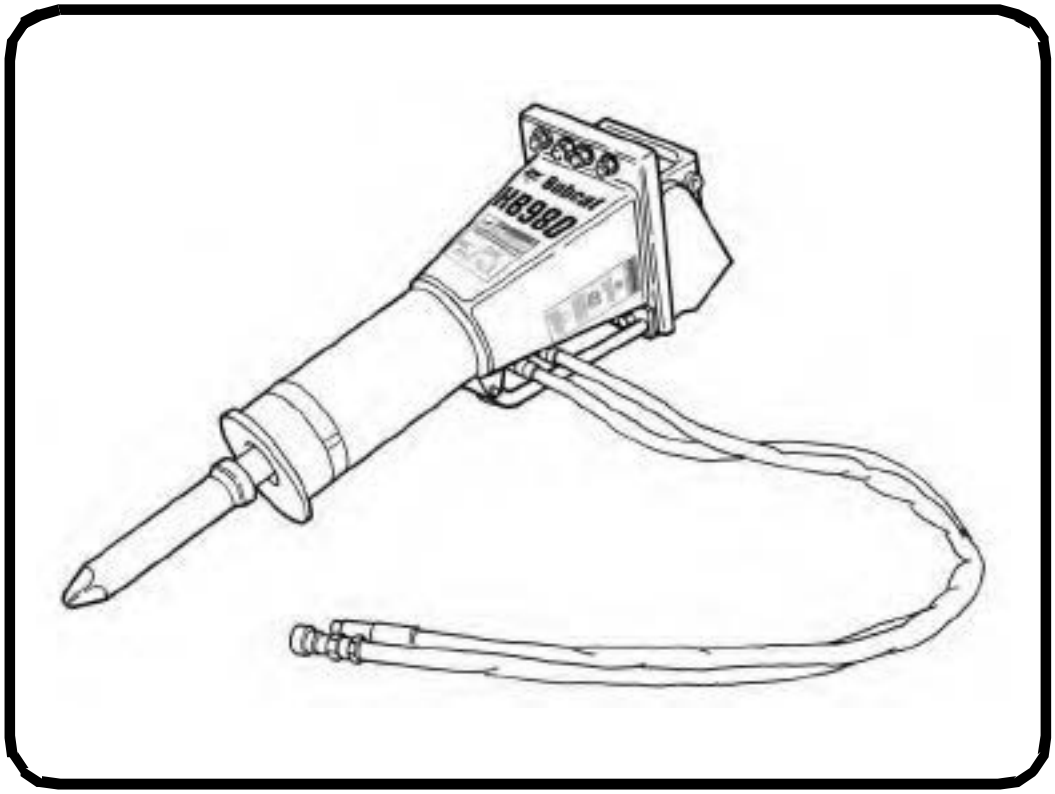
EN

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
(Breaker HB1180) S/N A01R00101 & Above



6904104-EN (12-09) Revised (7-10) (9)

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

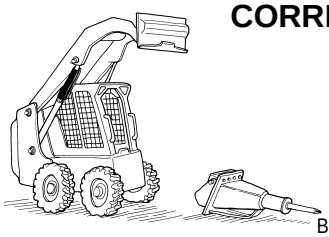
Safety Alert Symbol: This symbol is used for important safety messages. When you see this symbol, follow the safety messages to avoid personal injury or death.

CORRECT

P-90216

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

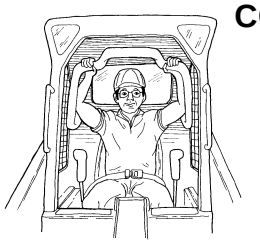
CORRECT



B-23294

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

CORRECT

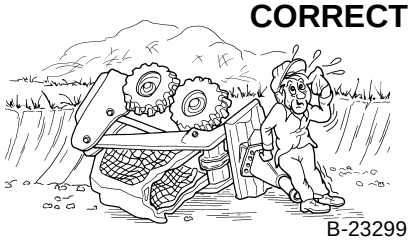


B-15570

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.

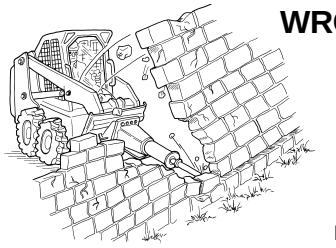
WRONG

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



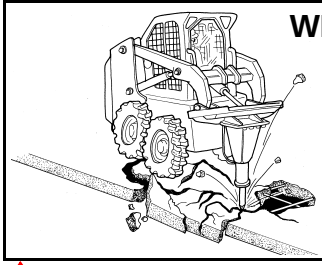
B-23291

Never demolish load bearing walls.

Keep other personnel away from work area.

Always use special applications kit.

WRONG



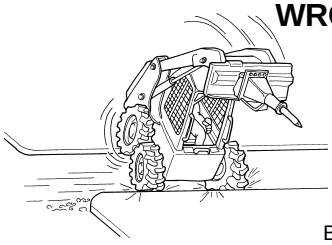
B-23292

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.

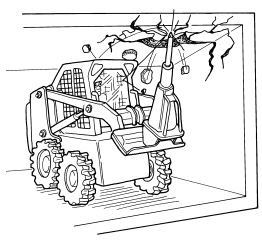
WRONG

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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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

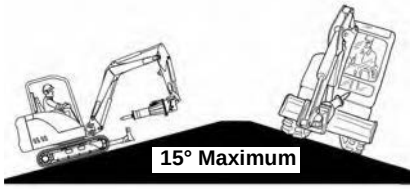
- **Always fasten seat belt snugly.**
- **Always operate controls only from the operator's position.**

CORRECT

B-23316

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

CORRECT



B-23323

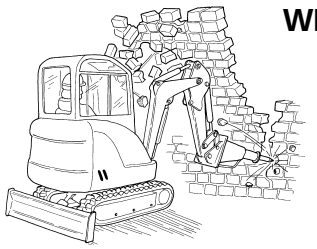
- **Never exceed a 15° degree slope when operating the excavator and breaker.**

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.**

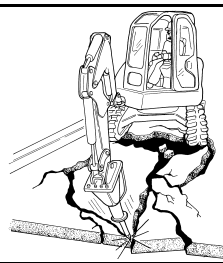
WRONG



B-2331S

- **Never demolish load bearing walls.**
- **Keep other personnel away from work area.**
- **Always use special applications kit.**

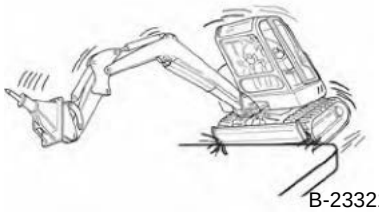
WRONG



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.**

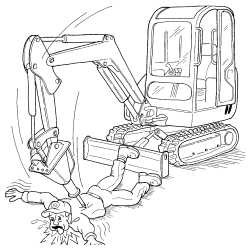
WRONG



B-23321A

- **Always carry attachment as low as possible.**
- **Do not travel or turn with attachment extended.**

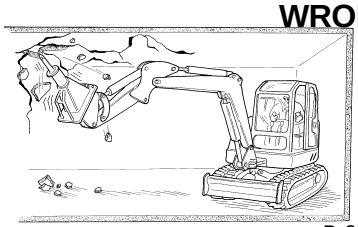
WRONG



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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OPERATOR SAFETY WARNINGS

WARNING

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

W-2001-0502

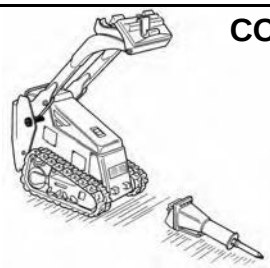
Safety Alert Symbol: **This symbol is used for important safety messages. When you see this symbol, follow the safety messages to avoid personal injury or death.**

CORRECT

P-90216

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

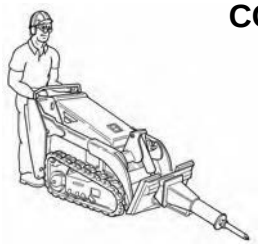
CORRECT



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

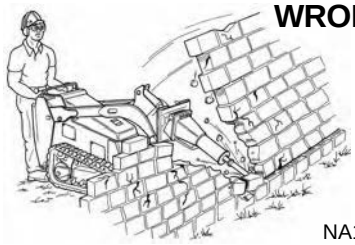
- **Never operate the breaker and mini loader near drop offs.**

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.**

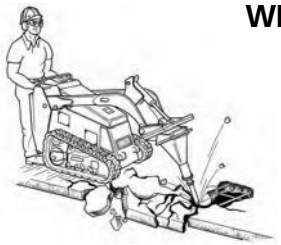
WRONG



NA1606

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

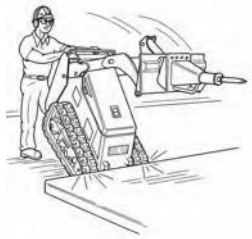
WRONG



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.**

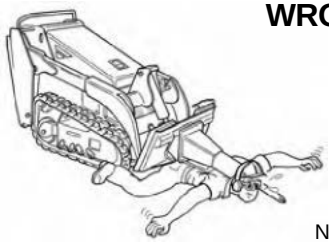
WRONG



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 HB series breaker in the spaces below. Always use these numbers when referring to your Bobcat HB series breaker.

Breaker 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 breaker. READ AND UNDERSTAND THIS OPERATION & MAINTENANCE MANUAL BEFORE OPERATING YOUR BOBCAT BREAKER. If you have any questions, see your Bobcat dealer. This manual may illustrate options and accessories not installed on your breaker.


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

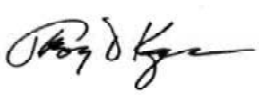
Type of Interchangeable Equipment:	Hydraulic Breaker			
Model Name: Model Code:	HB280	HB380	HB580	HB680
Lot Series:	A5T500101 & above	A01Q00101 & above	A00V00101 & above	A00W00101 & above

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 and Bismarck, North Dakota (U.S.A.), Pontchateau (France), Dobris (Czech Republic) and the Bobcat corporate offices (Gwinner, Bismarck & West Fargo) in North Dakota. Only certified assessors, like BSI, 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

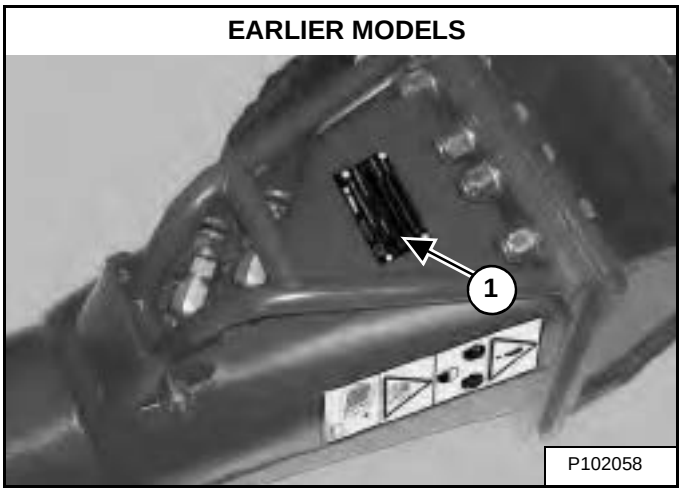


Figure 2

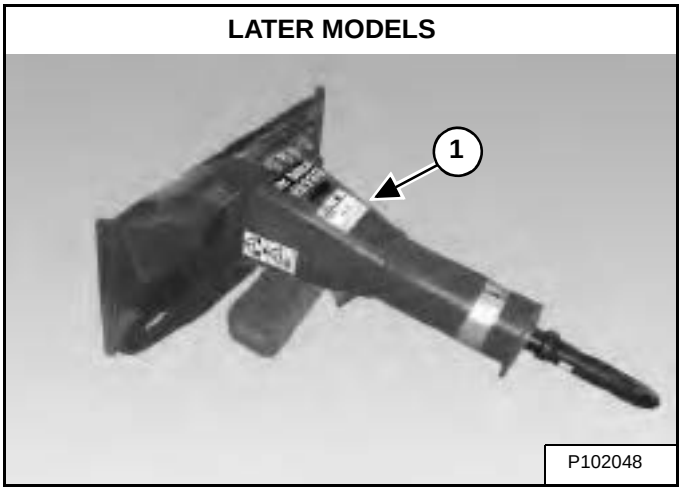
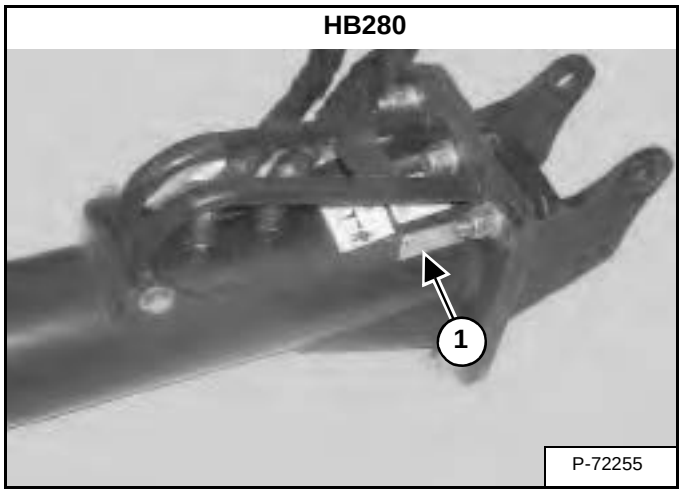


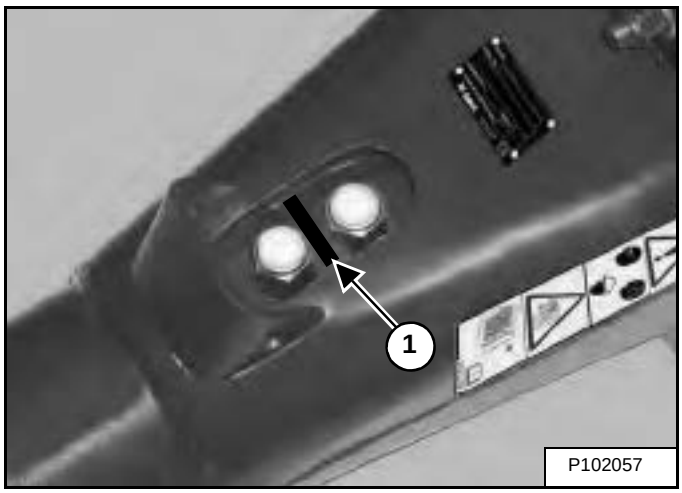
Figure 3



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.

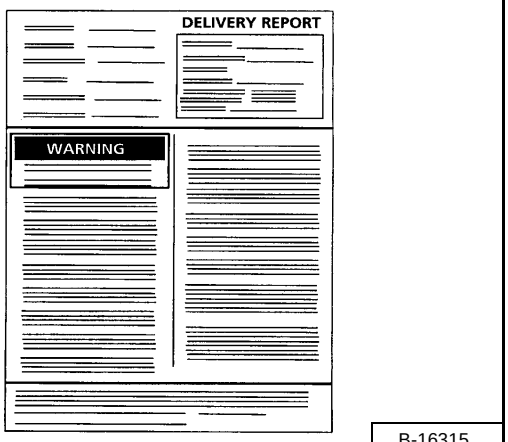
Figure 4



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

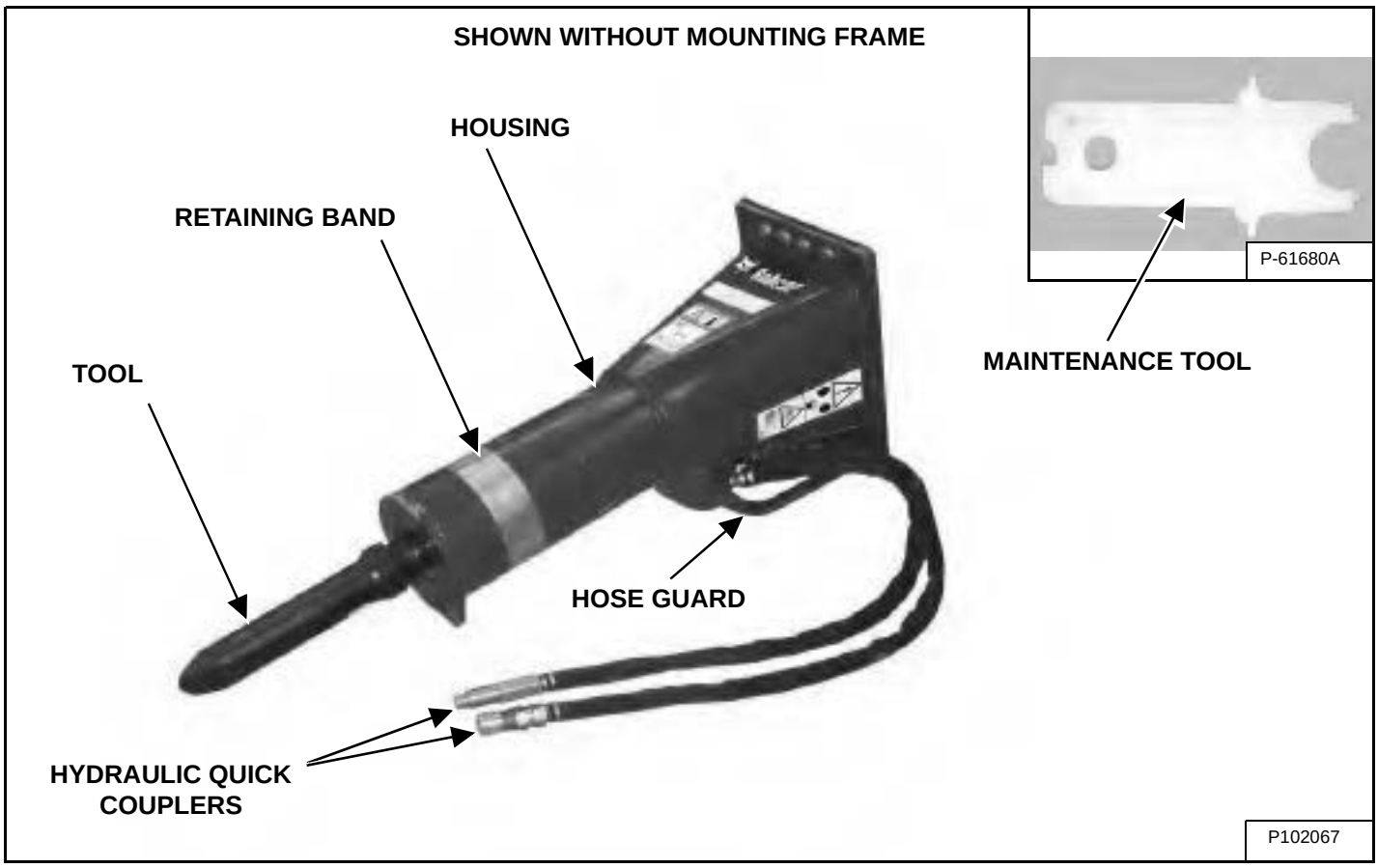
DELIVERY REPORT

Figure 5



The delivery report **[Figure 5]** must be completed by the dealer and signed by the owner or operator when the Bobcat breaker is delivered. An explanation of the form must be given to the owner.

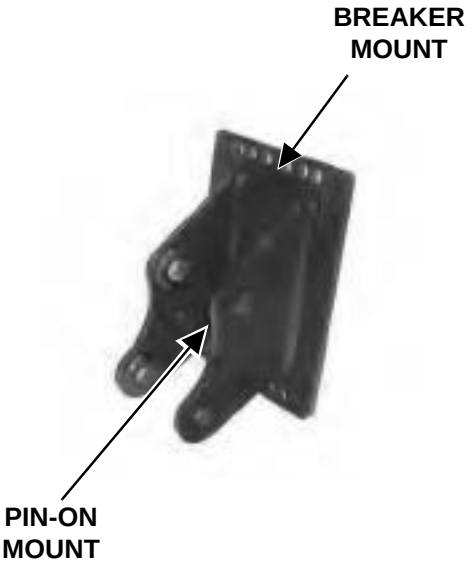
ATTACHMENT IDENTIFICATION



X-CHANGE MOUNTING FRAME

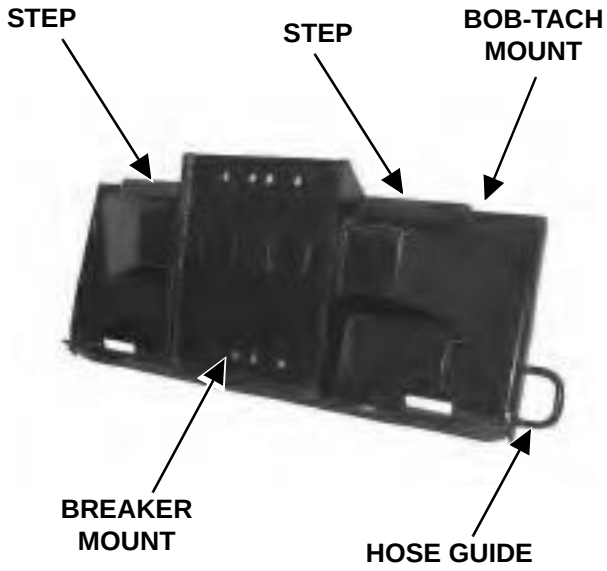
P-88735

PIN-ON MOUNTING FRAME



P-88736

BOB-TACH™ MOUNTING FRAME



P-88737

BOB-TACH / X-CHANGE MOUNTING FRAME

P102044

FEATURES AND ACCESSORIES

The breaker is equipped with the following standard items:

Standard Items

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

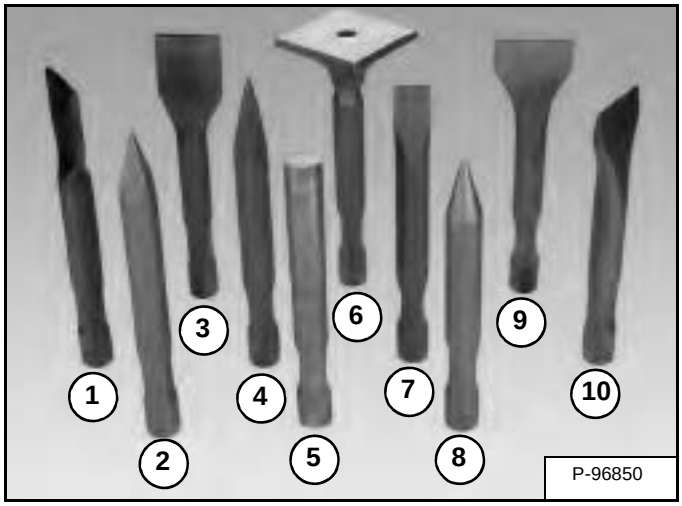
Options And Accessories

- 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

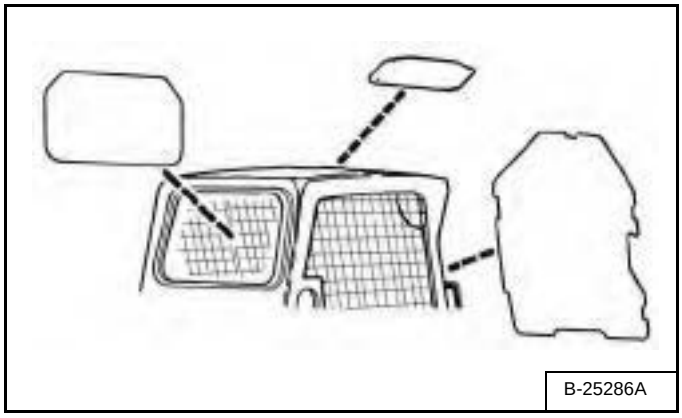
⚠ WARNING

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 1/2 in. (12,7 mm) thick poly carbonate 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

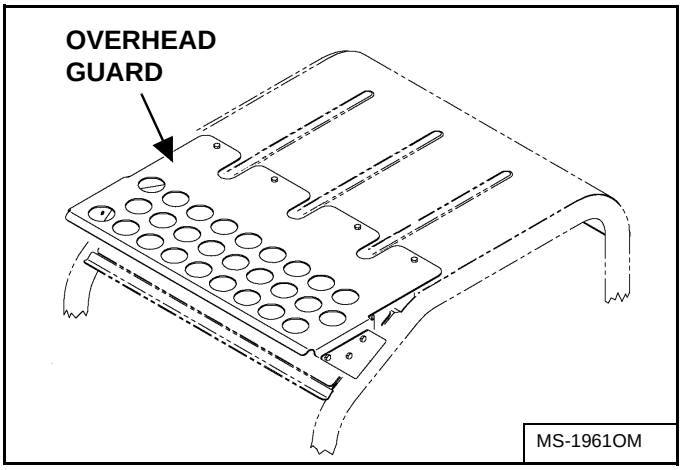
⚠ WARNING

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

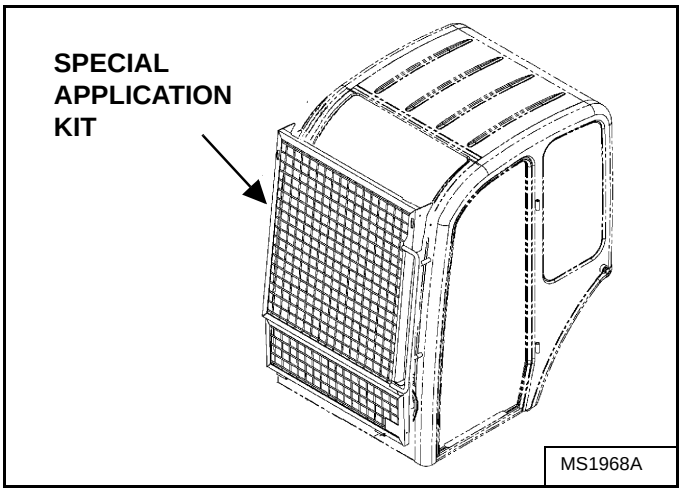
⚠ WARNING

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.


Bobcat®

SAFETY & 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-0909

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.

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

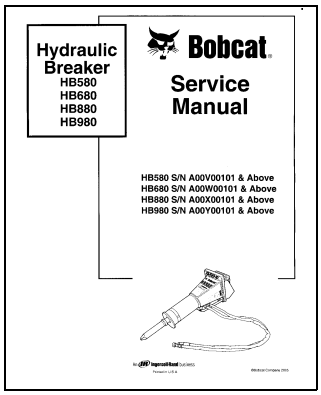
The following publications are also available for your Bobcat attachment. You can order from your Bobcat dealer.

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

OPERATION & MAINTENANCE MANUAL

6904104

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



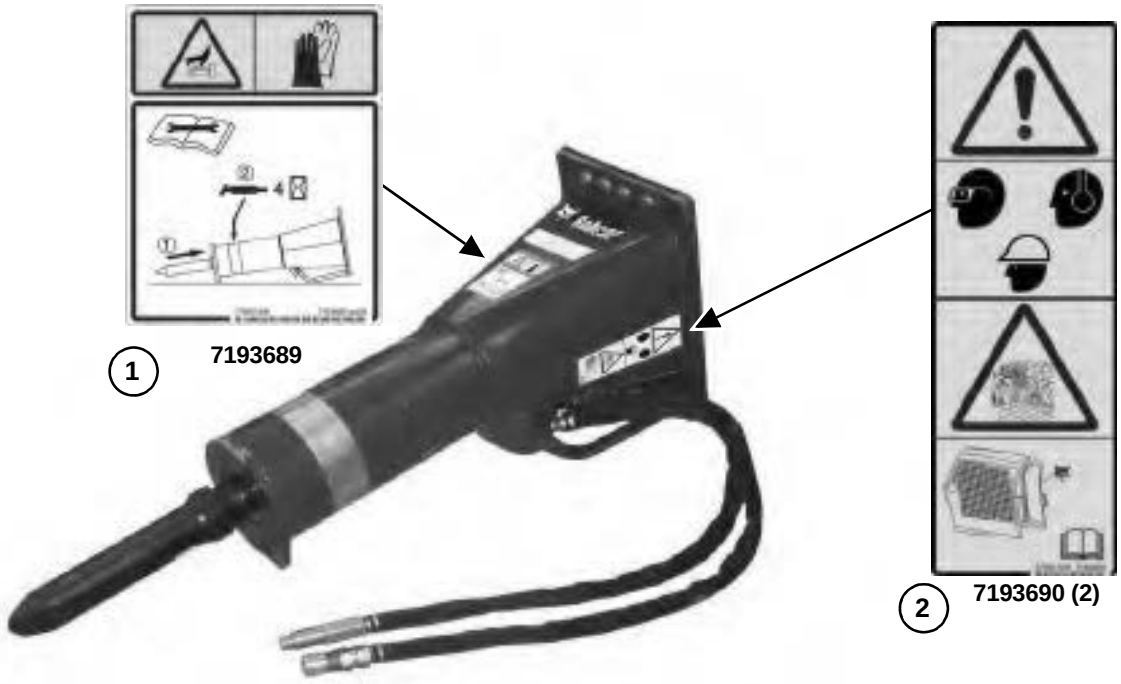
SERVICE MANUAL

6904105

Complete maintenance and overhaul instructions for your Bobcat Attachment.

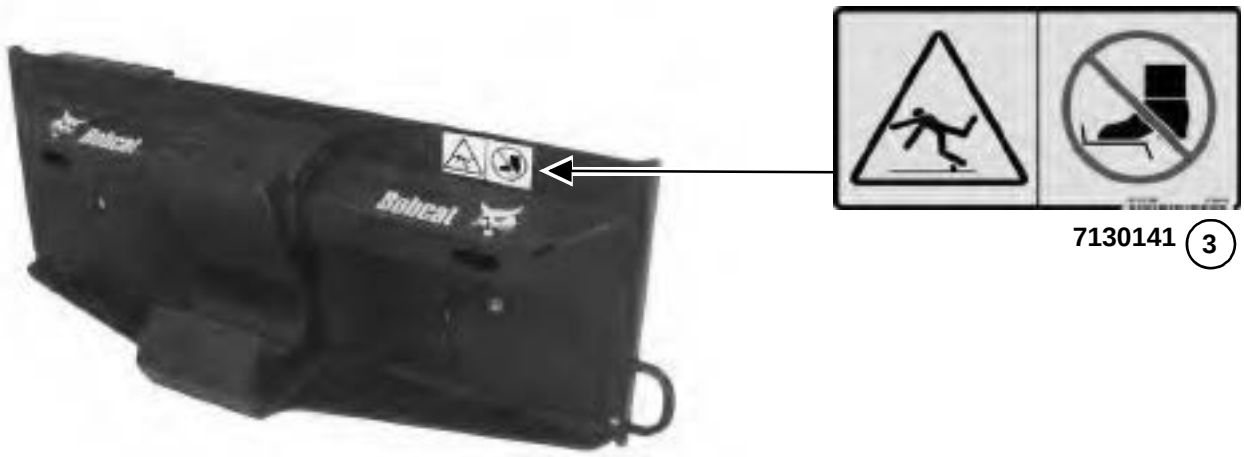
ATTACHMENT SIGNS (DECALS)

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.



P102067

BOB-TACH / X-CHANGE MOUNTING FRAME

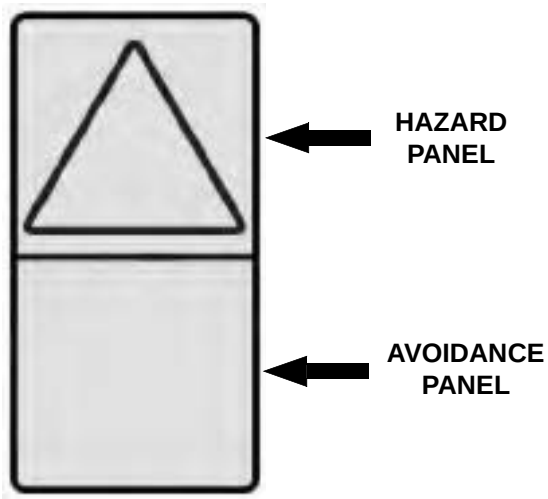


ATTACHMENT SIGNS (DECALS) (CONT'D)

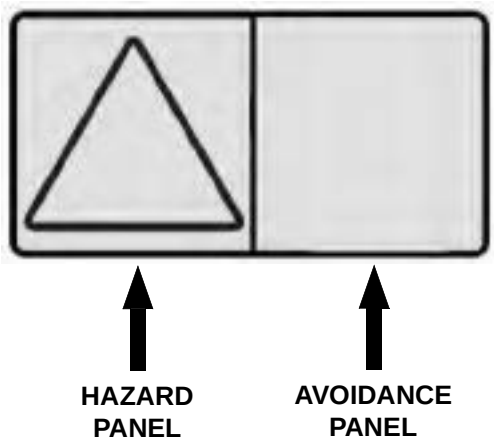
No-Text Safety Signs

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 familiarized 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 153.) of this manual for more illustrated and detailed information regarding service instructions for the breaker.

Grease the breaker every 4 hours of operation.

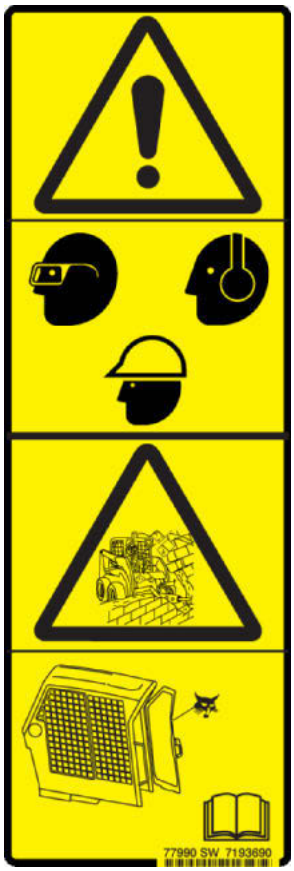
- Push the tool fully into the breaker.
- Apply grease (5 - 6 pumps) to the grease fitting at the upper end of the tool.

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

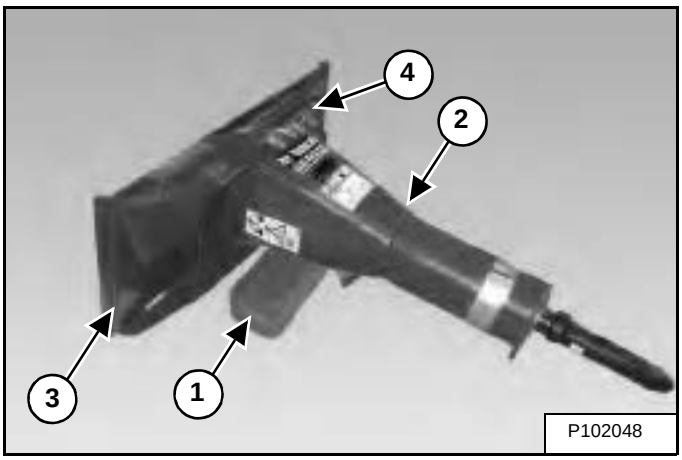
OPERATING INSTRUCTIONS

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.

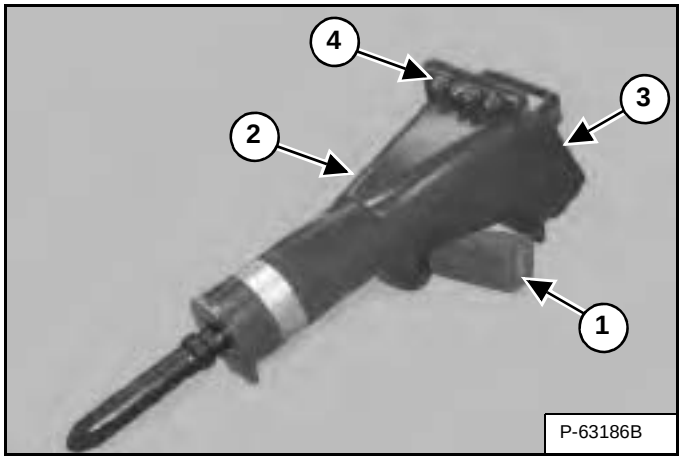
Install the hose guard.

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

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

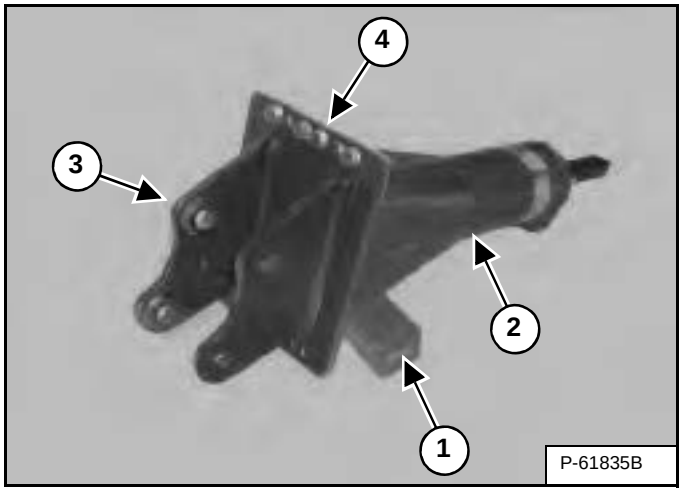
Tighten the bolts and nuts in a cross pattern to 270 ft.-lb. (370 N•m) torque.

INITIAL SETUP (CONT'D)

Assembly (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]**.

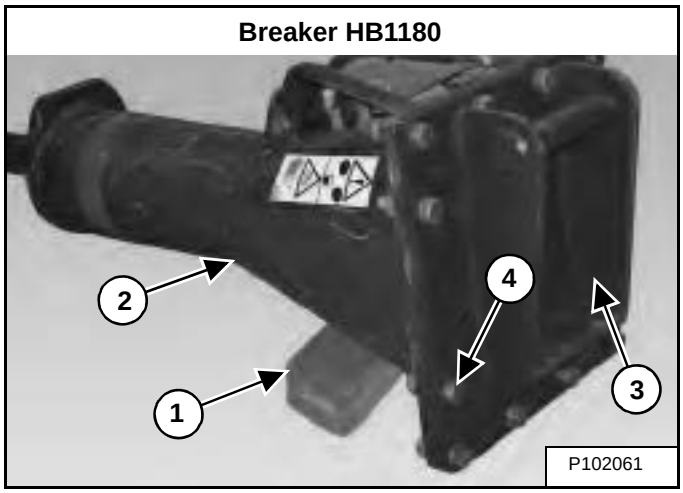
Install the eight bolts (Item 4) **[Figure 12]**, washers and nuts.

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

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

Installing The Bobcat Quick Coupler (BQC) Type SW Mounting Frame On The Breaker

Figure 13



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

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

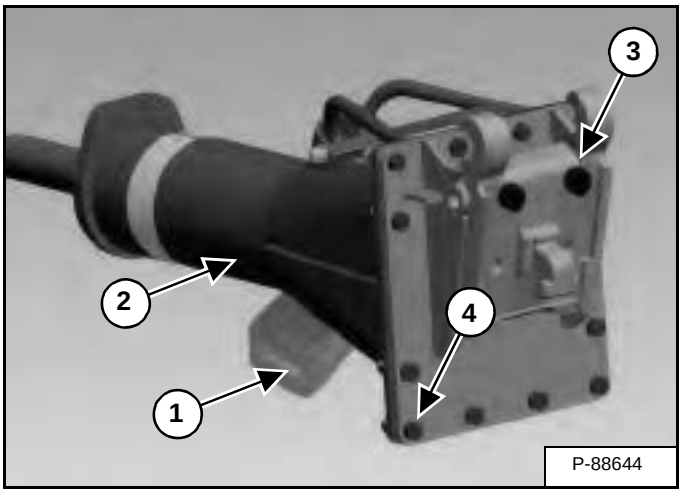
Install the twelve bolts (Item 4) **[Figure 13]**, washers and nuts. On the top side of the mount, only install the two centre bolts, washers and nuts at this time. The additional four bolts, washers and nuts will be installed with the hose guard.

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

Assembly (Cont'd)

Installing The Bobcat Quick Coupler (BQC) Type K Mounting Frame On The Breaker

Figure 14



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

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

Install the 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 270 ft.-lb. (370 N•m) torque.

Hose Installation

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

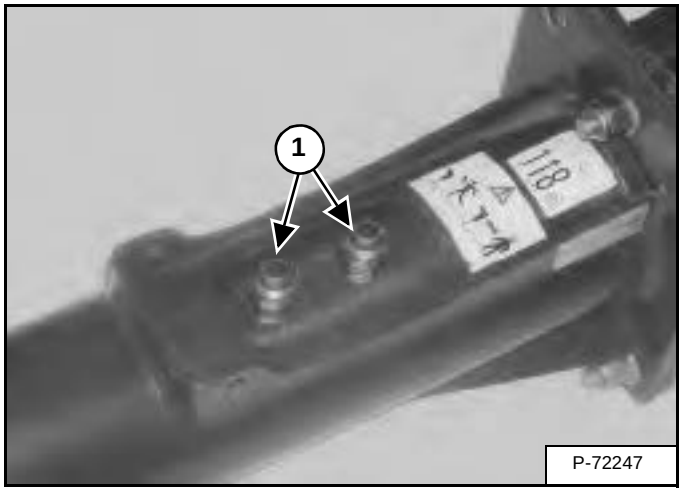
- (See HB280 (When Used On 316, E08 And E10 Model Excavators) on Page 38.)
- (See HB380, HB580, HB680, HB880 And HB980 (Earlier Model Breakers) on Page 40.)
- (See HB380, HB580, HB680, HB880 And HB980 (Later Model Breakers) on Page 41.)
- (See HB1180 (When Used On A300, S250, S300, S330, S630, S650, S850, T250, T300, T320, T650 And T870 Model Loaders) on Page 42.)
- (See HB1180 (When Used On 442 And 444 Model Excavator) on Page 43.)
- (See HB880, HB980 And HB1180 (When Used On E55W And E60 Model Excavators) on Page 45.)
- (See HB1180 (When Used On E80 Model Excavators) on Page 46.)

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.

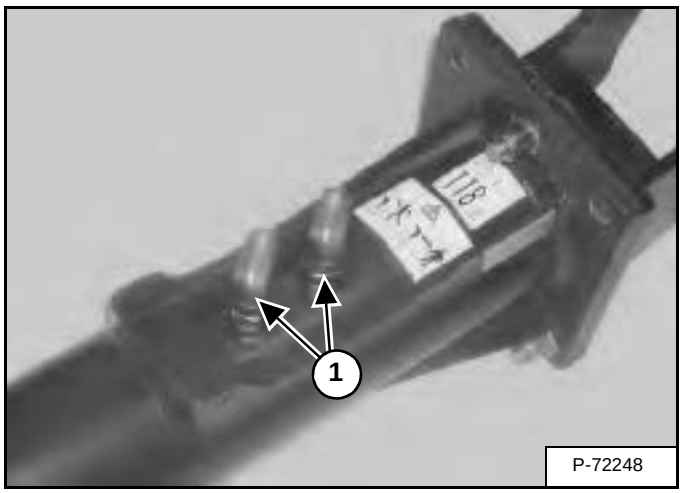
Figure 15



Install the fittings (Item 1) **[Figure 15]**.

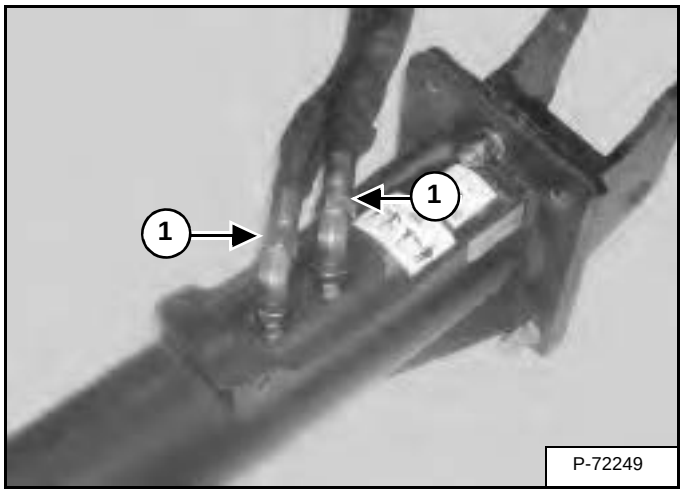
Tighten the fittings to 140 ft.-lb. (189 N•m) torque.

Figure 16



Install the two 90° elbows (Item 1) **[Figure 16]** in the ports.

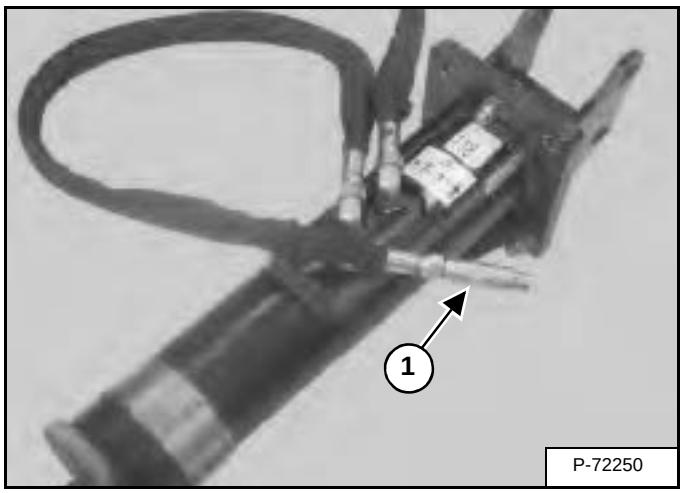
Figure 17



Install the two hoses (Item 1) **[Figure 17]** on the 90° elbows (Item 1) **[Figure 16]**.

Tighten the hoses to 85 ft.-lb. (63 N•m) torque.

Figure 18

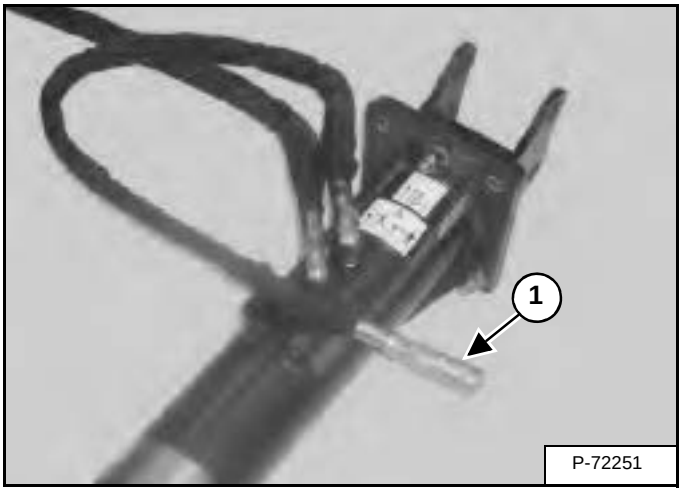


Install the male coupler (Item 1) **[Figure 18]** on the hose that connects to the HP port.

Hose Installation (Cont'd)

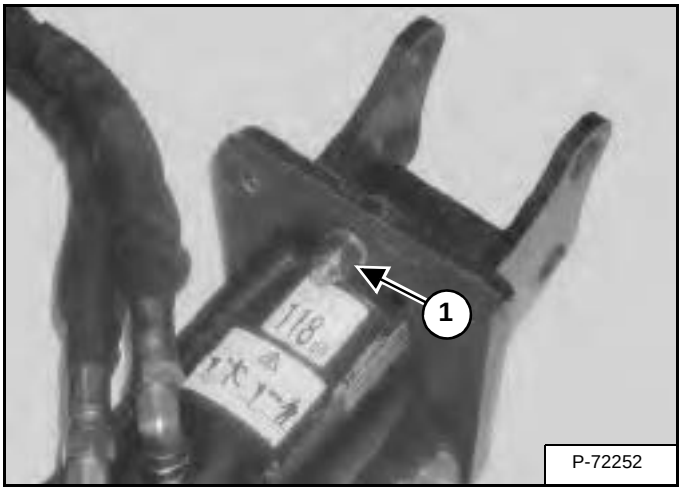
HB280 (When Used On 316, E08 And E10 Model Excavators) (Cont'd)

Figure 19



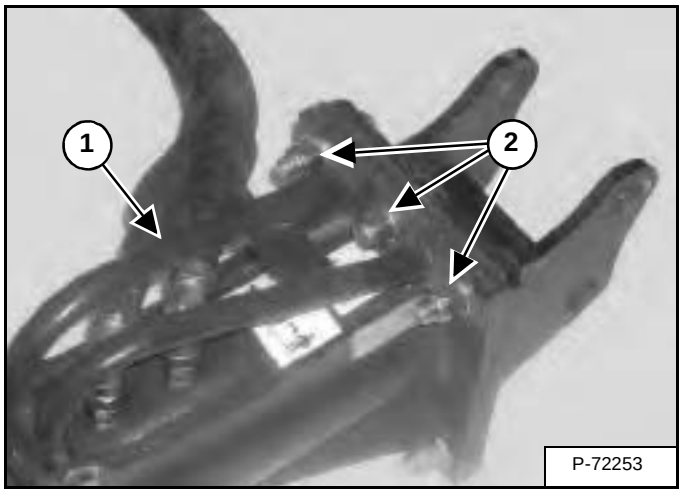
Install the female coupler (Item 1) **[Figure 19]** on the hose that connects to the BP port.

Figure 20



Remove the bolt (Item 1) **[Figure 20]**, washer and nut.

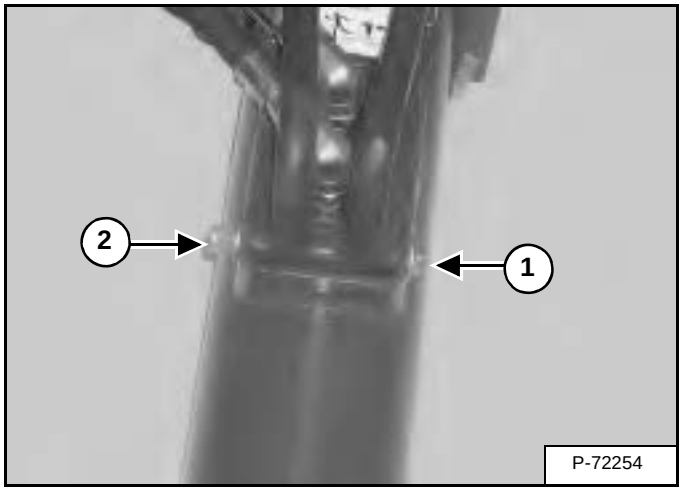
Figure 21



Install the hose guard (Item 1) using the three bolts, washers and nuts (Item 2) **[Figure 21]** provided with the breaker.

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

Figure 22



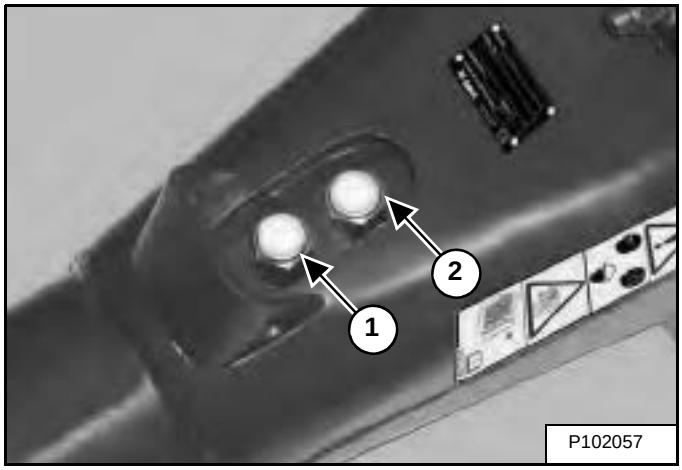
The bolt (Item 1) and nut (Item 2) **[Figure 22]** need only to be lightly tightened.

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 23

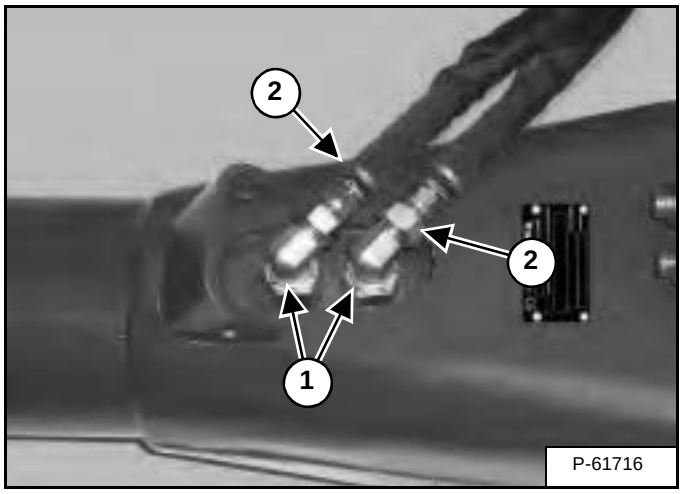


The port marked *HP* (Item 1) **[Figure 23]** will be connected to the breaker hose with the male coupler.

The port marked *BP* (Item 2) **[Figure 23]** will be connected to the breaker hose with the female coupler.

Tighten the fittings to 140 ft.-lb. (189 N•m) torque.

Figure 24

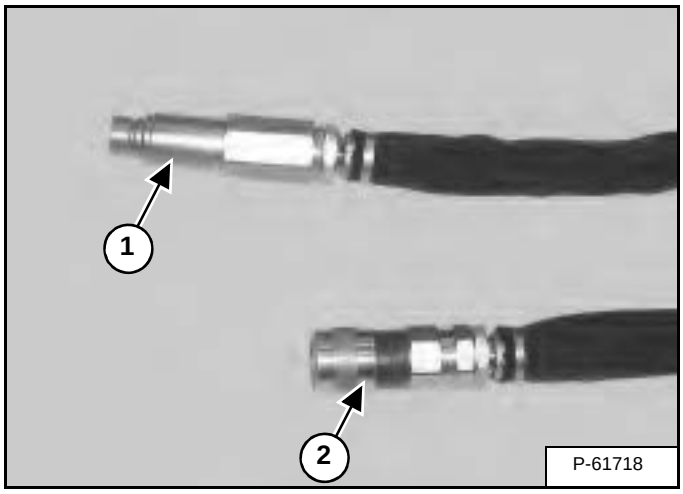


Install the two 90° elbows (Item 1) **[Figure 24]** in the ports.

Install the two hoses (Item 2) on the 90° elbows (Item 1) **[Figure 24]**.

Tighten the hoses to 85 ft.-lb. (63 N•m) torque.

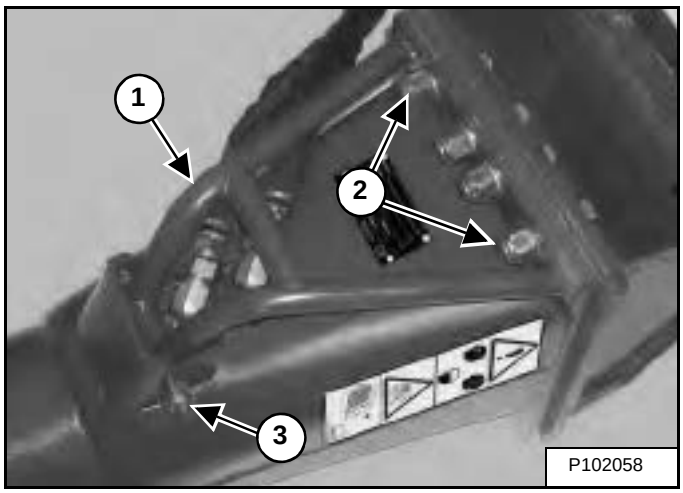
Figure 25



Install the male coupler (Item 1) **[Figure 25]** on the hose that connects to the *HP* port.

Install the female coupler (Item 2) **[Figure 25]** on the hose that connects to the *BP* port.

Figure 26



Install the bracket (Item 1), the three bolts (Item 2 and 3) **[Figure 26]**, washers and nuts.

Tighten the two bolts and nuts (Item 2) **[Figure 26]** to 270 ft.-lb. (370 N•m) torque.

The bolt and nut (Item 3) **[Figure 26]** need only to be lightly tightened.

