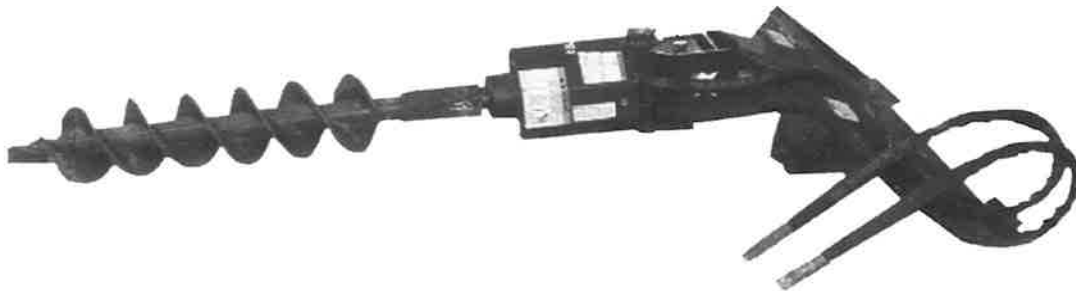


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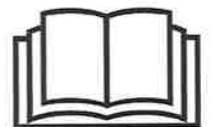
Bobcat®

Operation & Maintenance Manual



Direct Drive Auger

(10 Auger) S/N 879900101 & Above
(15C Auger) S/N 944200101 & Above
(15H Auger) S/N A90L00101 & Above
(30C Auger) S/N 944500101 & Above
(30H Auger) S/N A7ER00101 & Above





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REFERENCE INFORMATION

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

Attachment Serial Number _____

NOTES:

YOUR BOBCAT DEALER:

ADDRESS:

PHONE:



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

Doosan Bobcat EMEA s.r.o
U Kodetky 1810
26312 Dobris
CZECH REPUBLIC



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FOREWORD

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

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DECLARATION OF CONFORMITY

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

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

Technical Documentation

Doosan Bobcat EMEA s.r.o.
U Kodetky 1810
26312 Dobris
CZECH REPUBLIC

Description of Equipment

Type of Interchangeable Equipment:	Auger			
Model Name:	Auger 10	Auger 15C	Auger 30C	Auger 30H
Model Code:				
Lot Series:	879900101 & above	944200101 & above	944500101 & above	187700101 & above

Model Name:	Auger 15H	Auger 30H
Model Code:		
Lot Series:	A90L00101 & above	A7ER00101 & above

Declaration of Conformance

This equipment conforms to the requirements of an interchangeable equipment as specified in Machinery Directive 2006/42/EC Article 1(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



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BOBCAT COMPANY IS ISO 9001 CERTIFIED



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

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

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

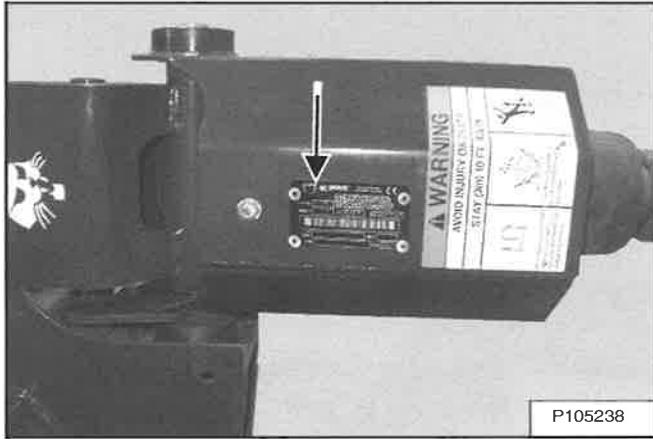


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SERIAL NUMBER LOCATION

Attachment Serial Number

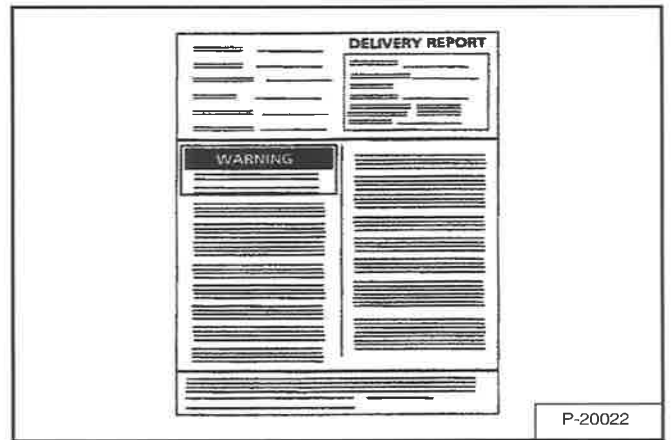
Figure 1



Always use the serial number of the direct drive auger 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 [Figure 1].

DELIVERY REPORT

Figure 2

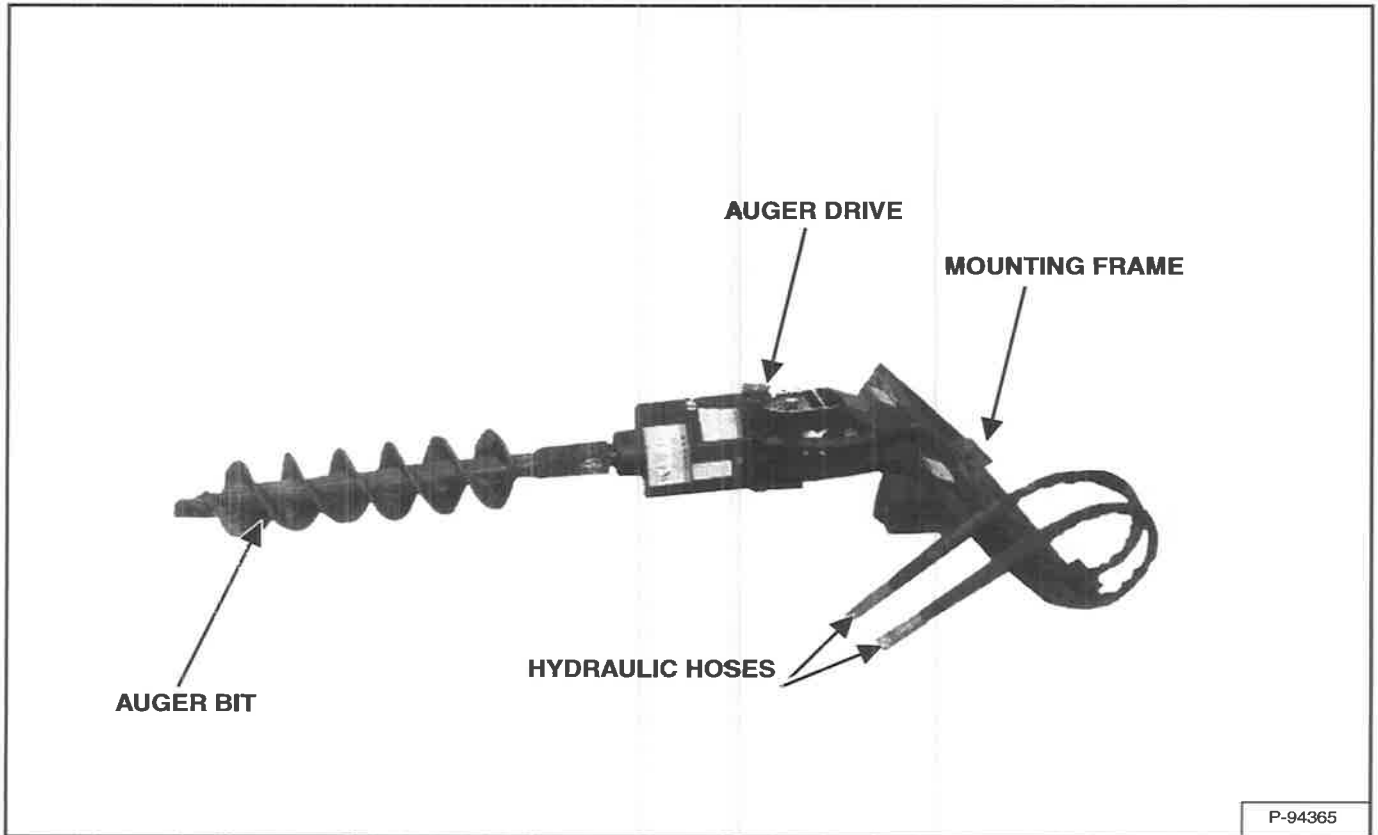


The delivery report [Figure 2] contains a list of items that must be explained or shown to the owner or operator by the dealer when the Bobcat direct drive auger is delivered.

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



ATTACHMENT IDENTIFICATION





FEATURES AND ACCESSORIES

Standard Items

The direct drive auger is equipped with the following Standard Items:

- Direct Drive For More Efficient Operation. A Smaller Drive Housing Allows The Entire Drive Unit To Follow The Bit Into The Hole, Adding 30,5 cm (12 in) More Dig Depth Than A Standard Drive Unit.
- More Torque. An Efficient Design And Modified Displacement Give These Units Plenty Of Torque.
- Improved Mounting System For Both Excavator And Loader Mounting.
- Round And Combination Shaft Direct Drive Augers Available.

Options And Accessories

Below is a list of Options and Accessories available for your direct drive auger. See your Bobcat dealer for other available options and accessories.

NOTE: See your Bobcat dealer for available bits approved for your model direct drive auger.

Light Duty Bits:

- 15,24 cm, 22,86 cm, 30,48 cm, 38,10 cm, 45,72 cm, 60,96 cm, 76,20 cm, 91,44 cm (6 in, 9 in, 12 in, 15 in, 18 in, 24 in, 30 in, 36 in)

Standard Bits:

- 15,24 cm, 22,86 cm, 30,48 cm, 38,10 cm, 45,72 cm, 60,96 cm, 76,20 cm, 91,44 cm (6 in, 9 in, 12 in, 15 in, 18 in, 24 in, 30 in, 36 in)

Tree Planting Bits:

- 45,72 cm, 60,96 cm, 76,20 cm, 91,44 cm (18 in, 24 in, 30 in, 36 in)

Heavy Duty Bits:

- 15,24 cm, 22,86 cm, 30,48 cm, 40,64 cm, 45,72 cm, 60,96 cm, 76,20 cm (6 in, 9 in, 12 in, 16 in, 18 in, 20 in, 24 in, 30 in)

Rock Bits:

- 15,24 cm, 22,86 cm, 30,48 cm, 40,64 cm, 45,72 cm, 60,96 cm, 76,20 cm (6 in, 9 in, 12 in, 16 in, 18 in, 20 in, 24 in, 30 in)

Extensions:

- 35,56 cm (14 in) Extension
- 60,96 cm (24 in) Adjustable Round Extension (Adjustable Positions: 22,86 cm, 41,91 cm, 60,96 cm) (Adjustable Positions: 9 in, 16.5 in, 24 in)
- 60,96 cm (24 in) Adjustable Hex Extension (Adjustable Positions: 22,86 cm, 41,91 cm, 60,96 cm) (Adjustable Positions: 9 in, 16.5 in, 24 in)
- 121,92 cm (48 in) Adjustable Round Extension (Adjustable Positions: 33,02 cm, 62,738 cm, 92,202 cm, 121,92 cm) (Adjustable Positions: 13 in, 24.7 in, 36.3 in, 48 in)
- 121,92 cm (48 in) Adjustable Hex Extension (Adjustable Positions: 33,02 cm, 62,738 cm, 92,202 cm, 121,92 cm) (Adjustable Positions: 13 in, 24.7 in, 36.3 in, 48 in)

NOTE: When using an extension with the 15,24 cm (6 in) and 22,86 cm (9 in) bits, only the longest extension position can be used. The extension length is not adjustable when used with these bits.

Adapters:

- Round Shaft To Hex Bit Adapter, Cast
- Hex Shaft To Round Bit Adapter, Cast
- Hex Shaft To Round Bit Adapter, Sleeve

Auger Bumper Kit (S630, S650, S850, T630, T650 and T870)

Swing Stop Kit (MT50, MT52, MT55)

Auger Bits

Hose Extension Kit (15C, 15H, 30C & 30H Augers Used On E50 Long Arm & E55 Excavators)



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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 coordination 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.

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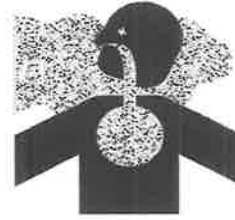


SAFETY INSTRUCTIONS (CONT'D)

Use Safety Rules

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

Avoid Silica Dust



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



FIRE PREVENTION



Maintenance

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

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

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

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

Operation

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

Electrical



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

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

Hydraulic System

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

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

Fueling



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

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

Starting

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

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

Spark Arrester Exhaust System

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

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



FIRE PREVENTION (CONT'D)

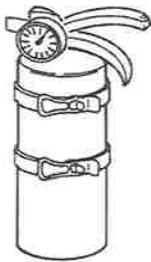
Welding And Grinding

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

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

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

Fire Extinguishers



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



PUBLICATIONS AND TRAINING RESOURCES

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

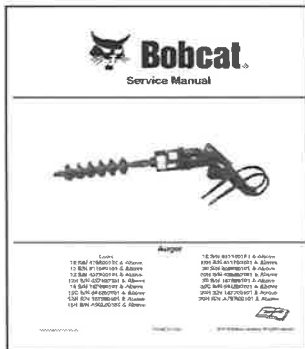
For the latest information on Bobcat products and the Bobcat Company, visit our web site at **Bobcat.com**



OPERATION & MAINTENANCE MANUAL

6901180enGB

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



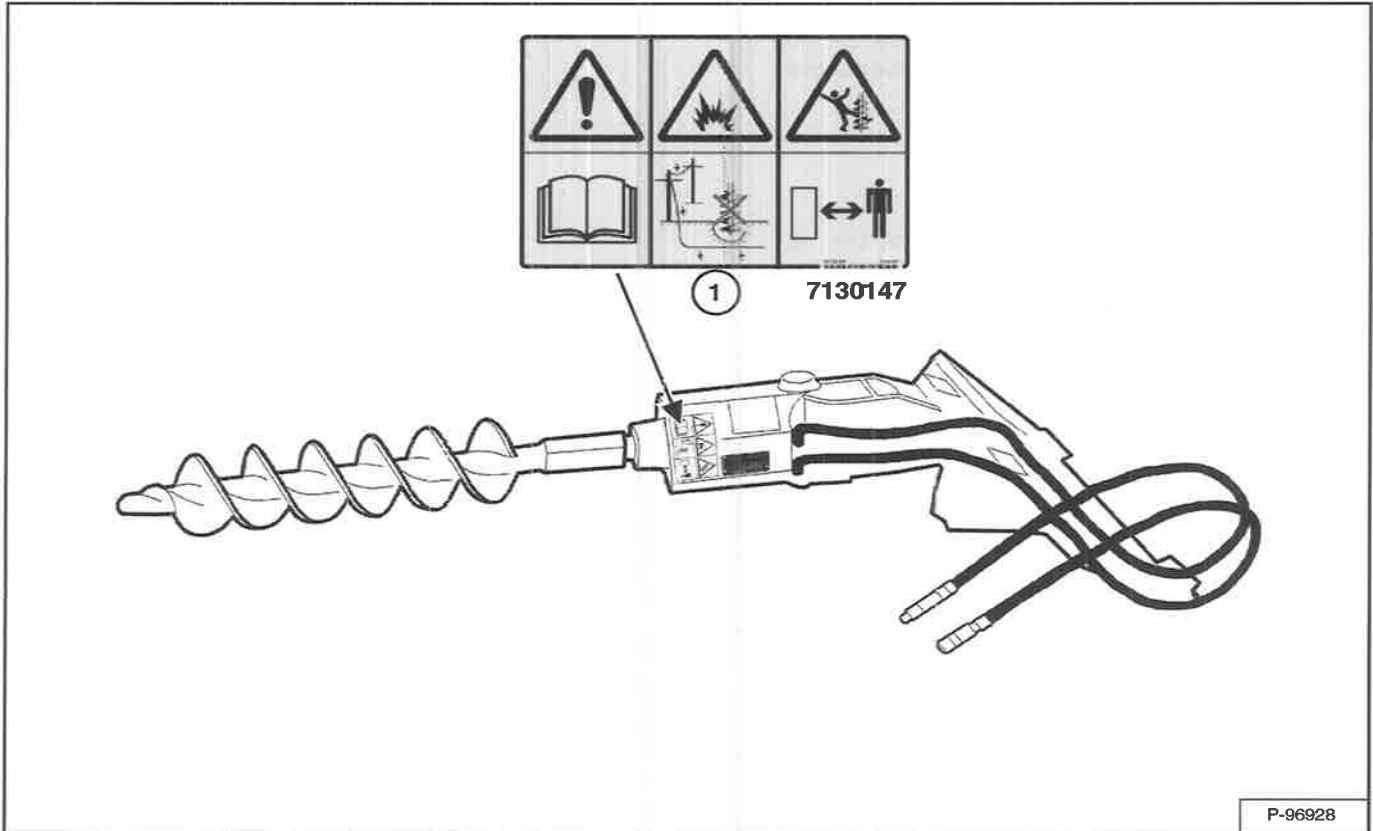
SERVICE MANUAL

6900889enUS

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.

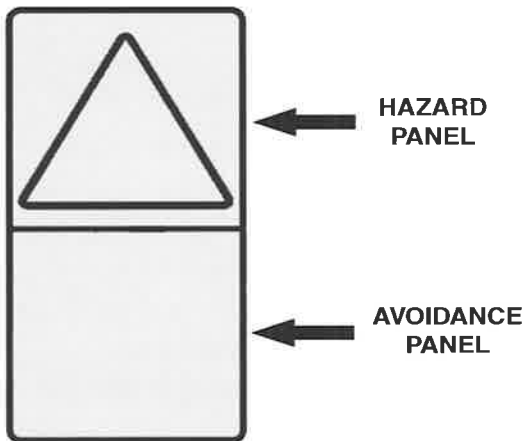


ATTACHMENT SIGNS (DECALS) (CONT'D)

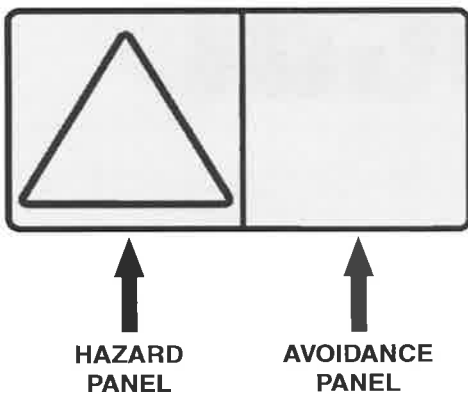
Pictorial Only Safety Signs

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

Vertical Configuration



Horizontal Configuration



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

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

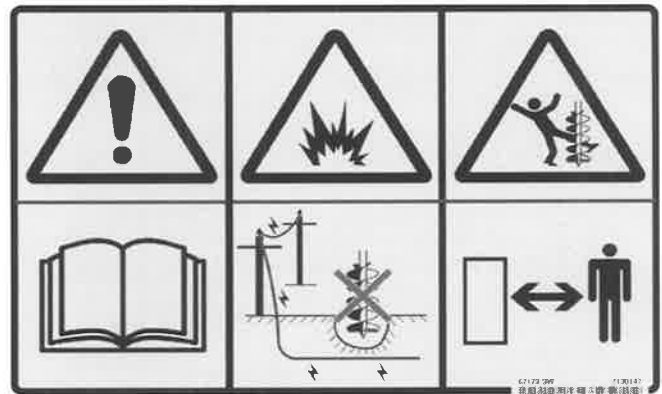
Avoidance panels depict actions required to avoid the hazards.

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

NOTE: See the numbered ATTACHMENT SIGNS (DECALS) on Page 20 for the location of each correspondingly numbered pictorial only decal.

1. General Hazard (7130147)

This safety sign is located on the auger drive.



AVOID INJURY OR DEATH

Never use auger without instructions. Read and understand the Operation & Maintenance Manual before operating or servicing the auger.

Explosion or electrocution can occur if auger bit contacts utility lines or pipes. Check for underground utility lines before digging.

Stay away from rotating auger and cutting head.

W-2791-0309



Bobcat®



OPERATING INSTRUCTIONS

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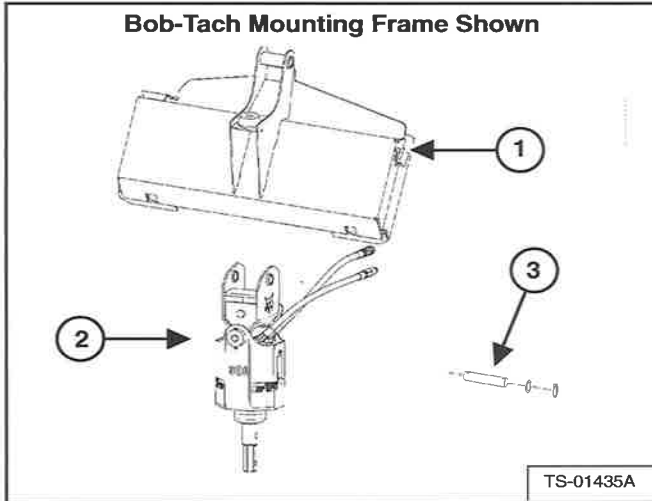


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INITIAL SETUP

Assembly

Figure 3

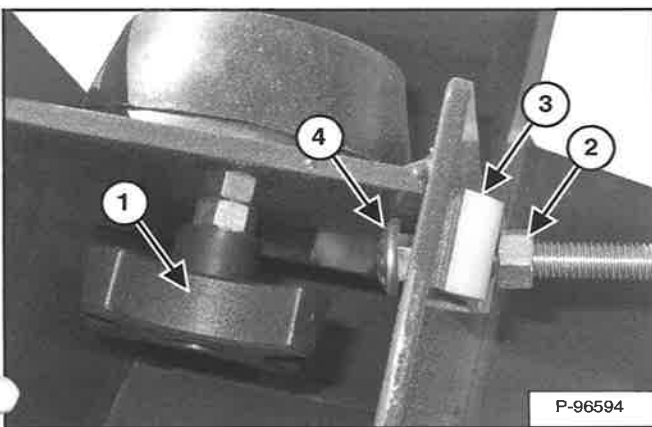


Non Bob-Tach Mounting Frame (Excavator And Telescopic Handler)

Align the auger mounting frame (Item 1) with the auger drive (Item 2) and install the pivot pin (Item 3) **[Figure 3]**. (See the machine's Operation & Maintenance Manual for the correct attachment installation procedure.)

