate the locking hooks (Item 2) **[Figure 224]** upward slightly.

Remove the retainer pin and the locking pin (Item 3) **[Figure 224]**.

Installation (Cont'd)

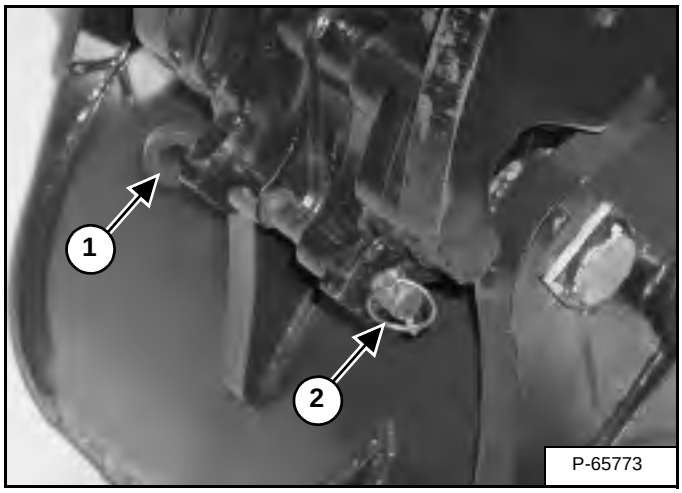
Manual Spring Loaded Coupler (442 And 444 Only) (Cont'd)

Figure 225



Rotate the locking hooks (Item 1) downward, cupping (engaging) the attachment pin (Item 2) **[Figure 225]**.

Figure 226



Install the locking pin (Item 1) and retainer pin (Item 2) **[Figure 226]** and remove the release bar.

Check for secure attachment. **Never operate without retainer pins (Item 2) [Figure 226] installed.**

⚠ WARNING

Keep all bystanders 6 m (20 ft) away from equipment when operating. Contact with moving parts, a trench cave-in or flying objects can cause injury or death.

W-2119-0910

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

For First Time Installation

New attachments and new excavators are factory equipped with flush face couplers. If installing an attachment equipped with poppet style couplers, the attachment couplers will have to be changed to match the excavator. See your Bobcat dealer for parts information.

IMPORTANT

- **Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.**
- **Contain and dispose of any oil leakage in an environmentally safe manner.**

I-2278-0608

With the excavator engine off and using the hose guides (if equipped), route the attachment hydraulic hoses to the excavator. Connect the attachment hydraulic quick couplers to the excavator couplers. (See Hydraulic Quick Couplers on Page 128.)

Check that the attachment hydraulic hoses are not twisted or contacting any moving parts of the excavator or attachment.

NOTE: It may be necessary to loosen the quick couplers on the attachment hydraulic hoses to remove any twists in the hoses.

⚠ 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

Loosen the quick coupler connections on the attachment hydraulic hoses while connected to the excavator. Do not remove the quick couplers.

Rotate the attachment hydraulic hoses as needed so the hoses are not twisted or contacting any moving parts of the excavator or attachment.

With the twist(s) removed from the hydraulic hoses, tighten the attachment quick coupler connections while the couplers are still connected to the excavator. This will help hold the hydraulic hoses in position while tightening.

Tighten the quick couplers connections to 63 N•m (46 ft-lb) torque before starting the excavator.

Enter the excavator. (See Entering And Exiting The Excavator on Page 99.)

Start the engine.

Engage auxiliary hydraulics. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

⚠ WARNING

AVOID INJURY OR DEATH

Diesel fuel or hydraulic fluid under pressure can penetrate skin or eyes, causing serious injury or death. Fluid leaks under pressure may not be visible. Use a piece of cardboard or wood to find leaks. Do not use your bare hand. Wear safety goggles. If fluid enters skin or eyes, get immediate medical attention from a doctor familiar with this injury.

W-2072-EN-0909

Check the attachment hydraulic quick coupler connections for leaks.

Hydraulic Quick Couplers

IMPORTANT

- **Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.**
- **Contain and dispose of any oil leakage in an environmentally safe manner.**

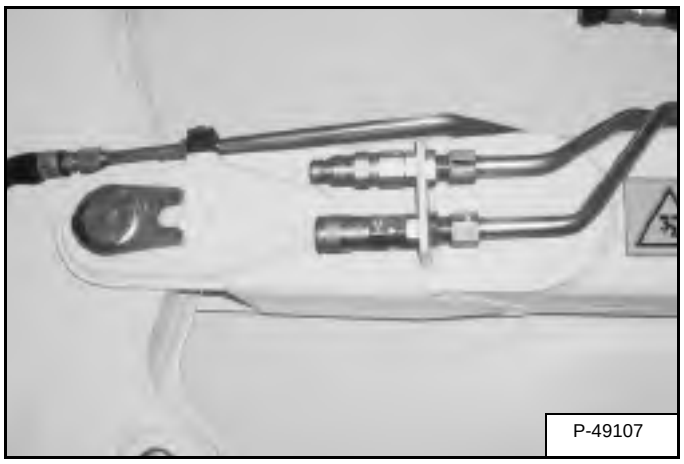
I-2278-0608

NOTE: The following illustrations may not show your hydraulic quick couplers exactly but the procedure is correct.

New attachments and new excavators are factory equipped with flush face couplers. If installing an attachment equipped with poppet style couplers, the attachment couplers will have to be changed to match the excavator. See your Bobcat dealer for parts information.

NOTE: Make sure the quick couplers are fully engaged. If the quick couplers do not fully engage, check to see that the couplers are the same size and type.

Figure 227



NOTE: The male flush face coupler is located on the right side of the arm and the female coupler is located on the left side of the arm (E60, E62, E80, and E85 excavators only).

⚠ WARNING

AVOID BURNS

Hydraulic fluid, tubes, fittings and quick couplers can get hot when running machine and attachments. Be careful when connecting and disconnecting quick couplers.

W-2220-0396

To Connect:

Remove dirt or debris from the surface of both the male and female couplers, and from the outside diameter of the male coupler. Visually check the couplers for corroding, cracking, damage, or excessive wear. If any of these conditions exist, the coupler(s) must be replaced **[Figure 227]**.

Install the male coupler into the female coupler. Full connection is made when the ball release sleeve slides forward on the female coupler.

NOTE: Check that the attachment hydraulic hoses are not twisted or contacting any moving parts of the excavator or attachment. (See For First Time Installation on Page 127.) for proper adjustment.

To Disconnect:

Relieve hydraulic pressure. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Hold the male coupler. Retract the sleeve on the female coupler until the couplers disconnect.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

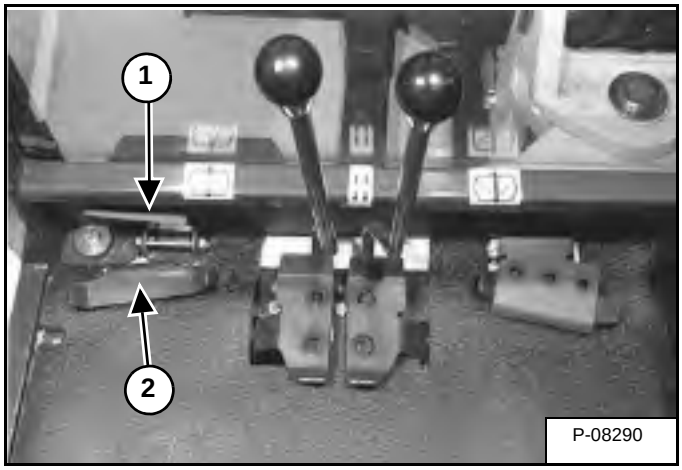
Control Functions

Engage the auxiliary hydraulics. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

NOTE: Auxiliary hydraulic must be activated prior to attachment operation.

Early Models And 320, 323 Current Models

Figure 228

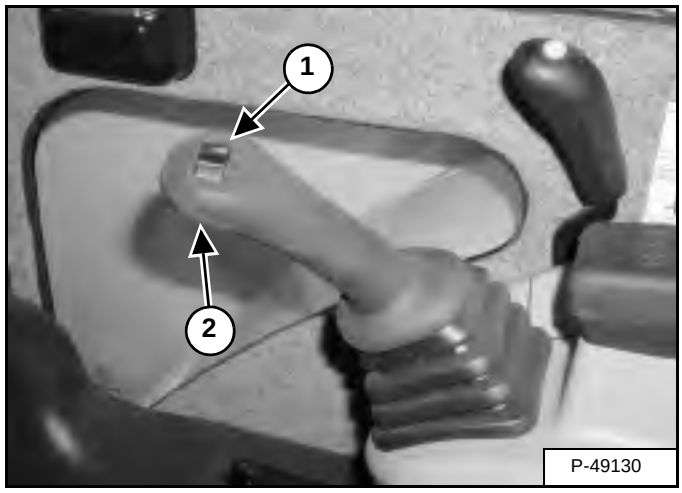


Raise the pedal lock / footrest (Item 1) to operate the auxiliary operation pedal (Item 2) **[Figure 228]**. Push the pedal to the right to pressurise the female coupler (breaker starts).

Later Model 300 And 400 Series Machines

Engage the auxiliary hydraulics. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Figure 229



Move the switch (Item 1) **[Figure 229]** on the right control lever to the right to pressurise the female coupler (breaker starts).

Press the front switch (Item 2) **[Figure 229]** on the front of the right control lever to give the quick couplers a continuous flow of fluid to the female coupler.

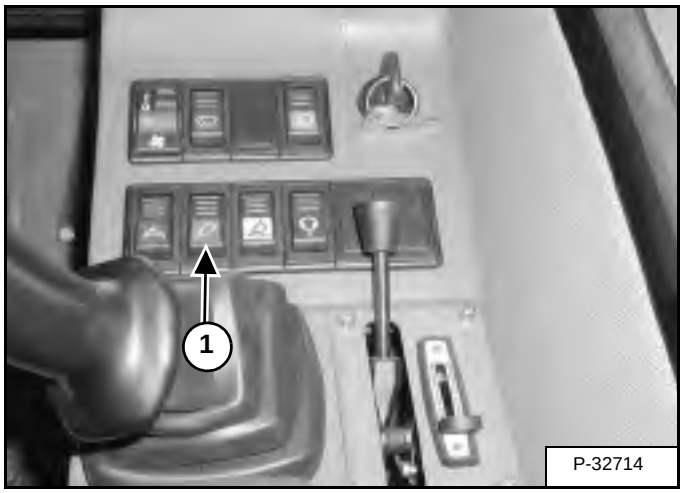
To release from continuous operation, press the front switch (Item 2) **[Figure 229]** a second time.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Control Functions (Cont'd)

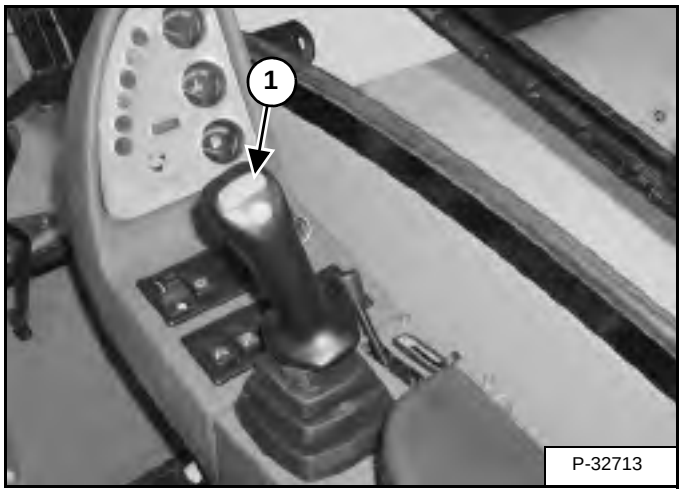
442 And 444 Excavator Auxiliary Hydraulics

Figure 230



Press the switch (Item 1) **[Figure 230]**. The switch will be illuminated.

Figure 231



Press and hold the switch (Item 1) **[Figure 231]** to provide hydraulic flow to the hydraulic breaker.

Release the switch to stop hydraulic flow.

Control Functions (Cont'd)

316 Excavator Auxiliary Hydraulics

Figure 232

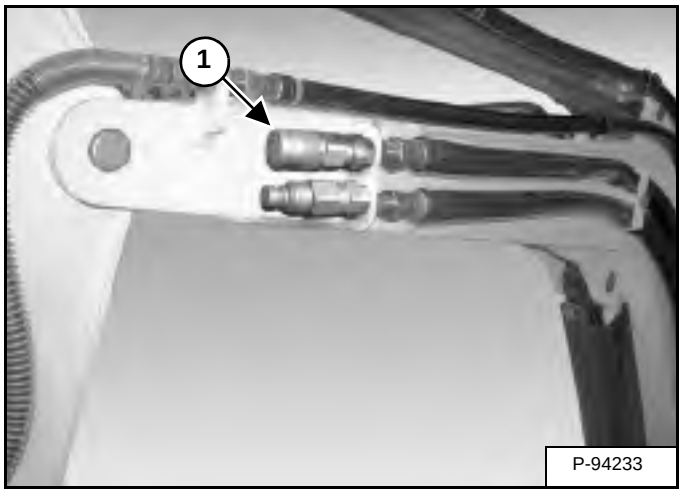
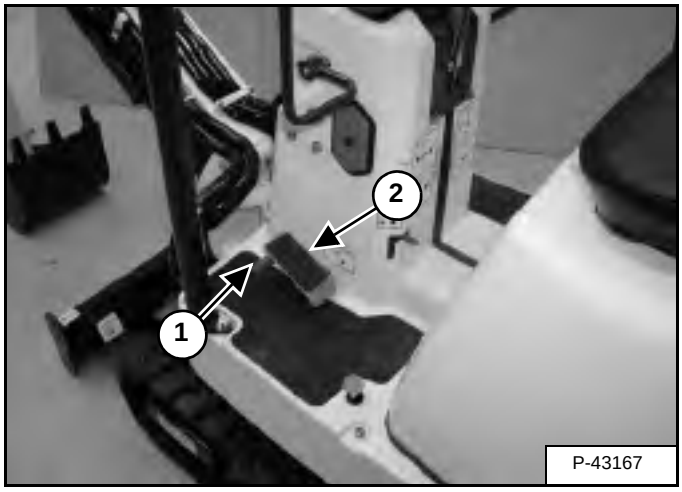


Figure 233



Pull the locking pin out (Item 1) **[Figure 233]** to allow the pedal to pivot.

Press the auxiliary Hydraulics Pedal (Item 2) **[Figure 233]** to provide hydraulic pressure to the top hydraulic line (Item 1) **[Figure 232]**. Release the pedal to stop hydraulic flow.

When you are not using the auxiliary hydraulics, engage the locking pin so that you can use the pedal as a footrest.

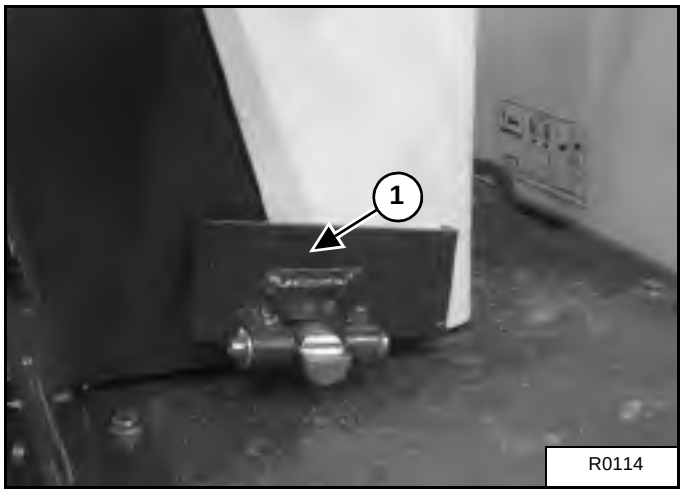
Only the top auxiliary line is pressurised. The bottom line is for return hydraulic fluid flow.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Control Functions (Cont'd)

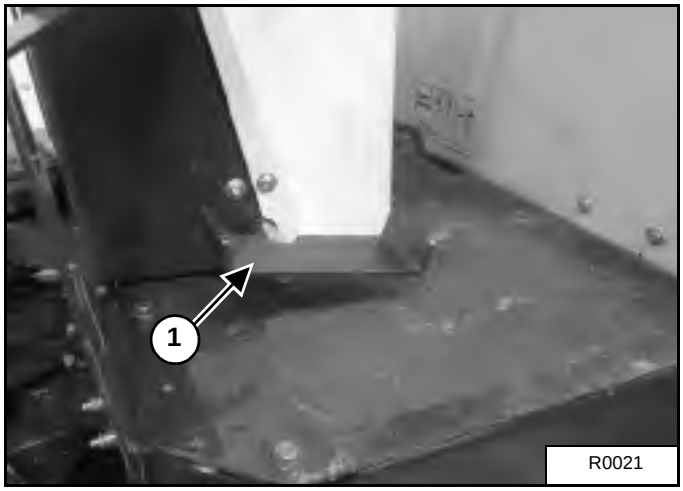
E08 And E10 Excavator Auxiliary Hydraulics

Figure 234



Rotate the auxiliary pedal (Item 1) **[Figure 234]** down.

Figure 235



Press the front of the auxiliary Hydraulics Pedal (Item 1) **[Figure 235]** to provide hydraulic pressure to the top hydraulic line (Item 1) **[Figure 232]**. Release the pedal to stop hydraulic flow.

When you are not using the auxiliary hydraulics, rotate the pedal up to the storage position.

E14 And E16 Excavator Auxiliary Hydraulics

Figure 236

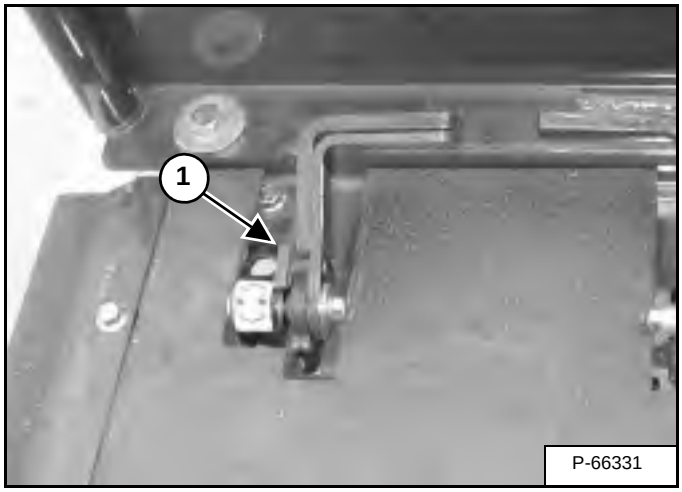
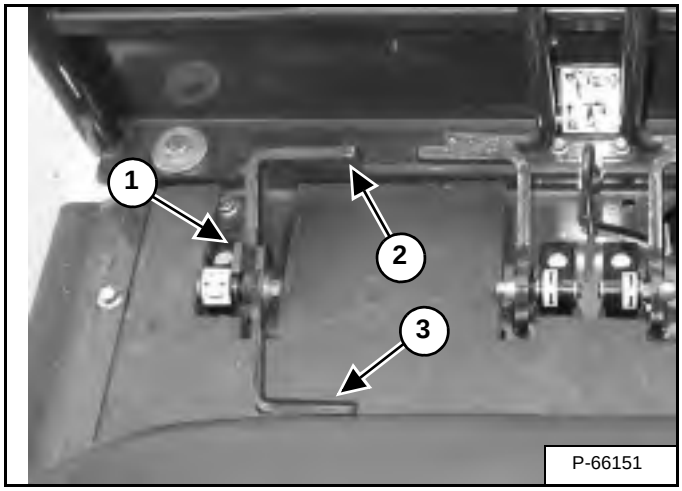


Figure 237



The left pedal **[Figure 236]** and **[Figure 237]** controls hydraulic flow to attachments (such as a hydraulic breaker) when mounted on the arm.

Release the pedal lock (Item 1) **[Figure 236]** and swing the heel of the pedal to the rear.

The excavator is equipped with two-way flow auxiliary hydraulics (either coupler can be pressurised).

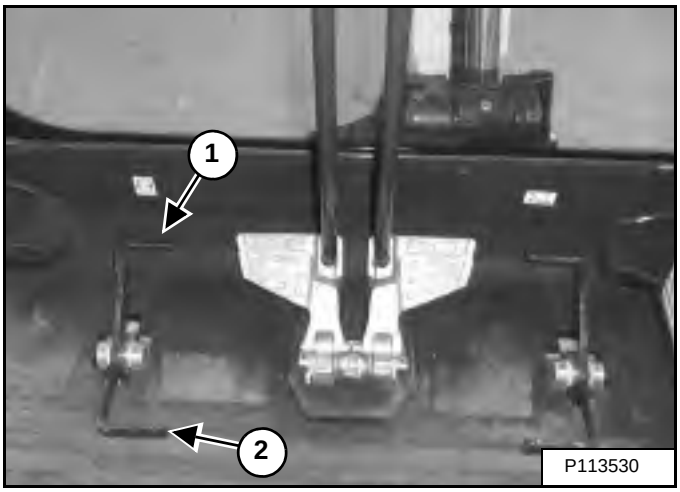
Push the toe of the pedal (Item 2) to activate hydraulic pressure / flow to the female coupler; heel (Item 3) **[Figure 237]** to activate hydraulic pressure / flow to the male coupler.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Control Functions (Cont'd)

E17, E19 And E20 Auxiliary Hydraulics - Manual Controls

Figure 238

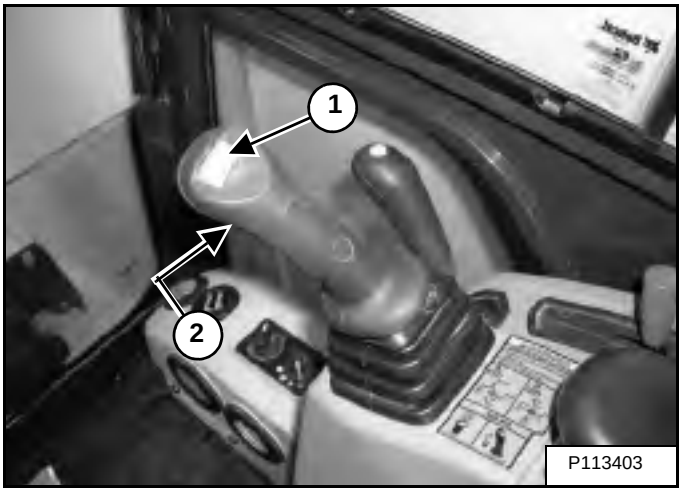


Press the toe of the pedal (Item 1) **[Figure 238]** to provide hydraulic flow / pressure to the female coupler (breaker starts). Release the pedal to stop the hydraulic flow and breaker operation.

E17, E19 And E20 Auxiliary Hydraulics - EH Controls

Engage auxiliary hydraulics. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Figure 239



Move the switch (Item 1) **[Figure 239]** on the right control to the right to pressurise the female coupler (breaker starts).

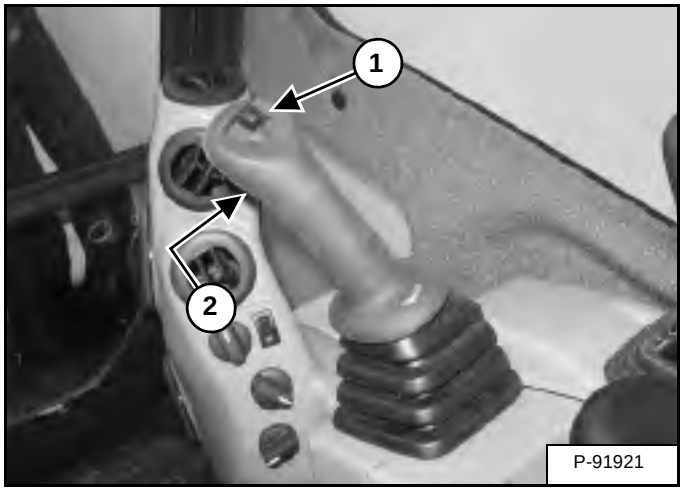
Press the switch (Item 2) **[Figure 239]** on the front of the handle to provide constant flow to the female coupler.

Press the switch (Item 2) **[Figure 239]** a second time to stop auxiliary flow to the quick couplers.

E25, E26, E32, E35, E45, E50 And E55 Excavator Auxiliary Hydraulics

Engage auxiliary hydraulics. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Figure 240



Move the switch (Item 1) **[Figure 240]** on the right control to the right to pressurise the female coupler (breaker starts).

Press the switch (Item 2) **[Figure 240]** on the front of the handle to provide constant flow to the female coupler.

Press the switch (Item 2) **[Figure 240]** a second time to stop auxiliary flow to the quick couplers.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Control Functions (Cont'd)

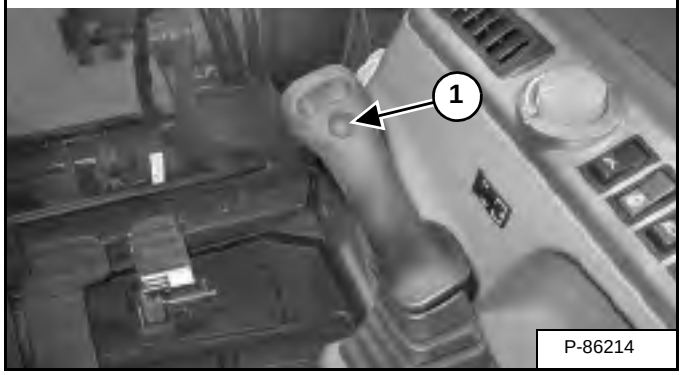
E55W, E60, And E80 Excavator Auxiliary Hydraulics

NOTE: For E55W and E80 excavators make sure the direct to tank valve (if equipped) is in the breaker position. (See the excavator's Operation & Maintenance Manual for detailed information.)

NOTE: For breaker applications, use the one way auxiliary hydraulic switch. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for the correct procedure.)

Figure 241

E55W, E60, And E80 Excavators



For E60 and E80 excavators: Press and hold the auxiliary hydraulics button (Item 1) **[Figure 241]** on the right joystick to supply hydraulic flow / pressure to the female coupler.

For E55W excavators: Press and hold the auxiliary hydraulics button (Item 1) **[Figure 241]** on the right joystick to supply hydraulic flow / pressure to the male coupler.

For E55W, E60 and E80 excavators: Release the button (Item 1) **[Figure 241]** to stop hydraulic flow.

E62 And E85 Excavator Auxiliary Hydraulics

NOTE: For E85 excavators make sure the direct to tank valve (if equipped) is in the breaker position. (See the excavator's Operation & Maintenance Manual for detailed information.)

NOTE: For breaker applications, use the one way auxiliary hydraulic switch. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for the correct procedure.)

Figure 242

E62 And E85 Excavators

Press and hold the auxiliary hydraulics button (Item 1) **[Figure 242]** on the right joystick to supply hydraulic flow / pressure to the female coupler.

Release the button (Item 1) **[Figure 242]** to stop hydraulic flow.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Operation With The Excavator

NOTE: Special Application Kits are available for loaders and excavators. Special Application Kits must be used in applications where falling debris is present. See your Bobcat dealer for availability.

⚠ WARNING

AVOID INJURY OR DEATH

- **Operator and bystanders must wear goggles, hard hat and noise protection when the breaker is in operation.**
- **DO NOT demolish overhead materials or ceilings.**
- **Keep all bystanders 6 m (20 ft) away from equipment when operating.**

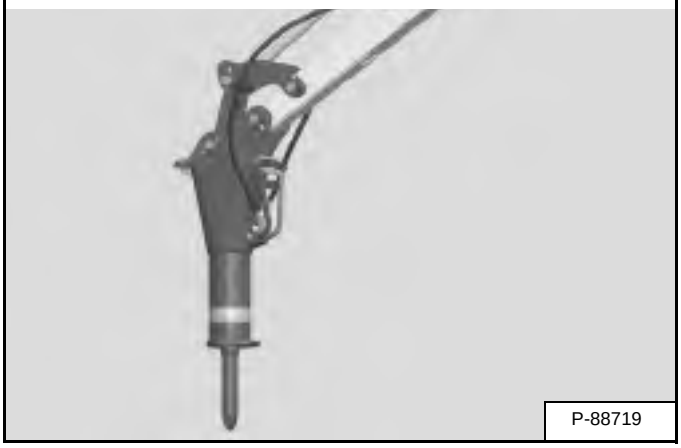
W-2627-0910

For the first time use on a rebuilt breaker, use low engine rpm and feather the hydraulics to fill the internal passages of the breaker with hydraulic fluid. If the breaker is used without first flooding the hydraulic passages, internal damage may result.

In cold weather conditions, warm the excavator hydraulic fluid to operating temperature before operating the breaker.

Figure 243

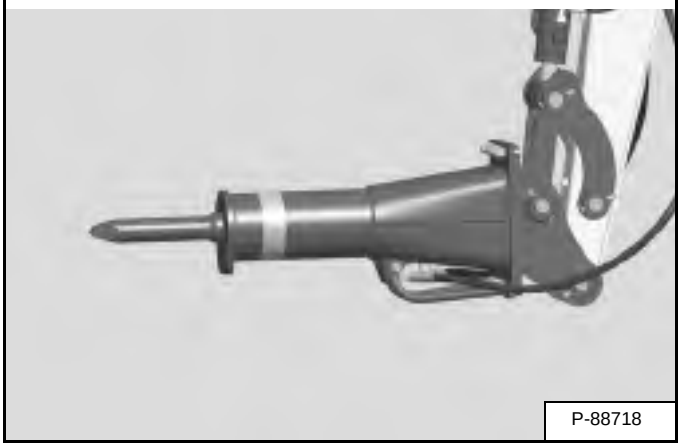
Vertical Operating Position



When operating in the vertical position **[Figure 243]**, on flat material, keep the tool vertical or curled back a small amount to direct the impact force downward and slightly toward the excavator.

Figure 244

Horizontal Operating Position



When operating in the horizontal position **[Figure 244]**, work near the edge.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Operation With The Excavator (Cont'd)

Driving The Excavator And Attachment To The Worksite

When driving the excavator and attachment to the worksite or operating on public roads, on slopes or in water, see the excavator's Operation & Maintenance Manual and Operator's Handbook to correctly operate the excavator.

Tips / Recommendations

⚠ WARNING

AVOID INJURY OR DEATH

- **Operator and bystanders must wear goggles, hard hat and noise protection when the breaker is in operation.**
- **DO NOT demolish overhead materials or ceilings.**
- **Keep all bystanders 6 m (20 ft) away from equipment when operating.**

W-2627-0910

IMPORTANT

Avoid Blank (No Load) Firing. Disengage auxiliary hydraulics when breaker is not in use.

I-2205-0800

IMPORTANT

Do not use the breaker bit as a pry bar to move broken material. Excess prying force can cause damage to the breaker or machine.

I-2074-0409

Use the following procedures as a guide when operating the breaker:

NOTE: With experience, the operator will become more effective at breaking.

- Break off small pieces to prevent damage to the equipment from falling material.
- Keep the tool perpendicular to the work surface.
- Apply penetrating force by raising the front of the excavator slightly off the ground.
- Apply penetrating force for no more than 15 seconds.
- Move the tool to a different location whenever the tool penetrates but does not crack the material.
- Strike the material several places along a line where you want it to break.
- Deep tool penetration is not necessary, 152 - 254 mm (6 - 10 in) is usually enough to break the material.
- Concrete reinforced with rebar will hold together when concrete is broken. Use a chisel point tool to cut the rebar.
- Excessive sideways force can cause tool binding, poor breaking and wear of the tool shank, cylinders and breaker attachment.
- Always direct the force toward the point of the tool in contact with the material.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal

Pin-On X-Change

Select a flat and level surface.