Hose Installation (Cont'd)

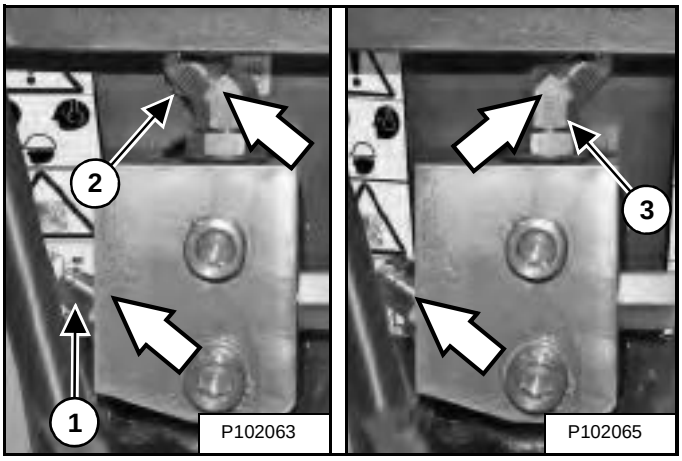
HB380, HB580, HB680, HB880 And HB980 (Later Model Breakers)

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

NOTE: When using the HB880 or HB980 breakers on S630, S650 and T650 model loaders, the breaker must be equipped with a diverter valve kit. See your Bobcat dealer for available kits.

Install the hose guard. (See Figure 26 on Page 40)

Figure 27



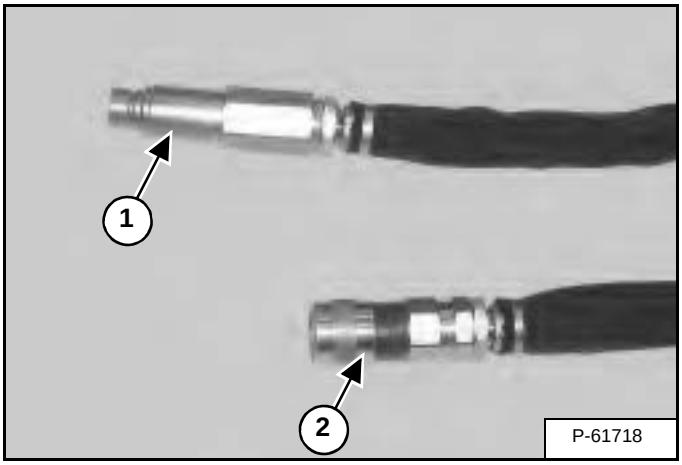
Install the straight fitting (Item 1) **[Figure 27]** (if required).

Install the 45° fitting (Item 2) **[Figure 27]** (if required).

NOTE: If operating the breaker on an E60 excavator, the 45° fitting (Item 3) [Figure 27] is installed facing the opposite direction of the straight fitting.

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

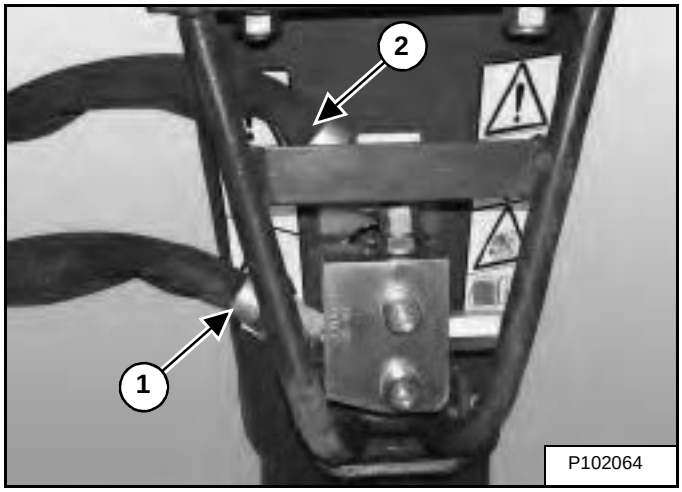
Figure 28



Install the male coupler (Item 1) **[Figure 28]** on the hose.

Install the female coupler (Item 2) **[Figure 28]** on the hose.

Figure 29

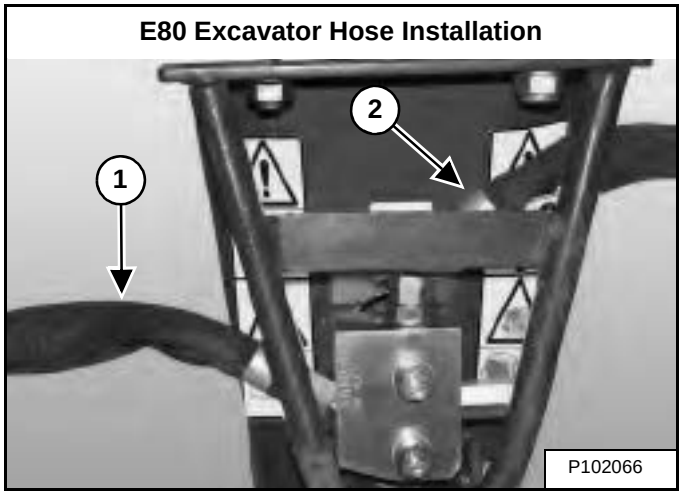


Install the male quick coupler hose (Item 1) **[Figure 29]** on the straight fitting.

Install the female quick coupler hose (Item 2) **[Figure 29]** on the 45° fitting.

Tighten the hoses to 85 ft.-lb. (114 N•m) torque.

Figure 30



Install the male quick coupler hose (Item 1) **[Figure 30]** on the straight fitting.

Install the female quick coupler hose (Item 2) **[Figure 30]** on the 45° fitting.

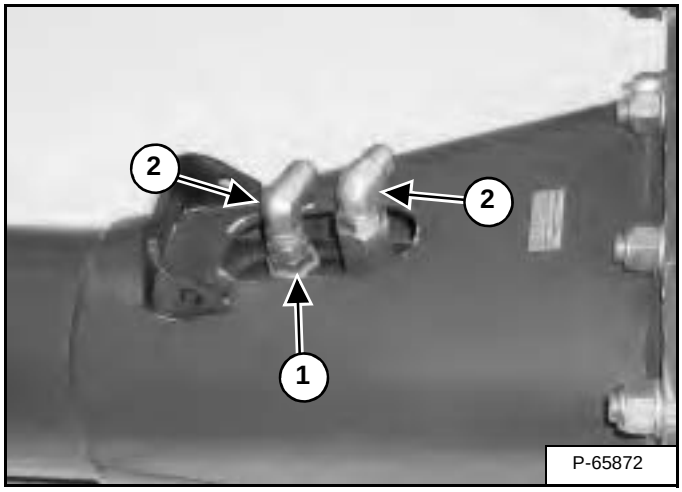
Tighten the hoses to 84 ft.-lb. (114 N•m) torque.

Hose Installation (Cont'd)

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

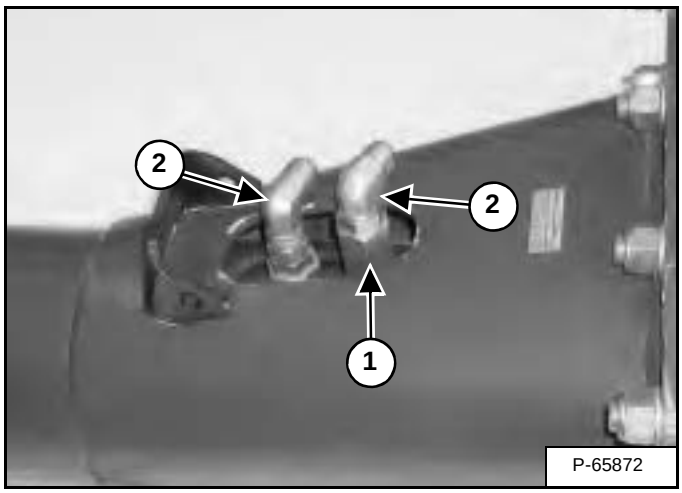
The breaker is supplied without the hoses installed on the breaker.

Figure 31



The port marked HP (Item 1) **[Figure 31]** will be connected to the breaker hose with the male coupler.

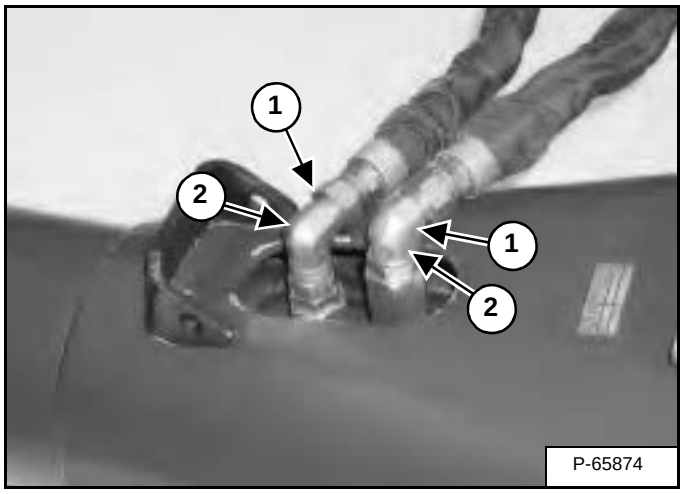
Figure 32



The port marked BP (Item 1) **[Figure 32]** will be connected to the breaker hose with the female coupler.

Install the two 90° elbows (Item 2) **[Figure 31]** and **[Figure 32]** in the ports.

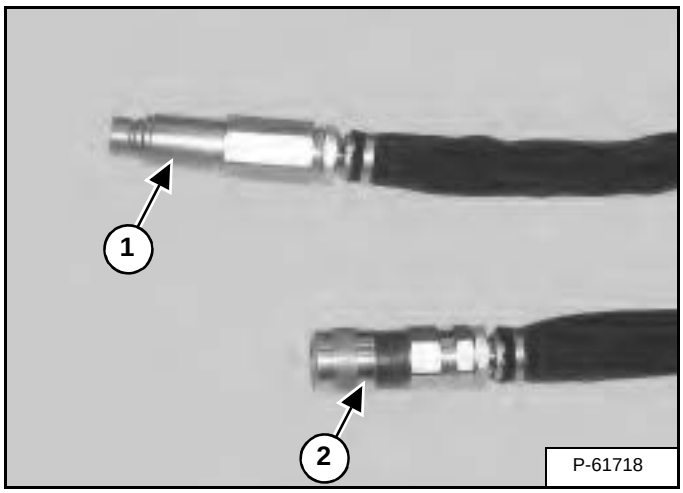
Figure 33



Install the two hoses (Item 1) on the 90° elbows (Item 2) **[Figure 33]**.

Tighten the hoses to 85 ft.-lb. (63 N•m) torque.

Figure 34



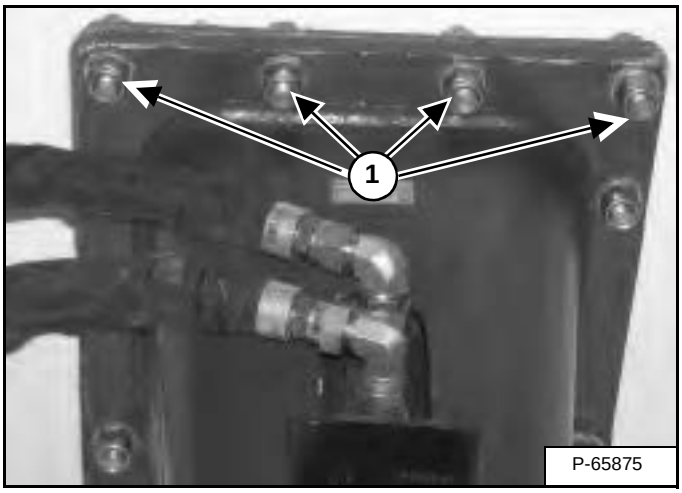
Install the male coupler (Item 1) **[Figure 34]** on the hose that connects to the *HP* port.

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

Hose Installation (Cont'd)

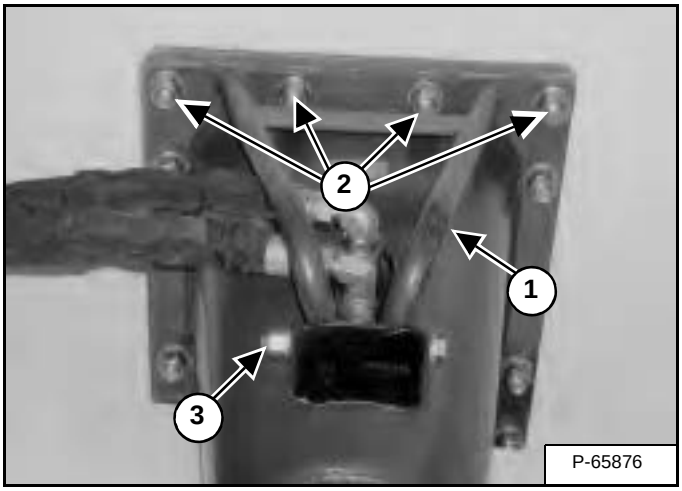
HB1180 (When Used On A300, S250, S300, S330, S630, S650, S850, T250, T300, T320, T650 And T870 Model Loaders) (Cont'd)

Figure 35



Remove the four bolts (Item 1) **[Figure 35]**, washers and nuts.

Figure 36



Install the hose guard (Item 1) using the four bolts provided with the breaker, washers and nuts (Item 2) **[Figure 36]**.

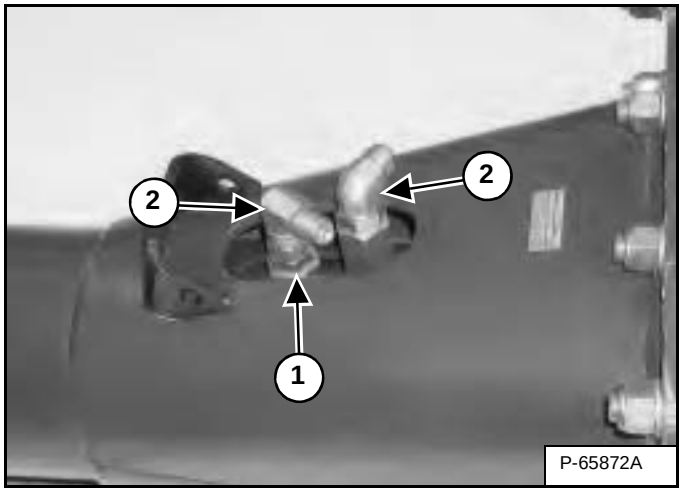
Tighten the four bolts and nuts (Item 2) **[Figure 36]** to 270 ft.-lb. (370 N•m) torque.

The bolt and nut (Item 3) **[Figure 36]** need only to be lightly tightened.

HB1180 (When Used On 442 And 444 Model Excavator)

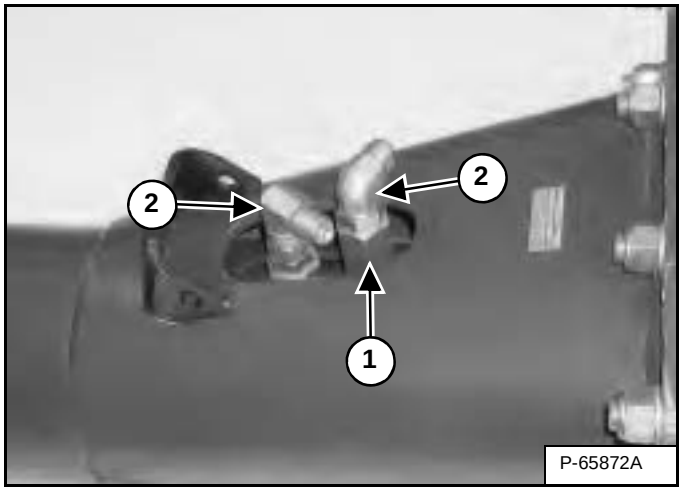
The breaker is supplied without the hoses installed on the breaker.

Figure 37



The port marked HP (Item 1) **[Figure 37]** will be connected to the breaker hose with the screw type quick coupler.

Figure 38



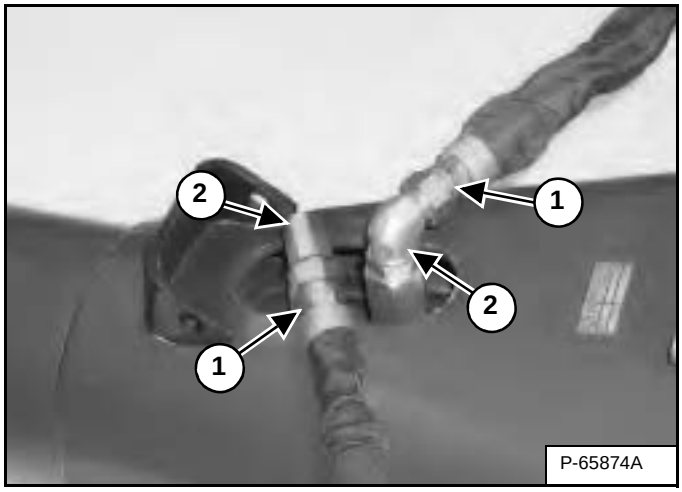
The port marked BP (Item 1) **[Figure 38]** will be connected to the breaker hose with the sleeve type quick coupler.

Install the two 90° elbows (Item 2) **[Figure 37]** and **[Figure 38]** in the ports.

Hose Installation (Cont'd)

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

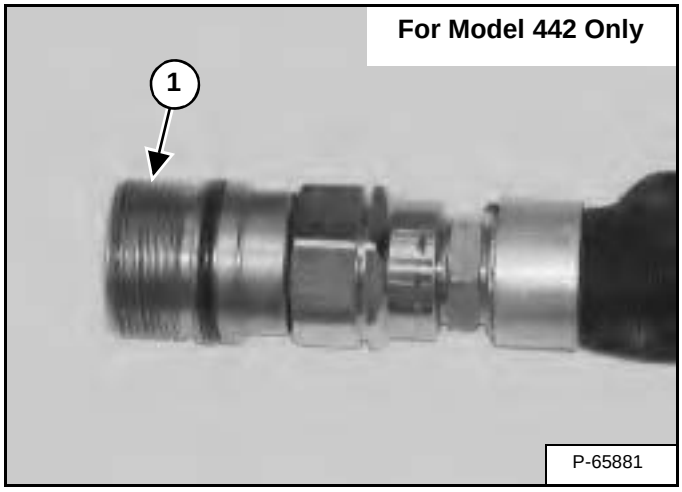
Figure 39



Install the two hoses (Item 1) on the 90° elbows (Item 2) **[Figure 39]**.

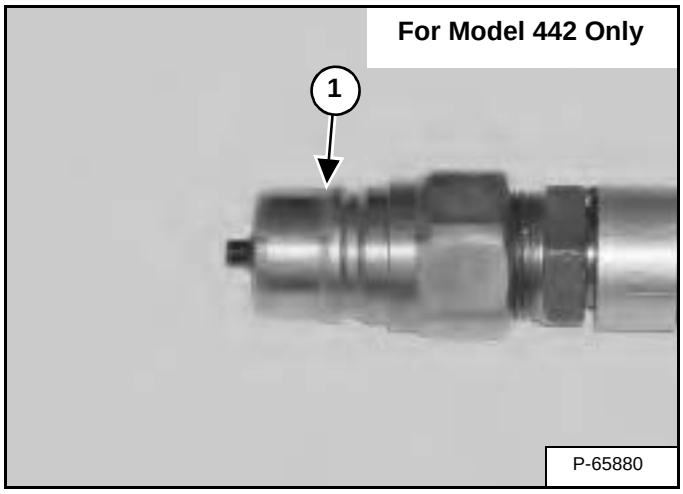
Tighten the hoses to 85 ft.-lb. (63 N•m) torque.

Figure 40



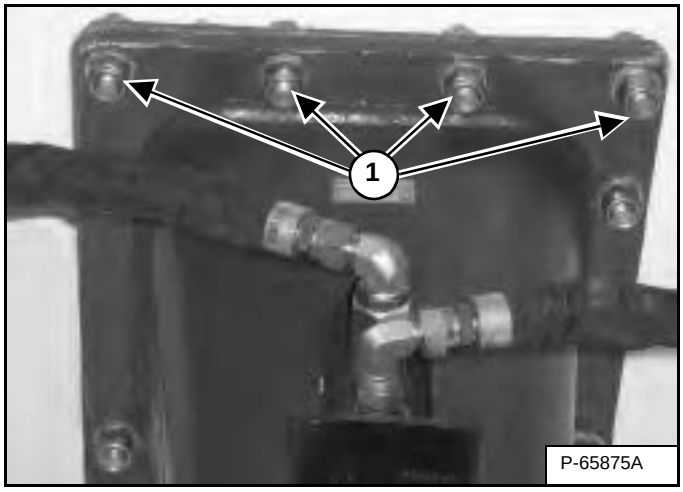
Install the screw type male coupler (Item 1) **[Figure 40]** on the hose that connects to the HP port.

Figure 41



Install the sleeve type male coupler (Item 1) **[Figure 41]** on the hose that connects to the HB port.

Figure 42

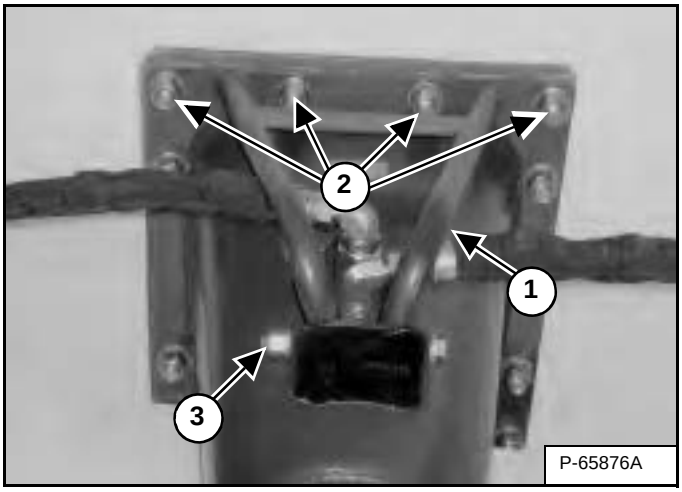


Remove the four bolts (Item 1) **[Figure 42]**, washers and nuts.

Hose Installation (Cont'd)

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

Figure 43



Install the hose guard (Item 1) using the four bolts provided with the breaker, washers and nuts (Item 2) **[Figure 43]**.

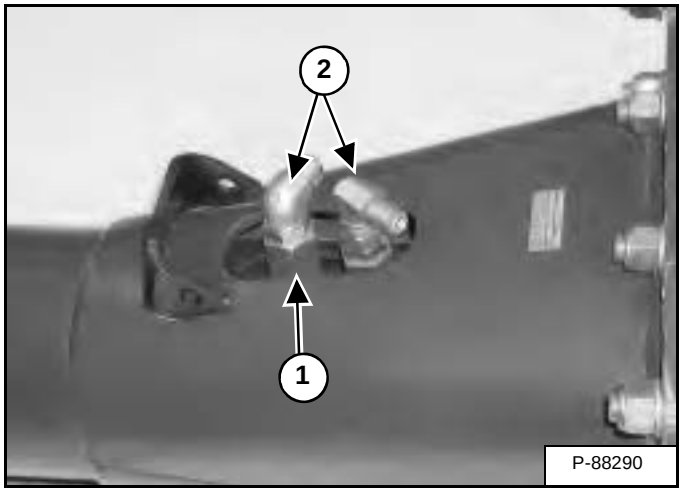
Tighten the four bolts and nuts (Item 2) **[Figure 43]** to 270 ft.-lb. (370 N•m) torque.

The bolt and nut (Item 3) **[Figure 43]** need only to be lightly tightened.

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

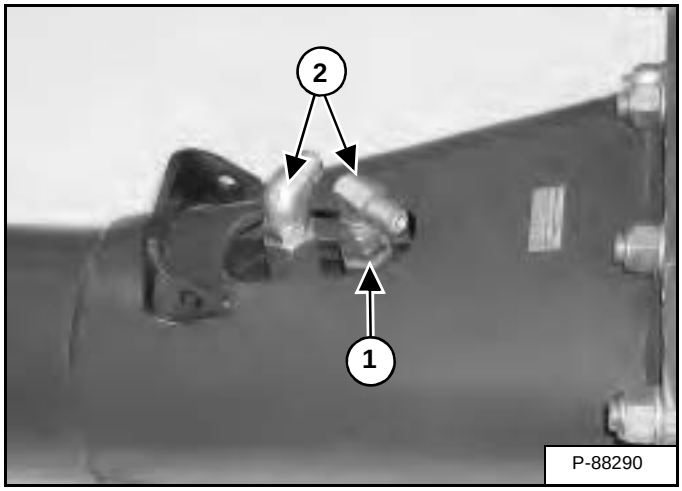
The breaker is supplied without the hoses installed on the breaker.

Figure 44



The port marked HP (Item 1) **[Figure 44]** will be connected to the breaker hose with the male coupler.

Figure 45



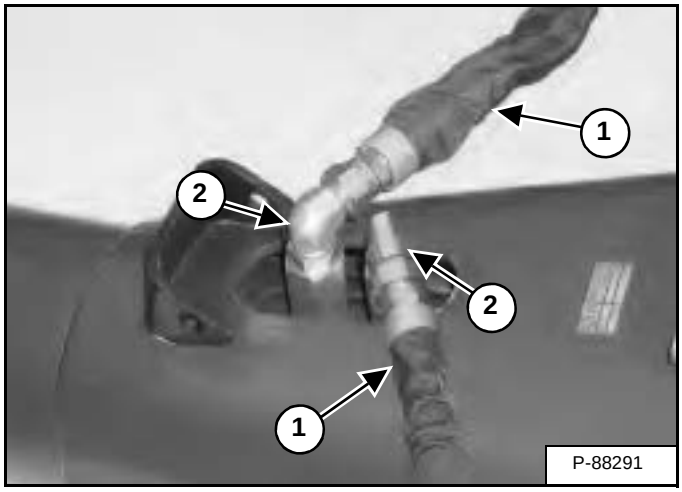
The port marked BP (Item 1) **[Figure 45]** will be connected to the breaker hose with the female coupler.

Install the two 90° elbows (Item 2) **[Figure 44]** and **[Figure 45]** in the ports.

Hose Installation (Cont'd)

HB880, HB980 And HB1180 (When Used On E55W And E60 Model Excavators) (Cont'd)

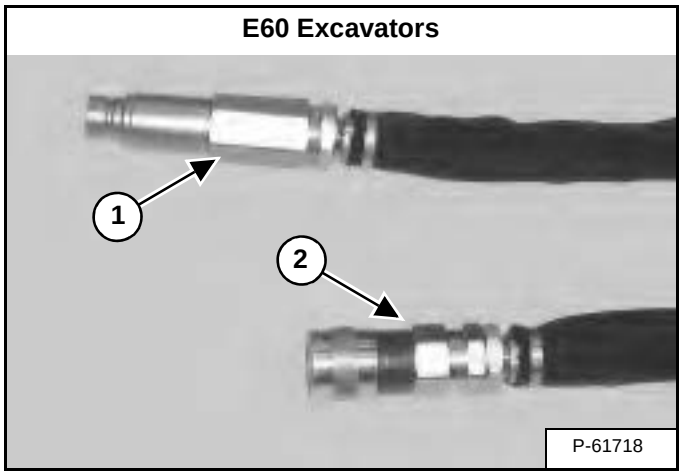
Figure 46



Install the two hoses (Item 1) on the 90° elbows (Item 2) **[Figure 46]**.

Tighten the hoses to 85 ft.-lb. (63 N•m) torque.

Figure 47



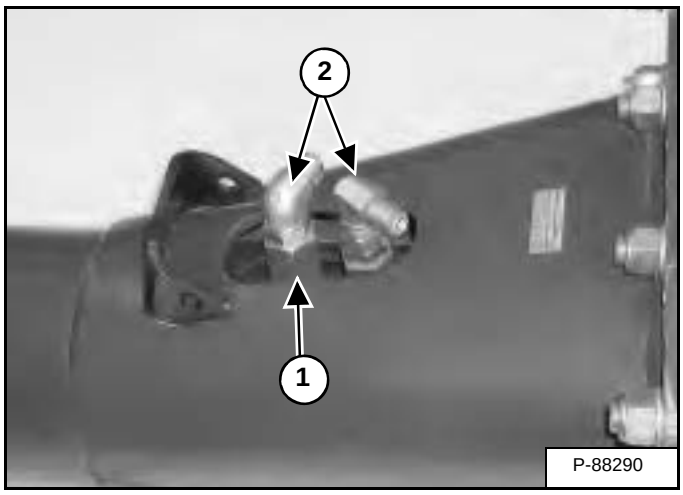
Install the male coupler (Item 1) **[Figure 47]** on the hose that connects to the HP port.

Install the female coupler (Item 2) **[Figure 47]** on the hose that connects to the BP port.

HB1180 (When Used On E80 Model Excavators)

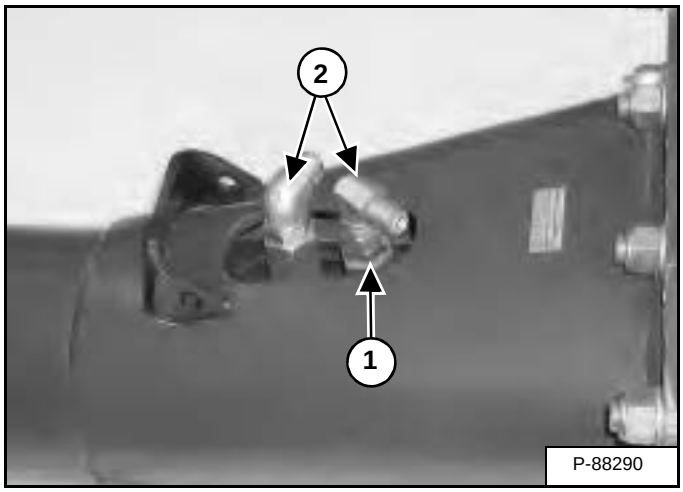
The breaker is supplied without the hoses installed on the breaker.

Figure 48



The port marked HP (Item 1) **[Figure 48]** will be connected to the breaker hose with the male coupler.

Figure 49



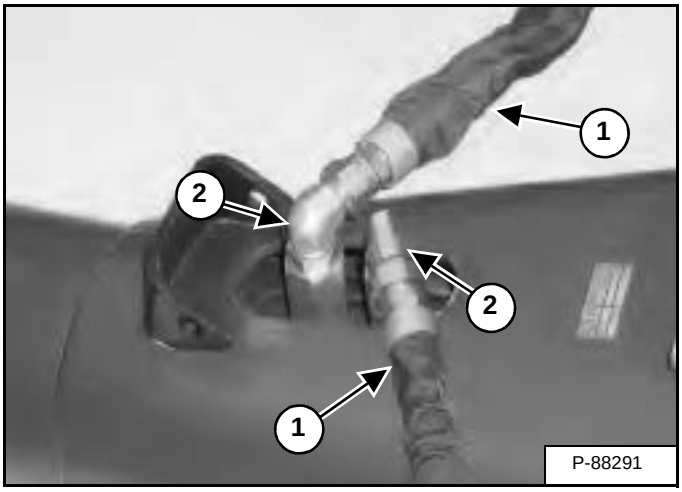
The port marked BP (Item 1) **[Figure 49]** will be connected to the breaker hose with the female coupler.

Install the two 90° elbows (Item 2) **[Figure 48]** and **[Figure 49]** in the ports.

Hose Installation (Cont'd)

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

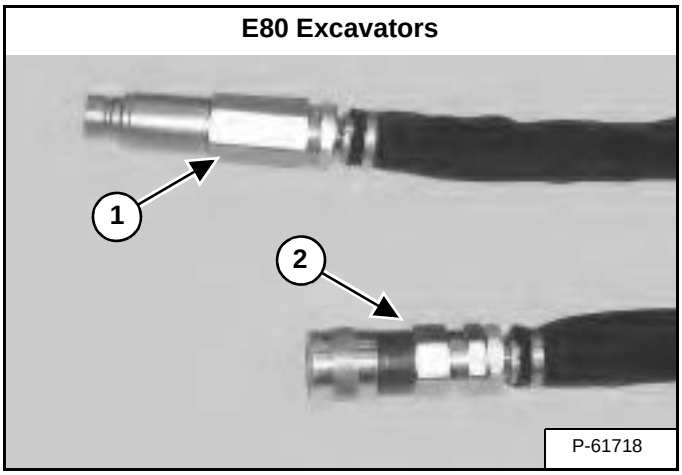
Figure 50



Install the two hoses (Item 1) on the 90° elbows (Item 2) **[Figure 50]**.

Tighten the hoses to 85 ft.-lb. (63 N•m) torque.

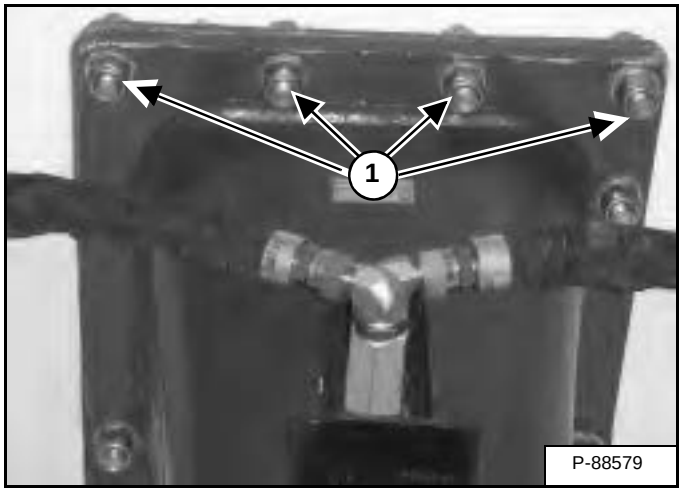
Figure 51



Install the male coupler (Item 1) **[Figure 51]** on the hose that connects to the HP port.

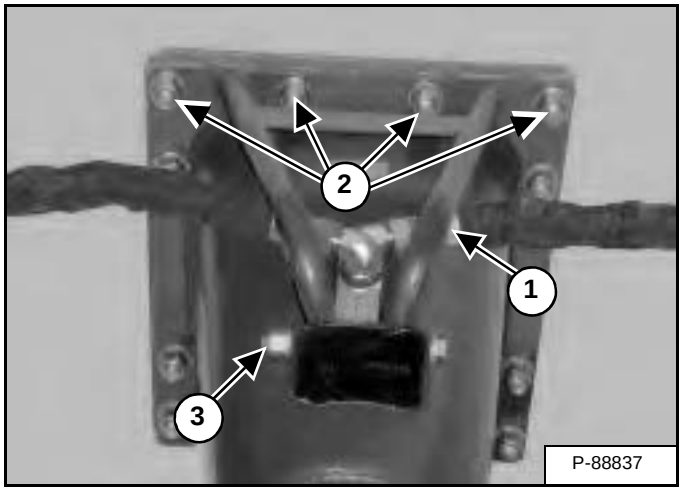
Install the female coupler (Item 2) **[Figure 51]** on the hose that connects to the BP port.

Figure 52



Remove the four bolts (Item 1) **[Figure 52]**, washers and nuts.

Figure 53



Install the hose guard (Item 1) using the four bolts provided with the breaker, washers and nuts (Item 2) **[Figure 53]**.

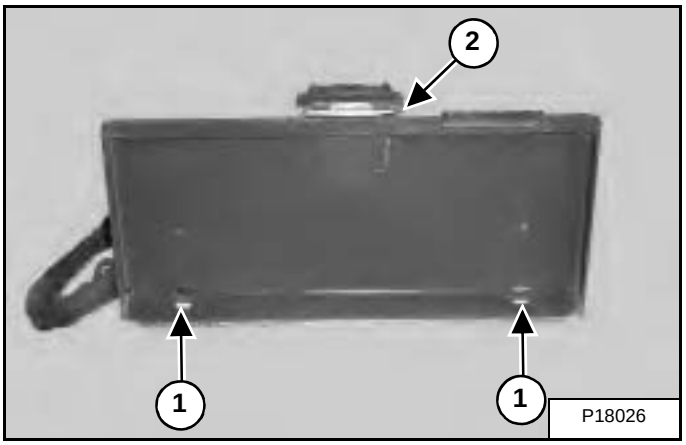
Tighten the four bolts and nuts (Item 2) **[Figure 53]** to 270 ft.-lb. (370 N•m) torque.

The bolt and nut (Item 3) **[Figure 53]** need only to be lightly tightened.

DAILY INSPECTION

Attachment Mounting Frame

Figure 54



Inspect the Bob-Tach wedge mounts (Item 1), mounting flange (Item 2) **[Figure 54]** 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.

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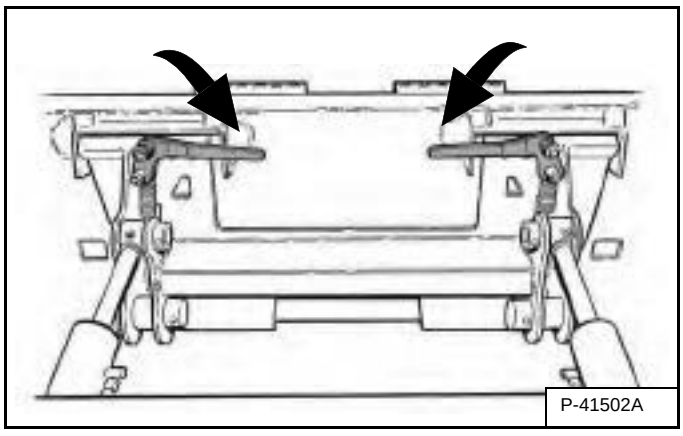
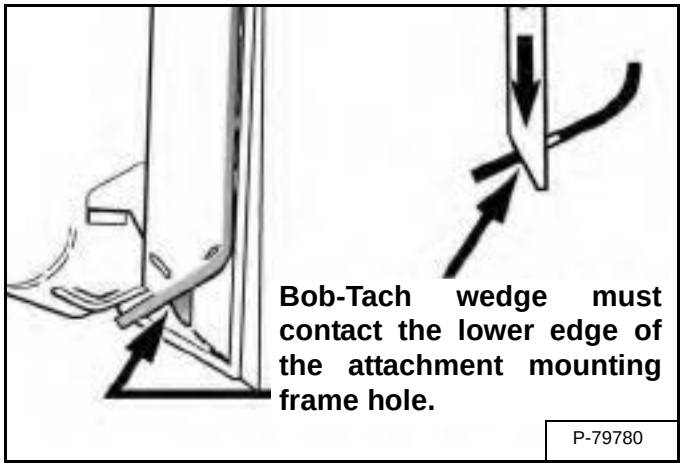
Figure 55



Push down on the Bob-Tach levers until they are fully engaged in the locked position **[Figure 55]** (wedges fully extended through the attachment mounting frame holes).

The levers and wedges must move freely **[Figure 55]**.

Figure 56



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach **[Figure 56]**.

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.

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Figure 57

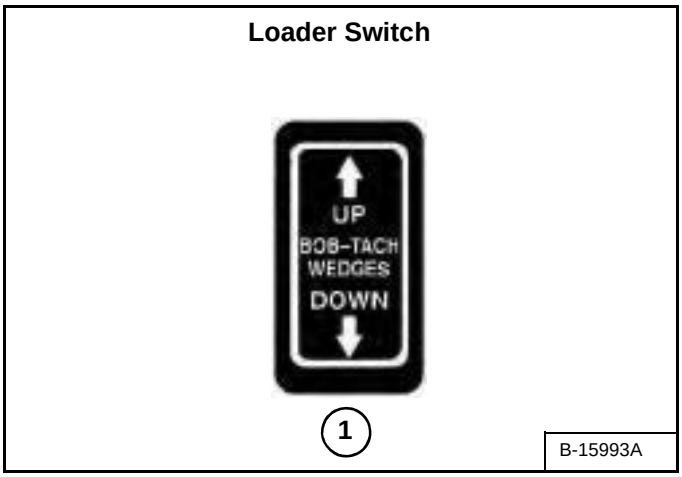
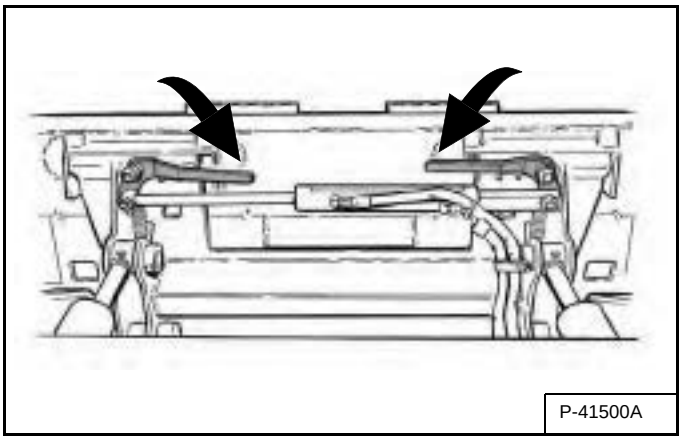
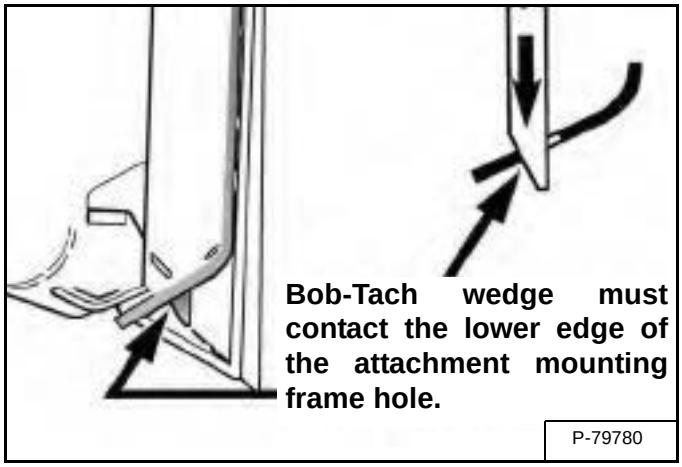


Figure 58



Push and hold the BOB-TACH "WEDGES DOWN" switch (Item 1) **[Figure 57]** until the levers are fully engaged in the locked position **[Figure 58]** (wedges fully extended through the attachment mounting frame holes).

Figure 59



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach **[Figure 59]**.

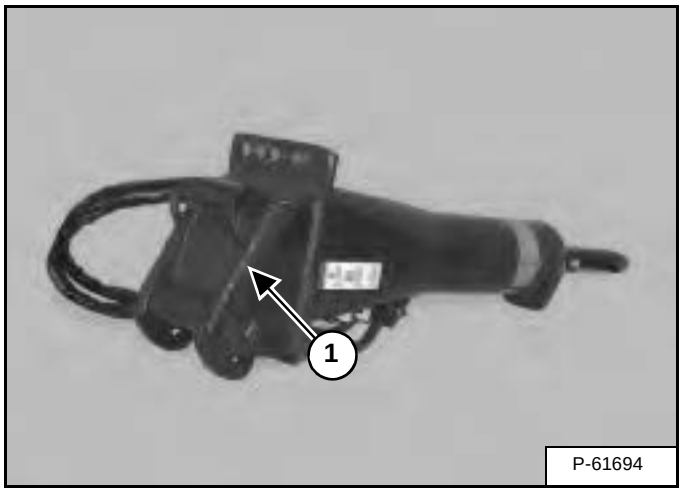
NOTE: If the wedge does not contact the lower edge of the hole, the attachment will be loose and can come off the Bob-Tach.

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 60

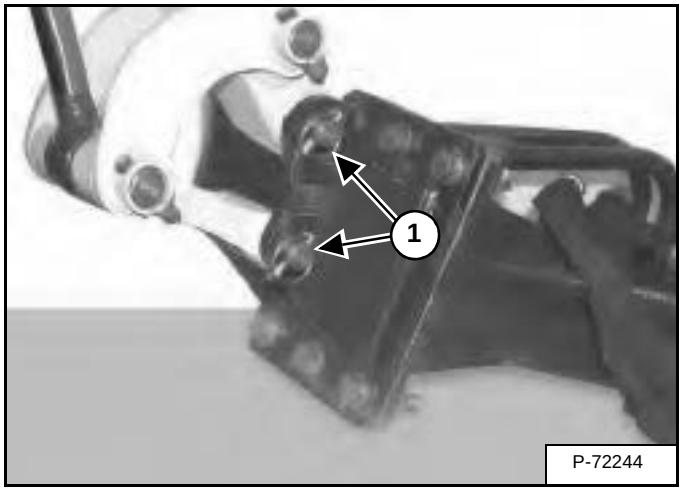


Inspect the X-Change mount (Item 1) **[Figure 60]** and all welds on the breaker mount for wear or damage each time the breaker is removed from the machine.

Repair or replace damaged parts.

Pin-On Attachment

Figure 61

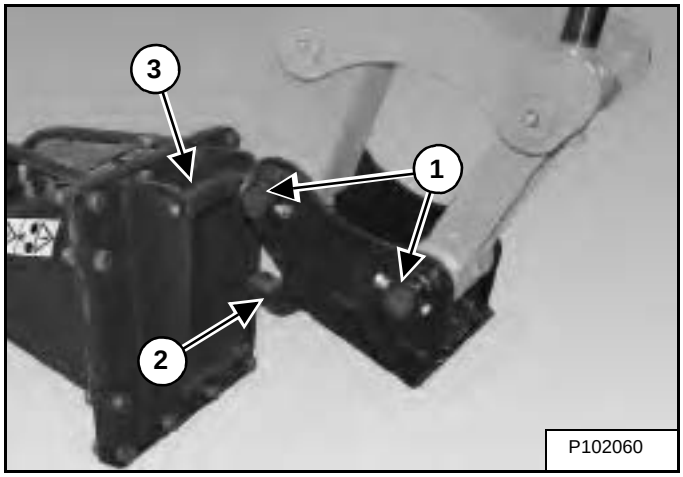


Inspect the Pin-On mount for wear or damage. Inspect the pivot pins (Item 1) **[Figure 61]** and mounts (on the attachment) for wear or damage.

Repair or replace damaged parts.

Bobcat Quick Coupler (BQC) Type SW

Figure 62



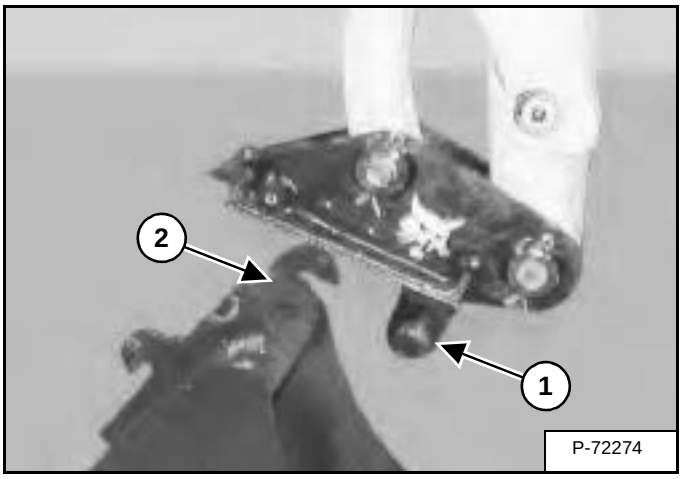
Inspect the BQC for wear or damage. Inspect the BQC pins (Item 1), hooks (Item 2), shaft (Item 3) **[Figure 62]** (on the attachment) and all hardware for wear or damage.

Repair or replace damaged parts.

DAILY INSPECTION (CONT'D)

Bobcat Quick Coupler (BQC) Type K

Figure 63

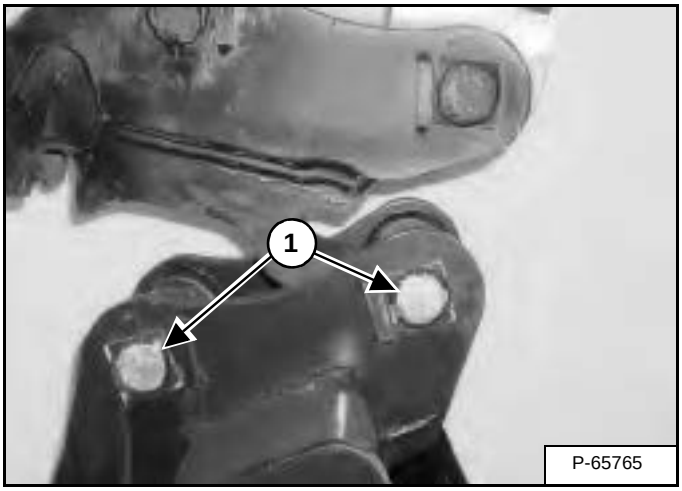


Inspect the attachment quick coupler for wear or damage. Inspect the mounting pins (Item 1) and hooks (Item 2) **[Figure 63]** (on the attachment) for wear or damage.

Repair or replace damaged parts.

Manual Spring Loaded Coupler (442 And 444 Only)

Figure 64



Inspect the manual spring loaded coupler and mount for wear or damage. Inspect the pivot pins (Item 1) **[Figure 64]** and mounts (on the attachment) for wear or damage.

Repair or replace damaged parts.

OPERATING PROCEDURE WITH LOADERS

Approved Loader Models & Requirements

Figure 65

LOADER MODEL	HB SERIES BREAKER						
	280	380	580	680	880	980	1180
463			X	X			
553				X	X		
A300						X	X
S70			X	X			
S100				X	X		
S130					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
*S630						X	X
*S650						X	X
S850							X
T110					X	X	
T140					X	X	
T190					X	X	
T250						X	X
T300						X	X
T320						X	X
*T650						X	X
T870							X

X = Approved

The chart **[Figure 65]** shows the breaker models approved for use with each loader model.

NOTE: * When using the HB880 or HB980 breakers on S630, S650 and T650 model loaders, the breaker must be equipped with a diverter valve kit. See your Bobcat dealer for available kits.

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.

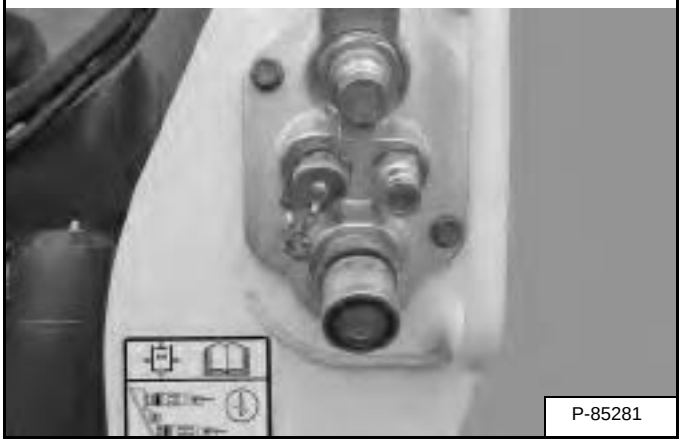
W-2662-0108

Figure 66

Earlier Models

Figure 67

Later Models



The loader must be equipped with auxiliary hydraulics **[Figure 66]** or **[Figure 67]**.

Special Applications Kit

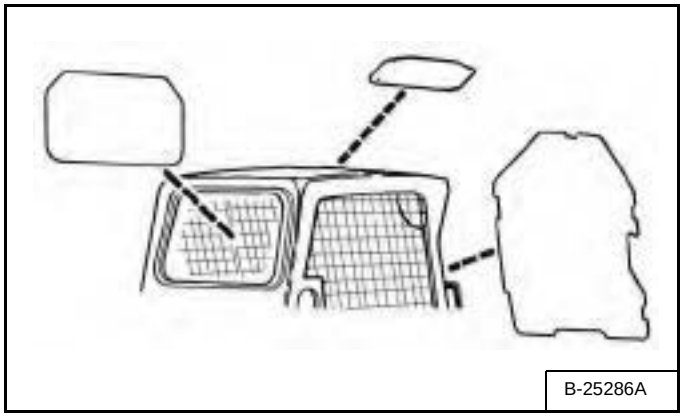
WARNING

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 68



Available for special applications to restrict material from entering cab openings. Kit includes 1/2 in. (12,70 mm) thick poly carbonate front door, top and rear windows **[Figure 68]**.

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

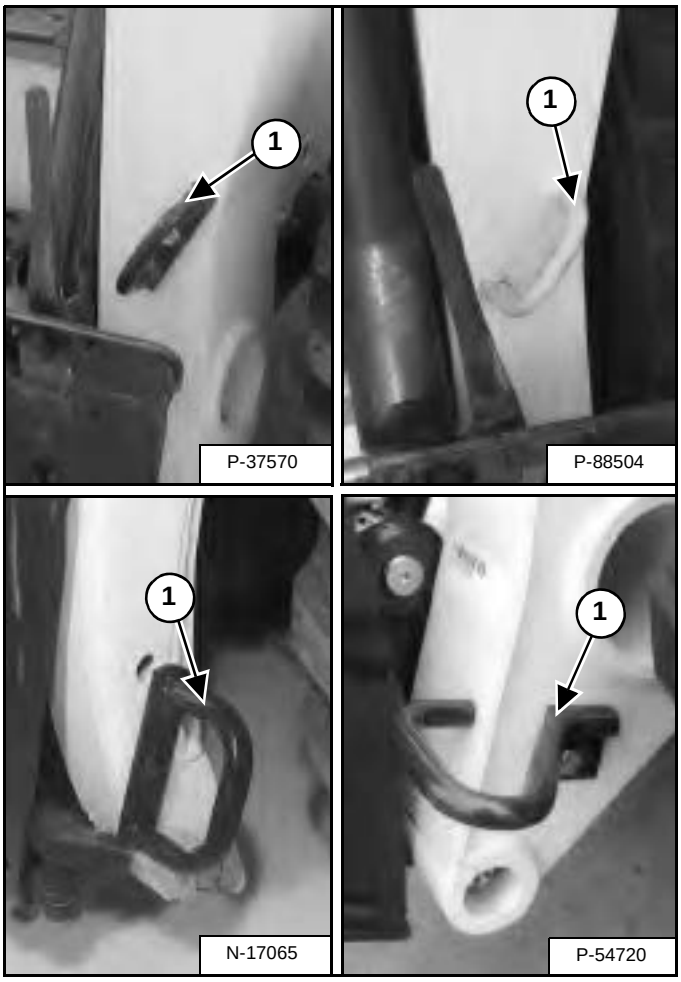
Special Applications Kit Inspection And Maintenance

- 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 69



Install the correct hose guide (Item 1) **[Figure 69]** 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.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Entering And Exiting The Loader

⚠ 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.**

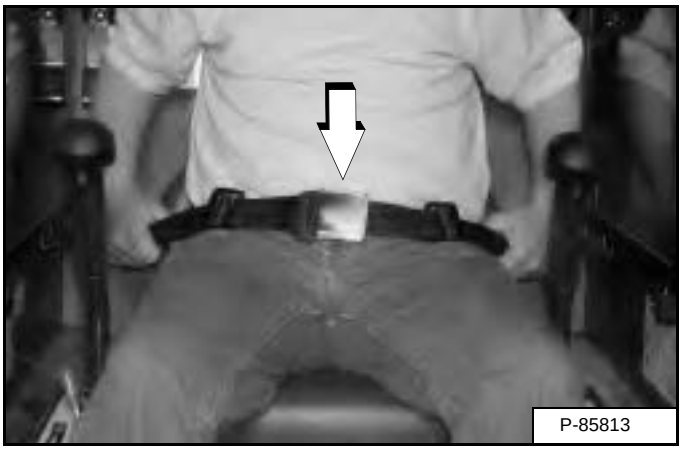
W-2261-0909

Entering

Figure 70

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 70]**.

Figure 71



Enter the loader. Fasten the seat belt and adjust it so the buckle is centred between your hips **[Figure 71]**.

Figure 72

Lower the seat bar and engage the parking brake **[Figure 72]**.

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.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

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.

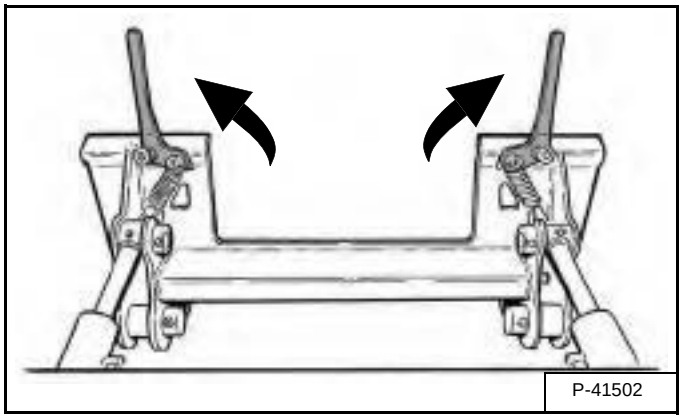
⚠ WARNING

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 48.)