Remove the auger mounting frame (Item 1), auger drive (Item 2), and pivot pin (Item 3) **[Figure 3]** from the shipping crates.

Figure 4



Remove the knob (Item 1) **[Figure 4]** from the bumper stop bolt. Retain knob for future use.

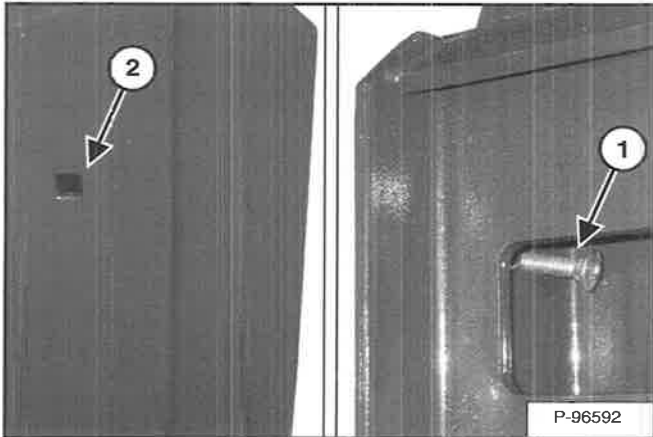
Remove the nut (Item 2), clamp (Item 3), and carriage bolt (Item 4) **[Figure 4]**. Retain hardware for future use.

INITIAL SETUP (CONT'D)

Assembly (Cont'd)

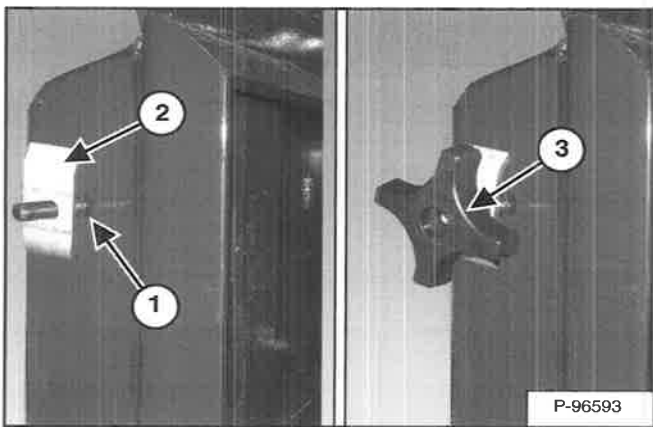
Bob-Tach Mounting Frame

Figure 5



Install the carriage bolt (Item 1) (from the inside) through the square opening (Item 2) [Figure 5] on the left side of the auger mounting frame.

Figure 6



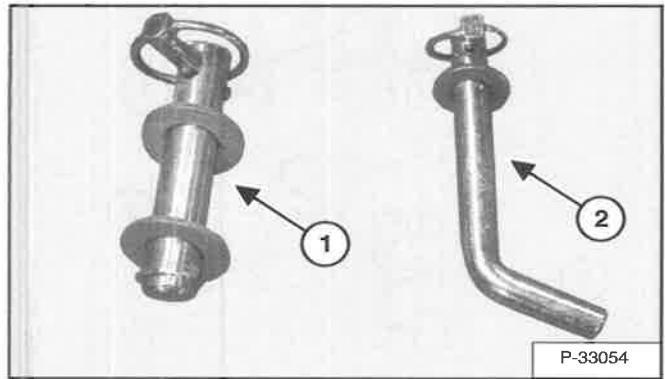
Pull the carriage bolt through the square opening and align the bolt collar with the opening. Install the nut (Item 1) [Figure 6].

Install the clamp (Item 2) and knob (Item 3) [Figure 6] onto the carriage bolt. Tighten the knob and clamp firmly against the auger mounting frame.

Install the mounting frame on the machine's Bob-Tach. (See the machine's Operation & Maintenance Manual for the correct attachment installation procedure.)

Auger Bit Installation

Figure 7

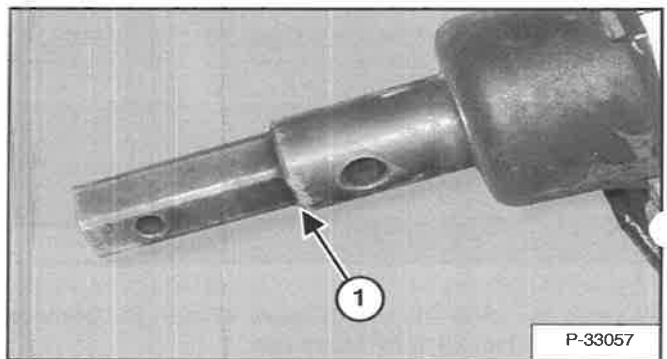


Mounting hardware for the round drive auger bits (Item 1). Mounting hardware for the hex drive auger bits (Item 2) [Figure 7].

NOTE: The auger bit mounting hardware (Items 1 or 2) [Figure 7] is different for attaching the auger bit.

NOTE: The model 10 auger, will only accept round drive auger bits and uses the mounting hardware (Item 1) [Figure 7].

Figure 8



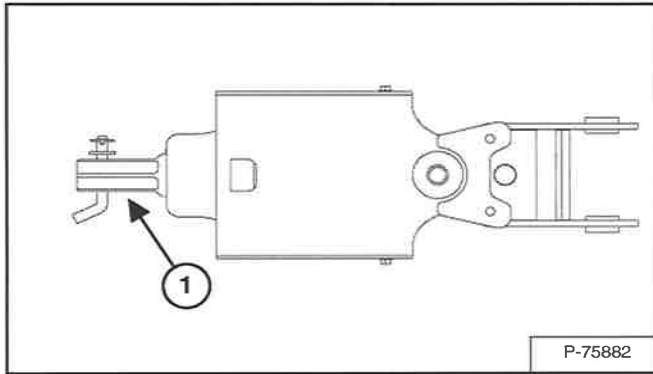
NOTE: The model 15C and 30C auger are equipped with a drive shaft (Item 1) [Figure 8] that will accept either the round or the hex drive auger bits.

INITIAL SETUP (CONT'D)

Assembly (Cont'd)

Auger Bit Installation (Cont'd)

Figure 9

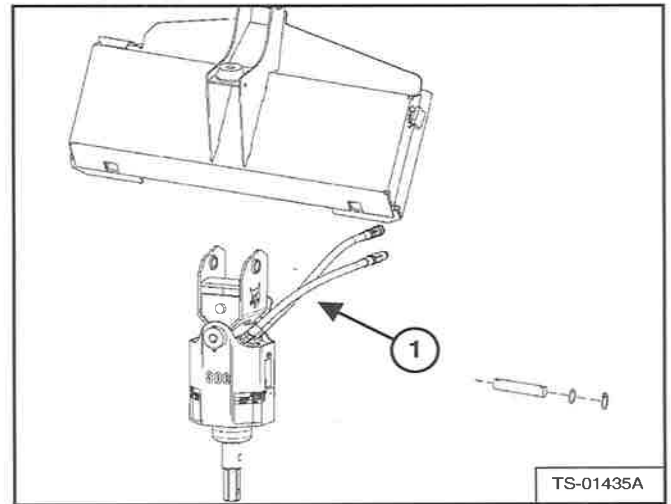


NOTE: The model 15H and 30H augers are equipped with a drive shaft (Item 1) [Figure 9] that will only accept hex drive auger bits.

NOTE: Make sure the decals are clearly visible on the auger drive.

Hose Installation

Figure 10

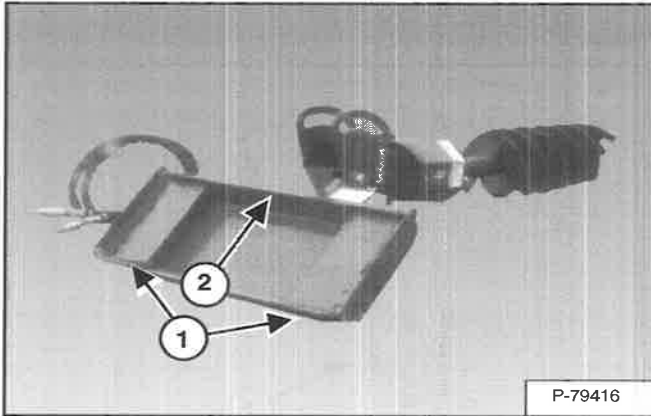


Install the hydraulic hoses (Item 1) [Figure 10] onto the auger head.

DAILY INSPECTION

Attachment Mounting Frame

Figure 11



Inspect the Bob-Tach wedge mounts (Item 1), mounting flange (Item 2) [Figure 11] and all welds on the auger for wear and damage each time the auger is removed from the machine.

Bob-Tach

Hand Lever Bob-Tach

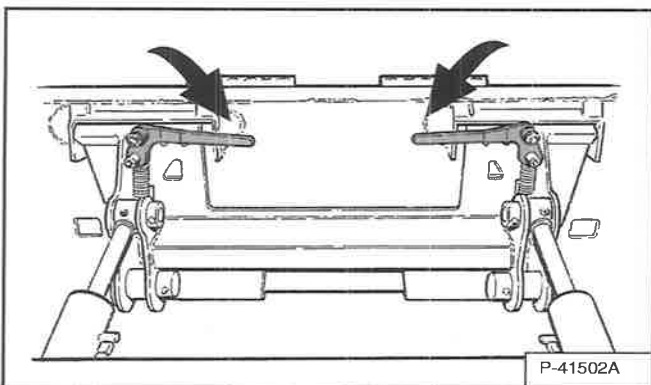


AVOID INJURY OR DEATH

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

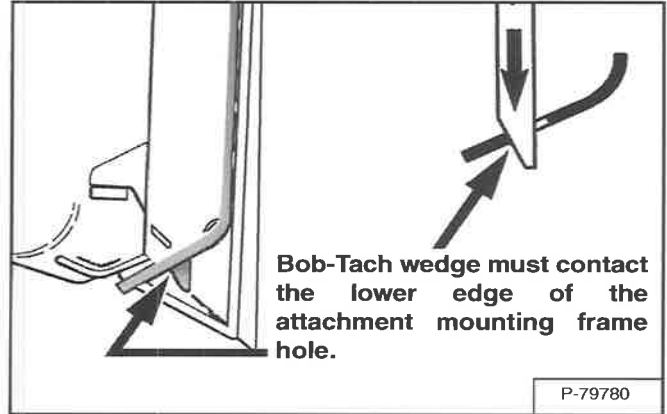
Figure 12



Push down on the Bob-Tach levers until they are fully engaged in the locked position [Figure 12] (wedges fully extended through the attachment mounting frame holes).

The levers and wedges must move freely [Figure 12].

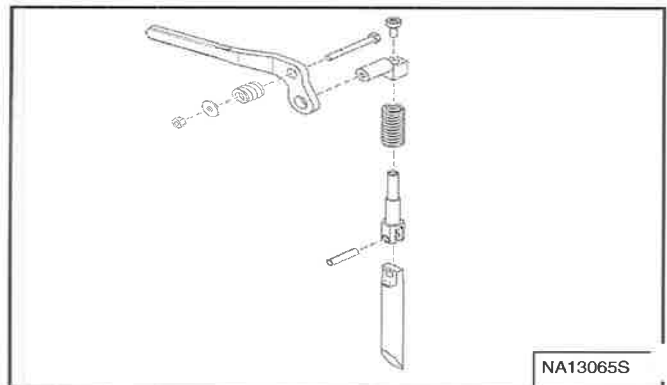
Figure 13



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 13].

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.

Figure 14



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 [Figure 14]. 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



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 15

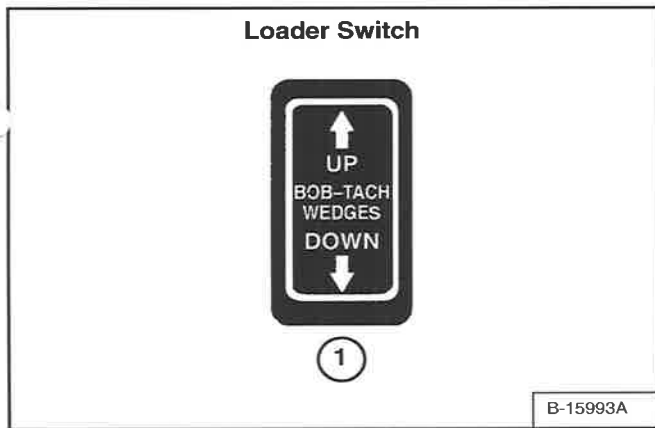
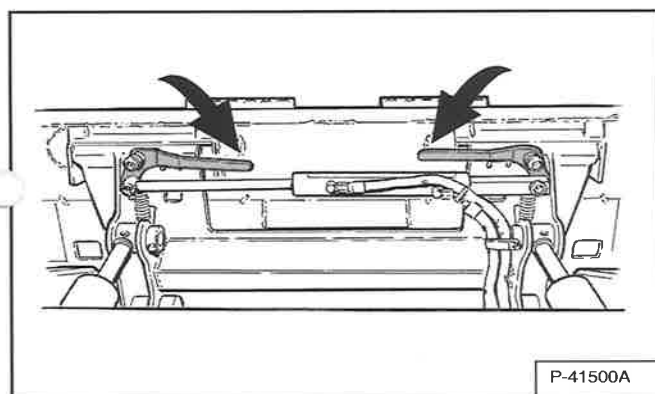
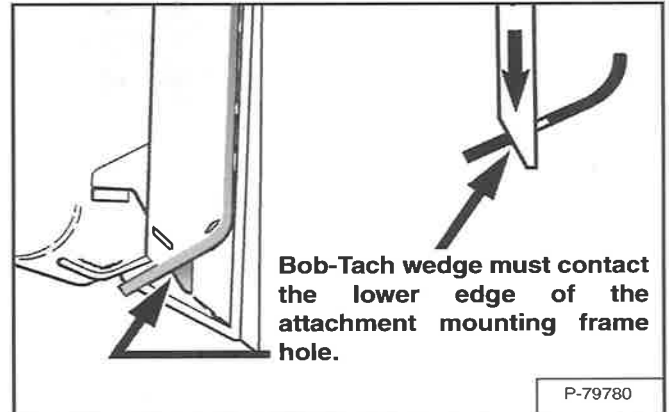


Figure 16



Push and hold the BOB-TACH "WEDGES DOWN" switch (Item 1) [Figure 15] until the levers are fully engaged in the locked position [Figure 16] (wedges fully extended through the attachment mounting frame holes).

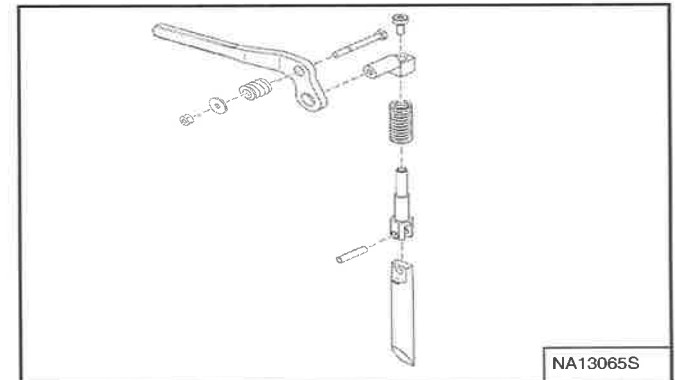
Figure 17



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 17].

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.

Figure 18



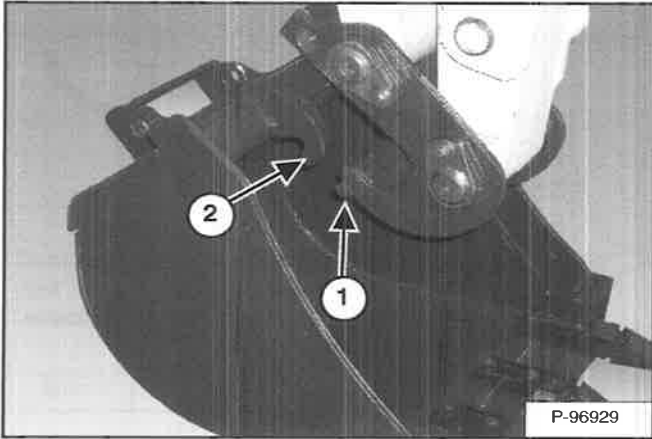
Inspect the mounting frame on the attachment. (See the machine's Operation & Maintenance Manual for inspecting the Bob-Tach). Replace any parts that are damaged, bent or missing [Figure 18]. Keep all fasteners tight. Look for cracked welds. Contact your Bobcat dealer for repair or replacement parts.

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

DAILY INSPECTION (CONT'D)

X-Change™

Figure 19

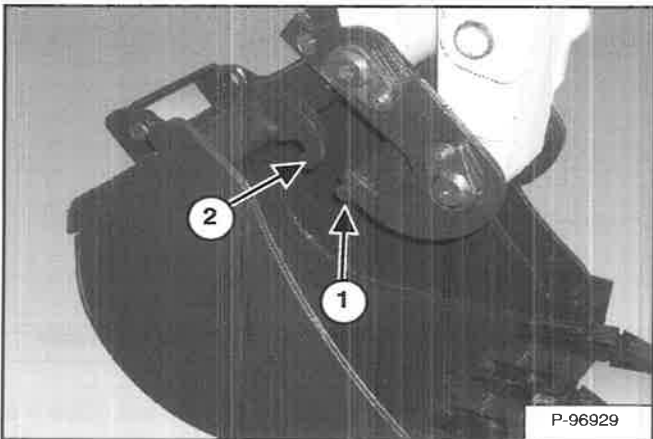


Inspect the X-Change for wear or damage. Inspect the X-Change pins (Item 1) and hooks (Item 2) [Figure 19] (on the attachment) for wear or damage.

Repair or replace damaged parts.

Pin-On X-Change

Figure 20

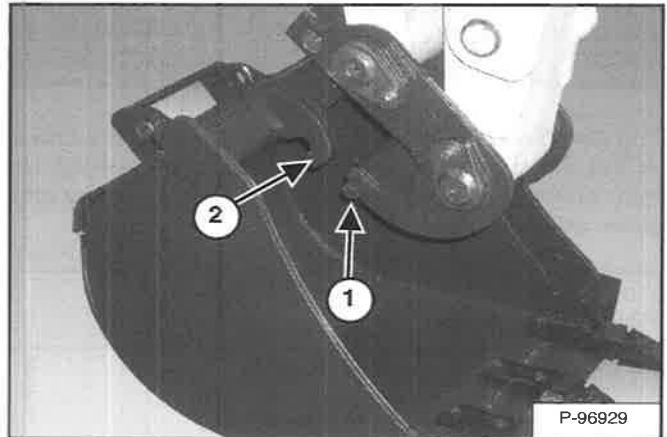


Inspect the pin-on X-Change for wear or damage. Inspect the X-Change pins (Item 1) and hooks (Item 2) [Figure 20] (on the attachment) for wear or damage.

Repair or replace damaged parts.

Bolt-On X-Change

Figure 21



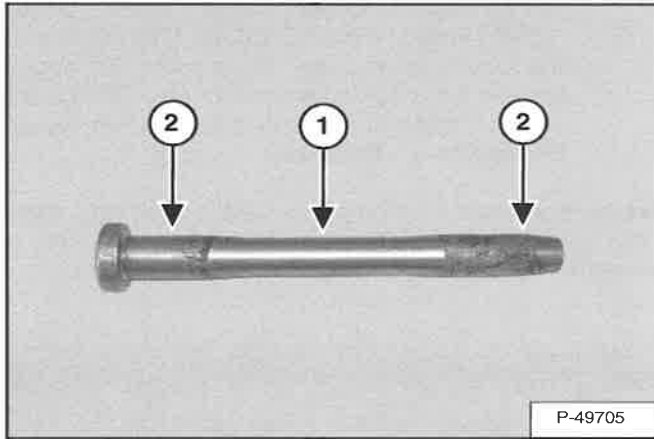
Inspect the bolt-on X-Change for wear or damage. Inspect the X-Change pins (Item 1) and hooks (Item 2) [Figure 21] (on the attachment) for wear or damage.

Repair or replace damaged parts.

DAILY INSPECTION (CONT'D)

Pin-On Attachment

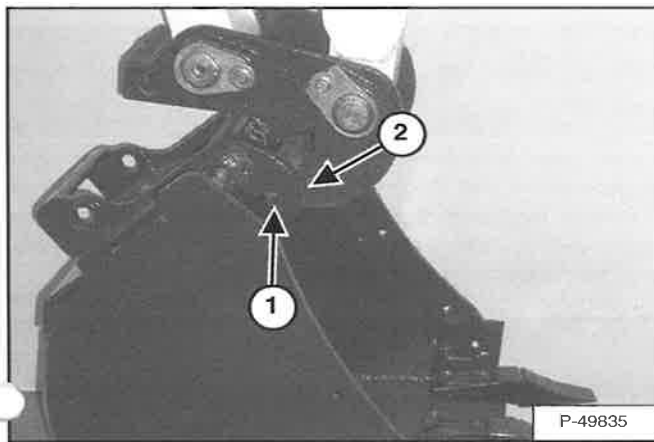
Figure 22



Inspect the pin (Item 1) [Figure 22] for wear or damage. Replace the pin as needed.