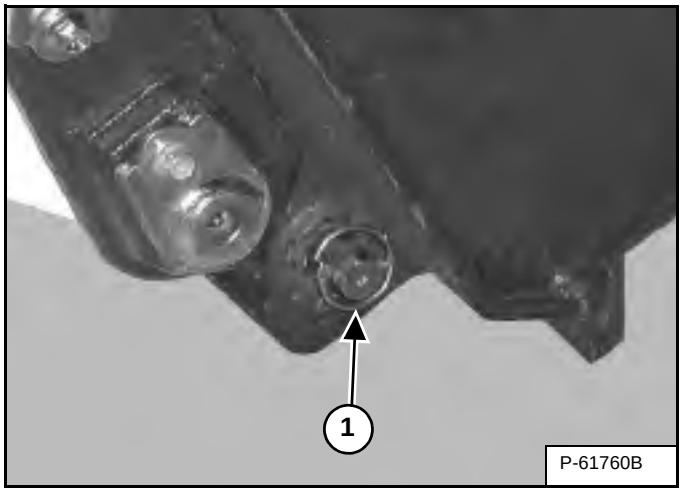
Position the arm vertically, lower the breaker to the ground. Stop the engine.

Relieve hydraulic pressure. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

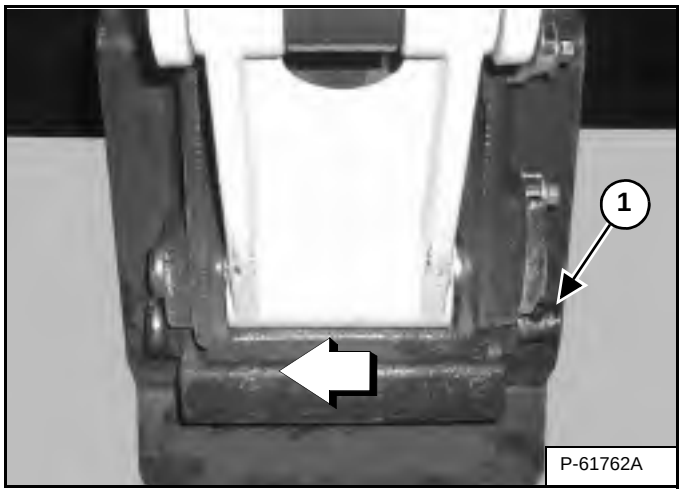
Disconnect the auxiliary couplers. (See Hydraulic Quick Couplers on Page 128.)

Figure 245



Remove the retainer pin (Item 1) **[Figure 245]**.

Figure 246



Drive the pin (Item 1) **[Figure 246]** out of the breaker and X-Change Mount.

⚠ 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.**

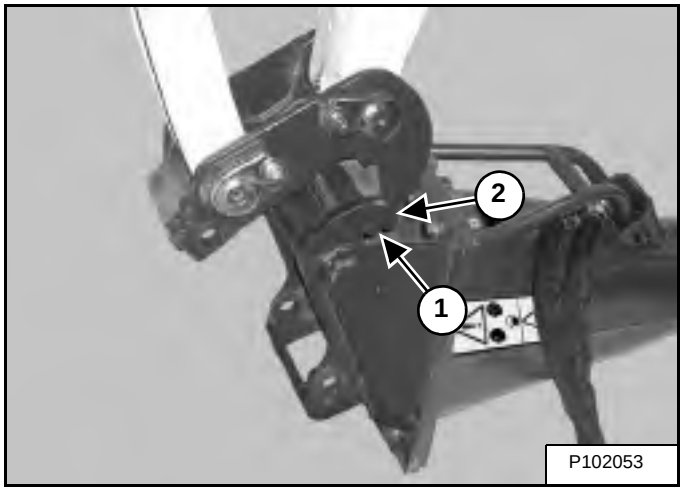
W-2019-0907

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Pin-On X-Change (Cont'd)

Figure 247



Enter the excavator. (See Entering And Exiting The Excavator on Page 99.)

Start the engine.

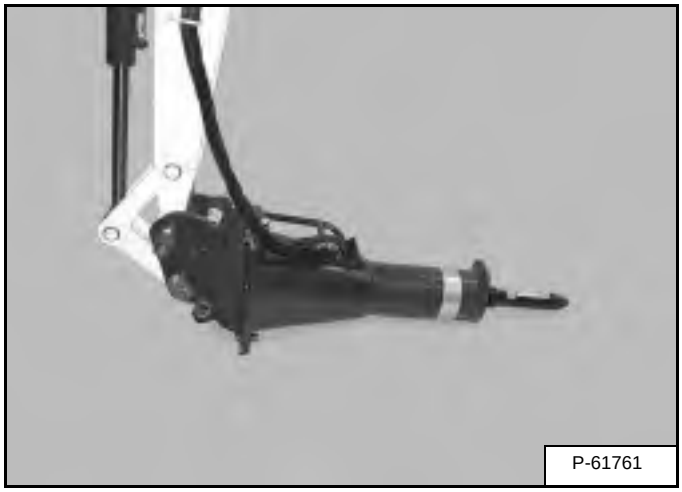
Lift the boom approximately 305 mm (12 in) and fully retract the bucket cylinder to disengage the breaker **[Figure 247]**.

Lower the boom until the X-Change pins (Item 1) are clear of the hooks (Item 2) **[Figure 247]**.

Move the arm toward the excavator until the X-Change pins are clear of the breaker.

Bolt-On X-Change

Figure 248



Select a flat and level surface.

Position the arm vertically and put the breaker on the ground **[Figure 248]**.

Stop the engine.

Relieve hydraulic pressure. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

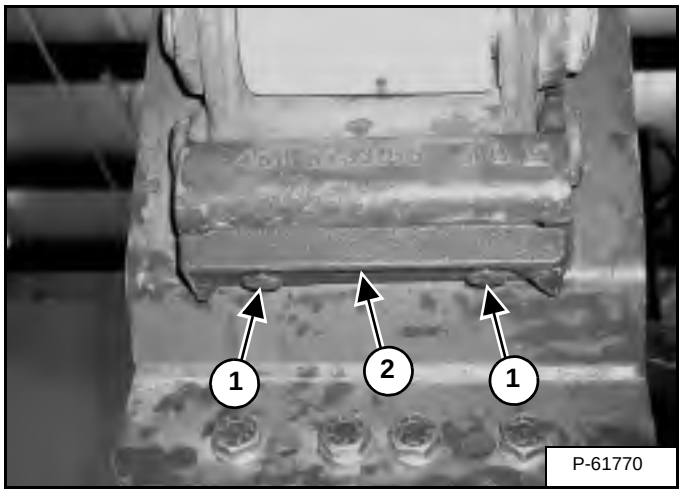
Exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Disconnect the auxiliary couplers. (See Hydraulic Quick Couplers on Page 128.)

Removal (Cont'd)

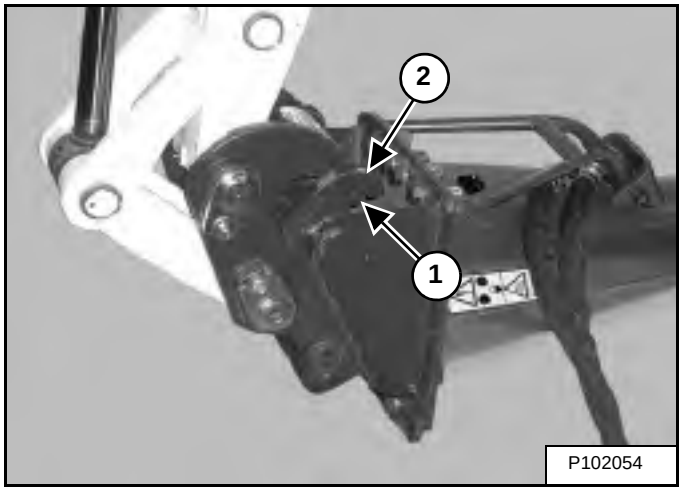
Bolt-On X-Change (Cont'd)

Figure 249



Remove the two bolts (Item 1) and plate (Item 2) **[Figure 249]**.

Figure 250

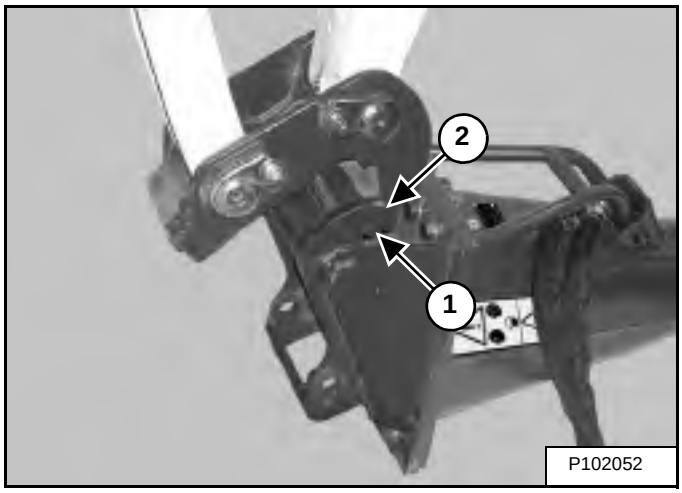


Enter the excavator. (See Entering And Exiting The Excavator on Page 99.)

Start the engine.

Raise the boom approximately 305 mm (12 in) until the X-Change pins (Item 1) engage the hooks (Item 2) **[Figure 250]** on the breaker.

Figure 251



Fully retract the bucket cylinder and lower the boom and arm until the breaker is on the ground, and the X-Change pins (Item 1) are disengaged from the hooks (Item 2) **[Figure 251]**.

Move the arm toward the excavator until the X-Change pins are clear of the breaker.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

X-Change System

Select a flat and level surface.

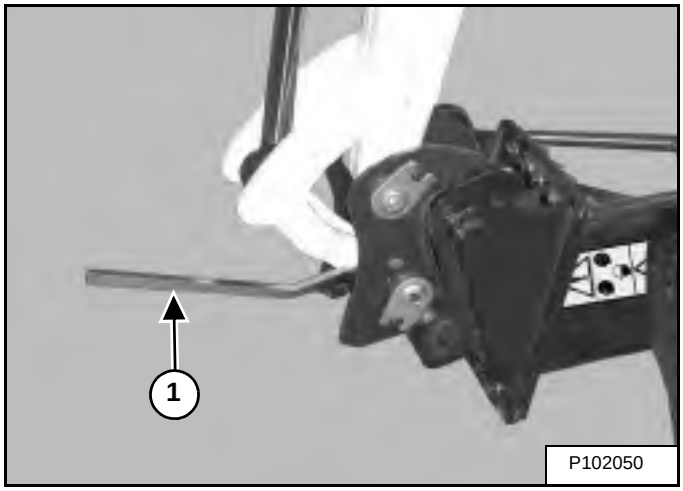
Position the arm vertically, lower the breaker to the ground. Stop the engine.

Relieve hydraulic pressure. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

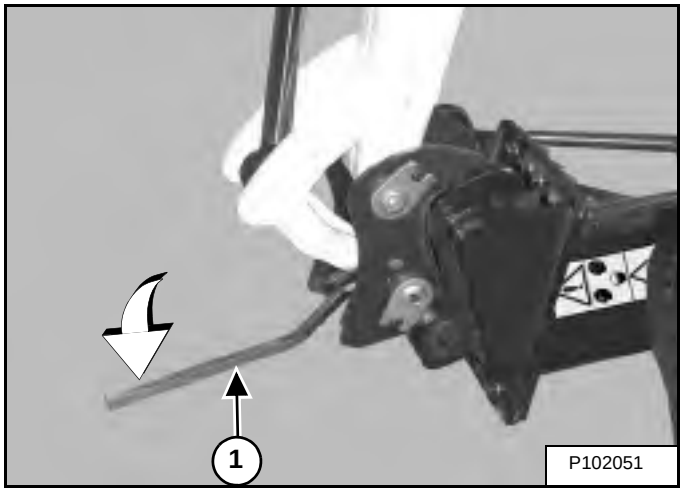
Disconnect the auxiliary couplers. (See Hydraulic Quick Couplers on Page 128.)

Figure 252



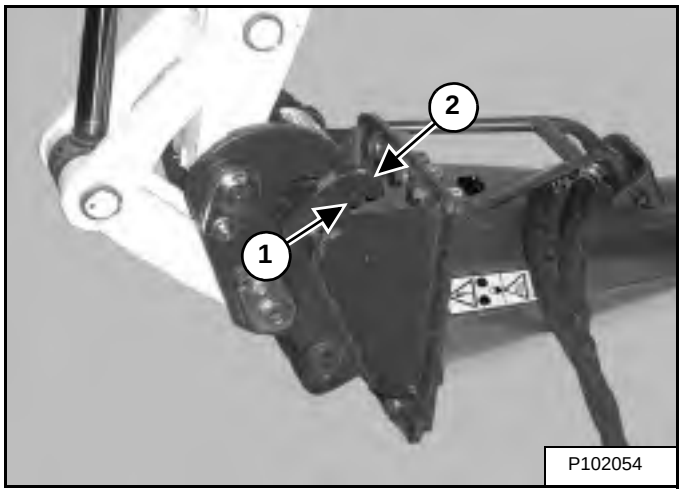
Install the X-Change tool (Item 1) **[Figure 252]** in the latch.

Figure 253



Pull the lever (Item 1) **[Figure 253]** away from the excavator, to unlock the latch. Remove the tool.

Figure 254



Start the engine. Lift the boom approximately 305 mm (12 in), until the X-Change pins (Item 1) engage the hooks (Item 2) **[Figure 254]** on the breaker.

⚠ WARNING

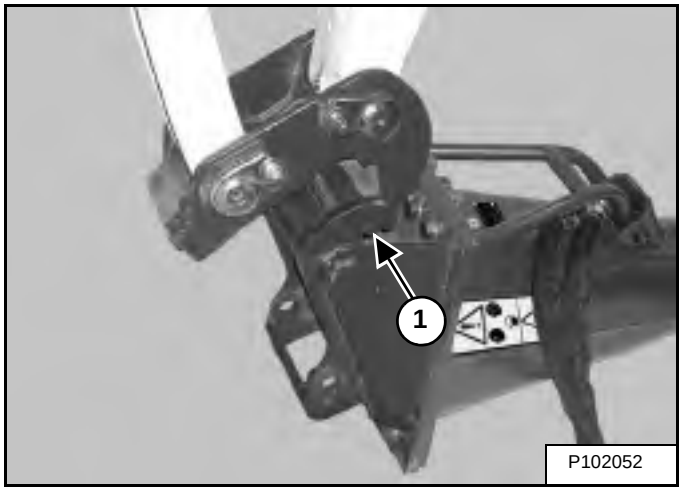
Keep all bystanders 6 m (20 ft) away from equipment when operating. Contact with moving parts, a trench cave-in or flying objects can cause injury or death.

W-2119-0910

Removal (Cont'd)

X-Change System (Cont'd)

Figure 255



Fully retract the bucket cylinder. Lower the boom and arm until the breaker is on the ground and the X-Change pins (Item 1) **[Figure 255]** are clear of the breaker.

Move the arm toward the excavator until the X-Change pins are clear of the breaker.

Removal (Cont'd)

Pin-On Attachment (442 And 444 Excavators)

Place the breaker flat on the ground.

Stop the engine.

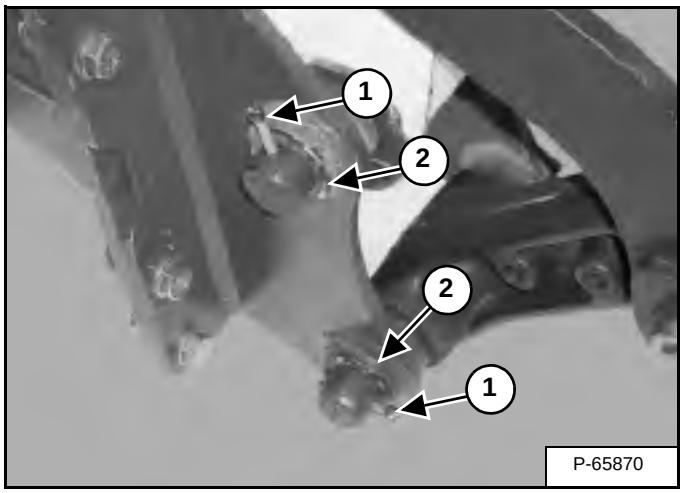
Relieve hydraulic pressure. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Disconnect the auxiliary couplers.

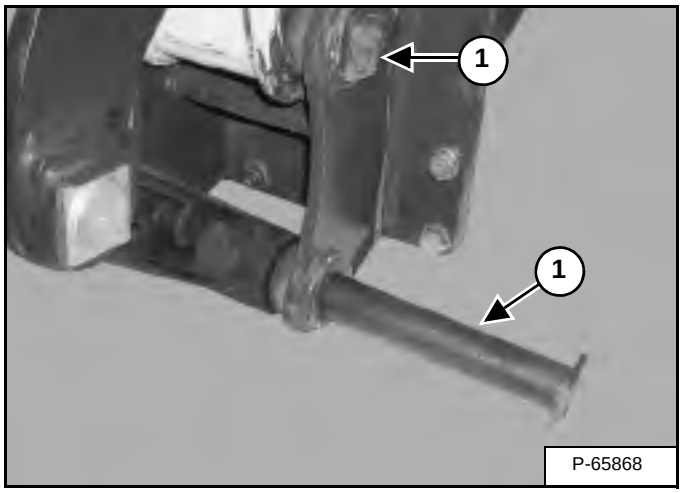
Disconnect the hoses from the auxiliary couplers. (See Hydraulic Quick Couplers on Page 128.)

Figure 256



Remove the retainer pins (Item 1) and the washers (Item 2) **[Figure 256]**.

Figure 257



Remove the two pins (Item 1) **[Figure 257]**.

Enter the excavator. (See Entering And Exiting The Excavator on Page 99.)

Start the engine, raise the boom and retract the bucket cylinder.

Move the arm away from the breaker.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Pin-On Attachment (316, E08, E10, E20, E25, E26, E32, E35, E45, E50 And E55 Excavators)

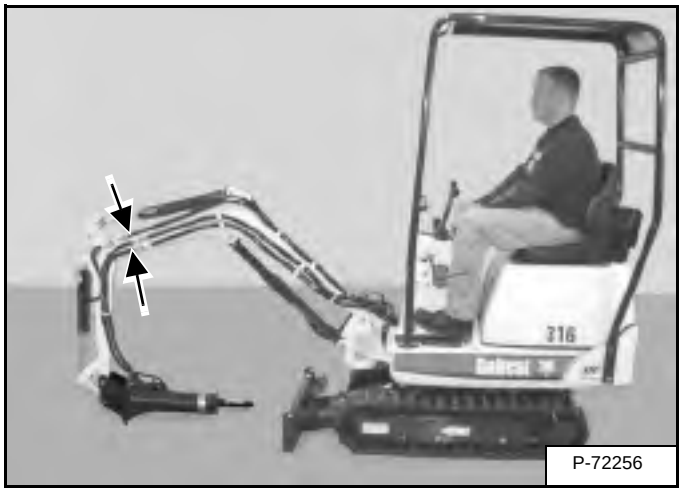
Park the excavator on a flat surface and place the breaker flat on the ground.

Relieve hydraulic pressure. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Stop the engine.

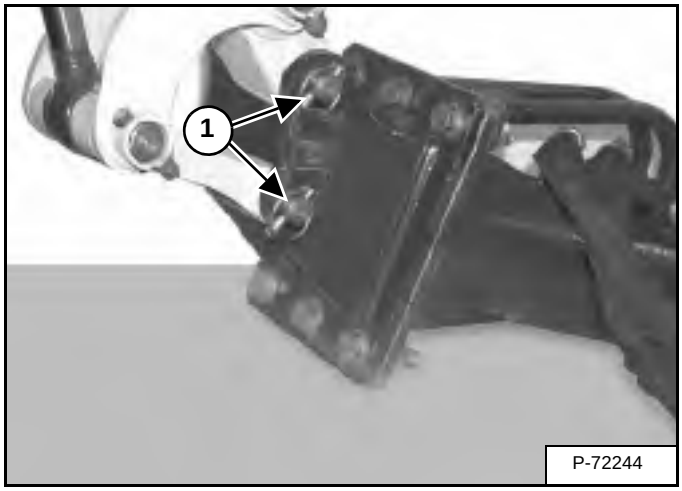
Exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Figure 258



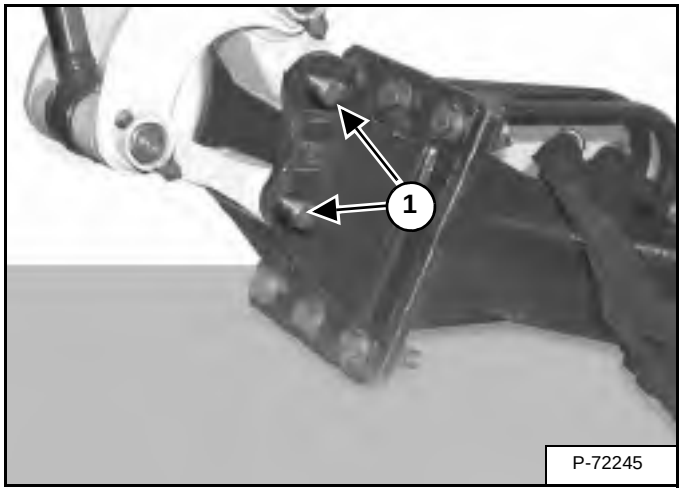
Disconnect the hoses from the auxiliary couplers **[Figure 258]**.

Figure 259



Remove the retaining clips (Item 1) **[Figure 259]**.

Figure 260



Remove the two pivot pins (Item 1) **[Figure 260]**.

Do not damage the dust seals in the arm.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

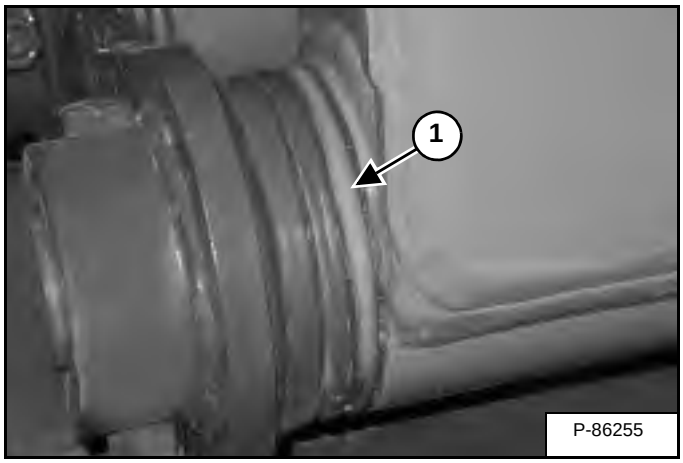
Pin-On Attachment (E55W, E60, E62, E80 And E85 Excavators)

Park the excavator on a flat surface and lower the attachment fully.

Stop the engine.

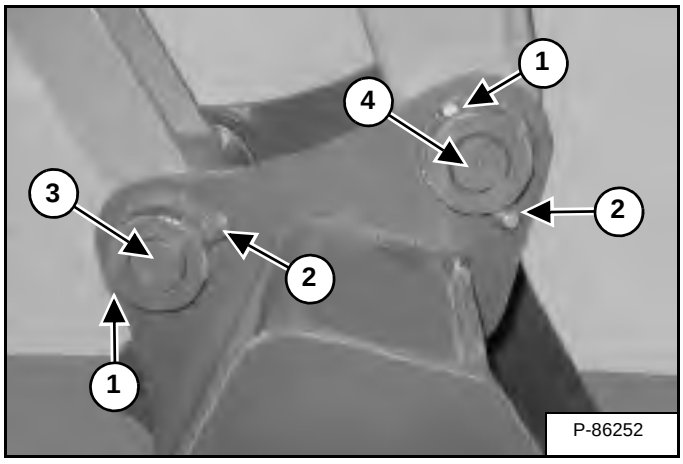
Exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Figure 261



Position the four O-rings (Item 1) **[Figure 261]** into the storage groove of the attachment so they do not get damaged during removal.

Figure 262



Remove the retainer bolts (Item 1) and nuts (Item 2) **[Figure 262]**.

Remove the pins (Items 3 and 4) **[Figure 262]**.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Pin Grabber Quick Coupler

NOTE: Removal and installation of the breaker is shown. The procedure is the same for other attachments. Disconnect any hydraulic lines that are operated by hydraulic power before removing any attachments (breaker, auger, etc.).

⚠ WARNING

Keep all bystanders 6 m (20 ft) away from equipment when operating. Contact with moving parts, a trench cave-in or flying objects can cause injury or death.

W-2119-0910

Figure 263

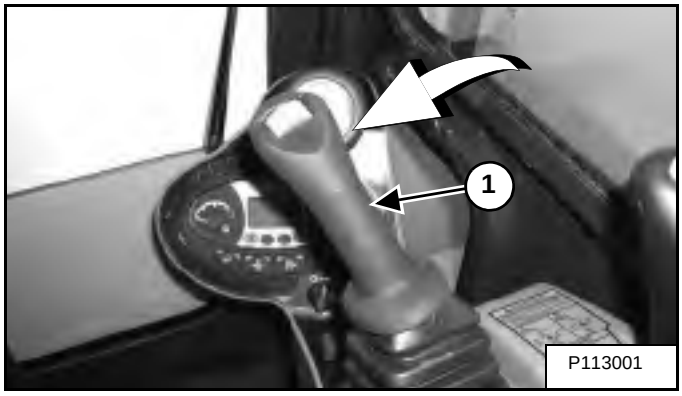
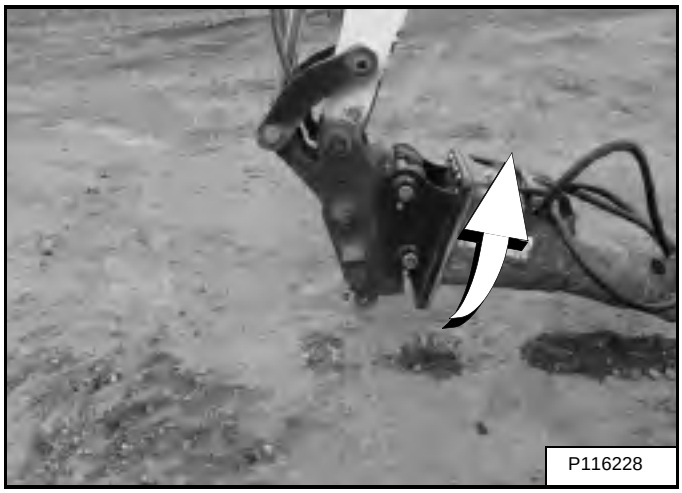
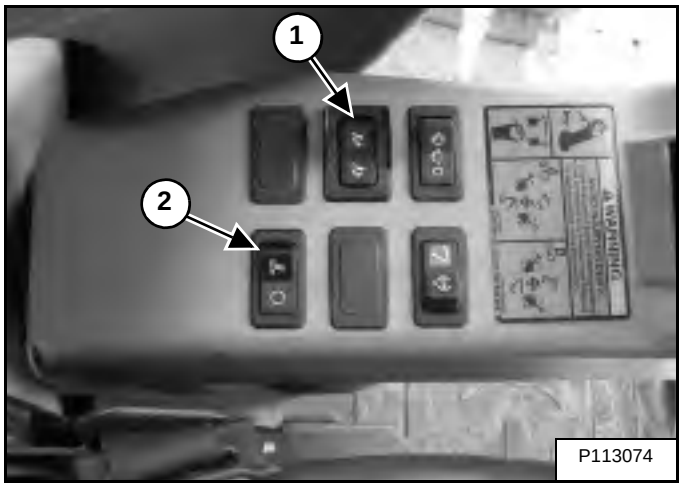


Figure 264



Move the right joystick (Item 1) **[Figure 263]** to the left (IN) and curl the quick coupler (Item 1) **[Figure 264]** fully.

Figure 265



Press the coupler ON / OFF switch (Item 1) **[Figure 265]** to the left (ON) position to enable the pin grabber quick coupler feature. The switch will illuminate when in the ON position and a buzzer will sound.

Press and release the INTENT switch (Item 2) within five seconds. (The buzzer will continue to sound and the light (Item 1) **[Figure 265]** will stay ON.)

Move the right joystick (Item 1) **[Figure 263]** to the left (IN) and continue to curl the quick coupler **[Figure 264]**. The coupler locking clasps will lift fully to unlock the attachment from the quick coupler.

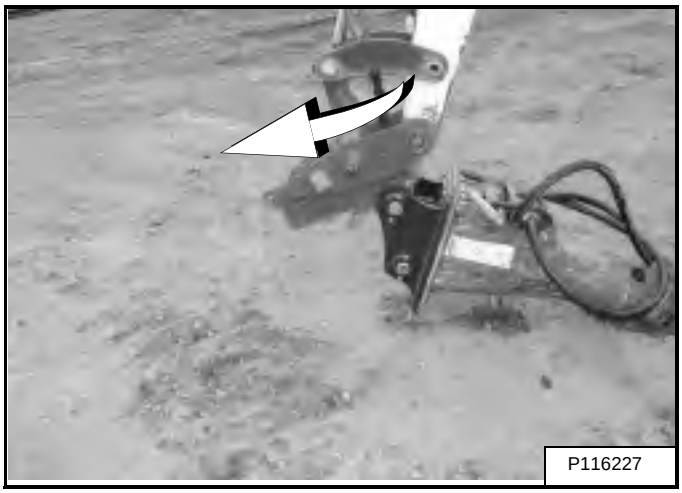
OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Pin Grabber Quick Coupler (Cont'd)

With the attachment slightly off of the ground, roll the quick coupler back until the coupler starts to disengage from the attachment.

Figure 266

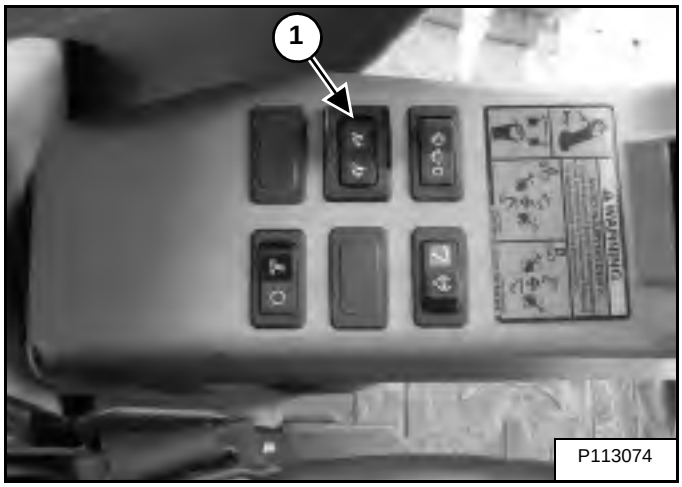


Roll the quick coupler back fully.

Lower the boom and arm until the attachment is on the ground and the quick coupler is disengaged from the attachment pins.

Move the arm away the excavator until the quick coupler is clear of the attachment **[Figure 266]**.

Figure 267



Press the coupler ON / OFF switch (Item 1) **[Figure 267]** to the right, (OFF) position. The switch light and buzzer will turn OFF.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Quick Coupler (Klac™ System)

Park the excavator on a level surface.

Position the attachment flat on the ground.

Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

NOTE: Installation and removal of the bucket is shown. The procedure is the same for other attachments. Disconnect any hydraulic lines that are operated by hydraulic power before removing any attachments (breaker, auger etc.).

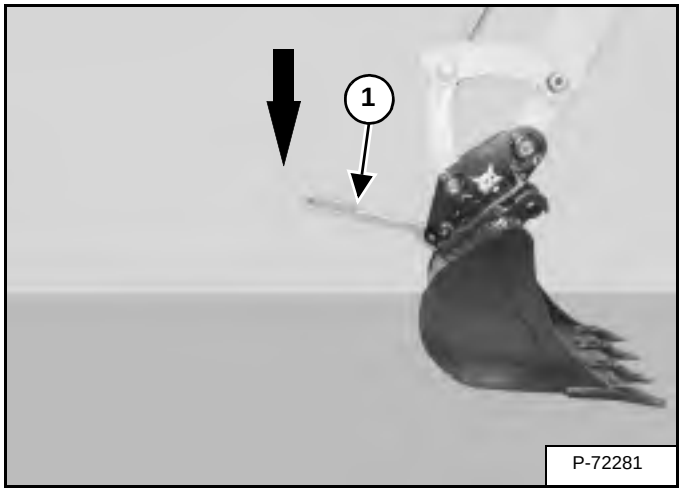
⚠ WARNING

AVOID INJURY

Keep fingers and hands out of pinch points when latching and unlatching the attachment quick coupler.