Figure 73

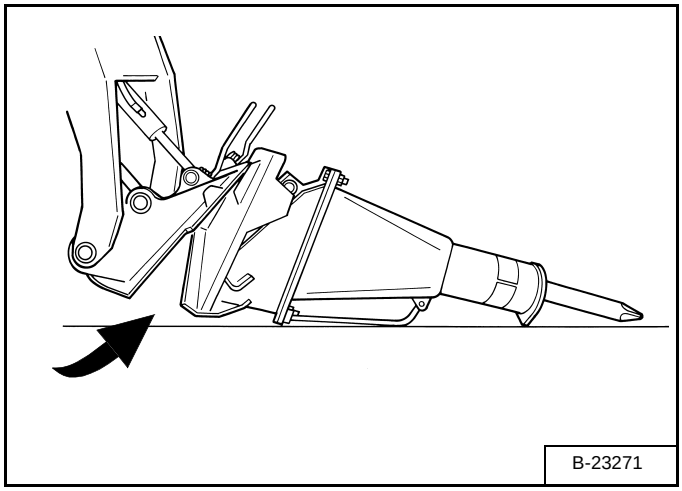


Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) **[Figure 73]**.

Enter the loader. (See Entering And Exiting The Loader on Page 55.)

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

Figure 74



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

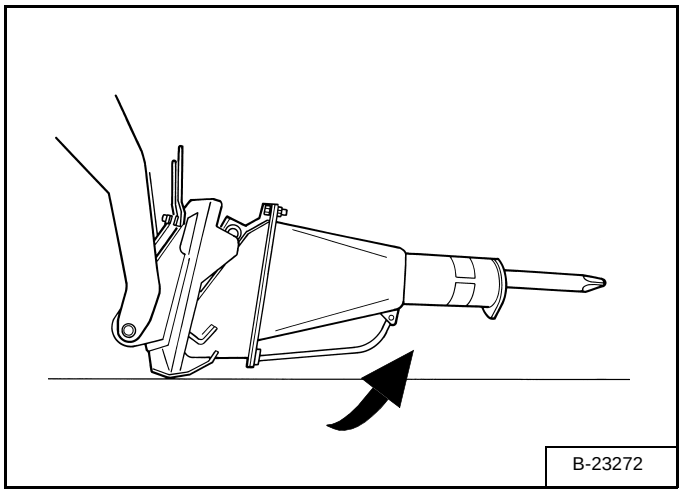
Drive the loader slowly forward until the top edge of the Bob-Tach is completely under the top flange of the attachment mounting frame **[Figure 74]**.

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

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 75



Tilt the Bob-Tach backward until the attachment is slightly off the ground **[Figure 75]**. 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 55.)

⚠ WARNING

AVOID INJURY OR DEATH

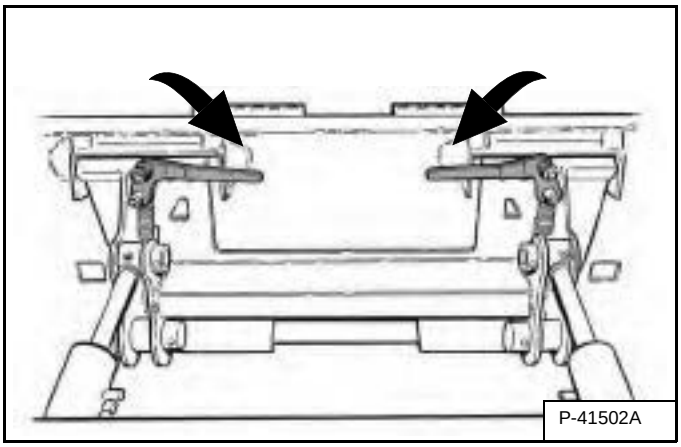
Before you leave the operator's seat:

- **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. Service the system if controls do not deactivate.

W-2463-0610

Figure 76



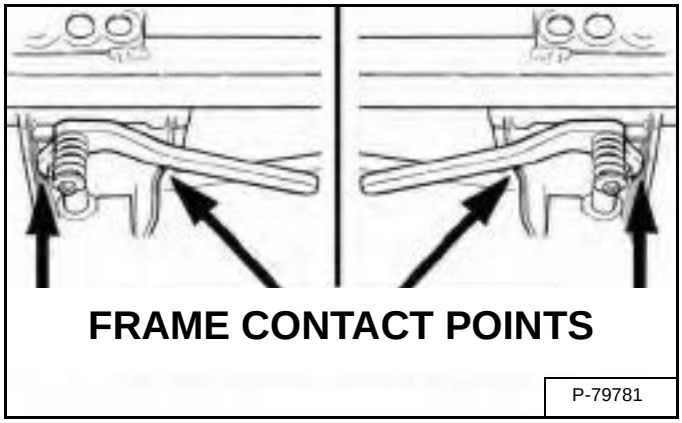
Push down on the Bob-Tach levers until they are fully engaged in the locked position **[Figure 76]** (wedges fully extended through the attachment mounting frame holes).

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 77



Both levers must contact the frame as shown when locked **[Figure 77]**.

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

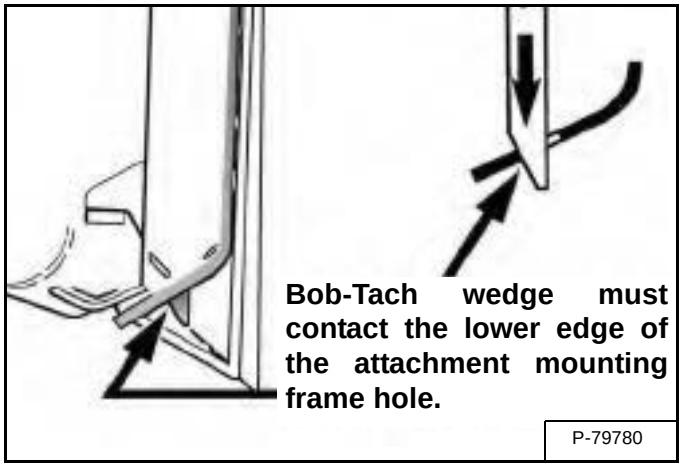
⚠ WARNING

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 78



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach **[Figure 78]**.

Connect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 68.)

OPERATING PROCEDURE WITH LOADERS (CONT'D)

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 55.)

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

Figure 79

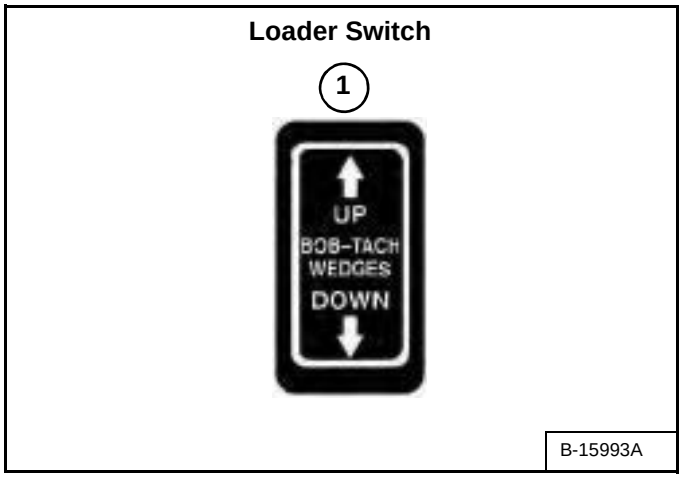
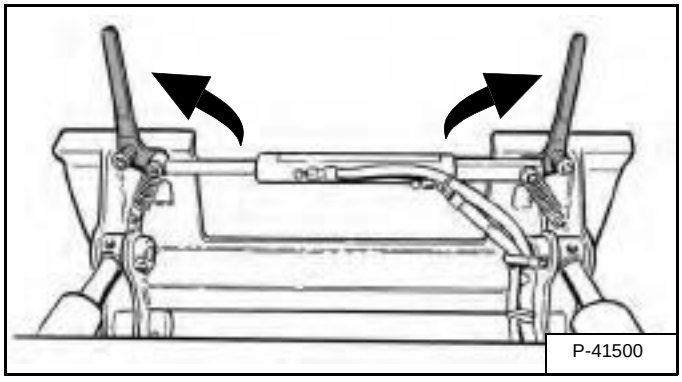
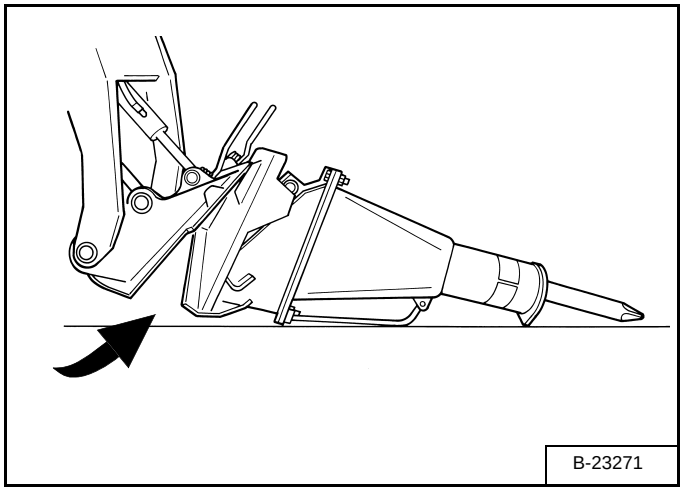


Figure 80



Push and hold the BOB-TACH "WEDGES UP" switch (Item 1) **[Figure 79]** until the levers are fully raised (wedges fully raised) **[Figure 80]**.

Figure 81



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 81]**.

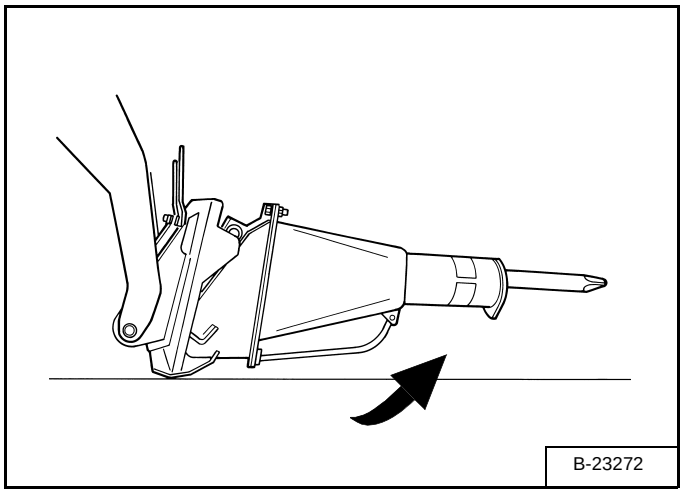
NOTE: Be sure the Bob-Tach levers do not hit the attachment.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Power Bob-Tach (Cont'd)

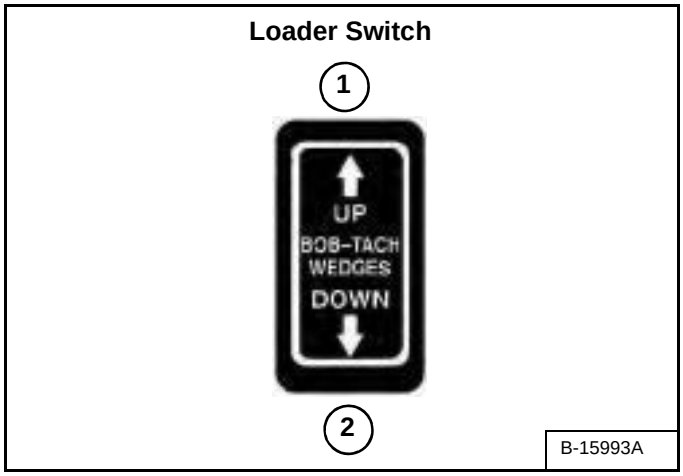
Figure 82



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 82]**. This will cause the attachment mounting frame to fit up against the front of the Bob-Tach.

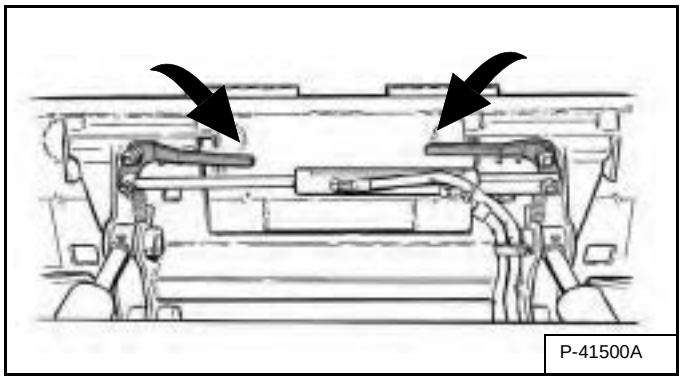
Figure 83



NOTE: The Power Bob-Tach system has continuous pressurised hydraulic oil 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 83]** until the levers are fully raised (wedges fully raised).

Figure 84



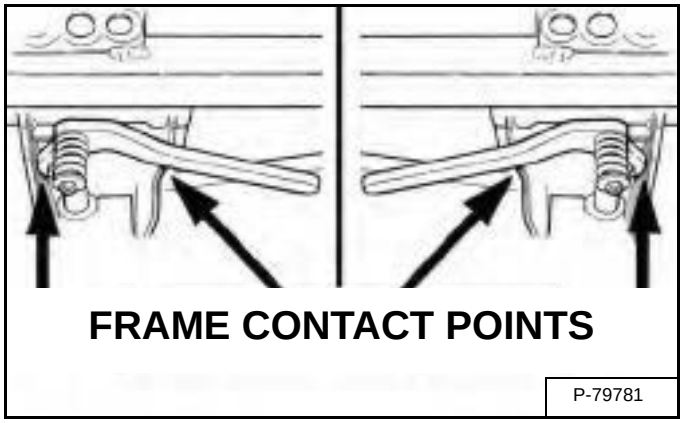
Push and hold the BOB-TACH "WEDGES DOWN" switch (Item 2) **[Figure 83]** until the levers are fully engaged in the locked position **[Figure 84]** (wedges fully extended through the attachment mounting frame holes).

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Power Bob-Tach (Cont'd)

Figure 85



FRAME CONTACT POINTS

P-79781

Both levers must contact the frame as shown when locked **[Figure 85]**.

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

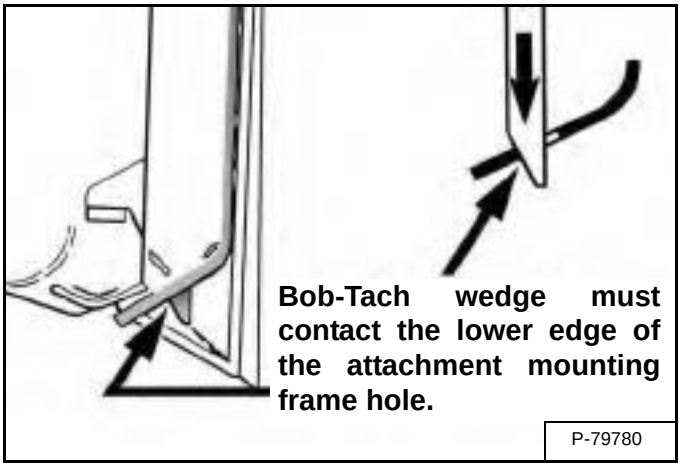
⚠ WARNING

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 86



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 86]**.

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 55.)(See Entering And Exiting The Loader on Page 55.)

⚠ 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. Service the system if controls do not deactivate.

W-2463-0610

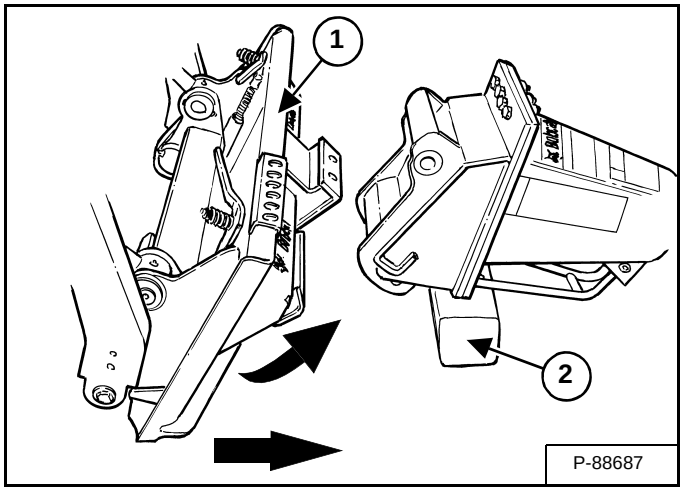
Connect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 68.)

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

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

Figure 87



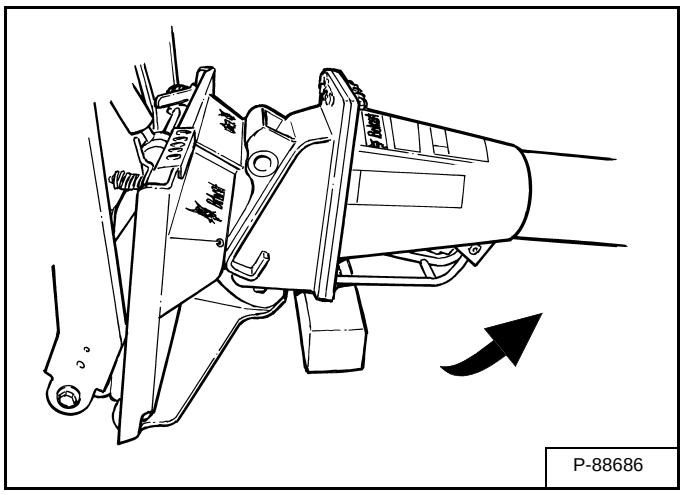
Install the breaker mount (Item 1) **[Figure 87]** on the loader.

Place the breaker on a block (Item 2) **[Figure 87]**.

Tilt the Bob-Tach forward.

Drive the loader forward until the breaker mount frame engages the breaker **[Figure 87]**.

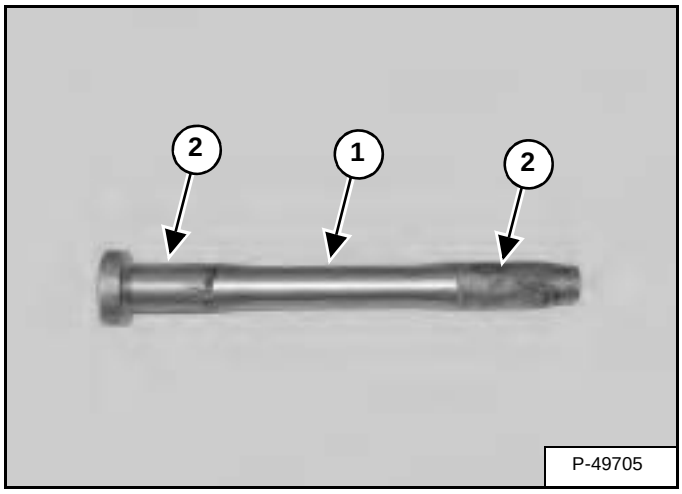
Figure 88



Tilt the Bob-Tach backward until the breaker is slightly off the ground **[Figure 88]**.

Stop the engine, engage the parking brake and exit the loader. (See Entering And Exiting The Loader on Page 55.)

Figure 89



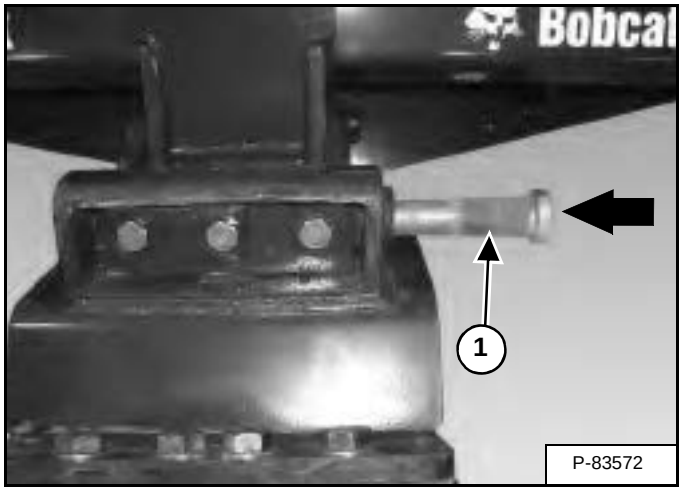
Inspect the pin (Item 1) **[Figure 89]** for wear or damage. Replace the pin as needed.

Apply a light coat of grease to the ends of the pin (Item 2) **[Figure 89]**.

Installation (Cont'd)

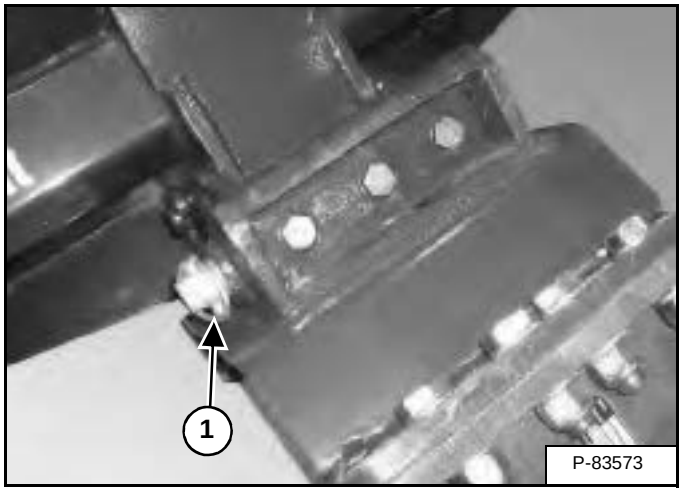
Bob-Tach / X-Change Mounting Frame (Pin-On) (Cont'd)

Figure 90



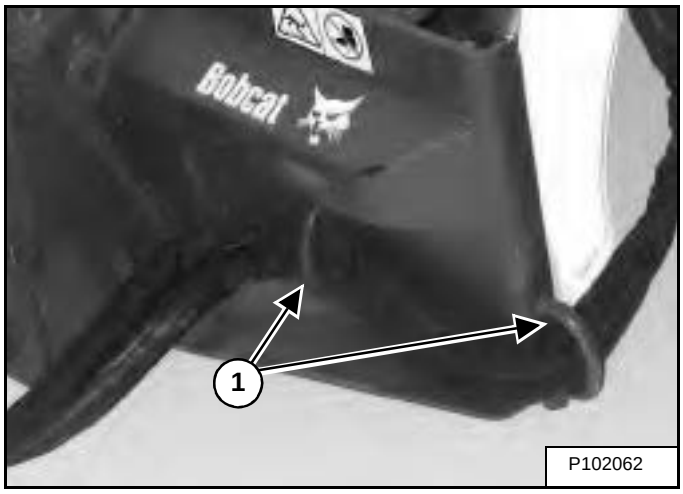
Drive the pin (Item 1) **[Figure 90]** through the breaker mount and X-Change.

Figure 91



Install the retainer pin (Item 1) **[Figure 91]**.

Figure 92



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 92]** on the breaker mounting frame.

Connect the hose couplers to the loader quick couplers. (See Hydraulic Quick Couplers on Page 68.)

Turn the hoses so they are not twisted or kinked.

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

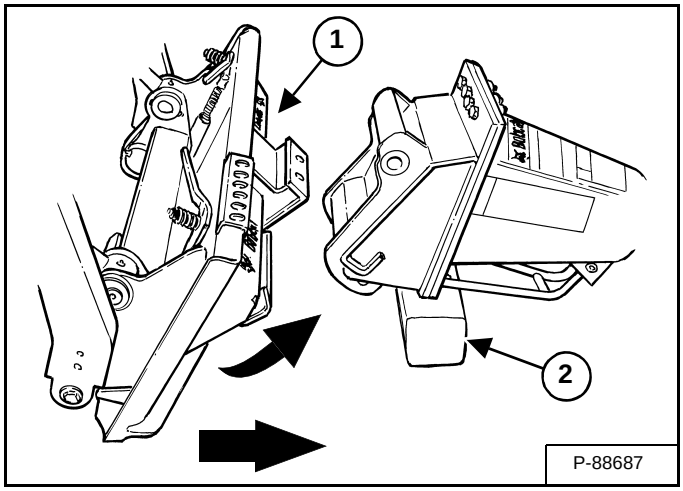
The hoses must not contact the tyres or tracks.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

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

Figure 93



Install the breaker mount (Item 1) **[Figure 93]** on the loader.

Place the breaker on a block (Item 2) **[Figure 93]**.

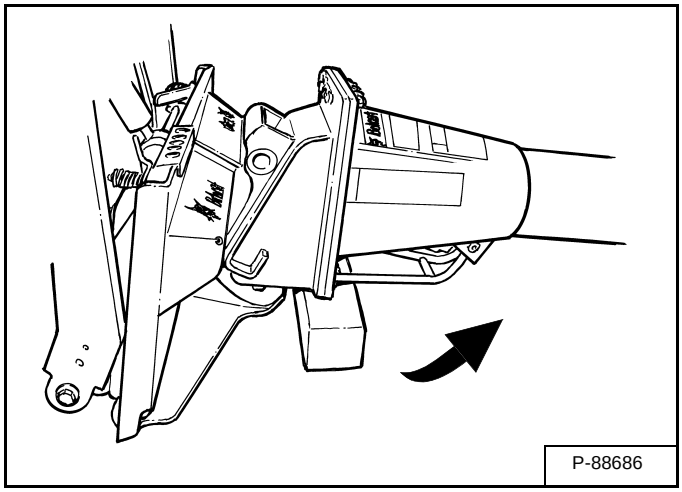
Enter the loader. (See Entering And Exiting The Loader on Page 55.)

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 93]**.

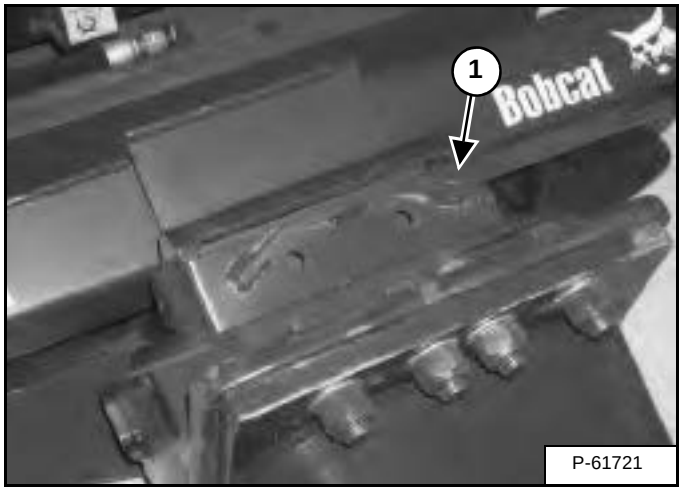
Figure 94



Tilt the Bob-Tach backward until the breaker is slightly off the ground **[Figure 94]**.

Stop the engine, engage the parking brake and exit the loader.

Figure 95



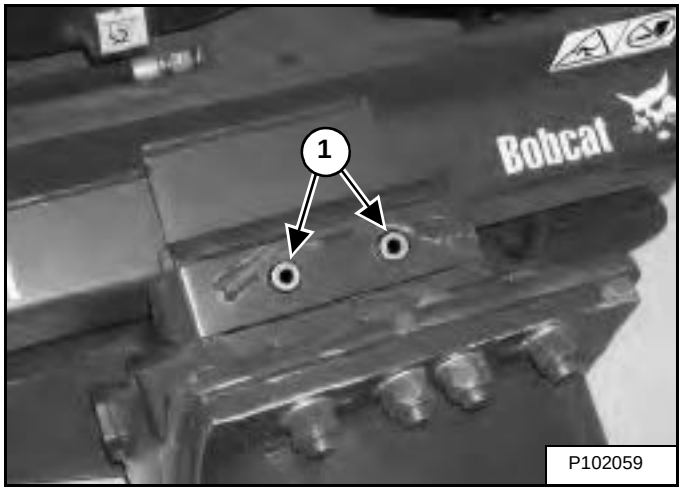
Install the plate (Item 1) **[Figure 95]**.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

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

Figure 96



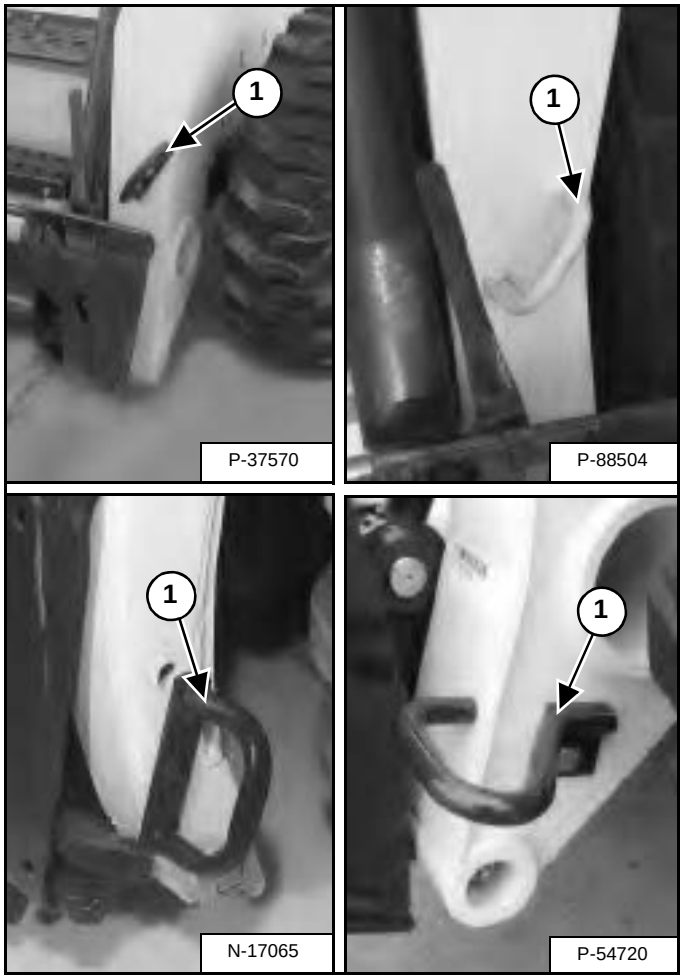
Install the bolts (Item 1) **[Figure 96]**.

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

NOTE: Do not over torque the bolts (Item 1) [Figure 96]. Over torquing may cause bolt or thread damage or could result in the bolts breaking during operation.

Hose Routing (Earlier Version)

Figure 97



Route hoses through hose guide (Item 1) **[Figure 97]** and connect quick couplers to the loader. (See For First Time Installation on Page 67.)

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.

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 68.)

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 46 ft.-lb. (63 N•m) torque before starting the loader.

Enter the loader. (See Entering And Exiting The Loader on Page 55.)

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.

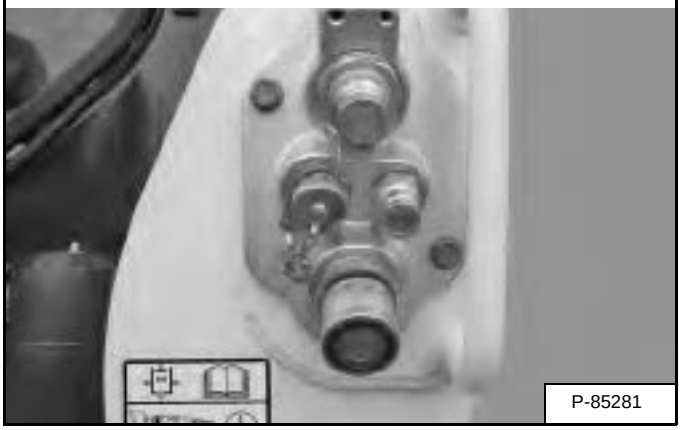
NOTE: Make sure the quick couplers are fully engaged. If the quick couplers do not fully engage, check to see that the couplers are the same size and type.

Figure 98

Earlier Models

Figure 99

Later Models



⚠ 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 98]** or **[Figure 99]**.

Install the male coupler into the female coupler. Full connection is made when the ball release sleeve slides forward on the female coupler **[Figure 98]** or **[Figure 99]**.

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 67.) 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, hold for five seconds. Retract the sleeve on the female coupler until the couplers disconnect.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

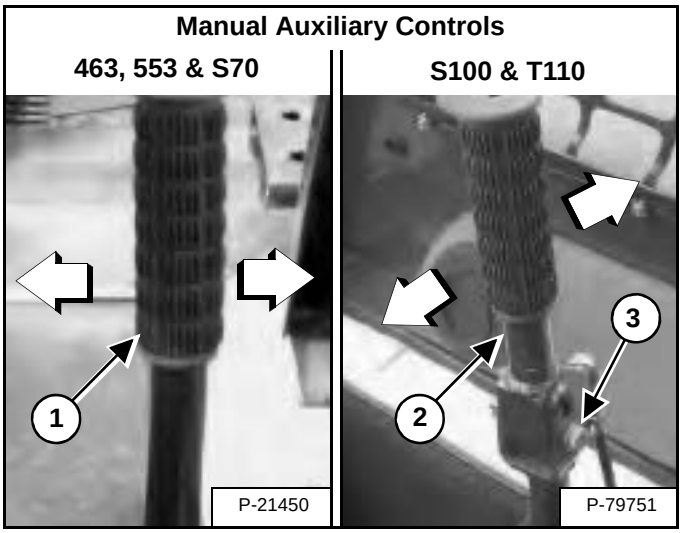
Control Functions

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 100



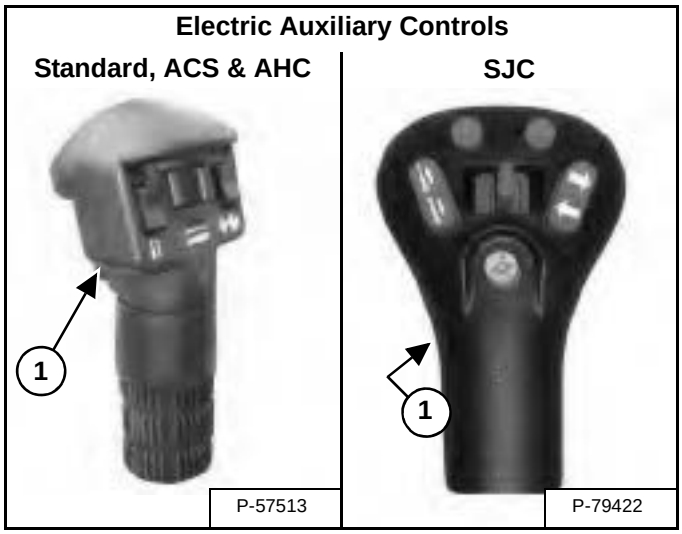
To start the breaker, move the right steering lever (Item 1) or the right steering lever handle (Item 2) **[Figure 100]** to the right.

For continuous hydraulic flow, move the right steering lever (Item 1) or right steering handle (Item 2) **[Figure 100]** fully to the right.

To stop the breaker, move the right steering lever (Item 1) or the right steering lever handle (Item 2) **[Figure 100]** to the centre position.

NOTE: Remove the auxiliary control lockout bolt and nut (Item 3) [Figure 100] (S100 and T110) before using the auxiliary control for the first time.

Figure 101



Continuous Flow

Push the front button (Item 1) **[Figure 101]** on the right steering lever once for continuous flow to the front auxiliary quick couplers (hydraulic breaker starts).

Push the button (Item 1) **[Figure 101]** 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.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

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 20 feet (6 m) away from equipment when operating.**

W-2627-0305

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 oil. 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.

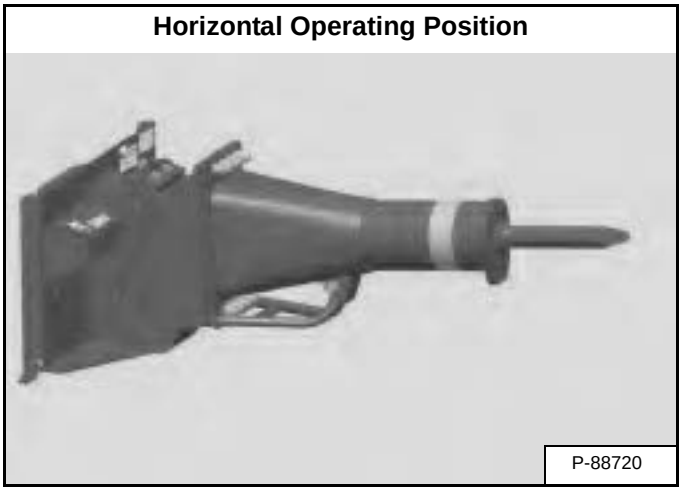
Figure 102

Vertical Operating Position

When operating in the vertical position **[Figure 102]**, 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 103

Horizontal Operating Position



When operating in the horizontal position **[Figure 103]**, work near the edge.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

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 20 feet (6 m) away from equipment when operating.**

W-2627-0305

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, 6 - 10 in. (152 - 254 mm) 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 towards the point of the tool in contact with the material.

OPERATING PROCEDURE WITH 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 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 55.)

⚠ WARNING

AVOID INJURY OR DEATH

Before you leave the operator's seat:

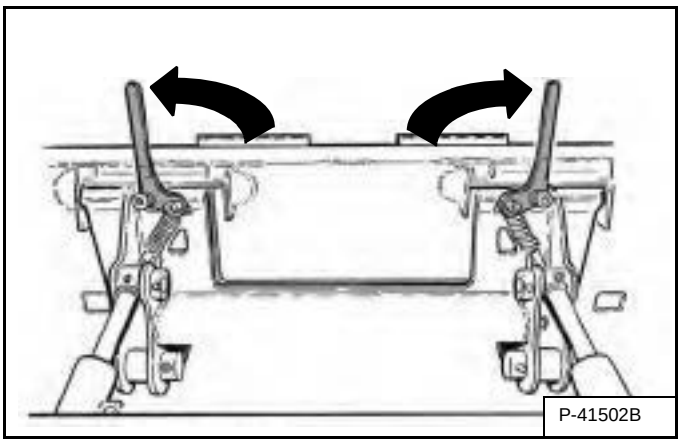
- **Lower the lift arms and put the attachment flat on the ground.**
- **Stop the engine.**
- **Engage the parking brake.**
- **Raise the seat bar.**
- **Move all controls to the NEUTRAL / LOCKED position to make sure the lift, tilt and traction drive functions are deactivated.**

The seat bar system must deactivate these functions when the seat bar is up. Service the system if controls do not deactivate.

W-2463-0610

Disconnect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 68.)

Figure 104



Pull the Bob-Tach levers up **[Figure 104]** until they are fully raised (wedges fully raised).

⚠ WARNING

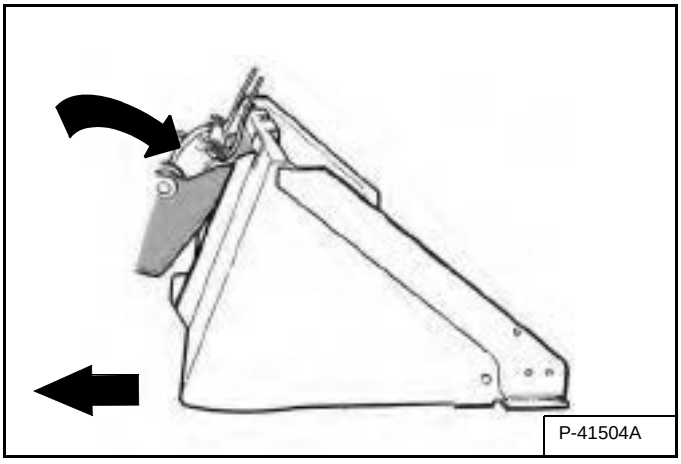
Bob-Tach levers have spring tension. Hold lever tightly and release slowly. Failure to obey warning can cause injury.

W-2054-1285

Enter the loader. (See Entering And Exiting The Loader on Page 55.)

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

Figure 105



Tilt the Bob-Tach forward and drive the loader backward, away from the attachment **[Figure 105]**.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Removal (Cont'd)

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 55.)

⚠ 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. Service the system if controls do not deactivate.

W-2463-0610

Disconnect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 68.)

Enter the loader. (See Entering And Exiting The Loader on Page 55.)

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

Figure 106

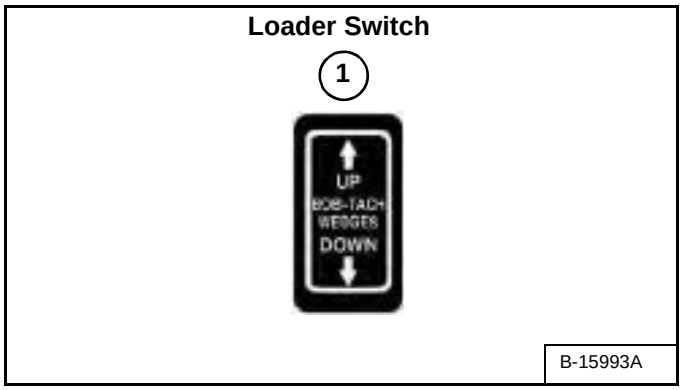
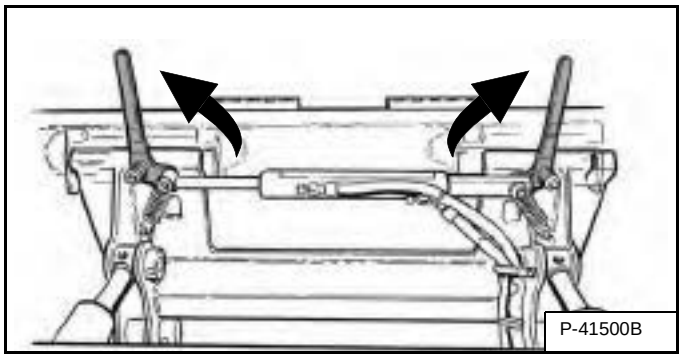
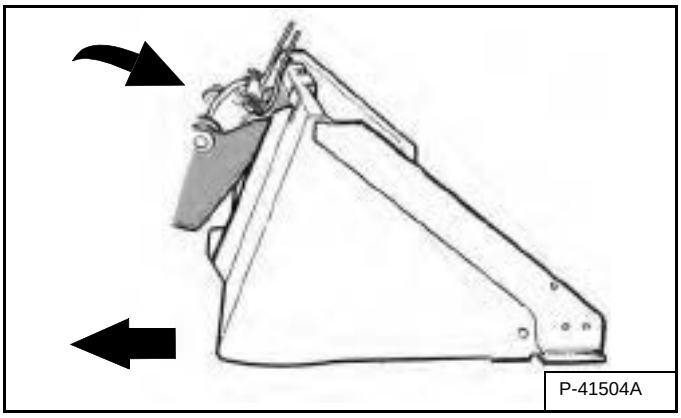


Figure 107



Push and hold the BOB-TACH "WEDGES UP" switch (Item 1) **[Figure 106]** (Front Panel) until the levers **[Figure 107]** are fully raised (wedges fully raised).

Figure 108



Tilt the Bob-Tach forward and drive the loader backward, away from the attachment **[Figure 108]**.

NOTE: The Power Bob-Tach system has continuous pressurised hydraulic oil 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.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

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.

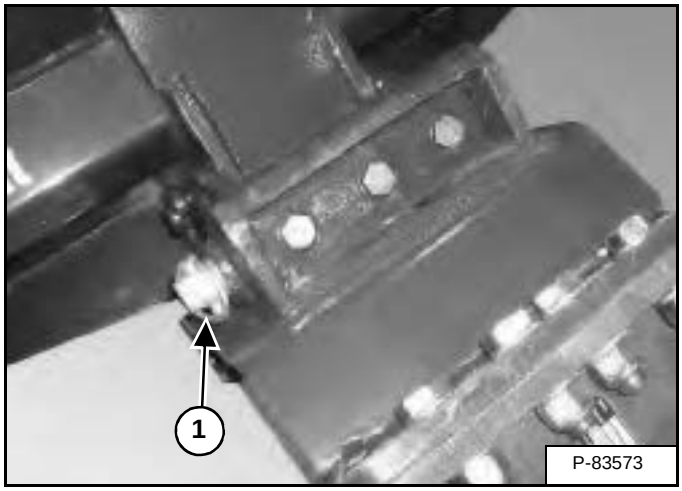
Stop the engine.

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 55.)

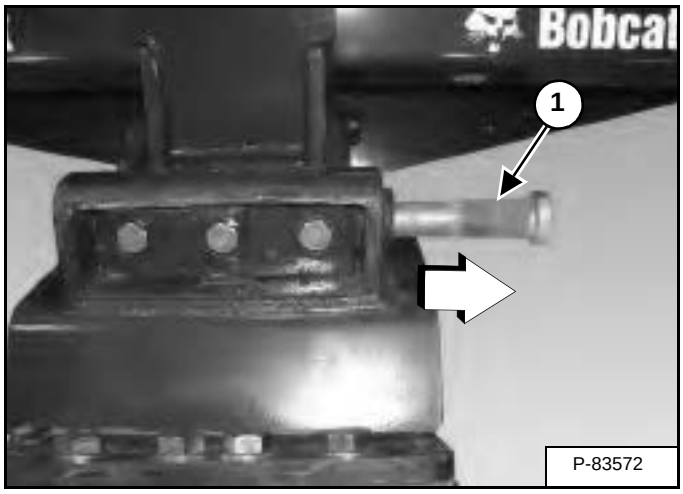
Disconnect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 68.)

Figure 109



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

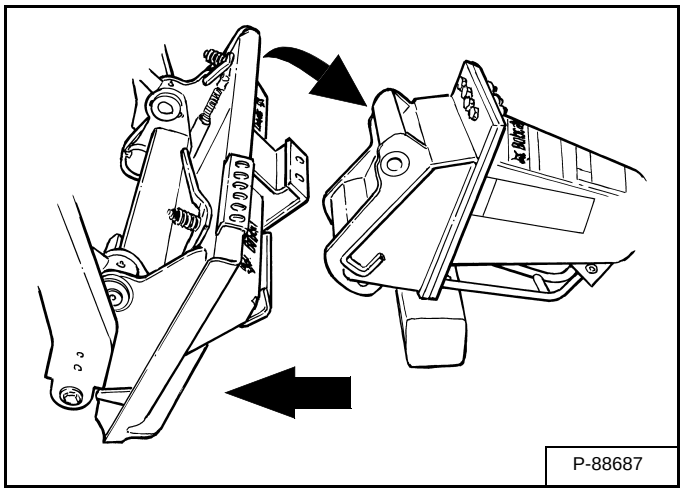
Figure 110



Drive the pin (Item 1) **[Figure 110]** out of the breaker and X-Change Mount.

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

Figure 111



Tilt the Bob-Tach forward while backing the loader away from the breaker **[Figure 111]**.

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.

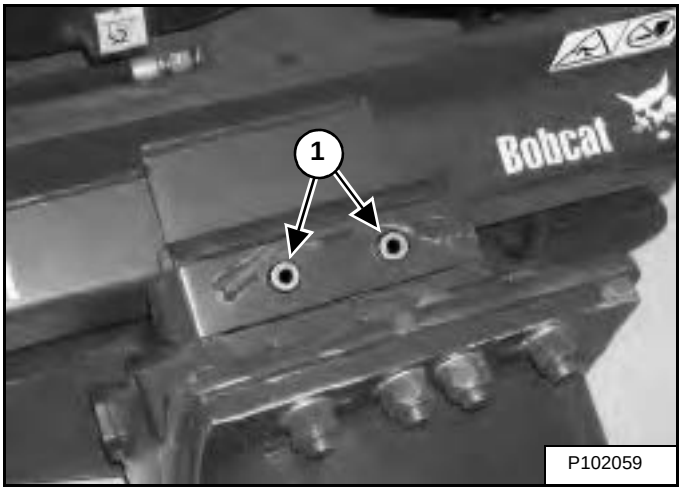
Stop the engine.

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 55.)

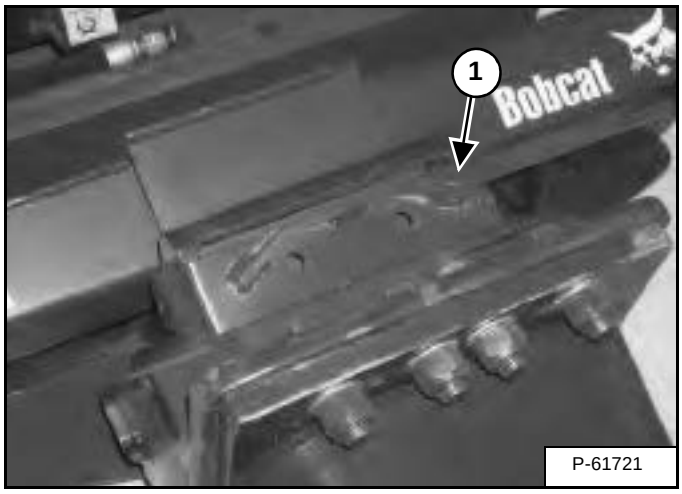
Disconnect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 68.)

Figure 112



Remove the bolts (Item 1) **[Figure 112]**.

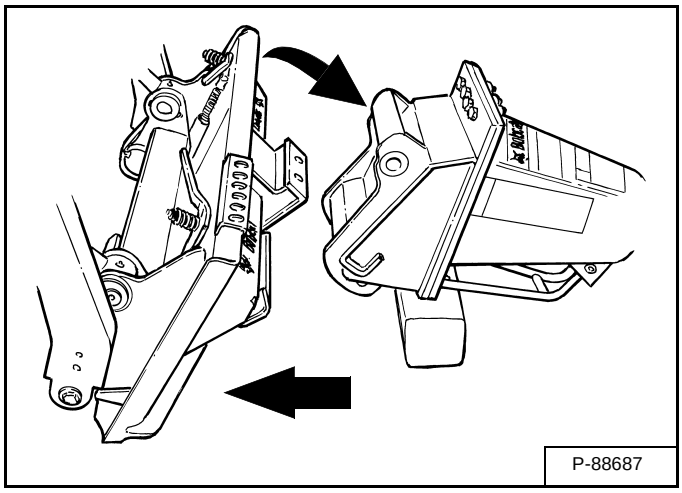
Figure 113



Remove the plate (Item 1) **[Figure 113]**.

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

Figure 114



Tilt the Bob-Tach forward while backing the loader away from the breaker **[Figure 114]**.

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.

OPERATING PROCEDURE WITH EXCAVATORS

Approved Excavator Models & Requirements

Figure 115

EXCAVATOR MODEL	HB SERIES BREAKER						
	280	380	580	680	880	980	1180
316	X						
319		X	X				
320		X	X				
321		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	
425				X			
428				X			
430					X	X	
435						X	X
442							X
444							X
E08	X						
E10	X						
E14		X	X				
E16		X	X				
E32					X	X	
E35					X	X	
E45						X	X
E50						X	X
E55W					X	X	X
E60					X	X	X
E80							X

X = Approved

The chart **[Figure 115]** 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.

⚠ 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

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Approved Excavator Models & Requirements (Cont'd)

Figure 116

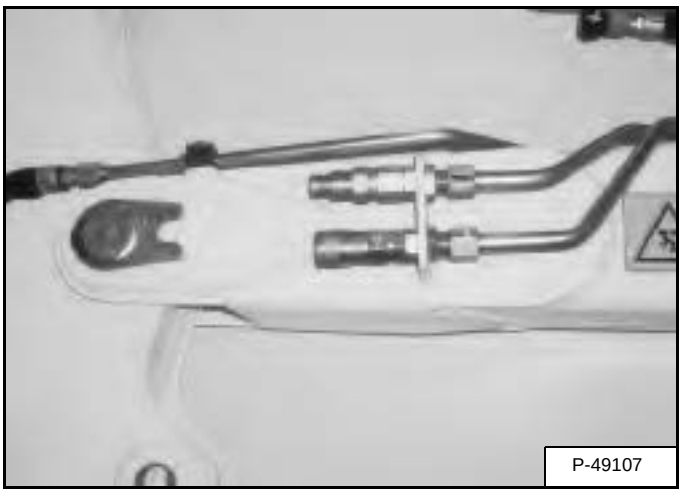
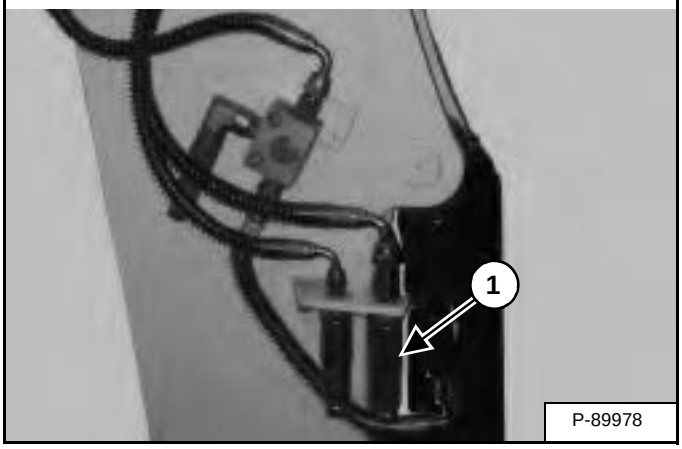


Figure 117

E55W, E60 & E80 Excavators



The excavator must be equipped with front auxiliary hydraulics **[Figure 116]** or **[Figure 117]**.

Primary auxiliary male coupler (Item 1) **[Figure 117]**. 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 117], the female coupler is located on the left side of the arm on E55W, E60 and E80 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.

The breaker does not need a direct to tank return for proper hydraulic operation on excavators. If the excavator is equipped with a direct to tank valve, the direct to tank option may be used. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for the correct procedure.)

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Falling Object Guard System (FOGS)

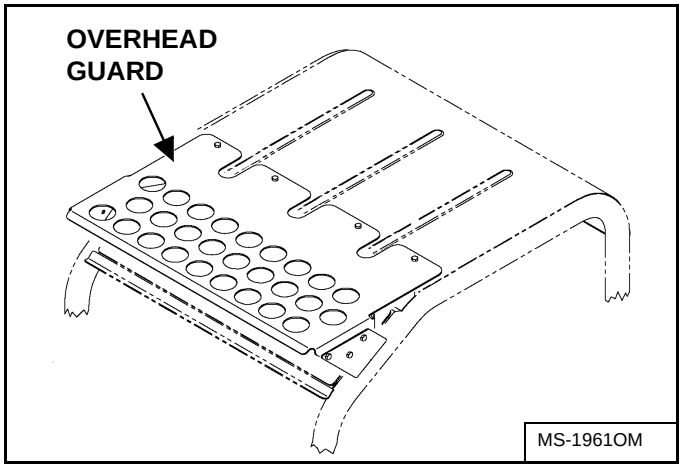
⚠ WARNING

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 118



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 118]** and **[Figure 119]**.

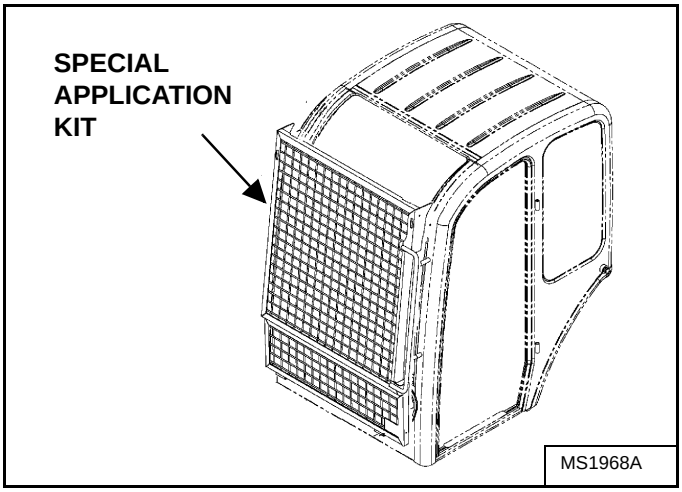
See your Bobcat dealer for available falling object guard structure kit for your model excavator.

Falling Object Guard System (FOGS) Inspection And Maintenance

Inspect the Falling Object Guard Structure (FOGS) **[Figure 118]** and all hardware. Repair or replace all damaged or missing parts.

Special Applications Kit

Figure 119



The Special Applications Kit includes an upper and lower screen guard **[Figure 119]**.

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 119]** and all hardware. Repair or replace all damaged or missing parts.