Apply a light coat of grease to the ends of the pin (Item 2) [Figure 22].

Figure 23

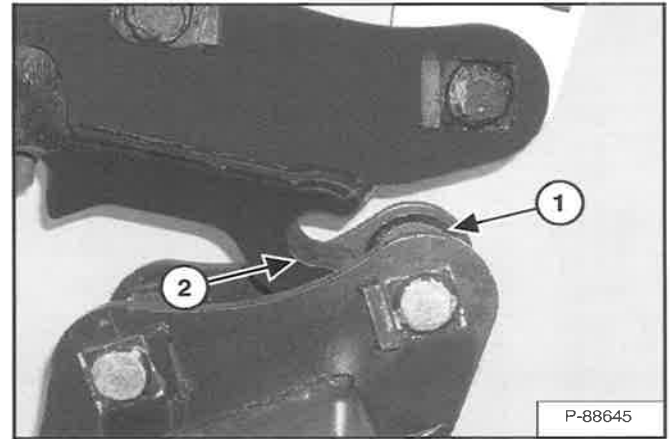


Inspect the mounting pins (Item 1) (on the attachment) and hooks (Item 2) [Figure 23] for wear or damage.

Repair or replace damaged parts.

Manual Spring Loaded Coupler

Figure 24

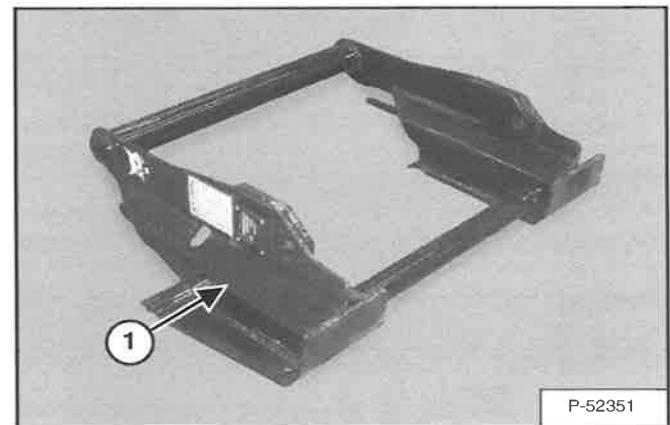


Inspect the manual spring loaded coupler for wear or damage. Inspect the mounting pins (Item 1) (on the attachment) and hooks (Item 2) [Figure 24] for wear or damage.

Repair or replace damaged parts.

Telescopic Handler Adapter Frame

Figure 25



Inspect the adapter frame (Item 1) [Figure 25] and all welds on the attachment mount for wear and damage each time the attachment is removed from the machine.

Repair or replace damaged parts.



OPERATING PROCEDURE WITH LOADERS

Approved Loader Models And Requirements

Figure 26

LOADER MODEL	DIRECT DRIVE AUGER				
	10	15C	15H	30C	30H
463	X				
553	X	X	X		
700 thru 800	X	X	X	X	X
A220		X	X	X	X
A300		X	X	X	X
*A770		X	X	X	X
S70	X				
S100	X	X	X		
S130	X	X	X	X	X
S150	X	X	X	X	X
S160	X	X	X	X	X
S175	X	X	X	X	X
S185	X	X	X	X	X
S205	X	X	X	X	X
S220		X	X	X	X
S250		X	X	X	X
S300		X	X	X	X
S330		X	X	X	X
S450	X	X	X	X	X
*S510		X	X	X	X
*S530		X	X	X	X
*S550		X	X	X	X
*S570		X	X	X	X
*S590		X	X	X	X
*S630		X	X	X	X
*S650		X	X	X	X
*S740		X	X	X	X
*S770		X	X	X	X
*S850		X	X	X	X
T110	X	X	X		
T140	X	X	X	X	X
T180		X	X	X	X
T190		X	X	X	X
T250		X	X	X	X
T300		X	X	X	X
T320		X	X	X	X
T450	X	X	X	X	X
*T550		X	X	X	X
*T590		X	X	X	X
*T650		X	X	X	X
*T770		X	X	X	X
*T870		X	X	X	X

(X = Approved)

NOTE: *A770, *S510, *S530, *S550, *S570, *S590, *S630, *S650, *S740, *S770, *S850, *T550, *T590, *T650, *T770 and *T870 loaders, the direct drive auger must have the auger bumper kit installed when 914 mm (36 in) and larger auger bits are being used. (See Auger Bumper Kit on Page 34.)

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

IMPORTANT

Never use auger bits which are not approved by Bobcat. Damage to the auger casting will occur. The use of unapproved auger bits will void warranty on the attachment. See your Bobcat dealer for a list of approved auger bits.

I-2388-1117

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

The chart [Figure 26] shows the approved direct drive auger models for each loader model.

NOTE: Model 30C and 30H direct drive augers are approved for use on 151 L/min (40 U.S. gpm) loaders.

NOTE: Model 10, 15C and 15H are NOT approved for use on High Flow machines.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Approved Loader Models And Requirements (Cont'd)

Figure 27

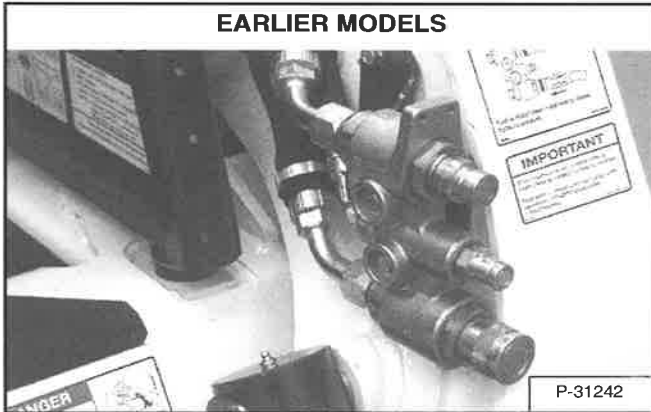
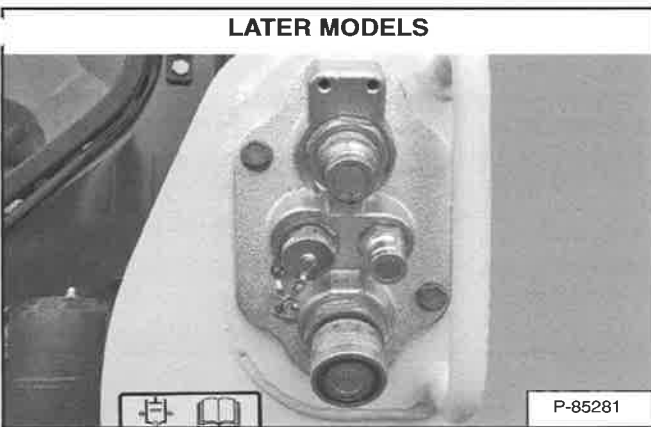


Figure 28



The loader must be equipped with front auxiliary hydraulics [Figure 27] or [Figure 28].

OPERATING PROCEDURE WITH LOADERS (CONT'D)

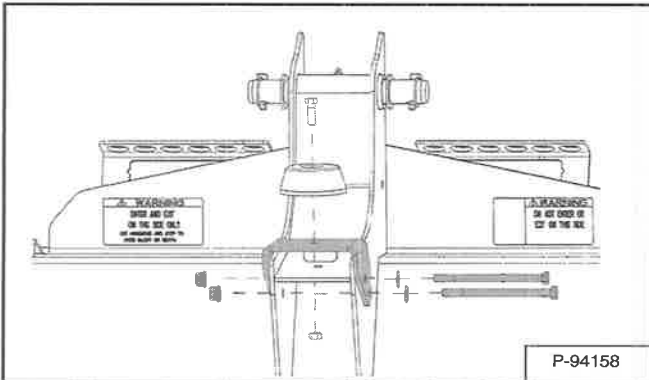
Machine / Attachment Setup

NOTE: Make sure the decals are clearly visible on the auger drive.

Auger Bumper Kit

NOTE: When using the direct drive auger with *A770, *S510, *S530, *S550, *S570, *S590, *S630, *S650, *S740, *S770, *S850, *T550, *T590, *T650, *T650, *T770 and *T870 loaders, the direct drive auger must have the auger bumper kit installed when 914 mm (36 in) and larger auger bits are being used.

Figure 29

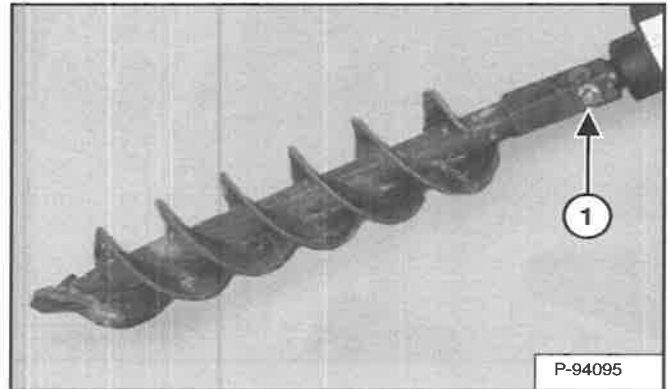


Available for direct drive auger operation with A770, S630, S650, S770, S850, T650, T770 and T870 Bobcat loaders. Kit includes bumper mount, bolts, nuts and washers [Figure 29].

See your Bobcat dealer for available kits for your model loader.

Auger Bit Installation

Figure 30



Install the auger bit on the drive shaft [Figure 30].

Install the pin (Item 1) [Figure 30] through the auger bit and the drive shaft. Install the washer and retaining clip.

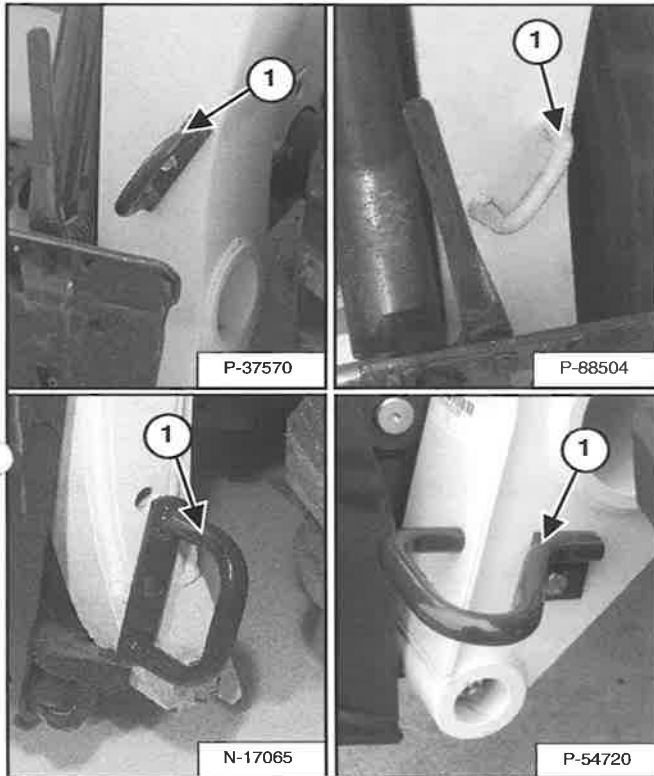
NOTE: The round drive auger bit is shown [Figure 30]. The hex drive auger bit mounts similar but uses different mounting hardware.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Machine / Attachment Setup (Cont'd)

Hose Guide Installation (Earlier Version)

Figure 31



Install the correct hose guide (Item 1) [Figure 31] 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

Entering



AVOID INJURY OR DEATH

When operating the machine:

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

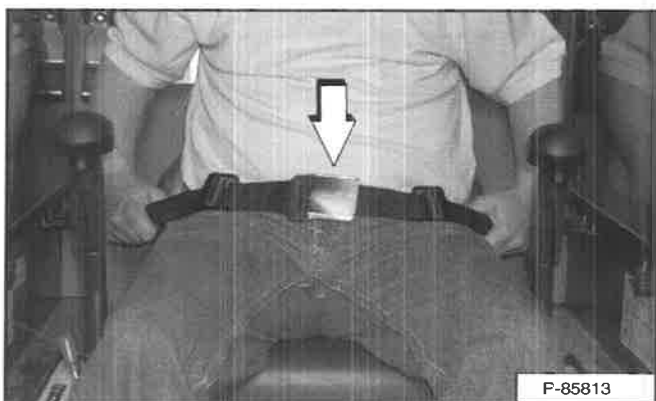
W-2261-0909

Figure 32



Use the auger 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 32].

Figure 33



Enter the loader. Fasten the seat belt and adjust it so the buckle is centred between your hips [Figure 33].

Figure 34



Lower the seat bar and engage the parking brake [Figure 34].

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

OPERATING PROCEDURE WITH 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.

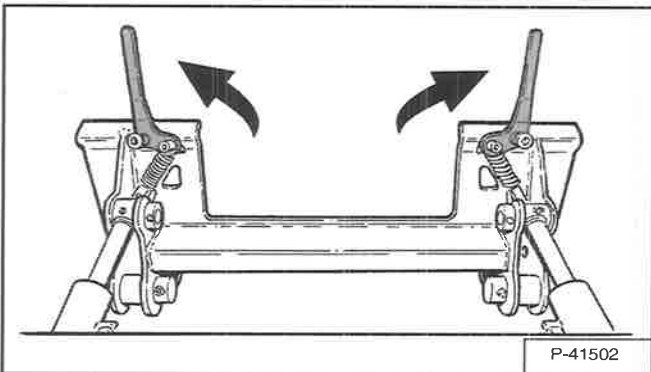


Warnings on the machine and in the manuals are for your safety. Failure to obey warnings can cause serious injury or death.

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 28.)

Figure 35

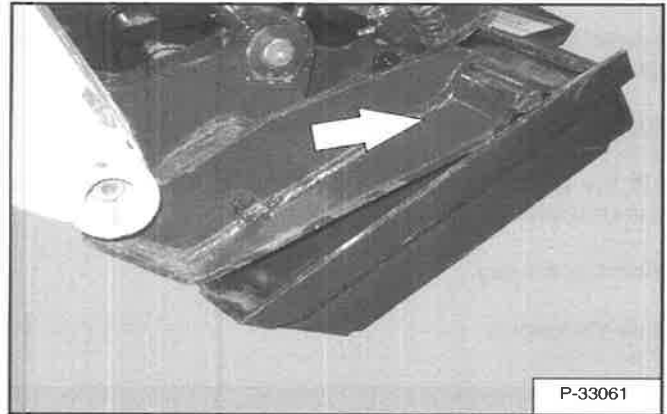


Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) [Figure 35].

Enter the loader. (See Entering And Exiting The Loader on Page 36.)

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

Figure 36



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 36].

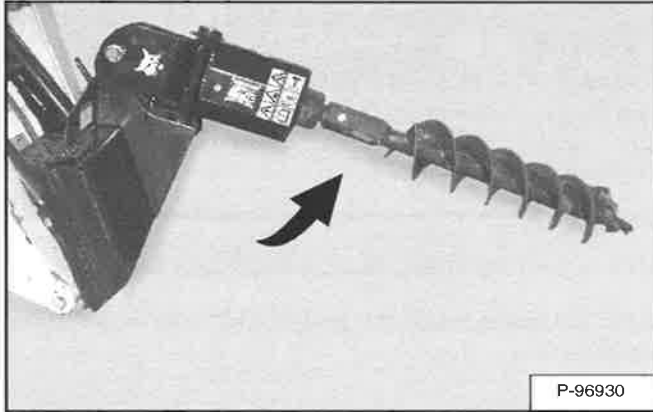
NOTE: Be sure the Bob-Tach levers do not hit the attachment.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 37



Tilt the Bob-Tach backward until the attachment is slightly off the ground [Figure 37]. 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 36.)

! WARNING

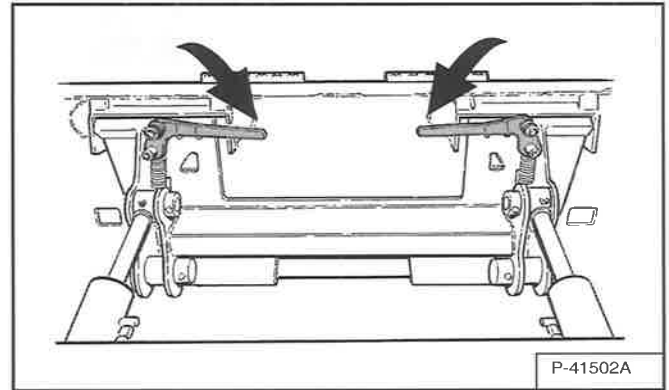
Before you leave the operator's position:

- Lower the lift arm(s) fully.
- 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.

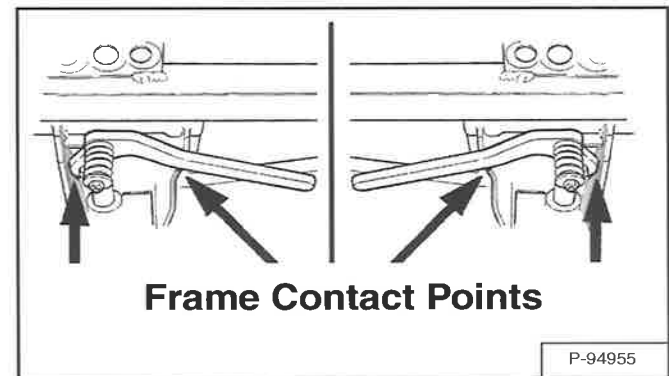
W-2500-0404

Figure 38



Push down on the Bob-Tach levers until they are fully engaged in the locked position [Figure 38].

Figure 39



Both levers must contact the frame as shown when locked [Figure 39].

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

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

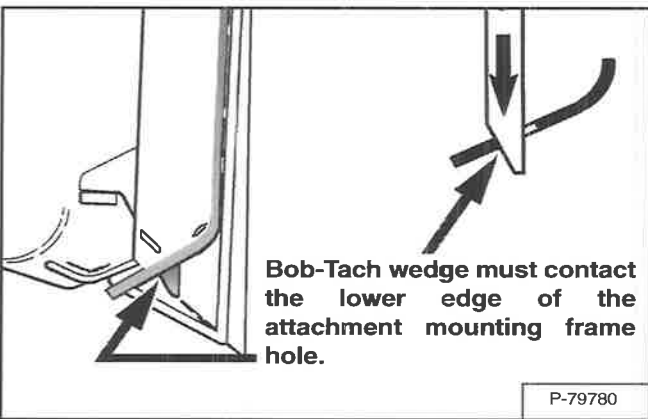


AVOID INJURY OR DEATH

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 40



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 40].

Connect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 46.)

Power Bob-Tach



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 36.)

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

Figure 41

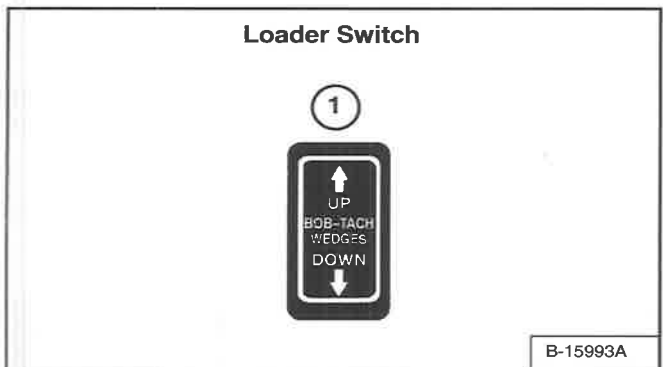
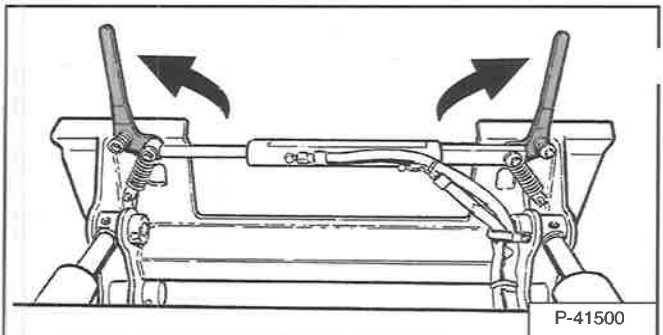


Figure 42



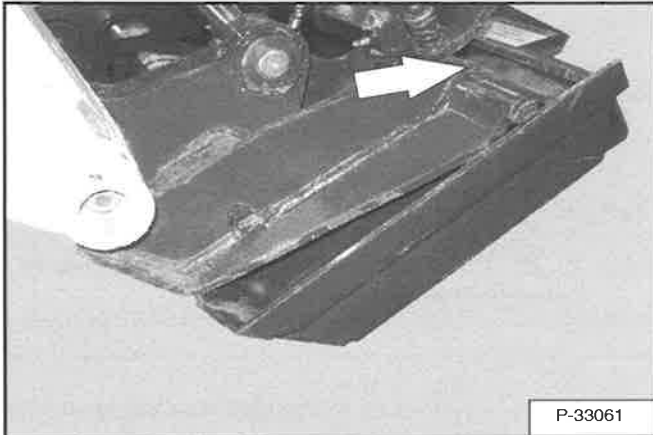
Push and hold the BOB-TACH "WEDGES UP" switch (Item 1) [Figure 41] until the levers are fully raised (wedges fully raised) [Figure 42].