W-2541-1106

Figure 268



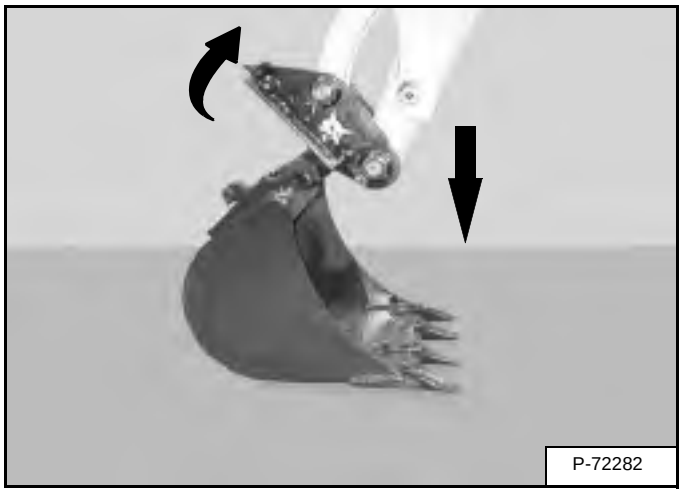
Install the quick coupler tool (Item 1) **[Figure 268]** into the hole in the quick coupler.

Push down on the tool (Item 1) **[Figure 268]** to unlock the latch.

Remove the tool.

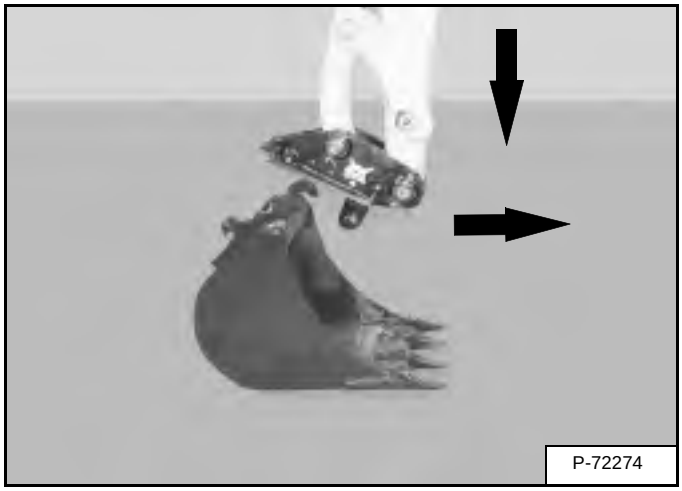
Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting The Excavator on Page 99.)

Figure 269



Retract the bucket cylinder fully and lower the boom **[Figure 269]**.

Figure 270



Continue to lower the boom and move the arm toward the excavator away from the attachment **[Figure 270]**.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

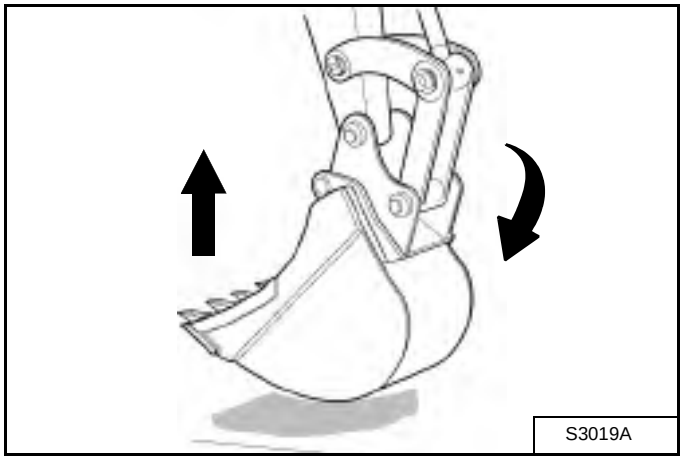
Removal (Cont'd)

Quick Coupler (Lehnhoff® System)

Park the excavator on a level surface.

NOTE: In muddy conditions or to prevent the attachment from freezing to the ground, put the attachment on planks or blocks before removing the attachment from the excavator.

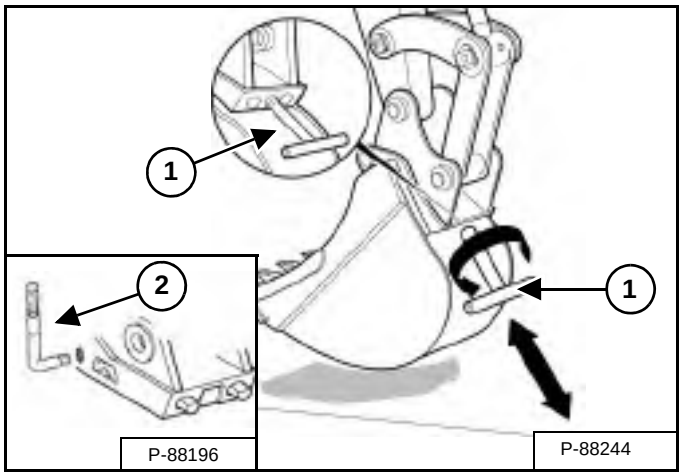
Figure 271



Raise the boom and extend the bucket cylinder until the attachment is slightly off the ground **[Figure 271]**.

Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Figure 272

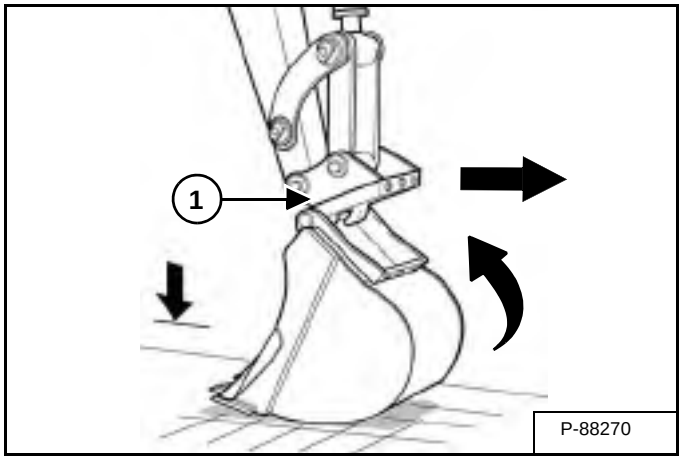


Install the supplied wrench (Item 1) or (Item 2) **[Figure 272]** and turn anticlockwise until the locking pins are disengaged. Remove the wrench.

Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting The Excavator on Page 99.)

Lower the attachment to the ground.

Figure 273



Retract the bucket cylinder to rotate the coupler (Item 1) **[Figure 273]** out of the attachment mounting frame.

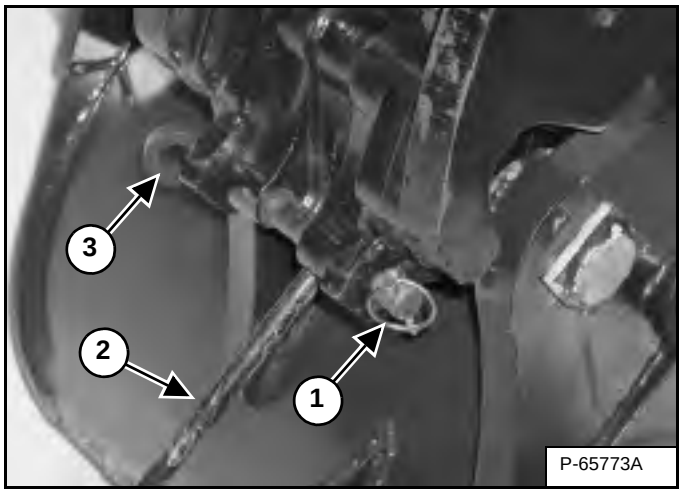
Move the arm out and raise the boom until the coupler is clear of the attachment mounting frame **[Figure 273]**.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Manual Spring Loaded Coupler (442 And 444 Only)

Figure 274



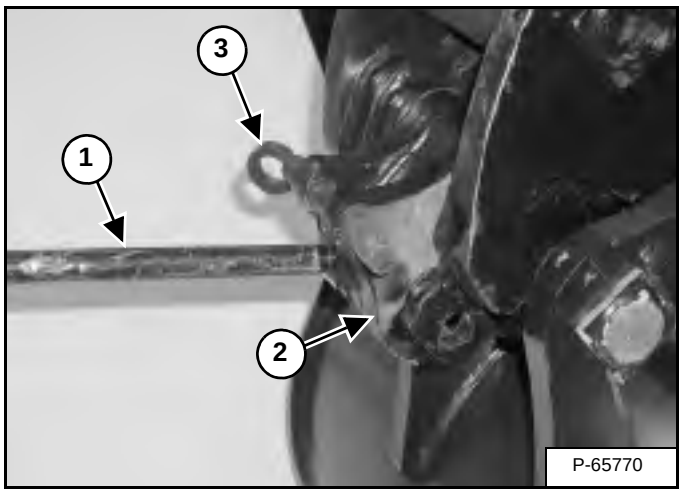
Position the attachment flat on the ground.

Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 99.)

Remove the retainer pin (Item 1) **[Figure 274]**.

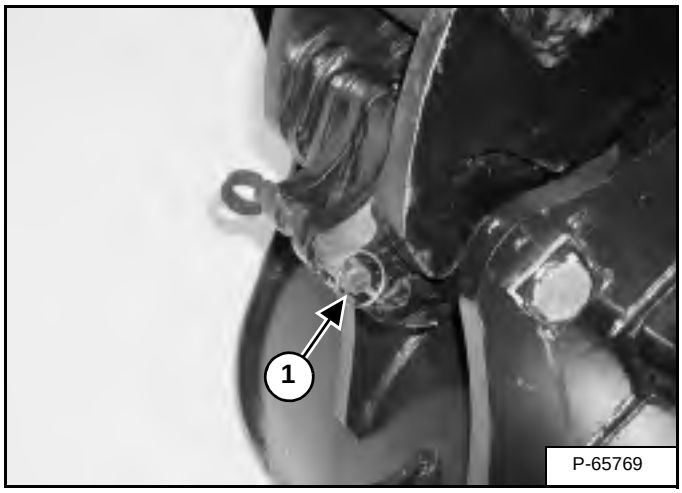
Insert the release bar (Item 2) and rotate the release bar upward slightly and remove the locking pin (Item 3) **[Figure 274]**.

Figure 275



Using the release bar (Item 1), rotate the locking hooks (Item 2) upward to the unlock position and install the locking pin (Item 3) **[Figure 275]**.

Figure 276



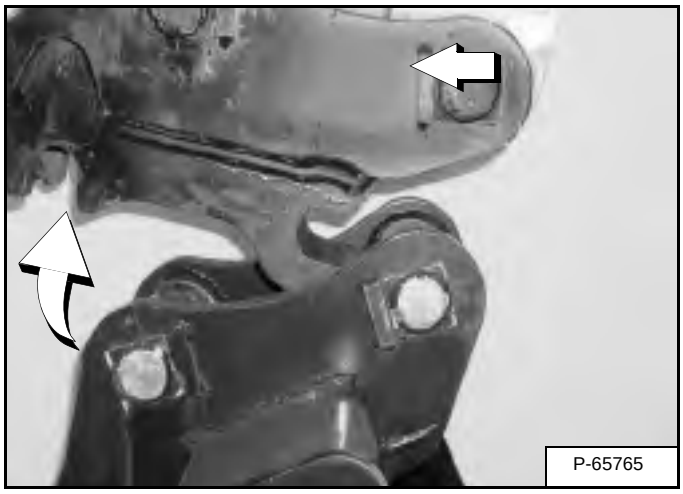
Install the retainer pin (Item 1) **[Figure 276]** to hold the locking hooks in the open position. Remove the release bar.

Enter the excavator, fasten the seat belt and start the engine.

Removal (Cont'd)

Manual Spring Loaded Coupler (442 And 444 Only) (Cont'd)

Figure 277



Retract the bucket cylinder and move the arm forward until the manual spring loaded coupler is clear of the attachment **[Figure 277]**.

OPERATING PROCEDURE WITH MINI LOADERS

Approved Mini Loader Models And Requirements

Figure 278

MINI LOADER MODEL	HB SERIES BREAKER						
	280	380	580	680	880	980	1180
MT55				X			

X = Approved

The chart **[Figure 278]** shows the hydraulic breaker models approved for use with the mini loader.

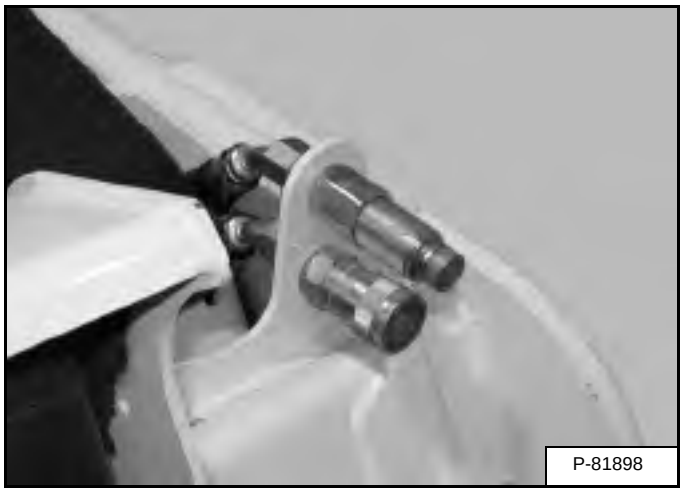
Warranty on this attachment is void if used on a non-approved carrier. See your Bobcat dealer for a current list of approved carriers.

⚠ WARNING

Never use attachments or buckets which are not approved by the Bobcat Company. Attachments and buckets for safe loads of specified densities are approved for each model. Unapproved attachments and buckets can cause injury or death.

W-2662-0108

Figure 279



The mini loader must be equipped with front auxiliary hydraulics **[Figure 279]**.

OPERATING PROCEDURE WITH MINI LOADERS (CONT'D)

Entering And Leaving The Operator's Position

⚠ WARNING

AVOID INJURY OR DEATH

When operating the machine:

- **Operate only from the operator's position at the rear of the loader.**
- **Always keep your hands on the controls.**
- **Stay away from the tracks.**

W-2407-0801

⚠ WARNING

AVOID INJURY OR DEATH

- **Movement of the attachment will occur if the tilt control is NOT in neutral when the engine is started.**
- **Always check that all levers are in neutral before starting the engine.**

W-2482-1003

⚠ WARNING

AVOID INJURY OR DEATH

When using the ride-on platform:

- **Operate only with feet on platform and hands on controls or grab handles.**
- **Always look in the direction of travel.**
- **Make sure swing area is clear of bystanders and objects.**
- **Avoid drop-offs and obstacles.**

W-2480-1003

Entering

Enter the operator's position at the rear of the mini loader.

Engage the parking brake and place all controls in neutral.

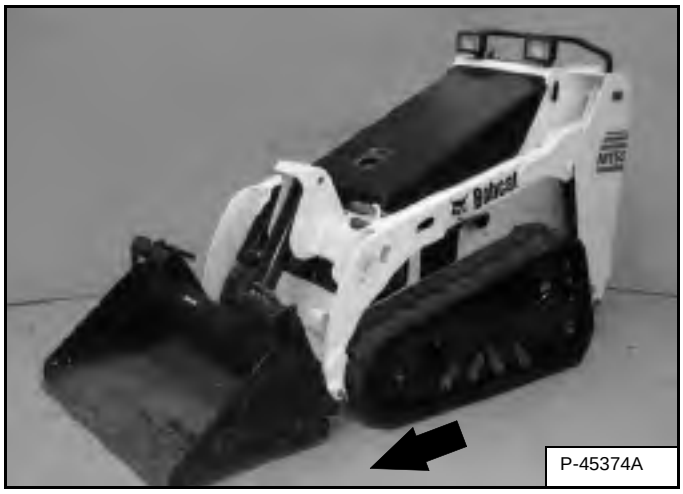
See the mini loader's Operation & Maintenance Manual for detailed information on operating the mini loader.

OPERATING PROCEDURE WITH MINI LOADERS (CONT'D)

Entering And Leaving The Operator's Position (Cont'd)

Leaving

Figure 280



Stop the mini loader on level ground.

Lower the lift arms and put the attachment flat on the ground **[Figure 280]**.

Disengage the auxiliary hydraulics.

Engage the parking brake.

Stop the engine.

Remove the key to prevent operation of the mini loader by unauthorised personnel.

Leave the operator's position.

⚠ WARNING

AVOID INJURY OR DEATH

Before you leave the operator's position:

- **Lower the lift arms, put the attachment flat on the ground.**
- **Stop the engine and engage the parking brake.**
- **Move all pedals, handles, joysticks, and other controls until they are LOCKED or in the NEUTRAL position.**

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

W-2722-0208

OPERATING PROCEDURE WITH MINI LOADERS (CONT'D)

Installation

Hand Lever Bob-Tach

NOTE: The attachment mounting frame for the attachment has a top flange that is designed to receive the top edge of the Bob-Tach and the lower part of the frame is designed to receive the Bob-Tach wedges.

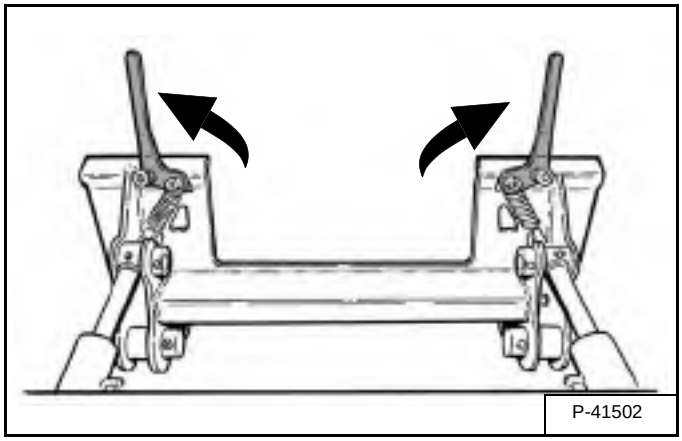
⚠ WARNING

Warnings on the machine and in the manuals are for your safety. Failure to obey warnings can cause serious injury or death.

W-2744-0608

Always inspect the mini loader's Bob-Tach and the attachment mounting frame before installation. See the mini loader's Operation & Maintenance Manual. (See DAILY INSPECTION on Page 52.)

Figure 281

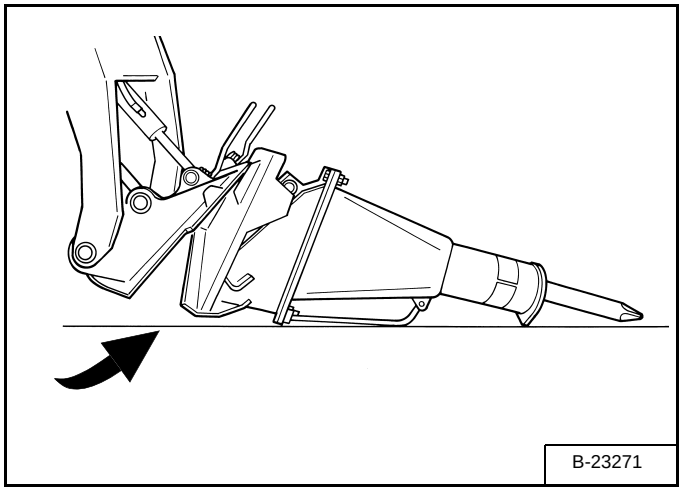


Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) **[Figure 281]**.

Move to the operator's position. (See Entering And Leaving The Operator's Position on Page 152.)

Start the engine and release the parking brake.

Figure 282



Lower the lift arms and tilt the Bob-Tach forward.

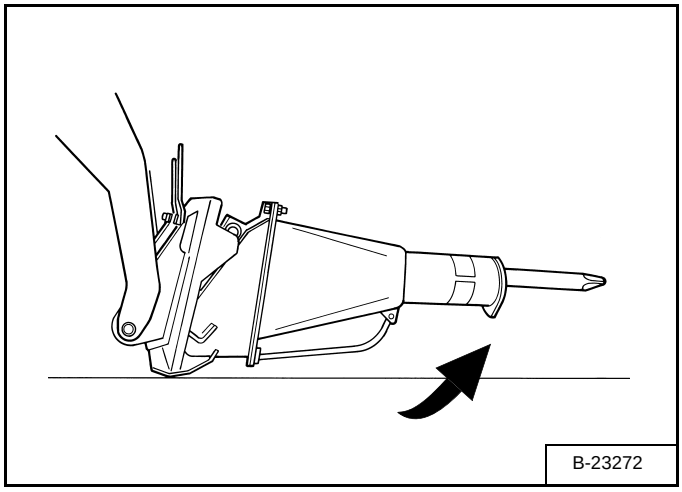
Drive the mini loader slowly forward until the top edge of the Bob-Tach is completely under the top flange of the attachment **[Figure 282]**.

NOTE: Be sure the Bob-Tach levers do not hit the attachment.

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 283



Tilt the Bob-Tach backward until the attachment is slightly off the ground **[Figure 283]**. This will cause the attachment mounting frame to fit up against the front of the Bob-Tach.

NOTE: When leaving the operator's position to install an attachment, tilt the attachment until it is slightly off the ground.

Engage the parking brake and stop the engine. Leave the operator's position. (See Entering And Leaving The Operator's Position on Page 152.)

⚠ WARNING

AVOID INJURY OR DEATH

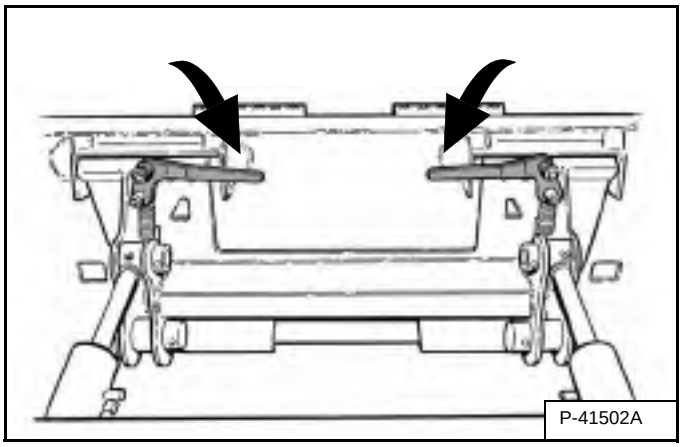
Before you leave the operator's position:

- **Lower the lift arms, put the attachment flat on the ground.**
- **Stop the engine and engage the parking brake.**
- **Move all pedals, handles, joysticks, and other controls until they are LOCKED or in the NEUTRAL position.**

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

W-2722-0208

Figure 284



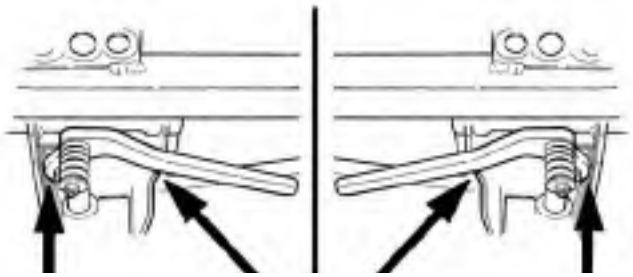
Push down on the Bob-Tach levers until they are fully engaged in the locked position **[Figure 284]** (wedges fully extended through the attachment mounting frame holes).

OPERATING PROCEDURE WITH MINI LOADERS (CONT'D)

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 285



Frame Contact Points

P-94955

Both levers must contact the frame as shown when locked **[Figure 285]**.

If both levers do not engage in the locked position, see your Bobcat dealer for maintenance.

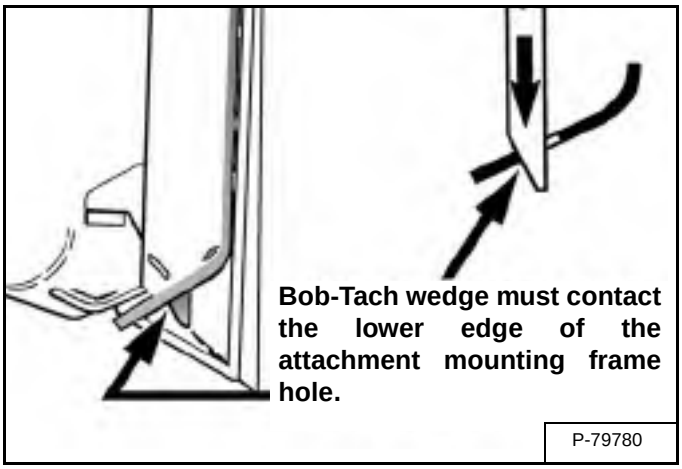
⚠ WARNING

AVOID INJURY OR DEATH

The Bob-Tach wedges must extend through the holes in the attachment mounting frame. Levers must be fully down and locked. Failure to secure wedges can allow attachment to come off.

W-2715-0208

Figure 286



Bob-Tach wedge must contact the lower edge of the attachment mounting frame hole.

P-79780

The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach **[Figure 286]**.

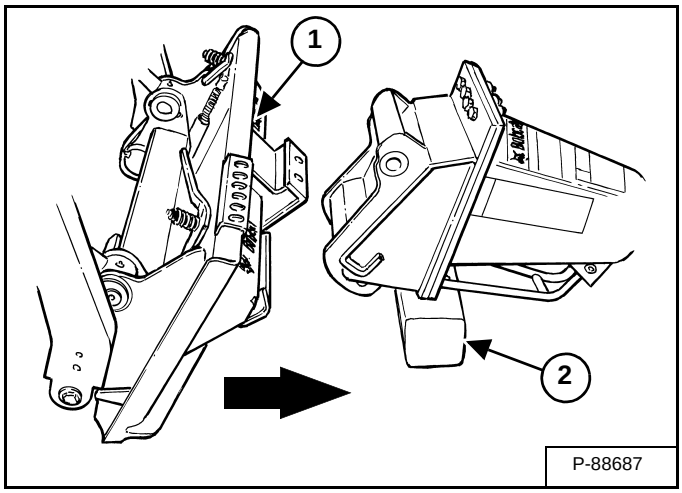
Connect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 160.)

OPERATING PROCEDURE WITH MINI LOADERS (CONT'D)

Installation (Cont'd)

Bob-Tach / X-Change Mounting Frame (Bolt-On)

Figure 287



Install the breaker mount (Item 1) **[Figure 287]** on the mini loader.

Place the breaker on a block (Item 2) **[Figure 287]**.

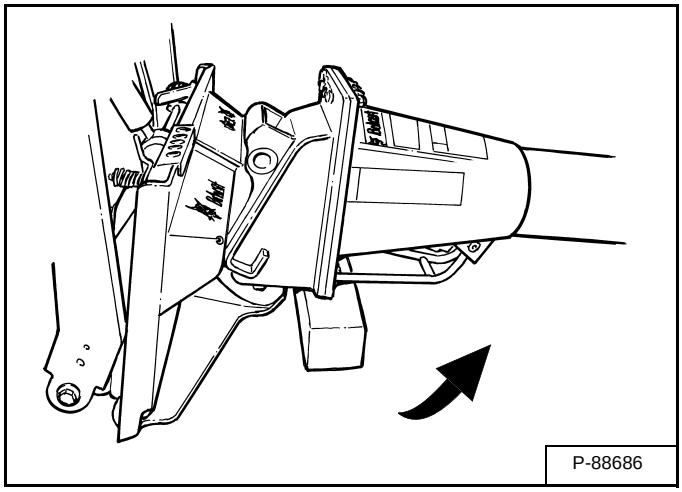
Enter the operator's position. (See Entering And Leaving The Operator's Position on Page 152.)

Start the engine and release the parking brake.

Tilt the Bob-Tach forward.

Drive the mini loader forward until the breaker mount frame engages the breaker **[Figure 287]**.

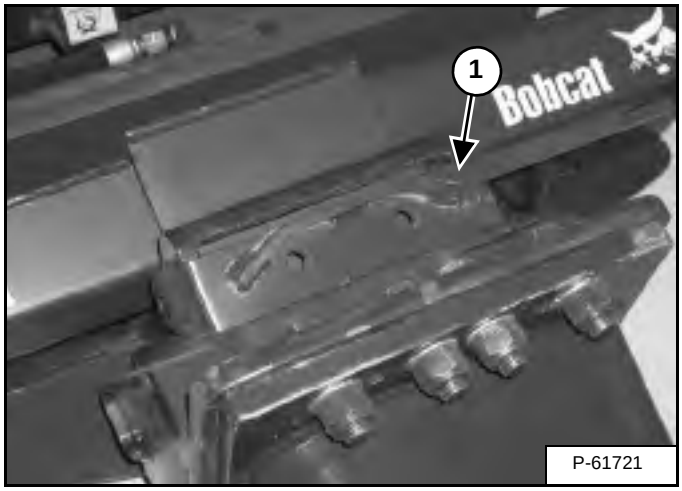
Figure 288



Tilt the Bob-Tach backward until the breaker is slightly off the ground **[Figure 288]**.

Stop the engine and leave the operator's position.

Figure 289

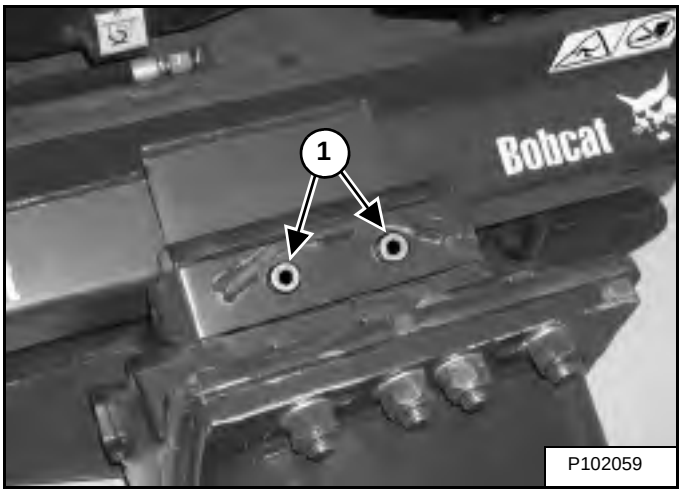


Install the plate (Item 1) **[Figure 289]**.

Installation (Cont'd)

Bob-Tach / X-Change Mounting Frame (Bolt-On) (Cont'd)

Figure 290

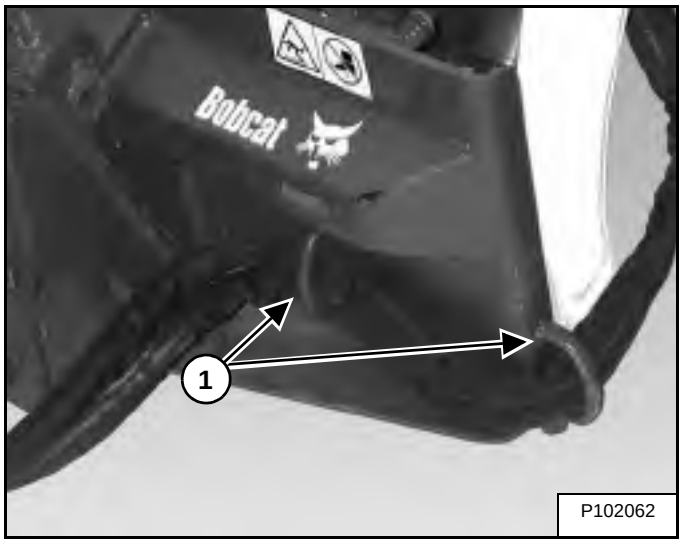


Install the bolts (Item 1) **[Figure 290]**.

Tighten the bolts to 170 - 190 N•m (125 - 140 ft-lb) torque. Retorque the bolts after every eight hours of operation.

NOTE: Do not over torque the bolts (Item 1) [Figure 290]. Over torquing may cause bolt or thread damage or could result in the bolts breaking during operation.

Figure 291



Route the hydraulic hoses through the hose guides (Item 1) **[Figure 291]** on the breaker frame.

Connect the hose couplers to the loader quick couplers. (See Hydraulic Quick Couplers on Page 160.)