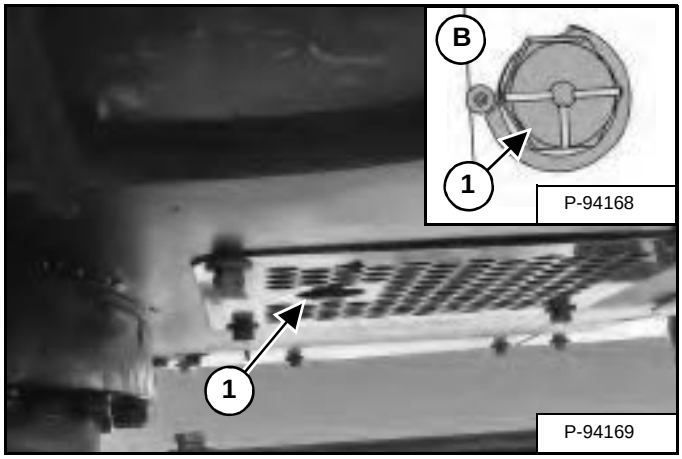
OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Machine / Attachment Setup

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

Direct To Tank Valve (E55W Excavator)

Figure 120



The direct to tank valve (Item 1) **[Figure 120]** is located at the rear of the excavator, between the wheels and below the engine area.

Rotate the direct to tank valve (Item 1) **[Figure 120]** spool clockwise until fully against the stop for breaker (ONLY) operation (B).

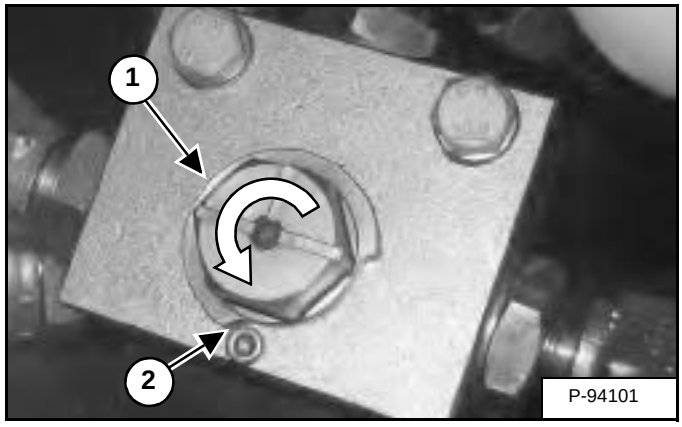
Direct To Tank Valve (E80 Excavator)

Figure 121

Open the centre cover (Item 1) **[Figure 121]** to access the direct to tank valve.

NOTE: The centre cover is located to the right of the operator on the outside of the cab.

Figure 122



Rotate the direct to tank valve (Item 1) spool anticlockwise until fully against the stop (Item 2) **[Figure 122]** for breaker operation.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Entering And Exiting the Excavator

⚠ WARNING

AVOID INJURY OR DEATH

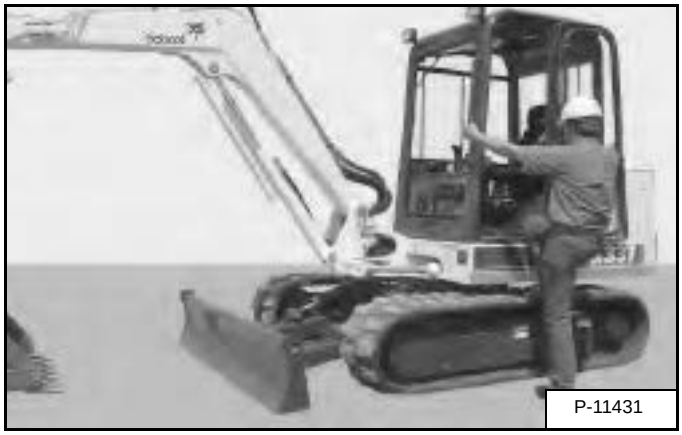
When operating the machine:

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

W-2777-1208

Entering

Figure 123



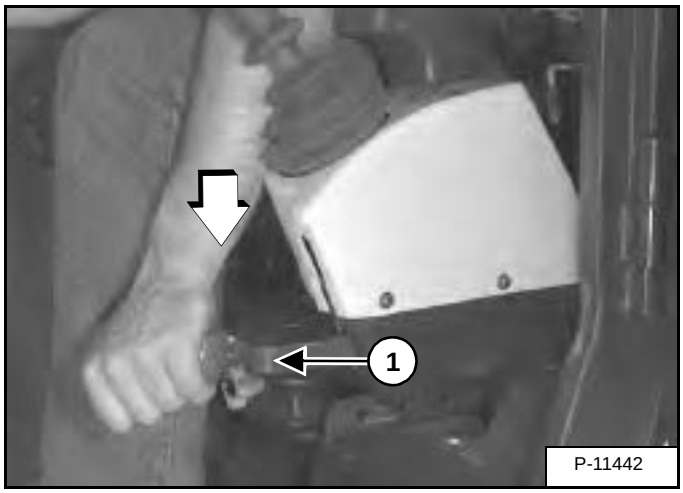
Use the grab handles, tracks and the safety treads to enter and exit the excavator **[Figure 123]**.

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

Figure 124

Fasten the seat belt snugly. Adjust the seat belt so the belt is over the operator's hips **[Figure 124]**.

Figure 125



Lower the left control lever (Item 1) **[Figure 125]** console before starting the engine.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Entering And Exiting the Excavator (Cont'd)

Entering (Cont'd)

Figure 126

E55W, E60, E80 Excavators

Lower the control console **[Figure 126]**.

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.

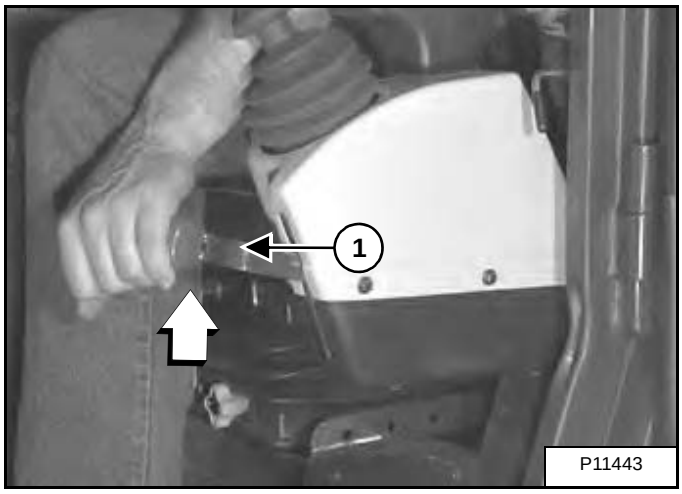
Exiting

Lower the work equipment to the ground.

Lower the blade to the ground.

Stop the engine and remove the key.

Figure 127



Lift up on the lever (Item 1) **[Figure 127]** to release and raise the control console.

Figure 128

E55W, E60, E80 Excavators

Raise the control console **[Figure 128]**.

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 & 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.

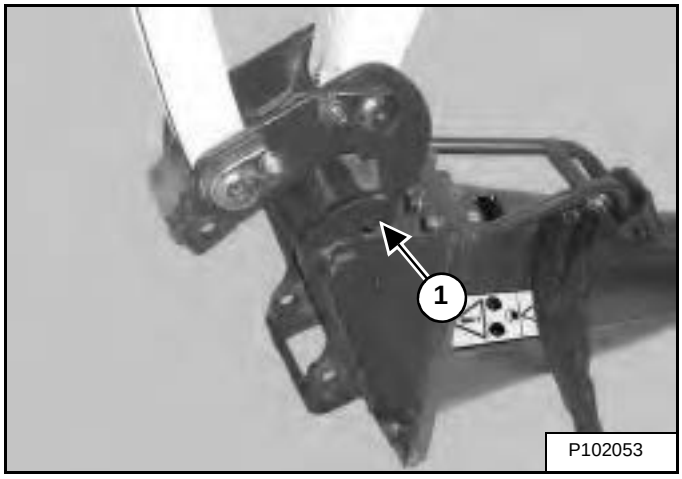
Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting the Excavator on Page 80.)

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

Fully retract the bucket cylinder.

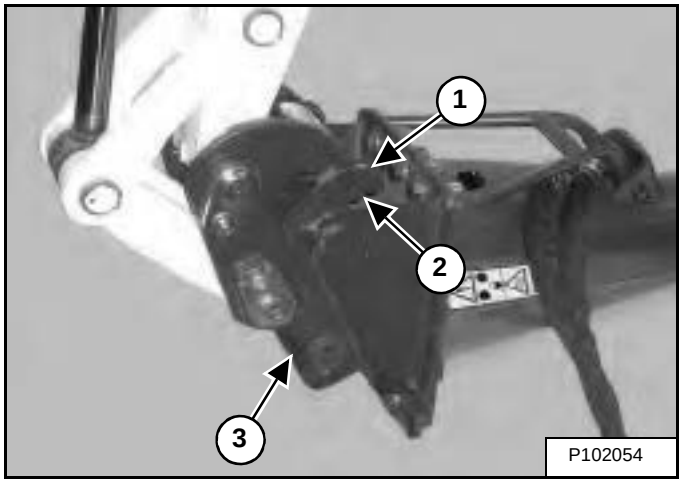
Move the arm toward the breaker mounting frame.

Figure 129



Raise the boom until the pins (Item 1) **[Figure 129]** engage the hooks on the mounting frame.

Figure 130



Raise the boom and extend the bucket cylinder until the X-Change contacts the attachment back **[Figure 130]**.

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 130]** fully engages in the mounting frame.

⚠ WARNING

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

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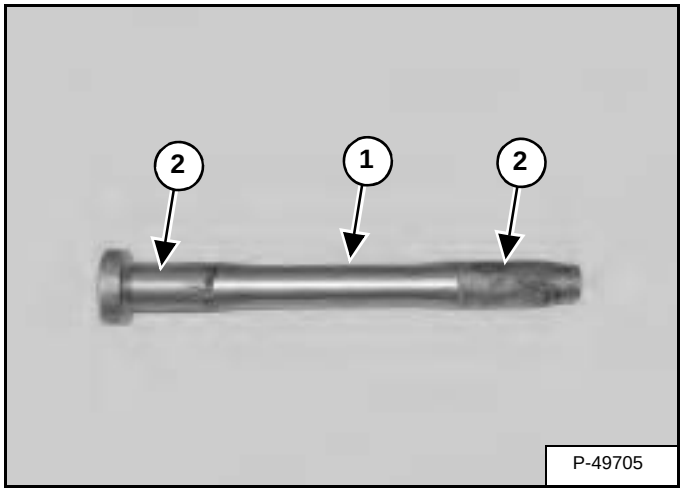
Stop the engine.

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 80.)

Figure 131



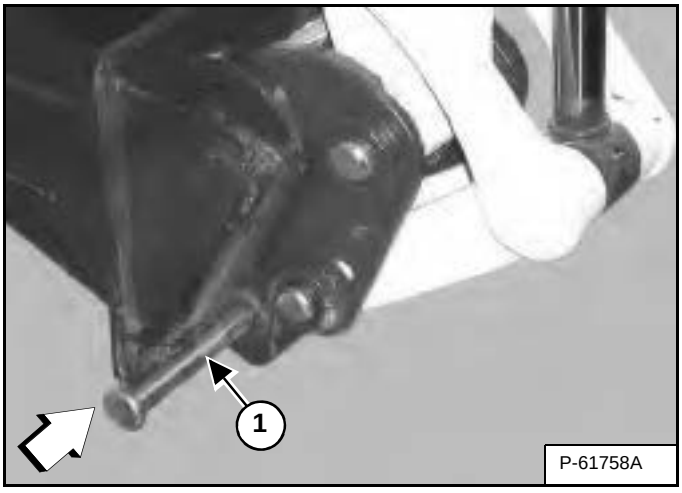
Inspect the pin (Item 1) **[Figure 131]** for wear or damage. Replace the pin as needed.

Apply a light coat of grease to the ends of the pin (Item 2) **[Figure 131]**.

Installation (Cont'd)

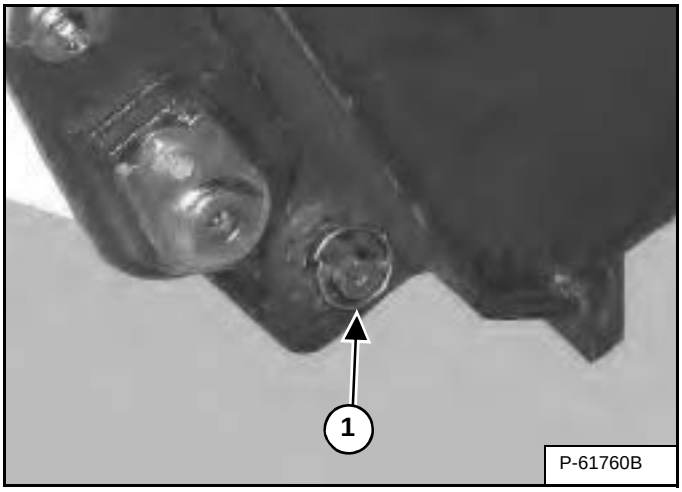
Pin-On X-Change (Cont'd)

Figure 132



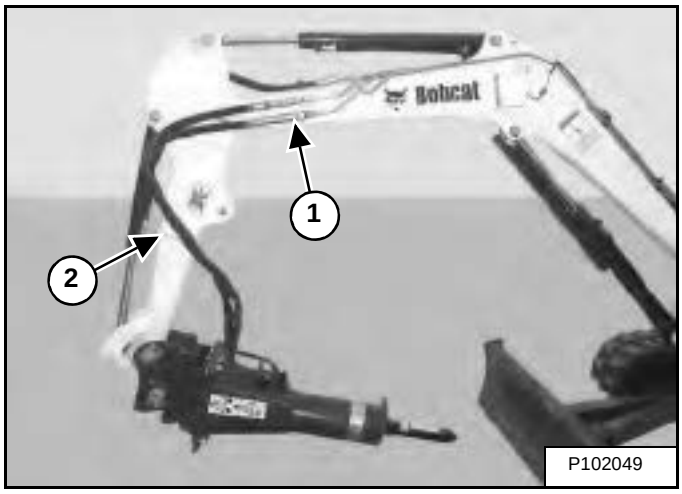
Drive the pin (Item 1) **[Figure 132]** through the breaker mount and X-Change.

Figure 133



Install the retainer pin (Item 1) **[Figure 133]**.

Figure 134



Route the hoses up to the auxiliary couplers (Item 1) **[Figure 134]**. (See Hydraulic Quick Couplers on Page 102.)

NOTE: Do not route the hoses through the retainer (Item 2) [Figure 134] 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.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

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.

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Place the breaker on blocks.

Figure 135

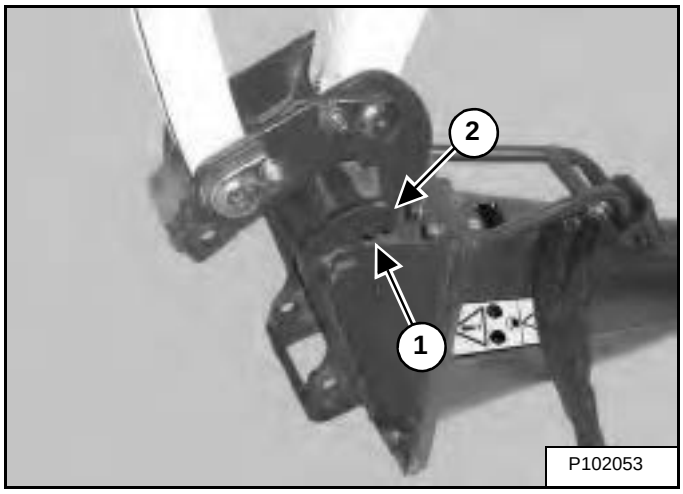
Position the breaker so the hydraulic hoses will be toward the excavator during operation and are facing up **[Figure 135]**.

Enter the excavator. (See Entering And Exiting the Excavator on Page 80.)

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

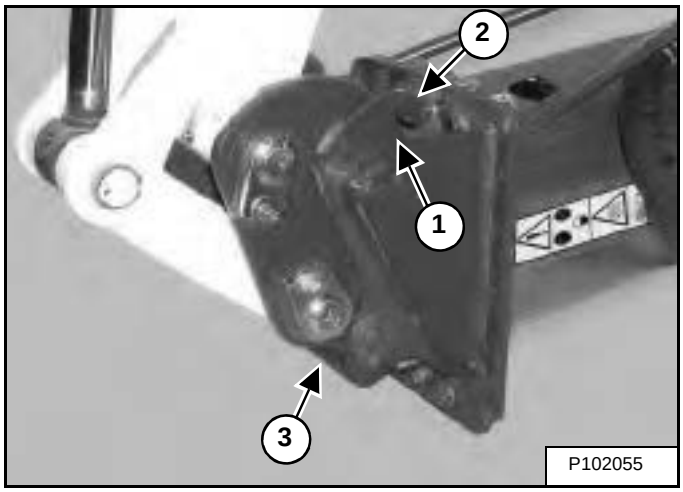
Fully retract the bucket cylinder.

Figure 136



Move the arm toward the breaker. Raise the boom until the pins (Item 1) engage the hooks (Item 2) **[Figure 136]** on the mount.

Figure 137



Raise the boom, and extend the bucket cylinder until the X-Change contacts the attachment back **[Figure 137]**.

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 137]** fully engages in the mounting frame.

Stop the engine.

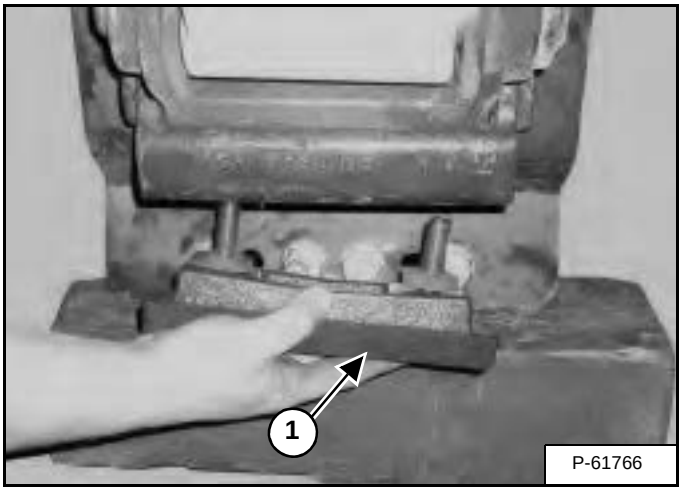
Relieve hydraulic pressure. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

Installation (Cont'd)

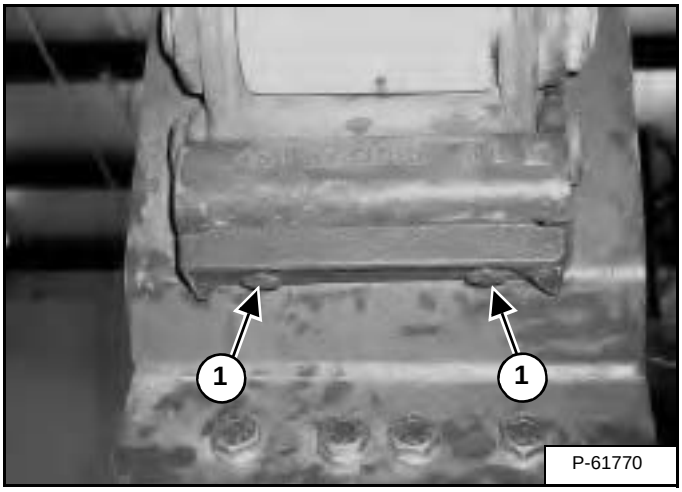
Bolt-On X-Change (Cont'd)

Figure 138



Install the plate (Item 1) **[Figure 138]** into the X-Change.

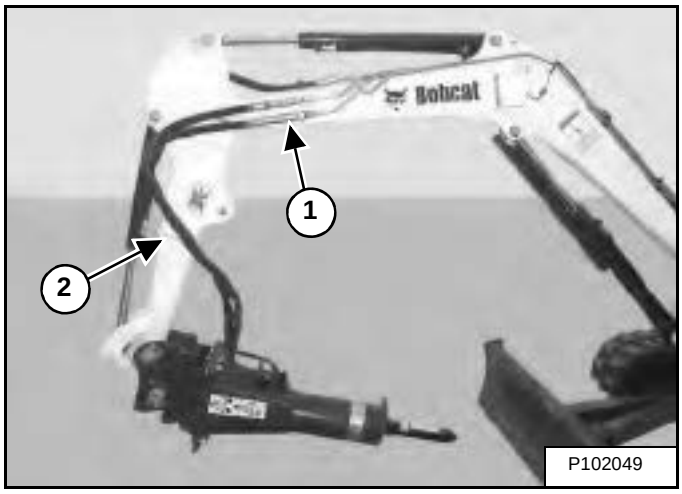
Figure 139



Install the two bolts (Item 1) **[Figure 139]**. Tighten the bolts to 125 - 140 ft.-lb. (170 - 190 N•m) torque. Retorque the bolts after every eight hours of operation.

NOTE: Do Not over torque the bolts (Item 1) [Figure 139]. Over torquing may cause bolt or thread damage or could result in the bolts breaking during operation.

Figure 140



Route the hoses up to the auxiliary couplers (Item 1) **[Figure 140]**. (See Hydraulic Quick Couplers on Page 102.)

NOTE: Do Not route the hoses through the retainer (Item 2) [Figure 140] 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 141

Position the breaker so the hydraulic hoses will be toward the excavator during operation and are facing up **[Figure 141]**.

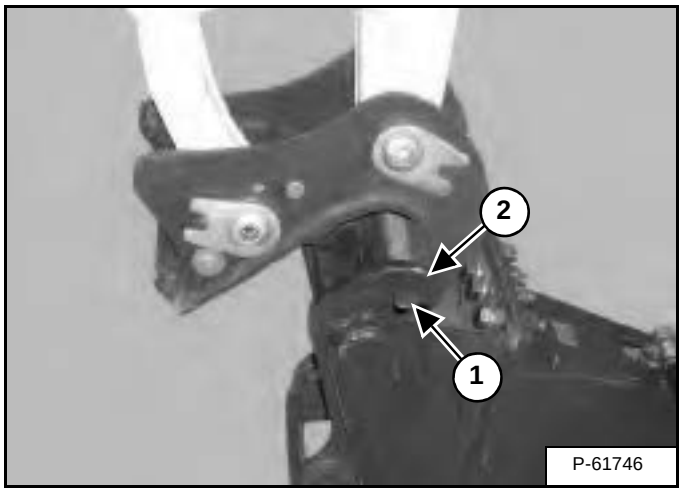
Enter the excavator. (See Entering And Exiting the Excavator on Page 80.)

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 142



Raise the boom until the pins (Item 1) engage the hooks (Item 2) **[Figure 142]** on the mounting frame.

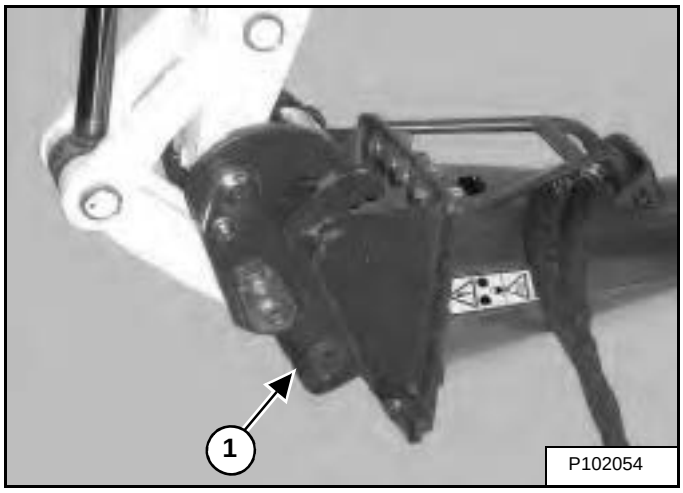
⚠ WARNING

AVOID INJURY OR DEATH

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

W-2277-1297

Figure 143



Raise the boom and extend the bucket cylinder until the X-Change seats in the mating area of the mounting frame **[Figure 143]**.

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

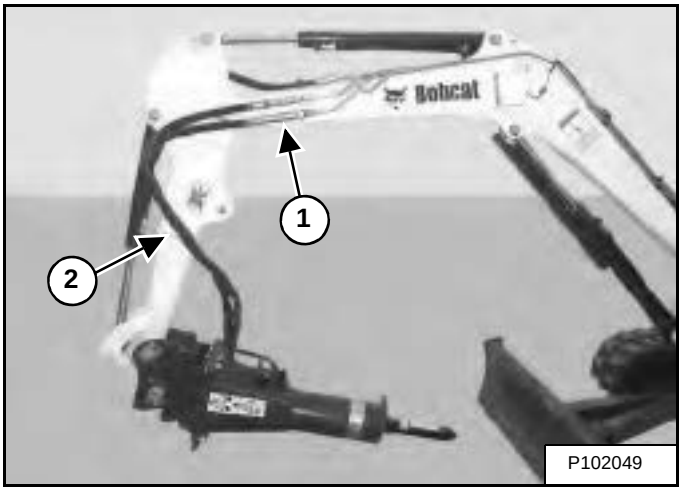
With the arm vertical, lower the boom to the ground until the hooks of the breaker frame disengage the pins of the X-Change and the plate fully engages in the mounting frame (Item 1) **[Figure 143]** locking the breaker frame to the X-Change.

Stop the engine and exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

Installation (Cont'd)

X-Change System (Cont'd)

Figure 144



Route the hoses up to the auxiliary couplers (Item 1) **[Figure 144]**. (See Hydraulic Quick Couplers on Page 102.)

NOTE: Do Not route the hoses through the retainer (Item 2) [Figure 144] 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.

Pin-On Attachment (442 and 444 Excavators)

⚠ WARNING

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

W-2119-0788

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 80.)

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

Move the arm toward the breaker mounting frame.

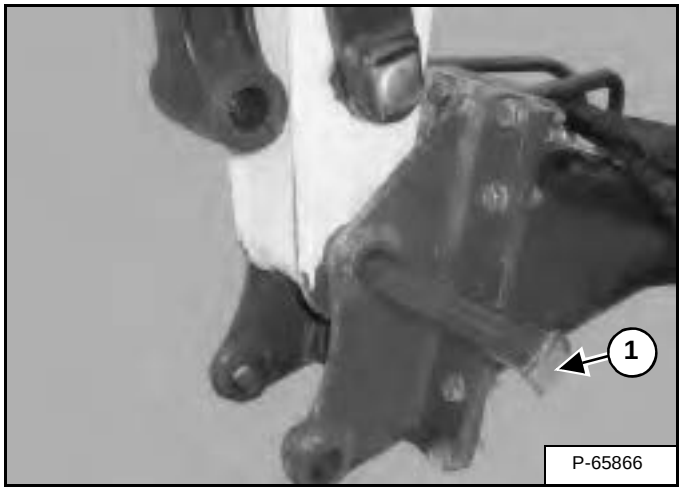
Retract the bucket cylinder so the bucket link is up and out of the way.

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, raise the control counsel, unfasten the seat belt and exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

Figure 145



Install the pin (Item 1) **[Figure 145]**.

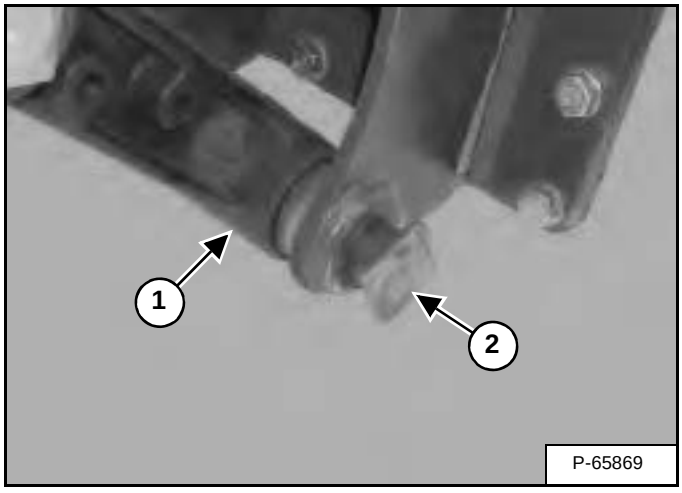
Enter the excavator, fasten seat belt and start the engine.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

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

Figure 146

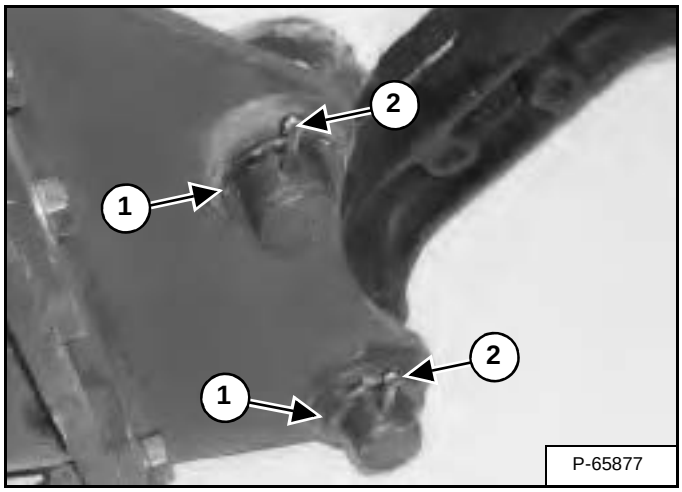


Extend the bucket cylinder until the bucket link (Item 1) **[Figure 146]** aligns with the bottom hole on the breaker frame.

Stop the engine, raise the control console, unfasten the seat belt and exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

Install the pin (Item 2) **[Figure 146]** into the bottom hole of the breaker mounting frame and the bucket link.

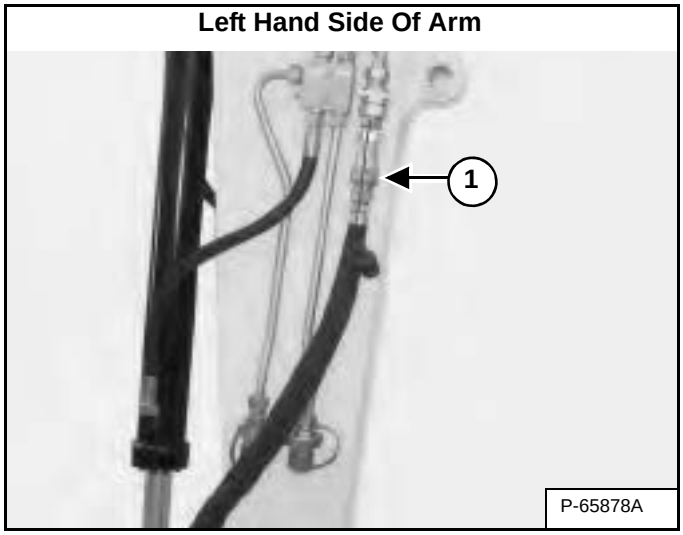
Figure 147



On the opposite side of the pins, install the washers (Item 1) and the retainer pins (Item 2) **[Figure 147]**.

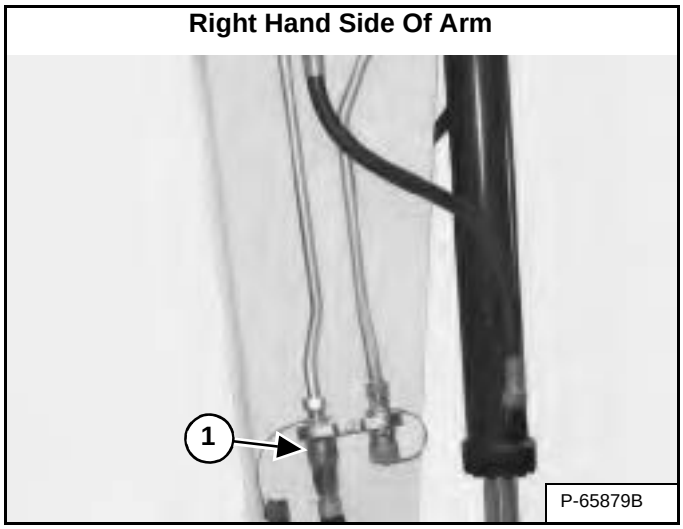
Spread the ends of the two retainer pins (Item 2) **[Figure 147]** so that they will be retained in the pin.

Figure 148



Route the hoses (from the HB port on the breaker) up the arm and connect the auxiliary coupler (Item 1) **[Figure 148]** to the return to tank coupler.

Figure 149



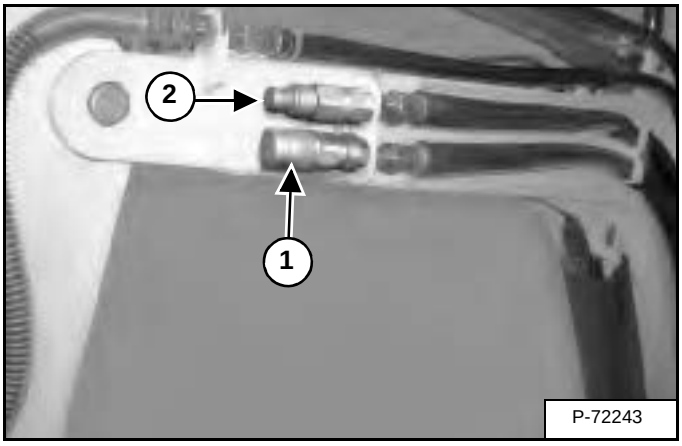
Route the hose (from the HP port on the breaker) up the arm and connect to the auxiliary coupler (Item 1) **[Figure 149]**.

Installation (Cont'd)

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

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

Figure 150



Install the male quick coupler (Item 1) on the bottom auxiliary hydraulic line and the female quick coupler (Item 2) **[Figure 150]** on the top hydraulic line.

⚠ WARNING

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

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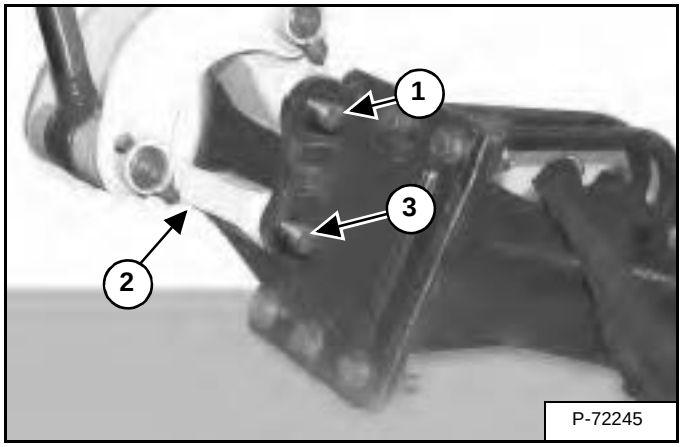
Position the breaker so the hydraulic hoses will be toward the excavator during operation and are facing up.

Figure 151



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, raise the control console, unfasten the seat belt and exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

Install the pivot pin (Item 1) **[Figure 151]**.

Enter the excavator. (See Entering And Exiting the Excavator on Page 80.)

Start the engine.

Extend the bucket cylinder until the link (Item 2) **[Figure 151]** aligns with the bottom hole on the breaker frame.

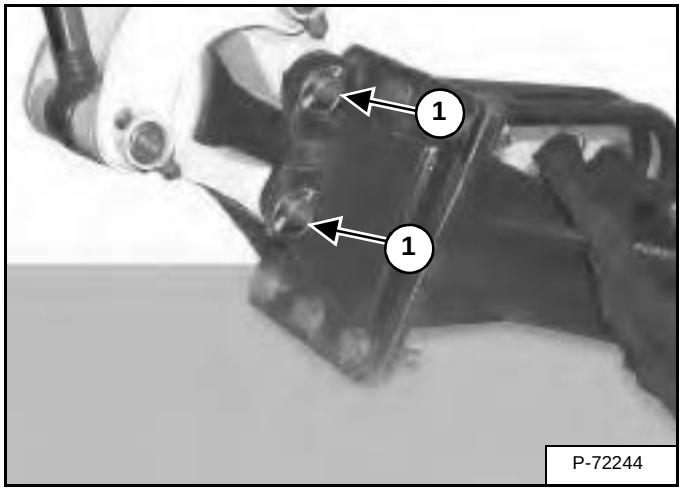
Stop the engine and exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

Install the pivot pin (Item 3) **[Figure 151]**.

Installation (Cont'd)

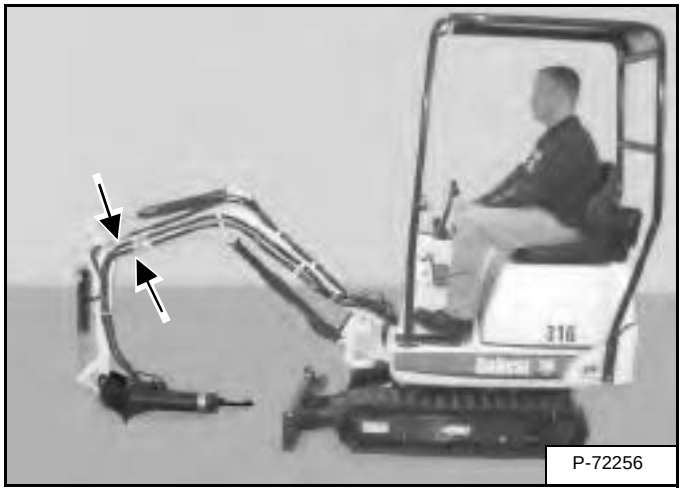
Pin-On Attachment (316, E08, E10, E32, E35, E45 And E50 Excavators) (Cont'd)

Figure 152



Install the retaining clips (Item 1) **[Figure 152]**.

Figure 153



Route the hoses up the arm and connect to the auxiliary couplers **[Figure 153]**. (See Hydraulic Quick Couplers on Page 102.)

⚠ 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.

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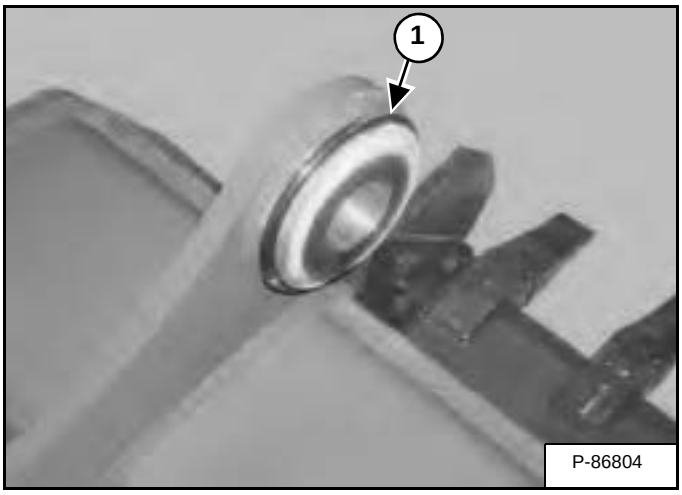
OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Pin-On Attachment (E55W, E60, E80 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 154

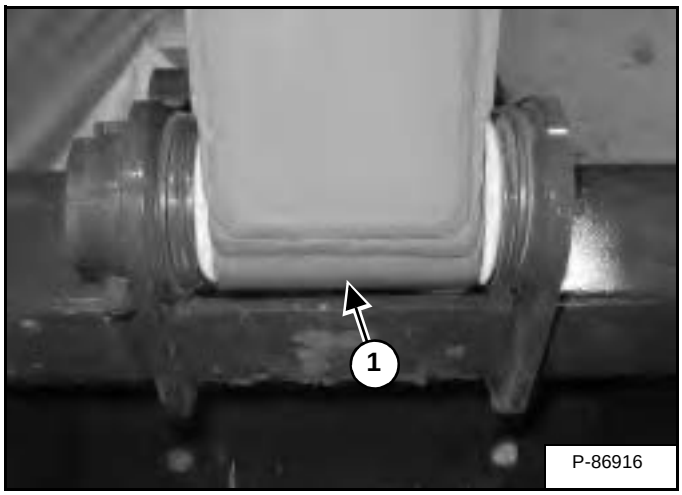


Before installing the attachment, make sure the four O-rings (Item 1) **[Figure 154]** are positioned over the attachment boss (as shown) so they are not damaged during installation.

Enter the excavator. (See Entering And Exiting the Excavator on Page 80.)

Start the engine and release the parking brake.

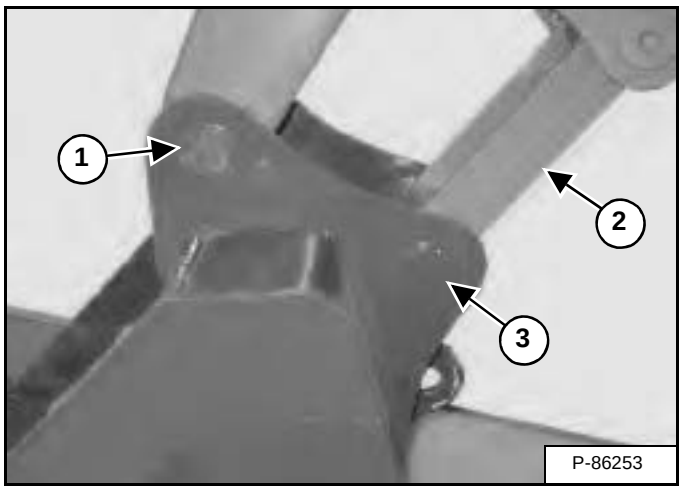
Figure 155



Install the arm (Item 1) **[Figure 155]** into the attachment.

Stop the engine, raise the control console, unfasten the seat belt and exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

Figure 156



Align the arm mounting hole with the attachment and install the pin (Item 1) **[Figure 156]**.

Enter the excavator. (See Entering And Exiting the Excavator on Page 80.)

Start the engine.

Extend the bucket cylinder until the bucket link (Item 2) aligns with the bottom hole (Item 3) **[Figure 156]** on the breaker frame.

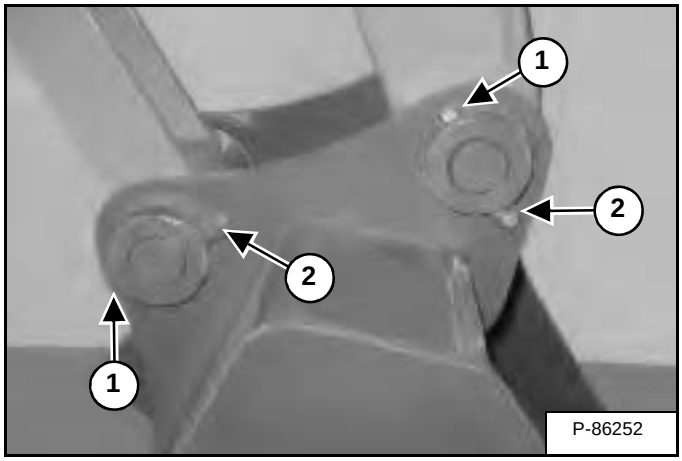
Stop the engine and exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

Align the bucket link mounting hole with the attachment and install the pin (Item 3) **[Figure 156]**.

Installation (Cont'd)

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

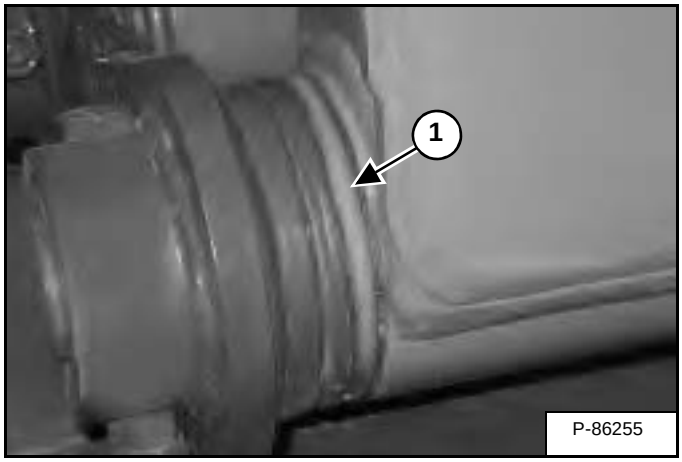
Figure 157



Install the two retainer bolts (Item 1) and jam nuts (Item 2) **[Figure 157]** and tighten the jam nuts.

NOTE: The two retaining bolts (Item 1) [Figure 157] 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 158



Reposition the four O-rings (Item 1) **[Figure 158]** 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)

Bobcat Quick Coupler (BQC) Type K

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.

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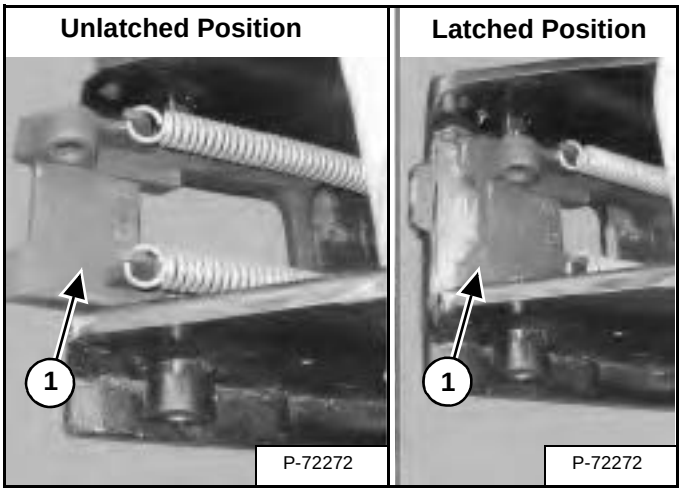
Figure 159



Fully retract the bucket cylinder.

Stop the engine and exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

Inspect the quick coupler to make sure the latch is in the unlatched position (Item 1) **[Figure 159]**.

If in the latched position, see **[Figure 160]** for additional information.

If the latch is in the unlatched position, proceed to **[Figure 161]**.

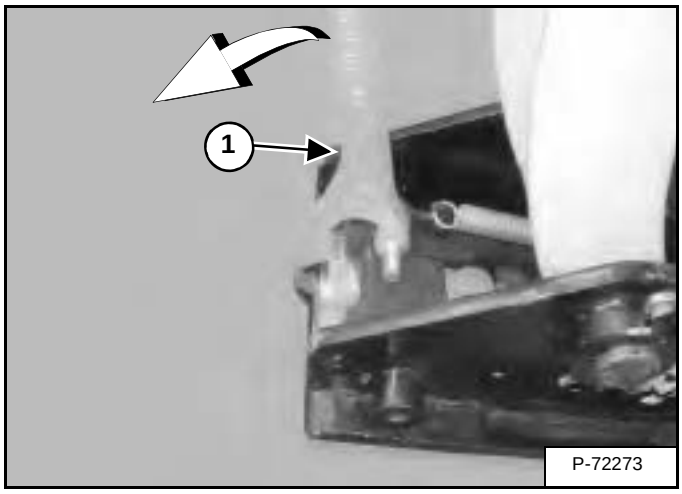
⚠ WARNING

AVOID INJURY

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

W-2541-1106

Figure 160



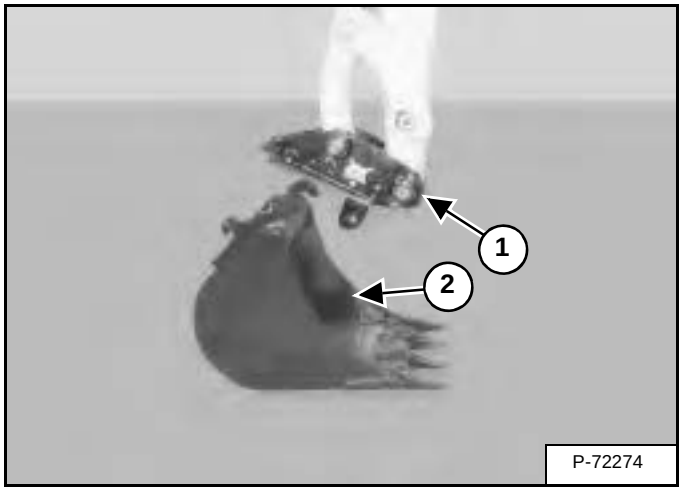
To unlatch the quick coupler, install the tool (Item 1) **[Figure 160]** and pull the handle. The latch will move completely forward. The latch will lock in the unlatched position.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Bobcat Quick Coupler (BQC) Type K (Cont'd)

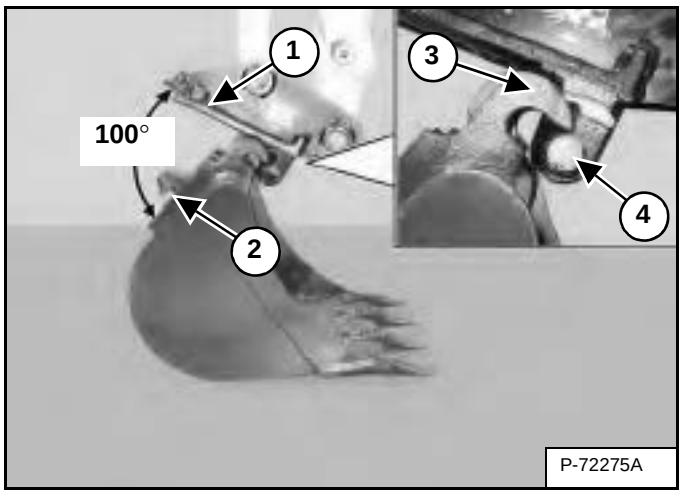
Figure 161



Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting the Excavator on Page 80.)

Position the quick coupler (Item 1) to the attachment (Item 2) **[Figure 161]**.

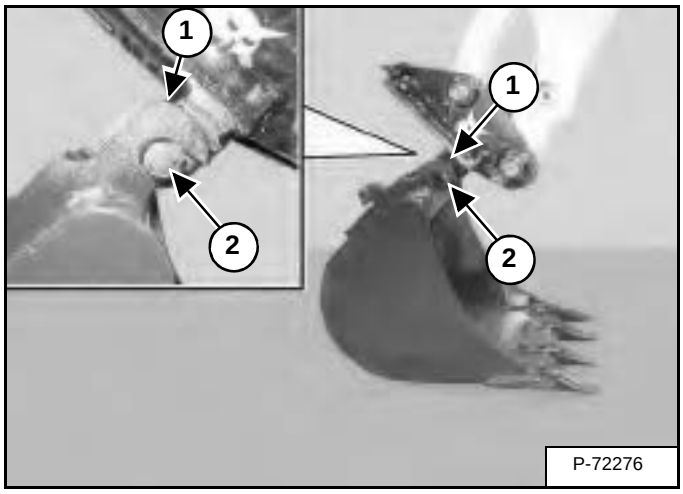
Figure 162



There must be at least 100° between the quick coupler surface (Item 1) and the attachment mounting surface (Item 2) **[Figure 162]**. 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 162]. Possible damage to the attachment hooks or the quick coupler could occur without proper clearance.

Figure 163

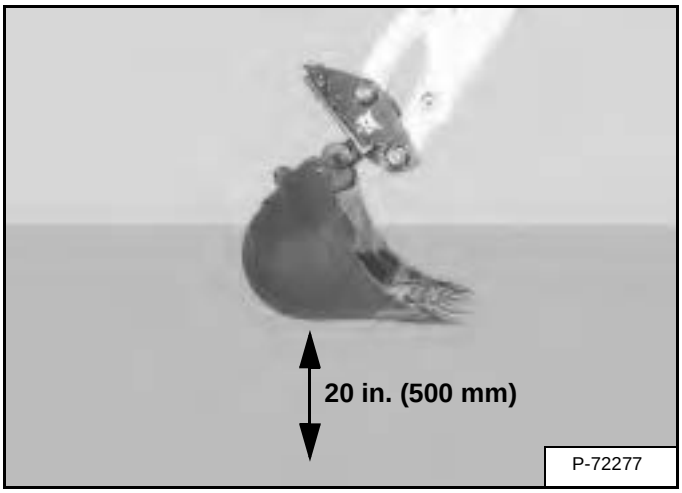


Raise the boom and extend the arm until the hooks of the attachment (Item 1) engage the pins (Item 2) **[Figure 163]** of the quick coupler.

Installation (Cont'd)

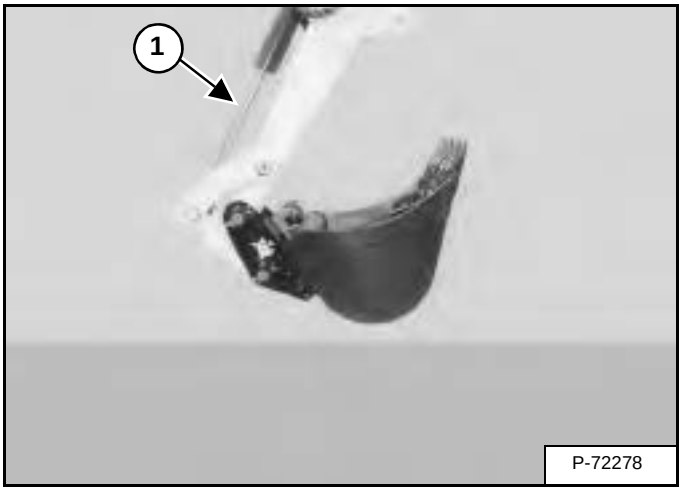
Bobcat Quick Coupler (BQC) Type K (Cont'd)

Figure 164



Raise the boom until there is approximately 20 in. (500 mm) of clearance between the bottom of the attachment and the ground **[Figure 164]**.

Figure 165

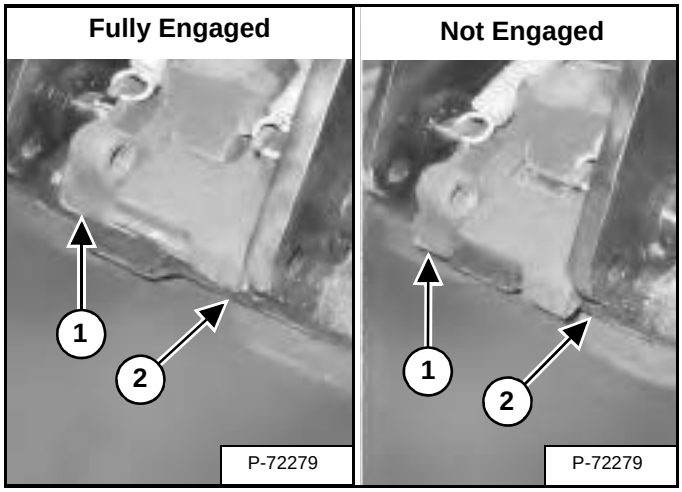


Extend the bucket cylinder (Item 1) **[Figure 165]** fully.

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 80.)

Figure 166



Visually inspect the quick coupler latch (Item 1) to the bucket mount (Item 2) **[Figure 166]**. 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.

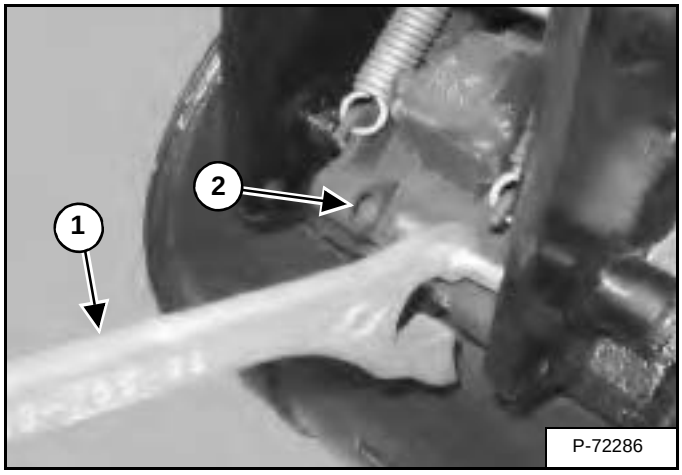
W-2541-1106

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Bobcat Quick Coupler (BQC) Type K (Cont'd)

Figure 167



If the latch is not engaged, install the tool (Item 1) in the hole (Item 2) **[Figure 167]** of the quick coupler and push down to unlatch the quick coupler. Remove the tool.

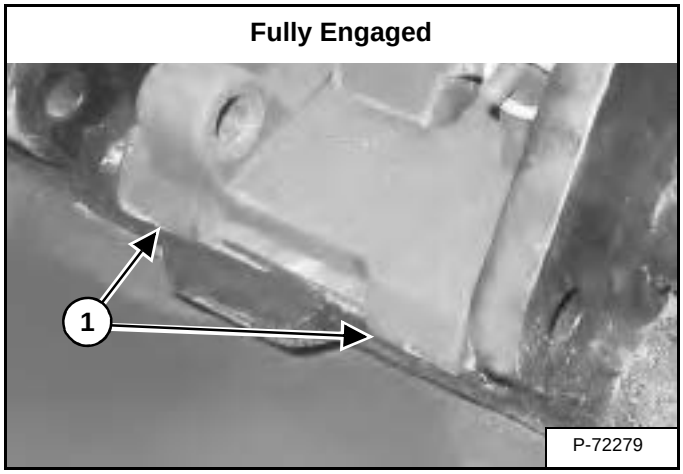
Enter the excavator. (See Entering And Exiting the Excavator on Page 80.)