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Power Bob-Tach (Cont'd)

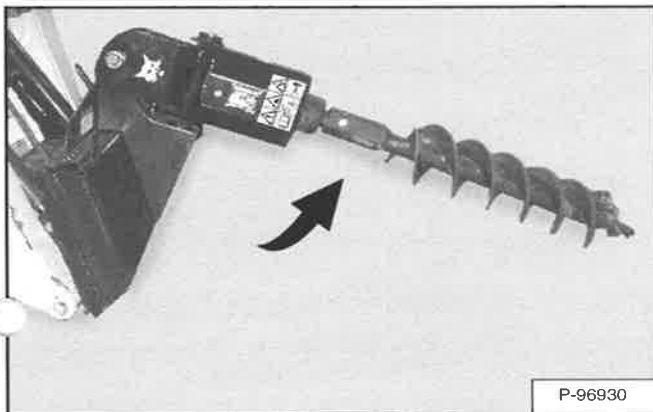
Figure 43



Tilt the Bob-Tach forward. Drive the loader forward until the top edge of the Bob-Tach is completely under the flange of the attachment mounting frame [Figure 43].

Be sure the Bob-Tach levers do not hit the direct drive auger.

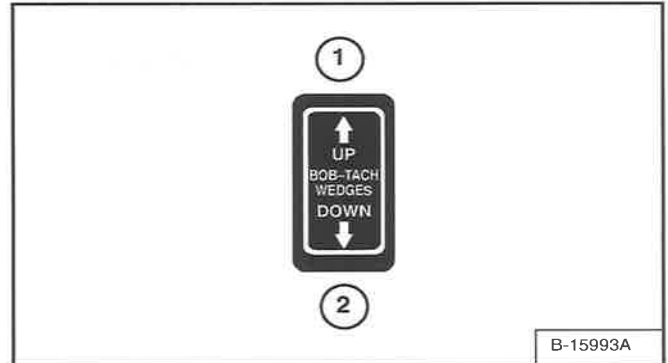
Figure 44



Tilt the Bob-Tach backward until the Bob-Tach is tight against the lower part of the attachment mounting frame [Figure 44].

Do not raise the lift arms. This can cause the attachment mounting frame to move away from the Bob-Tach.

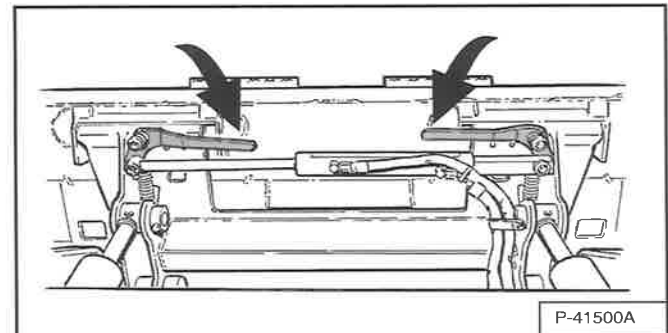
Figure 45



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 45] until the levers are fully raised (wedges fully raised).

Figure 46



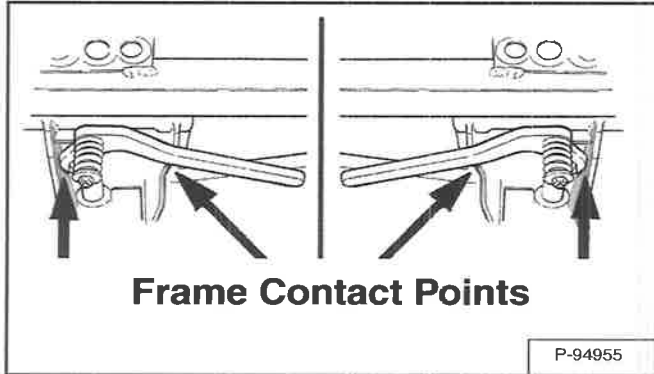
Push and hold the BOB-TACH “WEDGES DOWN” switch (Item 2) [Figure 45] until the levers are fully engaged in the locked position [Figure 46] (wedges fully extended through the attachment mounting frame holes).

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Power Bob-Tach (Cont'd)

Figure 47



Both levers must contact the frame as shown when locked [Figure 47].

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

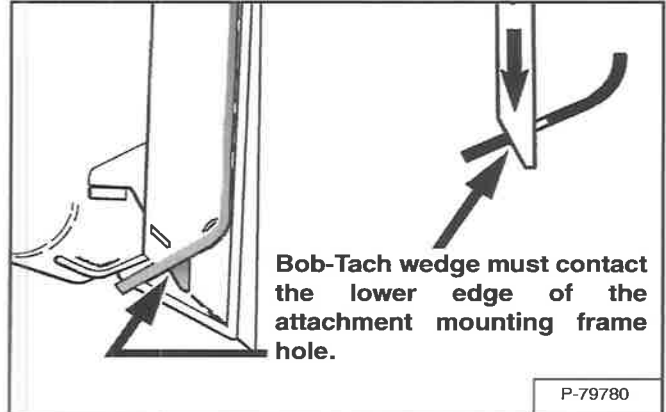


AVOID INJURY OR DEATH

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 48



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 48].

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

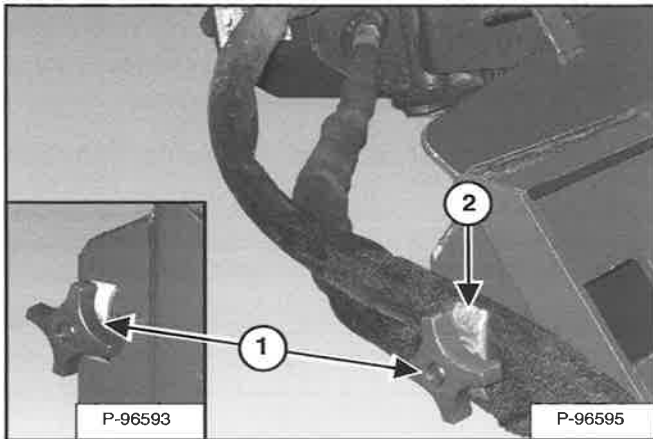
Connect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 46.)

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Auger Hose Clamp

Figure 49



Loosen knob (Item 1) [Figure 49] and clamp until there is adequate space for hydraulic hoses.

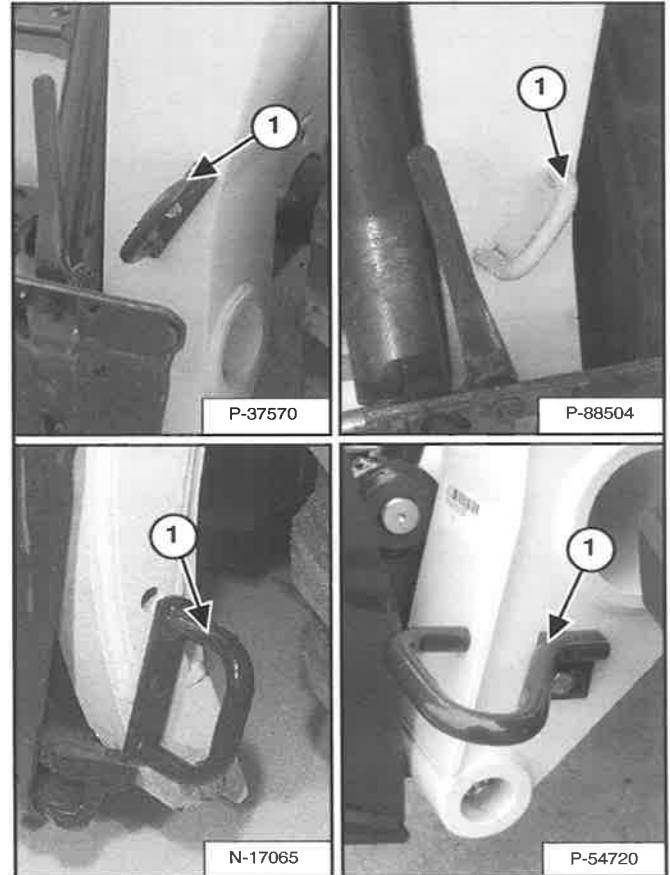
Place the auger hydraulic hoses between the clamp (Item 2) [Figure 49] and auger mounting frame.

NOTE: Do not pull the auger hydraulic hoses tight. Allow enough free hose for the auger drive to pivot freely.

Tighten knob and clamp against the auger hydraulic hoses.

Hose Routing (Earlier Version)

Figure 50



Route the hoses through the bottom of the hose guide (Item 1) [Figure 50] and connect to the auxiliary hydraulic couplers.



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 46.)

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

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

! WARNING

AVOID INJURY OR DEATH

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

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

W-2019-0907

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

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

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

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

Enter the loader. (See Entering And Exiting The Loader on Page 36.)

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

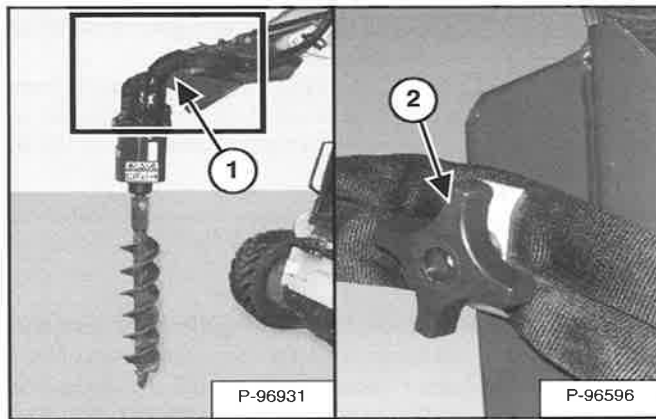
Check the attachment hydraulic quick coupler connections for leaks.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

For First Time Installation (Cont'd)

Figure 51

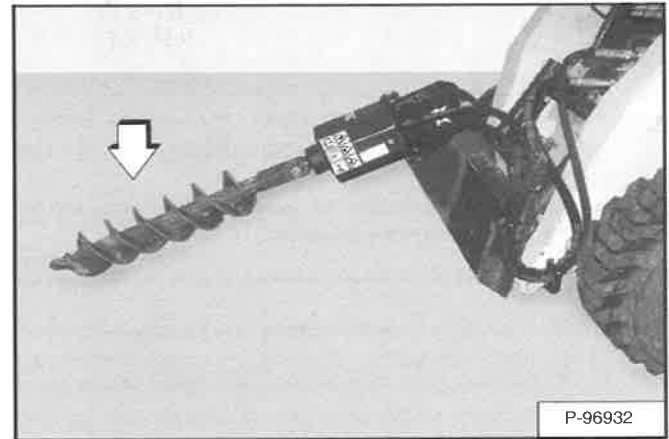


○ Raise the lift arms and tilt the Bob-Tach forward until the auger is not contacting the rubber stop on the transport bar. In this position, the auger should be free floating in the mounting frame [Figure 51].

Visually inspect the hydraulic hoses (Item 1) [Figure 51] between the auger drive and mounting frame.

NOTE: There must be adequate hose length between the auger drive and mounting frame to allow the auger to float freely.

Figure 52



To adjust hydraulic hose length between the auger drive and mounting frame, lower the lift arms and place the auger flat on the ground [Figure 52].

Stop the engine and exit the loader. (See Entering And Exiting The Loader on Page 36.)

Loosen knob (Item 2) [Figure 51] and clamp.

Pull the hydraulic hoses toward the auger drive to increase the amount of hydraulic hose between the auger drive and mounting frame. Tighten knob (Item 2) [Figure 51] and clamp against the hoses.

Enter the loader. (See Entering And Exiting The Loader on Page 36.)

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

Raise the lift arms and place the auger in the operating position [Figure 51].

Visually inspect the hydraulic hoses between the auger drive and mounting frame.

Repeat the procedure until the auger drive floats freely.

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

NOTE: Periodically check the knob and hose clamp for tightness. This will help maintain the correct hose length between the auger drive and mounting frame.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

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

! WARNING

AVOID BURNS

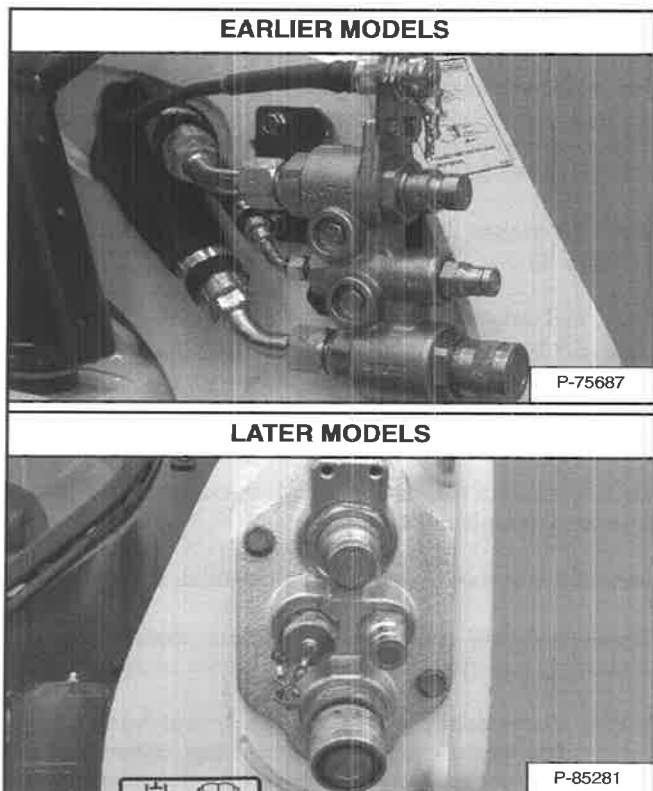
Hydraulic fluid, tubes, fittings and quick couplers can get hot when running machine and attachments. Be careful when connecting and disconnecting quick couplers.

W-2220-0396

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 53



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 53].

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 loader or attachment. (See For First Time Installation on Page 44.) for proper adjustment.

To Disconnect:

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

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

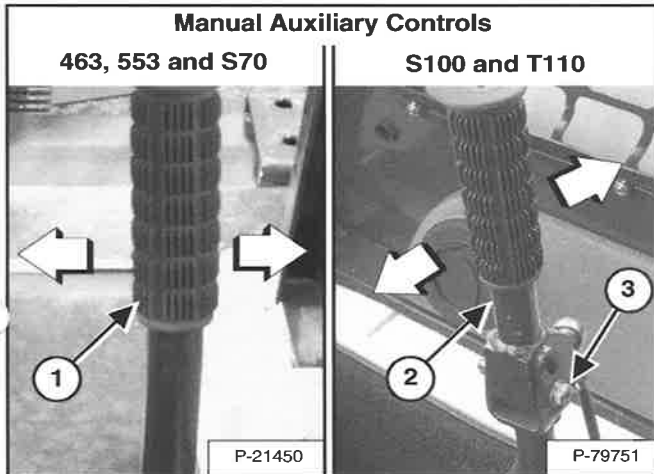
OPERATING PROCEDURE WITH LOADERS (CONT'D)

Control Functions

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 54



To start clockwise rotation, move the right steering lever (Item 1) or the right steering lever handle (Item 2) [Figure 54] to the right.

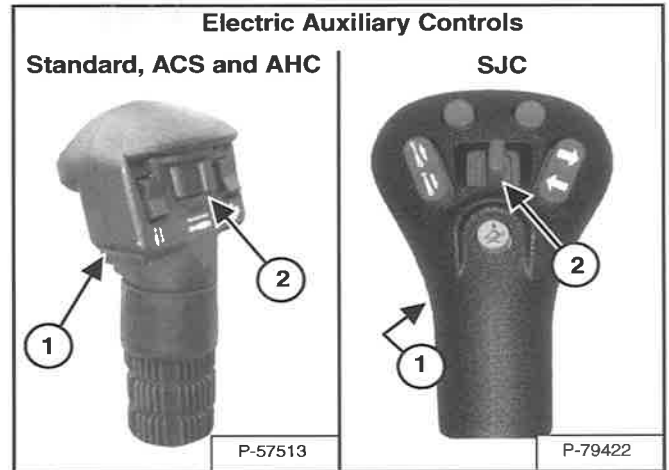
For continuous clockwise rotation, move the right steering lever (Item 1) or right steering handle (Item 2) [Figure 54] fully to the right.

To stop rotation, move the right steering lever (Item 1) or the right steering lever handle (Item 2) [Figure 54] to the centre position.

For anticlockwise rotation, move the right steering lever (Item 1) or the right steering lever handle (Item 2) [Figure 54] to the left.

NOTE: Remove the auxiliary control lockout bolt and nut (Item 3) [Figure 54] (S100 and T110 Only) before using the auxiliary control for the first time.

Figure 55



Press button (Item 1) [Figure 55] on the right steering lever once for continuous flow to the front auxiliary quick couplers (auger bit rotates clockwise).

Push the button (Item 1) [Figure 55] a second time to disengage continuous flow (detent) (auger bit rotation stops).

For anticlockwise auger rotation, press the switch (Item 2) [Figure 55] to the left.

Continuous (Detent) Reverse Direction Operation - Later Models Only

For continuous anticlockwise auger rotation, press and hold the switch (Item 2) to the left and then press the button (Item 1) [Figure 55] once. Let go of both switches and the auger will continue to rotate in the anticlockwise direction.

To stop anticlockwise rotation, press the switch (Item 2) a second time or press the switch (Item 1) [Figure 55] to the right.

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

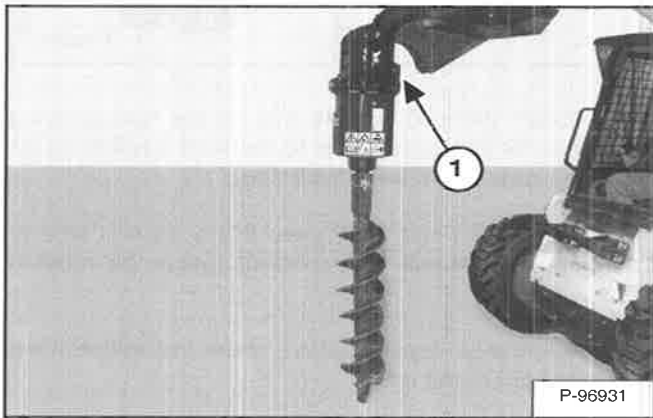


AVOID INJURY OR DEATH

- Check for underground utility lines before digging.
- Keep bystanders away from rotating auger and cutting head.
- Do not operate the auger if the point of the auger is not touching the ground.

W-2711-0208

Figure 56



Raise the lift arms and tilt the Bob-Tach forward until the auger is not contacting the rubber stop on the transport bar (Item 1) [Figure 56]. In this position, the auger will be free floating in the mounting frame and will allow for a vertical hole to be drilled.

Lower the lift arms until the point of the auger touches the ground.

Engage the auxiliary hydraulics on the loader so that the auger turns in a clockwise direction [Figure 56]. (See Control Functions on Page 47.)

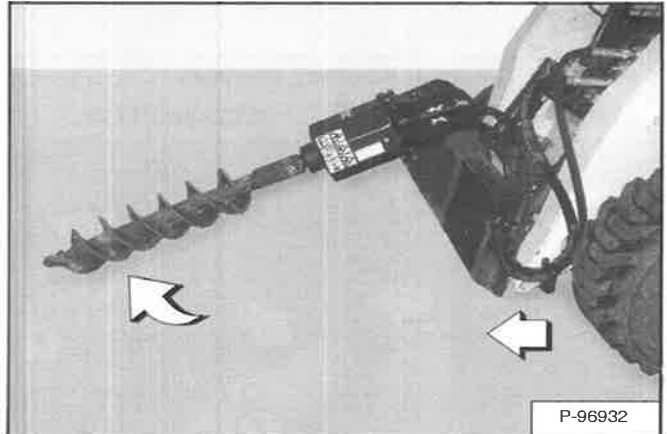
At the same time, slowly lower the lift arms to drill into the soil.

Raise the lift arms often while the auger is turning, to remove the dirt from the hole. Stop the auger when the point is above the ground.

Moving The Loader With The Direct Drive Auger Installed

Raise the auger bit, stop the auger bit rotation, raise the auger just above ground, and tilt the Bob-Tach fully back.

Figure 57



Lower the lift arms so the auger does not touch the ground. Drive the loader to the next location to be drilled [Figure 57].



Do not side load the auger while drilling. Excessive pressure can damage the auger or machine.

I-2189-0807

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 36.)

WARNING

AVOID INJURY OR DEATH

Before you leave the operator's seat:

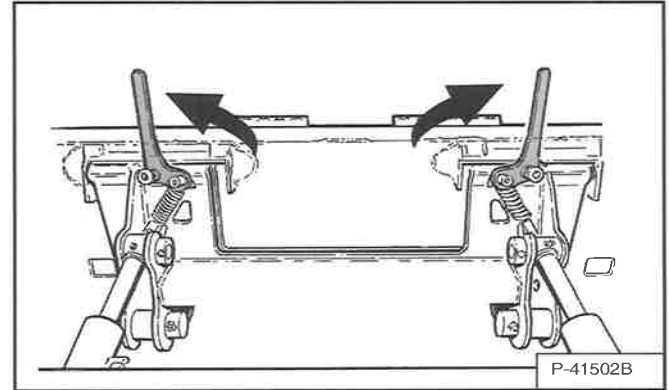
- Lower the lift arms and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Raise the seat bar.
- Move all controls to the **NEUTRAL / LOCKED** position to make sure the lift, tilt and traction drive functions are deactivated.

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

W-2463-1110

Disconnect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 46.)

Figure 58



Pull the Bob-Tach levers up [Figure 58] until they are fully raised (wedges fully raised).