Turn the hoses so the hoses are not twisted or kinked.

The hoses should route smoothly through the hose guides to the breaker.

The hoses must not contact the tracks.

OPERATING PROCEDURE WITH MINI LOADERS (CONT'D)

Installation (Cont'd)

For First Time Installation

New attachments and new mini loaders are factory equipped with flush face couplers. If installing an attachment equipped with poppet style couplers, the attachment couplers will have to be changed to match the mini loader. See your Bobcat dealer for parts information.

IMPORTANT

- **Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.**
- **Contain and dispose of any oil leakage in an environmentally safe manner.**

I-2278-0608

With the mini loader engine off and using the hose guides (if equipped), route the attachment hydraulic hoses to the mini loader. Connect the attachment hydraulic quick couplers to the mini loader couplers. (See Hydraulic Quick Couplers on Page 160.)

Check that the attachment hydraulic hoses are not twisted or contacting any moving parts of the mini loader or attachment.

NOTE: It may be necessary to loosen the quick couplers on the attachment hydraulic hoses to remove any twists in the hoses.

⚠ 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

Loosen the quick coupler connections on the attachment hydraulic hoses while connected to the mini loader. Do not remove the quick couplers.

Rotate the attachment hydraulic hoses as needed so the hoses are not twisted or contacting any moving parts of the mini loader or attachment.

With the twist(s) removed from the hydraulic hoses, tighten the attachment quick coupler connections while the couplers are still connected to the mini loader. This will help hold the hydraulic hoses in position while tightening.

Tighten the quick couplers connections to 63 N•m (46 ft-lb) torque before starting the mini loader.

Enter the operator's position. (See Entering And Leaving The Operator's Position on Page 152.)

Start the engine and release the parking brake.

Engage auxiliary hydraulics. (See the mini loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

⚠ WARNING

AVOID INJURY OR DEATH

Diesel fuel or hydraulic fluid under pressure can penetrate skin or eyes, causing serious injury or death. Fluid leaks under pressure may not be visible. Use a piece of cardboard or wood to find leaks. Do not use your bare hand. Wear safety goggles. If fluid enters skin or eyes, get immediate medical attention from a doctor familiar with this injury.

W-2072-EN-0909

Check the attachment hydraulic quick coupler connections for leaks.

Hydraulic Quick Couplers

IMPORTANT

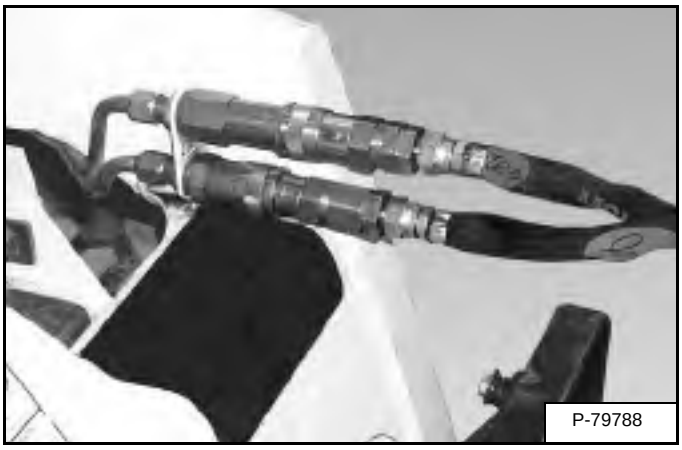
- **Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.**
- **Contain and dispose of any oil leakage in an environmentally safe manner.**

I-2278-0608

New attachments and new mini loaders are factory equipped with flush face couplers. If installing an attachment equipped with poppet style couplers, the attachment couplers will have to be changed to match the mini loader. See your Bobcat dealer for parts information.

NOTE: Make sure the quick couplers are fully engaged. If the quick couplers do not fully engage, check to see that the couplers are the same size and type.

Figure 292



⚠ WARNING

AVOID BURNS

Hydraulic fluid, tubes, fittings and quick couplers can get hot when running machine and attachments. Be careful when connecting and disconnecting quick couplers.

W-2220-0396

To Connect:

Remove any dirt or debris from the surface of both the male and female couplers, and from the outside diameter of the male coupler. Visually check the couplers for corroding, cracking, damage, or excessive wear. If any of these conditions exist, the coupler(s) must be replaced **[Figure 292]**.

Install the male coupler into the female coupler. Full connection is made when the ball release sleeve slides forward on the female coupler.

NOTE: Check that the attachment hydraulic hoses are not twisted or contacting any moving parts of the mini loader or attachment. (See For First Time Installation on Page 159.) for proper adjustment.

To Disconnect:

Relieve hydraulic pressure. (See the mini loader's Operation & Maintenance Manual for correct procedure.)

Hold the male coupler. Retract the sleeve on the female coupler until the couplers disconnect.

OPERATING PROCEDURE WITH MINI LOADERS (CONT'D)

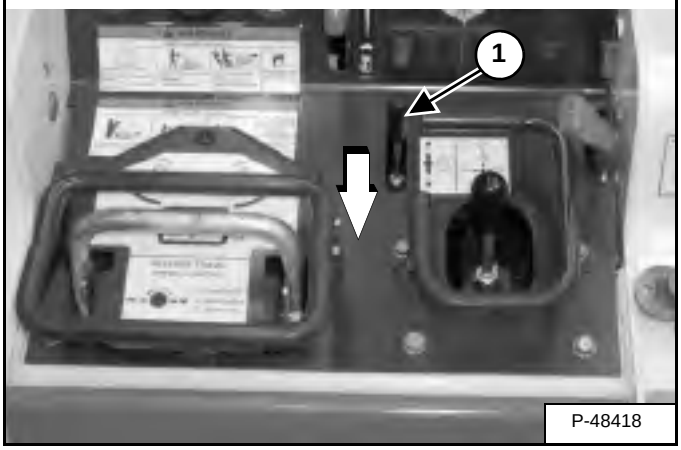
Control Functions

Engage auxiliary hydraulics. (See the mini loader's Operation & Maintenance Manual for correct procedure)

NOTE: The auxiliary hydraulics must be activated prior to attachment operation.

Figure 293

MT55 (EARLIER MODELS)

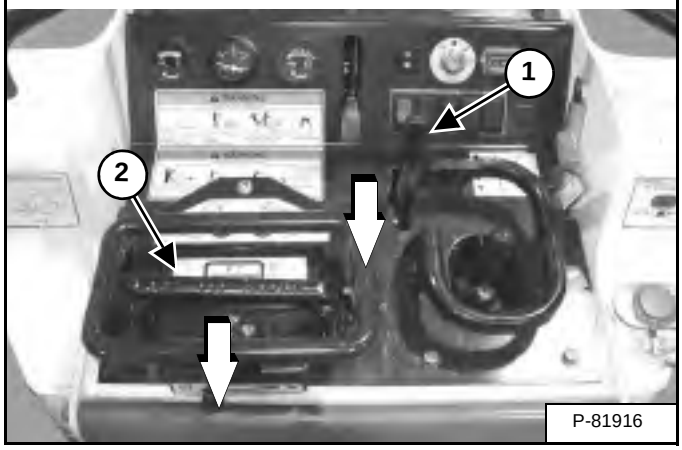


With the operator at the operator's position at the rear of the mini loader, start the engine. Move the Auxiliary Hydraulic Control Lever (Item 1) **[Figure 293]** rearward for auxiliary hydraulic flow to the front female coupler. The hydraulic breaker will start.

Move the Auxiliary Hydraulic Control Lever to the neutral position to disengage the auxiliary hydraulics. The hydraulic breaker will stop. (See the mini loader's Operation & Maintenance Manual for a complete description on mini loader controls.)

Figure 294

MT55 (LATER MODELS)



Variable Flow

Pull the Auxiliary Hydraulic Control Lever (Item 1) **[Figure 294]** rearward for auxiliary hydraulic fluid flow to the front female coupler. The breaker will start. (See the mini loader's Operation & Maintenance Manual for a complete description on mini loader controls.)

NOTE: Hydraulic fluid flow increases to the coupler as the lever (Item 1) [Figure 294] is pulled rearward.

Continuous Flow

While holding the Continuous Flow Shut-off Lever (Item 2) down, pull the auxiliary hydraulic control lever (Item 1) **[Figure 294]** all the way rearward until it locks (detent position) for continuous hydraulic fluid flow to the front female coupler. The breaker will start. (See the mini loader's Operation & Maintenance Manual for a complete description on mini loader controls.)

If the Continuous Flow Shut-off Lever (Item 2) is released while in continuous flow, the Auxiliary Hydraulic Control Lever (Item 1) **[Figure 294]** will return to neutral after one to three seconds and auxiliary hydraulic fluid flow will stop.

To resume the continuous flow operation, make sure the Auxiliary Hydraulic Control Lever (Item 1) is in neutral and press down on the Continuous Flow Shut-off Lever. Move the Auxiliary Hydraulic Control Lever (Item 2) **[Figure 294]** all the way forward or rearward until it locks (detent position).

NOTE: The Continuous Flow Shut-off Lever (Item 2) must be in the UP position and the Auxiliary Hydraulic Control Lever (Item 1) [Figure 294] must be in NEUTRAL to start the engine.

NOTE: The Continuous Flow Shut-off Lever (Item 2) [Figure 294] must return to the UP position when released.

Operation With The Mini Loader

⚠ WARNING

AVOID INJURY OR DEATH

- **Operator and bystanders must wear goggles, hard hat and noise protection when the breaker is in operation.**
- **DO NOT demolish overhead materials or ceilings.**
- **Keep all bystanders 6 m (20 ft) away from equipment when operating.**

W-2627-0910

For the first time use on a rebuilt breaker, use low engine rpm and feather the hydraulics to fill the internal passages of the breaker with hydraulic fluid. If the breaker is used without first flooding the hydraulic passages, internal damage may result.

In cold weather conditions, warm the mini loader hydraulic fluid to operating temperature before operating the breaker.

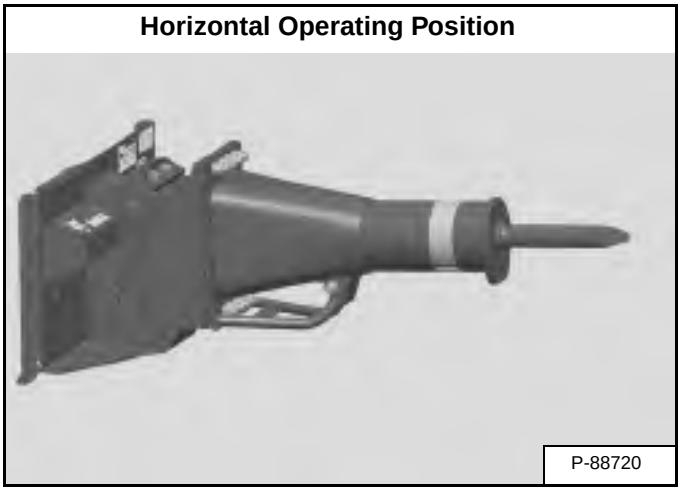
Figure 295

Vertical Operating Position

When operating in the vertical position **[Figure 295]**, on flat material, keep the tool vertical or curled back a small amount to direct the impact force downward and slightly toward the loader.

Figure 296

Horizontal Operating Position



When operating in the horizontal position **[Figure 296]**, work near the edge.

OPERATING PROCEDURE WITH MINI LOADERS (CONT'D)

Operation With The Mini Loader (Cont'd)

Tips / Recommendations

⚠ WARNING

AVOID INJURY OR DEATH

- **Operator and bystanders must wear goggles, hard hat and noise protection when the breaker is in operation.**
- **DO NOT demolish overhead materials or ceilings.**
- **Keep all bystanders 6 m (20 ft) away from equipment when operating.**

W-2627-0910

IMPORTANT

Avoid Blank (No Load) Firing. Disengage auxiliary hydraulics when breaker is not in use.

I-2205-0800

IMPORTANT

Do not use the breaker bit as a pry bar to move broken material. Excess prying force can cause damage to the breaker or machine.

I-2074-0409

Use the following procedures as a guide when operating the breaker:

NOTE: With experience, the operator will become more effective at breaking.

- Break off small pieces to prevent damage to the equipment from falling material.
- Keep the tool perpendicular to the work surface.
- Apply penetrating force by raising the front of the mini loader slightly off the ground.
- Apply penetrating force for no more than 15 seconds.
- Move the tool to a different location whenever the tool penetrates but does not crack the material.
- Strike the material several places along a line where you want it to break.
- Deep tool penetration is not necessary, 152 - 254 mm (6 - 10 in) is usually enough to break the material.
- Concrete reinforced with rebar will hold together when concrete is broken. Use a chisel point tool to cut the rebar.
- Excessive sideways force can cause tool binding, poor breaking and wear of the tool shank, cylinders and breaker attachment.
- Always direct the force toward the point of the tool in contact with the material.

OPERATING PROCEDURE WITH MINI LOADERS (CONT'D)

Removal

Hand Lever Bob-Tach

Lower the lift arms and put the attachment flat on the ground. Lower or close the hydraulic equipment (if equipped).

NOTE: In muddy conditions or to prevent the attachment from freezing to the ground, put the attachment on planks or blocks before removing the attachment from the mini loader.

Engage the parking brake a stop the engine.

Release auxiliary hydraulic pressure (if applicable). (See the mini loader's Operation & Maintenance Manual for correct procedure.)

Leave the operator's position. (See Entering And Leaving The Operator's Position on Page 152.)

⚠ WARNING

AVOID INJURY OR DEATH

Before you leave the operator's position:

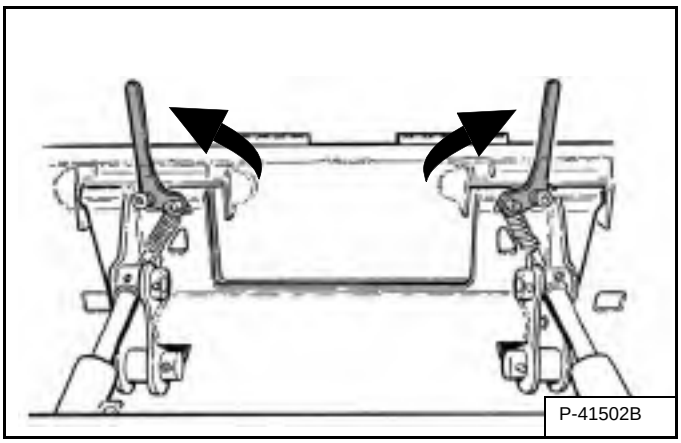
- **Lower the lift arms, put the attachment flat on the ground.**
- **Stop the engine and engage the parking brake.**
- **Move all pedals, handles, joysticks, and other controls until they are LOCKED or in the NEUTRAL position.**

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

W-2722-0208

Disconnect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 160.)

Figure 297



Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) **[Figure 297]**.

⚠ WARNING

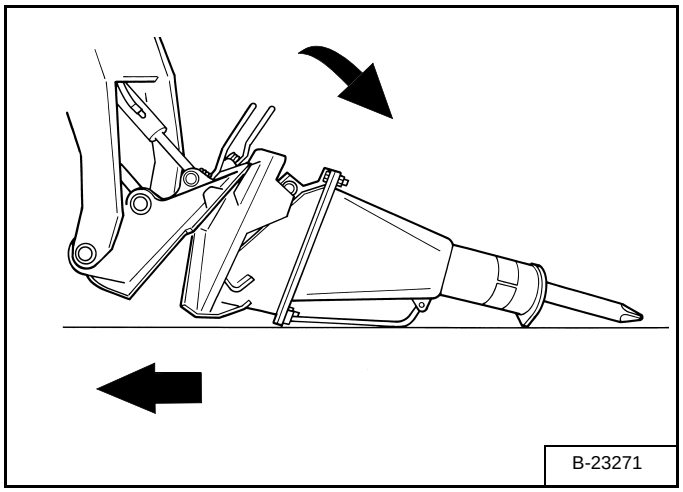
Bob-Tach levers have spring tension. Hold lever tightly and release slowly. Failure to obey warning can cause injury.

W-2054-1285

Enter the operator's position. (See Entering And Leaving The Operator's Position on Page 152.)

Start the engine and release the parking brake.

Figure 298



Tilt the Bob-Tach forward and drive the mini loader backward, away from the attachment **[Figure 298]**.

OPERATING PROCEDURE WITH MINI LOADERS (CONT'D)

Removal (Cont'd)

Bob-Tach / X-Change Mounting Frame (Bolt-On)

Park the loader on a flat and level surface.

Lower the breaker fully to the ground.

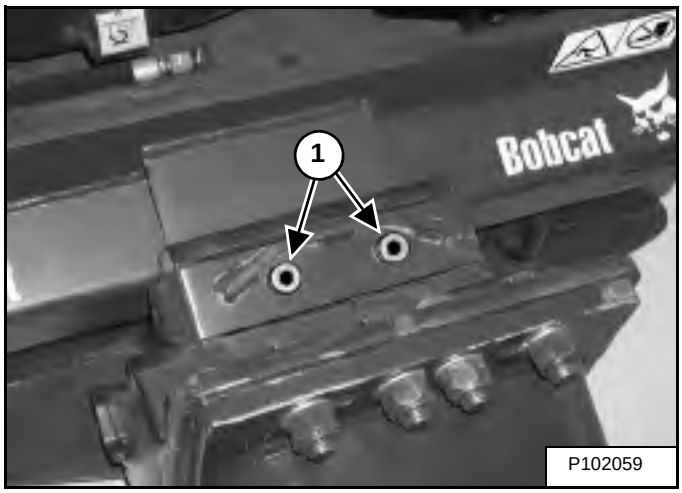
Engage the parking brake and stop the engine.

Relieve hydraulic pressure. (See the mini loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Leave the operator's position. (See Entering And Leaving The Operator's Position on Page 152.)

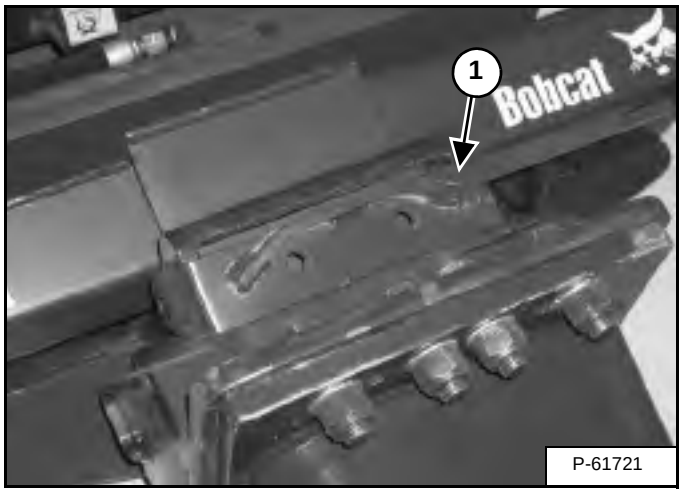
Disconnect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 160.)

Figure 299



Remove the bolts (Item 1) **[Figure 299]**.

Figure 300

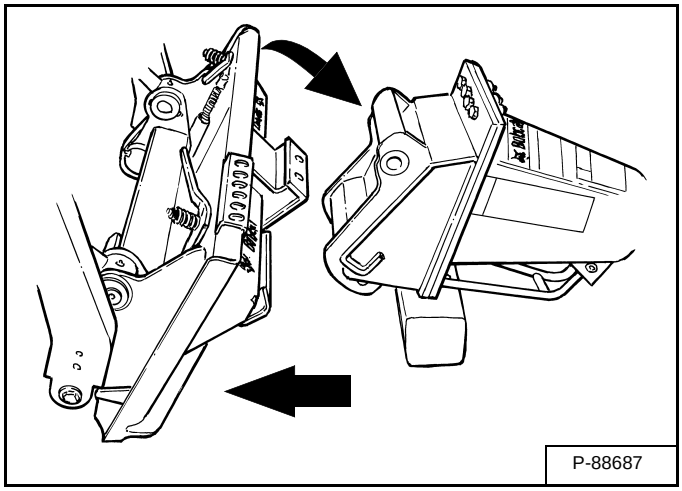


Remove the plate (Item 1) **[Figure 300]**.

Enter the operator's position. (See Entering And Leaving The Operator's Position on Page 152.)

Start the engine and release the parking brake.

Figure 301



Tilt the Bob-Tach forward while backing the mini loader away from the breaker **[Figure 301]**.

NOTE: In muddy conditions or to prevent the attachment from freezing to the ground, put the attachment on planks or blocks before removing the attachment from the mini loader.

LIFTING THE ATTACHMENT

Procedure

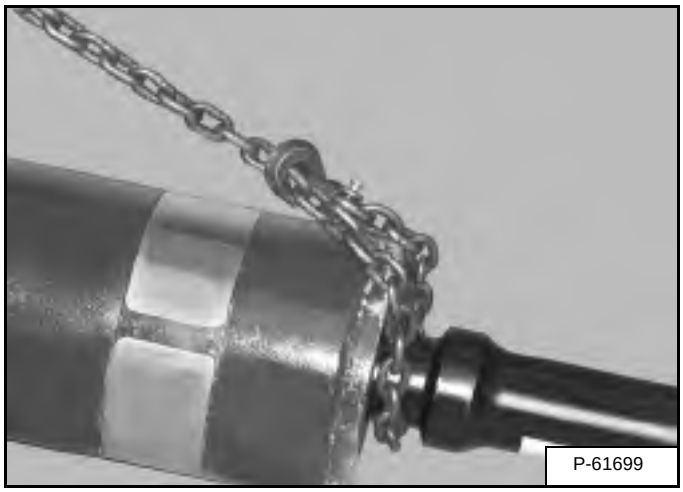
NOTE: If lifting the backhoe / breaker (See the backhoe's Operation & Maintenance Manual for correct procedure.)

Bob-Tach Mounting Frame

NOTE: Use chains that are in good condition and of adequate size to lift the breaker.

Figure 302

Figure 303



Fasten the chains to the breaker **[Figure 302]** and **[Figure 303]**.

Figure 304

Lift the breaker **[Figure 304]**.

LIFTING THE ATTACHMENT (CONT'D)

Procedure (Cont'd)

X-Change, Pin-On, Or Pin Grabber Mounting Frame

NOTE: Use chains that are in good condition and of adequate size to lift the breaker.

Figure 305

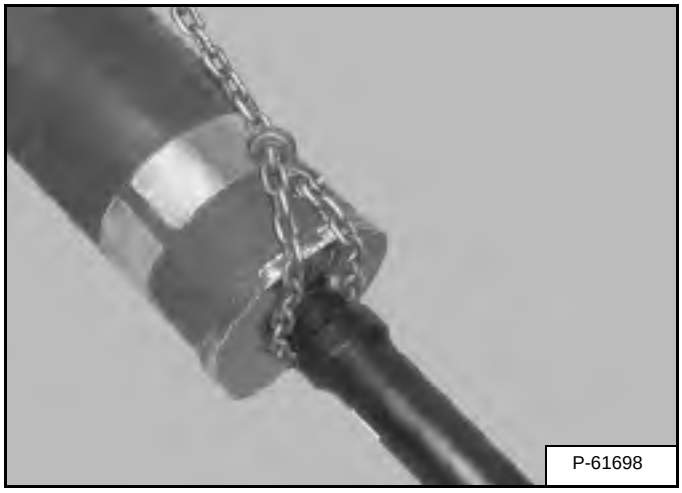


Figure 306

Fasten the chains to the breaker **[Figure 305]** and **[Figure 306]**.

Figure 307

Lift the breaker **[Figure 307]**.

TRANSPORTING THE ATTACHMENT ON A TRAILER

Fastening

NOTE: If transporting the backhoe / breaker on a trailer. (See the backhoe's Operation & Maintenance Manual to properly chain the backhoe to the transport vehicle.)

Bob-Tach Mounting Frame

Figure 308

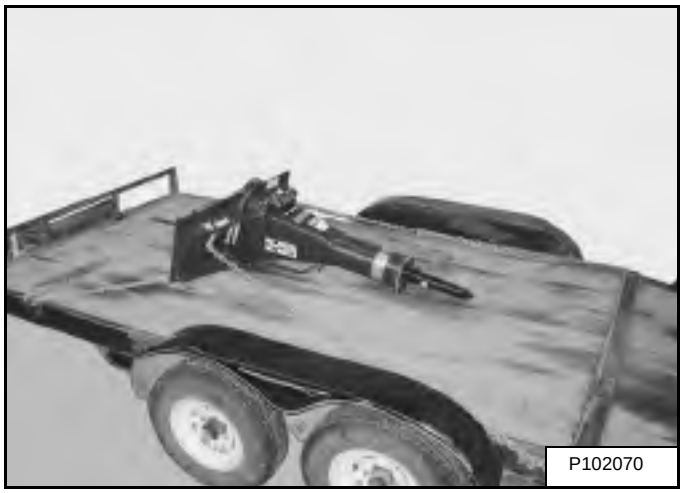


Figure 309

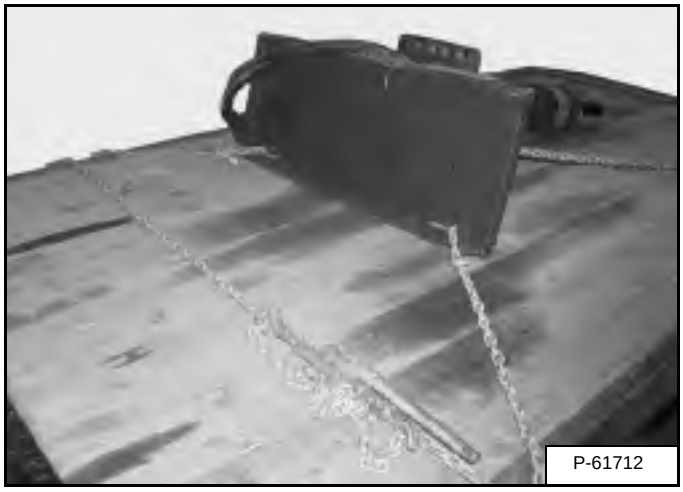
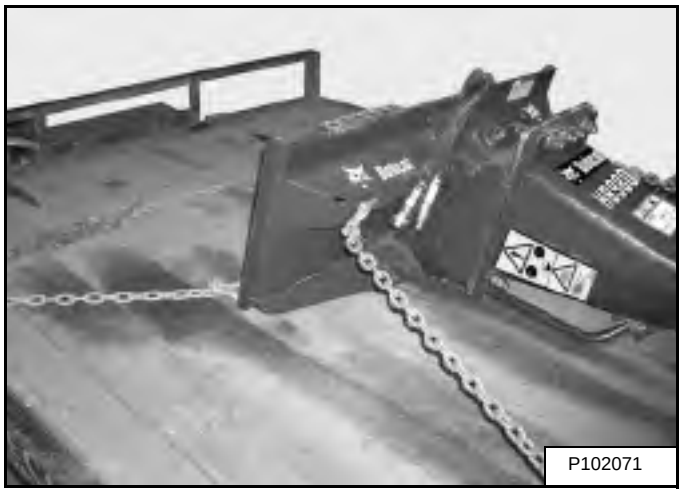


Figure 310



Fasten the chains to the breaker and to the transport vehicle **[Figure 308]**, **[Figure 309]** and **[Figure 310]**.

Use chain binders to prevent the breaker from moving during transport.

Secure the hydraulic hoses to the breaker.

TRANSPORTING THE ATTACHMENT ON A TRAILER (CONT'D)

Fastening (Cont'd)

X-Change, Pin-On, Or Pin Grabber Mounting Frame

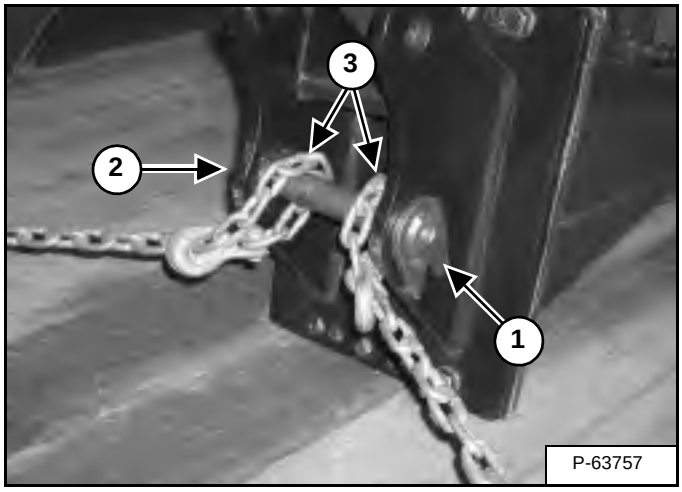
Figure 311

Figure 312

Figure 313

Fasten the chains to the breaker **[Figure 311]**, **[Figure 312]** and **[Figure 313]** and to the transport vehicle.

Figure 314



For pin on breaker mounting frames, install the pin (Item 1) and retainer (Item 2) **[Figure 314]** in the mounting frame.

Install the chains (Item 3) around the pin (Item 1) **[Figure 314]** and to the transport vehicle.

Fasten the chains to the breaker **[Figure 311]**, **[Figure 312]** and **[Figure 313]** and to the transport vehicle.

Use chain binders to prevent the breaker from moving during transport.

Secure the hydraulic hoses to the breaker.

TRANSPORTING THE ATTACHMENT AND MACHINE ON A TRAILER

Loading And Fastening

⚠ WARNING

AVOID SERIOUS INJURY OR DEATH

Adequately designed ramps of sufficient strength are needed to support the weight of the machine when loading onto a transport vehicle. Wood ramps can break and cause personal injury.

W-2058-0807

Be sure the transport and towing vehicles are of adequate size and capacity for weight of machine and attachment combination. (See machine and attachment Operation & Maintenance Manuals for specifications.)

Loading

The rear of the trailer must be blocked or supported when loading and unloading to prevent the front of the trailer from raising.

- Load the heaviest end of the machine and attachment combination first.
- Lower the attachment to the floor.
- Stop the engine.
- Engage the parking brake (if equipped).
- Exit the machine. (See the machine's Operation & Maintenance Manual for the correct procedure.)

Fastening

Install the chains at the front and rear tie-down positions on the machine. (See the machine's Operation & Maintenance Manual to properly chain the machine to the transport vehicle.)

- Install chains on the attachment (if needed).
- Fasten each end of the chain to the transport vehicle.

NOTE: Use chain binders to prevent the attachment and machine from moving during transport.

PREVENTIVE MAINTENANCE


Bobcat®

MAINTENANCE SAFETY

WARNING

Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

W-2003-0807

Safety Alert Symbol: This symbol with a warning statement, means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.

CORRECT

P-90216

- **Never service attachments / implements without instructions. See Operation & Maintenance Manual and Attachment / Implement Service Manual.**
- **Cleaning and maintenance are required daily.**
- **Never service or adjust attachment / implement with the engine running unless instructed to do so in manual.**
- **Always lower the attachment / implement to the ground before lubricating or servicing.**
- **Avoid contact with leaking hydraulic fluid or diesel fuel under pressure. It can penetrate skin or eyes.**
- **Stop, cool and clean engine of flammable materials before checking fluids.**
- **Keep body, loose objects and clothing away from moving parts, electrical contacts, hot parts and exhaust.**
- **Safety glasses are needed for eye protection from electrical arcs, battery acid, compressed springs, fluids under pressure and flying debris or when tools are used. Use eye protection approved for type of welding.**

Maintenance procedures which are given in the Operation & Maintenance Manual can be performed by the owner/operator without any specific technical training. Maintenance procedures which are **not** in the Operation & Maintenance Manual must be performed **ONLY BY QUALIFIED BOBCAT SERVICE PERSONNEL. Always use genuine Bobcat replacement parts.**


Bobcat®

TROUBLESHOOTING

Chart

WARNING

Instructions are necessary before operating or servicing machine. Read and understand the Operation Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

W-2003-0807

If the attachment is not working correctly, check the hydraulic system of the machine thoroughly before making any repairs on the attachment. Attachment problems can be affected by a hydraulic system that is not operating to specifications. Connect a flow meter to the machine to check the hydraulic pump output, relief valve setting and tube lines to check flow and pressure. (See the machine's Service Manual for the correct procedure to connect the flow meter.)

Use the following troubleshooting chart to locate and correct problems which most often occur with the attachment.