Fasten the seat belt and start the engine.

Raise the attachment 20 in. (500 mm) 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 80.)

Figure 168



Again, visually inspect the quick coupler to make sure the latch (Item 1) **[Figure 168]** 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)

Bobcat Quick Coupler (BQC) Type SW

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.

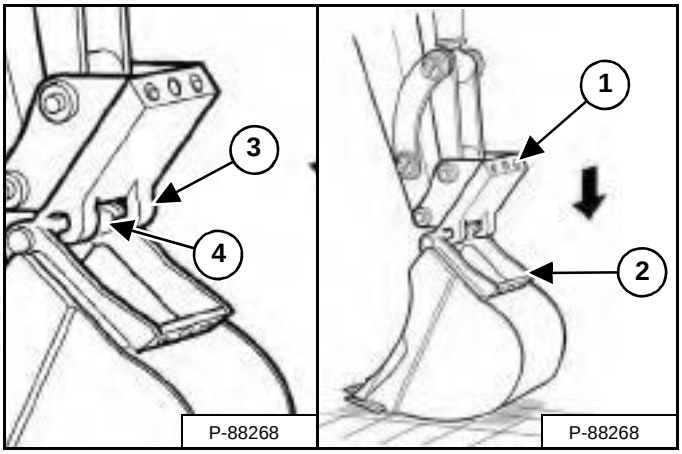
W-2052-0907

Enter the excavator. (See Entering And Exiting the Excavator on Page 80.)

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

Fully retract the bucket cylinder.

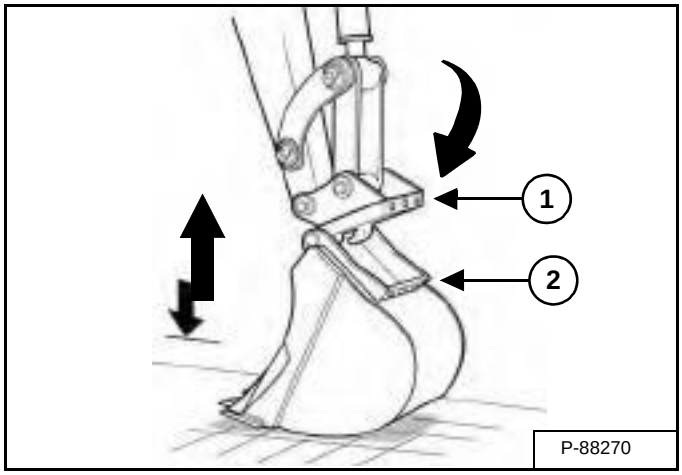
Figure 169



Lower the coupler (Item 1) onto the attachment (Item 2) **[Figure 169]**.

Engage the coupler hooks (Item 3) onto the mounting shaft (Item 4) **[Figure 169]**.

Figure 170



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 170]**.

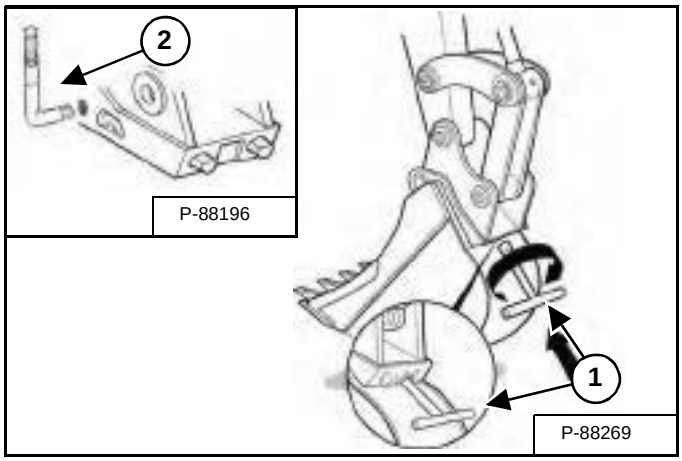
Stop the engine and exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

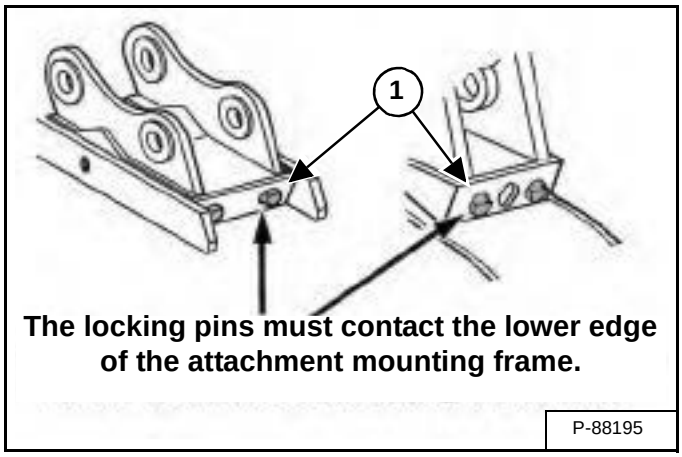
Bobcat Quick Coupler (BQC) Type SW (Cont'd)

Figure 171



Install the supplied wrench (Item 1) or (Item 2) **[Figure 171]** and turn clockwise until the locking pins are fully engaged.

Figure 172



The locking pins (Item 1) **[Figure 172]** 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.

Manual Spring Loaded Coupler (442 and 444 Only)

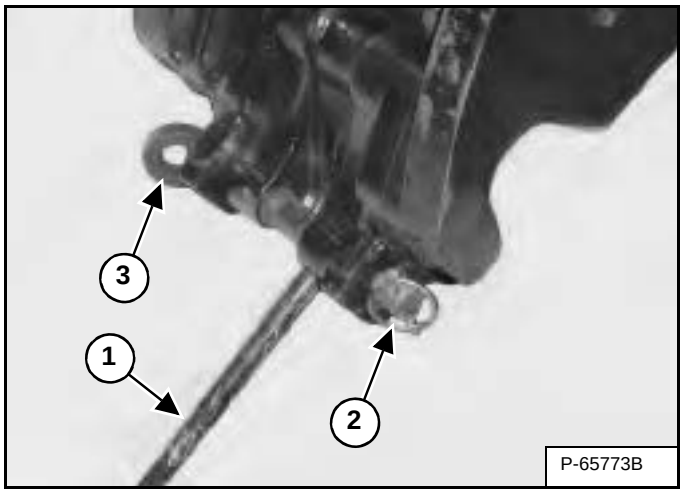
NOTE: Removal and installation of the bucket is shown. The procedure is the same for other attachments. Disconnect any hydraulic lines that are operated by hydraulic power before removing any attachments (breaker, direct drive auger, etc.).

⚠ 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 173

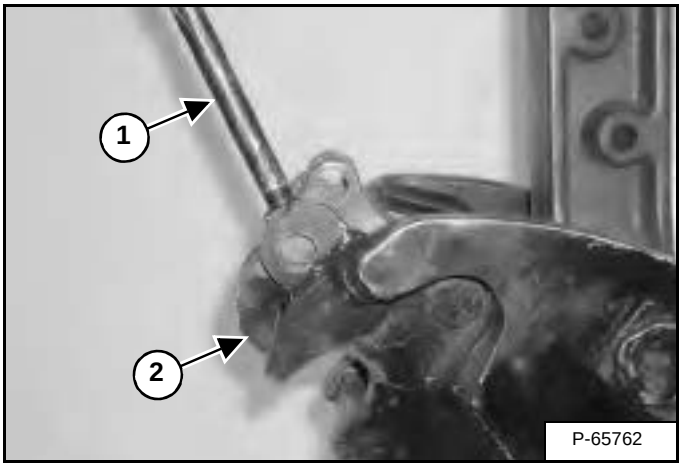


Insert the release bar (Item 1) into the manual spring loaded coupler. Remove the retainer pin (Item 2). Rotate the release bar (Item 1) upward slightly and remove the lock pin (Item 3) **[Figure 173]**.

Installation (Cont'd)

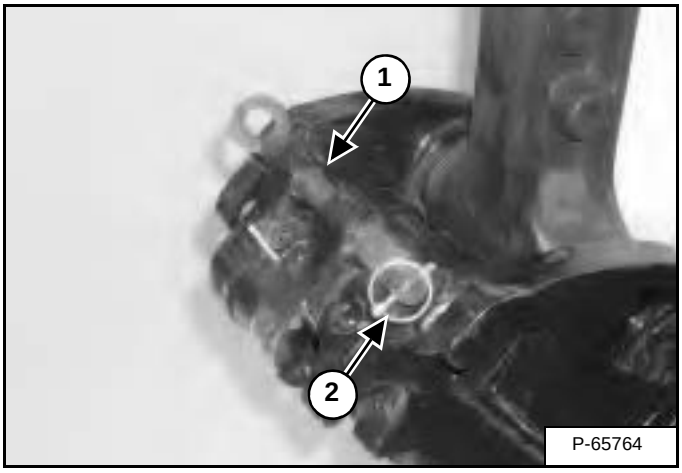
Manual Spring Loaded Coupler (442 and 444 Only) (Cont'd)

Figure 174



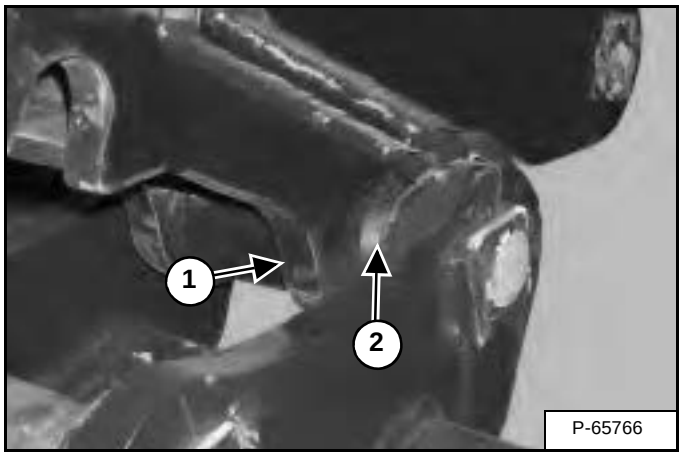
Using the release bar (Item 1), rotate the locking hooks (Item 2) **[Figure 174]** upwards to the unlock position.

Figure 175



Install the lock pin (Item 1) and retainer pin (Item 2) **[Figure 175]** to hold the locking hooks in the open position. Remove the release bar.

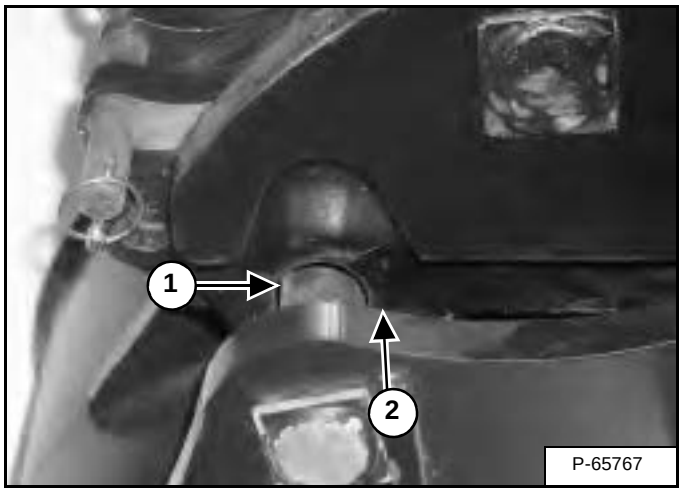
Figure 176



Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting the Excavator on Page 80.)

Position the front hooks (Item 1) over the front pin (Item 2) **[Figure 176]** of the attachment.

Figure 177



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 177]**.

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

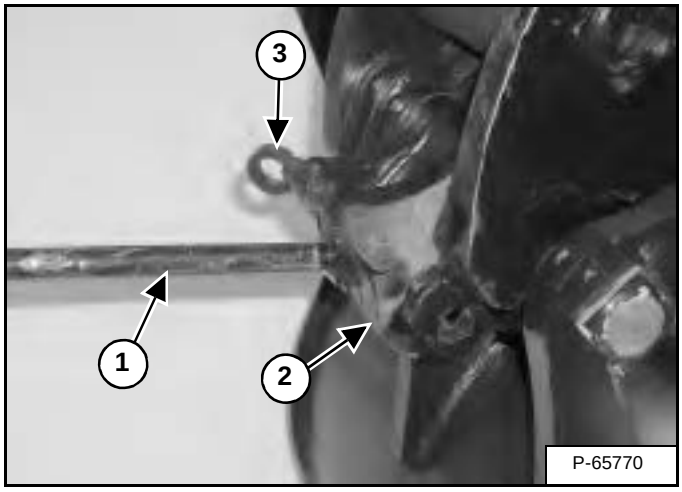
Stop the engine and exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

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

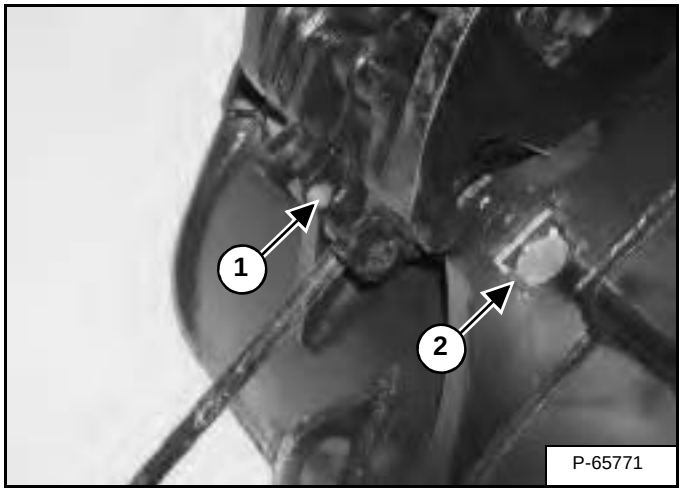
Figure 178



Reinsert the release bar (Item 1) and rotate the locking hooks (Item 2) **[Figure 178]** upwards slightly.

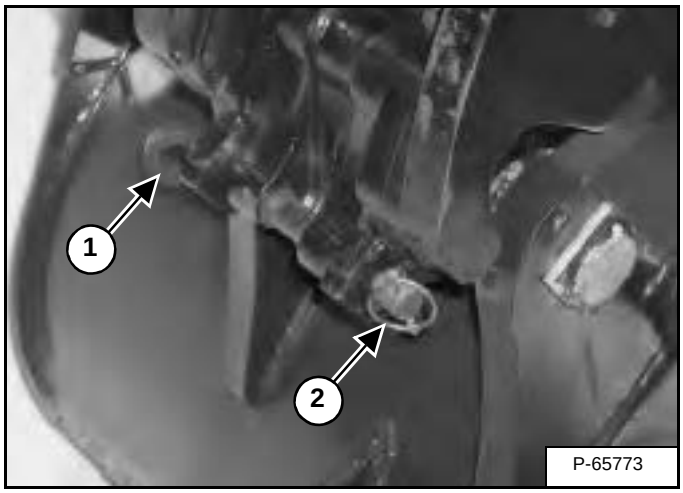
Remove the retainer pin and the locking pin (Item 3) **[Figure 178]**.

Figure 179



Rotate the locking hooks (Item 1) downward, cupping (engaging) the attachment pin (Item 2) **[Figure 179]**.

Figure 180



Install the locking pin (Item 1) and retainer pin (Item 2) **[Figure 180]** and remove the release bar.

Check for secure attachment. **Never operate without retainer pins (Item 2) [Figure 180] installed.**

⚠ WARNING

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

W-2119-0788

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 102.)

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 46 ft.-lb. (63 N•m) torque before starting the excavator.

Enter the excavator. (See Entering And Exiting the Excavator on Page 80.)

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.**

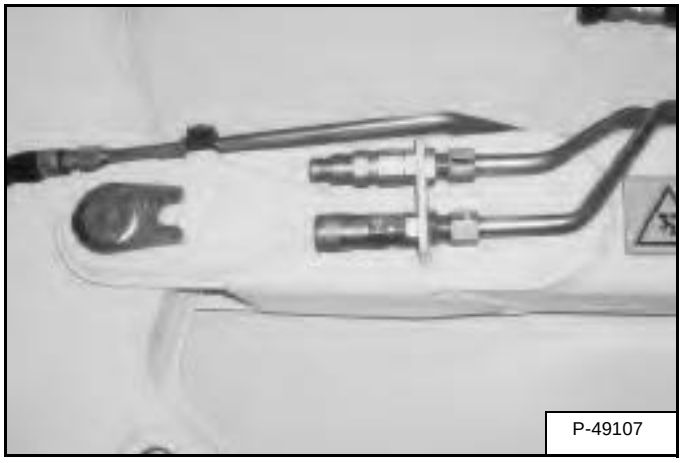
I-2278-0608

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 181



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 (E80 and E60 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 181]**.

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 101.) 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)

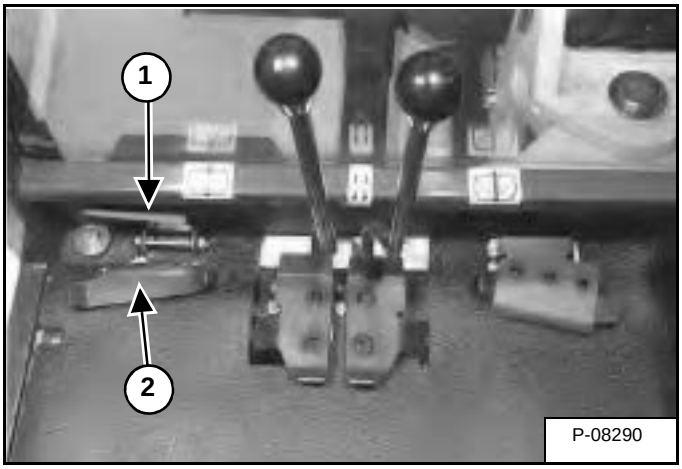
Control Functions

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 182

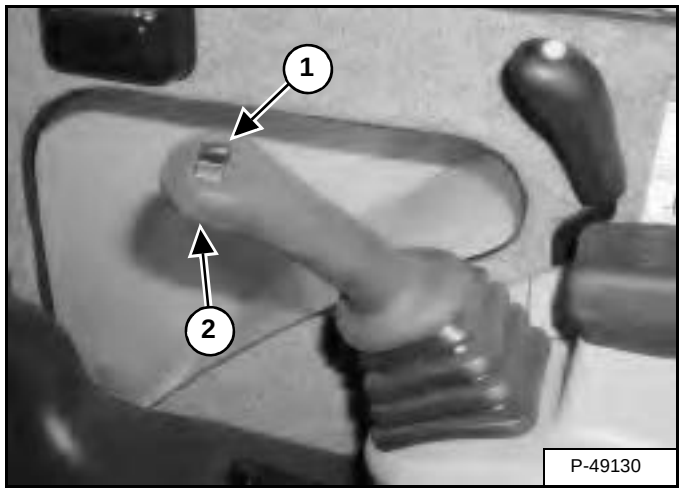


Raise the pedal lock / footrest (Item 1) to operate the auxiliary operation pedal (Item 2) **[Figure 182]**. Push the pedal to the right to pressurise the female coupler (breaker starts).

Later Models

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

Figure 183



Move the switch (Item 1) **[Figure 183]** on the right control lever to the right to pressurise the female coupler (breaker starts).

Press the front switch (Item 2) **[Figure 183]** on the front of the right control lever to give the quick couplers a continuous flow of fluid to the female coupler.

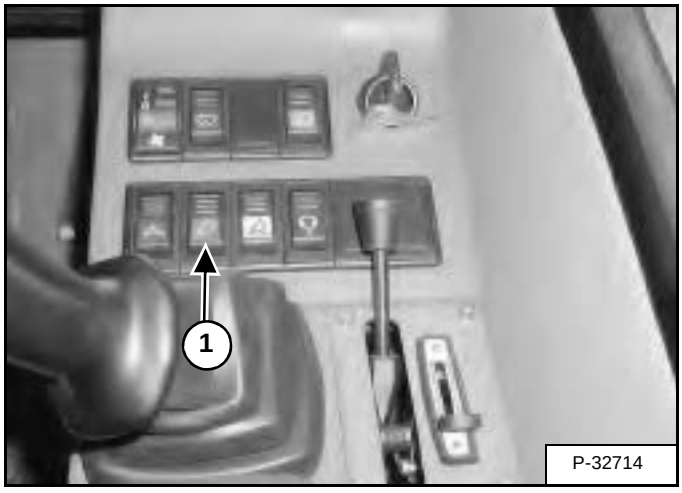
To release from continuous operation, press the front switch (Item 2) **[Figure 183]** a second time.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Control Functions (Cont'd)

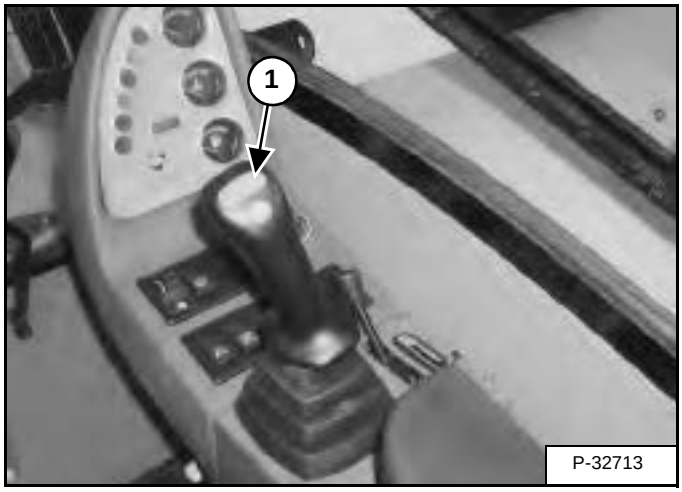
442 And 444 Excavator Auxiliary Hydraulics

Figure 184



Press the switch (Item 1) **[Figure 184]**. The switch will be illuminated.

Figure 185



Press and hold the switch (Item 1) **[Figure 185]** to provide hydraulic flow to the hydraulic breaker.

Release the switch to stop hydraulic flow.

316 Excavator Auxiliary Hydraulics

Figure 186

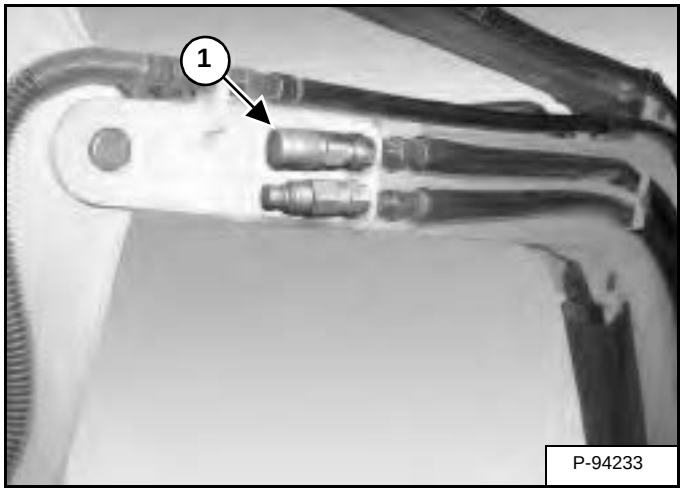
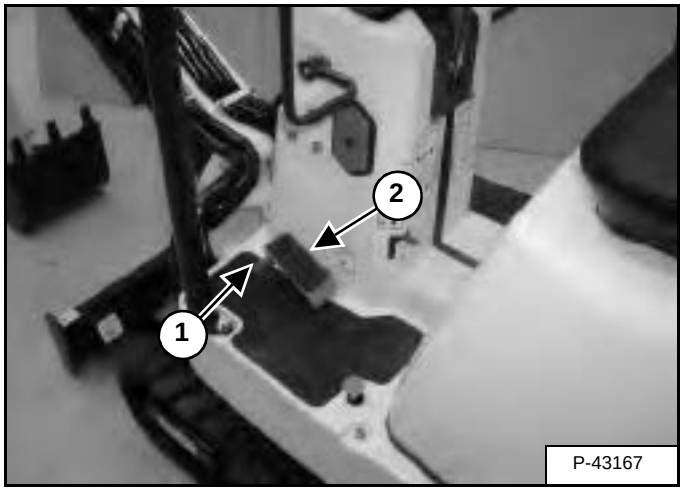


Figure 187



Pull the locking pin out (Item 1) **[Figure 187]** to allow the pedal to pivot.

Press the auxiliary Hydraulics Pedal (Item 2) **[Figure 187]** to provide hydraulic pressure to the top hydraulic line (Item 1) **[Figure 186]**. 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.

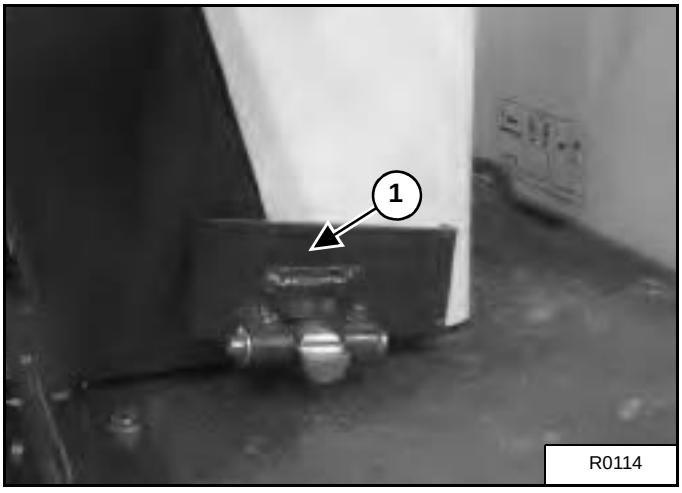
Only the top auxiliary line is pressurised. The bottom line is for return oil flow.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Control Functions (Cont'd)

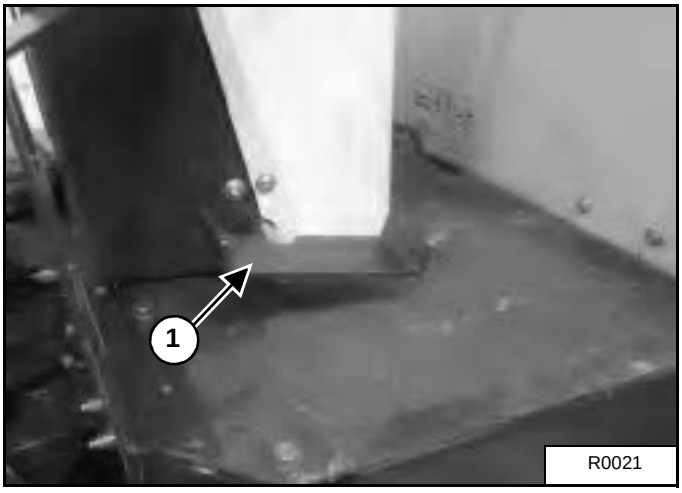
E08 And E10 Excavator Auxiliary Hydraulics

Figure 188



Rotate the auxiliary pedal (Item 1) **[Figure 188]** down.

Figure 189



Press the front of the auxiliary Hydraulics Pedal (Item 1) **[Figure 189]** to provide hydraulic pressure to the top hydraulic line (Item 1) **[Figure 186]**. 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 Auxiliary Hydraulics

Figure 190

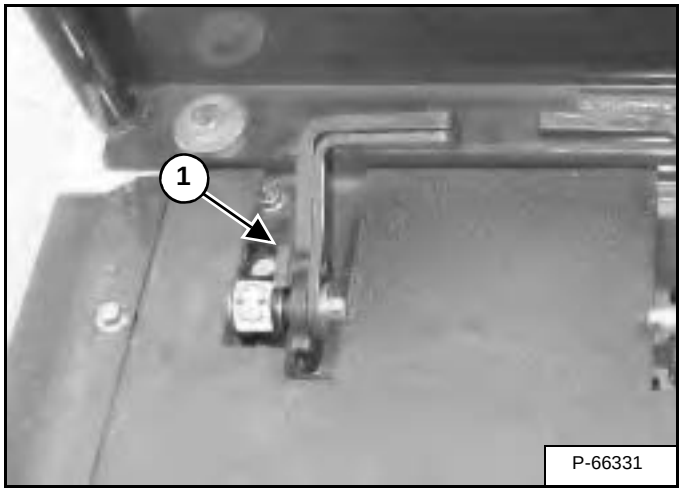
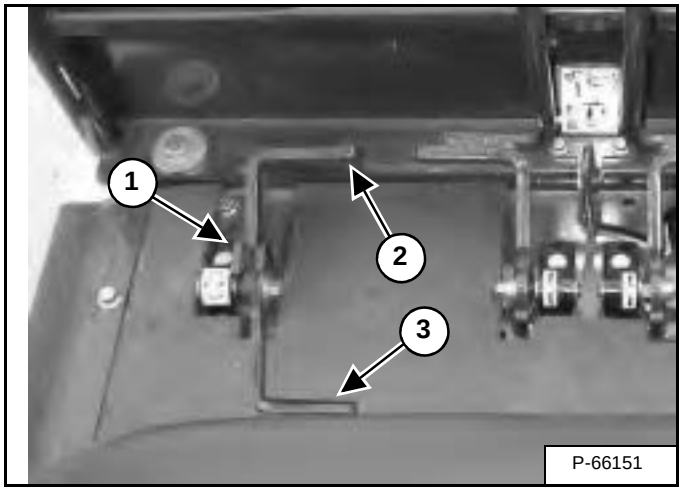


Figure 191



The left pedal **[Figure 190]** and **[Figure 191]** controls hydraulic flow to attachments (such as a hydraulic breaker) when mounted on the arm.

Release the pedal lock (Item 1) **[Figure 190]** 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 191]** to activate hydraulic pressure / flow to the male coupler.

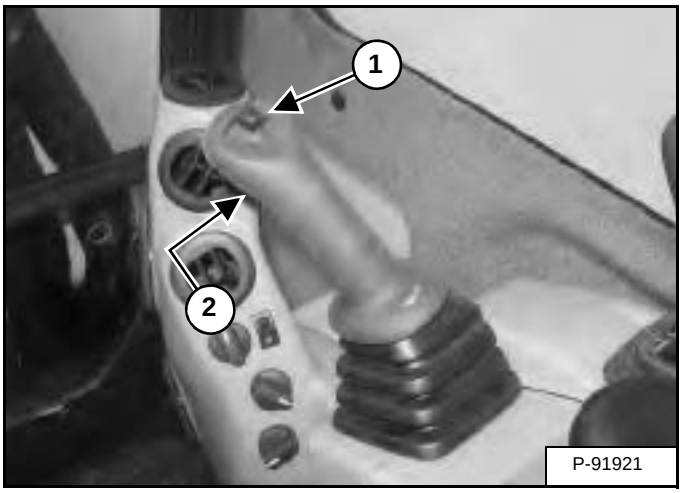
OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Control Functions (Cont'd)

E32, E35, E45 And E50 Auxiliary Hydraulics

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

Figure 192



Move the switch (Item 1) **[Figure 192]** on the right control to the right to pressurise the female coupler (breaker starts).

Press the switch (Item 2) **[Figure 192]** on the front of the handle to provide constant flow to the female coupler.

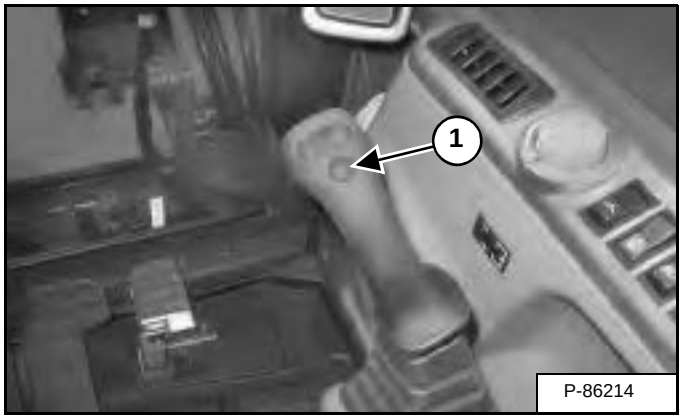
Press the switch (Item 2) **[Figure 192]** a second time to stop auxiliary flow to the quick couplers.

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 Machine / Attachment Setup on Page 79.)

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 193



Press and hold the auxiliary hydraulics button (Item 1) **[Figure 193]** on the right joystick to supply hydraulic flow / pressure to the female coupler.

Release the button (Item 1) **[Figure 193]** 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 20 feet (6 m) away from equipment when operating.**

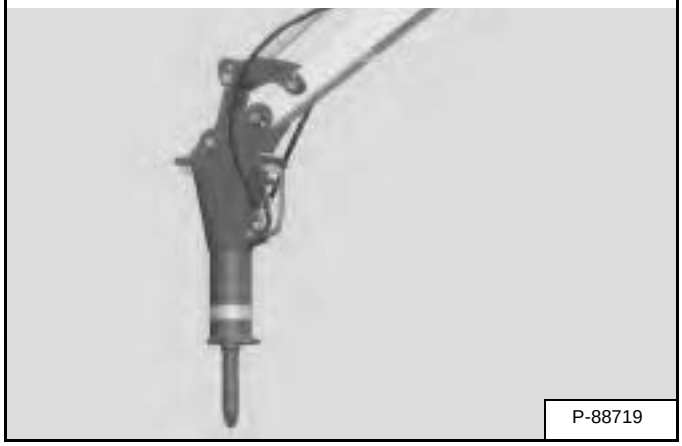
W-2627-0305

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 oil. 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 194

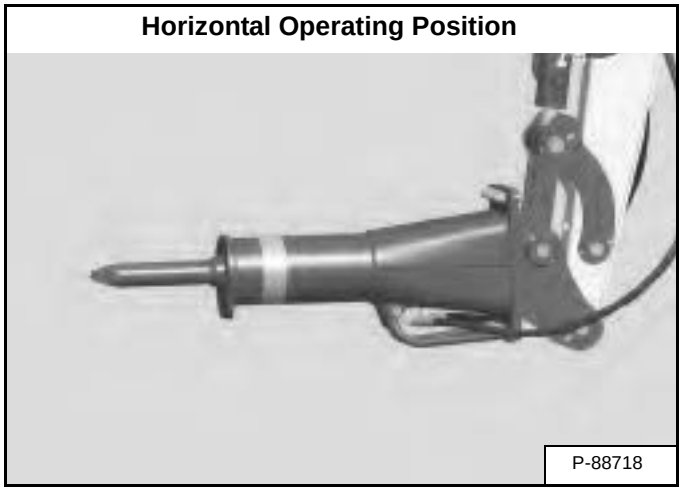
Vertical Operating Position



When operating in the vertical position **[Figure 194]**, 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 195

Horizontal Operating Position



When operating in the horizontal position **[Figure 195]**, 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 20 feet (6 m) away from equipment when operating.**

W-2627-0305

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, 6 - 10 in. (152 - 254 mm) 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 towards 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.

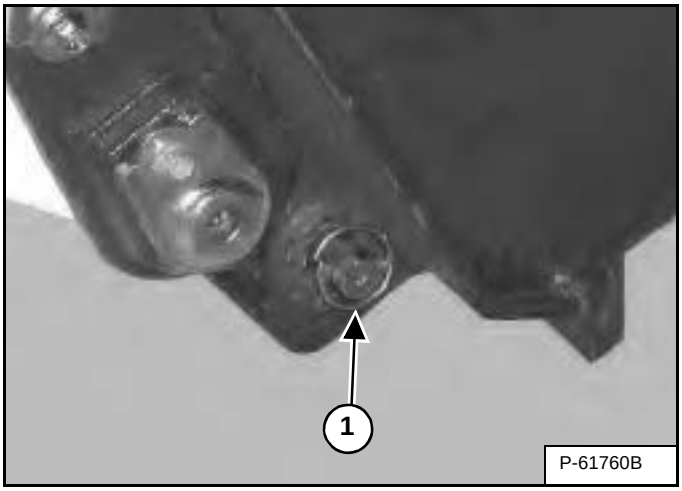
Position the arm vertically, lower the breaker to the ground. Stop the engine.

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 80.)

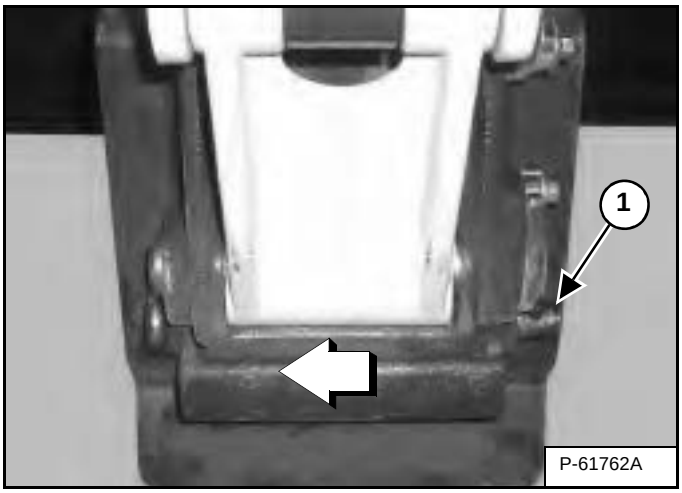
Disconnect the auxiliary couplers. (See Hydraulic Quick Couplers on Page 102.)

Figure 196



Remove the retainer pin (Item 1) **[Figure 196]**.

Figure 197



Drive the pin (Item 1) **[Figure 197]** out of the breaker and X-Change Mount.

⚠ WARNING

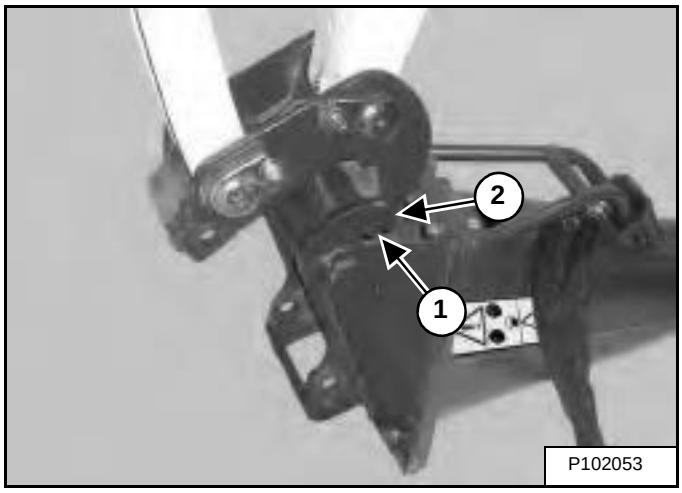
AVOID INJURY OR DEATH

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

Figure 198



Enter the excavator. (See Entering And Exiting the Excavator on Page 80.)

Start the engine.

Lift the boom approximately 12 in. (305 mm) and fully retract the bucket cylinder to disengage the breaker **[Figure 198]**.

Lower the boom until the X-Change pins (Item 1) are clear of the hooks (Item 2) **[Figure 198]**.

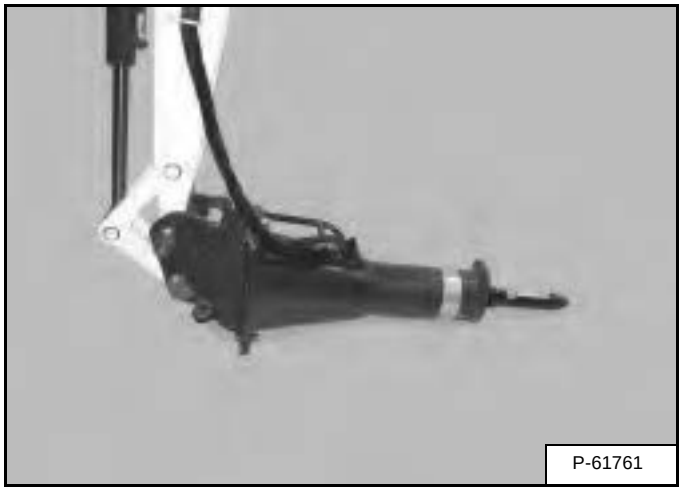
Move the arm toward the excavator until the X-Change pins are clear of the breaker.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Bolt-On X-Change

Figure 199



Select a flat and level surface.

Position the arm vertically and but the breaker on the ground **[Figure 199]**.

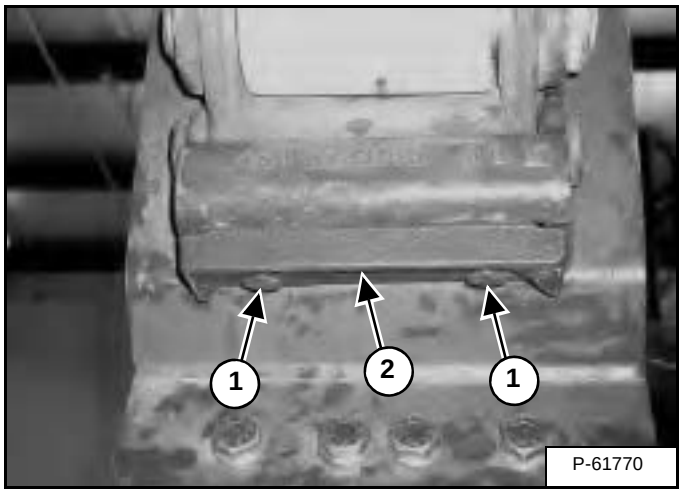
Stop the engine.

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 80.)

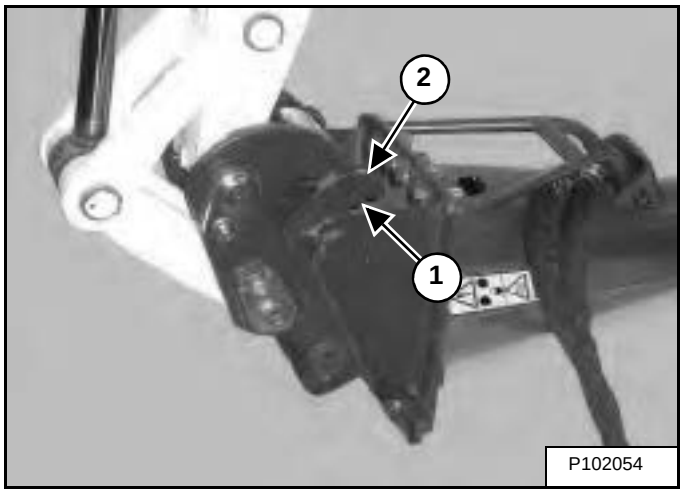
Disconnect the auxiliary couplers. (See Hydraulic Quick Couplers on Page 102.)

Figure 200



Remove the two bolts (Item 1) and plate (Item 2) **[Figure 200]**.

Figure 201

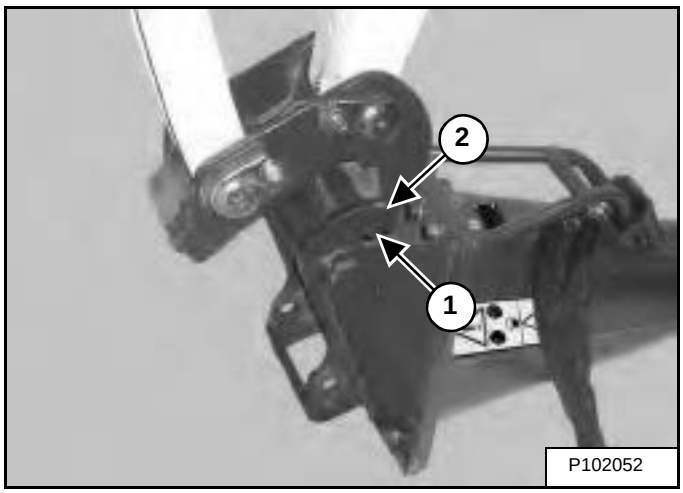


Enter the excavator. (See Entering And Exiting the Excavator on Page 80.)

Start the engine.

Raise the boom approximately 12 in. (305 mm) until the X-Change pins (Item 1) engage the hooks (Item 2) **[Figure 201]** on the breaker.

Figure 202



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 202]**.

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.

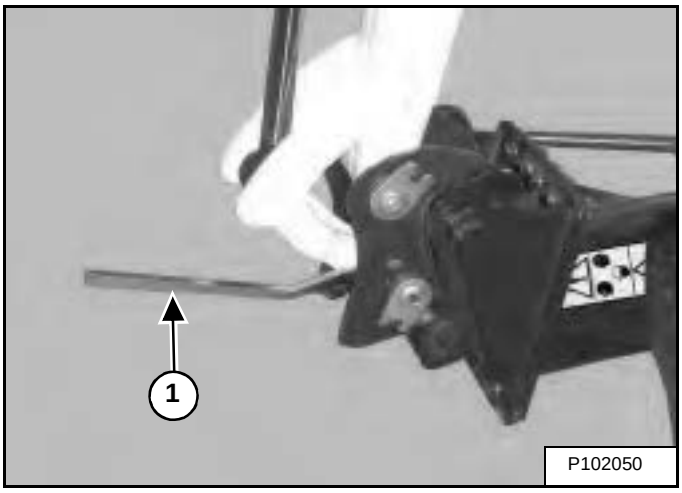
Position the arm vertically, lower the breaker to the ground. Stop the engine.

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 80.)

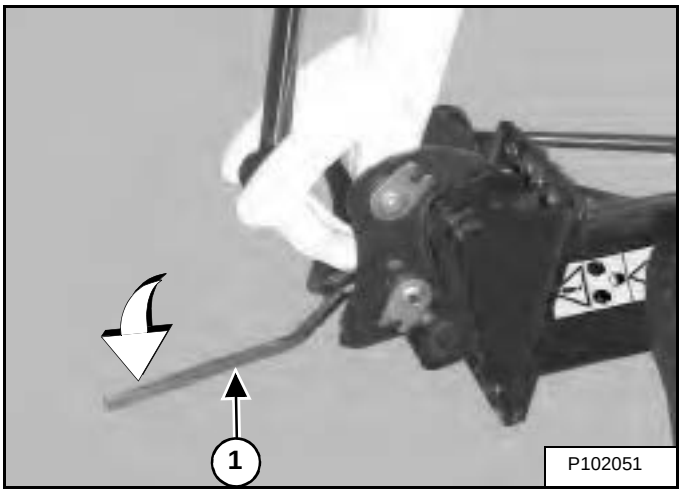
Disconnect the auxiliary couplers. (See Hydraulic Quick Couplers on Page 102.)

Figure 203



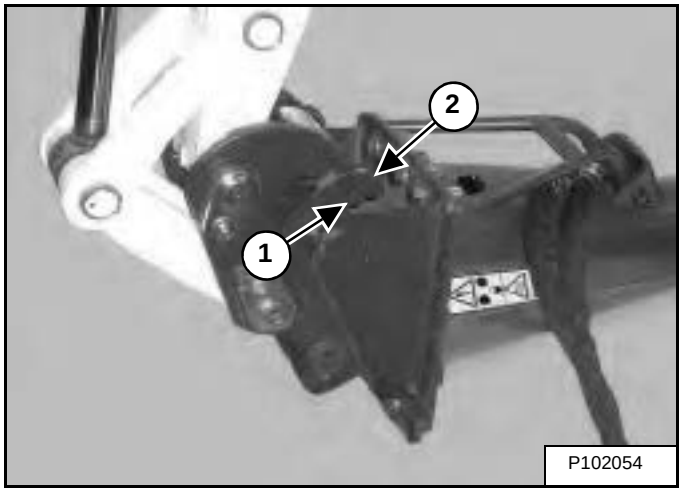
Install the X-Change tool (Item 1) **[Figure 203]** in the latch.

Figure 204



Pull the lever (Item 1) **[Figure 204]** away from the excavator, to unlock the latch. Remove the tool.

Figure 205



Start the excavator. Lift the boom approximately 12 in. (305 mm), until the X-Change pins (Item 1) engage the hooks (Item 2) **[Figure 205]** on the breaker.

⚠ WARNING

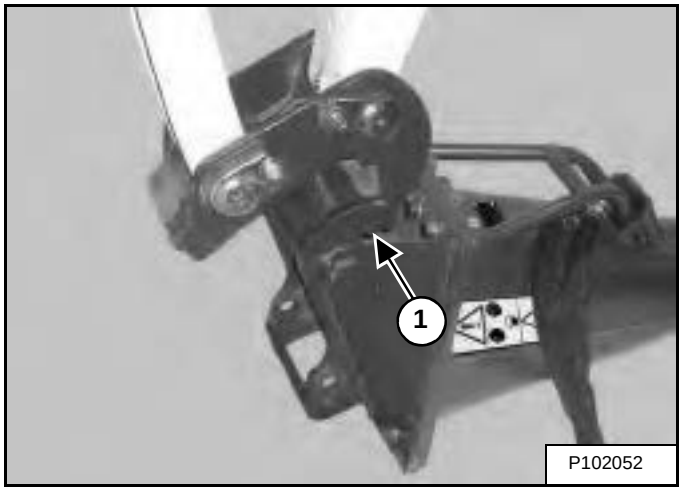
Keep all bystanders 20 feet (6 m) away from equipment when operating. Contact with moving parts, a trench cave-in or flying objects can cause injury or death.

W-2119-0788

Removal (Cont'd)

X-Change System (Cont'd)

Figure 206



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 206]** 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.

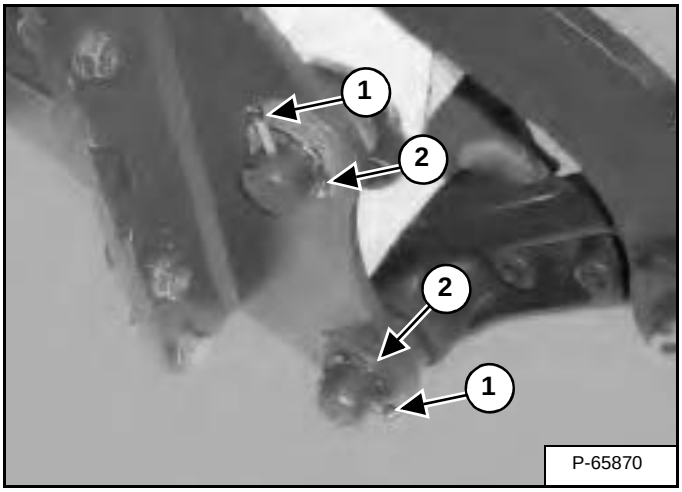
Relieve hydraulic pressure. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

Exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

Disconnect the auxiliary couplers.

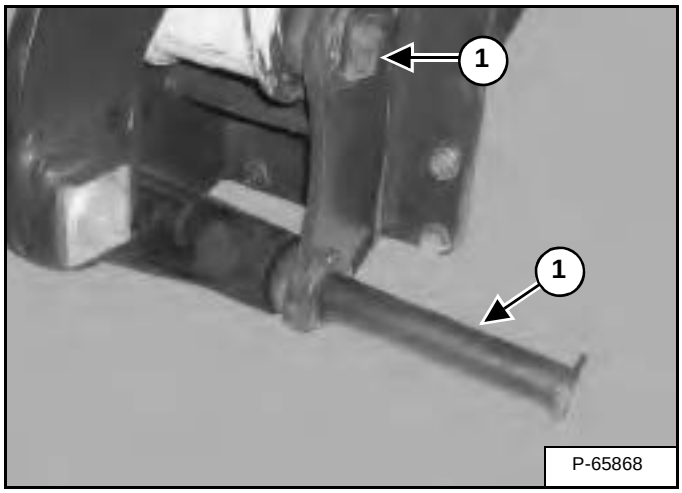
Disconnect the hoses from the auxiliary couplers. (See Hydraulic Quick Couplers on Page 102.)

Figure 207



Remove the retainer pins (Item 1) and the washers (Item 2) **[Figure 207]**.

Figure 208



Remove the two pins (Item 1) **[Figure 208]**.

Enter the excavator. (See Entering And Exiting the Excavator on Page 80.)

Start the excavator, 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, E32, E35, E45 And E50 Excavators)

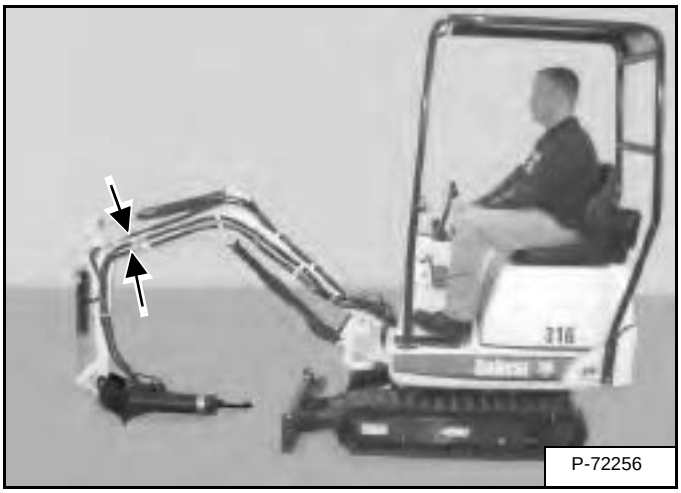
Park the excavator on a flat surface and place the breaker flat on the ground.

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

Stop the engine.

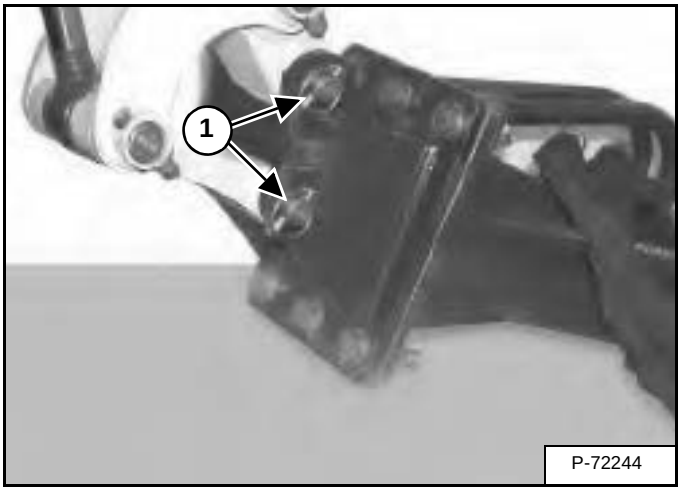
Exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

Figure 209



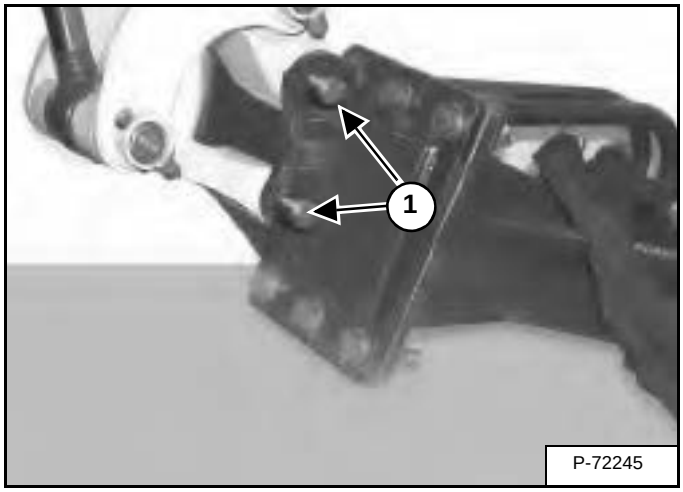
Disconnect the hoses from the auxiliary couplers **[Figure 209]**.

Figure 210



Remove the retaining clips (Item 1) **[Figure 210]**.

Figure 211



Remove the two pivot pins (Item 1) **[Figure 211]**.

Do not damage the dust seals in the arm.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

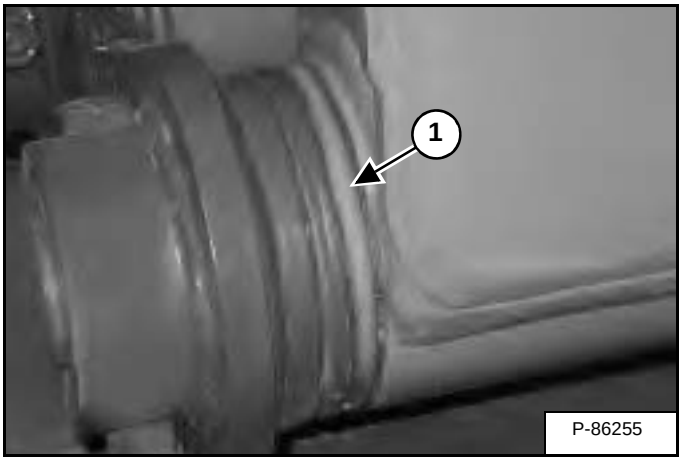
Pin-On Attachment (E55W, E60, E80 Excavators)

Park the excavator on a flat surface and lower the attachment fully.