WARNING

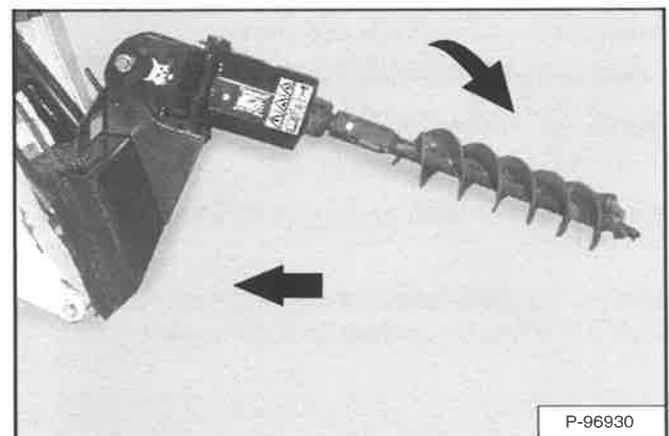
Bob-Tach levers have spring tension. Hold lever tightly and release slowly. Failure to obey warning can cause injury.

W-2054-1285

Enter the loader. (See Entering And Exiting The Loader on Page 36.)

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

Figure 59



Tilt the Bob-Tach forward and drive the loader backward, away from the attachment [Figure 59].

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 36.)



AVOID INJURY OR DEATH

Before you leave the operator's seat:

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

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

W-2463-1110

Disconnect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 46.)

Enter the loader. (See Entering And Exiting The Loader on Page 36.)

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

Figure 60

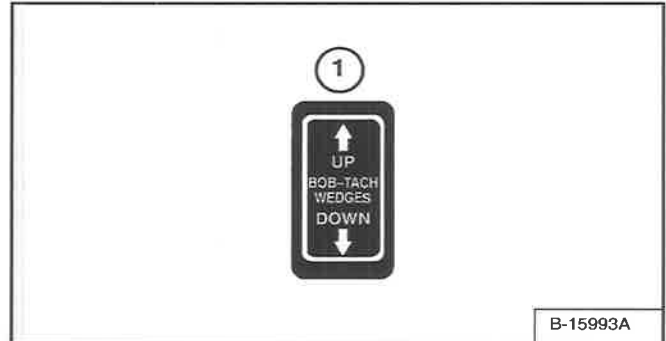
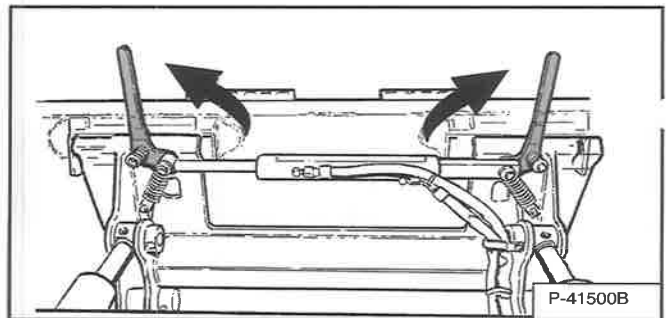


Figure 61



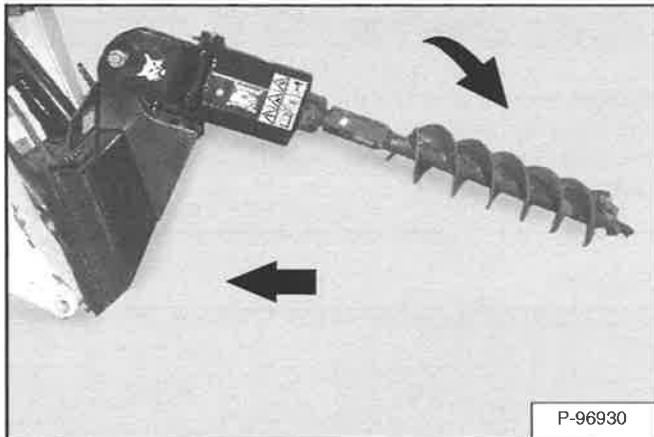
Push and hold the BOB-TACH "WEDGES UP" switch (Item 1) [Figure 60] (Front Panel) until the levers [Figure 61] are fully raised (wedges fully raised).

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Removal (Cont'd)

Power Bob-Tach (Cont'd)

Figure 62



Tilt the Bob-Tach forward and drive the loader backward, away from the attachment [Figure 62].

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 EXCAVATORS

Approved Excavator Models And Requirements

Figure 63

EXCAVATOR MODEL	DIRECT DRIVE AUGER				
	10	15C	15H	30C	30H
319	X				
320	X				
321	X				
322	X				
323	X				
325	X	X	X	X	X
328	X	X	X	X	X
329		X	X	X	X
331		X	X	X	X
334		X	X	X	X
335		X	X	X	X
337		X	X	X	X
341		X	X	X	X
425	X	X	X	X	X
428	X	X	X	X	X
430		X	X	X	X
435		X	X	X	X
E14	X				
E16	X				
E17	X				
E19	X				
E20	X				
E26	X	X	X	X	X
E32		X	X	X	X
E35		X	X	X	X
E42		X	X	X	X
E45		X	X	X	X
E50		X	X	X	X
E55		X	X	X	X
E55W		X	X		
E80		X	X	X	X
E85		X	X	X	X

X = Approved

The chart [Figure 63] shows the approved direct drive auger models for 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

IMPORTANT

Never use auger bits which are not approved by Bobcat. Damage to the auger casting will occur. The use of unapproved auger bits will void warranty on the attachment. See your Bobcat dealer for a list of approved auger bits.

I-2388-1117

Figure 64

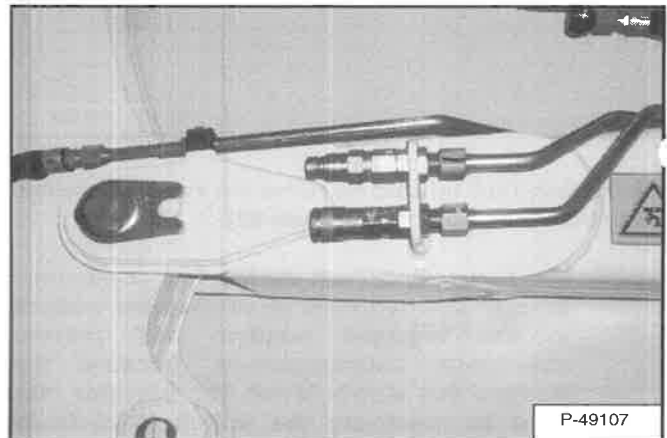
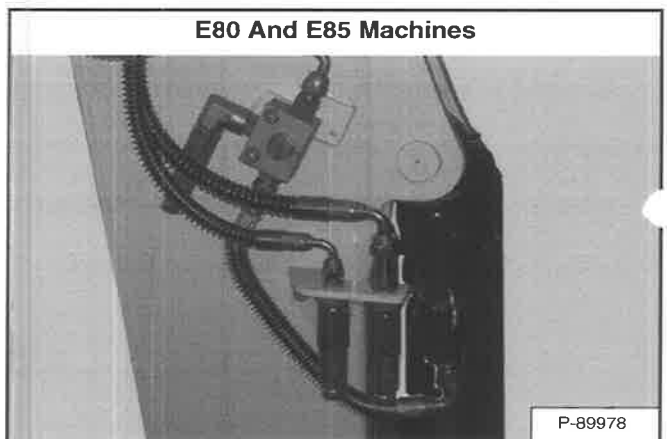


Figure 65



The excavator must be equipped with front auxiliary hydraulics [Figure 64] or [Figure 65].

NOTE: The male flush face couplers are located on the right side of the arm (shown) [Figure 65], the female couplers are located on the left side of the arm (E80 excavators only).

**OPERATING PROCEDURE WITH EXCAVATORS
(CONT'D)**

Machine / Attachment Setup

Port Relief Valve Installation

Figure 66

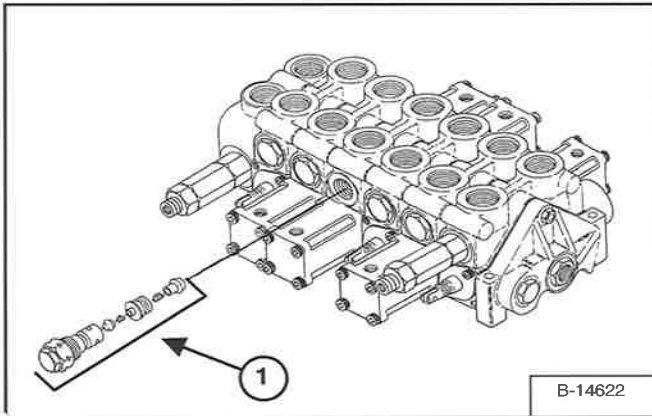
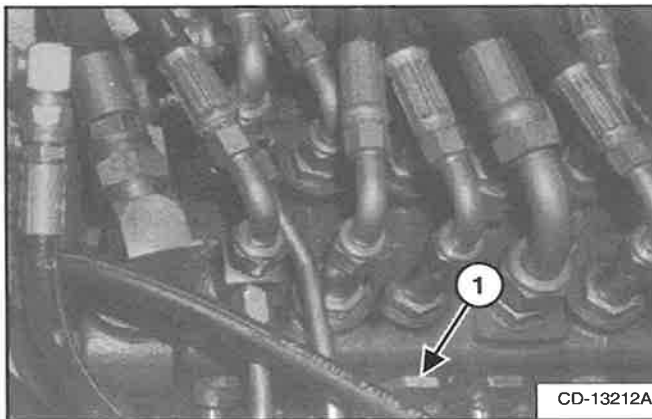


Figure 67



NOTE: It is recommended that the Port Relief Kit (Item 1) [Figure 66] and [Figure 67] is ordered and installed in the base end (Item 1) [Figure 67] of the Bucket section in the hydraulic control valve in models listed below, before using the direct drive auger.

- 231 S/N 508912000 & Above
- 331 S/N 511920001 & Above
- 331 S/N 512911001 - 51291299

See your Bobcat dealer for parts information.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Entering And Exiting The Excavator

Entering



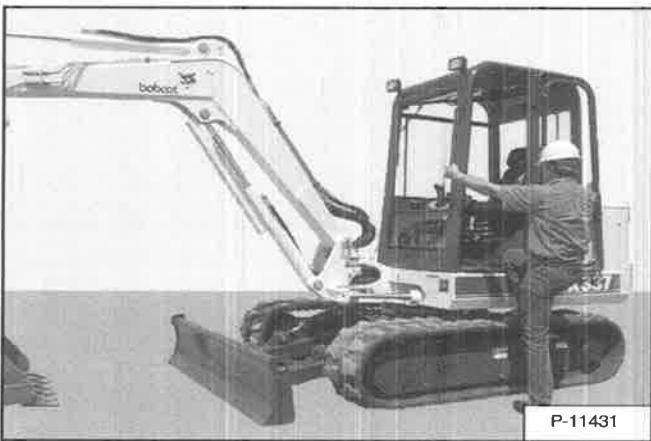
AVOID INJURY OR DEATH

When operating the machine:

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

W-2777-1208

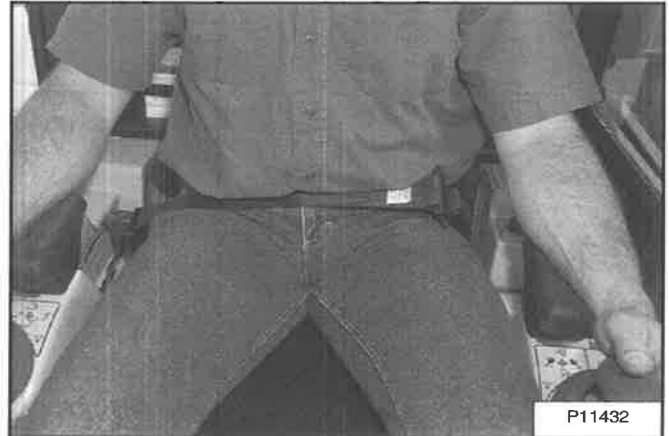
Figure 68



Use the grab handles, tracks and the safety treads to enter and exit the excavator [Figure 68].

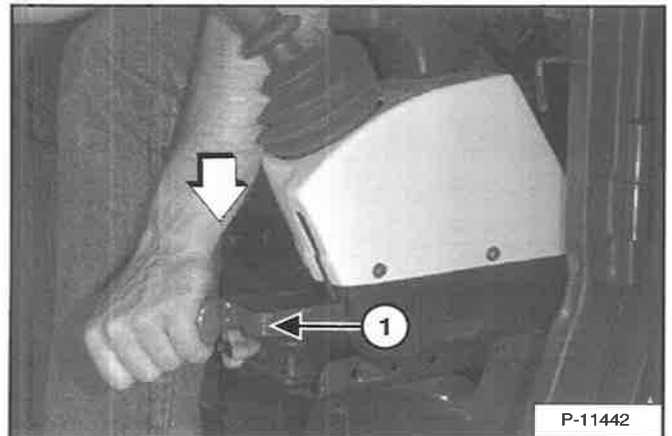
NOTE: Maintain three-point contact at all times while entering or exiting the excavator. Do not jump.

Figure 69



Fasten the seat belt snugly. Adjust the seat belt so the belt is over the operator's hips [Figure 69].

Figure 70



Lower the left control lever (Item 1) [Figure 70] console before starting the engine.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Entering And Exiting The Excavator (Cont'd)

Entering (Cont'd)

Figure 71



Lower the control console [Figure 71].

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.

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

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

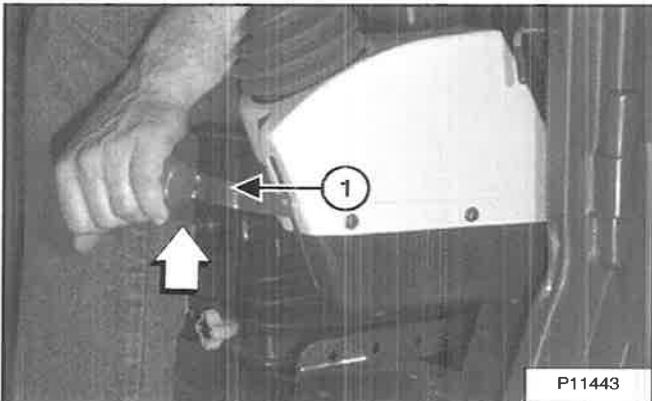
Entering And Exiting The Excavator (Cont'd)

Exiting

Lower the work equipment to the ground.

Lower the blade to the ground.

Figure 72



Lift up on the lever (Item 1) [Figure 72] to release and raise the control console.

Figure 73



Raise the control console [Figure 73].

Stop the engine and remove the key.

Exit the excavator.

⚠ WARNING

AVOID INJURY OR DEATH

Before leaving the machine:

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

W-2196-0595

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation

Pin-On X-Change

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.).

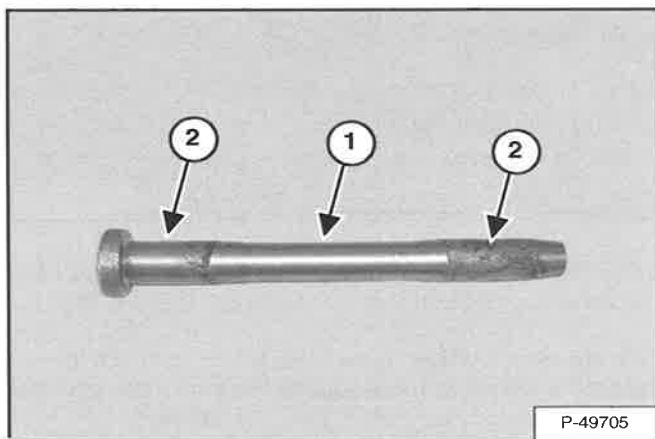
! WARNING

AVOID INJURY OR DEATH

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

W-2052-0907

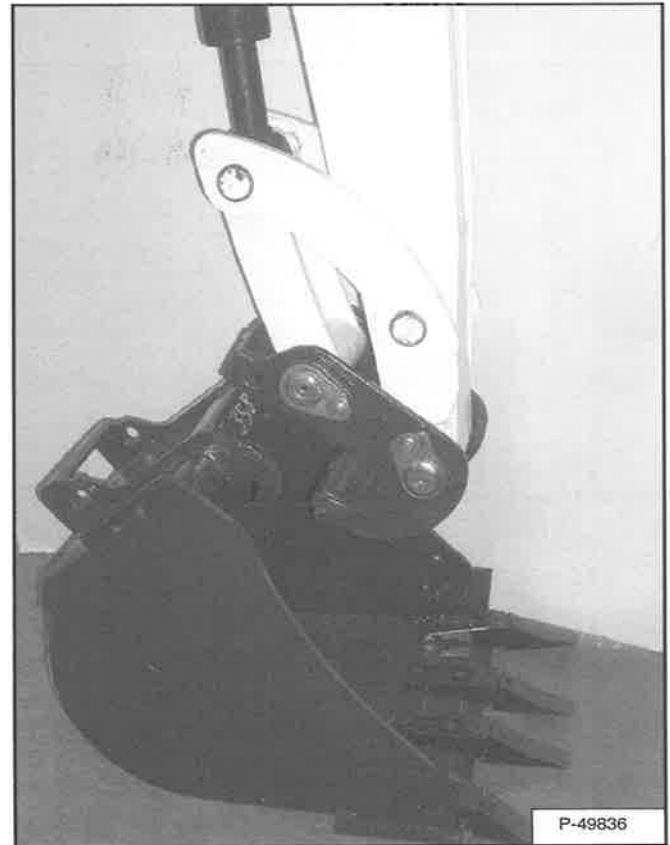
Figure 74



Inspect the pin (Item 1) [Figure 74] for wear or damage. Replace the pin as needed.

Apply a light coat of grease to the ends of the pin (Item 2) [Figure 74].

Figure 75



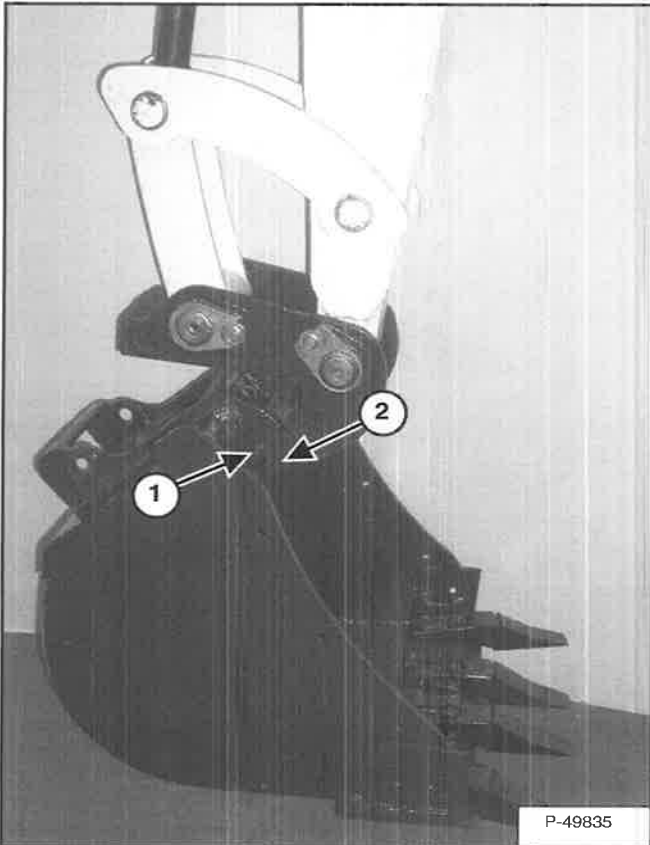
Start the engine and move the arm toward the attachment [Figure 75].

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

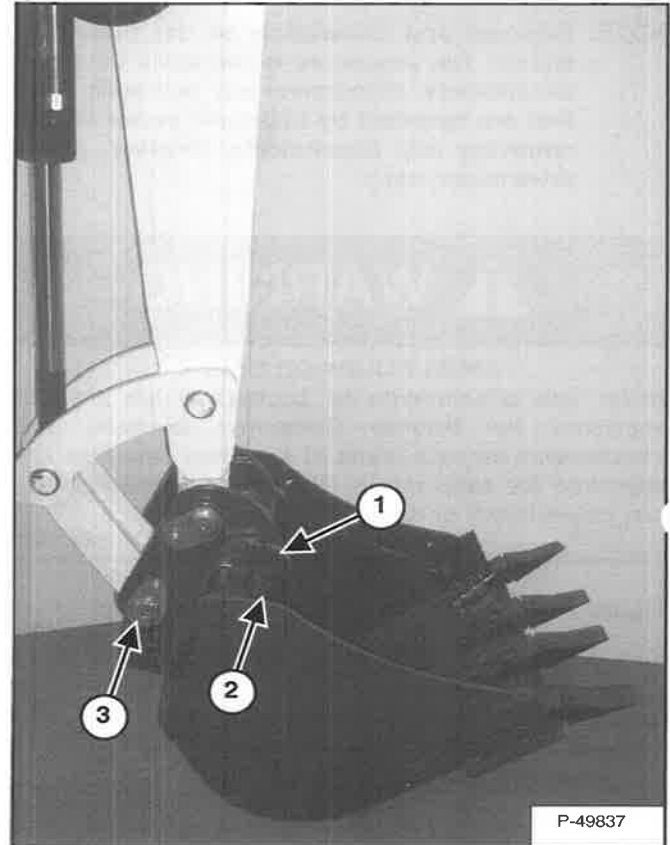
Pin-On X-Change (Cont'd)

Figure 76



Raise the boom until the pins (Item 1) engage the hooks (Item 2) [Figure 76] on the attachment.

Figure 77



Raise the boom and extend the bucket cylinder until the X-Change contacts the attachment back [Figure 77].

With the arm vertical, lower the boom until the hooks (Item 1) of the attachment engage the pins (Item 2) of the X-Change and the plate (Item 3) [Figure 77] fully engages in the attachment crossmember.