PROBLEM	CAUSE	CORRECTION
Breaker will not fire.	Machine fluid reservoir is low.	Add hydraulic fluid to the fluid reservoir.
	Hydraulic hoses connected to wrong ports.	Reverse hydraulic hoses.
	Damaged hydraulic couplers.	Replace hydraulic couplers.
	Machine main relief valve set too low.	Adjust main relief valve to correct setting.
	No hydraulic flow to the breaker.	Check the hydraulic flow to the breaker.
	Machine hydraulic pump not working.	Check flow of hydraulic pump. Repair or replace as needed.
	Oil in the air chamber.	Damaged internal seals, replace seals. (See Breaker Service Manual).
	Regulator ring damaged or installed backward.	Replace regulator ring. (See Breaker Service Manual).
	Tool bushing is worn.	Replace bushing.
Breaker stops after three blows.	Regulator ring damaged.	Replace regulator ring. (See Breaker Service Manual).
Breaker runs very slowly or blow per minute reducing.	Machine main relief valve set too low.	Adjust main relief valve to correct setting.
	Not enough hydraulic flow.	Test hydraulics for correct flow and pressure.
	Excessive heat build up.	Check oil cooler for debris and air flow Check relief valve pressure.
	Damaged hydraulic couplers.	Replace hydraulic couplers.
	Internal leakage.	Check seals and O-rings in the breaker. Check piston, sleeve and seal carrier for wear. (See the Breaker Service Manual).
	No breaking force and hoses jumping.	Check diaphragm for damage. (See the Breaker Service Manual).

Troubleshooting chart continued on next page.

TROUBLESHOOTING (CONT'D)

Chart (Cont'd)

PROBLEM	CAUSE	CORRECTION
Breaker fires erratically.	Machine main relief valve set too low.	Adjust main relief valve to correct setting.
	Excessive back pressure.	Check for plugged or bent return lines.
	Low fluid level.	Add fluid to the reservoir as needed.
	Not enough hydraulic flow.	Test hydraulics for correct flow and pressure.
	Damaged hydraulic couplers.	Replace hydraulic couplers.
	Tool binding.	Add grease to the tool shank fitting.
Breaker runs for twenty minutes then stops. Breaker will restart after thirty minutes of idle time.	Oil overheating.	Clean machine radiator.
		Adjust main relief valve to correct setting.
		Add hydraulic fluid to the fluid reservoir.
	Breaker distributor damage from overheating.	Replace distributor. (See Breaker Service Manual).
Breaker lacks striking force.	Regulator ring damaged.	Replace regulator ring. (See Breaker Service Manual).
	Not enough hydraulic flow.	Test hydraulics for correct flow and pressure.
	Accumulator nitrogen pressure low.	Check nitrogen pressure. If oil in accumulator chamber, replace diaphragm. If pressure low, recharge nitrogen. (See Breaker Service Manual).
		Make sure nitrogen fill plug is installed and torque to specifications.
	Tool is broken inside bushing.	Replace tool.
Excessive heat build up.	Blank firing.	Refer to the hydraulic controls section for correct operating procedure.
	Machine fluid reservoir is low.	Add hydraulic fluid to the fluid reservoir.
Hydraulic hoses between breaker and machine are pulsing more than normal.	Nitrogen charge pressure is low.	Check nitrogen pressure. If oil in accumulator chamber, replace diaphragm. If pressure low, recharge nitrogen. (See Breaker Service Manual).
	Accumulator nitrogen pressure is low.	
Hydraulic oil on breaker tool.	Damaged piston seals.	Replace seals. (See Breaker Service Manual).
Tool breakage.	Firing without sufficient down force on the tool.	Apply additional down force with the machine.
	Using the tool as a pry bar.	Only use perpendicular down force on the tool when breaking, do not pry with tool.
	Grinding on the side face of the tool.	Grinding on the side face of the tool may cause fatigue points or stress areas on the tool.
	Tool corrosion.	If the breaker or tool is unused for extended periods of time, retract tool and grease the outside of the tool.
	Cold tool.	If used in cold weather, keep tool in a warm area prior to usage.

See the following troubleshooting chart also.

Chart (Cont'd)

CHARGING INFORMATION	AFFECTED ON BREAKER
Accumulator charge is low.	Reduced life of the diaphragm - possibly forcing the diaphragm into the schrader valve inflation hole.
Accumulator charge is too high.	Reduced diaphragm life - possibly forcing the diaphragm into the grid holes.

Figure 315

Pressure Measured	Possible Cause	Solution
0 - 2482 kPa (0 - 25 bar) (0 - 360 psi)	Diaphragm damaged or deflated.	Replace diaphragm. Charge Nitrogen Chamber.
2482 - 3998 kPa (25 - 40 bar) (360 - 580 psi)	OK	
Above 3988 kPa (40 bar) (580 psi)	Diaphragm damaged.	Replace diaphragm.

Charging Information

Correct nitrogen charge pressure is an important factor in the service life of the breaker diaphragm **[Figure 315]**.

When the charge is too low, the breaker will cycle faster than intended reducing the life of the diaphragm. Low charge also causes the breaker to not hit as hard as designed, reducing performance. When the charge is too high, the breaker will cycle slower than intended and build excessive heat affecting the performance and service life of the breaker and carrier. A service interval of every 12 months has been established for checking nitrogen charge.

NOTE: If oil is detected in the nitrogen, the diaphragm is damaged and must be replaced. (See your Bobcat dealer for additional information.)

Chart

NOTE: Push tool in before greasing.

Apply grease (5 - 6 pumps) to the grease fitting every 4 hours of operation.

NOTE: For detailed lubrication information, (See Lubrication Locations on Page 187.)

Grease the breaker every 4 hours of operation.

1. Push the tool fully into the breaker.
2. Apply grease (5 - 6 pumps) to the grease fitting at the upper end of the tool.

REGULAR MAINTENANCE ITEMS

Weekly Inspection

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

WARNING

AVOID BURN INJURY

Breaker tool can be hot after use. Let breaker tool cool or use gloves when handling tool.

W-2204-0905

Figure 316

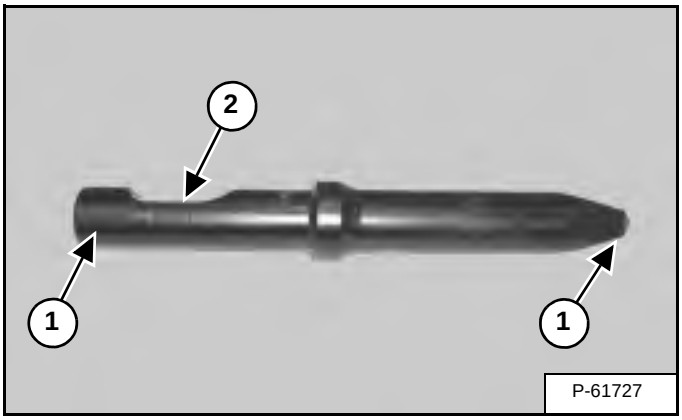
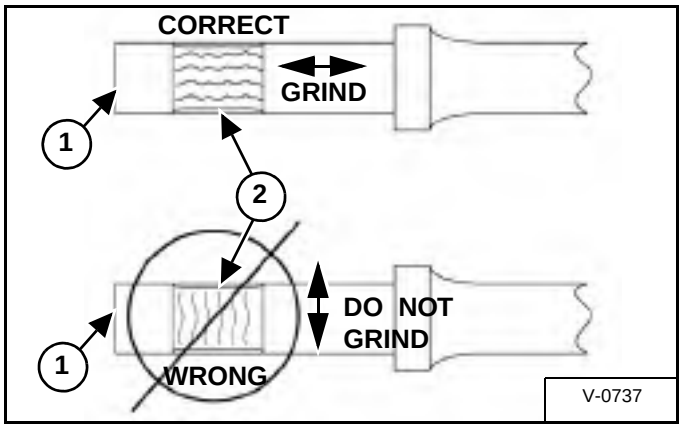


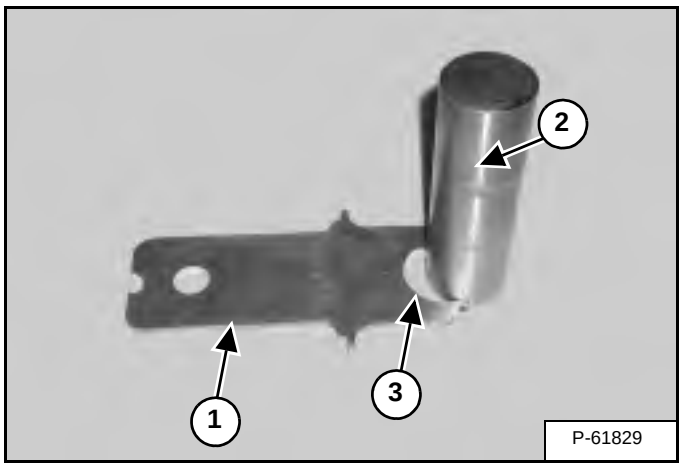
Figure 317



Inspect both ends of the tool (Item 1) **[Figure 316]** and **[Figure 317]** for damage and / or cracks. Replace the tool if damaged or worn.

Inspect the side edges of the retaining pin groove (Item 2) **[Figure 316]** and **[Figure 317]**. If metal burrs are present on the outer edge, carefully file or grind the burrs. Do not grind on the diameter of the tool. Grind the tool length ways, NOT side ways. Do not weld on the tool.

Figure 318



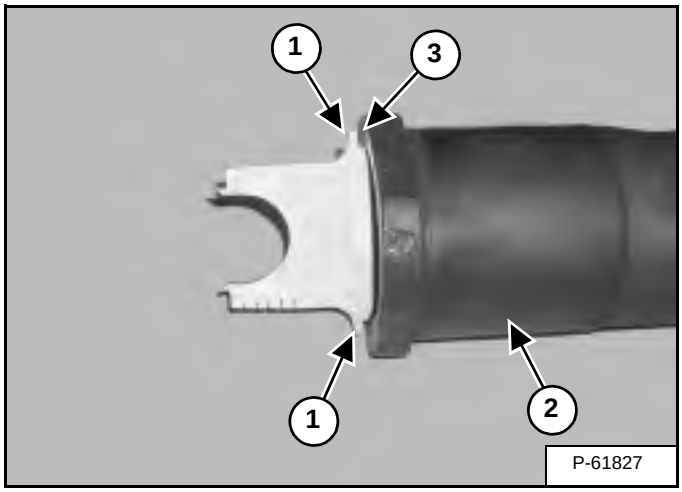
Use the maintenance tool (Item 1) to inspect the tool retainer pin (Item 2) for wear. Replace the pin if the maintenance tool notch (Item 3) **[Figure 318]** fits over the pin along the length of the pin. Inspect the pin along the entire length.

Replace the pin if damaged.

Weekly Inspection (Cont'd)

For Models HB280, HB380, HB580, HB680, HB880, And HB980

Figure 319



Check the end chamfer on the bushing.

Install the maintenance tool (Item 1) into the bushing (Item 2) **[Figure 319]** as shown and rotate the tool 180° to check the chamfer.

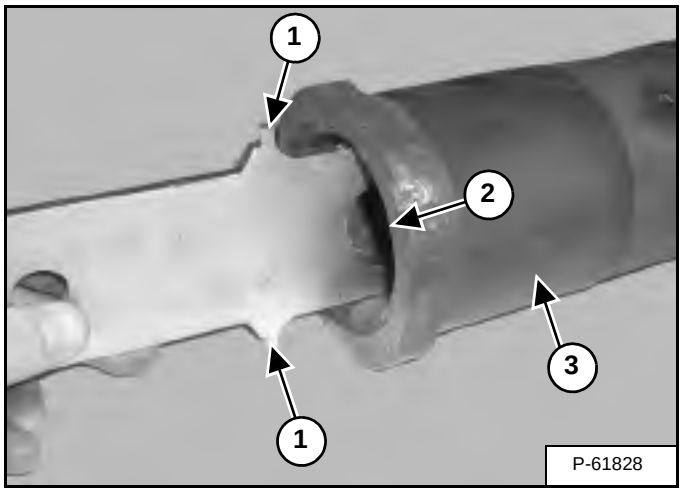
Replace the bushing if the tabs (Item 1) on the tool contact the end of bushing (Item 3) **[Figure 319]** at any point.

NOTE: The bushing is shown removed for photo clarity.

NOTE: Failure to replace a worn bushing may result in reduced performance.

For All Models

Figure 320



Check the internal wear on the bushing.

Install the maintenance tool (Item 1) into the bushing (Item 2) **[Figure 320]** as shown and rotate the tool 180° to check the chamfer.

Replace the bushing if the tabs (Item 1) on the maintenance tool contact the end of the bushing (Item 2) at any point of the diameter of the bushing (Item 3) **[Figure 320]**.

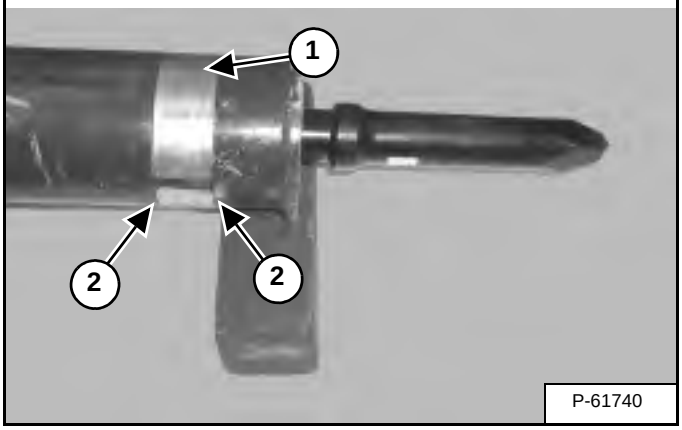
NOTE: The bushing is shown removed for photo clarity.

NOTE: Failure to replace a worn bushing may result in reduced performance.

Weekly Inspection (Cont'd)

Figure 321

External Retaining Band

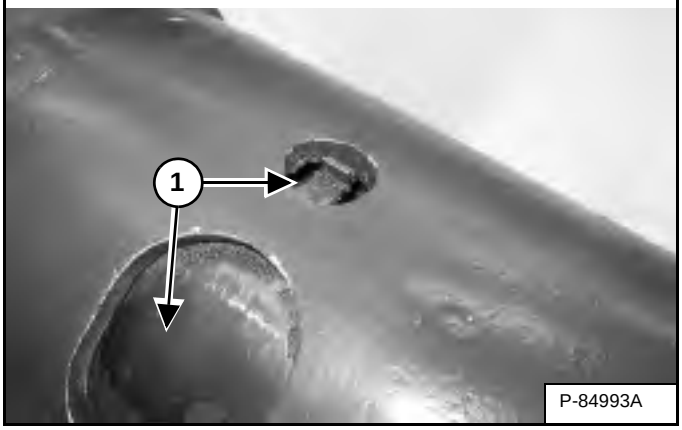


Inspect the retaining band (Item 1) **[Figure 321]** for wear or damage.

Replace the retaining band if a gap of more than 2 mm (0.08 in) can be measured at any point between the side of the band and the side of the housing (Item 2) **[Figure 321]**.

Figure 322

Internal Retaining Band



If the retaining band (Item 1) **[Figure 322]** is damaged, see your Bobcat dealer for replacement information and parts.

The breaker will need to be removed from the mounting frame to service the retaining band (Item 1) **[Figure 322]**.

Retaining Band Replacement

⚠ 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.**

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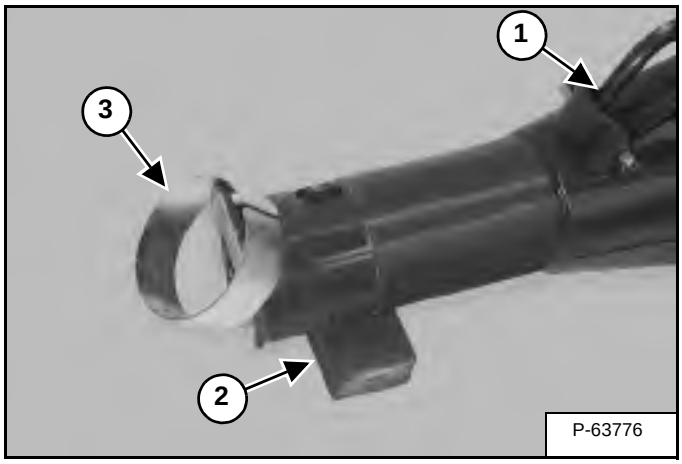
Figure 323

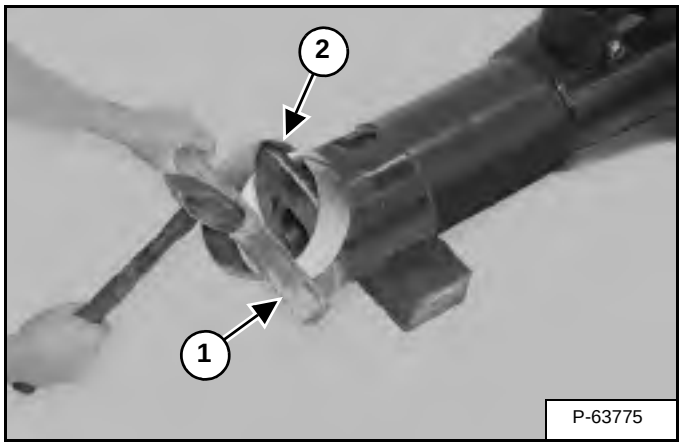


Position the breaker so the hose guard (Item 1) **[Figure 323]** is facing up.

Install a block of wood (Item 2) **[Figure 323]** under the breaker.

Position the retaining band (Item 3) **[Figure 323]** over the end of the breaker with the slot in the retainer band facing up.

Figure 324



Using a second block of wood (Item 1) and a hammer, force the retaining band (Item 2) **[Figure 324]** over the end of the breaker.

After the retaining band is positioned over the breaker frame, use the gauge tool to reposition the retaining band on the breaker frame.

Nitrogen Chamber

Checking The Nitrogen Chamber Charge Pressure

Use the following procedure to check the nitrogen charge pressure.

NOTE: Hydraulic pressure in the breaker can affect checking the accumulator charge pressure. Before checking the charge pressure, relieve the hydraulic pressure.

The breaker check valve is located under the breaker mounting frame. Remove the breaker mounting frame.

⚠ 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.**

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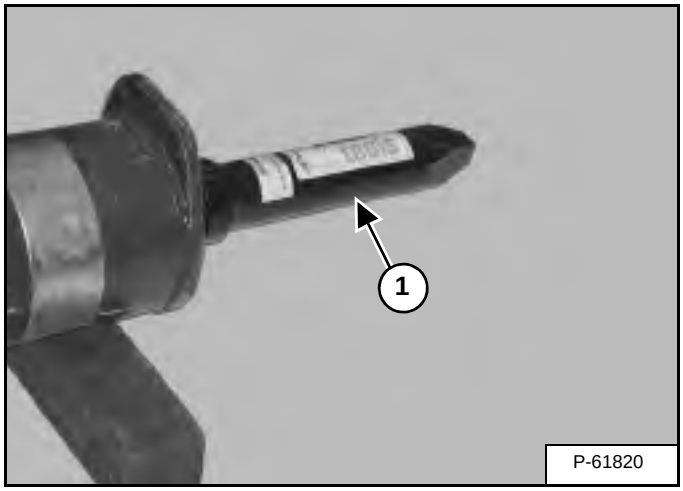
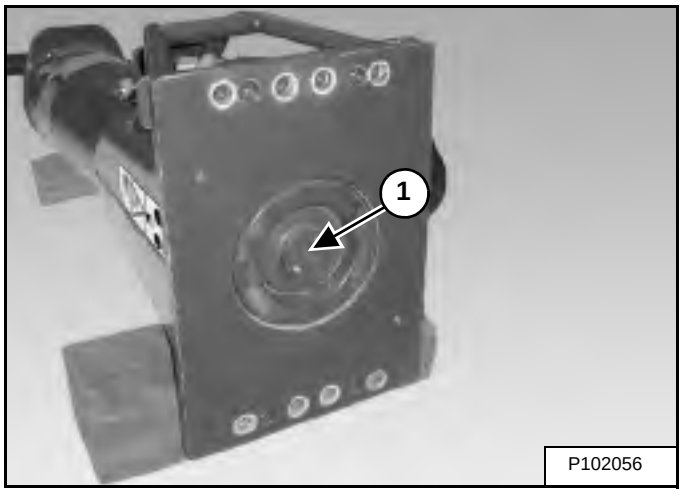
Use the nitrogen accumulator charge pressure gauge MEL1523B to check the pressure.

Figure 325



Block up the breaker so the tool (Item 1) **[Figure 325]** is not under pressure and is not in contact with the nitrogen chamber.

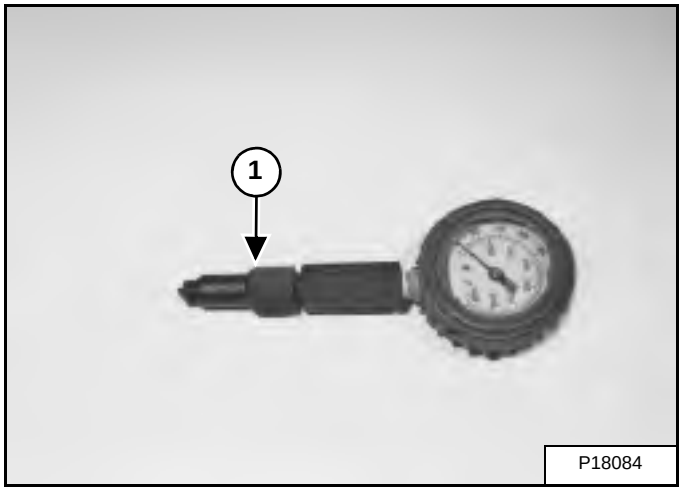
Figure 326



Remove the plug (Item 1) **[Figure 326]**.

NOTE: If the plug (Item 1) [Figure 326] is tight, tap the end of the plug with a hammer before removing.

Figure 327

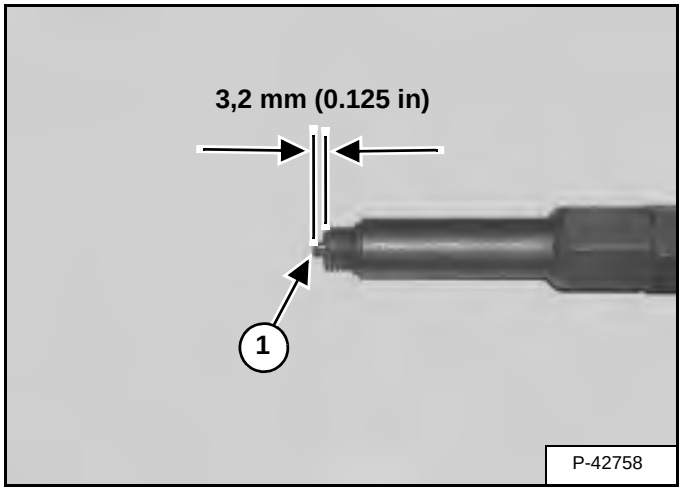


Install the correct adapter (Item 1) **[Figure 327]** on the gauge.

Nitrogen Chamber (Cont'd)

Checking The Nitrogen Chamber Charge Pressure (Cont'd)

Figure 328



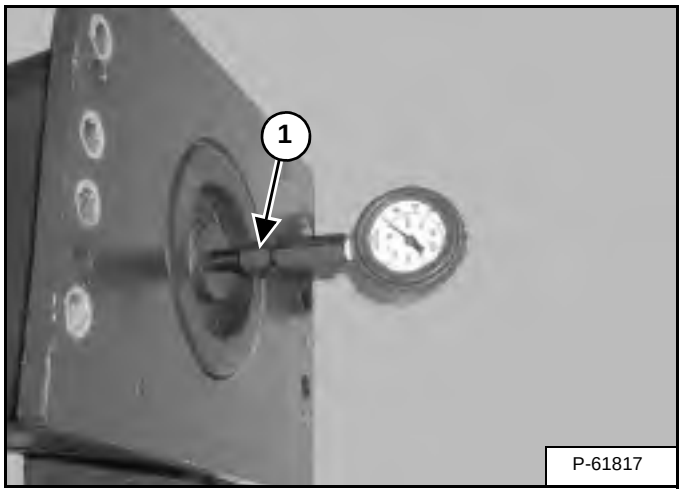
Measure the pin (Item 1) **[Figure 328]** protrusion.

Manually extend or retract the pin until the pin measures 3,2 mm (0.125 in) from pin tip to adapter face **[Figure 328]**.

Figure 329

Loosen the adapter until the pin is flush with the end of the adapter as shown **[Figure 329]**.

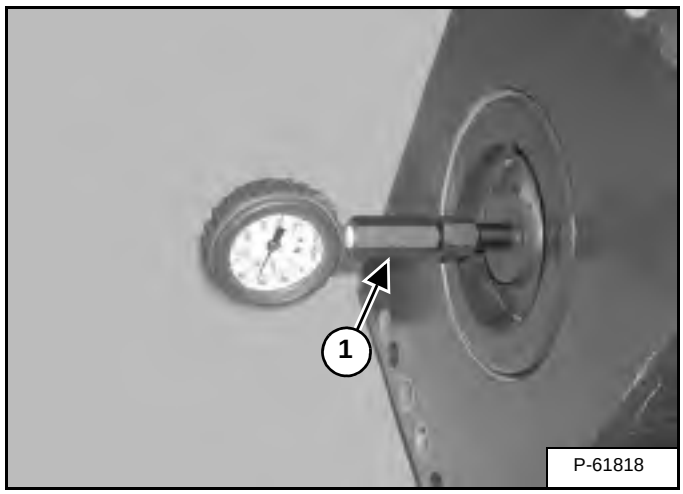
Figure 330



Install the gauge / adapter on the breaker **[Figure 330]**.

Tighten the adapter (Item 1) **[Figure 330]** on the breaker.

Figure 331



Slowly turn the gauge valve body (Item 1) **[Figure 331]** clockwise until the gauge shows a reading. If the pressure is low, recharge the breaker. See your Bobcat dealer for available kits.

Nitrogen Chamber (Cont'd)

Discharging The Nitrogen Chamber

⚠ 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.**

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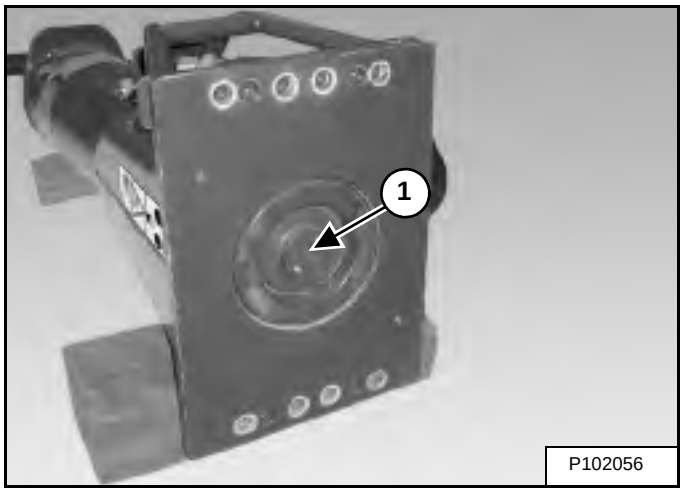
The breaker check valve is located under the breaker mounting frame. Remove the breaker mounting frame.

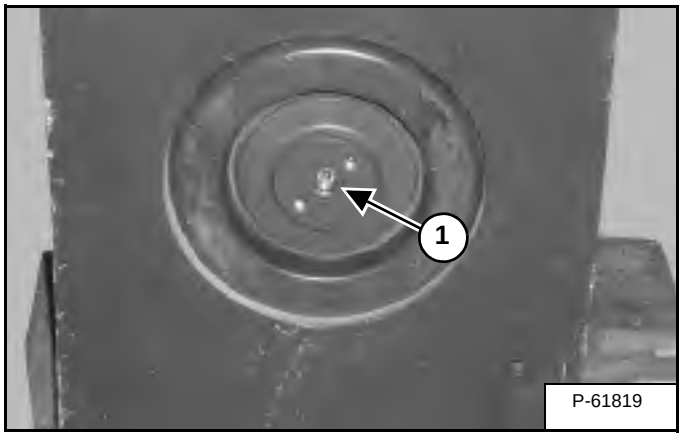
Figure 332



Remove the plug (Item 1) **[Figure 332]** from the charge valve.

NOTE: If the plug (Item 1) [Figure 332] is tight, tap the end of the plug with a hammer before removing.

Figure 333



Using a small shaft, push the valve (Item 1) **[Figure 333]** inward to release the gas pressure.

NOTE: If oil is detected in the nitrogen, the diaphragm is damaged and must be replaced. (See your Bobcat dealer for additional information.)

Install the plug in the charge valve.

Tighten the plug to 37 N•m (27 ft-lb) torque.

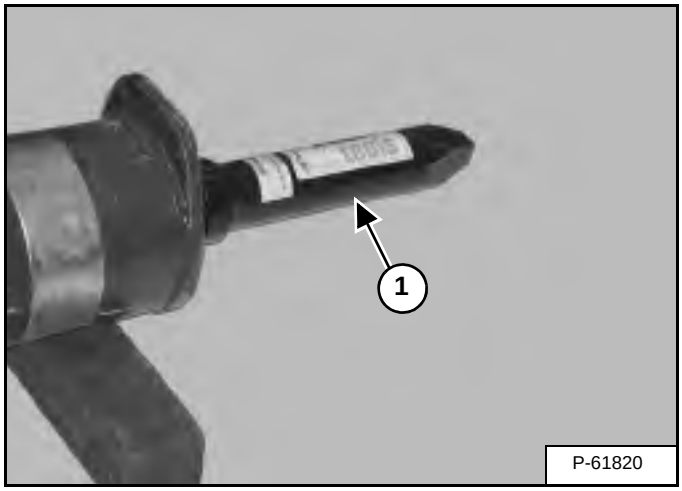
NOTE: When in doubt of nitrogen charge pressure or when recharging a hot breaker, release the nitrogen pressure completely and recharge the nitrogen chamber.

Nitrogen Chamber (Cont'd)

Charging The Nitrogen Chamber

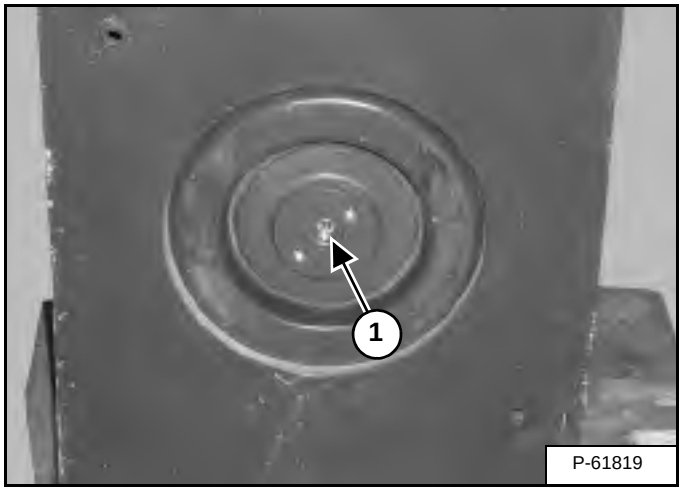
NOTE: When in doubt of nitrogen charge pressure or when recharging a hot breaker, release the nitrogen pressure completely and recharge the nitrogen chamber.

Figure 334



Block up the breaker so the tool (Item 1) **[Figure 334]** is not under pressure and is not in contact with the nitrogen chamber.