Stop the engine.

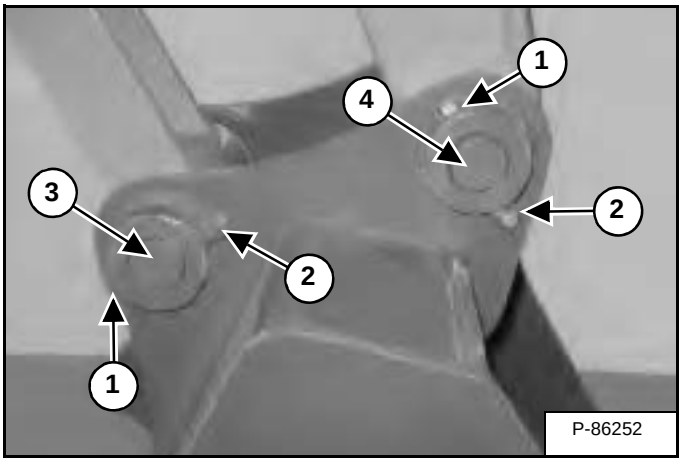
Exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

Figure 212



Position the four O-rings (Item 1) **[Figure 212]** into the storage groove of the attachment so they do not get damaged during removal.

Figure 213



Remove the retainer bolts (Item 1) and nuts (Item 2) **[Figure 213]**.

Remove the pins (Items 3 and 4) **[Figure 213]**.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Bobcat Quick Coupler (BQC) Type K

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 80.)

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.).

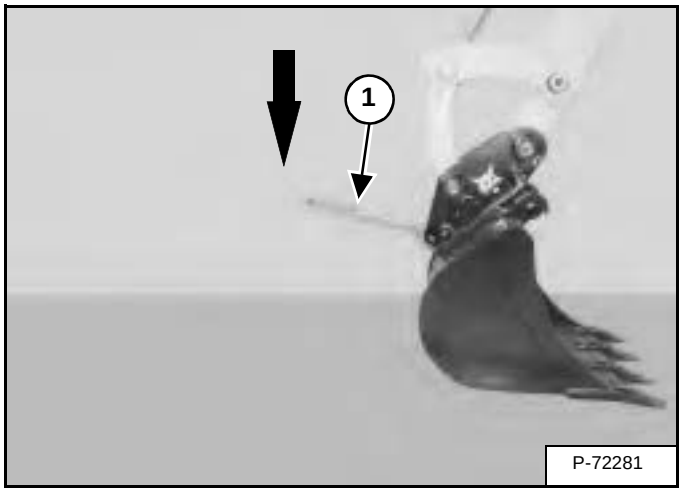
⚠ WARNING

AVOID INJURY

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

W-2541-1106

Figure 214



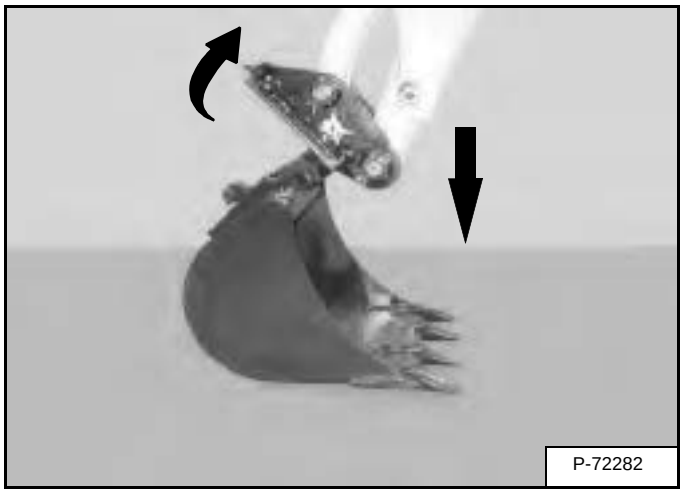
Install the quick coupler tool (Item 1) **[Figure 214]** into the hole in the quick coupler.

Push down on the tool (Item 1) **[Figure 214]** to unlock the latch.

Remove the tool.

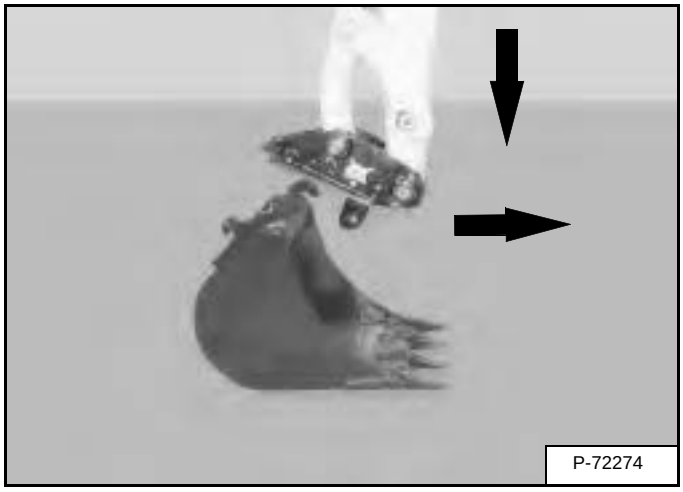
Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting the Excavator on Page 80.)

Figure 215



Retract the bucket cylinder fully and lower the boom **[Figure 215]**.

Figure 216



Continue to lower the boom and move the arm towards the excavator away from the attachment **[Figure 216]**.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

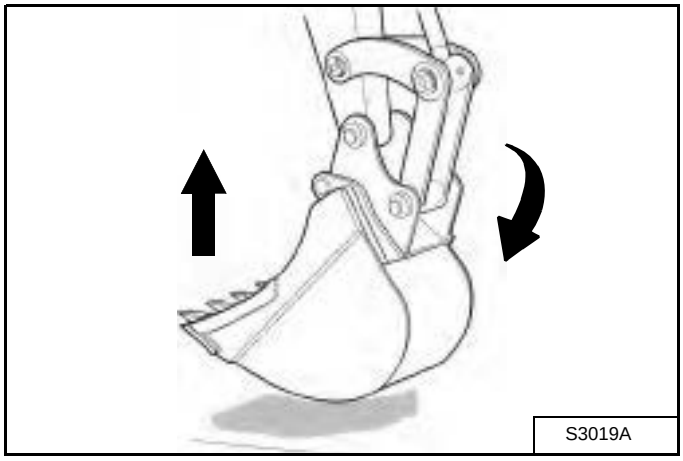
Removal (Cont'd)

Bobcat Quick Coupler (BQC) Type SW

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 217

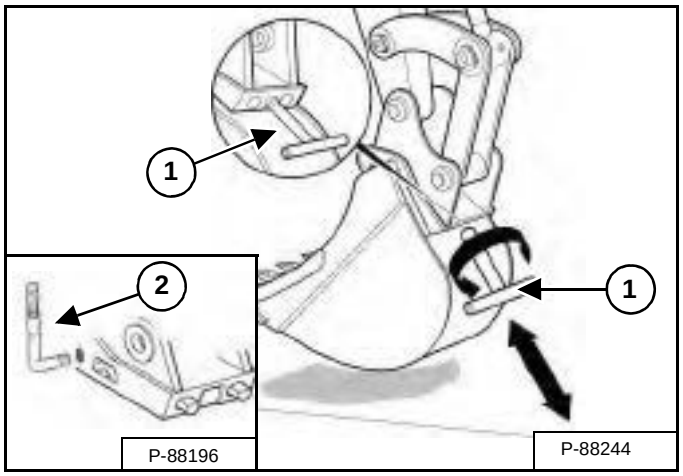


Raise the boom and extend the bucket cylinder until the attachment is slightly off the ground **[Figure 217]**.

Engage the parking brake.

Stop the engine and exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

Figure 218

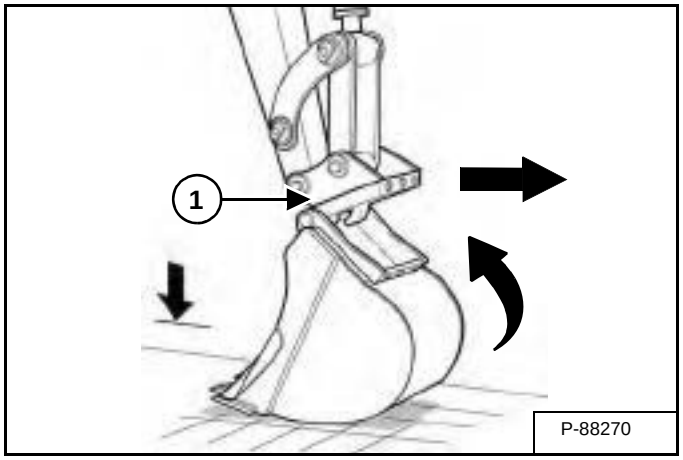


Install the supplied wrench (Item 1) or (Item 2) **[Figure 218]** and turn anticlockwise until the locking pins are disengaged. Remove the wrench.

Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting the Excavator on Page 80.)

Lower the attachment to the ground.

Figure 219



Retract the bucket cylinder to rotate the coupler (Item 1) **[Figure 219]** out of the attachment mounting frame.

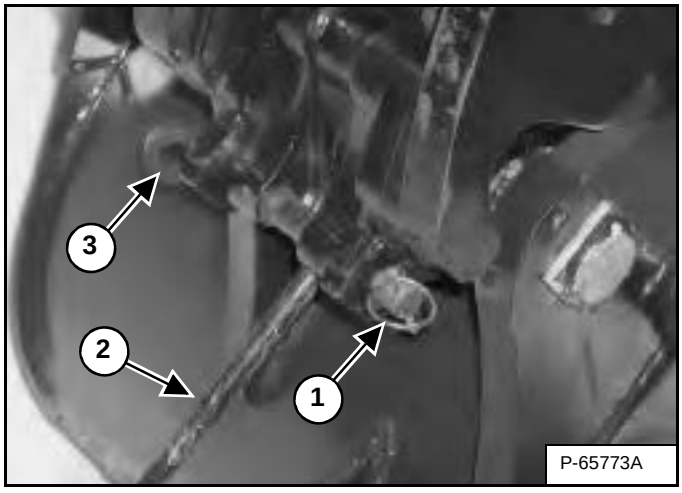
Move the arm out and raise the boom until the coupler is clear of the attachment mounting frame **[Figure 219]**.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Manual Spring Loaded Coupler (442 And 444 Only)

Figure 220



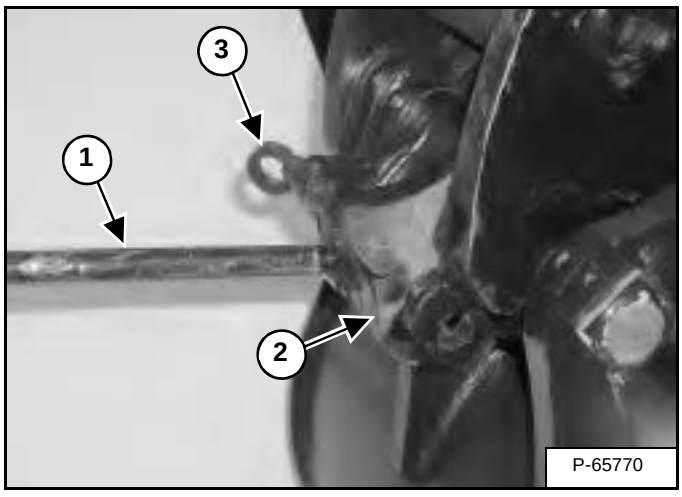
Position the attachment flat on the ground.

Stop the engine and exit the excavator. (See Entering And Exiting the Excavator on Page 80.)

Remove the retainer pin (Item 1) **[Figure 220]**.

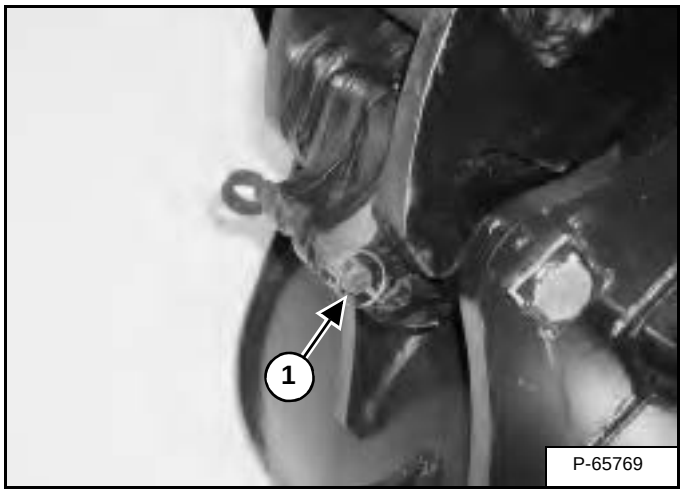
Insert the release bar (Item 2) and rotate the release bar upward slightly and remove the locking pin (Item 3) **[Figure 220]**.

Figure 221



Using the release bar (Item 1), rotate the locking hooks (Item 2) upwards to the unlock position and install the locking pin (Item 3) **[Figure 221]**.

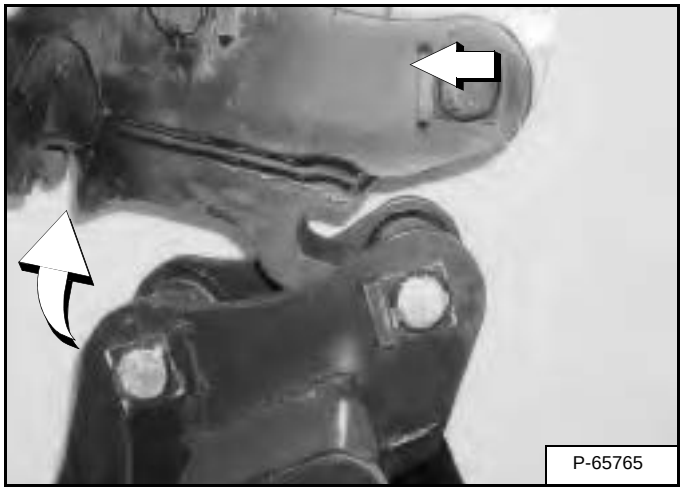
Figure 222



Install the retainer pin (Item 1) **[Figure 222]** to hold the locking hooks in the open position. Remove the release bar.

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

Figure 223



Retract the bucket cylinder and move the arm forward until the manual spring loaded coupler is clear of the attachment **[Figure 223]**.

OPERATING PROCEDURE WITH MINI LOADERS

Approved Mini Loader Models & Requirements

Figure 224

MINI LOADER MODEL	HB SERIES BREAKER						
	280	380	580	680	880	980	1180
MT 55				X			

X = Approved

The chart **[Figure 224]** shows the hydraulic breaker models approved for use with each mini loader model.

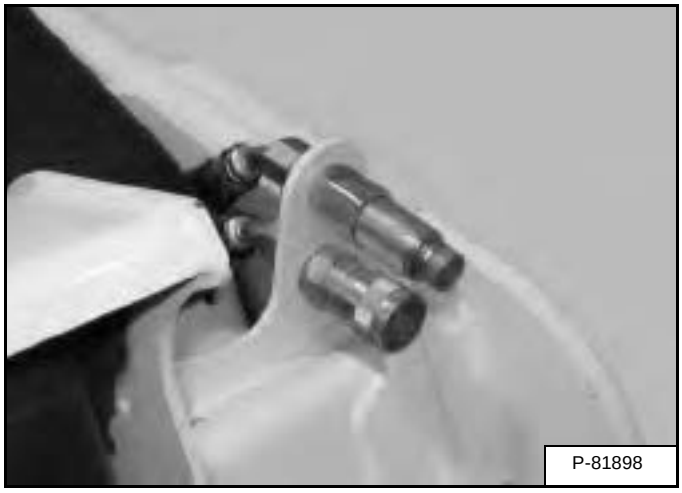
Warranty on this attachment is void if used on a non-approved carrier. See your Bobcat dealer for a current list of approved carriers.

⚠ 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 225



The mini loader must be equipped with front auxiliary hydraulics **[Figure 225]**.

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.

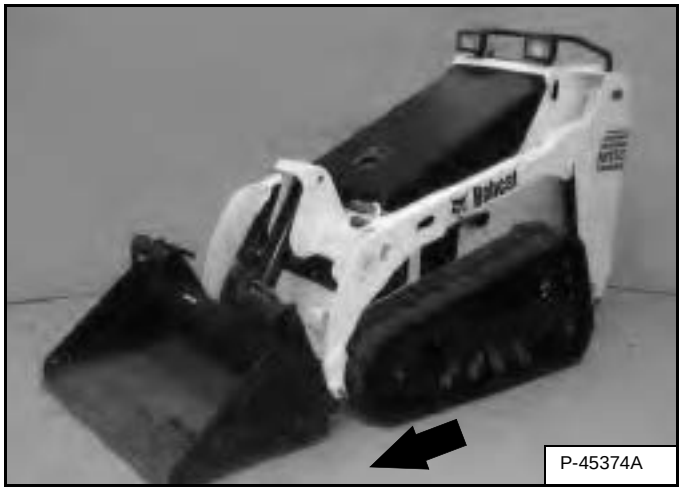
Engage the parking brake and place all controls in neutral.

See the mini loader's Operation & Maintenance Manual for detailed information on operating the mini loader.

Entering And Leaving The Operator's Position (Cont'd)

Leaving

Figure 226



Stop the mini loader on level ground.

Lower the lift arms and put the attachment flat on the ground **[Figure 226]**.

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.

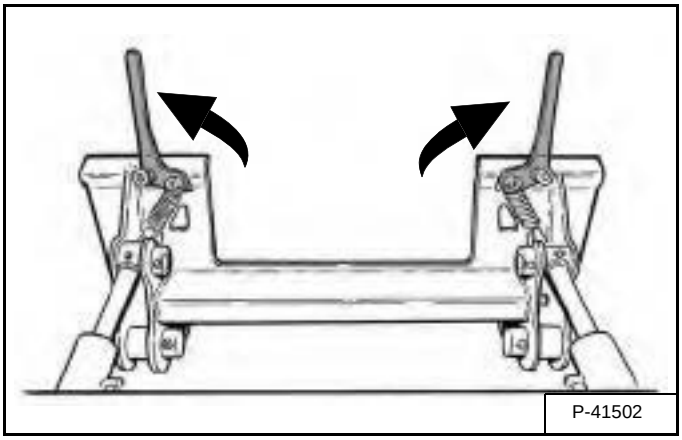
⚠ WARNING

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 48.)

Figure 227

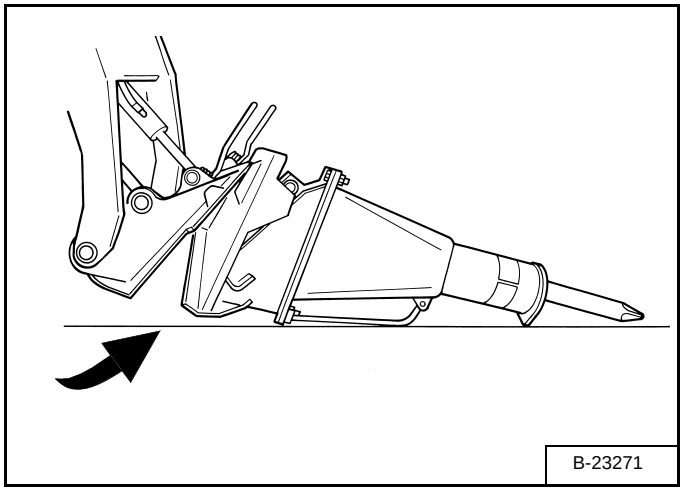


Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) **[Figure 227]**.

Move to the operator's position. (See Entering And Leaving The Operator's Position on Page 120.)

Start the engine and release the parking brake.

Figure 228



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 228]**.

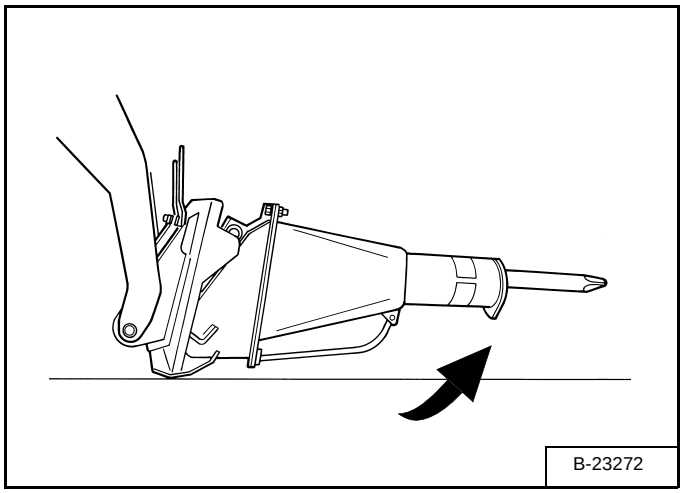
NOTE: Be sure the Bob-Tach levers do not hit the attachment.

OPERATING PROCEDURE WITH MINI LOADERS (CONT'D)

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 229



Tilt the Bob-Tach backward until the attachment is slightly off the ground **[Figure 229]**. 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 120.)

⚠ WARNING

AVOID INJURY OR DEATH

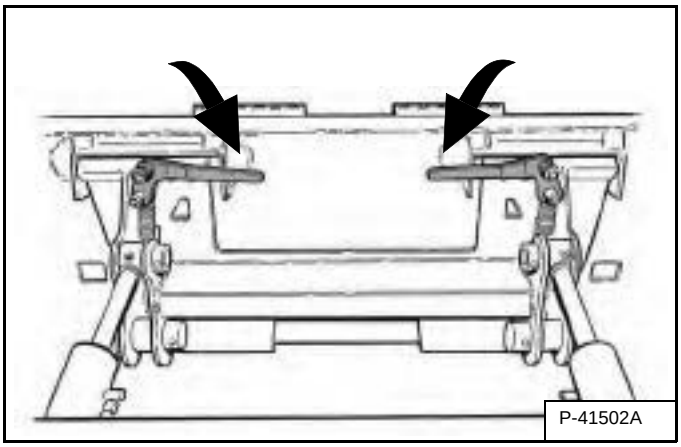
Before you leave the operator's position:

- **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 230



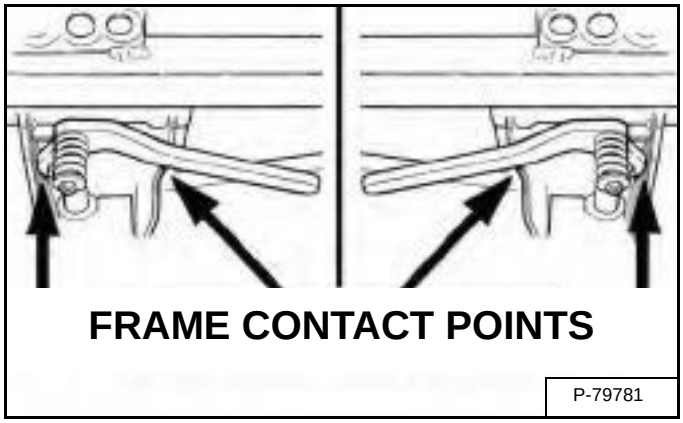
Push down on the Bob-Tach levers until they are fully engaged in the locked position **[Figure 230]** (wedges fully extended through the attachment mounting frame holes).

OPERATING PROCEDURE WITH MINI LOADERS (CONT'D)

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 231



Both levers must contact the frame as shown when locked **[Figure 231]**.

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

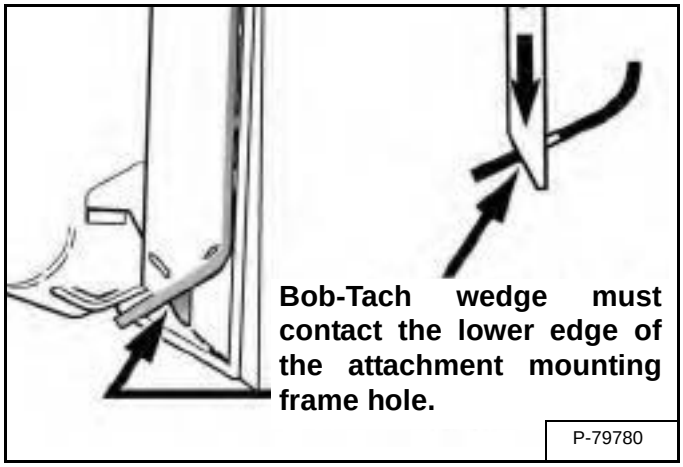
⚠ WARNING

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 232



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach **[Figure 232]**.

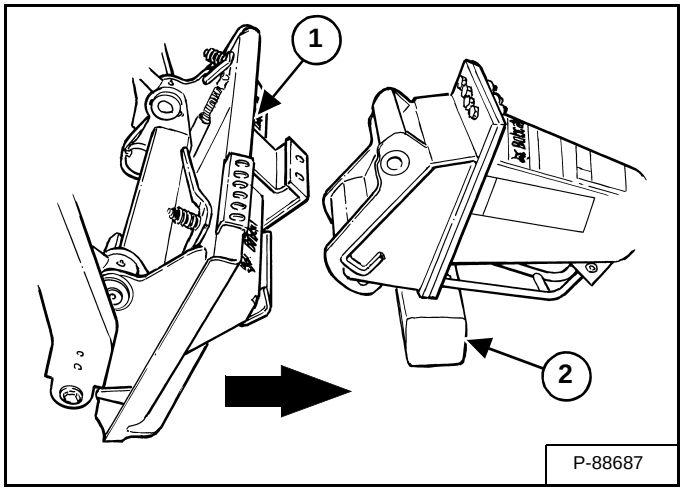
Connect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 128.)

OPERATING PROCEDURE WITH MINI LOADERS (CONT'D)

Installation (Cont'd)

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

Figure 233



Install the breaker mount (Item 1) **[Figure 233]** on the mini loader.

Place the breaker on a block (Item 2) **[Figure 233]**.

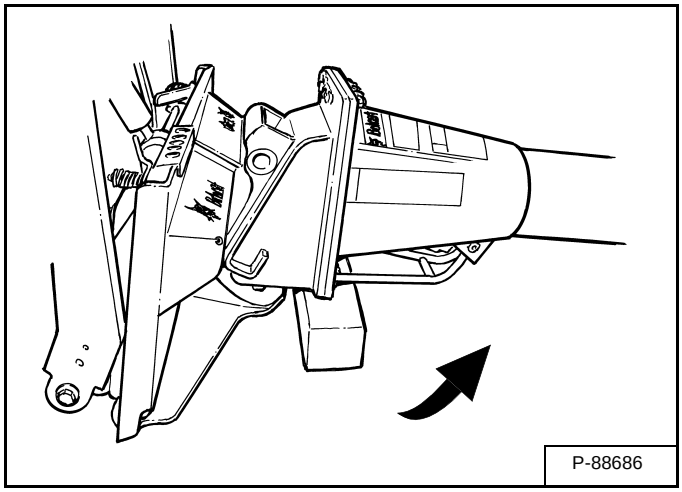
Enter the operator's position. (See Entering And Leaving The Operator's Position on Page 120.)

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 233]**.

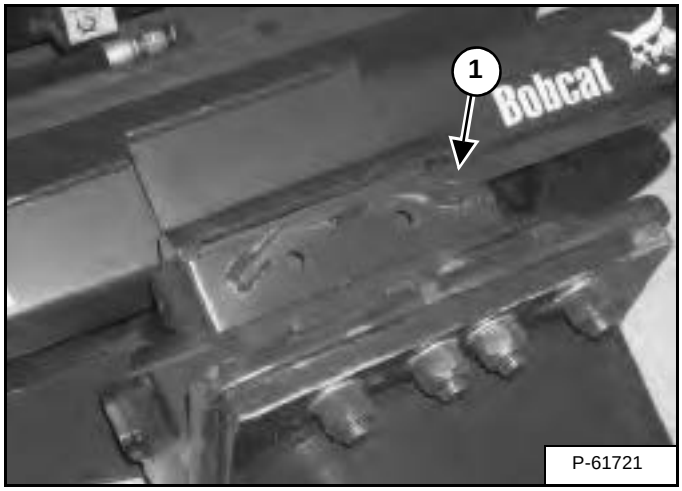
Figure 234



Tilt the Bob-Tach backward until the breaker is slightly off the ground **[Figure 234]**.

Stop the engine, engage the parking brake and leave the operator's position.

Figure 235

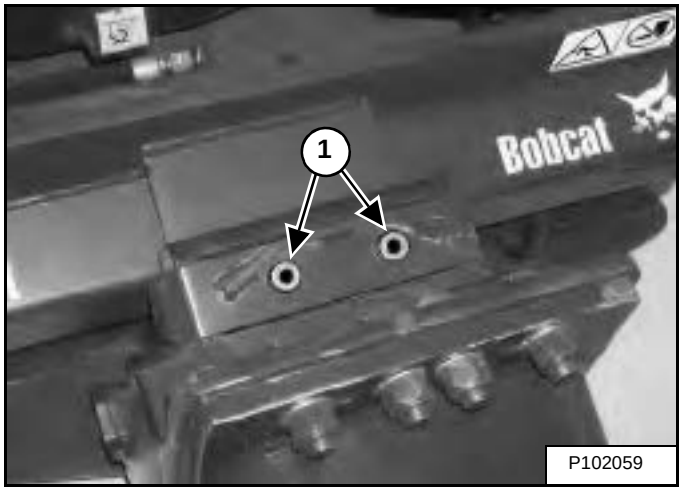


Install the plate (Item 1) **[Figure 235]**.

Installation (Cont'd)

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

Figure 236

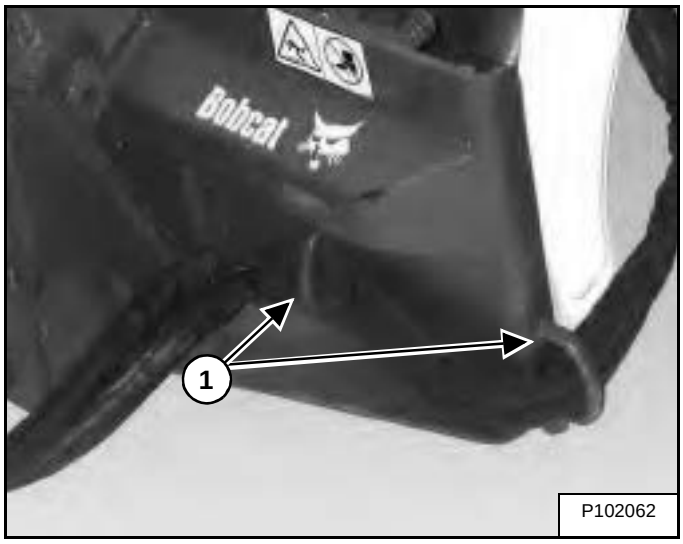


Install the bolts (Item 1) **[Figure 236]**.

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

NOTE: Do not over torque the bolts (Item 1) [Figure 236]. Over torquing may cause bolt or thread damage or could result in the bolts breaking during operation.

Figure 237



Route the hydraulic hoses through the hose guides (Item 1) **[Figure 237]** on the breaker frame.

Connect the hose couplers to the loader quick couplers. (See Hydraulic Quick Couplers on Page 128.)

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 128.)

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 46 ft.-lb. (63 N•m) torque before starting the mini loader.

Enter the operator's position. (See Entering And Leaving The Operator's Position on Page 120.)

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 238

⚠ 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 238]**.

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 127.) 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)

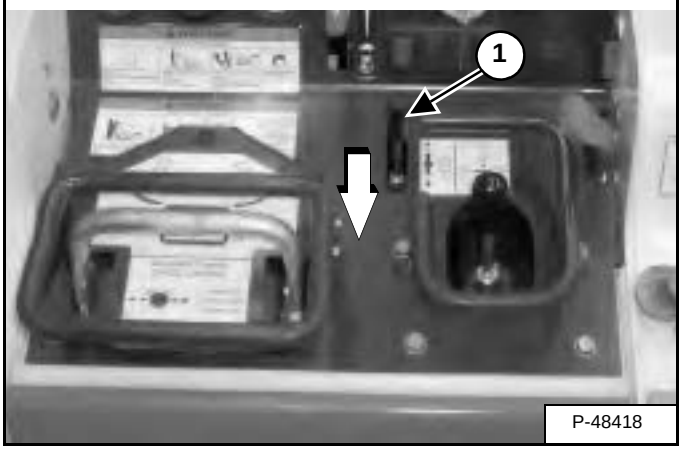
Control Functions

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 239

MT55 (Earlier Models)

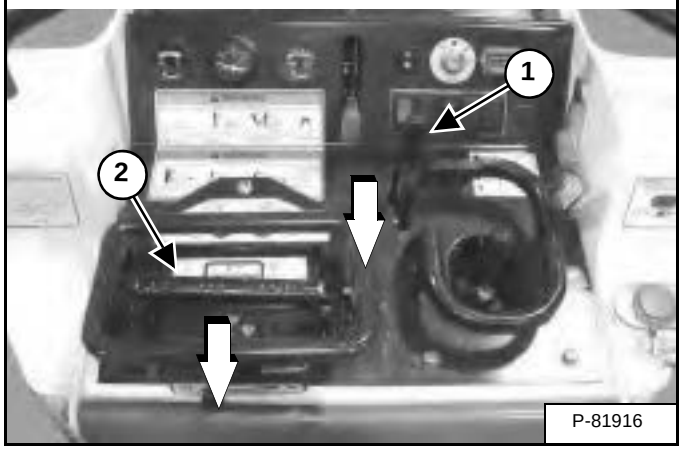


With the operator at the operator's position at the rear of the mini loader, start the engine. Move the Auxiliary Hydraulic Control Lever (Item 1) **[Figure 239]** rearward for auxiliary hydraulic flow to the front female coupler. The hydraulic breaker will start.

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 240

MT55 (Later Models)



Variable Flow

Pull the Auxiliary Hydraulic Control Lever (Item 1) **[Figure 240]** rearward for auxiliary hydraulic oil 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 oil flow increases to the coupler as the lever (Item 1) [Figure 240] is pulled rearward.

Continuous Flow

While holding the Continuous Flow Shutoff Lever (Item 2) down, pull the auxiliary hydraulic control lever (Item 1) **[Figure 240]** all the way rearward until it locks (detent position) for continuous hydraulic oil 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 Shutoff Lever (Item 2) is released while in continuous flow, the Auxiliary Hydraulic Control Lever (Item 1) **[Figure 240]** will return to neutral after one to three seconds and auxiliary hydraulic oil 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 Shutoff Lever. Move the Auxiliary Hydraulic Control Lever (Item 2) **[Figure 240]** all the way forward or rearward until it locks (detent position).

NOTE: The Continuous Flow Shutoff Lever (Item 2) must be in the UP position and the Auxiliary Hydraulic Control Lever (Item 1) [Figure 240] must be in NEUTRAL to start the engine.

NOTE: The Continuous Flow Shutoff Lever (Item 2) [Figure 240] 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 20 feet (6 m) away from equipment when operating.**

W-2627-0305

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 oil. 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.

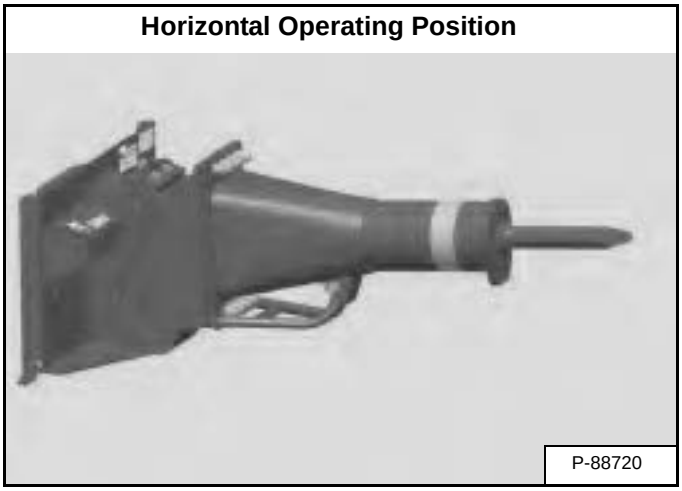
Figure 241

Vertical Operating Position

When operating in the vertical position **[Figure 241]**, 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 242

Horizontal Operating Position



When operating in the horizontal position **[Figure 242]**, work near the edge.

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 20 feet (6 m) away from equipment when operating.**

W-2627-0305

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, 6 - 10 in. (152 - 254 mm) 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 towards 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 120.)

⚠ WARNING

AVOID INJURY OR DEATH

Before you leave the operator's position:

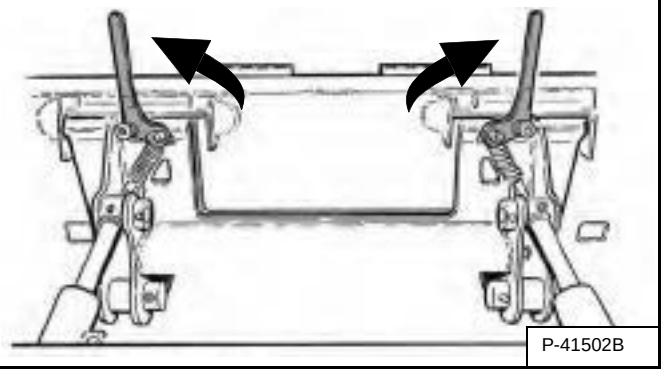
- **Lower the lift arms, put the attachment flat on the ground.**
- **Stop the engine and engage the parking brake.**
- **Move all pedals, handles, joysticks, and other controls until they are LOCKED or in the NEUTRAL position.**

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

W-2722-0208

Disconnect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 128.)

Figure 243



Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) **[Figure 243]**.

⚠ WARNING

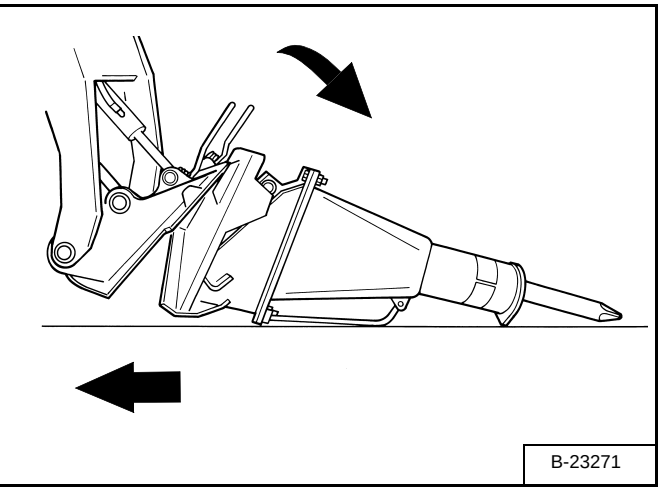
Bob-Tach levers have spring tension. Hold lever tightly and release slowly. Failure to obey warning can cause injury.

W-2054-1285

Enter the operator's position. (See Entering And Leaving The Operator's Position on Page 120.)

Start the engine and release the parking brake.

Figure 244



Tilt the Bob-Tach forward and drive the mini loader backward, away from the attachment **[Figure 244]**.

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.

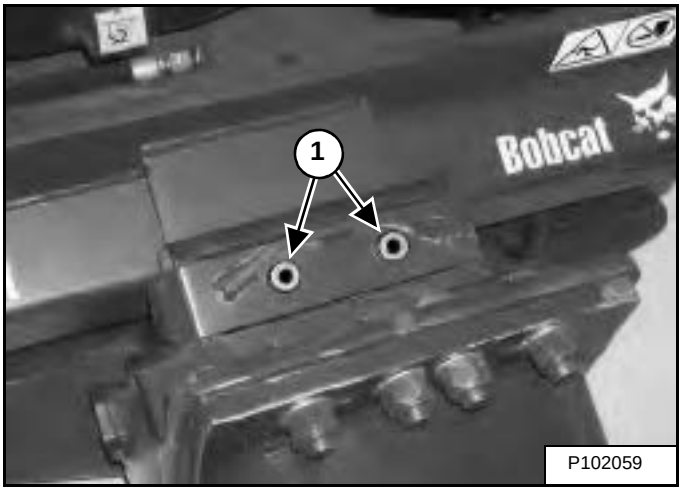
Engage the parking brake and stop the engine.

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 120.)

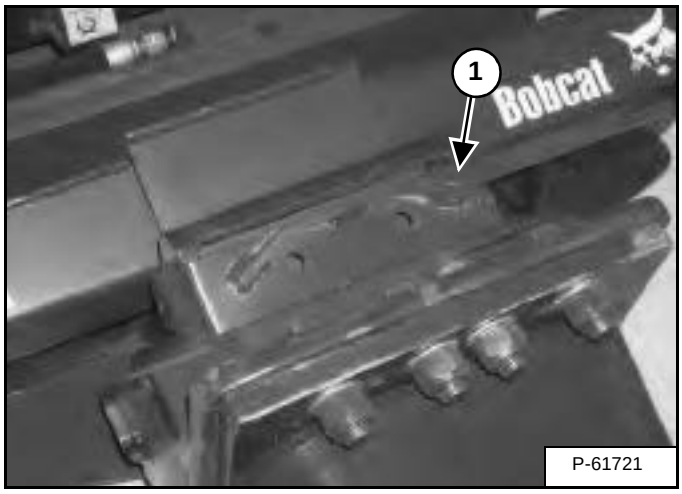
Disconnect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 128.)

Figure 245



Remove the bolts (Item 1) **[Figure 245]**.

Figure 246

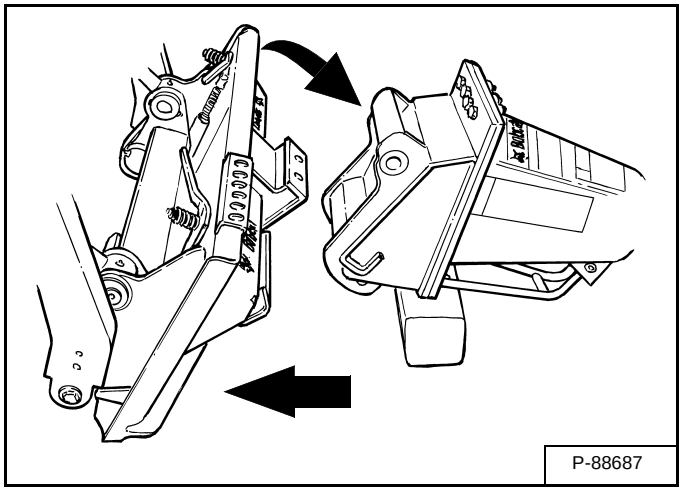


Remove the plate (Item 1) **[Figure 246]**.

Enter the operator's position. (See Entering And Leaving The Operator's Position on Page 120.)

Start the engine and release the parking brake.

Figure 247



Tilt the Bob-Tach forward while backing the mini loader away from the breaker **[Figure 247]**.

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

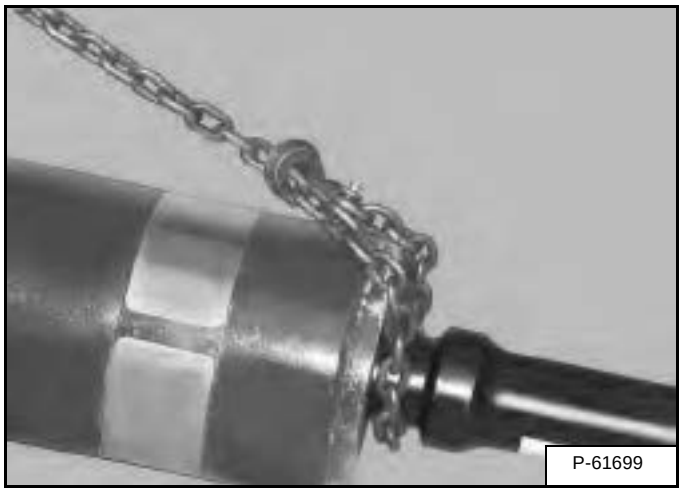
Procedure

Bob-Tach Mounting Frame

NOTE: Use chains that are in good condition and of adequate size to lift the breaker.

Figure 248

Figure 249



Fasten the chains to the breaker **[Figure 248]** and **[Figure 249]**.

Figure 250

Lift the breaker **[Figure 250]**.

LIFTING THE ATTACHMENT (CONT'D)

Procedure (Cont'd)

X-Change Or Pin-On Mounting Frame

NOTE: Use chains that are in good condition and of adequate size to lift the breaker.

Figure 251

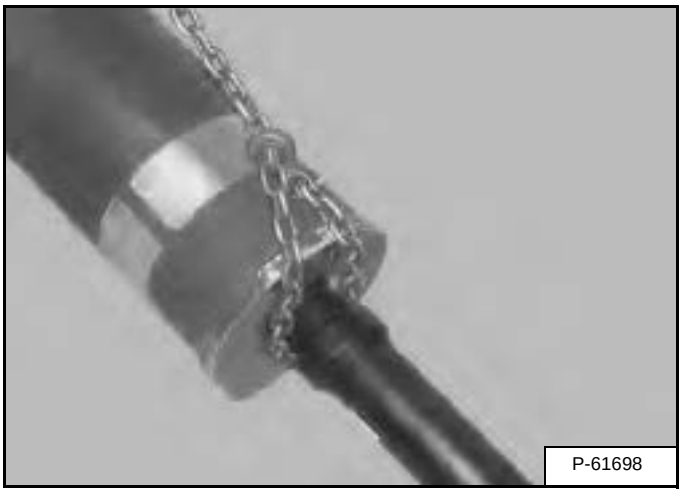


Figure 252

Fasten the chains to the breaker **[Figure 251]** and **[Figure 252]**.

Figure 253

Lift the breaker **[Figure 253]**.

TRANSPORTING THE ATTACHMENT ON A TRAILER

Fastening

Bob-Tach Mounting Frame

Figure 254

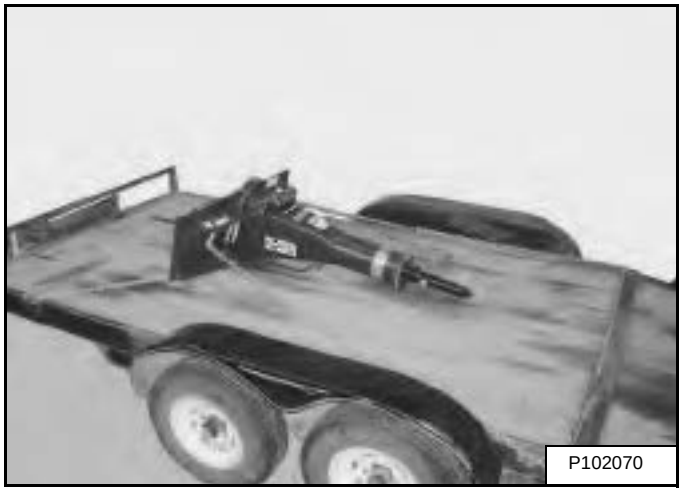


Figure 255

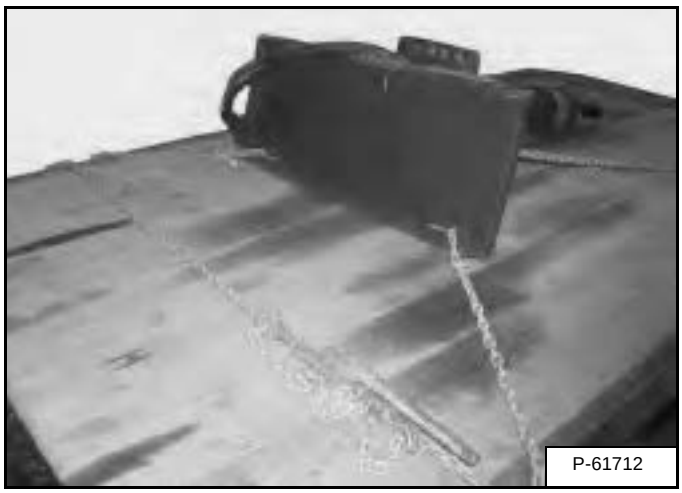
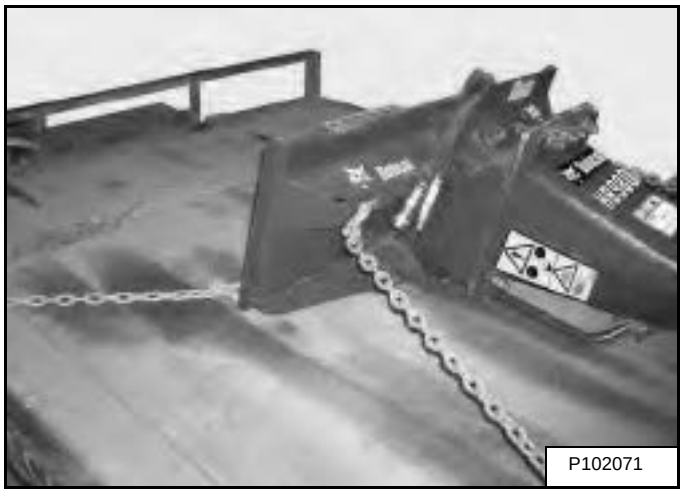


Figure 256



Fasten the chains to the breaker and to the transport vehicle **[Figure 254]**, **[Figure 255]** and **[Figure 256]**.

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 Or Pin-On Mounting Frame

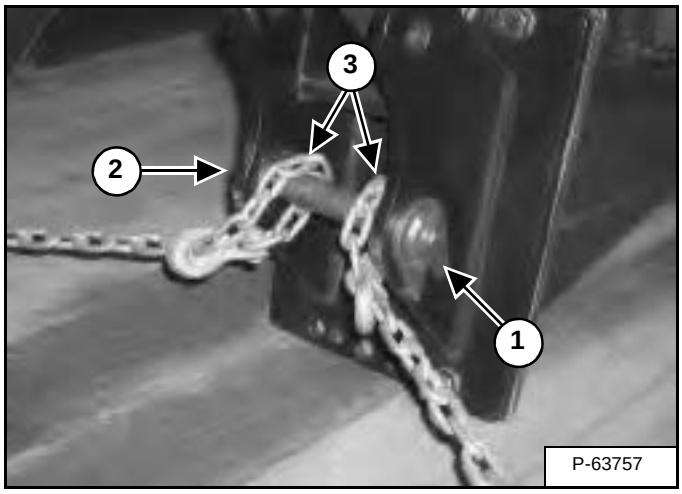
Figure 257

Figure 258

Figure 259

Fasten the chains to the breaker **[Figure 257]**, **[Figure 258]**, and **[Figure 259]** and to the transport vehicle.

Figure 260



For pin on breaker mounting frames, install the pin (Item 1) and retainer (Item 2) **[Figure 260]** in the mounting frame.

Install the chains (Item 3) around the pin (Item 1) **[Figure 260]** and to the transport vehicle.

Fasten the chains to the breaker **[Figure 257]**, **[Figure 258]** and **[Figure 259]** 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®

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.

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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 backwards.	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 261

Pressure Measured		Possible Cause	Solution
PSI	bar		
0 - 360	0 - 25	Diaphragm damaged or deflated.	Replace diaphragm. Charge Nitrogen Chamber.
360 - 580	25 - 40	OK	
Above 580	Above 40	Diaphragm damaged.	Replace diaphragm.

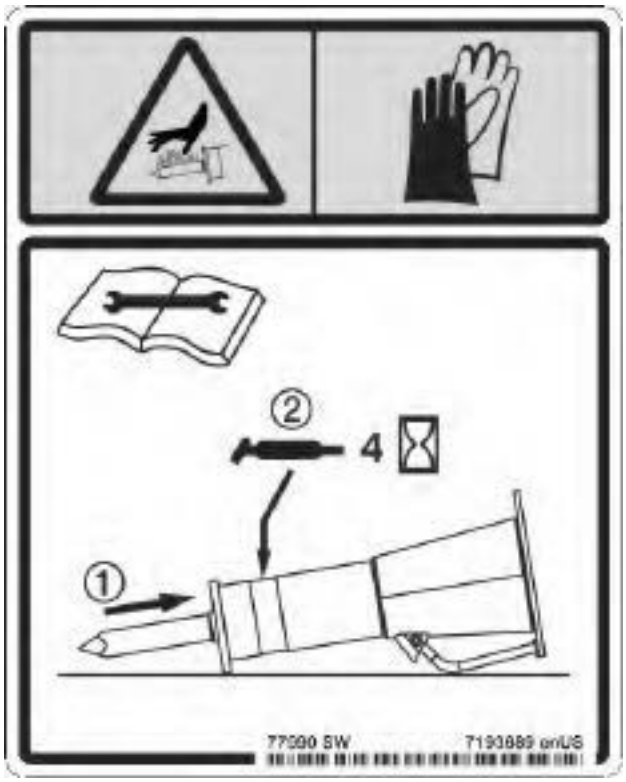
Charging Information

Correct nitrogen charge pressure is an important factor in the service life of the breaker diaphragm **[Figure 261]**.

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 153.)

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.**

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⚠ 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 262

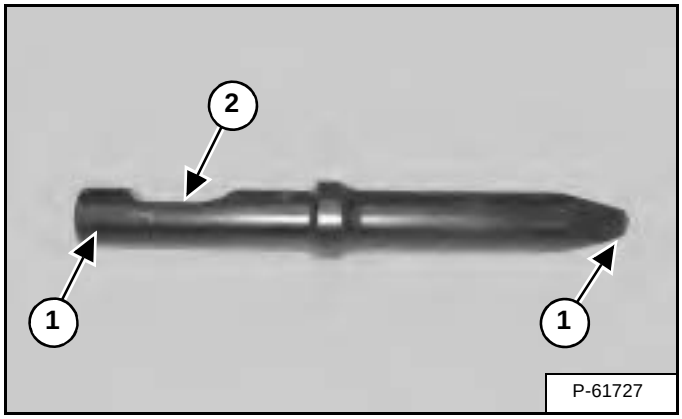
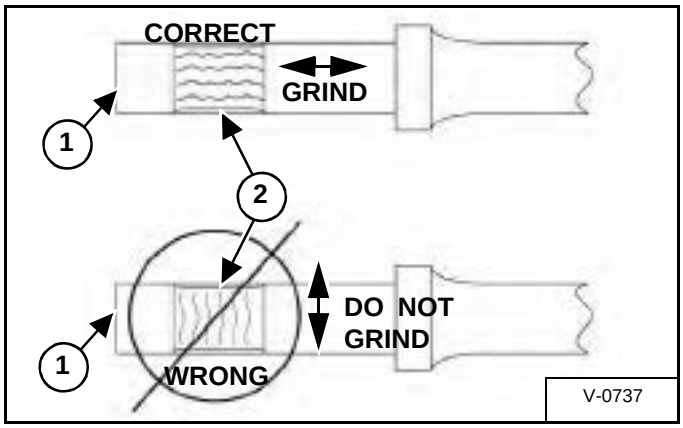


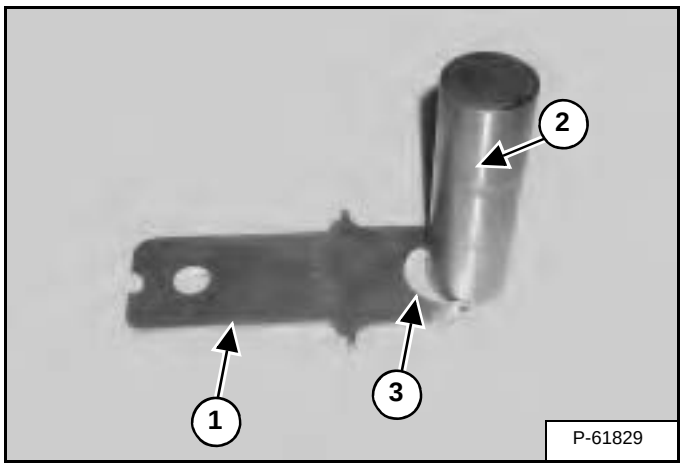
Figure 263



Inspect both ends of the tool (Item 1) **[Figure 262]** and **[Figure 263]** for damage and / or cracks. Replace the tool if damaged or worn.