WARNING

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

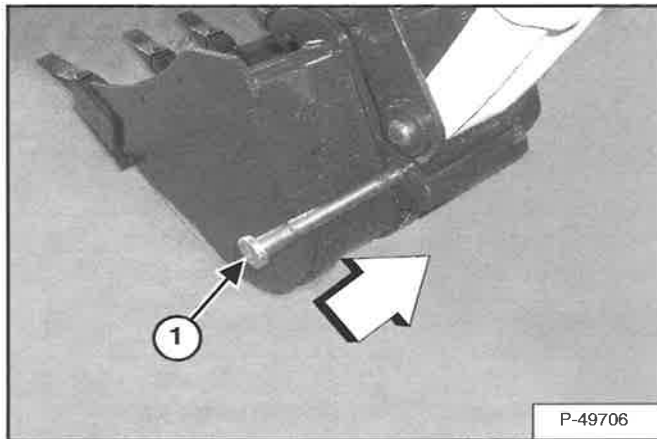
W-2119-0910

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Pin-On X-Change (Cont'd)

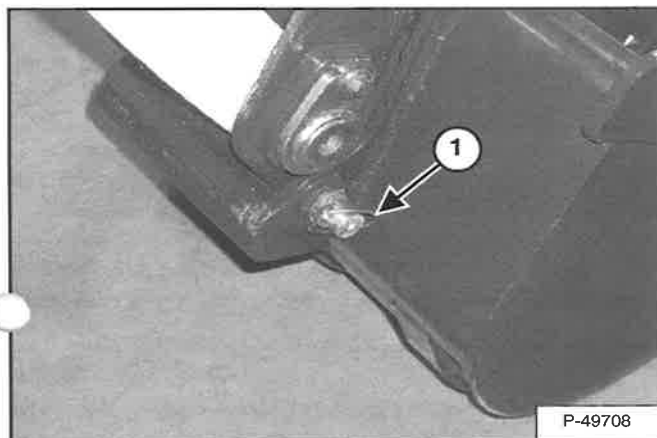
Figure 78



Stop the engine. Turn the start key to the ON position and move both hydraulic control levers to relieve hydraulic pressure.

Drive the pin (Item 1) [Figure 78] through the attachment mount and X-Change.

Figure 79



Install the retainer pin (Item 1) [Figure 79].

Check for proper installation.

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

Bolt-On X-Change

Use the Bolt-On X-Change components when installing older attachments that do not have the pin retention provision. Bolt on components are supplied with the excavator and are stored under the right side cover.

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.).

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

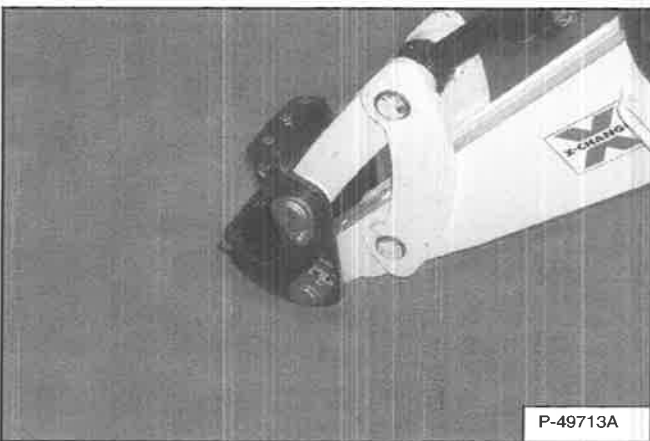
Bolt-On X-Change (Cont'd)



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

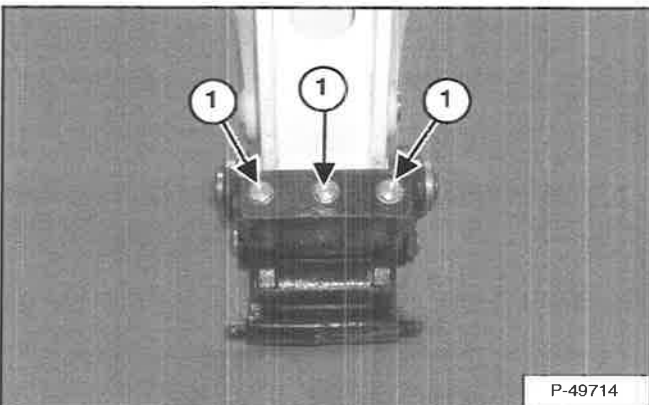
Figure 80



Fully retract the bucket cylinder and lower the arm to the ground [Figure 80].

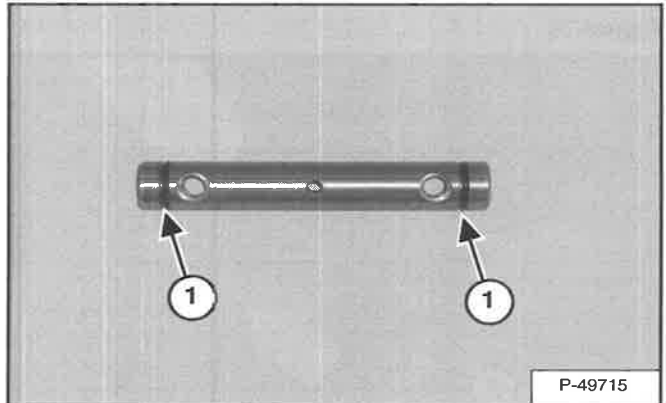
With the engine off, turn the start key to the ON position and move both hydraulic control levers to relieve hydraulic pressure.

Figure 81



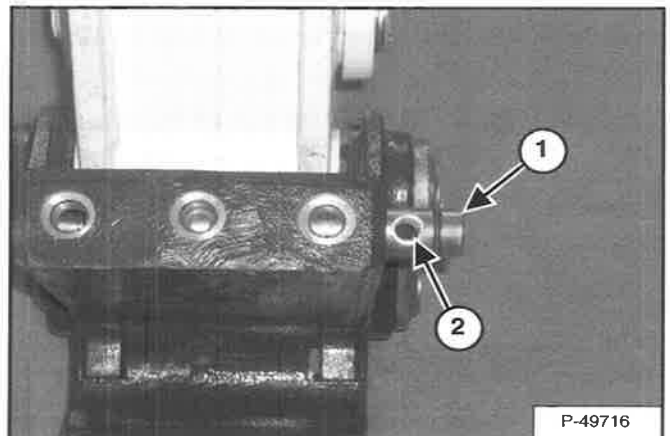
Remove the three plugs (Item 1) [Figure 81].

Figure 82



Apply grease to the O-rings (Item 1) [Figure 82].

Figure 83



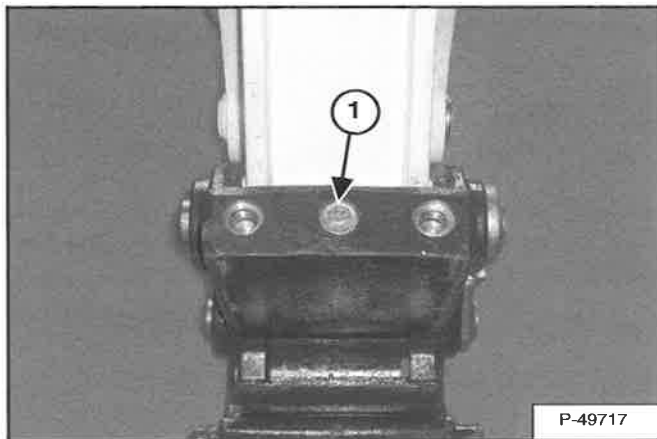
Install the pin (Item 1) in the X-Change. Orientate the bolt holes (Item 2) [Figure 83] as shown.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

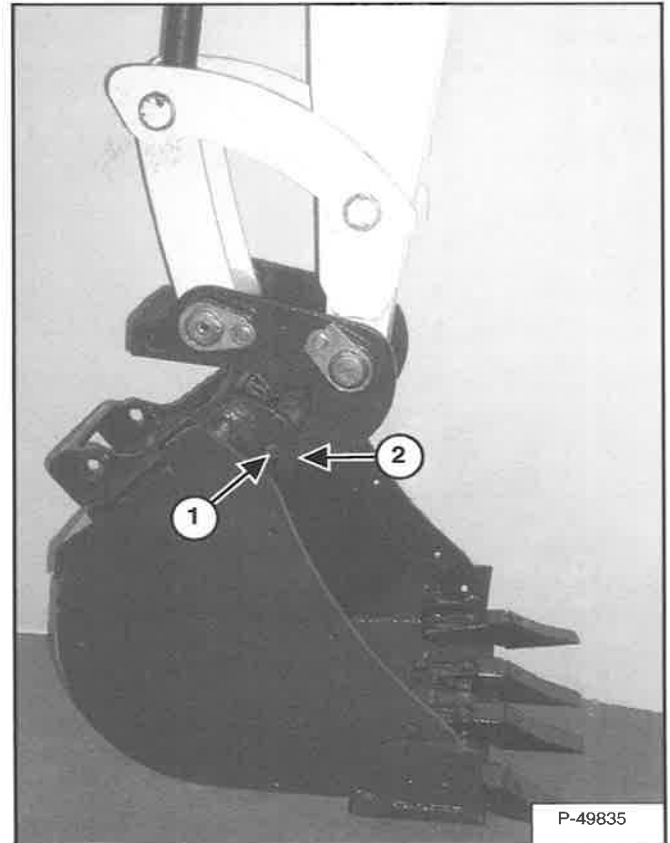
Bolt-On X-Change (Cont'd)

Figure 84



Install the bolt (Item 1) [Figure 84] and washer through the X-Change and into the pin.

Figure 85



Start the engine and move the arm toward the attachment. Raise the boom until the pins (Item 1) engage the hooks (Item 2) [Figure 85] on the attachment.

! WARNING

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

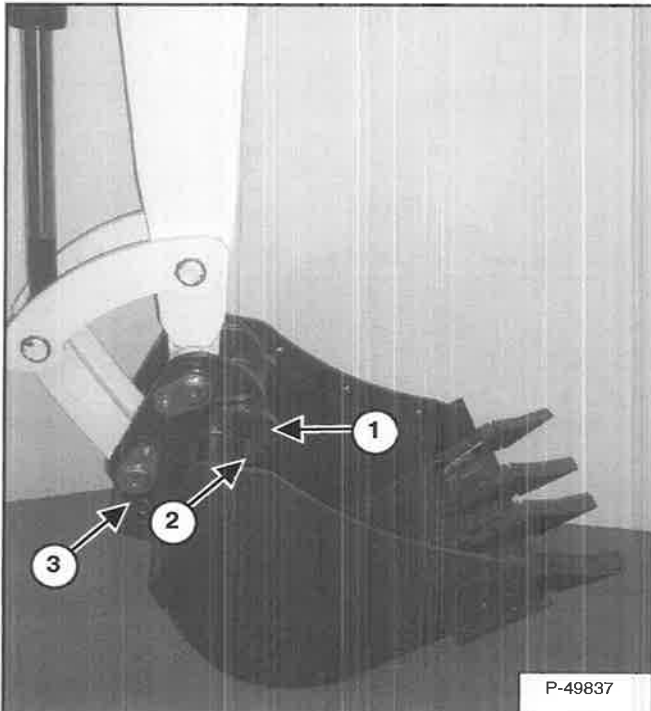
W-2119-0910

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Bolt-On X-Change (Cont'd)

Figure 86



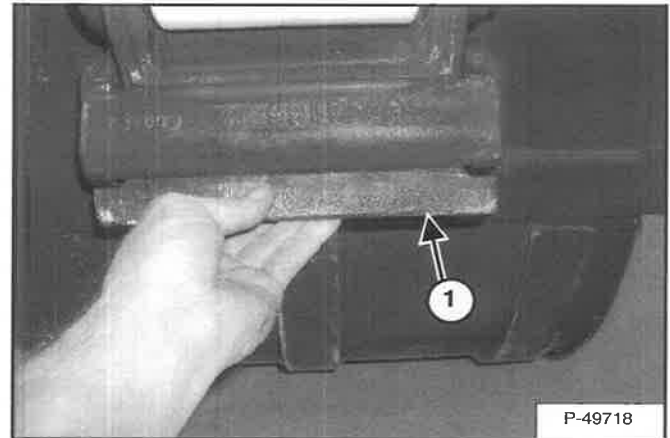
Raise the boom, and extend the bucket cylinder until the attachment is in the position shown [Figure 86].

With the arm vertical, lower the boom until the hooks (Item 1) of the attachment engage the pins (Item 2) of the X-Change and plate (Item 3) [Figure 86] engages in the attachment crossmember.

Stop the engine. Turn the start key to the ON position and move both hydraulic control levers to relieve hydraulic pressure.

Exit the excavator. (See Entering And Exiting The Excavator on Page 54.)

Figure 87



Install the plate (Item 1) [Figure 87].

WARNING

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

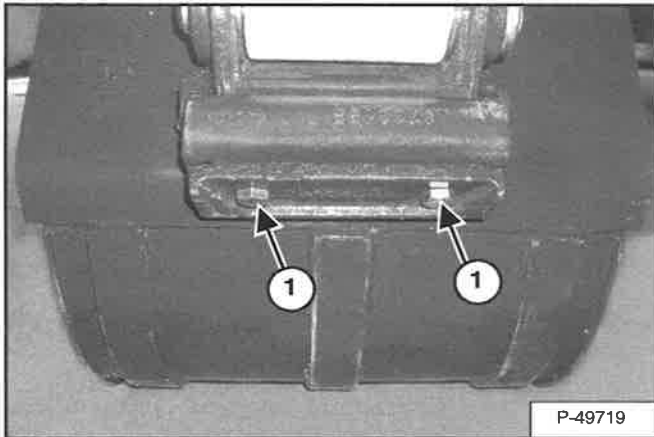
W-2119-0910

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Bolt-On X-Change (Cont'd)

Figure 88



Install the bolts (Item 1) [Figure 88] through the plate and into the X-Change.

Tighten the bolts to 177 N•m (130 ft-lb) torque. Re-torque the bolts after every eight hours of operation.

Check for proper installation.

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

! WARNING

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

W-2119-0910

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Pin-On Attachment

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.).



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.

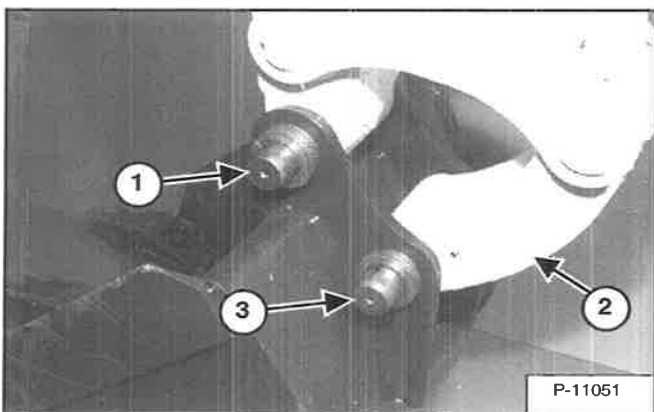
W-2662-0108

Enter the excavator. (See Entering And Exiting The Excavator on Page 54.)

Start the engine and move the arm toward the attachment. Align arm with attachment mounting frame.

Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 54.)

Figure 89

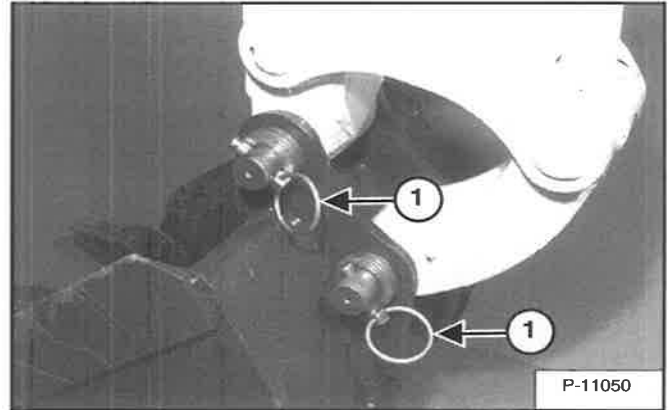


Install the arm into the attachment and align the mounting hole.

Install the pin (Item 1) [Figure 89] and washers.

Install the link (Item 2) in the attachment and align the mounting hole. Install the pin (Item 3) [Figure 89] and washers.

Figure 90



Install the two retainer pins (Item 1) [Figure 90]. Lubricate the grease fittings.



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

W-2119-0910

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Manual Spring Loaded Coupler (442 Only)

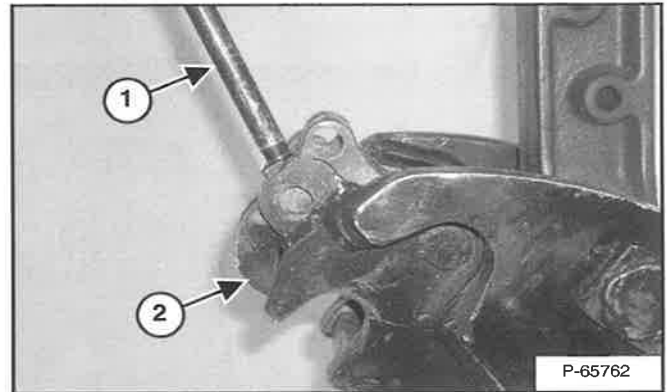
NOTE: Removal and installation of the bucket is shown. The procedure is the same for other attachments. Disconnect any hydraulic lines that are operated by hydraulic power before removing any attachments (breaker, direct drive auger, etc.).

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.

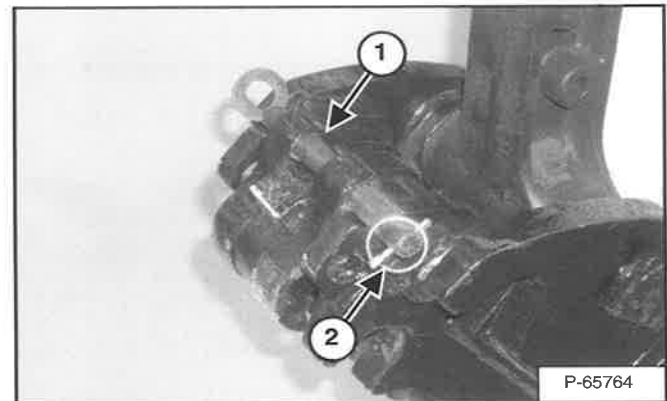
W-2662-0108

Figure 92



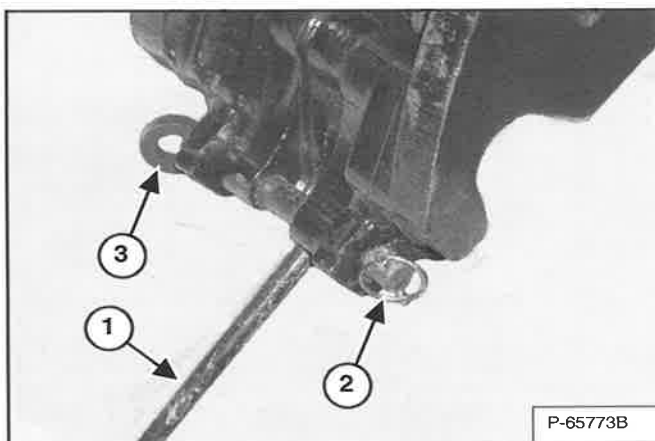
Using the release bar (Item 1), rotate the locking hooks (Item 2) [Figure 92] upward to the unlock position.

Figure 93



Install the lock pin (Item 1) and retainer pin (Item 2) [Figure 93] to hold the locking hooks in the open position. Remove the release bar.

Figure 91



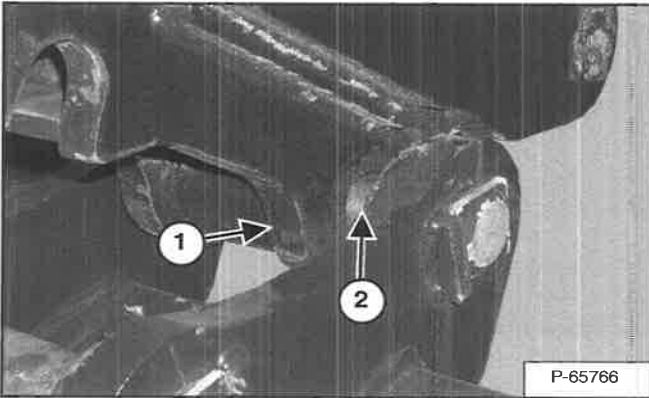
Insert the release bar (Item 1) into the manual spring loaded coupler. Remove the retainer pin (Item 2). Rotate the release bar (Item 1) upward slightly and remove the lock pin (Item 3) [Figure 91].

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

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

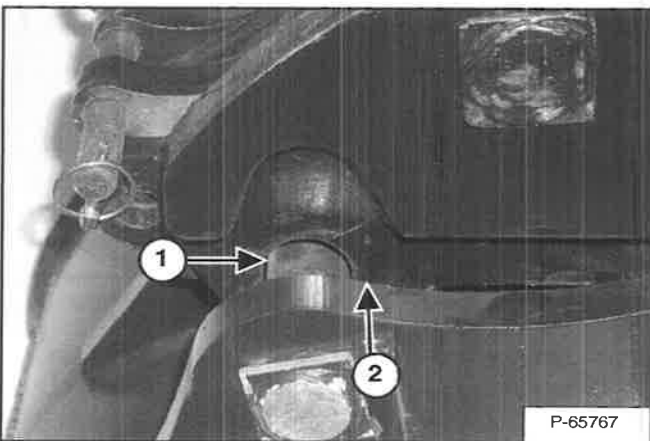
Figure 94



Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting The Excavator on Page 54.)