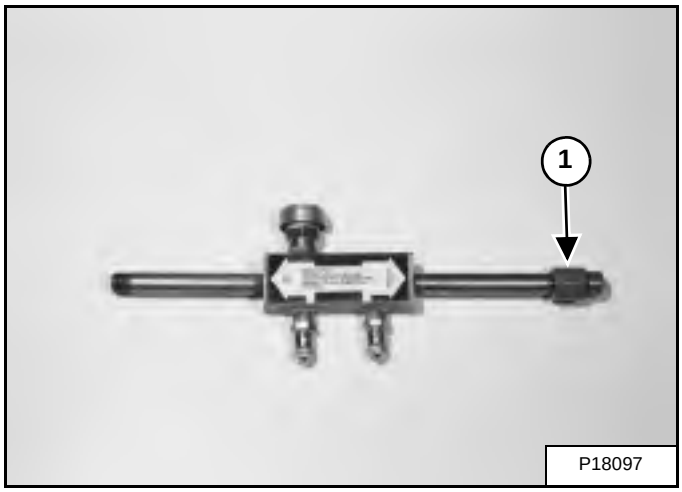
Figure 335



Remove the plug (Item 1) **[Figure 335]**.

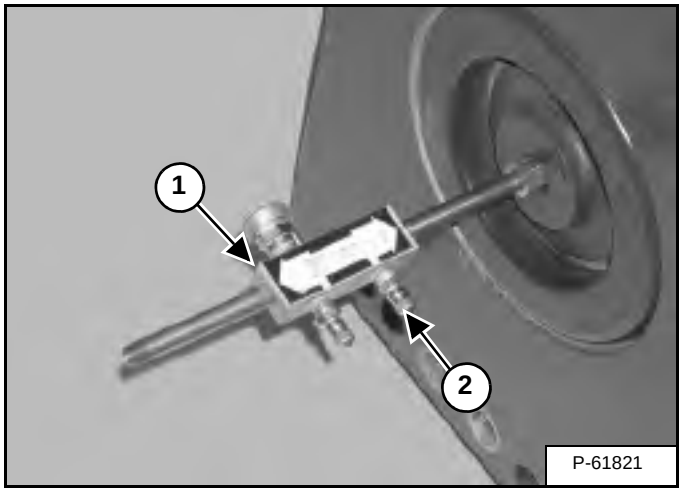
NOTE: If the plug (Item 1) [Figure 335] is tight, tap the end of the plug with a hammer before removing.

Figure 336



Install the adapter (Item 1) **[Figure 336]** on the "Above 689 kPa (6,89 bar) (100 psi)" side of the charging tool.

Figure 337



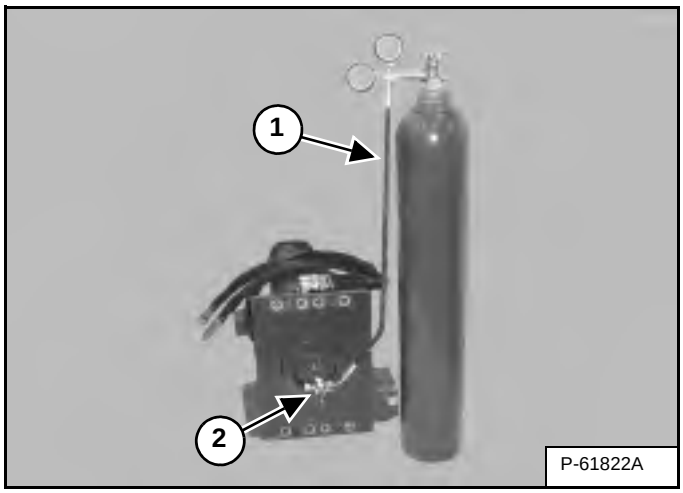
Install the charging tool (Item 1) **[Figure 337]** on the breaker.

Remove the cap (Item 2) **[Figure 337]** from the charging tool.

Nitrogen Chamber (Cont'd)

Charging The Nitrogen Chamber (Cont'd)

Figure 338



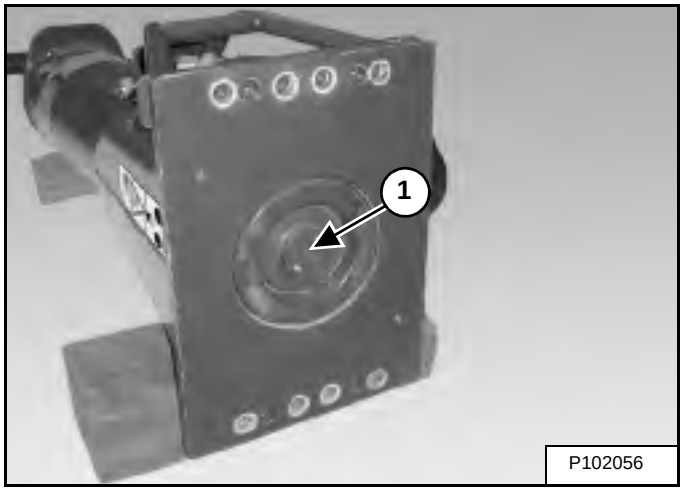
Connect the nitrogen hose (Item 1) to the charging tool (Item 2) **[Figure 338]**.

Using the regulator valve on the nitrogen tank, slowly fill the chamber to the 3199 kPa (32 bar) (464 psi).

Close the valve on the nitrogen tank.

Disconnect the hose and charging tool.

Figure 339



NOTE: Inspect the O-ring on the plug (Item 1) [Figure 339] for damage. Replace if necessary.

Install and tighten the plug (Item 1) **[Figure 339]** to 37 N•m (27 ft-lb) torque.

LUBRICATING THE ATTACHMENT

Lubrication Locations

⚠ WARNING

AVOID BURN INJURY

Breaker tool can be hot after use. Let breaker tool cool or use gloves when handling tool.

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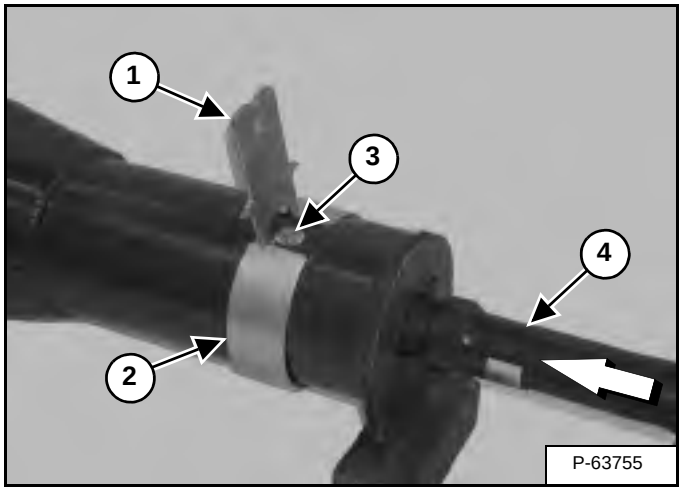
Put the breaker in the horizontal position.

Fully lower the breaker to the ground and stop the engine.

Figure 340



Use the maintenance tool (Item 1) to turn the retainer band (Item 2) until the grease fitting (Item 3) is accessible. Push the tool (Item 4) **[Figure 340]** fully into the breaker.

NOTE: Do not use an electric or pneumatic grease gun. Over greasing may damage the seal.

NOTE: Failure to push the tool up inside the breaker before greasing may cause seal damage.

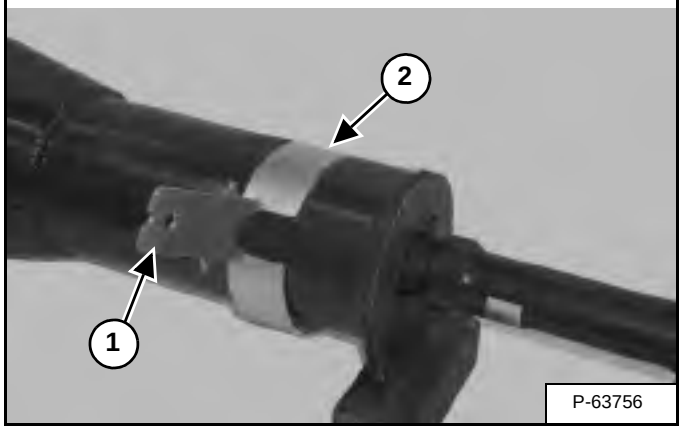
Apply grease (5 - 6 pumps) to the upper end of the tool at the grease fitting (Item 3) **[Figure 340]** every 4 hours of operation or sooner if the tool looks dry.

Always use a good quality lithium base multipurpose grease when lubricating the attachment.

If the tool is not greased at recommended intervals, tool and bushing wear will occur.

Figure 341

External Retaining Band

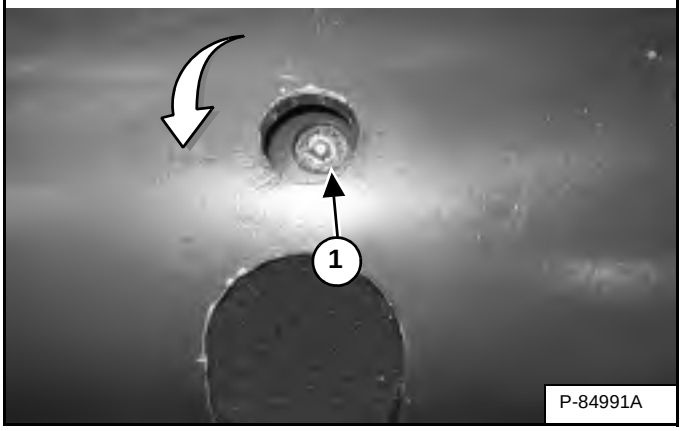


Use the maintenance tool (Item 1) to turn the retainer band (Item 2) **[Figure 341]** until the grease fitting is covered to keep out contamination.

Lubrication Locations (Cont'd)

Figure 342

Internal Retaining Band



Rotate the tool pin retainer band to access the grease fitting.

Apply grease (5 - 6 pumps) to the grease fitting (Item 1) **[Figure 342]** every 4 hours of operation or sooner if the tool looks dry.

NOTE: Use a good quality lithium based grease. Lower quality grease may melt when hot and reduce the life of the tool and bushing.

Rotate the retainer band to the closed position after greasing.

IMPORTANT

Underwater use of the breaker will cause internal damage. No portion of the breaker may be submerged.

I-2053-0589

REMOVAL AND INSTALLATION OF TOOL

Procedure (External Retaining Band)

Tool Removal For Earlier Breaker Models

NOTE: For later breaker models (See Tool Removal For Later Breaker Models on Page 192.)

⚠ WARNING

AVOID BURN INJURY

Breaker tool can be hot after use. Let breaker tool cool or use gloves when handling tool.

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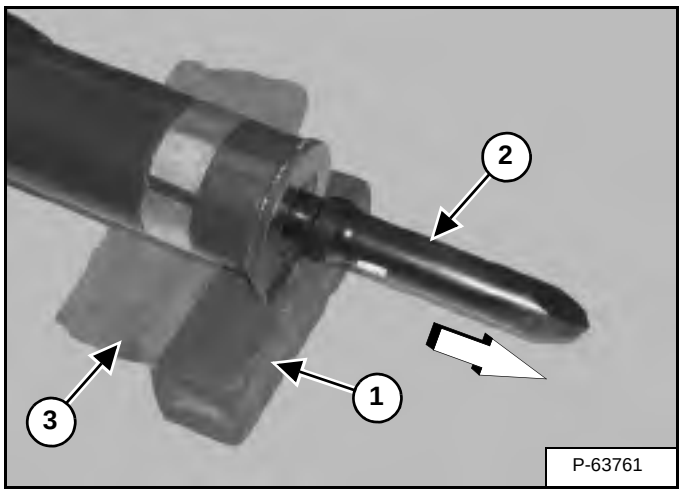
Figure 343



Raise and block (Item 1) **[Figure 343]** the front of the breaker.

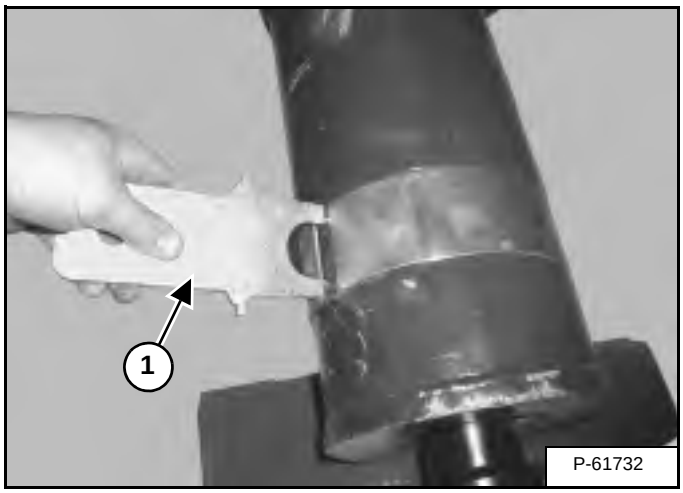
Pull the tool (Item 2) **[Figure 343]** out as far as possible. (This will help to hold the tool retaining pin in place when the retainer is repositioned.)

Place a piece of cardboard or a shop towel (Item 3) **[Figure 343]** under the breaker for the tool retaining pin to land on. This will keep the pin from being contaminated if it falls on the ground.

Procedure (External Retaining Band) (Cont'd)

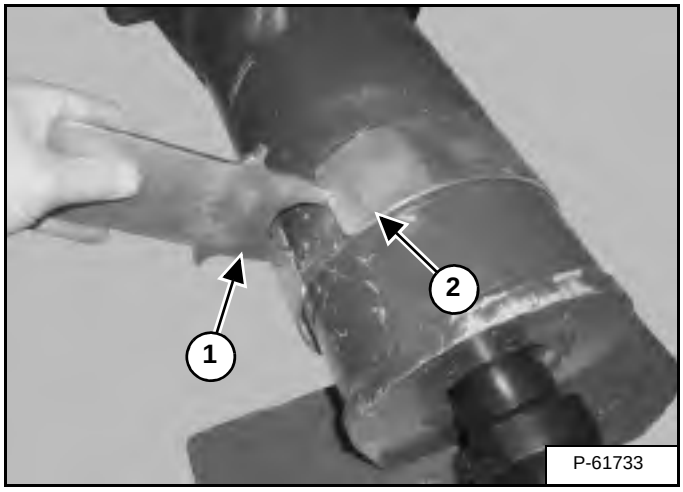
Tool Removal For Earlier Breaker Models (Cont'd)

Figure 344



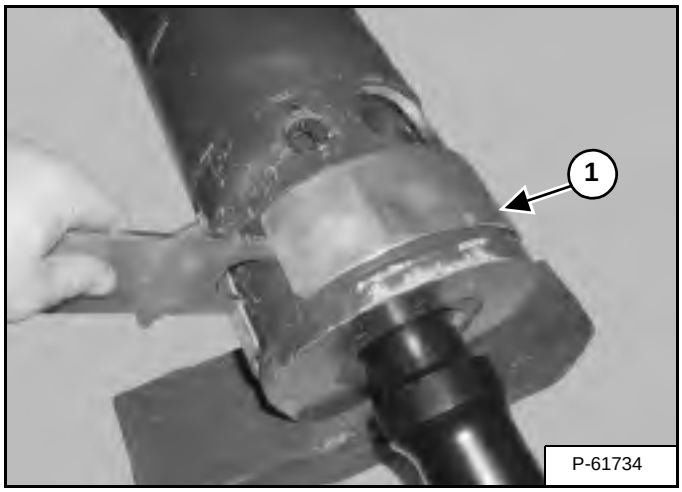
Install the maintenance tool (Item 1) **[Figure 344]**.

Figure 345



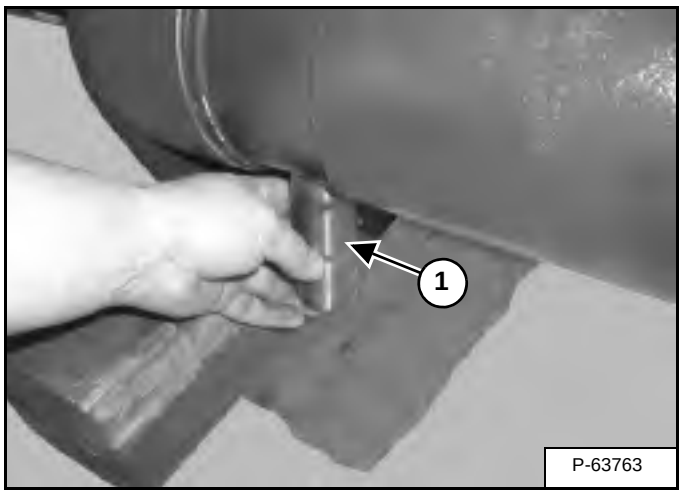
Turn the maintenance tool (Item 1) 90° to expand the band (Item 2) **[Figure 345]**.

Figure 346



Move the band (Item 1) **[Figure 346]** forward as shown.

Figure 347

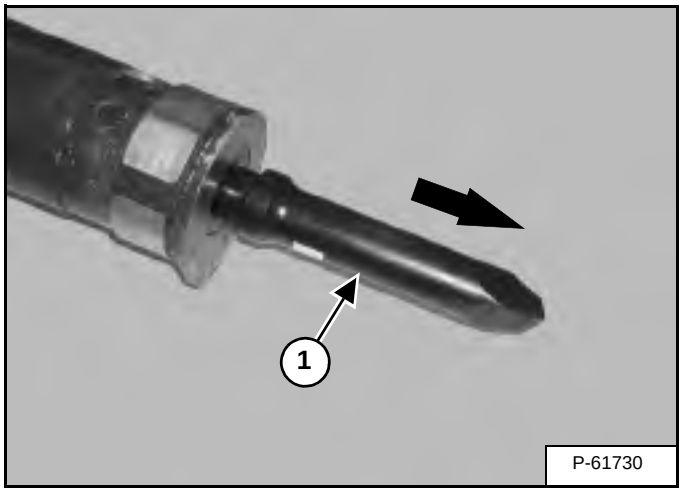


Push the tool toward the breaker and remove the tool retainer pin (Item 1) **[Figure 347]**.

Procedure (External Retaining Band) (Cont'd)

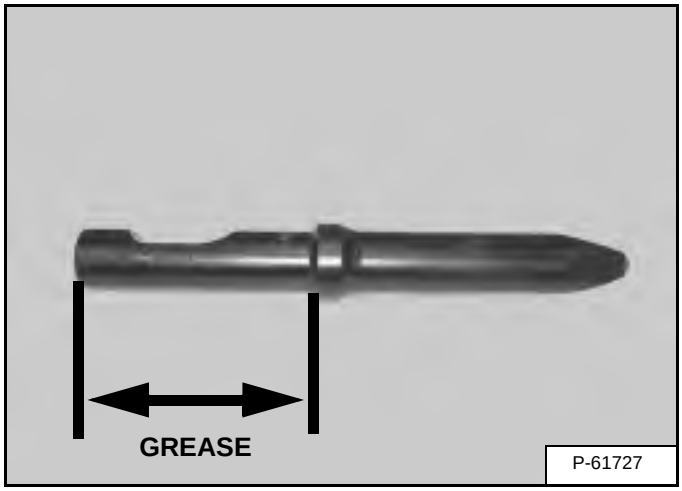
Tool Removal For Earlier Breaker Models (Cont'd)

Figure 348



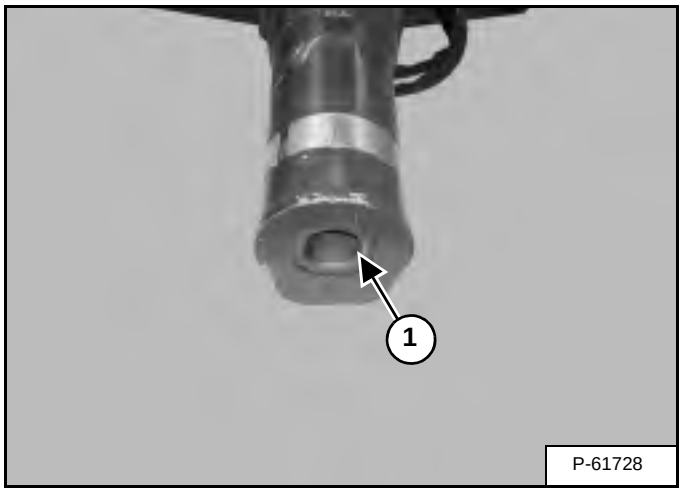
Remove the tool (Item 1) **[Figure 348]**.

Figure 349



Apply grease to the top section of the tool **[Figure 349]**.

Figure 350



Apply grease to the inside diameter of the lower bushing (Item 1) **[Figure 350]**.

NOTE: Use a good quality lithium based grease. Lower quality grease may melt when hot and reduce the life of the tool and bushing.

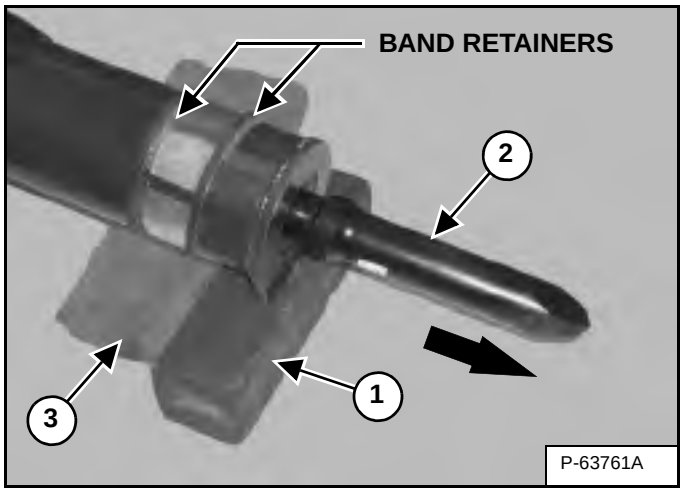
Procedure (External Retaining Band) (Cont'd)

Tool Removal For Later Breaker Models

NOTE: For early breaker models (See Tool Removal For Earlier Breaker Models on Page 189.)

NOTE: Later breaker models can be identified by the two band retainers that are located on each sides of the band.

Figure 351



Raise and block (Item 1) **[Figure 351]** the front of the breaker.

Pull the tool (Item 2) **[Figure 351]** out as far as possible. (This will help to hold the tool retaining pin in place when the retainer is repositioned.)

Place a piece of cardboard or a shop towel (Item 3) **[Figure 351]** under the breaker for the tool retaining pin to land on. This will keep the pin from being contaminated if it falls on the ground.

⚠ WARNING

AVOID BURN INJURY

Breaker tool can be hot after use. Let breaker tool cool or use gloves when handling tool.

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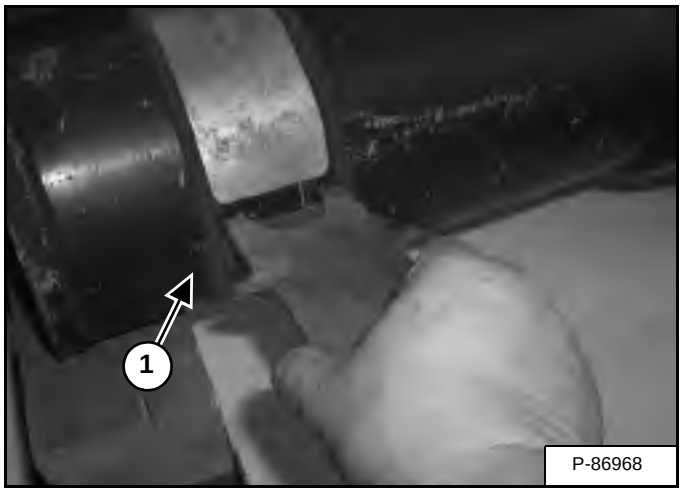
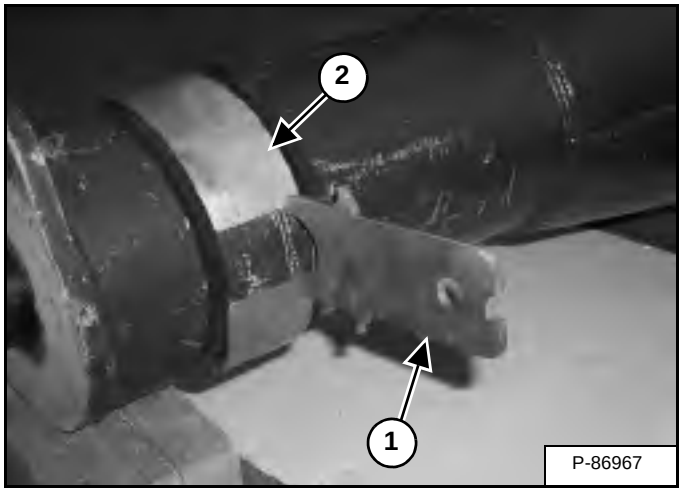
Figure 352



Install the maintenance tool (Item 1) **[Figure 352]**.

Figure 353

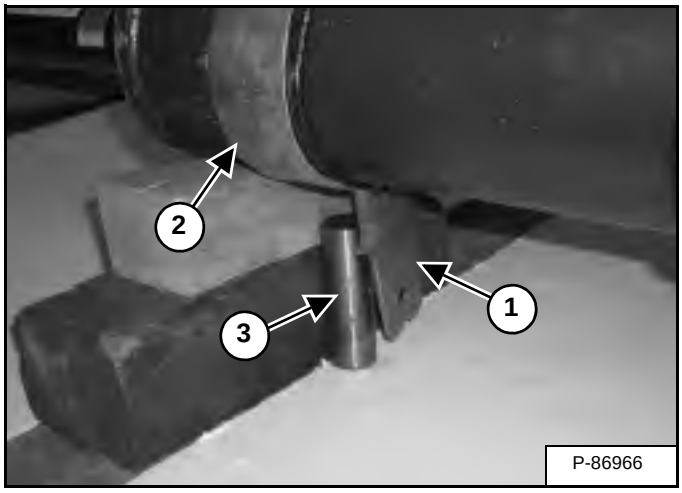


Turn the maintenance tool (Item 1) 90° to expand the band (Item 2) **[Figure 353]**.

Procedure (External Retaining Band) (Cont'd)

Tool Removal For Later Breaker Models (Cont'd)

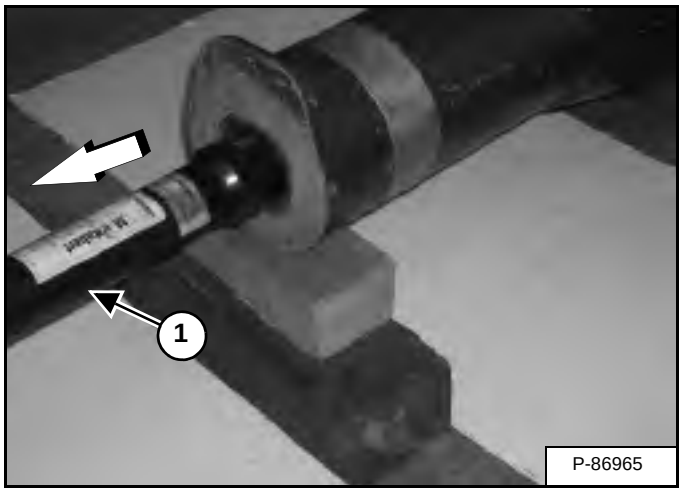
Figure 354



Rotate the maintenance tool (Item 1) and the band (Item 2) until the maintenance tool (Item 1) **[Figure 354]** is under the breaker.

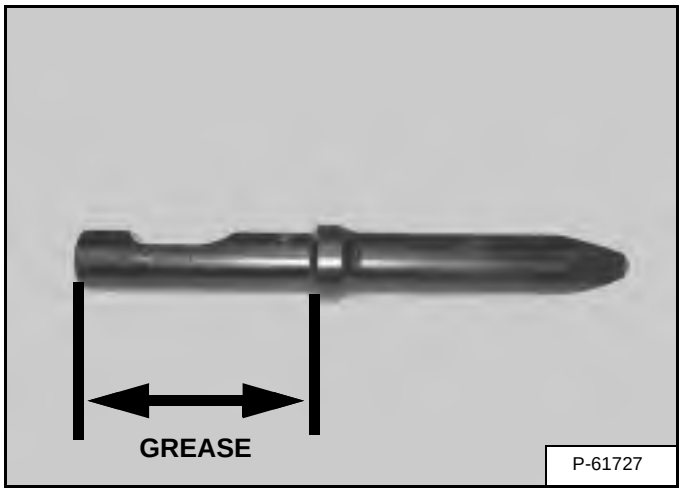
The tool retainer pin (Item 3) **[Figure 354]** will drop out of the bottom of the breaker.

Figure 355



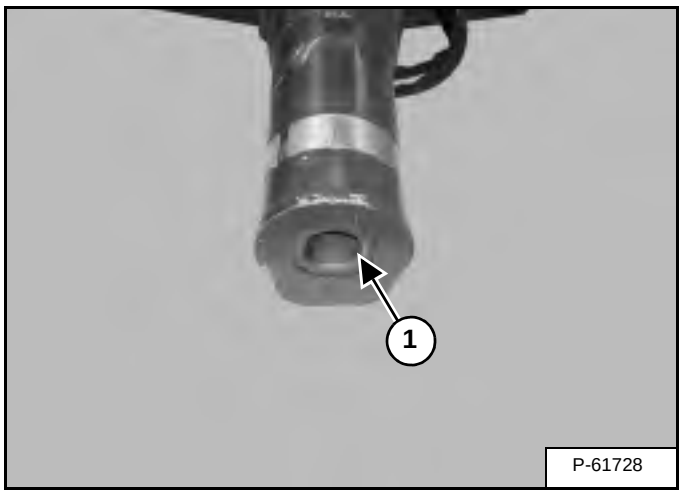
The breaker tool (Item 1) **[Figure 355]** can now be removed from the breaker by pulling out on the tool.

Figure 356



Apply grease to the top section of the tool **[Figure 356]**.

Figure 357



Apply grease to the inside diameter of the lower bushing (Item 1) **[Figure 357]**.

NOTE: Use a good quality lithium based grease. Lower quality grease may melt when hot and reduce the life of the tool and bushing.

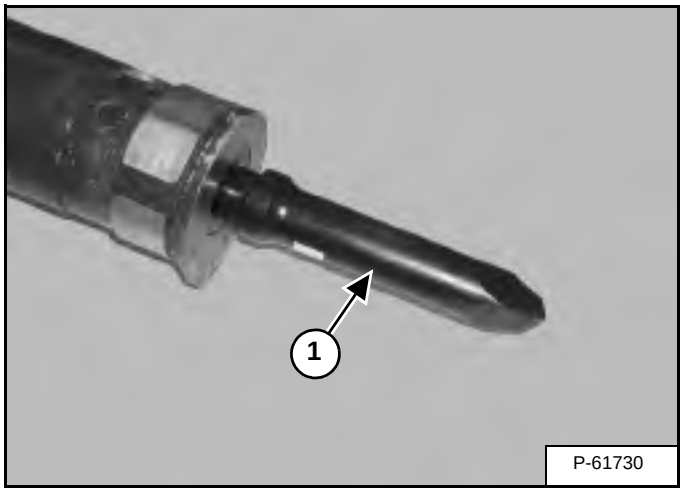
REMOVAL AND INSTALLATION OF TOOL (CONT'D)

Procedure (External Retaining Band) (Cont'd)

Tool Installation For Earlier Breaker Models

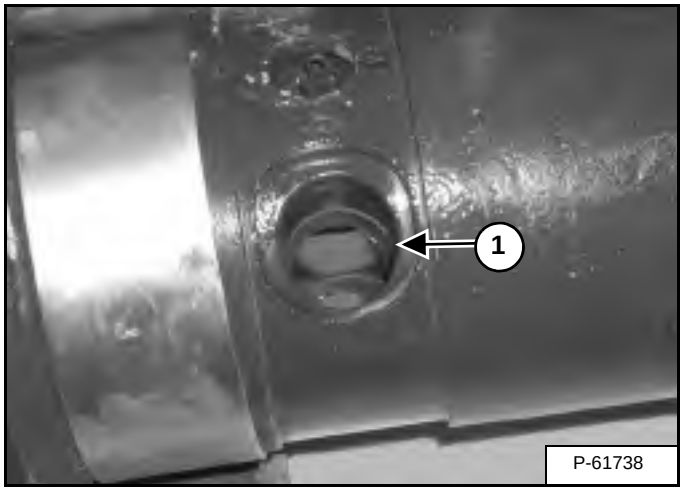
NOTE: For later breaker models (See Tool Installation For Later Breaker Models on Page 195.)