Inspect the side edges of the retaining pin groove (Item 2) **[Figure 262]** and **[Figure 263]**. 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 264

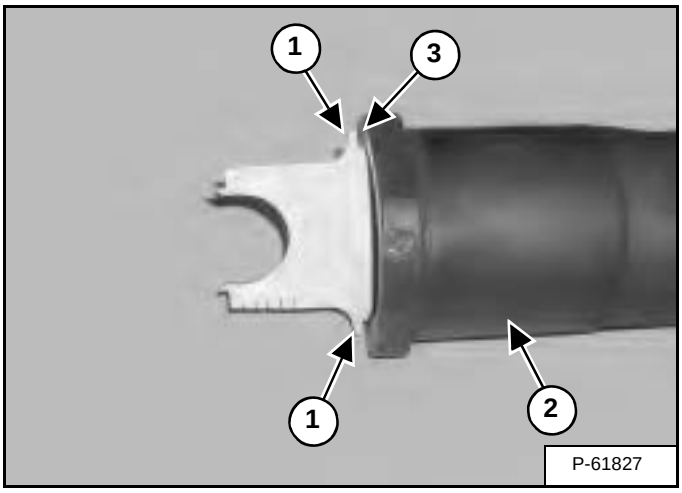


Use the maintenance tool (Item 1) to inspect the tool retainer pin (Item 2) for wear. Replace the pin if the maintenance tool notch (Item 3) **[Figure 264]** fits over the pin along the length of the pin. Inspect the pin along the entire length.

Replace the pin if damaged.

Weekly Inspection (Cont'd)

Figure 265



For Models HB280, HB380, HB580, HB680, HB880, And HB980

Check the end chamfer on the bushing.

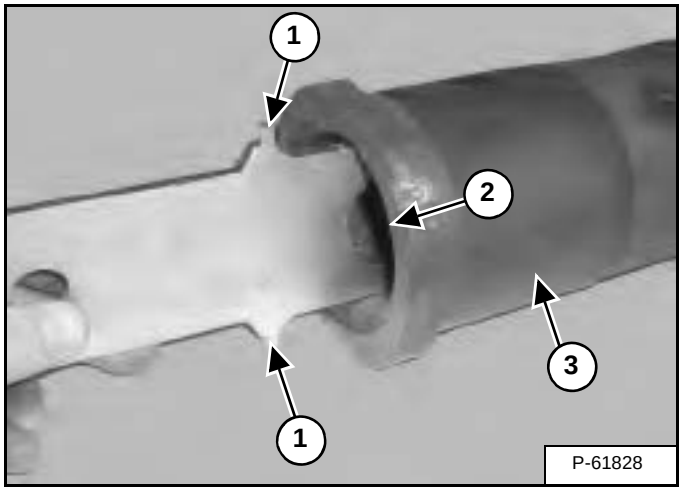
Install the maintenance tool (Item 1) into the bushing (Item 2) **[Figure 265]** as shown and rotate the tool 180° to check the chamfer.

Replace the bushing if the tabs (Item 1) on the tool contact the end of bushing (Item 3) **[Figure 265]** at any point.

NOTE: The bushing is shown removed for photo clarity.

NOTE: Failure to replace a worn bushing may result in reduced performance.

Figure 266



For All Models

Check the internal wear on the bushing.

Install the maintenance tool (Item 1) into the bushing (Item 2) **[Figure 266]** 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 266]**.

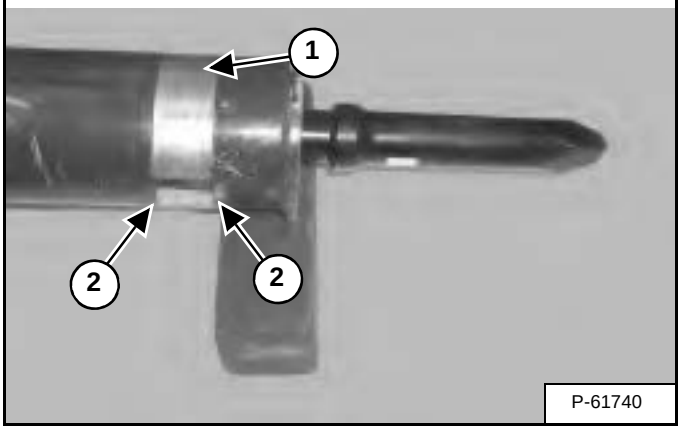
NOTE: The bushing is shown removed for photo clarity.

NOTE: Failure to replace a worn bushing may result in reduced performance.

Weekly Inspection (Cont'd)

Figure 267

External Retaining Band

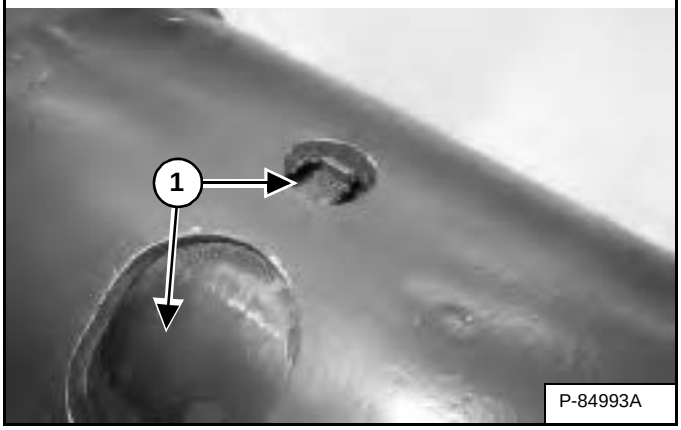


Inspect the retaining band (Item 1) **[Figure 267]** for wear or damage.

Replace the retaining band if a gap of more than 0.08 in. (2 mm) can be measured at any point between the side of the band and the side of the housing (Item 2) **[Figure 267]**.

Figure 268

Internal Retaining Band



If the retaining band (Item 1) **[Figure 268]** 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 268]**.

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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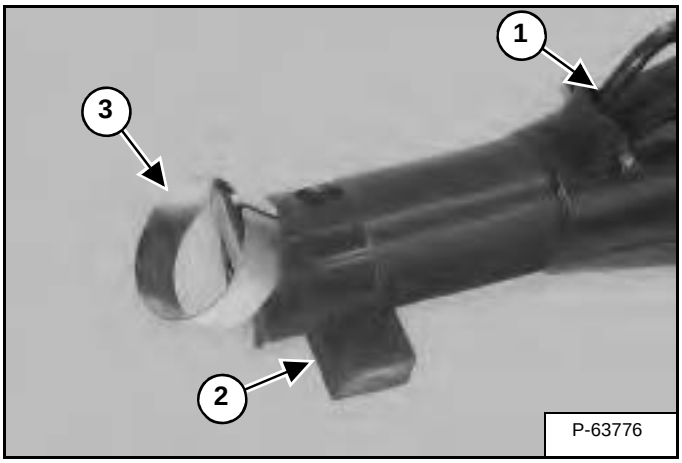
Figure 269

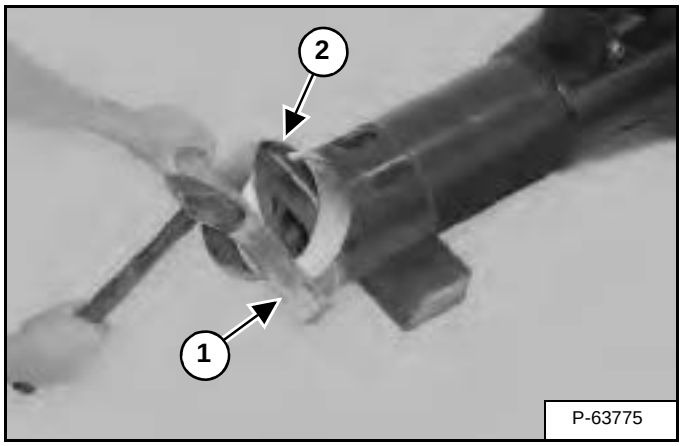


Position the breaker so the hose guard (Item 1) **[Figure 269]** is facing up.

Install a block of wood (Item 2) **[Figure 269]** under the breaker.

Position the retaining band (Item 3) **[Figure 269]** over the end of the breaker with the slot in the retainer band facing up.

Figure 270



Using a second block of wood (Item 1) and a hammer, force the retaining band (Item 2) **[Figure 270]** 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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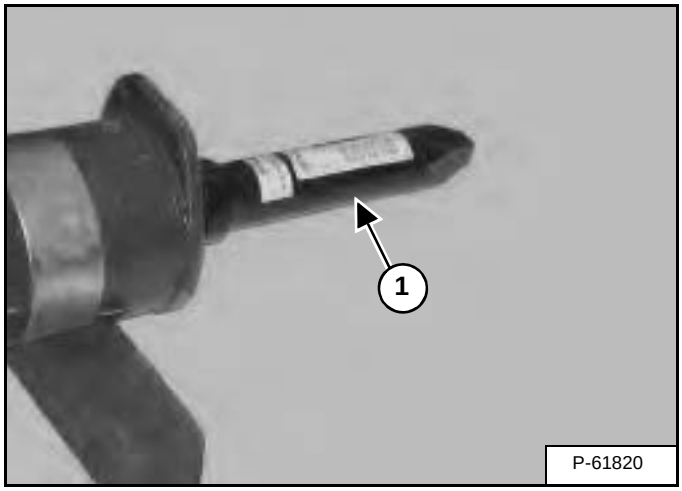
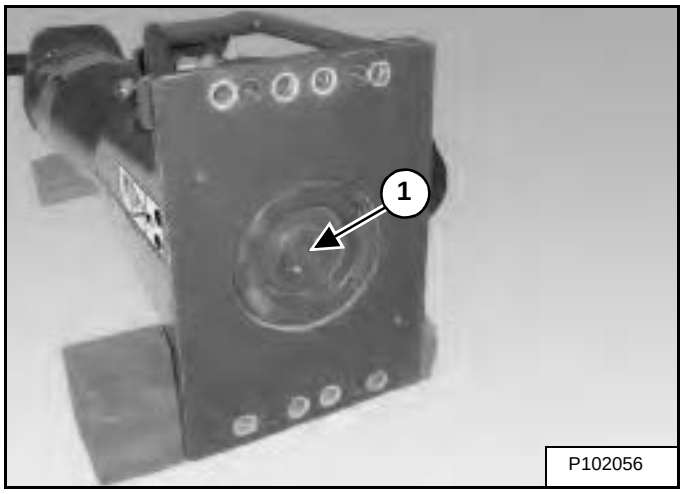
Use the nitrogen accumulator charge pressure gauge MEL1523B to check the pressure.

Figure 271



Block up the breaker so the tool (Item 1) **[Figure 271]** is not under pressure and is not in contact with the nitrogen chamber.

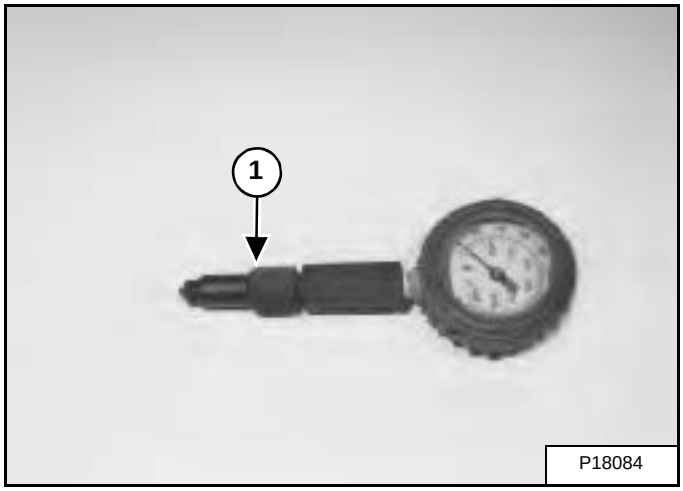
Figure 272



Remove the plug (Item 1) **[Figure 272]**.

NOTE: If the plug (Item 1) [Figure 272] is tight, tap the end of the plug with a hammer before removing.

Figure 273

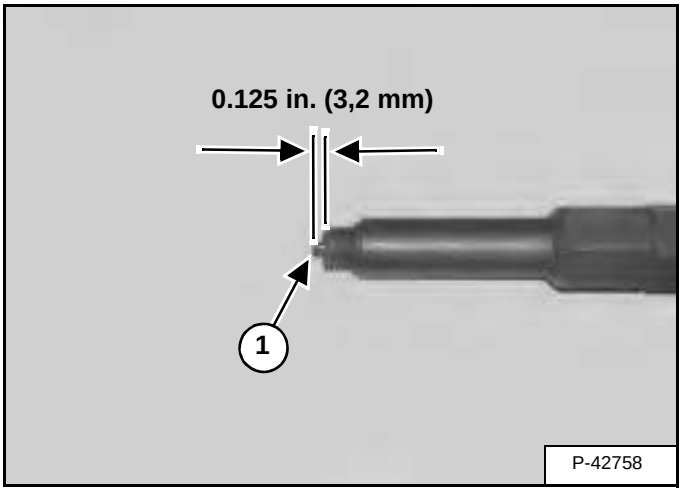


Install the correct adapter (Item 1) **[Figure 273]** on the gauge.

Nitrogen Chamber (Cont'd)

Checking The Nitrogen Chamber Charge Pressure (Cont'd)

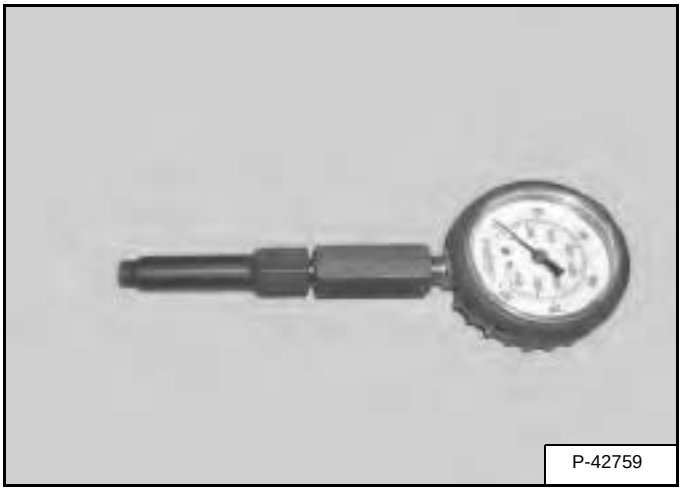
Figure 274



Measure the pin (Item 1) **[Figure 274]** protrusion.

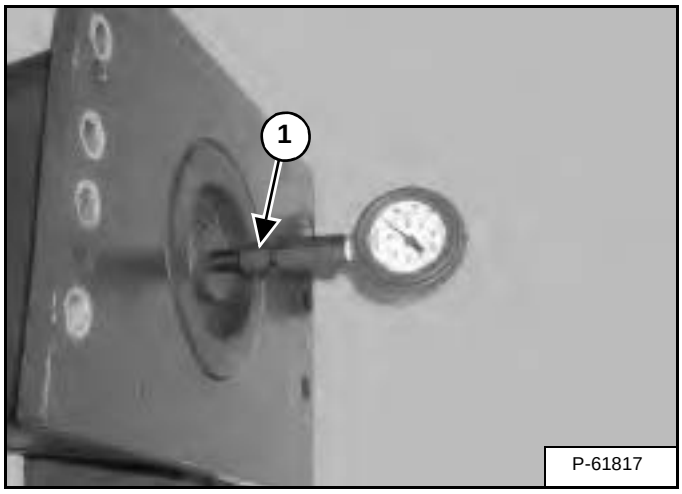
Manually extend or retract the pin until the pin measures 0.125 in. (3,2 mm) from pin tip to adapter face.

Figure 275



Loosen the adapter until the pin is flush with the end of the adapter as shown **[Figure 275]**.

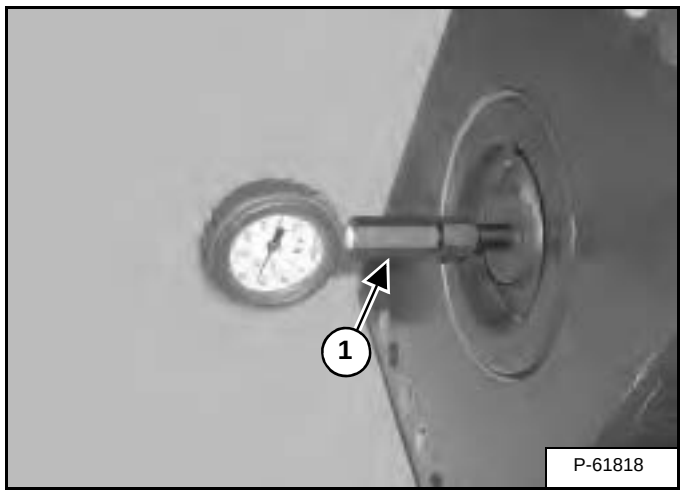
Figure 276



Install the gauge / adapter on the breaker **[Figure 276]**.

Tighten the adapter (Item 1) **[Figure 276]** on the breaker.

Figure 277



Slowly turn the gauge valve body (Item 1) **[Figure 277]** 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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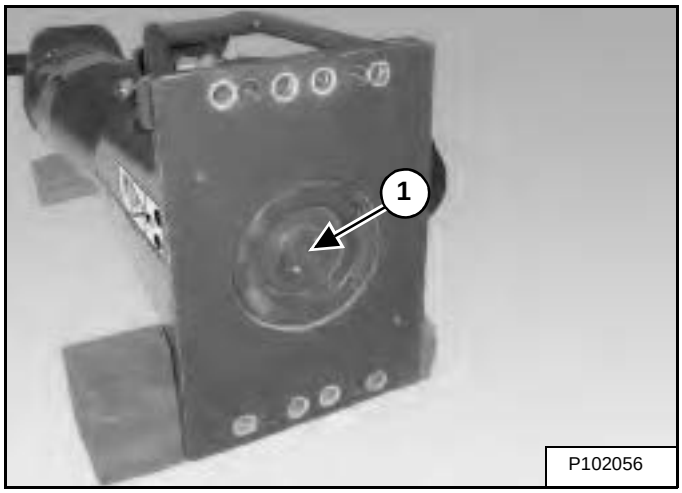
The breaker check valve is located under the breaker mounting frame. Remove the breaker mounting frame.

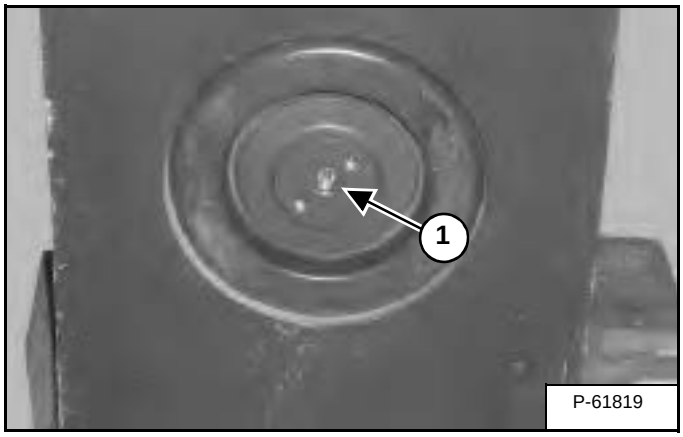
Figure 278



Remove the plug (Item 1) **[Figure 278]** from the charge valve.

NOTE: If the plug (Item 1) [Figure 278] is tight, tap the end of the plug with a hammer before removing.

Figure 279



Using a small shaft, push the valve (Item 1) **[Figure 279]** 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 27 ft.-lb. (37 N•m) torque.

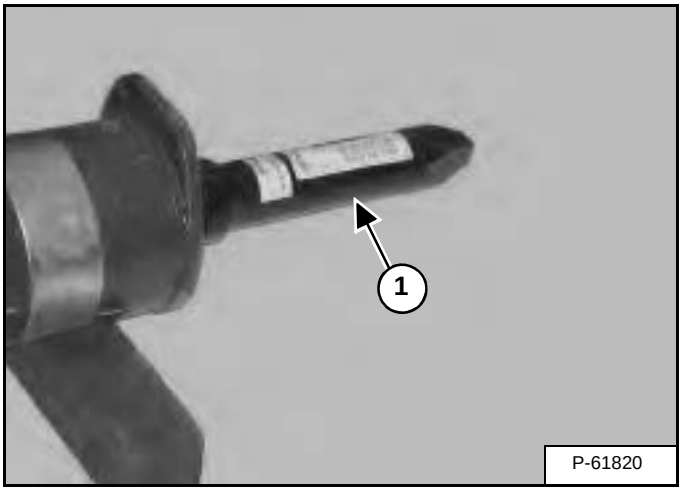
NOTE: When in doubt of nitrogen charge pressure or when recharging a hot breaker, release the nitrogen pressure completely and recharge the nitrogen chamber.

Nitrogen Chamber (Cont'd)

Charging The Nitrogen Chamber

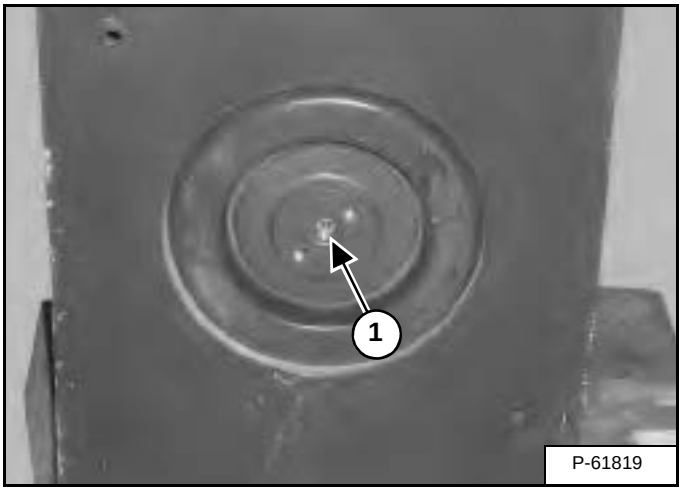
NOTE: When in doubt of nitrogen charge pressure or when recharging a hot breaker, release the nitrogen pressure completely and recharge the nitrogen chamber.

Figure 280



Block up the breaker so the tool (Item 1) **[Figure 280]** is not under pressure and is not in contact with the nitrogen chamber.

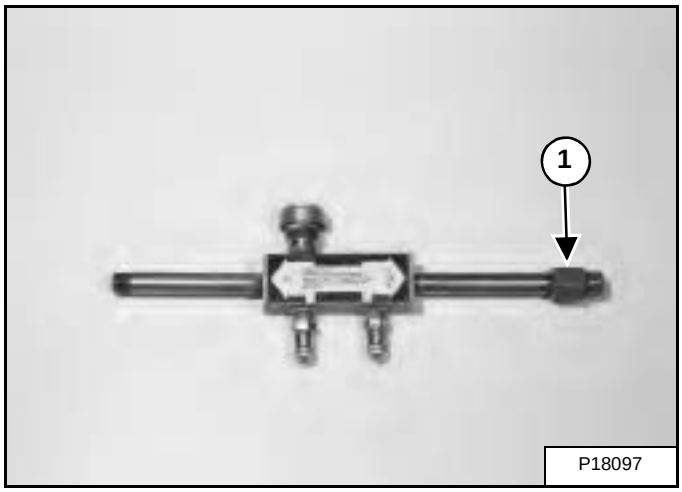
Figure 281



Remove the plug (Item 1) **[Figure 281]**.

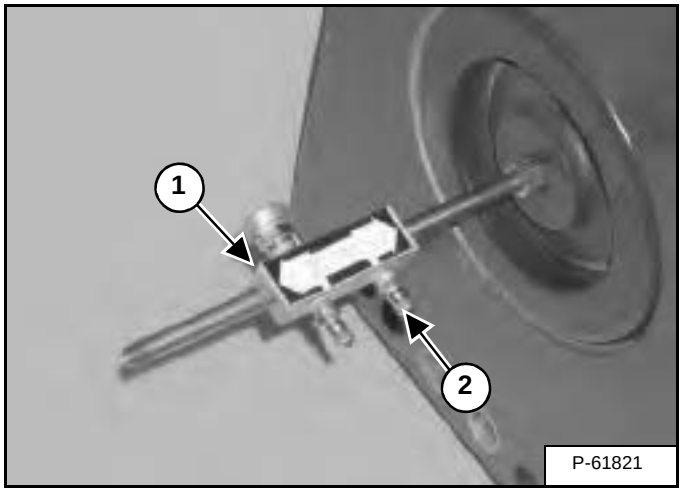
NOTE: If the plug (Item 1) [Figure 281] is tight, tap the end of the plug with a hammer before removing.

Figure 282



Install the adapter (Item 1) **[Figure 282]** on the "Above 100 PSI (6,80 bar)" side of the charging tool.

Figure 283



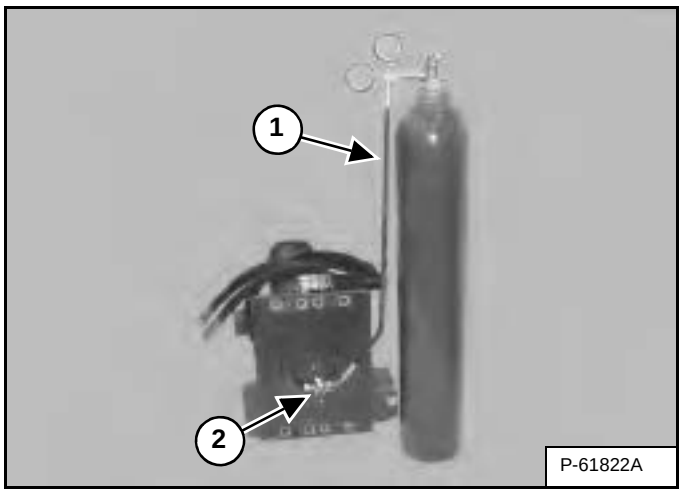
Install the charging tool (Item 1) **[Figure 283]** on the breaker.

Remove the cap (Item 2) **[Figure 283]** from the charging tool.

Nitrogen Chamber (Cont'd)

Charging The Nitrogen Chamber (Cont'd)

Figure 284



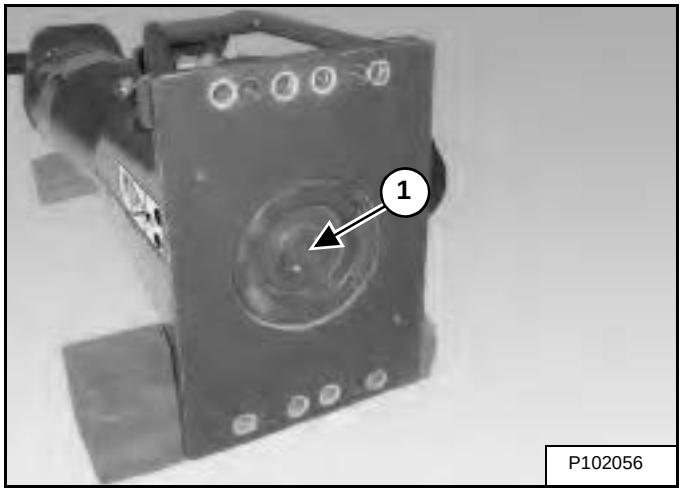
Connect the nitrogen hose (Item 1) to the charging tool (Item 2) **[Figure 284]**.

Using the regulator valve on the nitrogen tank, slowly fill the chamber to the 464 PSI (32 bar).

Close the valve on the nitrogen tank.

Disconnect the hose and charging tool.

Figure 285



NOTE: Inspect the O-ring on the plug (Item 1) [Figure 285] for damage. Replace if necessary.

Install and tighten the plug (Item 1) **[Figure 285]** to 27 ft.-lb. (37 N•m) 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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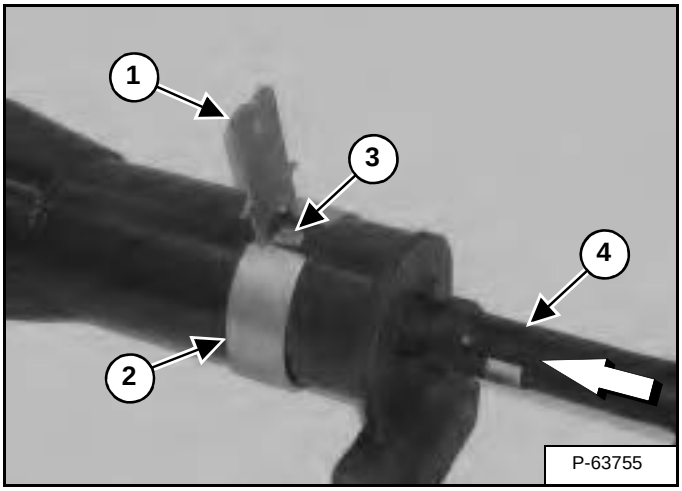
Put the breaker in the horizontal position.

Fully lower the breaker to the ground and stop the engine.

Figure 286



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 286]** 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.

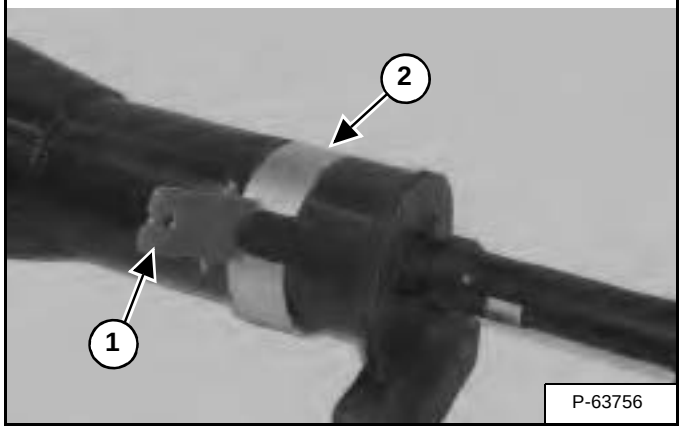
Apply grease (5 - 6 pumps) to the upper end of the tool at the grease fitting (Item 3) **[Figure 286]** every 4 hours of operation or sooner if the tool looks dry.

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 287

External Retaining Band

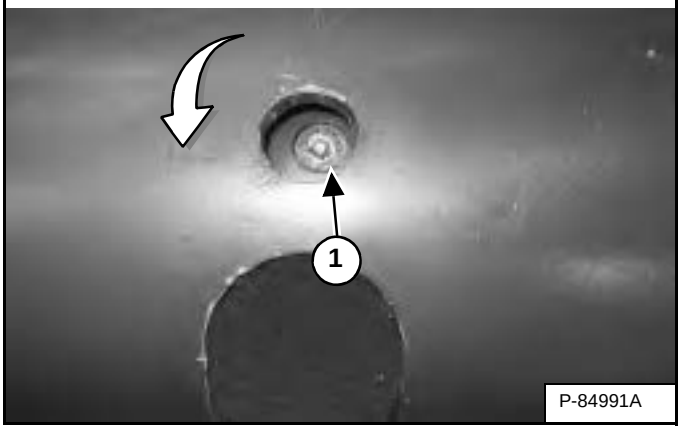


Use the maintenance tool (Item 1) to turn the retainer band (Item 2) **[Figure 287]** until the grease fitting is covered to keep out contamination.

Lubrication Locations (Cont'd)

Figure 288

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 288]** 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

Procedure (External Retaining Band)

Tool Removal For Earlier Breaker Models

NOTE: For later breaker models (See Tool Removal For Later Breaker Models on Page 157.).

⚠ 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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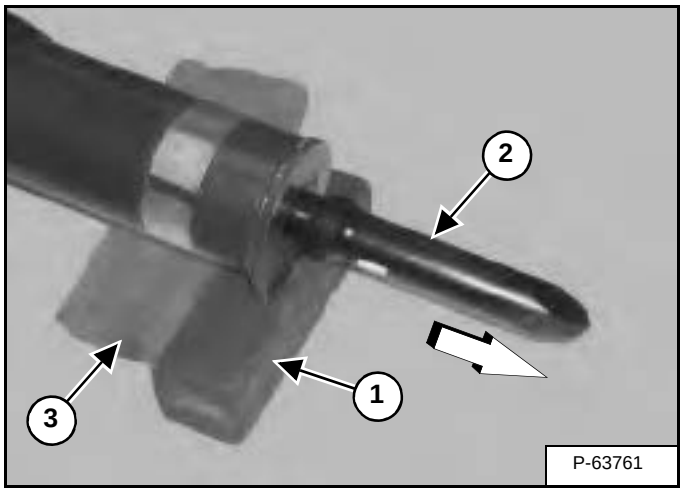
Figure 289



Raise and block (Item 1) **[Figure 289]** the front of the breaker.

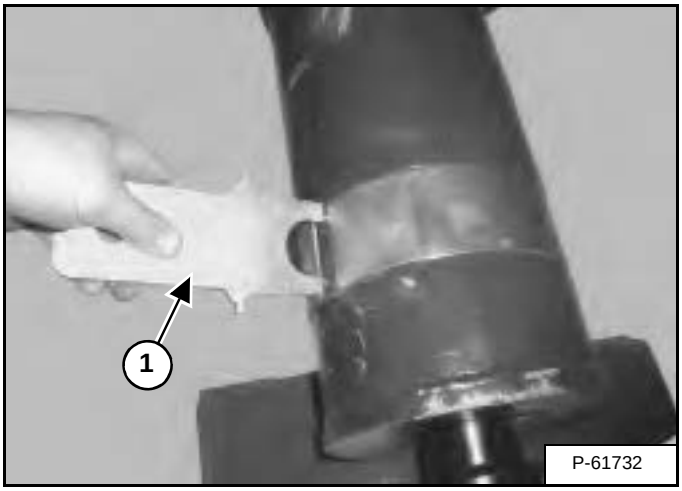
Pull the tool (Item 2) **[Figure 289]** out as far as possible. (This will help to hold the tool retaining pin in place when the retainer is repositioned.)

Place a piece of cardboard or a shop towel (Item 3) **[Figure 289]** 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)

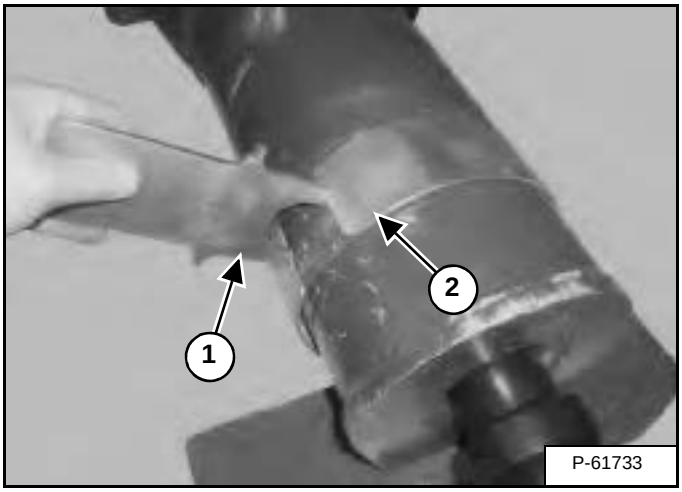
Tool Removal For Earlier Breaker Models (Cont'd)

Figure 290



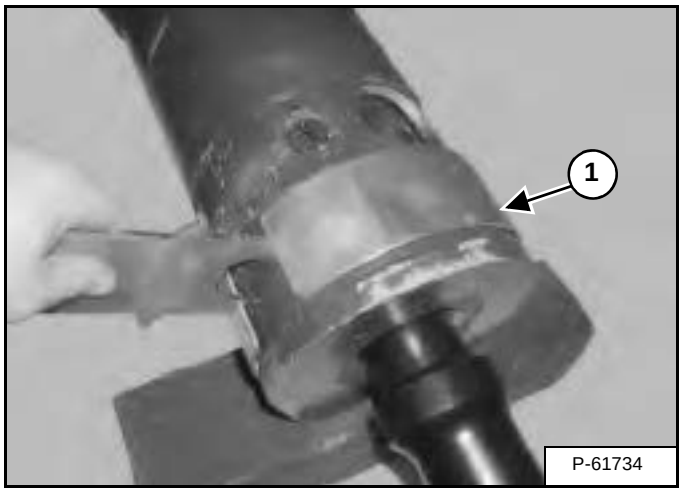
Install the maintenance tool (Item 1) **[Figure 290]**.

Figure 291



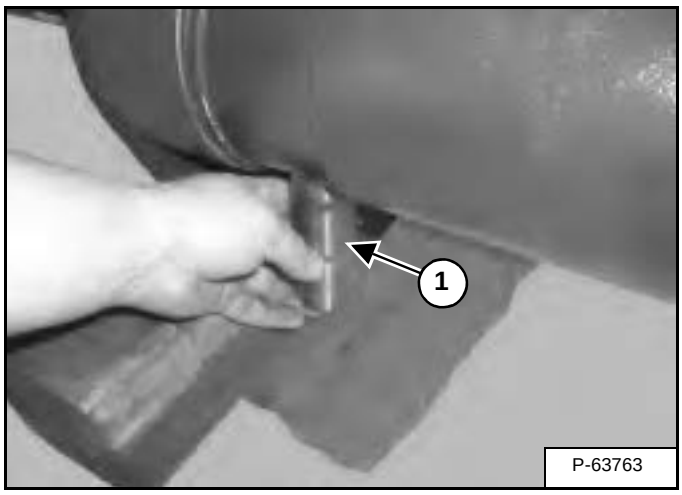
Turn the maintenance tool (Item 1) 90° to expand the band (Item 2) **[Figure 291]**.

Figure 292



Move the band (Item 1) **[Figure 292]** forward as shown.

Figure 293

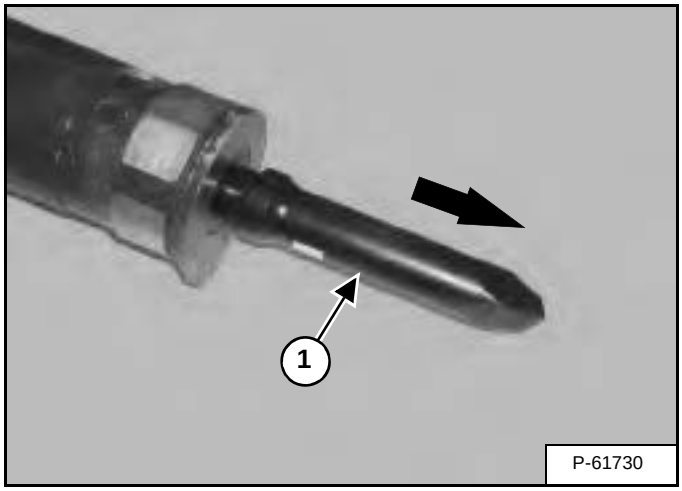


Push the tool towards the breaker and remove the tool retainer pin (Item 1) **[Figure 293]**.

Procedure (External Retaining Band) (Cont'd)

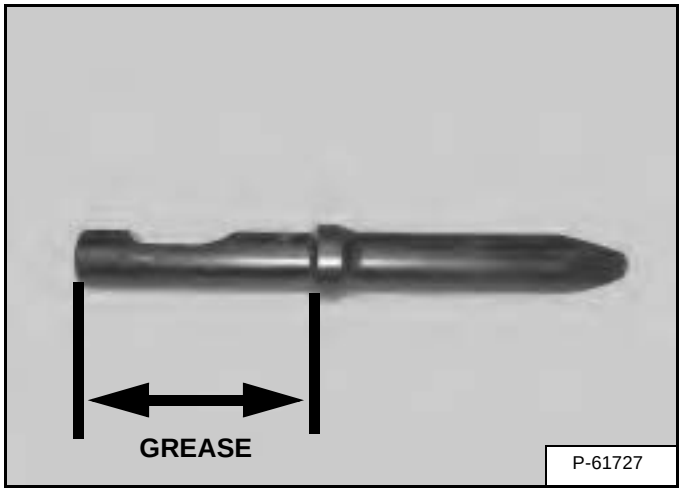
Tool Removal For Earlier Breaker Models (Cont'd)

Figure 294



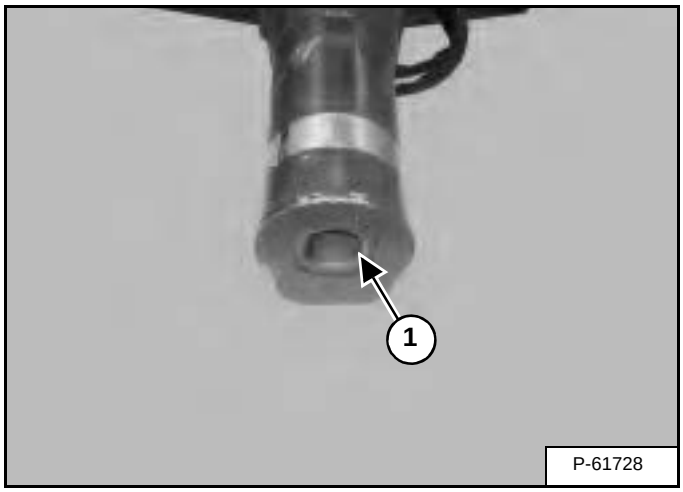
Remove the tool (Item 1) **[Figure 294]**.

Figure 295



Apply grease to the top section of the tool **[Figure 295]**.

Figure 296



Apply grease to the inside diameter of the lower bushing (Item 1) **[Figure 296]**.

NOTE: Use a good quality lithium based grease. Lower quality grease may melt when hot and reduce the life of the tool and bushing.

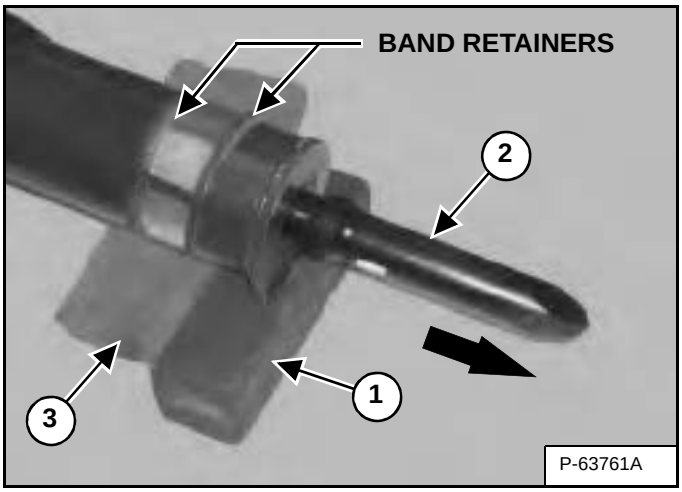
Procedure (External Retaining Band) (Cont'd)

Tool Removal For Later Breaker Models

NOTE: For early breaker models (See Tool Removal For Earlier Breaker Models on Page 154.).

NOTE: Later breaker models can be identified by the two band retainers that are located on each sides of the band.

Figure 297



Raise and block (Item 1) **[Figure 297]** the front of the breaker.

Pull the tool (Item 2) **[Figure 297]** 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 297]** 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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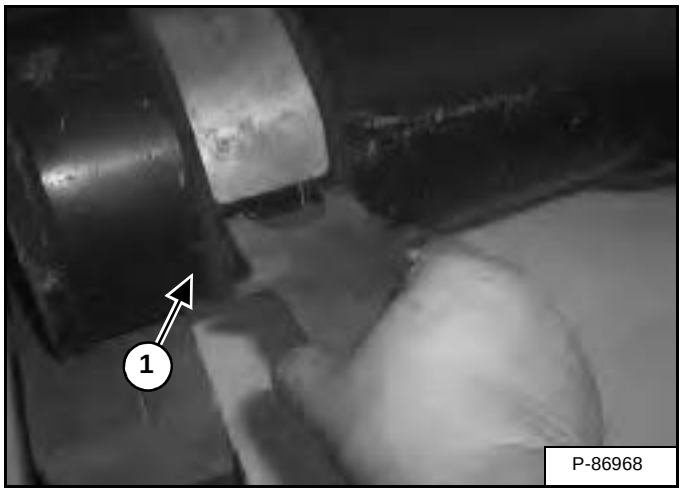
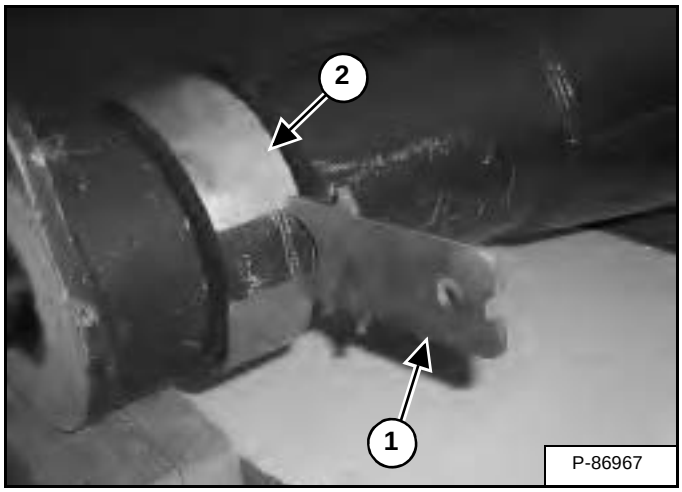
Figure 298



Install the maintenance tool (Item 1) **[Figure 298]**.

Figure 299

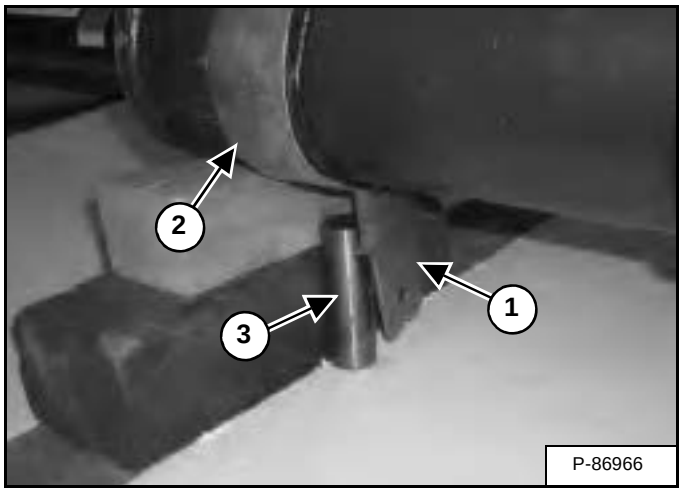


Turn the maintenance tool (Item 1) 90° to expand the band (Item 2) **[Figure 299]**.

Procedure (External Retaining Band) (Cont'd)

Tool Removal For Later Breaker Models (Cont'd)

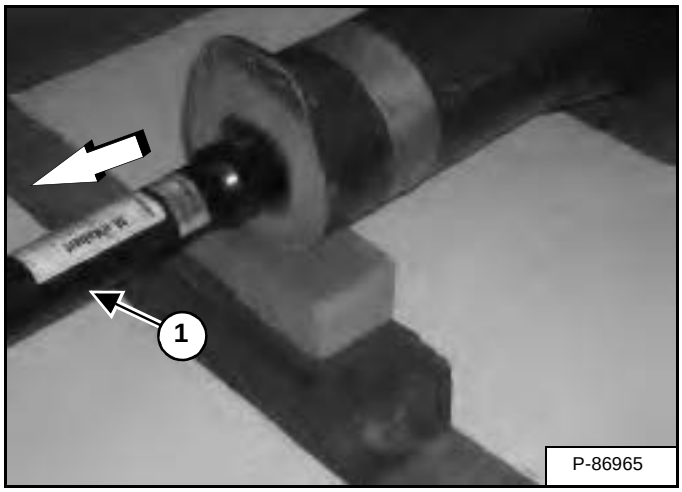
Figure 300



Rotate the maintenance tool (Item 1) and the band (Item 2) until the maintenance tool (Item 1) **[Figure 300]** is under the breaker.

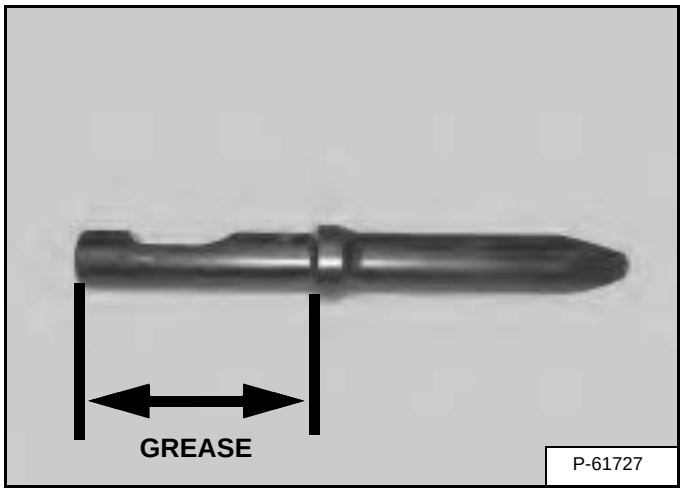
The tool retainer pin (Item 3) **[Figure 300]** will drop out of the bottom of the breaker.

Figure 301



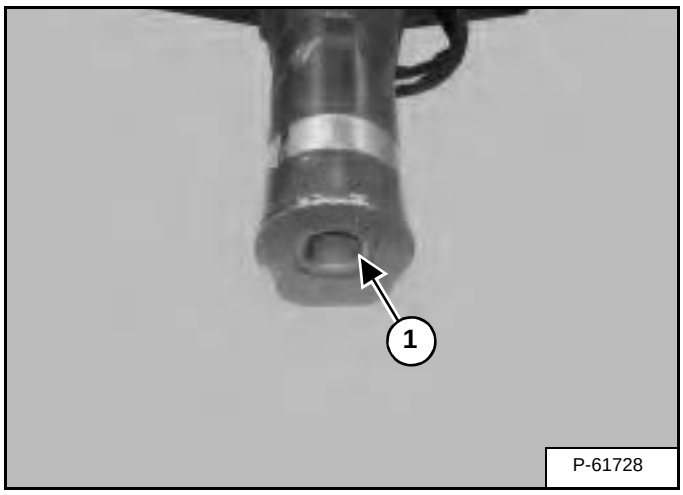
The breaker tool (Item 1) **[Figure 301]** can now be removed from the breaker by pulling out on the tool.

Figure 302



Apply grease to the top section of the tool **[Figure 302]**.

Figure 303



Apply grease to the inside diameter of the lower bushing (Item 1) **[Figure 303]**.

NOTE: Use a good quality lithium based grease. Lower quality grease may melt when hot and reduce the life of the tool and bushing.

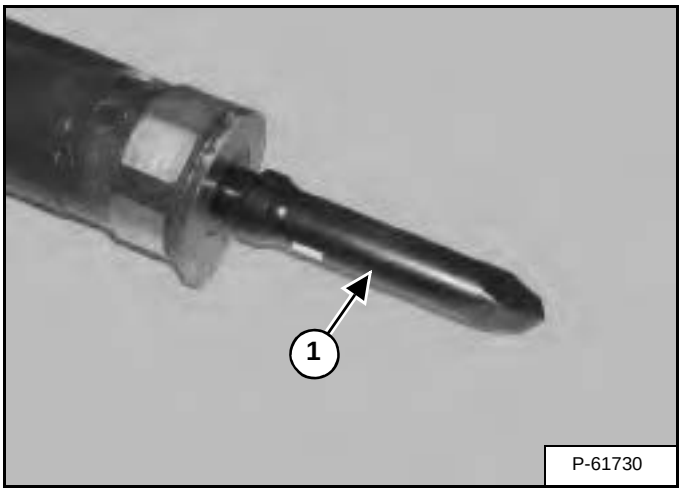
REMOVAL AND INSTALLATION OF TOOL (CONT'D)

Procedure (External Retaining Band) (Cont'd)

Tool Installation For Earlier Breaker Models

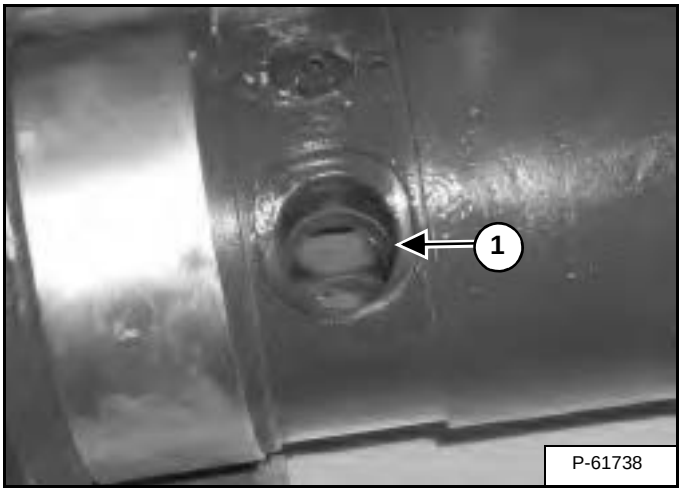
NOTE: For later breaker models (See Tool Installation For Later Breaker Models on Page 160.)

Figure 304



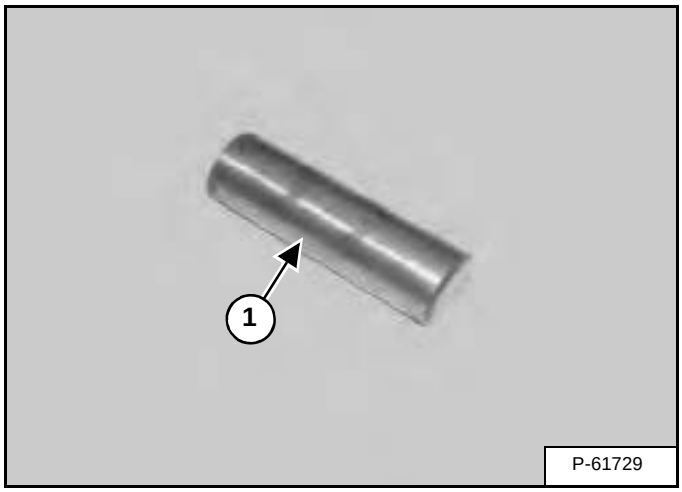
Install the tool (Item 1) **[Figure 304]** in the breaker.

Figure 305



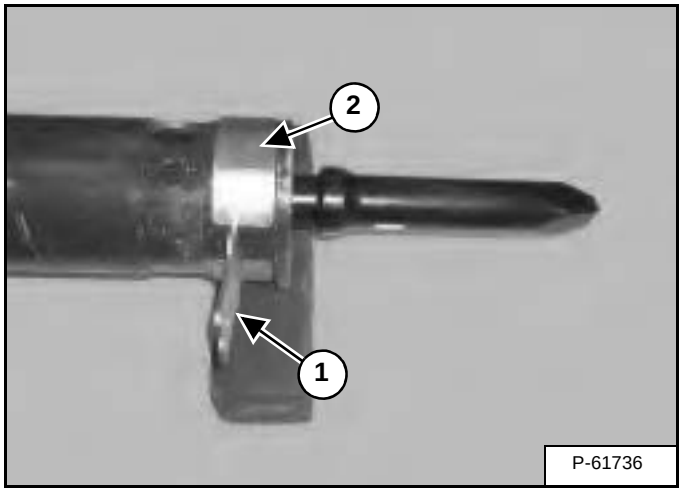
Align the notch in the tool with the hole (Item 1) **[Figure 305]** in the housing.

Figure 306



Inspect the tool retainer pin (Item 1) **[Figure 306]** for wear or damage before installation. To inspect pin diameter (See Weekly Inspection on Page 144.)

Figure 307

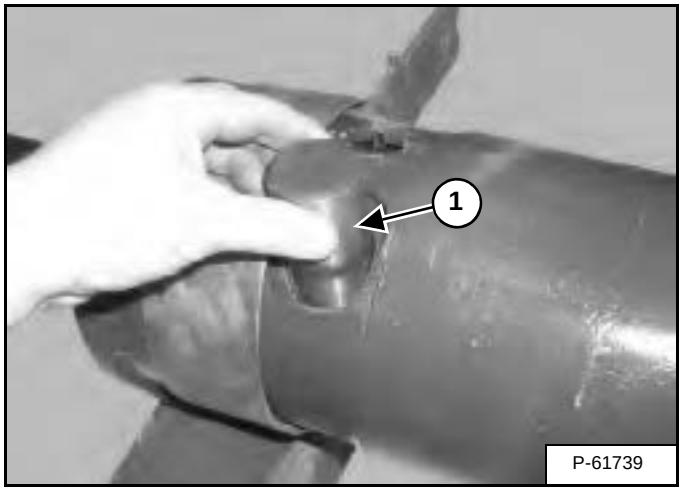


Install the maintenance tool (Item 1) and turn 90° to expand the band (Item 2) **[Figure 307]**.