Position the front hooks (Item 1) over the front pin (Item 2) [Figure 94].

Figure 95

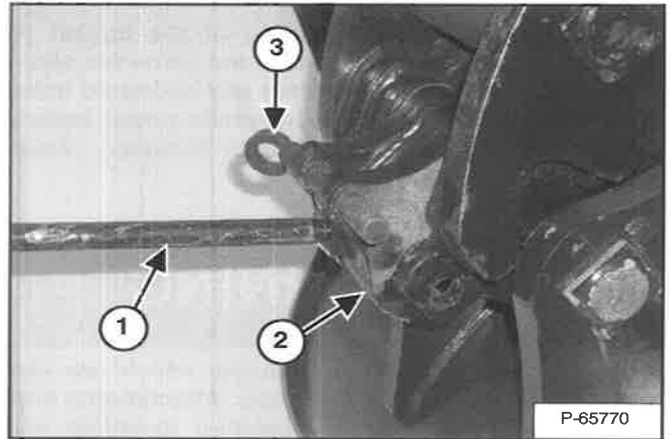


Extend the bucket cylinder (curl in) the coupler until the rear pin of the attachment (Item 1) is firmly seated in the coupler (Item 2) [Figure 95].

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 54.)

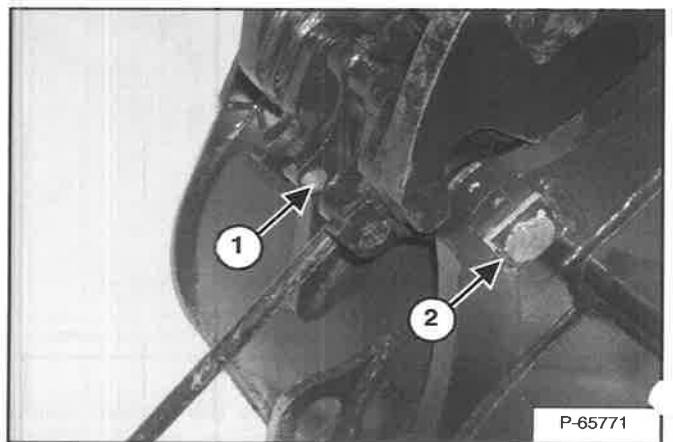
Figure 96



Reinsert the release bar (Item 1) and rotate the locking hooks (Item 2) [Figure 96] upward slightly.

Remove the retainer pin and the locking pin (Item 3) [Figure 96].

Figure 97



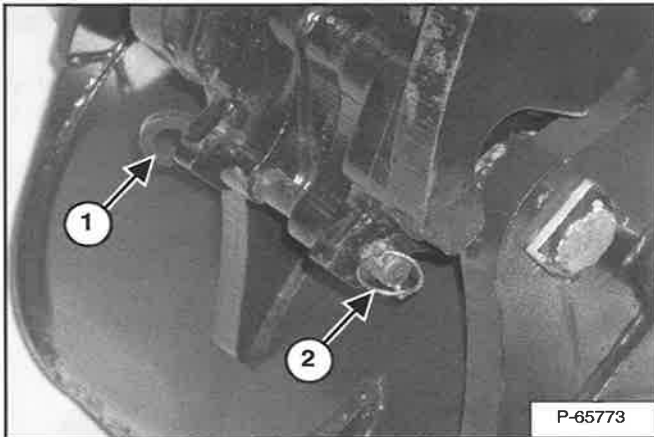
Rotate the locking hooks (Item 1) downward, cupping (engaging) the attachment pin (Item 2) [Figure 97].

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

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

Figure 98



Install the locking pin (Item 1) and retainer pin (Item 2) [Figure 98] and remove the release bar.

Check for secure attachment. **Never operate without retainer pins (Item 2) [Figure 98] installed.**

! WARNING

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

W-2119-0910

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Quick Coupler (Klac™ System)

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



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

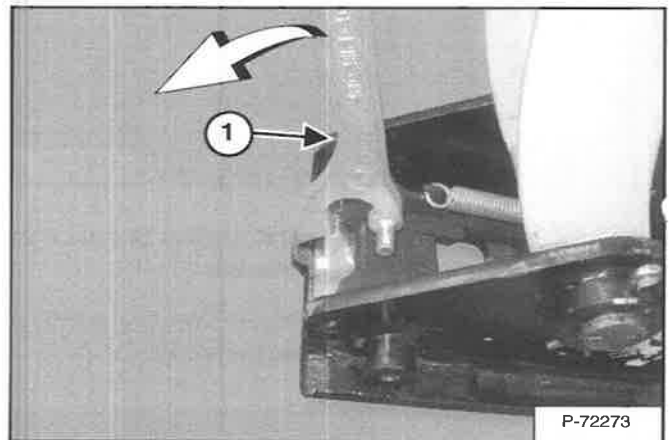


AVOID INJURY

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

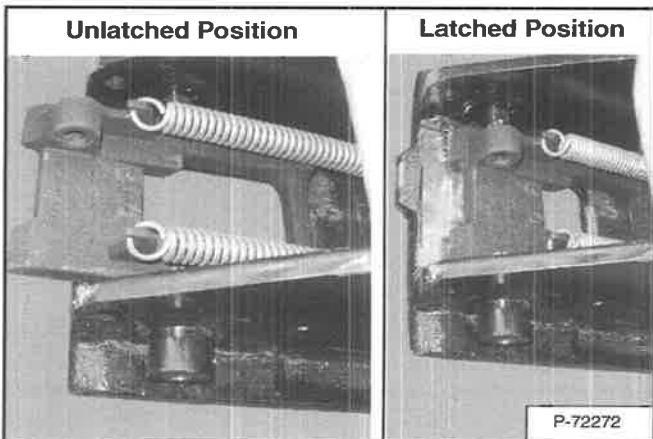
W-2541-1106

Figure 100



To unlatch the quick coupler, install the tool (Item 1) [Figure 100] and pull the handle. The latch will move completely forward. The latch will lock in the unlatched position.

Figure 99



Fully retract the bucket cylinder.

Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 54.)

Inspect the quick coupler to make sure the latch is in the unlatched position [Figure 99].

If in the latched position, see [Figure 100] for additional information.

If the latch is in the unlatched position, proceed to [Figure 101].

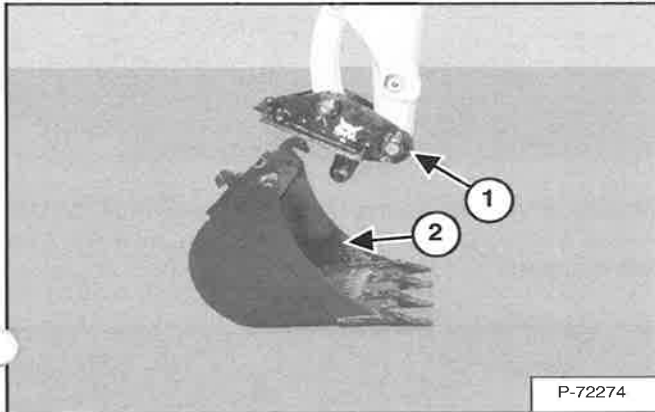
OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Quick Coupler (Klac™ System) (Cont'd)

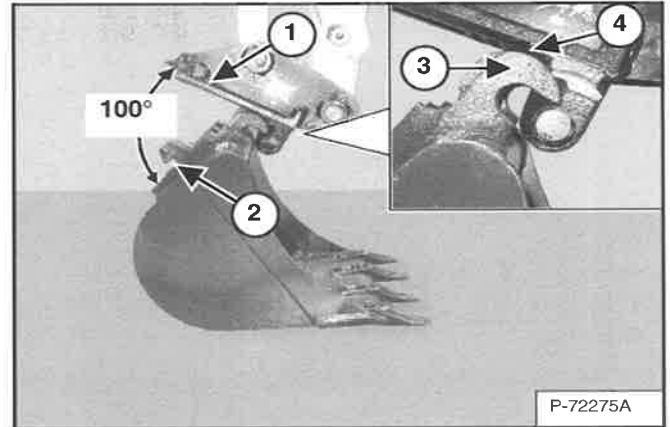
Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting The Excavator on Page 54.)

Figure 101



Position the quick coupler (Item 1) to the attachment (Item 2) [Figure 101].

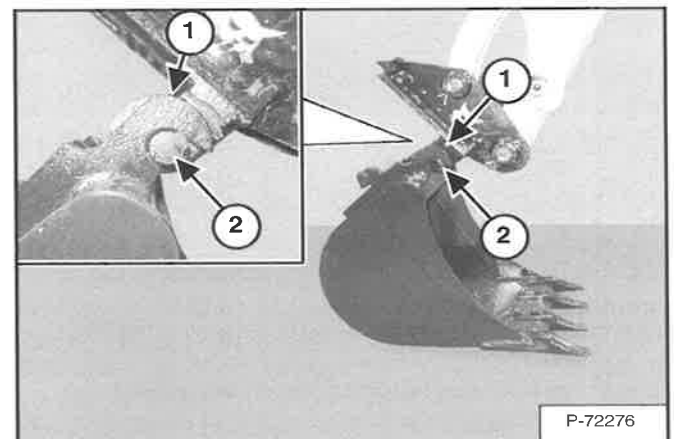
Figure 102



There must be at least 100° between the quick coupler surface (Item 1) and the attachment mounting surface (Item 2) [Figure 102]. 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 102]. Possible damage to the attachment hooks or the quick coupler could occur without proper clearance.

Figure 103



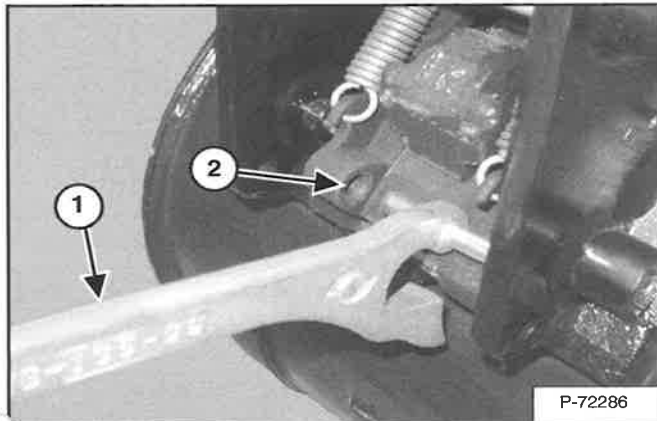
Raise the boom and extend the arm until the hooks of the attachment (Item 1) engage the pins (Item 2) [Figure 103] of the quick coupler.

**OPERATING PROCEDURE WITH EXCAVATORS
(CONT'D)**

Installation (Cont'd)

Quick Coupler (Klac™ System) (Cont'd)

Figure 107



If the latch is not engaged, install the tool (Item 1) in the hole (Item 2) [Figure 107] of the quick coupler and push down to unlatch the quick coupler. Remove the tool.

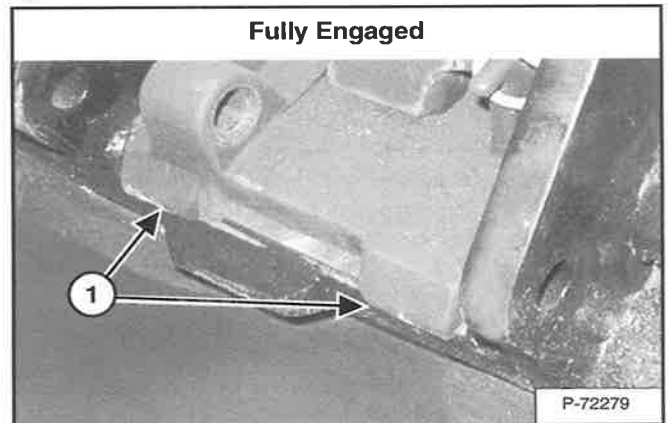
Enter the excavator. (See Entering And Exiting The Excavator on Page 54.)

Fasten the seat belt and start the engine.

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

Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 54.)

Figure 108



Again, visually inspect the quick coupler to make sure the latch (Item 1) [Figure 108] is fully engaged. If it is not fully engaged, remove the attachment and inspect both the quick coupler and the attachment for damage or debris.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

Quick Coupler (Lehnhoff® System)

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



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.

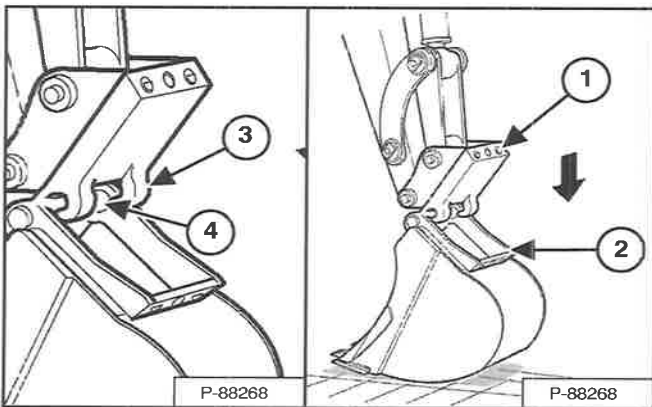
W-2052-0907

Enter the excavator. (See Entering And Exiting The Excavator on Page 54.)

Position the excavator arm above the attachment.

Fully retract the bucket cylinder.

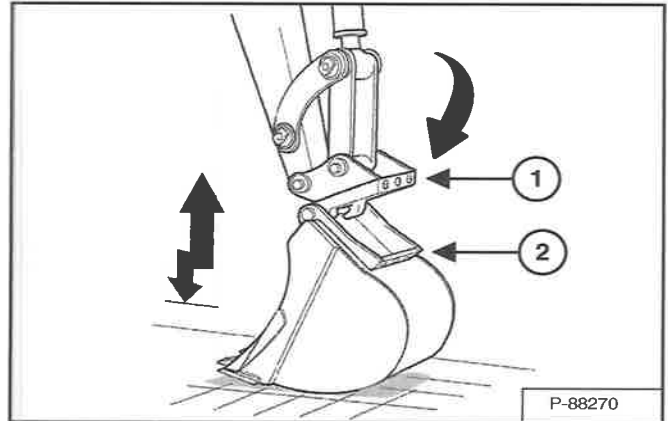
Figure 109



Lower the coupler (Item 1) onto the attachment (Item 2) [Figure 109].

Engage the coupler hooks (Item 3) onto the mounting shaft (Item 4) [Figure 109].

Figure 110



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 110].

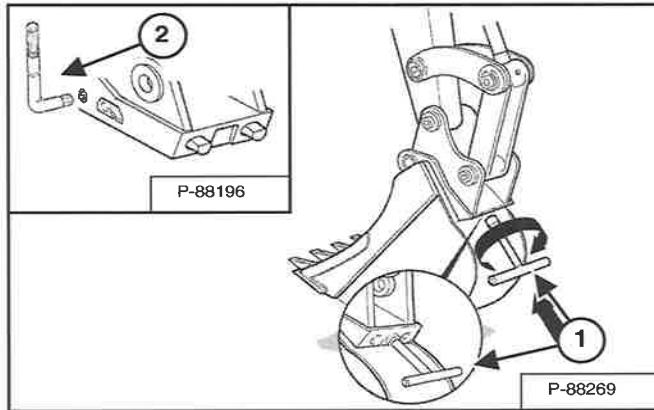
Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 54.)

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

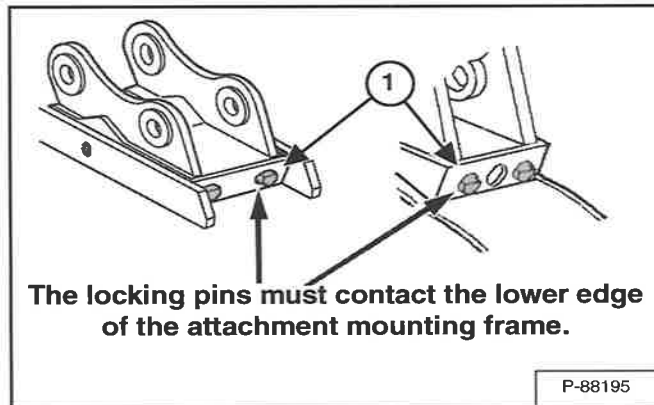
Quick Coupler (Lehnhoff® System) (Cont'd)

Figure 111



○ Install the tool (Item 1) or (Item 2) [Figure 111] and turn clockwise until the locking pins are fully engaged.

Figure 112



○ The locking pins (Item 1) [Figure 112] must extend through the holes in the attachment mounting frame, securely fastening the attachment to the coupler.

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



OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Installation (Cont'd)

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 75.)

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

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

WARNING

AVOID INJURY OR DEATH

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

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

W-2019-0907

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

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

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

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

Enter the excavator. (See Entering And Exiting The Excavator on Page 54.)

Start the engine and release the parking brake.

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.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Hydraulic Quick Couplers

IMPORTANT

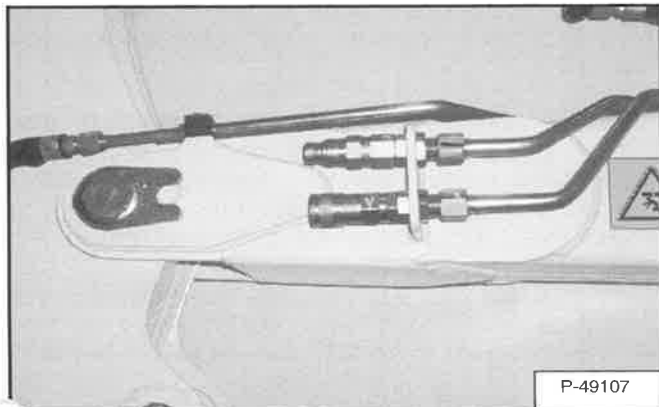
- Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.
- Contain and dispose of any oil leakage in an environmentally safe manner.

I-2278-0608

NOTE: The following illustrations may not show your hydraulic quick couplers exactly like they appear 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.

Figure 113



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.

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 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 113].

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 74.) for proper adjustment.

To Disconnect:

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

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

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

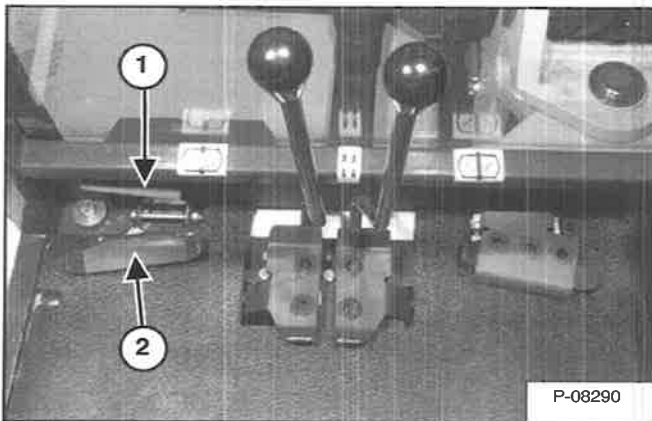
Control Functions

Earlier Models and 320 / 323 Current Models

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.

Figure 114



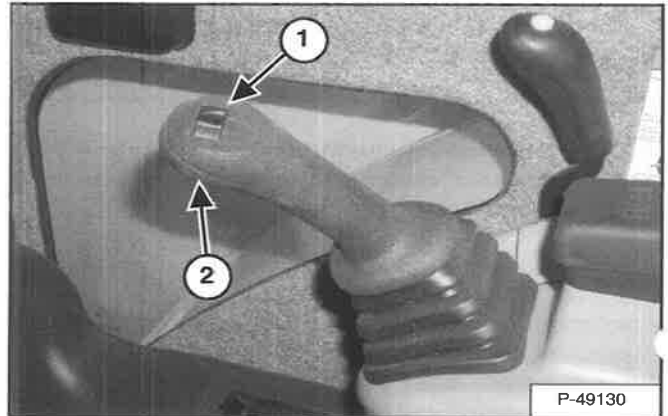
Raise the pedal lock / footrest (Item 1) to operate the auxiliary operation pedal (Item 2) [Figure 114].

Push the pedal to the right to start auger rotation in the clockwise direction or to the left to rotate the auger in the anticlockwise direction.

Later Model 300 And 400 Series Machines

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

Figure 115



Move the switch (Item 1) [Figure 115] on the right control lever to the right to start auger rotation in the clockwise direction or left to rotate the auger in the anticlockwise direction.

Continuous Flow: Press the front switch (Item 2) [Figure 115] on the front of the right control lever for constant flow of fluid to the female coupler. The auger will rotate in the clockwise direction. Press the front switch (Item 2) [Figure 115] a second time to stop auger rotation.