Figure 358



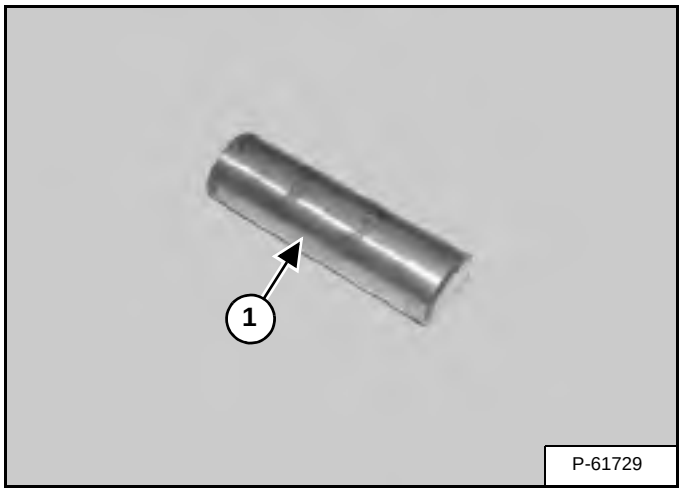
Install the tool (Item 1) **[Figure 358]** in the breaker.

Figure 359



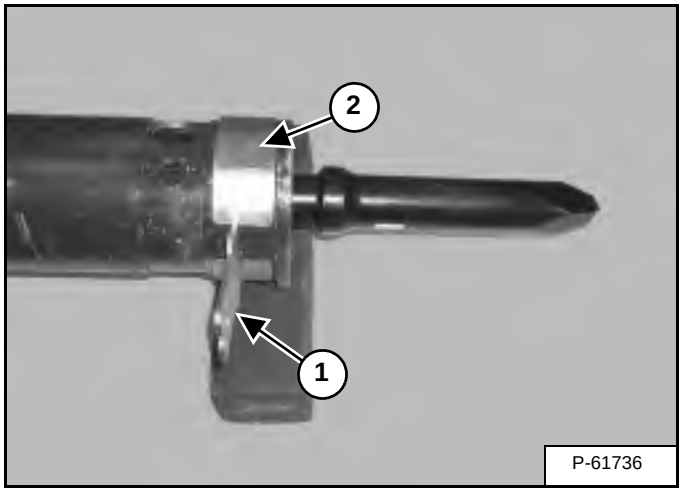
Align the notch in the tool with the hole (Item 1) **[Figure 359]** in the housing.

Figure 360



Inspect the tool retainer pin (Item 1) **[Figure 360]** for wear or damage before installation. To inspect pin diameter (See Weekly Inspection on Page 178.)

Figure 361

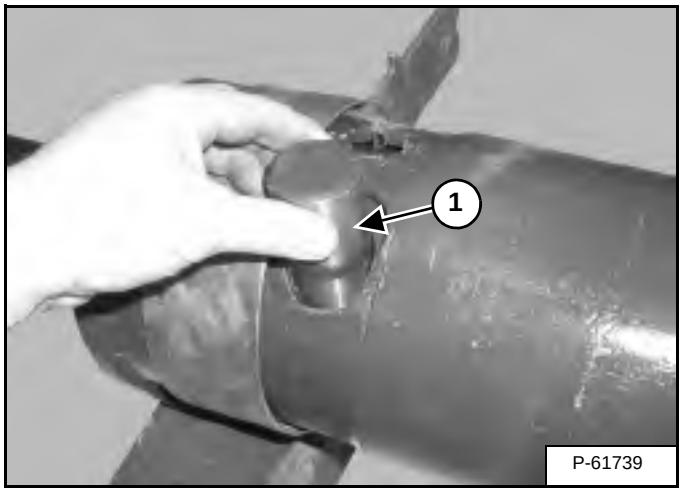


Install the maintenance tool (Item 1) and turn 90° to expand the band (Item 2) **[Figure 361]**.

Procedure (External Retaining Band) (Cont'd)

Tool Installation For Earlier Breaker Models (Cont'd)

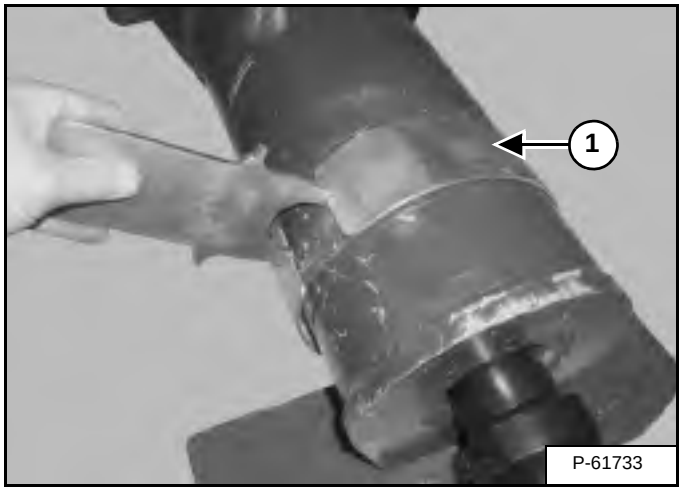
Figure 362



Install the tool retainer pin (Item 1) **[Figure 362]**.

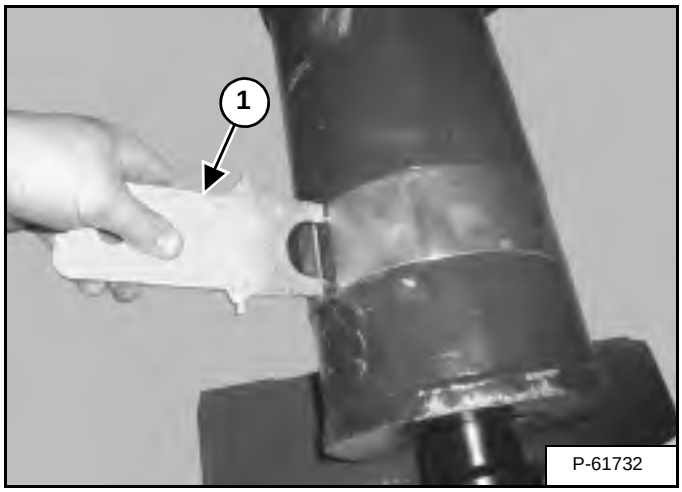
NOTE: Pull the tool outward to help hold the retainer pin in place when reinstalling the band.

Figure 363



Move the band (Item 1) **[Figure 363]** back over the tool retainer pin.

Figure 364

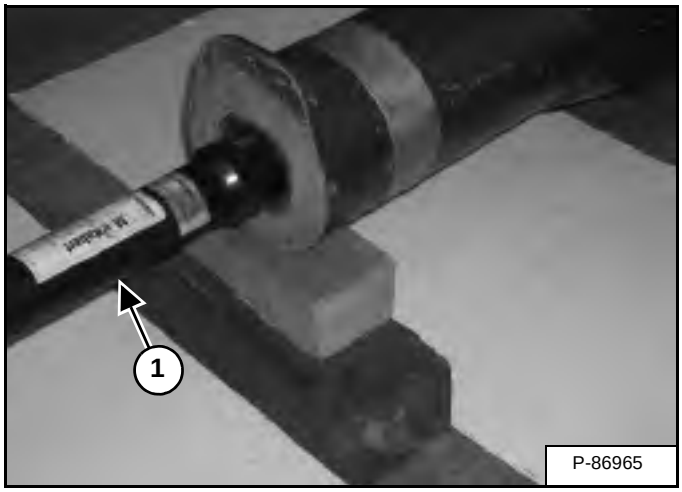


Turn the maintenance tool (Item 1) **[Figure 364]** 90° and remove the maintenance tool. Turn the band so that the grease fitting and the retainer pin are not exposed.

Tool Installation For Later Breaker Models

NOTE: For earlier breaker models (See Tool Installation For Earlier Breaker Models on Page 194.)

Figure 365

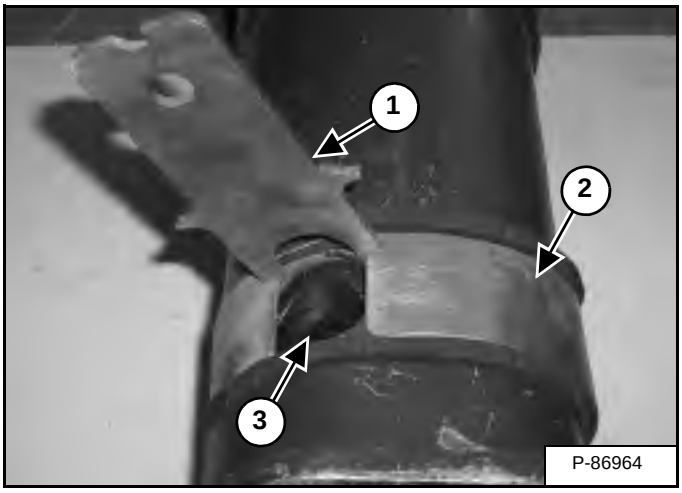


Install the breaker tool (Item 1) **[Figure 365]** into the breaker.

Procedure (External Retaining Band) (Cont'd)

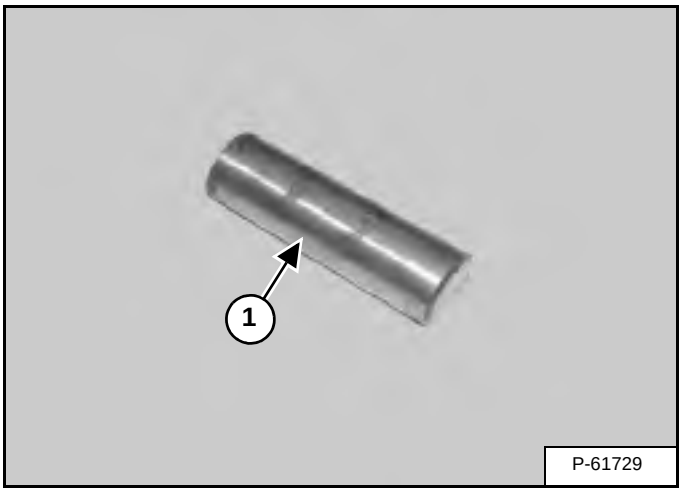
Tool Installation For Later Breaker Models (Cont'd)

Figure 366



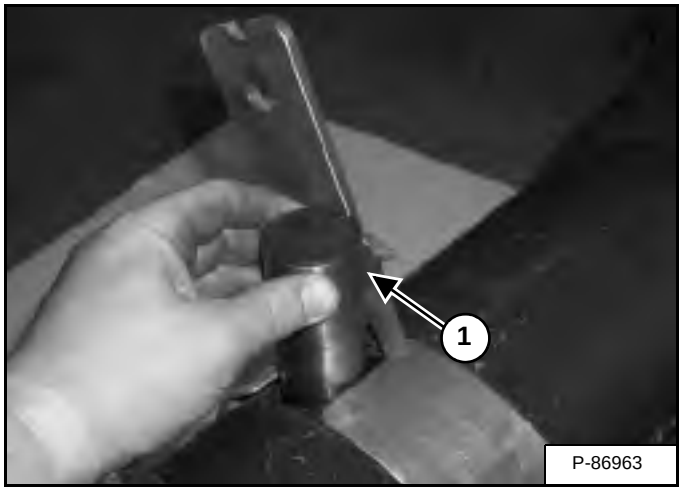
Install the maintenance tool (Item 1) and rotate the band (Item 2) until the tool retainer pin hole (Item 3) **[Figure 366]** is visible at the top of the breaker.

Figure 367



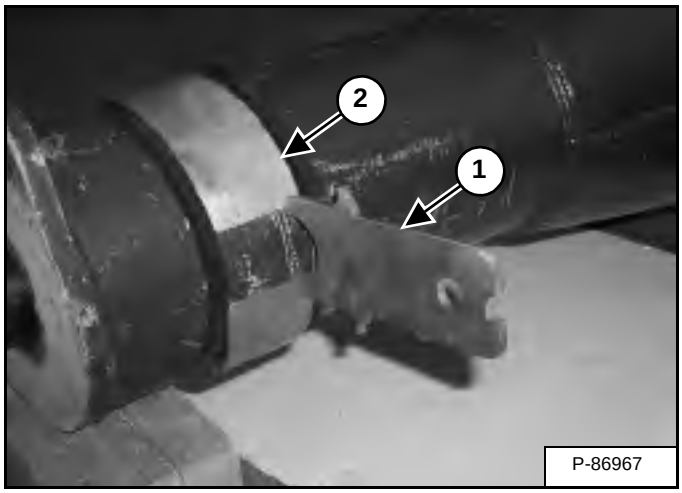
Inspect the tool retainer pin (Item 1) **[Figure 367]** for wear or damage before installation. To inspect pin diameter (See Weekly Inspection on Page 178.)

Figure 368



Install the tool retainer pin (Item 1) **[Figure 368]**. The breaker tool may need to be rotated so the retainer pin will install correctly into the breaker and breaker tool.

Figure 369

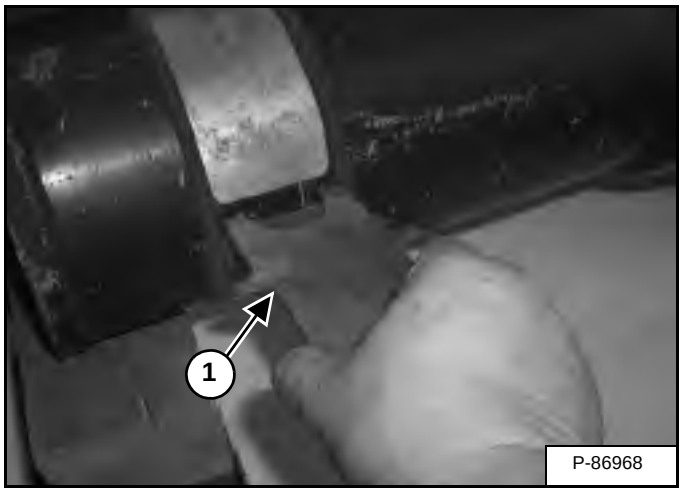


Rotate the maintenance tool (Item 1) and band (Item 2) **[Figure 369]** so the slot in the band is not directly over the tool retainer pin.

Procedure (External Retaining Band) (Cont'd)

Tool Installation For Later Breaker Models (Cont'd)

Figure 370

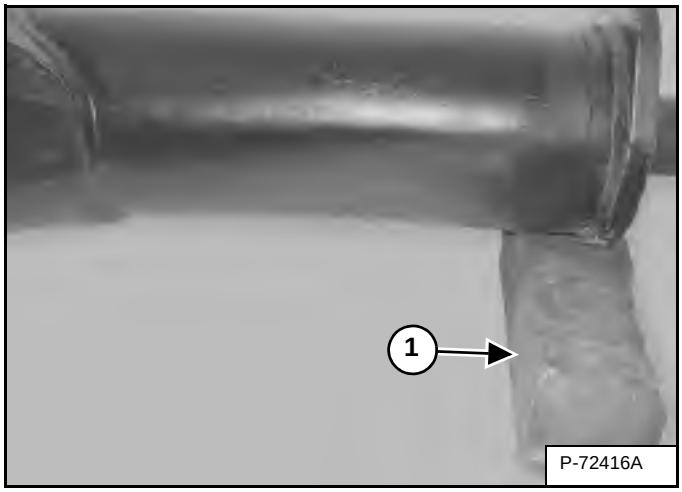


Rotate the maintenance tool (Item 1) **[Figure 370]** 90° and remove the maintenance tool.

Procedure (Internal Retaining Band)

Removing The Tool

Figure 371



Raise and block (Item 1) **[Figure 371]** the front of the breaker.

WARNING

AVOID BURN INJURY

Breaker tool can be hot after use. Let breaker tool cool or use gloves when handling tool.

W-2204-0905

WARNING

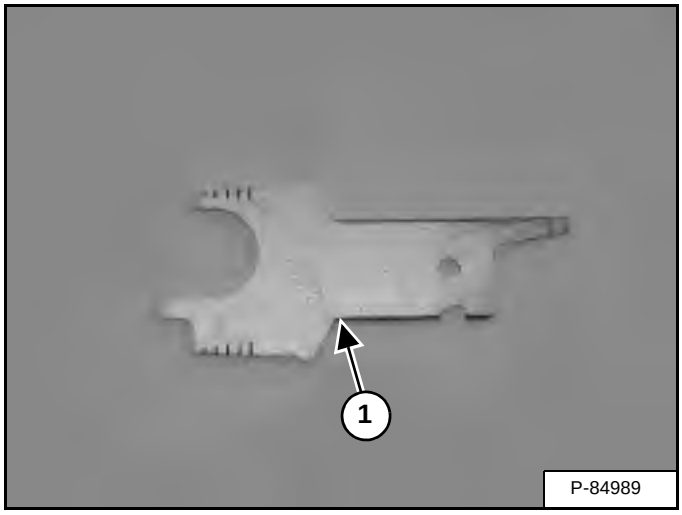
AVOID INJURY OR DEATH

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 372



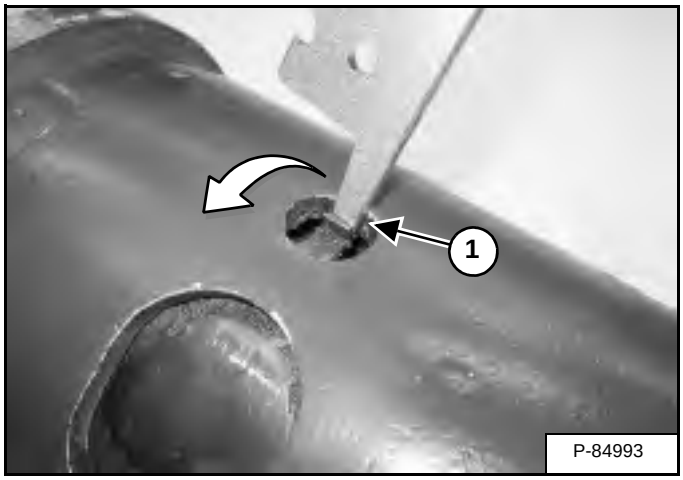
The maintenance tool (Item 1) **[Figure 372]** that is supplied with the breaker will be used to remove the tool retainer pin. (If this tool is not available, a flat blade screw driver can be used.)

REMOVAL AND INSTALLATION OF TOOL (CONT'D)

Procedure (Internal Retaining Band) (Cont'd)

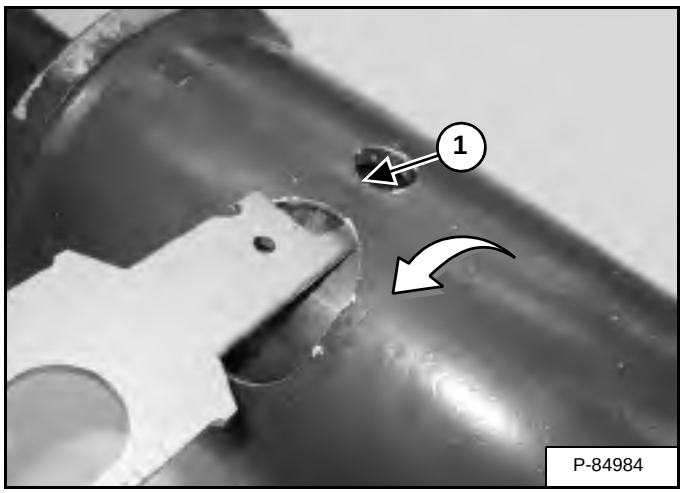
Removing The Tool (Cont'd)

Figure 373



Insert the tip of the tool (Item 1) **[Figure 373]** between the breaker frame and the tool retainer band. Use the tool to rotate the retainer band inside the breaker frame.

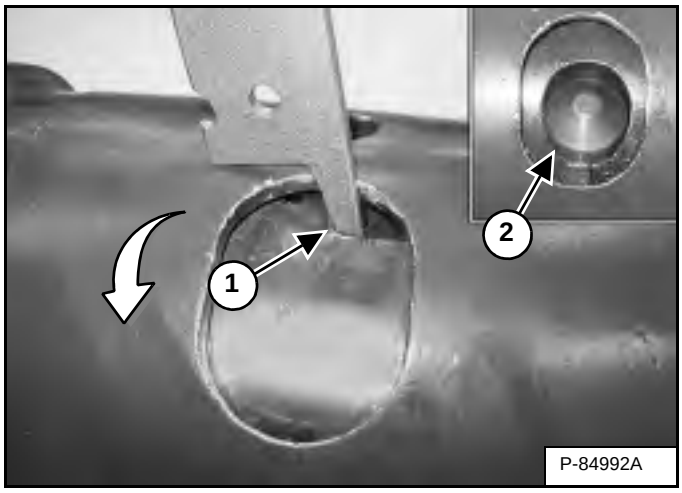
Figure 374



Insert the end of the tool (Item 1) **[Figure 374]**. Lift up on the tool to allow the tab on the end of the retainer band to go under the frame opening.

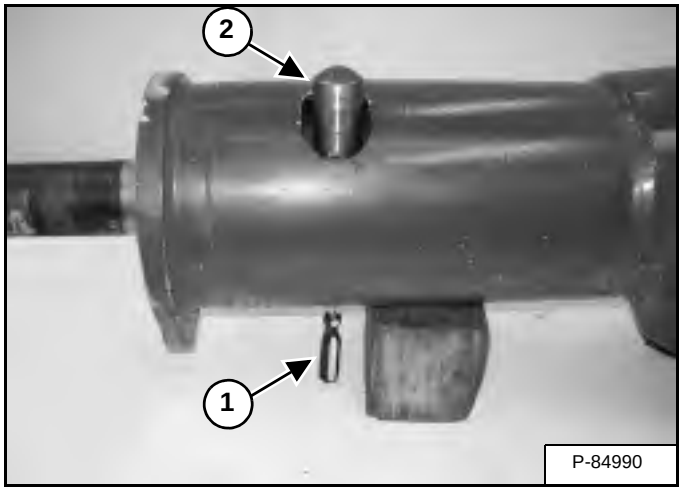
NOTE: Keep tool retaining components and tool bushings free of dirt and debris.

Figure 375



Continue using the maintenance tool (Item 1) to rotate the retainer band until the tool retainer pin (Item 2) **[Figure 375]** is exposed.

Figure 376



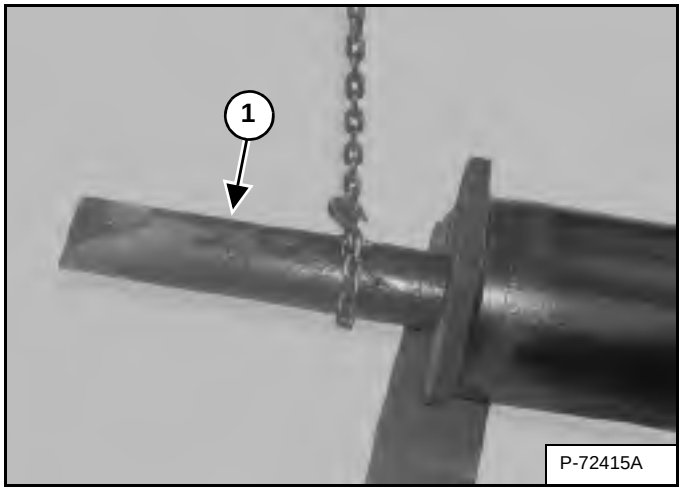
Insert a screw driver or punch (Item 1) through the access hole on the bottom of the frame and push the tool retaining pin (Item 2) **[Figure 376]** up and remove the retaining pin.

REMOVAL AND INSTALLATION OF TOOL (CONT'D)

Procedure (Internal Retaining Band) (Cont'd)

Removing The Tool (Cont'd)

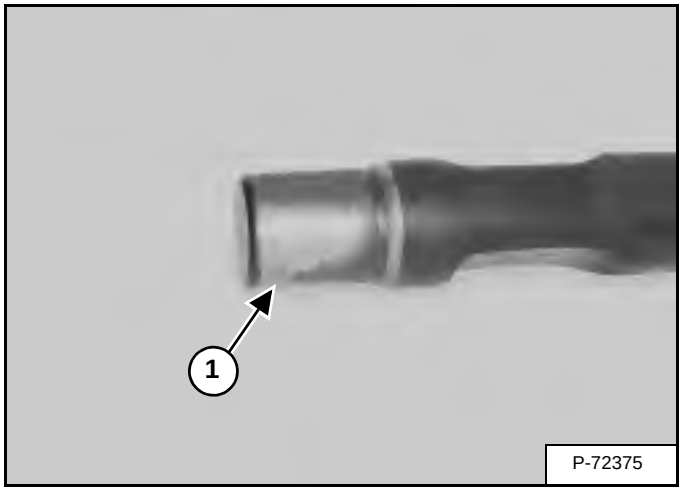
Figure 377



Using a lifting device, remove the tool (Item 1) **[Figure 377]**.

Installing The Tool

Figure 378

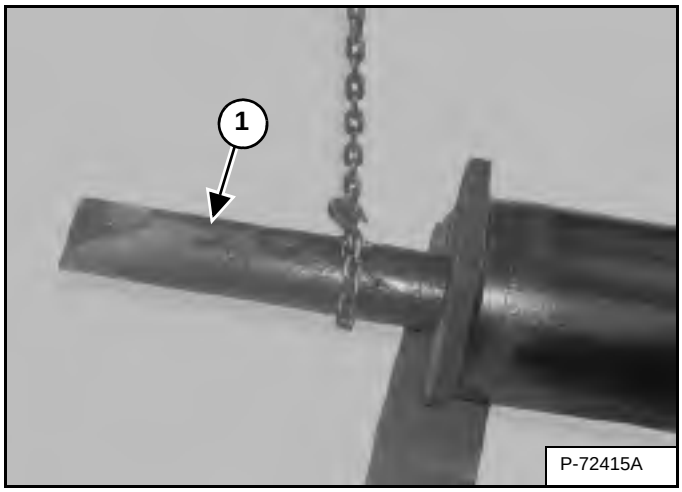


NOTE: Keep tool retaining components and tool bushings free of dirt and debris.

Apply grease to the top section of the tool (Item 1) **[Figure 378]**.

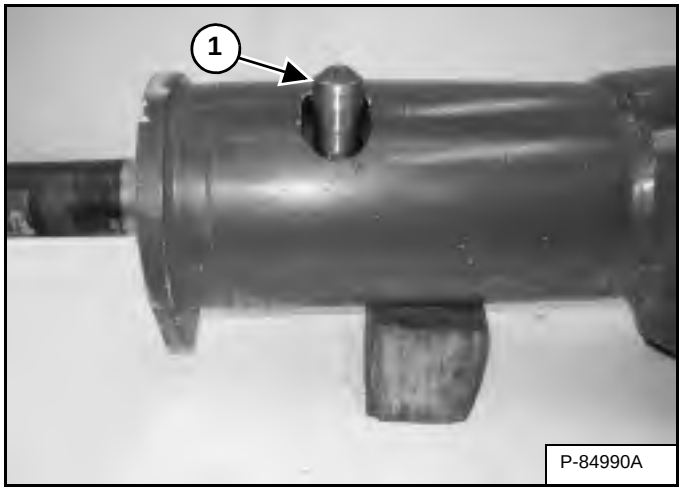
NOTE: Use a good quality lithium based grease. Lower quality grease may melt when hot and reduce the life of the tool and bushing.

Figure 379



Install the tool (Item 1) **[Figure 379]** in the breaker.

Figure 380



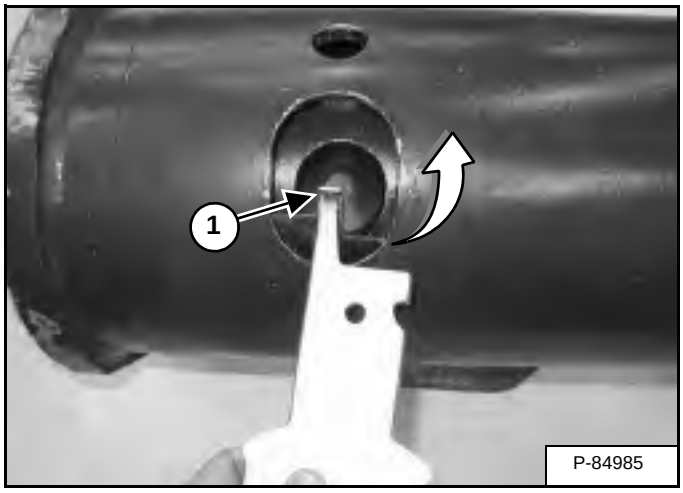
Install the tool retainer pin (Item 1) **[Figure 380]** in the breaker. The tool may need to be rotated for the pin to fit properly.

REMOVAL AND INSTALLATION OF TOOL (CONT'D)

Procedure (Internal Retaining Band) (Cont'd)

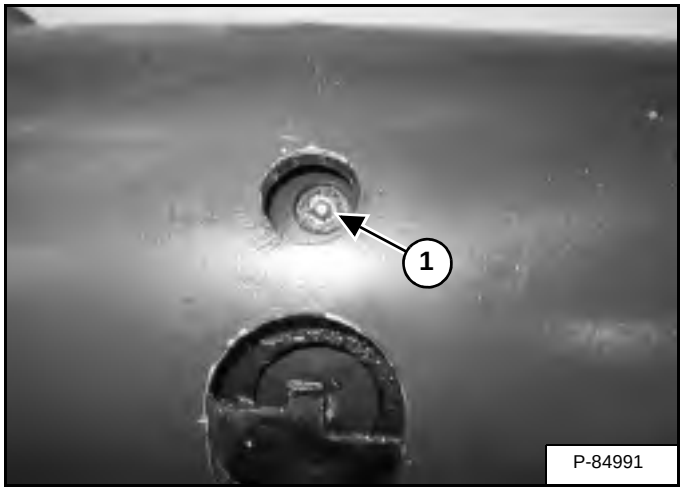
Installing The Tool (Cont'd)

Figure 381



Using the maintenance tool (Item 1) **[Figure 381]**, rotate the retainer band to close the opening.

Figure 382



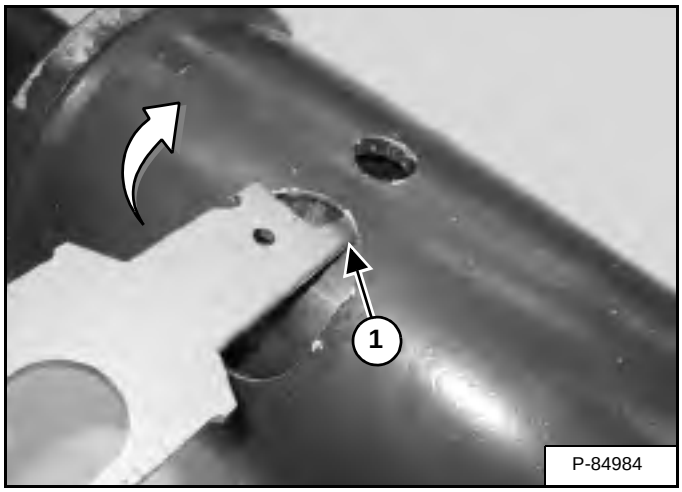
NOTE: Use a good quality lithium based grease. Lower quality grease may melt when hot and reduce the life of the tool and bushing.

NOTE: Do not use an electric or pneumatic grease gun. Over greasing may damage the seal.

NOTE: Failure to push the tool up inside the breaker before greasing may cause seal damage.

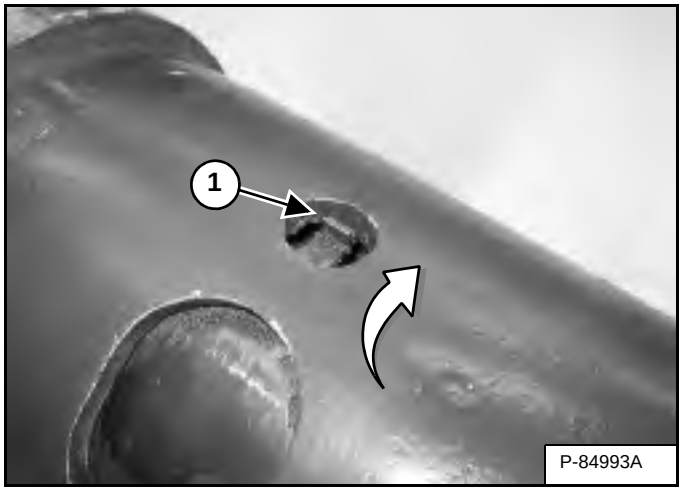
Push the tool in as far as possible. Apply grease (5 - 6 pumps) at the grease fitting (Item 1) **[Figure 382]**.