Procedure (External Retaining Band) (Cont'd)

Tool Installation For Earlier Breaker Models (Cont'd)

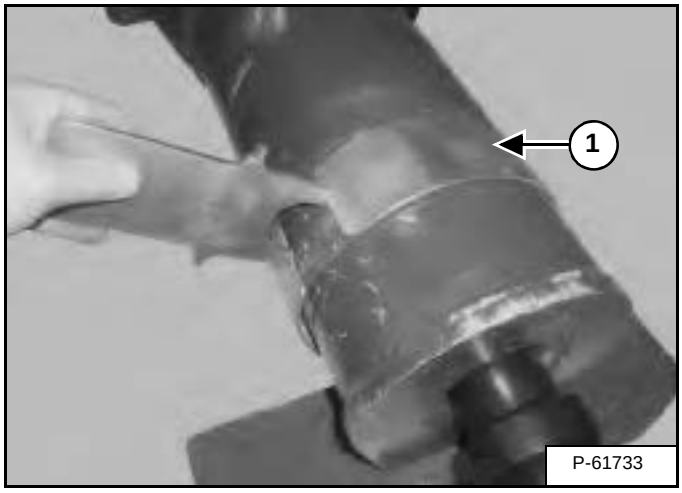
Figure 308



Install the tool retainer pin (Item 1) **[Figure 308]**.

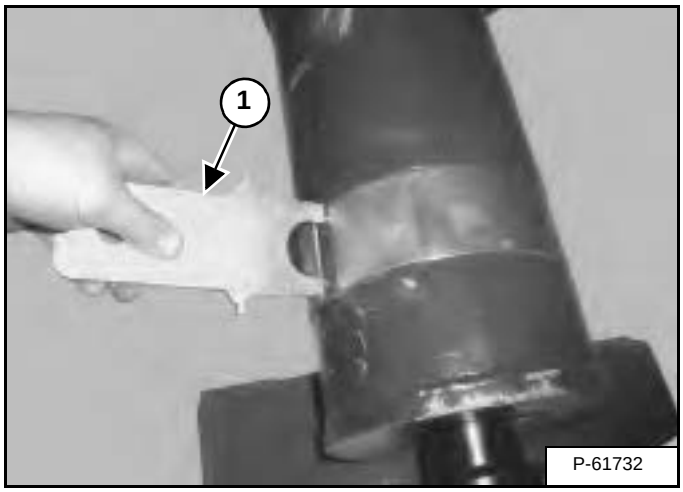
NOTE: Pull the tool outwards to help hold the retainer pin in place when reinstalling the band.

Figure 309



Move the band (Item 1) **[Figure 309]** back over the tool retainer pin.

Figure 310

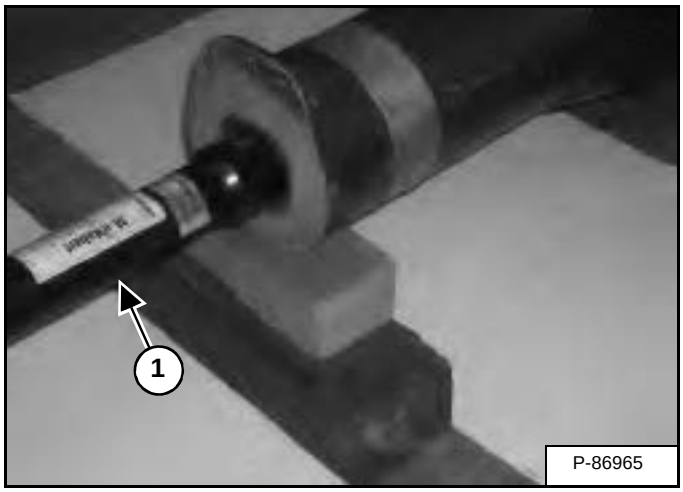


Turn the maintenance tool (Item 1) **[Figure 310]** 90° and remove the maintenance tool. Turn the band so that the grease fitting and the retainer pin are not exposed.

Tool Installation For Later Breaker Models

NOTE: For earlier breaker models (See Tool Installation For Earlier Breaker Models on Page 159.)

Figure 311

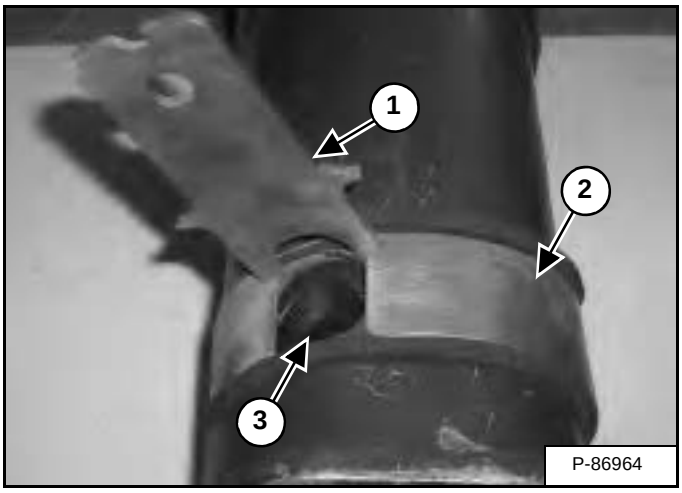


Install the breaker tool (Item 1) **[Figure 311]** into the breaker.

Procedure (External Retaining Band) (Cont'd)

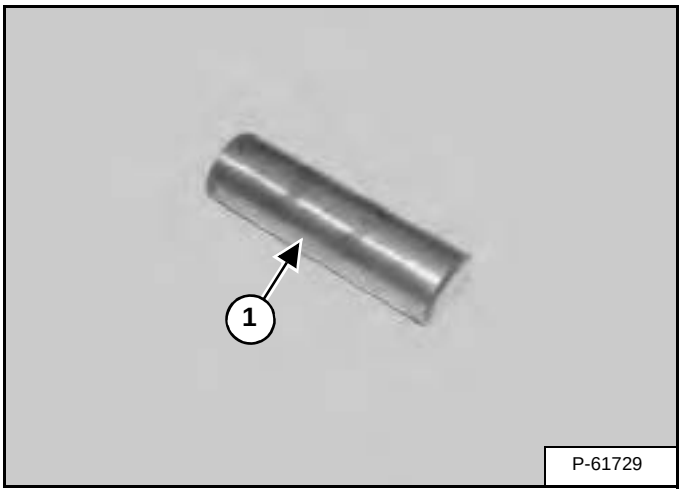
Tool Installation For Later Breaker Models (Cont'd)

Figure 312



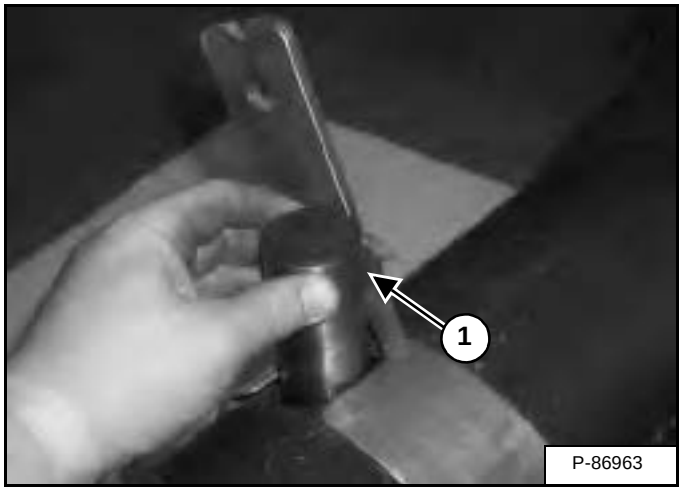
Install the maintenance tool (Item 1) and rotate the band (Item 2) until the tool retainer pin hole (Item 3) **[Figure 312]** is visible at the top of the breaker.

Figure 313



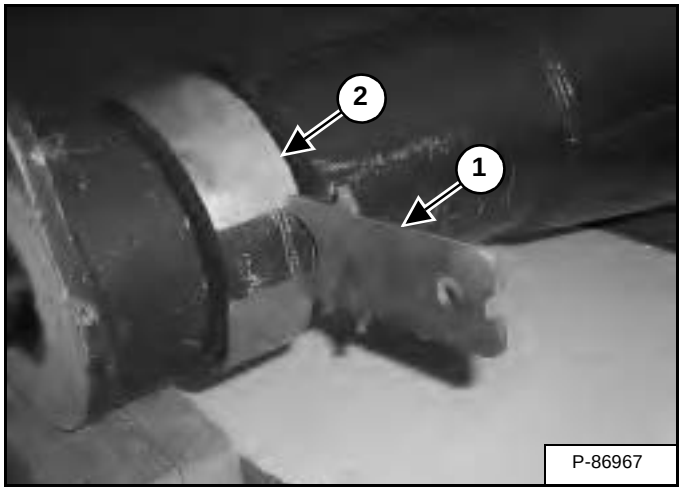
Inspect the tool retainer pin (Item 1) **[Figure 313]** for wear or damage before installation. To inspect pin diameter (See Weekly Inspection on Page 144.)

Figure 314



Install the tool retainer pin (Item 1) **[Figure 314]**. The breaker tool may need to be rotated so the retainer pin will install correctly into the breaker and breaker tool.

Figure 315

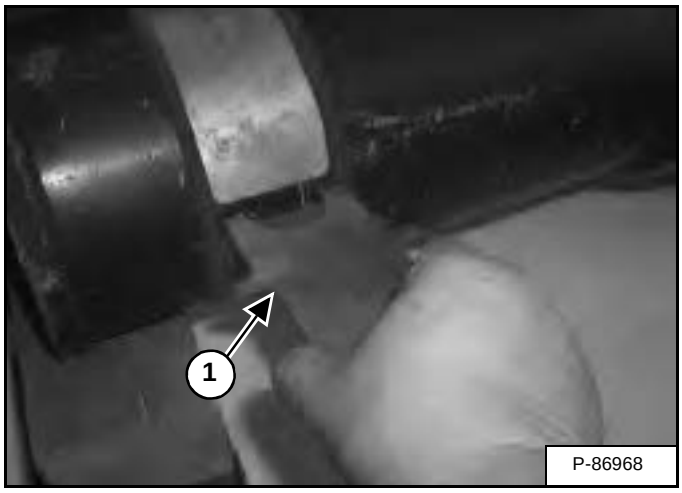


Rotate the maintenance tool (Item 1) and band (Item 2) **[Figure 315]** so the slot in the band is not directly over the tool retainer pin.

Procedure (External Retaining Band) (Cont'd)

Tool Installation For Later Breaker Models (Cont'd)

Figure 316

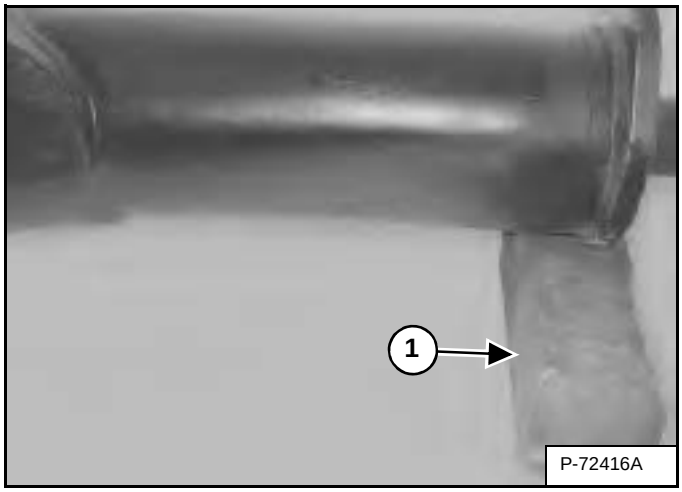


Rotate the maintenance tool (Item 1) **[Figure 316]** 90° and remove the maintenance tool.

Procedure (Internal Retaining Band)

Removing The Tool

Figure 317



Raise and block (Item 1) **[Figure 317]** 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.

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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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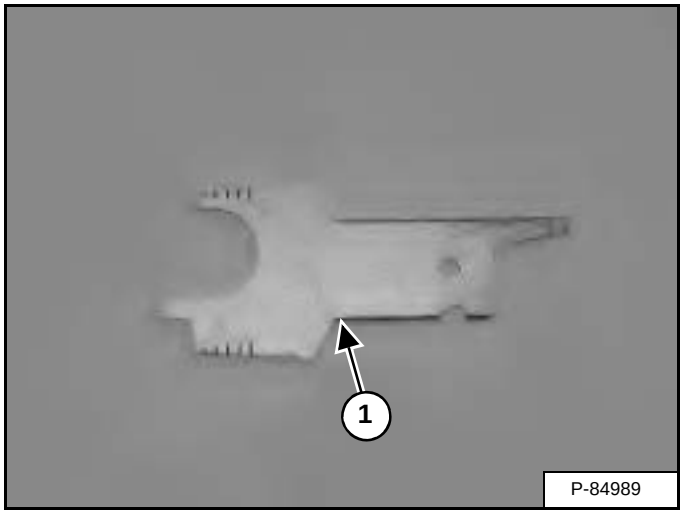
Figure 318



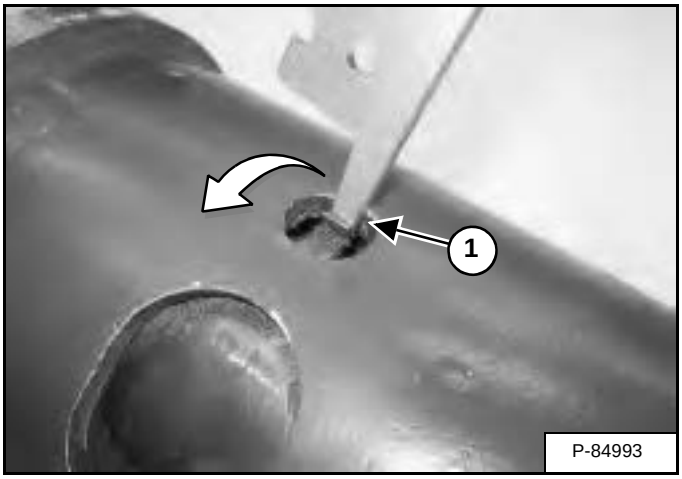
The maintenance tool (Item 1) **[Figure 318]** that is supplied with the breaker will be used to remove the tool retainer pin. (If this tool is not available, a flat blade screw driver can be used.)

REMOVAL AND INSTALLATION OF TOOL (CONT'D)

Procedure (Internal Retaining Band) (Cont'd)

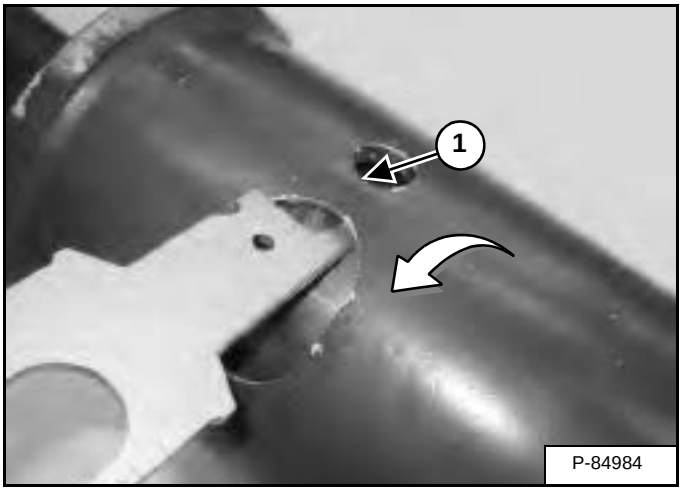
Removing The Tool (Cont'd)

Figure 319



Insert the tip of the tool (Item 1) **[Figure 319]** between the breaker frame and the tool retainer band. Use the tool to rotate the retainer band inside the breaker frame.

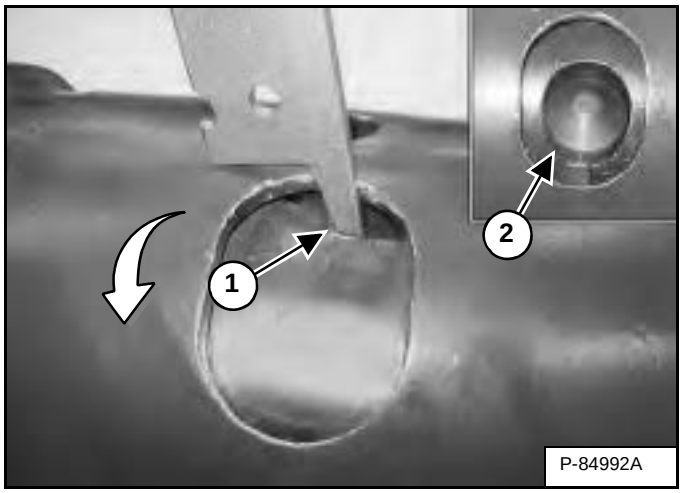
Figure 320



Insert the end of the tool (Item 1) **[Figure 320]**. Lift up on the tool to allow the tab on the end of the retainer band to go under the frame opening.

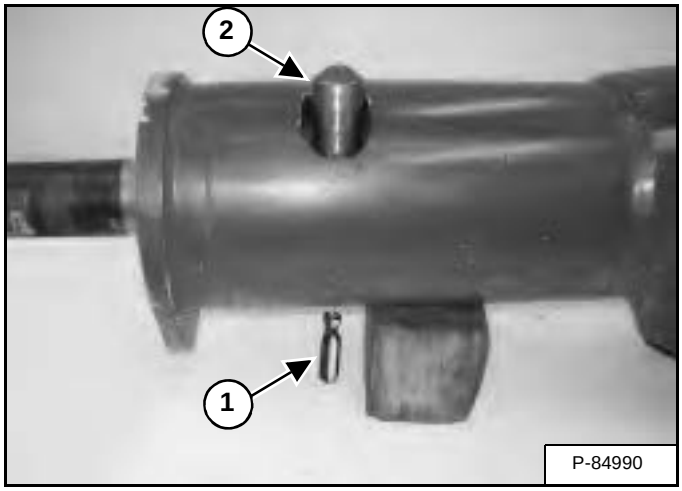
NOTE: Keep tool retaining components and tool bushings free of dirt and debris.

Figure 321



Continue using the maintenance tool (Item 1) to rotate the retainer band until the tool retainer pin (Item 2) **[Figure 321]** is exposed.

Figure 322



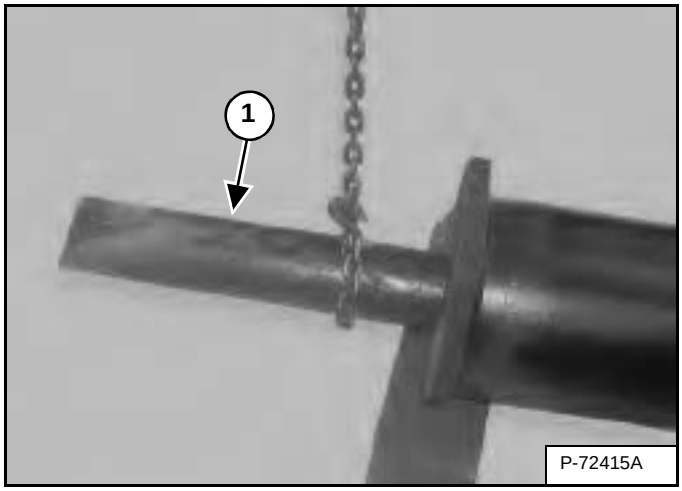
Insert a screw driver or punch (Item 1) through the access hole on the bottom of the frame and push the tool retaining pin (Item 2) **[Figure 322]** up and remove the retaining pin.

REMOVAL AND INSTALLATION OF TOOL (CONT'D)

Procedure (Internal Retaining Band) (Cont'd)

Removing The Tool (Cont'd)

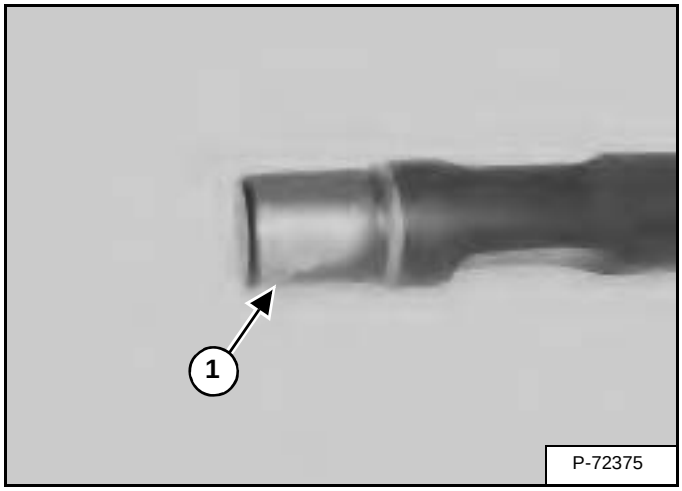
Figure 323



Using a lifting device, remove the tool (Item 1) **[Figure 323]**.

Installing The Tool

Figure 324

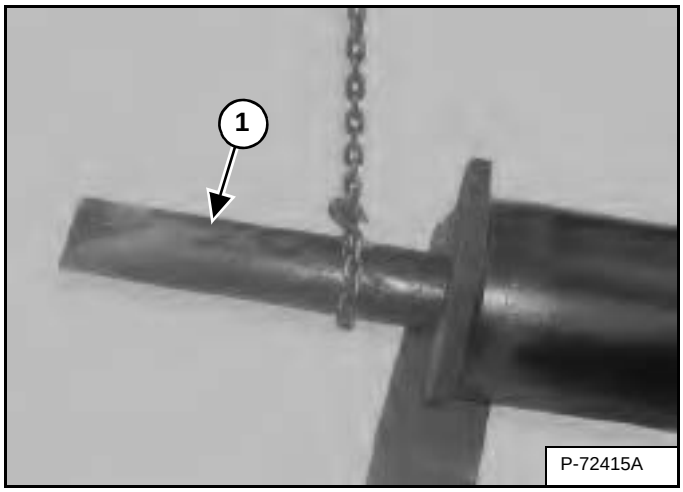


NOTE: Keep tool retaining components and tool bushings free of dirt and debris.

Apply grease to the top section of the tool (Item 1) **[Figure 324]**.

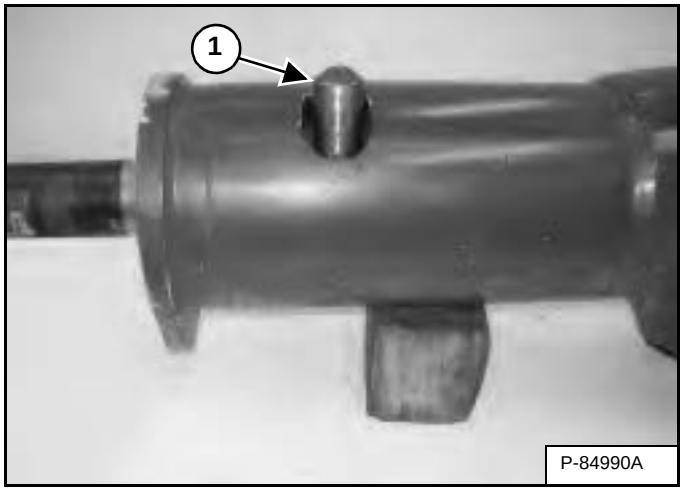
NOTE: Use a good quality lithium based grease. Lower quality grease may melt when hot and reduce the life of the tool and bushing.

Figure 325



Install the tool (Item 1) **[Figure 325]** in the breaker.

Figure 326

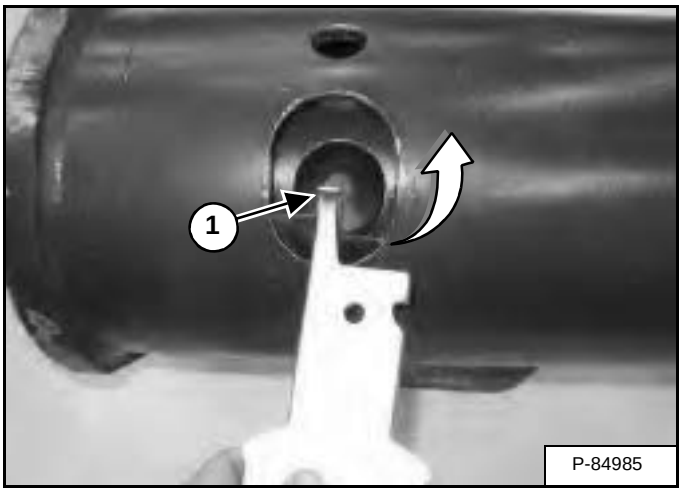


Install the tool retainer pin (Item 1) **[Figure 326]** in the breaker. The tool may need to be rotated for the pin to fit properly.

Procedure (Internal Retaining Band) (Cont'd)

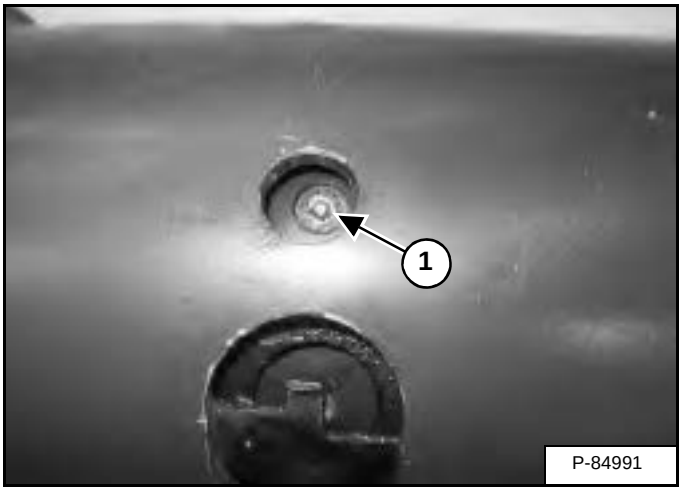
Installing The Tool (Cont'd)

Figure 327



Using the maintenance tool (Item 1) **[Figure 327]**, rotate the retainer band to close the opening.

Figure 328



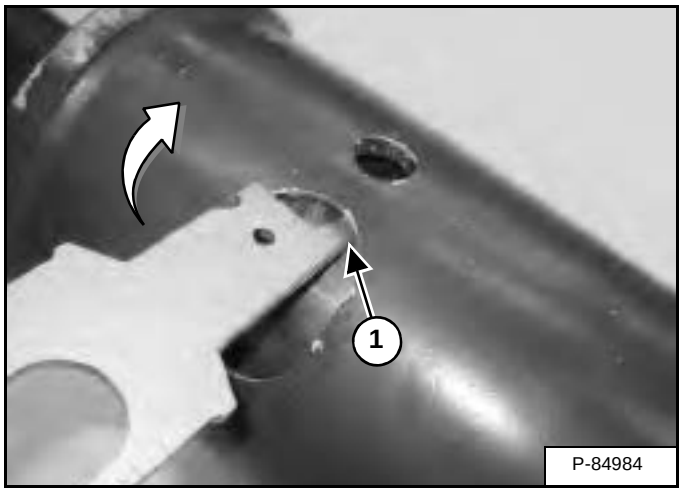
NOTE: Use a good quality lithium based grease. Lower quality grease may melt when hot and reduce the life of the tool and bushing.

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.

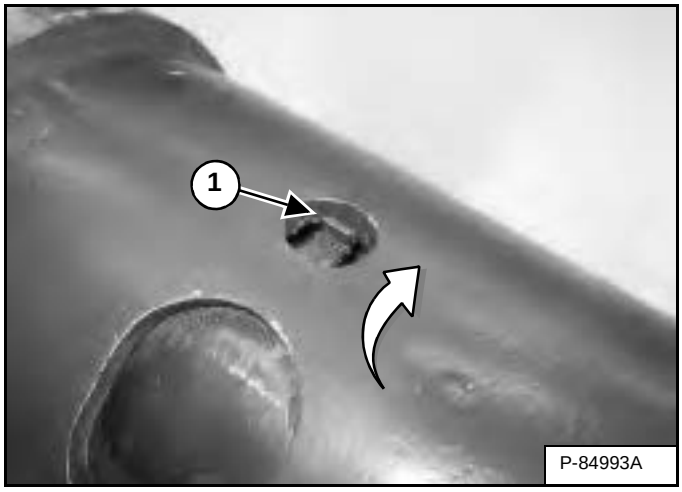
Push the tool in as far as possible. Apply grease (5 - 6 pumps) at the grease fitting (Item 1) **[Figure 328]**.

Figure 329



Using the maintenance tool (Item 1) **[Figure 329]**, press the tang of the retaining band so that it is pushed under the breaker frame.

Figure 330



Continue to rotate the retaining band (Item 1) **[Figure 330]** 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.
- Put all controls in neutral position.

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.

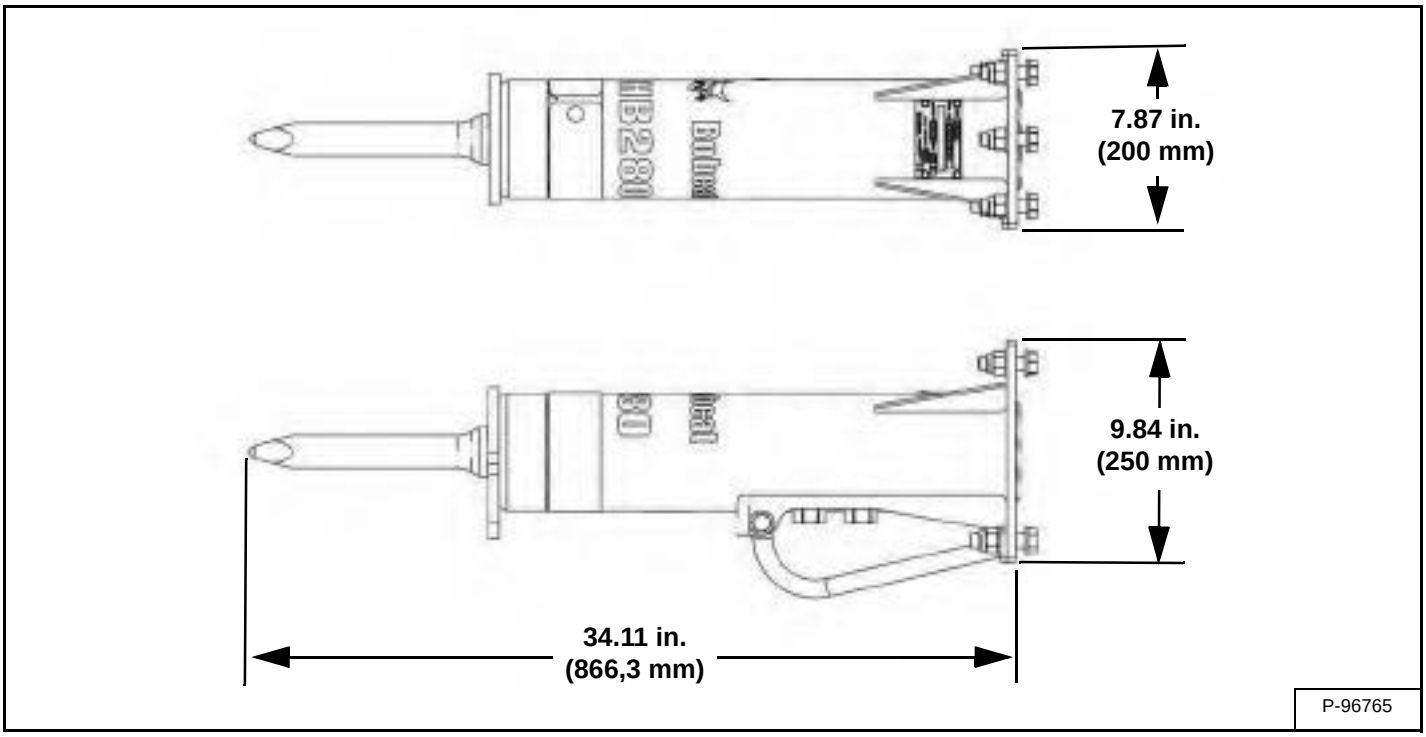
SPECIFICATIONS


Bobcat®

(HB280) HYDRAULIC BREAKER SPECIFICATIONS

Dimensions

- All dimensions are shown in inches. Respective metric dimensions are given in millimeters enclosed by parentheses.
- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



Performance

Breaker Weight	127 lb. (58 kg)
Blow Rate	
Soft Ground	1120 bpm
Hard Ground	1290 bpm
Operating Pressure	1750 PSI (120 bar)
System Pressure	2150 PSI (148 bar)
Impact Class	60 lbf. (81 kN/m)
CIMA Energy Rating	59 lbf. (80 kN/m)
Nitrogen Charge Pressure	465 PSI (32 bar)
Bit Diameter	1.46 in. (37 mm)
Bit Working Length	10.6 in. (269 mm)

Hydraulic System

Hydraulic Flow	3.4 - 6.1 GPM (13 - 23 L/min.)

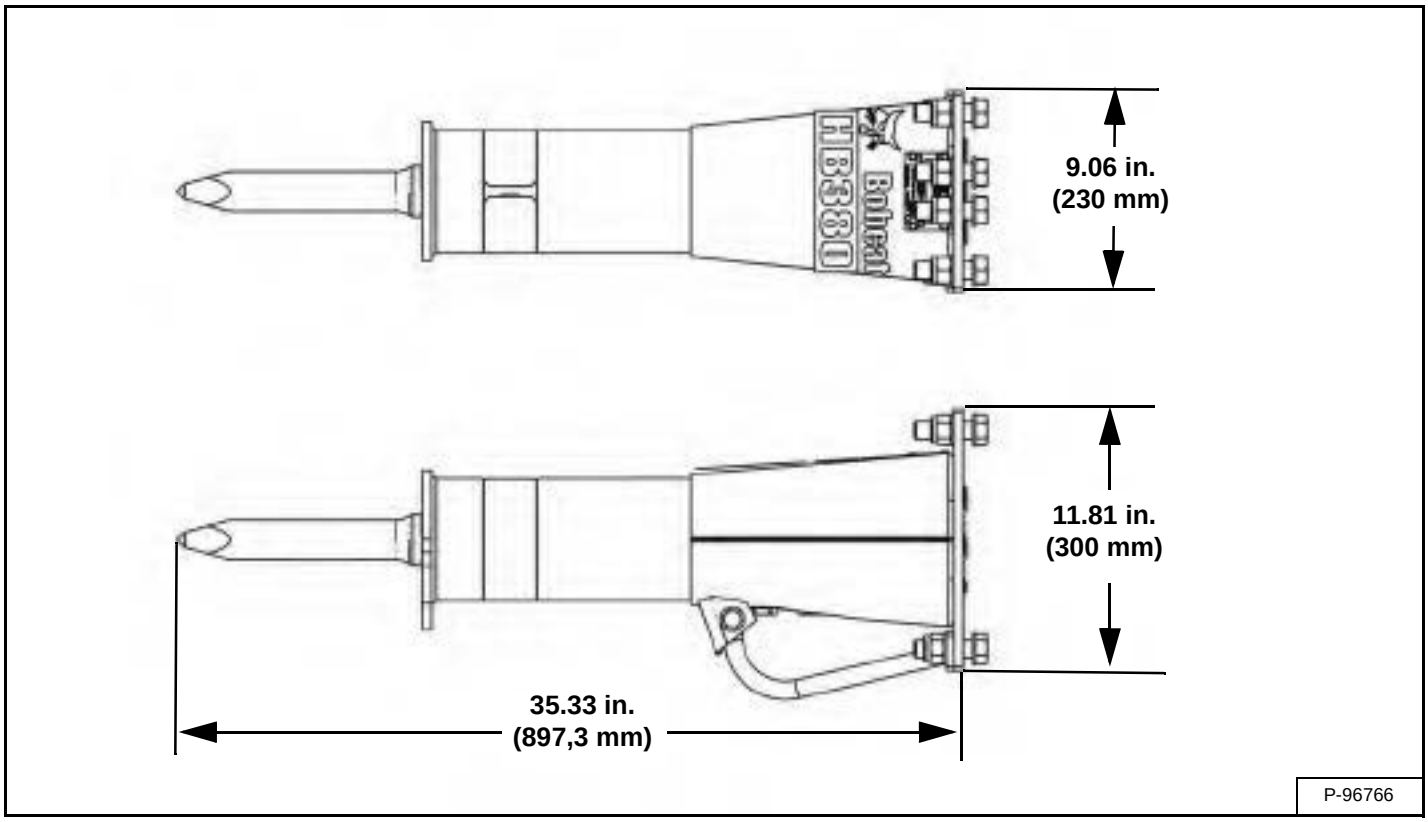
Environmental

Noise Level LwA (EU Directive 2000/14/EC)	Measured	Guaranteed
	115 db	118 db

(HB380) HYDRAULIC BREAKER SPECIFICATIONS

Dimensions

- All dimensions are shown in inches. Respective metric dimensions are given in millimeters enclosed by parentheses.
- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



Performance

Breaker Weight	169 lb. (77 kg)
Blow Rate	
Soft Ground	1400 bpm
Hard Ground	1600 bpm
Operating Pressure	1750 PSI (120 bar)
System Pressure	2150 PSI (148 bar)
Impact Class	70 lbf. (95 kN/m)
CIMA Energy Rating	70 lbf. (77 kN/m)
Nitrogen Charge Pressure	465 PSI (32 bar)
Bit Diameter	1.77 in. (45 mm)
Bit Working Length	11.0 in. (279 mm)

Hydraulic System

Hydraulic Flow	4.0 - 7.9 GPM (15 - 30 L/min.)

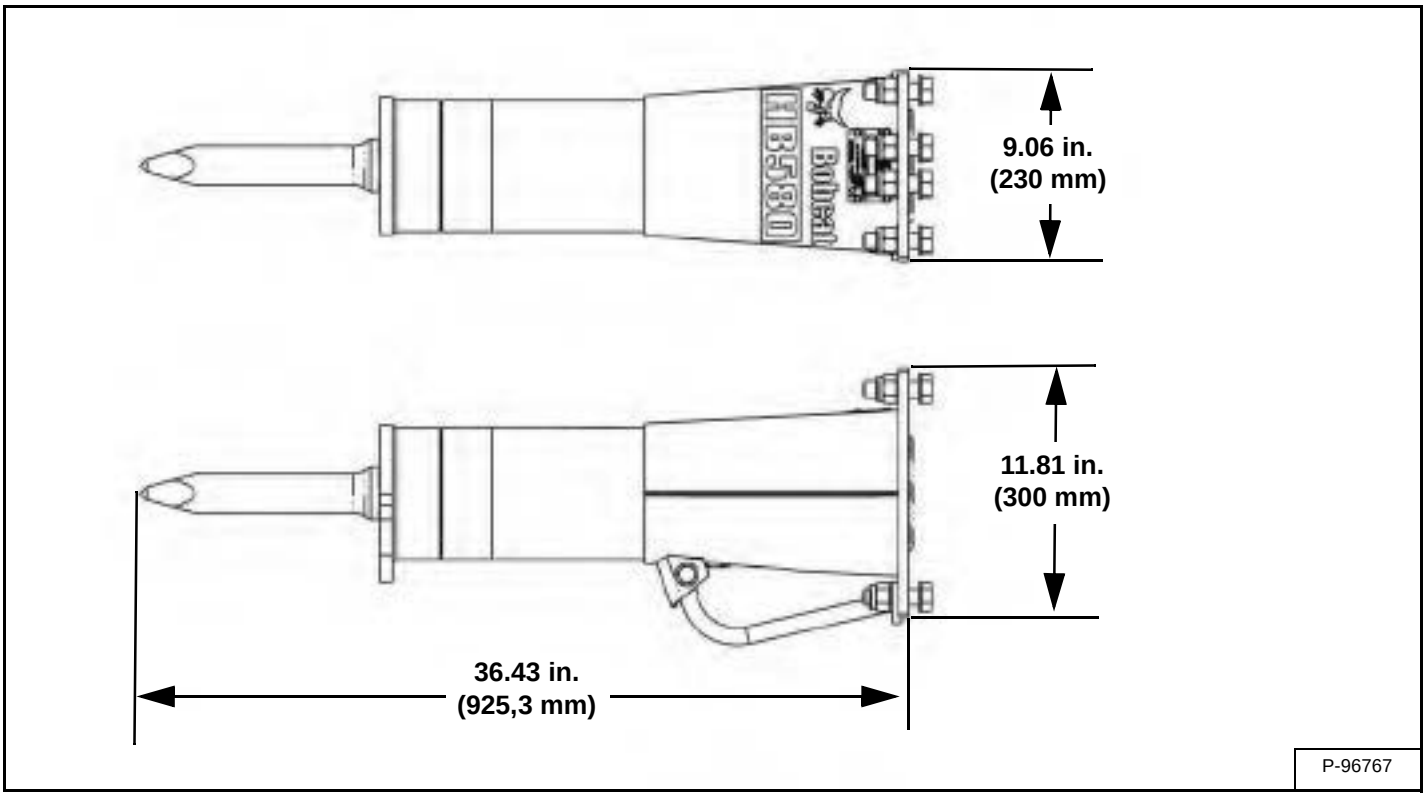
Environmental

Noise Level LwA (EU Directive 2000/14/EC)	Measured	Guaranteed
	118 db	121 db

(HB580) HYDRAULIC BREAKER SPECIFICATIONS

Dimensions

- All dimensions are shown in inches. Respective metric dimensions are given in millimeters enclosed by parentheses.
- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



Performance

Breaker Weight	211 lb. (96 kg)
Blow Rate	
Soft Ground	1220 bpm
Hard Ground	1350 bpm
Operating Pressure	1750 PSI (120 bar)
System Pressure	2150 PSI (148 bar)
Impact Class	100 lbf. (136 kN/m)
CIMA Energy Rating	83 lbf. (112 kN/m)
Nitrogen Charge Pressure	465 PSI (32 bar)
Bit Diameter	1.85 in. (47 mm)
Bit Working Length	11.5 in. (292 mm)

Hydraulic System

Hydraulic Flow	6.6 - 13.2 GPM (25 - 50 L/min.)

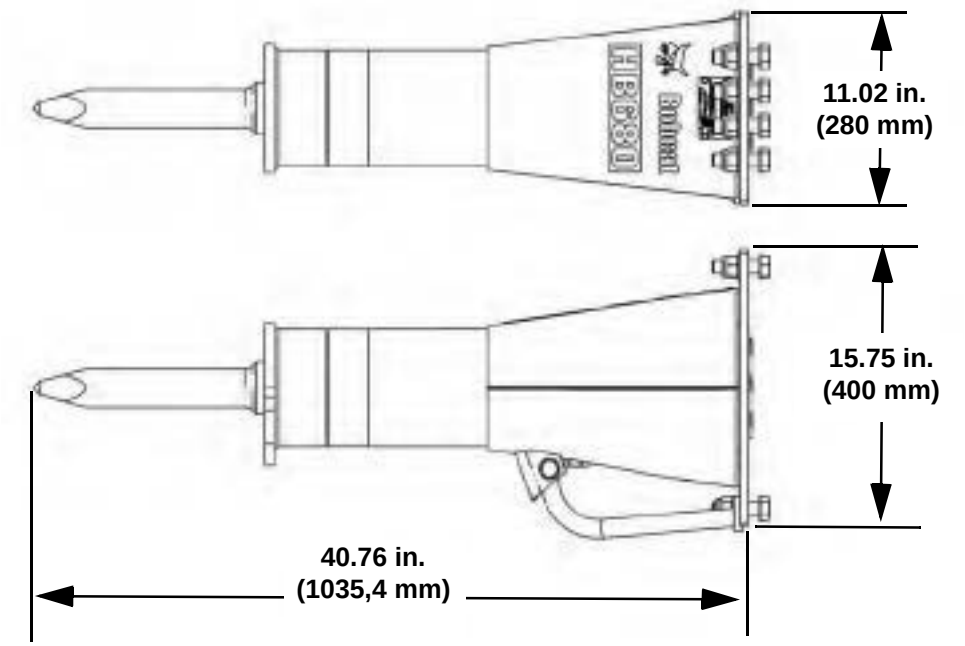
Environmental

Noise Level LwA (EU Directive 2000/14/EC)	Measured	Guaranteed
	117 db	121db

(HB680) HYDRAULIC BREAKER SPECIFICATIONS

Dimensions

- All dimensions are shown in inches. Respective metric dimensions are given in millimeters enclosed by parentheses.
- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



P-96768

Performance

Breaker Weight	281 lb. (127 kg)
Blow Rate	
Soft Ground	780 - 1220 bpm
Hard Ground	860 - 1340 bpm
Operating Pressure	1750 PSI (120 bar)
System Pressure	2150 PSI (148 bar)
Impact Class	150 lbf. (203 kN/m)
CIMA Energy Rating	143 lbf. (194 kN/m)
Nitrogen Charge Pressure	465 PSI (32 bar)
Bit Diameter	2.17 in. (55,1 mm)
Bit Working Length	13.0 in. (330 mm)

Hydraulic System

Hydraulic Flow	6.6 - 13.2 GPM (25 - 50 L/min.)

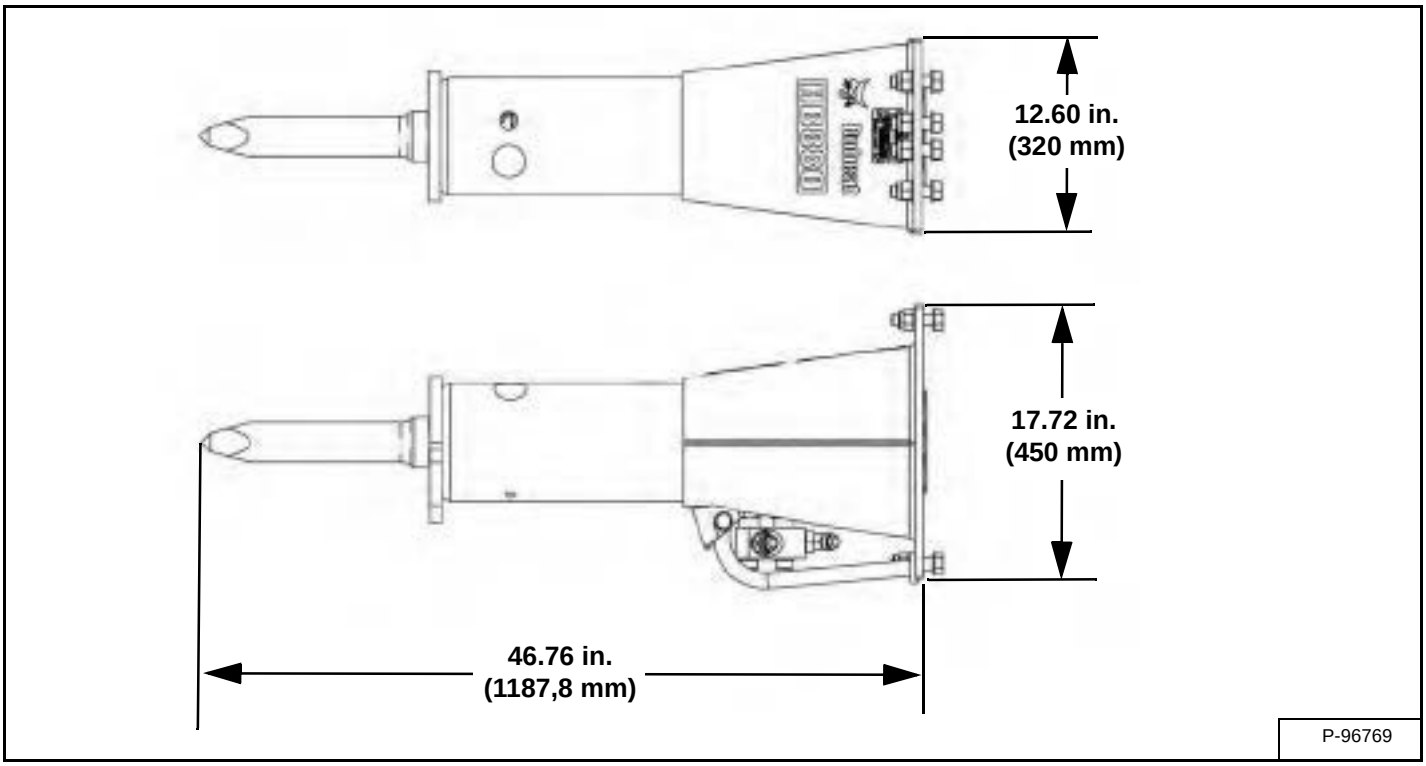
Environmental

Noise Level LwA (EU Directive 2000/14/EC)	Measured	Guaranteed
	119 db	122 db

(HB880) HYDRAULIC BREAKER SPECIFICATIONS

Dimensions

- All dimensions are shown in inches. Respective metric dimensions are given in millimeters enclosed by parentheses.
- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



Performance

Breaker Weight	427 lb. (194 kg)
Blow Rate	
Soft Ground	755 - 1150 bpm
Hard Ground	860 - 1310 bpm
Operating Pressure	1750 PSI (120 bar)
System Pressure	2150 PSI (148 bar)
Impact Class	300 lbf. (407 kN/m)
CIMA Energy Rating	207 lbf. (282 kN/m)
Nitrogen Charge Pressure	465 PSI (32 bar)
Bit Diameter	2.56 in. (65 mm)
Bit Working Length	13.0 in. (330 mm)

Hydraulic System

Hydraulic Flow	7.9 - 17.2 GPM (30 - 65 L/min.)

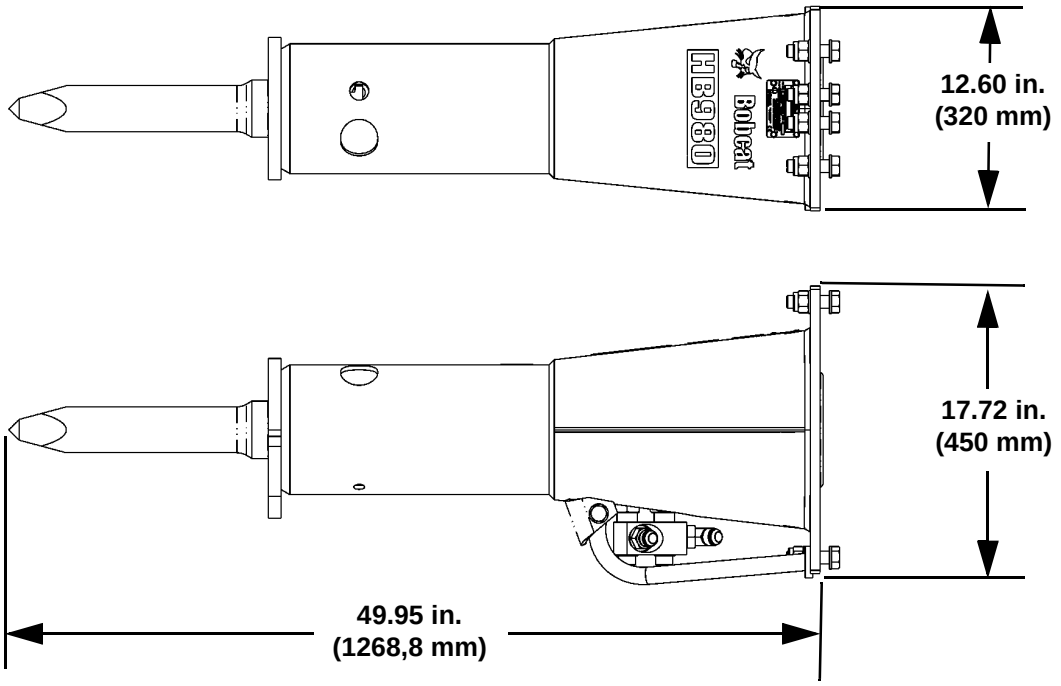
Environmental

Noise Level LwA (EU Directive 2000/14/EC)	Measured	Guaranteed
	117 db	121 db

(HB980) HYDRAULIC BREAKER SPECIFICATIONS

Dimensions

- All dimensions are shown in inches. Respective metric dimensions are given in millimeters enclosed by parentheses.
- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



Performance

Breaker Weight	502 lb. (228 kg)
Blow Rate	
Soft Ground	855 - 1060 bpm
Hard Ground	1170 - 1450 bpm
Operating Pressure	1750 PSI (120 bar)
System Pressure	2150 PSI (148 bar)
Impact Class	500 lbf. (678 kN/m)
CIMA Energy Rating	282 lbf. (382 kN/m)
Nitrogen Charge Pressure	465 PSI (32 bar)
Bit Diameter	2.84 in. (72,1 mm)
Bit Working Length	14.0 in. (356 mm)

Hydraulic System

Hydraulic Flow	11.9 - 21.1 GPM (45 - 80 L/min.)

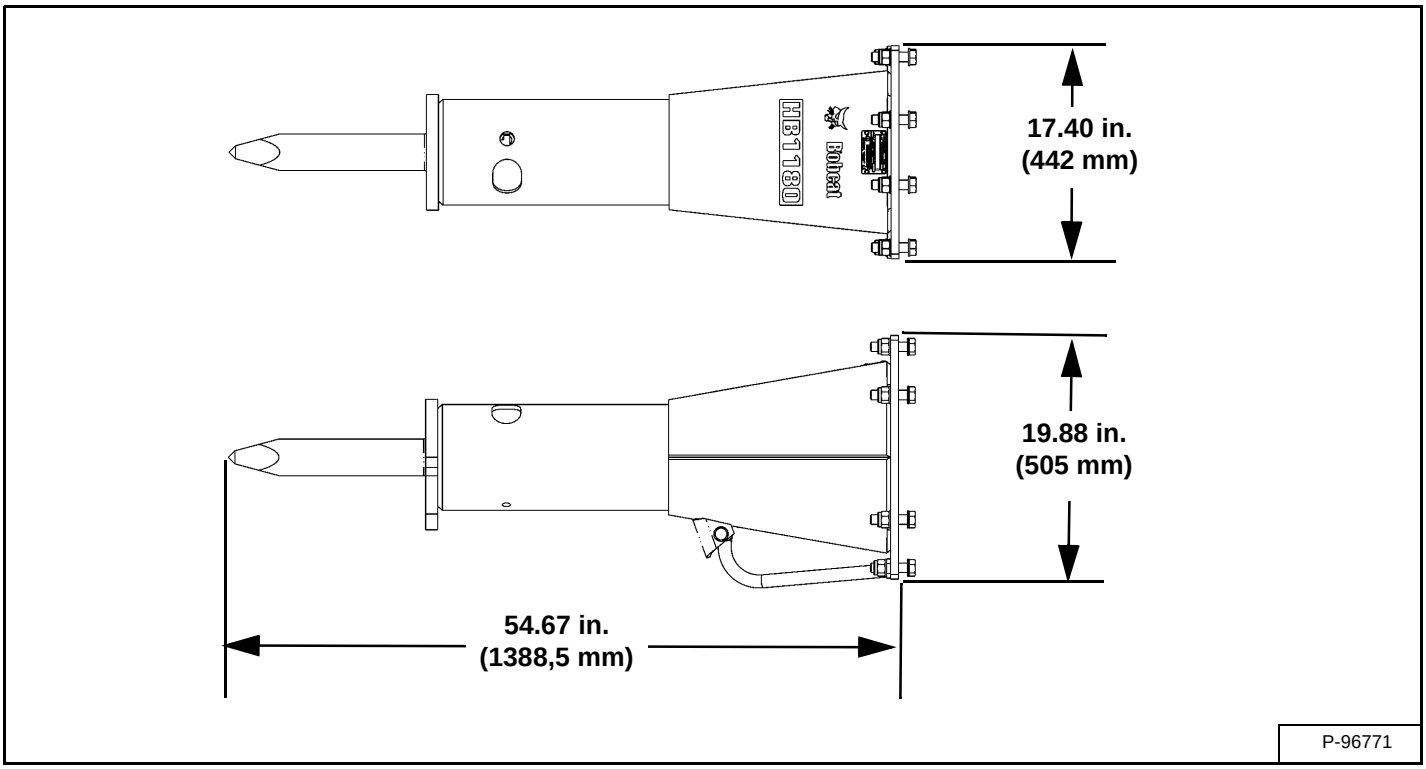
Environmental

Noise Level LwA (EU Directive 2000/14/EC)	Measured	Guaranteed
	122 db	125 db

(HB1180) HYDRAULIC BREAKER SPECIFICATIONS

Dimensions

- All dimensions are shown in inches. Respective metric dimensions are given in millimeters enclosed by parentheses.
- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



Performance

Breaker Weight	659 lb. (299 kg)
Blow Rate	
Soft Ground	680 - 1070 bpm
Hard Ground	820 - 1280 bpm
Operating Pressure	1850 PSI (125 bar)
System Pressure	2150 PSI (148 bar)
Impact Class	750 lbf. (1017 kN/m)
CIMA Energy Rating	384 lbf. (520 kN/m)
Nitrogen Charge Pressure	465 PSI (32 bar)
Bit Diameter	3.03 in. (85 mm)
Bit Working Length	16.0 in. (406 mm)

Hydraulic System

Hydraulic Flow	14.5 - 26.4 GPM (55 - 100 L/min.)

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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