Figure 383



Using the maintenance tool (Item 1) **[Figure 383]**, press the tang of the retaining band so that it is pushed under the breaker frame.

Figure 384



Continue to rotate the retaining band (Item 1) **[Figure 384]** until it is in the fully closed position.

ATTACHMENT STORAGE AND RETURN TO SERVICE

Storage

Sometimes it may be necessary to store your Bobcat attachment for an extended period of time. Below is a list of items to perform before storage.

- Thoroughly clean the attachment.
- Lubricate the attachment.
- Inspect the Bob-Tach wedge mounts, mounting flange and all welds on the attachment for wear and damage.
- Check for loose hardware, missing guards, or damaged parts.
- Replace worn or damaged parts.
- Check for damaged or missing decals. Replace if necessary.
- Place the attachment in a dry protected shelter.
- Place the attachment flat on the ground.

NOTE: In muddy conditions or to prevent the attachment from freezing to the ground, put the attachment on planks or blocks before removing the attachment from the machine.

Always relieve the hydraulic pressure when disconnecting the breaker from the machine. Plug the breaker hydraulic ports when in storage. If equipped with hoses, install caps on the hoses. If equipped with couplers, connect the couplers together to keep them clean.

If storing for six months or longer, remove the tool and thoroughly grease the piston and lower bushing to prevent corrosion. Reinstall the tool and store the breaker in the vertical position, with the tool installed into a holding fixture. The weight of the breaker on the tool retracts the piston which reduces the possibility of piston corrosion. Storing vertical prevents any side loading of the piston seal and increases the seal service life. Check the nitrogen charge before using the breaker.

If the breaker is stored in a highly corrosive environment, has high humidity or a coastal location, grease and store the breaker as recommended above if the storage period is over thirty days.

If the breaker must be stored in the horizontal position, remove the tool and thoroughly grease the piston and lower bushing to prevent corrosion. Cap or cover the opening. Reinstall the tool only when the breaker is going to be used.

Return To Service

After the Bobcat attachment has been in storage, it is necessary to follow a list of items to return the attachment to service.

- Be sure all shields and guards are in place.
- Lubricate the attachment.
- Install and operate attachment, check for correct function.
- Check for leaks. Repair as needed.


Bobcat®

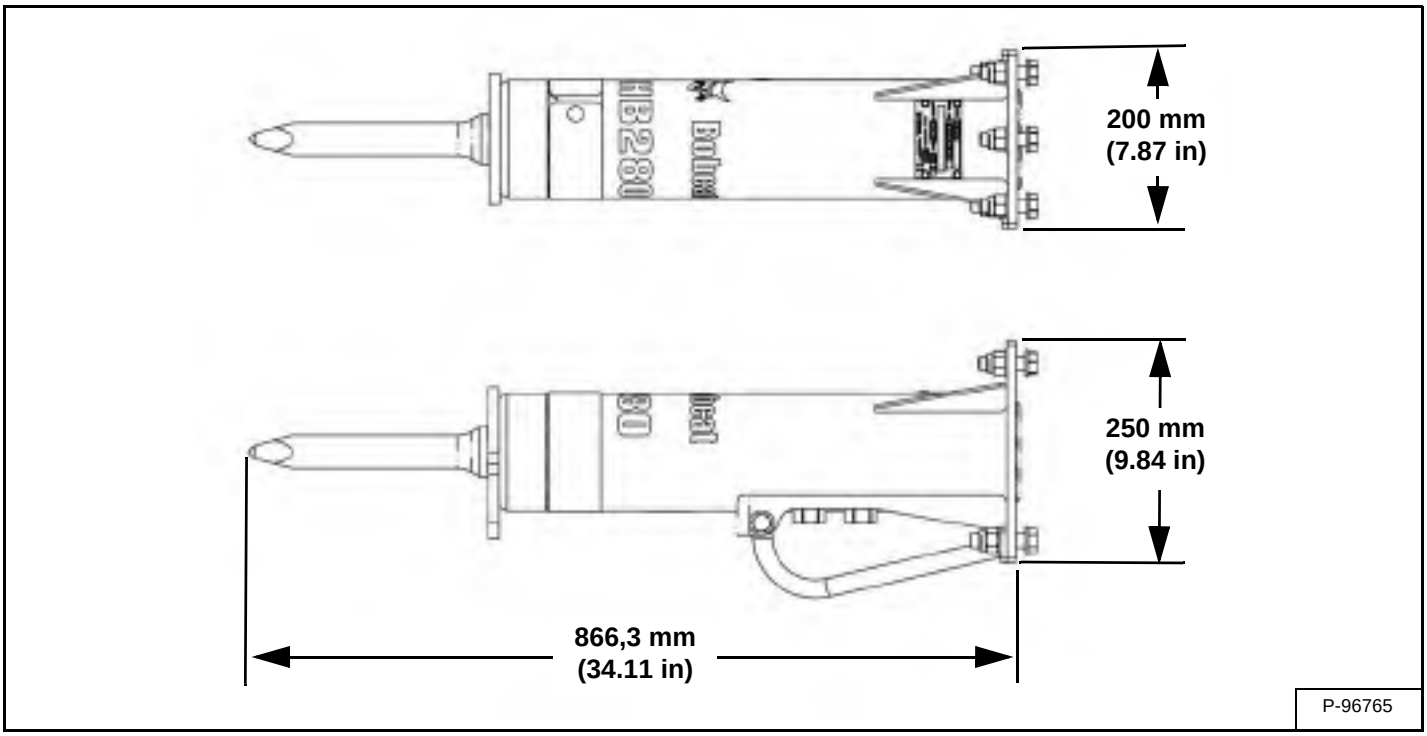
SPECIFICATIONS


Bobcat®

(HB280) HYDRAULIC BREAKER SPECIFICATIONS

Dimensions

- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



Performance

Breaker Weight	58 kg (127 lb)
Blow Rate	
Soft Ground	1120 bpm
Hard Ground	1290 bpm
Operating Pressure	12065 kPa (120,6 bar) (1750 psi)
System Pressure	14823 kPa (148 bar) (2150 psi)
Impact Class	0,266 kN (60 lbf)
CIMA Energy Rating	0,262 kN (59 lbf)
Nitrogen Charge Pressure	3206 kPa (32 bar) (465 psi)
Bit Diameter	37 mm (1.46 in)
Bit Working Length	269 mm (10.6 in)

Hydraulic System

Hydraulic Flow	13 - 23 L/min (3.4 - 6.1 U.S. gpm)

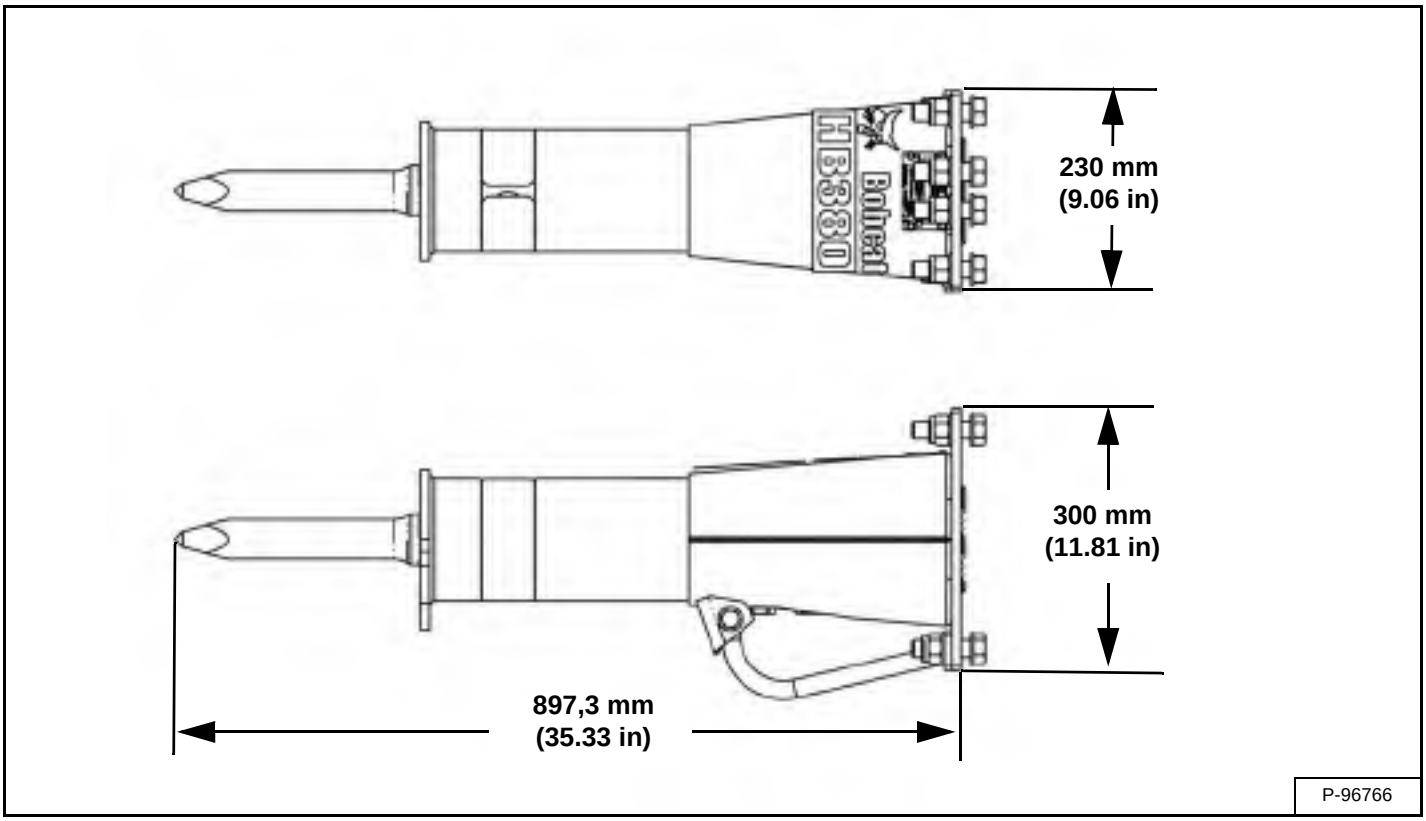
Environmental

Noise Level LwA (EU Directive 2000/14/EC)	Measured	Guaranteed
	115 db	118 db

(HB380) HYDRAULIC BREAKER SPECIFICATIONS

Dimensions

- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



Performance

Breaker Weight	77 kg (169 lb)
Blow Rate	
Soft Ground	1400 bpm
Hard Ground	1600 bpm
Operating Pressure	12065 kPa (120,6 bar) (1750 psi)
System Pressure	14823 kPa (148 bar) (2150 psi)
Impact Class	0,311 kN (70 lbf)
CIMA Energy Rating	0,311 kN (70 lbf)
Nitrogen Charge Pressure	3206 kPa (32 bar) (465 psi)
Bit Diameter	45 mm (1.77 in)
Bit Working Length	279 mm (11.0 in)

Hydraulic System

Hydraulic Flow	15 - 30 L/min (4.0 - 7.9 U.S. gpm)

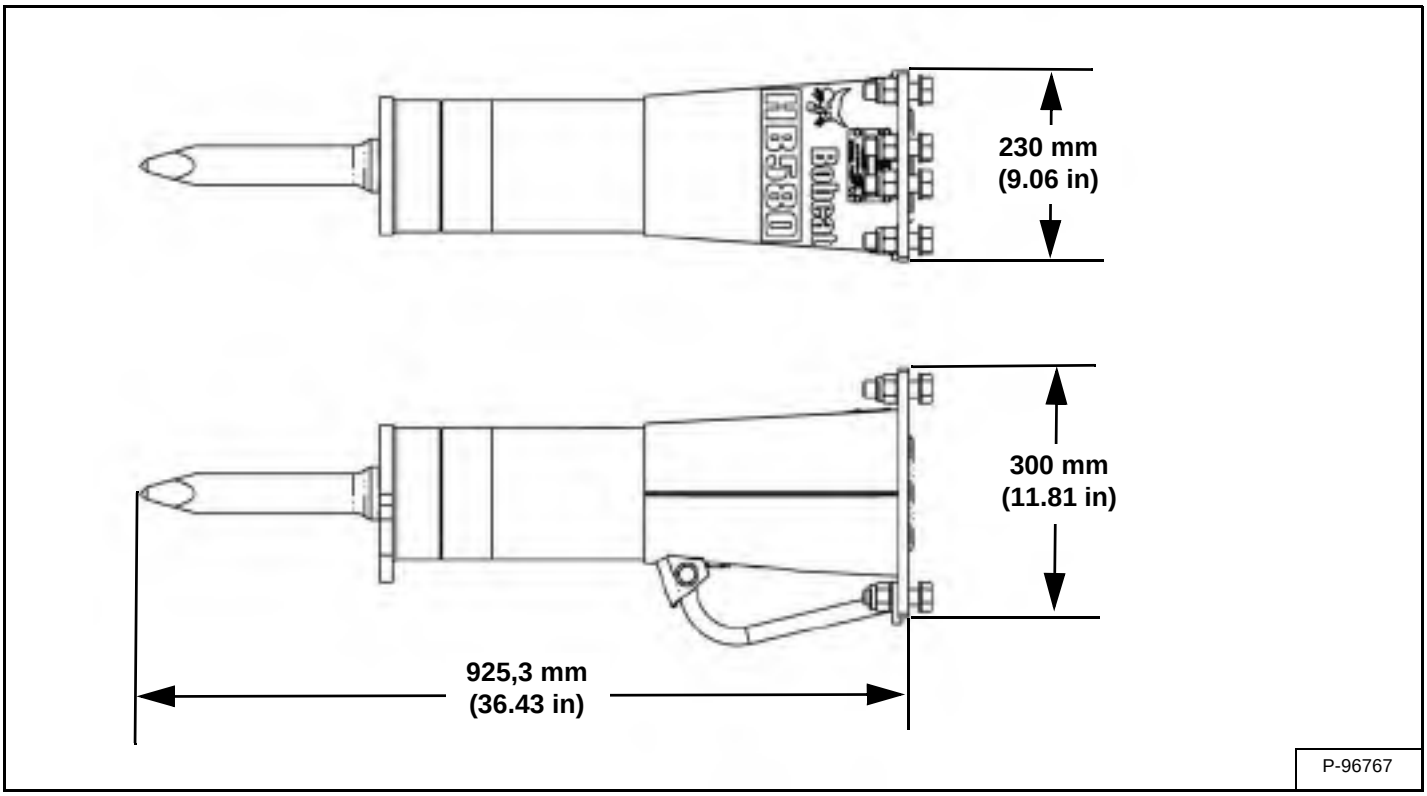
Environmental

Noise Level LwA (EU Directive 2000/14/EC)	Measured	Guaranteed
	118 db	121 db

(HB580) HYDRAULIC BREAKER SPECIFICATIONS

Dimensions

- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



Performance

Breaker Weight	96 kg (211 lb)
Blow Rate	
Soft Ground	1220 bpm
Hard Ground	1350 bpm
Operating Pressure	12065 kPa (120,6 bar) (1750 psi)
System Pressure	14823 kPa (148 bar) (2150 psi)
Impact Class	0,444 kN (100 lbf)
CIMA Energy Rating	0.369 kN (83 lbf)
Nitrogen Charge Pressure	3206 kPa (32 bar) (465 psi)
Bit Diameter	47 mm (1.85 in)
Bit Working Length	292 mm (11.5 in)

Hydraulic System

Hydraulic Flow	25 - 50 L/min (6.6 - 13.2 U.S. gpm)

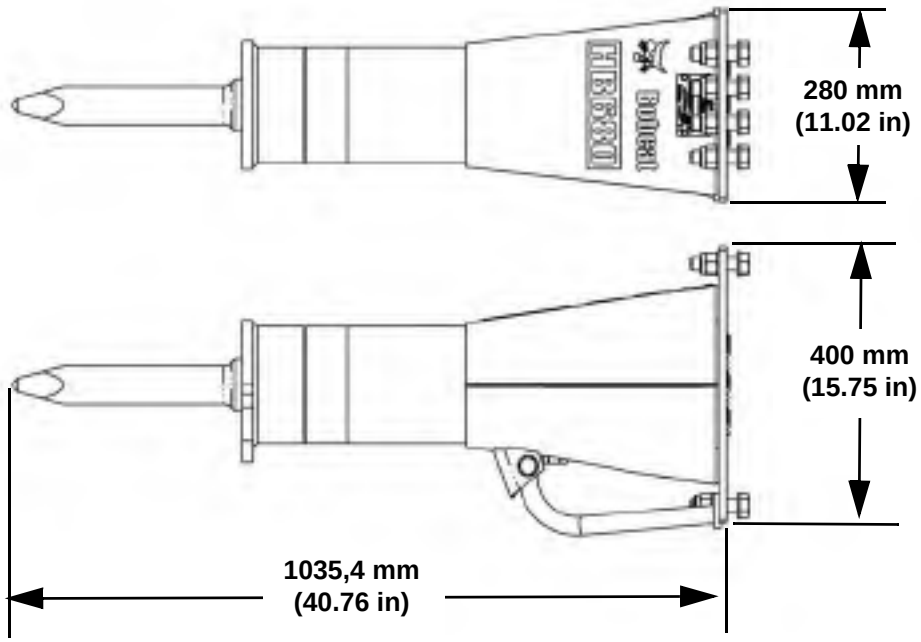
Environmental

Noise Level LwA (EU Directive 2000/14/EC)	Measured	Guaranteed
	117 db	121db

(HB680) HYDRAULIC BREAKER SPECIFICATIONS

Dimensions

- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



Performance

Breaker Weight	127 kg (281 lb)
Blow Rate	
Soft Ground	780 - 1220 bpm
Hard Ground	860 - 1340 bpm
Operating Pressure	12065 kPa (120,6 bar) (1750 psi)
System Pressure	14823 kPa (148 bar) (2150 psi)
Impact Class	0,667 kN (150 lbf)
CIMA Energy Rating	0,636 kN (143 lbf)
Nitrogen Charge Pressure	3206 kPa (32 bar) (465 psi)
Bit Diameter	55,1 mm (2.17 in)
Bit Working Length	330 mm (13.0 in)

Hydraulic System

Hydraulic Flow	25 - 50 L/min (6.6 - 13.2 U.S. gpm)

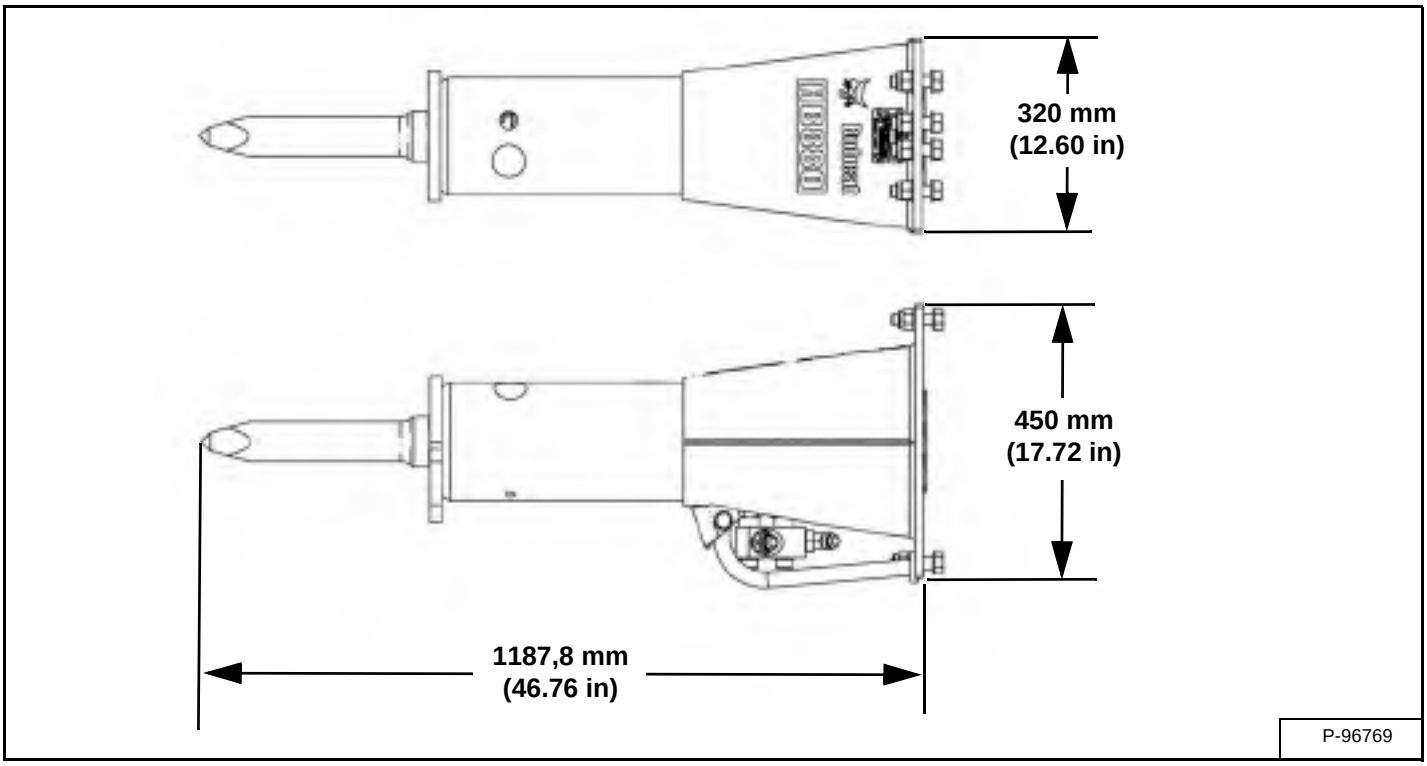
Environmental

Noise Level LwA (EU Directive 2000/14/EC)	Measured	Guaranteed
	119 db	122 db

(HB880) HYDRAULIC BREAKER SPECIFICATIONS

Dimensions

- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



Performance

Breaker Weight	194 kg (427 lb)
Blow Rate	
Soft Ground	755 - 1150 bpm
Hard Ground	860 - 1310 bpm
Operating Pressure	12065 kPa (120,6 bar) (1750 psi)
System Pressure	14823 kPa (148 bar) (2150 psi)
Impact Class	1,334 kN (300 lbf)
CIMA Energy Rating	0,920 kN (207 lbf)
Nitrogen Charge Pressure	3206 kPa (32 bar) (465 psi)
Bit Diameter	65 mm (2.56 in)
Bit Working Length	330 mm (13.0 in)

Hydraulic System

Hydraulic Flow	30 - 65 L/min (7.9 - 17.2 U.S. gpm)

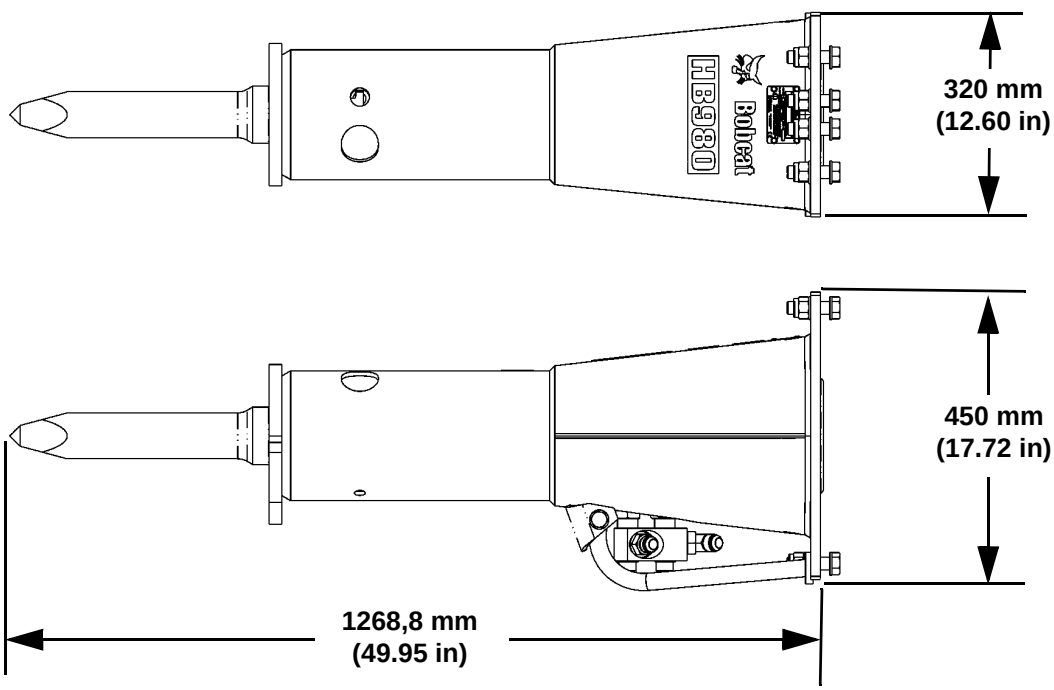
Environmental

Noise Level LwA (EU Directive 2000/14/EC)	Measured	Guaranteed
	117 db	121 db

(HB980) HYDRAULIC BREAKER SPECIFICATIONS

Dimensions

- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



Performance

Breaker Weight	228 kg (502 lb)
Blow Rate	
Soft Ground	855 - 1060 bpm
Hard Ground	1170 - 1450 bpm
Operating Pressure	12065 kPa (120,6 bar) (1750 psi)
System Pressure	14823 kPa (148 bar) (2150 psi)
Impact Class	2,224 kN (500 lbf)
CIMA Energy Rating	1,254 kN (282 lbf)
Nitrogen Charge Pressure	3206 kPa (32 bar) (465 psi)
Bit Diameter	72,1 mm (2.84 in)
Bit Working Length	356 mm (14.0 in)

Hydraulic System

Hydraulic Flow	45 - 80 L/min (11.9 - 21.1 U.S. gpm)

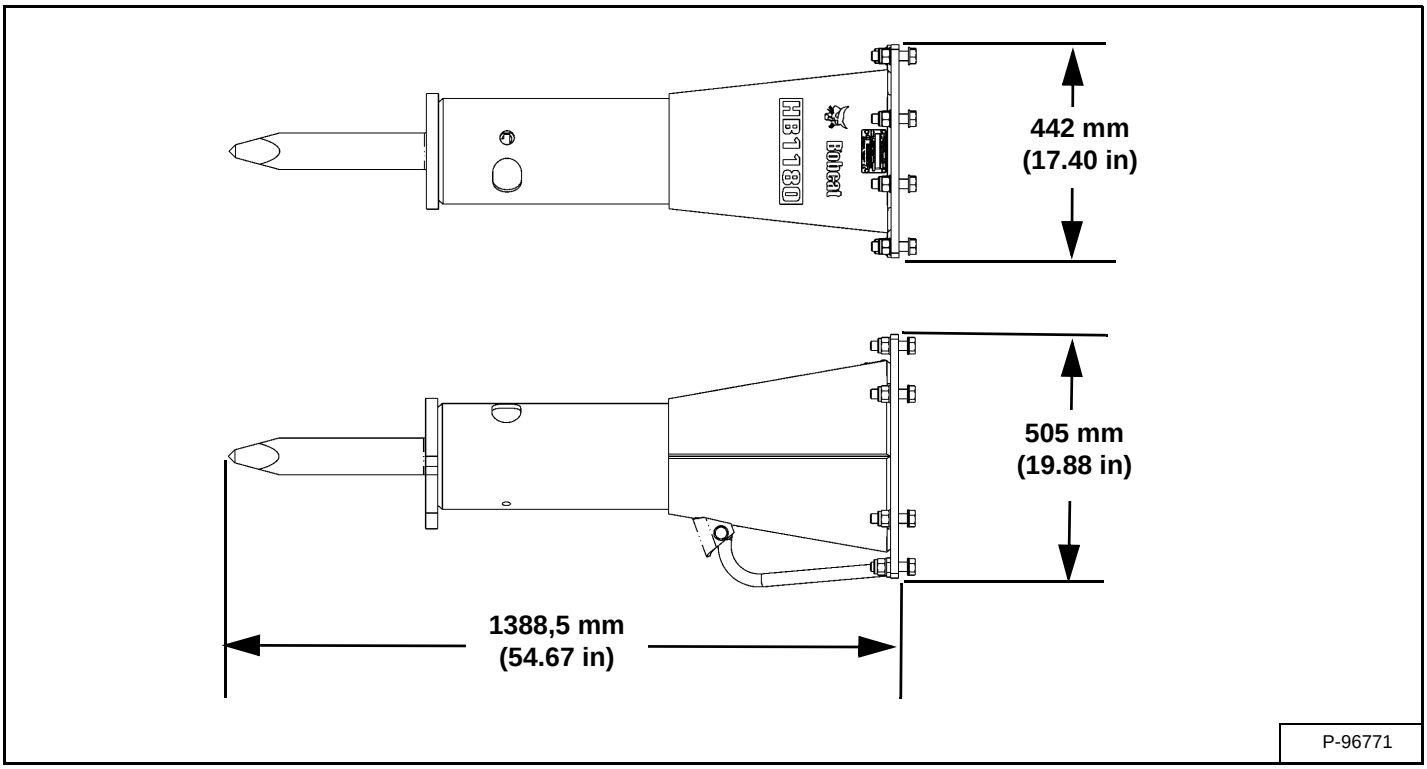
Environmental

Noise Level LwA (EU Directive 2000/14/EC)	Measured	Guaranteed
	122 db	125 db

(HB1180) HYDRAULIC BREAKER SPECIFICATIONS

Dimensions

- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



Performance

Breaker Weight	299 kg (659 lb)
Blow Rate	
Soft Ground	680 - 1070 bpm
Hard Ground	820 - 1280 bpm
Operating Pressure	12755 kPa (127,5 bar) (1850 psi)
System Pressure	14823 kPa (148 bar) (2150 psi)
Impact Class	3,336 kN (750 lbf)
CIMA Energy Rating	1,708 kN (384 lbf)
Nitrogen Charge Pressure	3206 kPa (32 bar) (465 psi)
Bit Diameter	85 mm (3.03 in)
Bit Working Length	406 mm (16.0 in)

Hydraulic System

Hydraulic Flow	55 - 100 L/min (14.5 - 26.4 U.S. gpm)

Environmental

Noise Level LwA (EU Directive 2000/14/EC)	Measured	Guaranteed
	121 db	124 db


Bobcat®

WARRANTY


Bobcat®

WARRANTY

BOBCAT ATTACHMENTS

DOOSAN BENELUX S.A. warrants to its authorised dealers who in turn warrant to the end-user / owner that each Bobcat serial-numbered attachment will be free from proven defects in material and workmanship for twelve months after delivery to the end-user / owner. A Bobcat Attachment is defined as being manufactured by Bobcat or having been approved and sold by DOOSAN BENELUX S.A.

During the warranty period, the authorised Bobcat dealer shall repair or replace, at DOOSAN BENELUX S.A.'s option, without charge for parts, labour and travel time of mechanics any part of the Bobcat product which fails because of defects in material and workmanship. The end-user / owner shall provide the authorised dealer with prompt written notice of the defect and allow reasonable time for replacement or repair. DOOSAN BENELUX S.A. may, at its option, request that failed parts to be returned to the factory. Transportation of the Bobcat product to the authorised Bobcat attachment dealer for warranty work is the responsibility of the end-user / owner.

Service schedules must be adhered to, documented and genuine parts / lubricants must be used. The warranty does not cover oils, lubricants and replacement of scheduled service items and / or high wear items. Pins and bushings are considered to be normal consumable items and are not warranted.

The warranty does not cover damages resulting from abuse, accidents, alterations, use of the Bobcat product as an attachment on any equipment not approved by Bobcat, air flow obstructions, or failure to maintain or use the Bobcat product according to the instructions applicable to it.

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