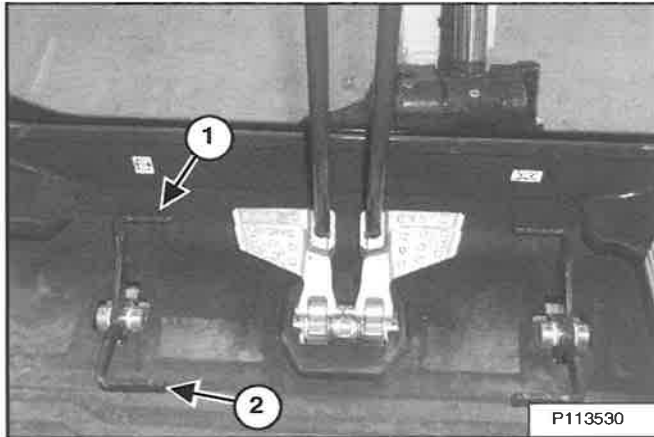
Continuous (Detent) Reverse Direction Operation: For continuous anticlockwise auger rotation, press and hold the switch (Item 1) to the left and then press the switch (Item 2) once. Let go of both switches and the auger will continue to rotate in the anticlockwise direction. To stop anticlockwise rotation, press the switch (Item 2) a second time or press the switch (Item 1) [Figure 115] to the right.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Control Functions (Cont'd)

E17, E19 And E20 Auxiliary Hydraulics - Manual Controls

Figure 116



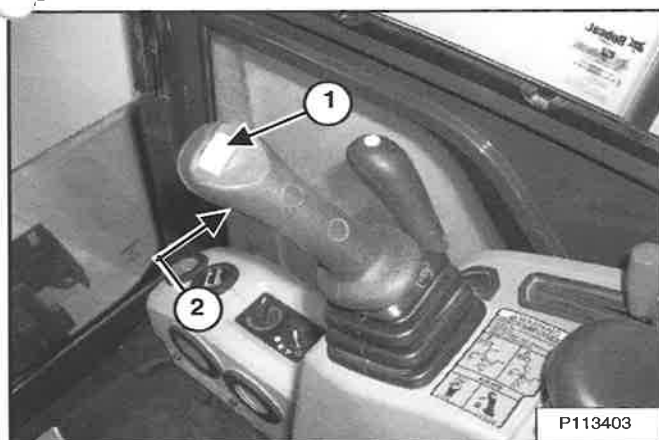
Press the toe of the pedal (Item 1) [Figure 116] to provide hydraulic flow / pressure to the female coupler. The auger will rotate clockwise. Release the pedal to stop the hydraulic flow and auger rotation.

Press the heel of the pedal (Item 2) [Figure 116] to provide hydraulic flow / pressure to the male coupler. The auger will rotate anticlockwise. Release the pedal to stop the hydraulic flow and auger rotation.

E17, E19 And E20 Auxiliary Hydraulics - EH Controls

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

Figure 117



Move the switch (Item 1) [Figure 117] on the right control lever to the right to start auger rotation in the clockwise direction or left to rotate the auger in the anticlockwise direction.

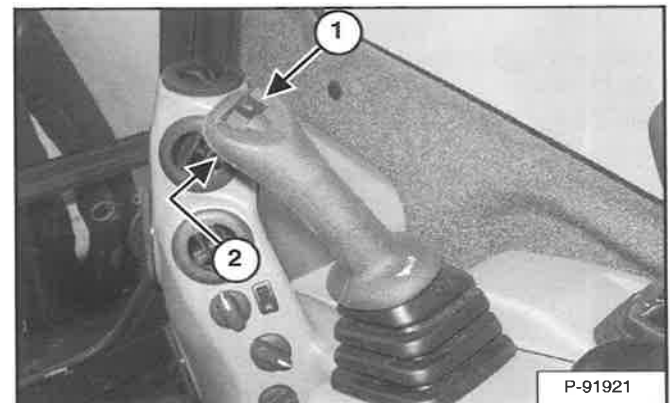
Continuous Flow: Press the front switch (Item 2) [Figure 117] on the front of the right control lever for constant flow of fluid to the female coupler. The auger will rotate in the clockwise direction. Press the front switch (Item 2) [Figure 117] a second time to stop auger rotation.

Continuous (Detent) Reverse Direction Operation: For continuous anticlockwise auger rotation, press and hold the switch (Item 1) to the left and then press the switch (Item 2) once. Let go of both switches and the auger will continue to rotate in the anticlockwise direction. To stop anticlockwise rotation, press the switch (Item 2) a second time or press the switch (Item 1) [Figure 117] to the right.

E26, E32, E35, E42, E45, E50 And E55 Machines

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

Figure 118



Move the switch (Item 1) [Figure 118] on the right control lever to the right to start auger rotation in the clockwise direction or left to rotate the auger in the anticlockwise direction.

Continuous Flow: Press the front switch (Item 2) [Figure 118] on the front of the right control lever for constant flow of fluid to the female coupler. The auger will rotate in the clockwise direction. Press the front switch (Item 2) [Figure 118] a second time to stop auger rotation.

Continuous (Detent) Reverse Direction Operation: For continuous anticlockwise auger rotation, press and hold the switch (Item 1) to the left and then press the switch (Item 2) once. Let go of both switches and the auger will continue to rotate in the anticlockwise direction. To stop anticlockwise rotation, press the switch (Item 2) a second time or press the switch (Item 1) [Figure 118] to the right.

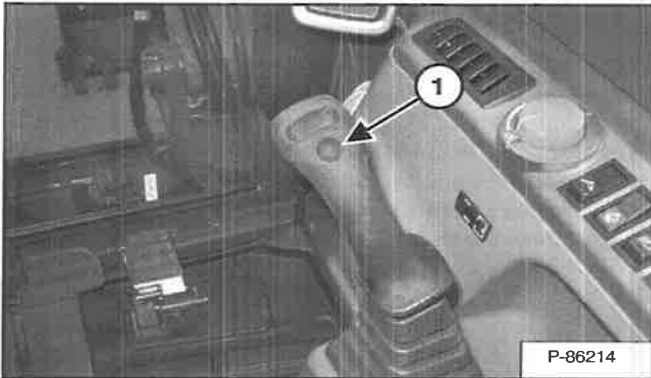
OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Control Functions (Cont'd)

E80 Machines

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

Figure 119

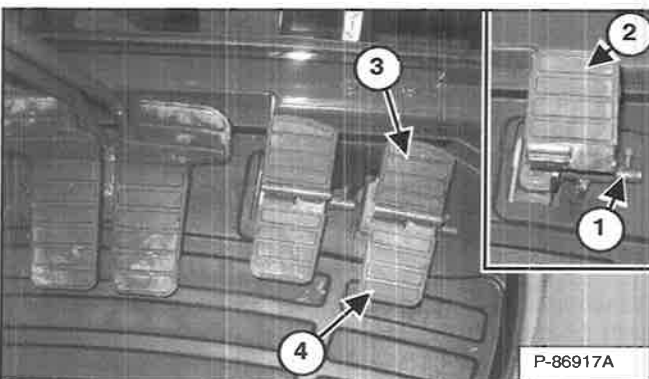


The direct to tank valve (if equipped) must be in the attachment position for two way flow auxiliaries. (See the excavator's Operation & Maintenance Manual.)

Press and hold switch (Item 1) [Figure 119] on the right joystick to start auger rotation in the clockwise direction. Release the switch to stop auger rotation.

NOTE: The primary auxiliary hydraulics and the one way flow auxiliary hydraulics use the same auxiliary hydraulic couplers.

Figure 120



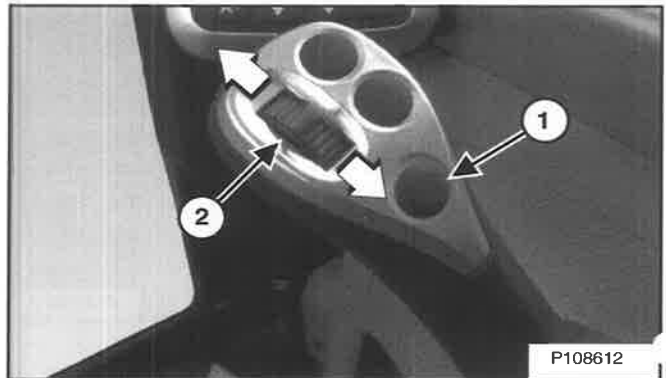
Release the pedal lock (Item 1) and pivot the heel of the pedal to the rear (Item 2) [Figure 120].

Push the toe of the pedal (Item 3) to start auger rotation in the clockwise direction; push the heel of the pedal (Item 4) [Figure 120] to rotate the auger in the anticlockwise direction.

E85 Machines

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

Figure 121



The direct to tank valve (if equipped) must be in the attachment position for two way flow auxiliaries. (See the excavator's Operation & Maintenance Manual.)

Press and release switch (Item 1) [Figure 121] on the right joystick to start auger rotation in the clockwise direction. Press and release the switch again to stop auger rotation.

NOTE: The primary auxiliary hydraulics and the one way flow auxiliary hydraulics use the same auxiliary hydraulic couplers.

Pushing the switch (Item 1) [Figure 121] up on the right joystick to start auger rotation in the clockwise direction.

Pushing the switch (Item 1) [Figure 121] down on the right joystick to start auger rotation in the clockwise direction.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Operation With The Excavator

! WARNING

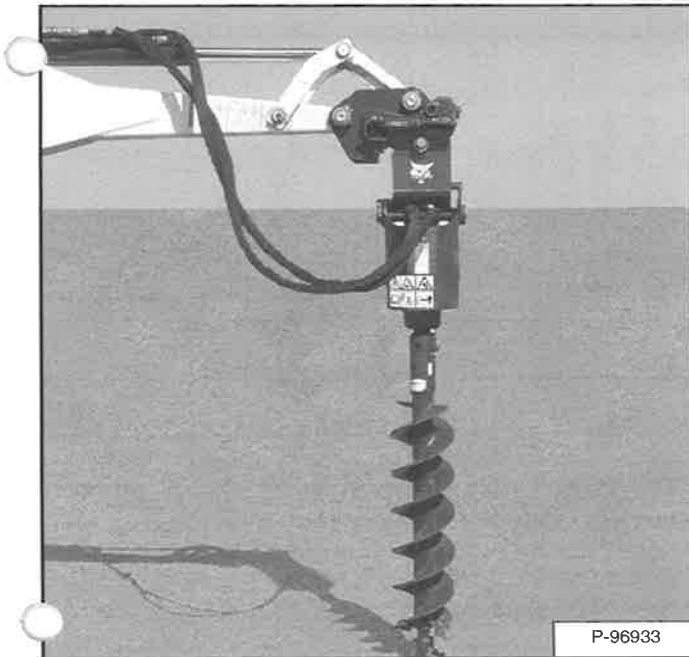
AVOID INJURY OR DEATH

- Check for underground utility lines before digging.
- Keep bystanders away from rotating auger and cutting head.
- Do not operate the auger if the point of the auger is not touching the ground.

W-2711-0208

Raise the boom slowly.

Figure 122



Retract or extend the bucket cylinder so the auger will be free floating in the mounting frame and will allow for a vertical hole to be drilled **[Figure 122]**.

Lower the boom until the auger point touches the ground.

Engage the auxiliary hydraulics on the excavator to rotate the auger bit in the correct direction **[Figure 122]**.

At the same time, slowly lower the boom to drill into the soil.

Raise the boom often while the auger is turning to remove dirt from the hole.

Stop the auger when the point clears the hole above ground.

Moving The Excavator With The Direct Drive Auger Installed

Raise the auger bit from the drilled hole and stop the auger bit rotation.

Retract the bucket cylinder fully. Lower the boom to carry the auger as low as possible when driving the excavator to the next drilling location.

IMPORTANT

Do not side load the auger while drilling. Excessive pressure can damage the auger or machine.

I-2189-0807

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal

Pin-On X-Change

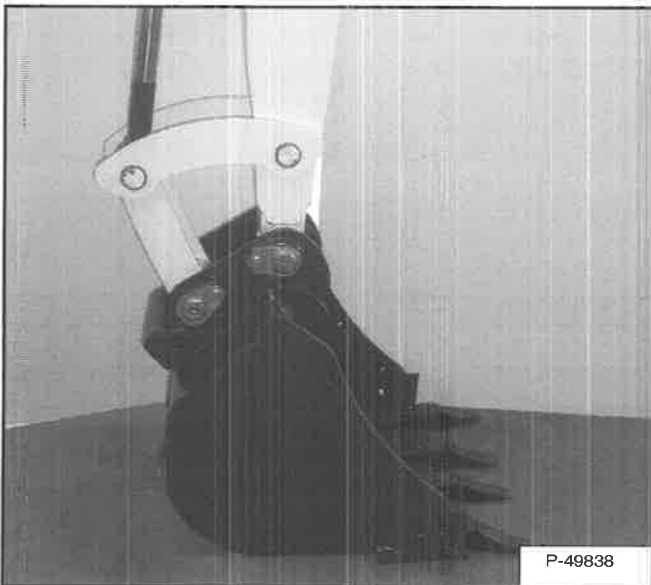
NOTE: Removal of the bucket is shown. The procedure is the same for other attachments. Disconnect any hydraulic lines that are operated by hydraulic power before removing any attachments (breaker, direct drive auger, etc.).

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 123

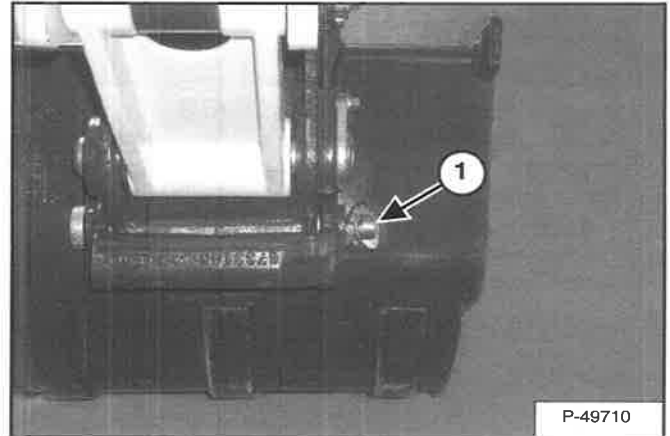


Park the excavator on a flat level surface. Put the attachment on the ground [Figure 123].

With the engine off, turn the start key to the ON position and move both hydraulic control levers to relieve hydraulic pressure.

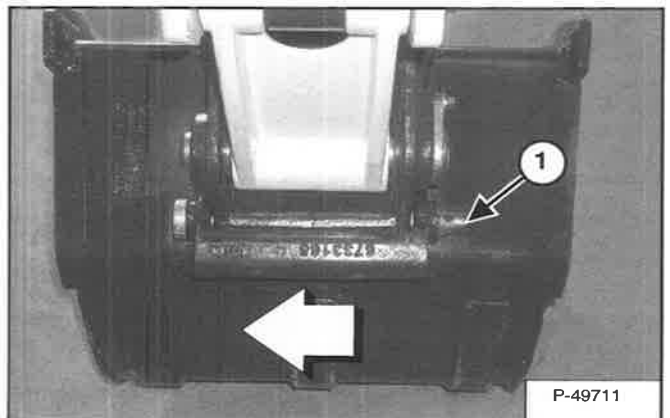
Exit the excavator. (See Entering And Exiting The Excavator on Page 54.)

Figure 124



Remove the retainer pin (Item 1) [Figure 124].

Figure 125



Drive the pin (Item 1) [Figure 125] out of the attachment and X-Change mount.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Pin-On X-Change (Cont'd)



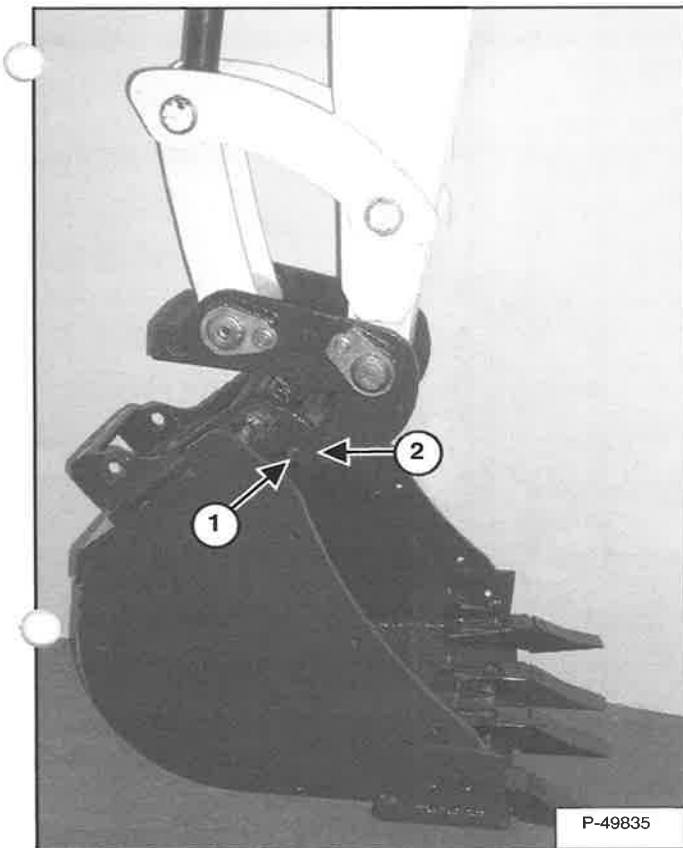
AVOID INJURY OR DEATH

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.

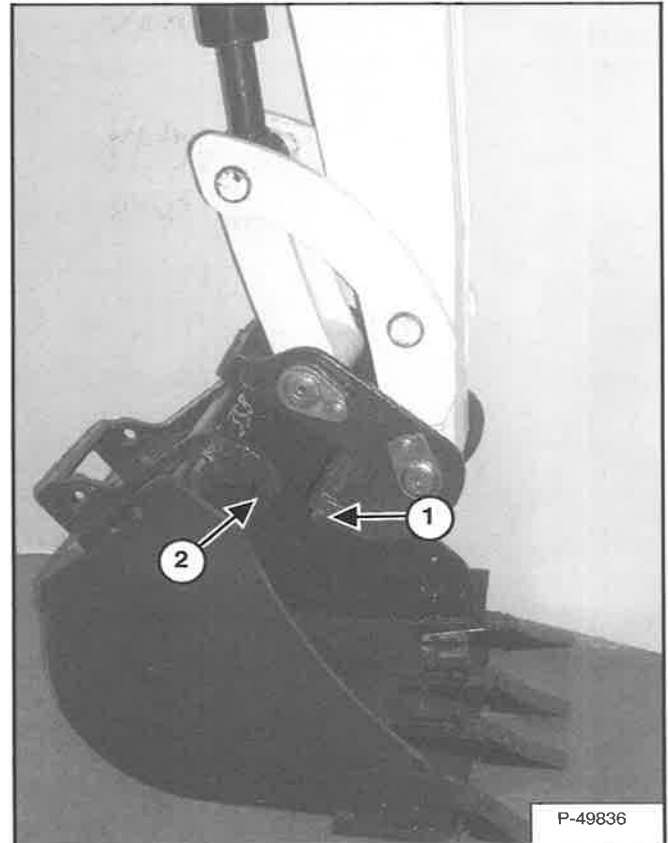
W-2019-0907

Figure 126



Start the engine, raise the boom approximately 305 mm (12 in) and retract the bucket cylinder until the X-Change pins (Item 1) engage the hooks (Item 2) [Figure 126] on the attachment.

Figure 127



Fully retract the bucket cylinder and lower the boom and arm until the attachment is on the ground, and the X-Change pins (Item 1) are disengaged from the hooks (Item 2) [Figure 127].

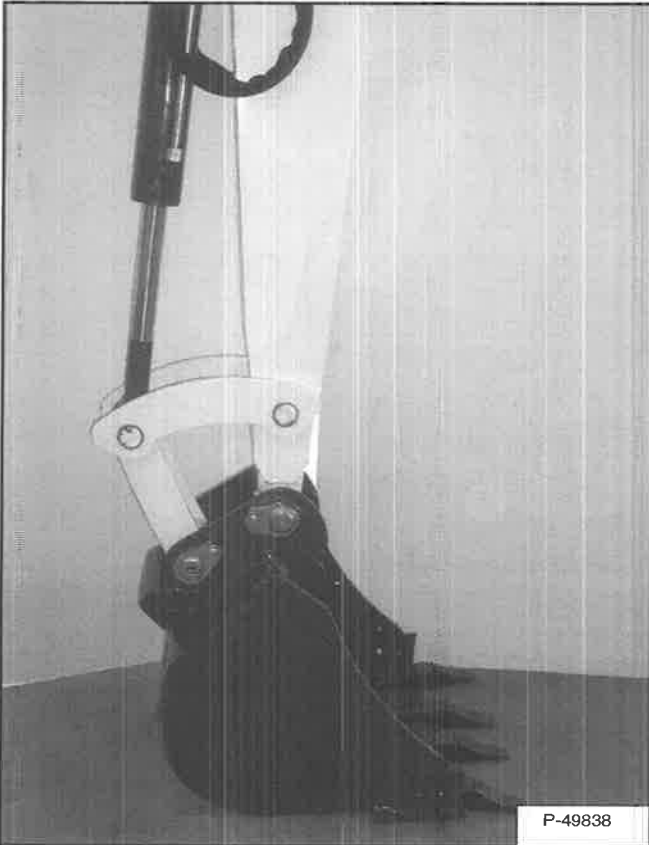
Move the arm toward the excavator until the X-Change pins are clear of the attachment.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Bolt-On X-Change

Figure 128

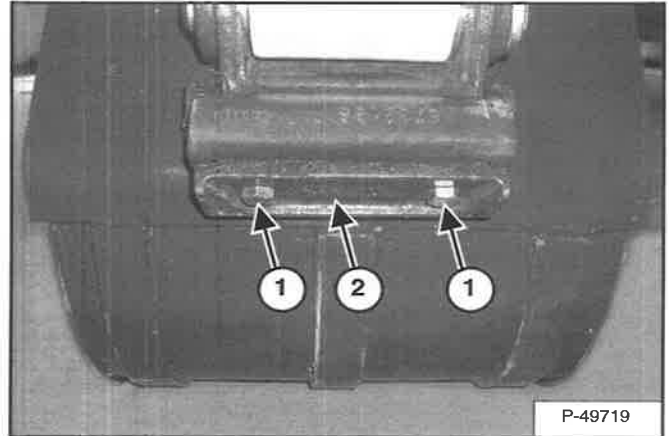


Park the excavator on a flat, level surface. Put the attachment on the ground [Figure 128].

With the engine off, turn the start key to the ON position and move both hydraulic control levers to relieve hydraulic pressure.

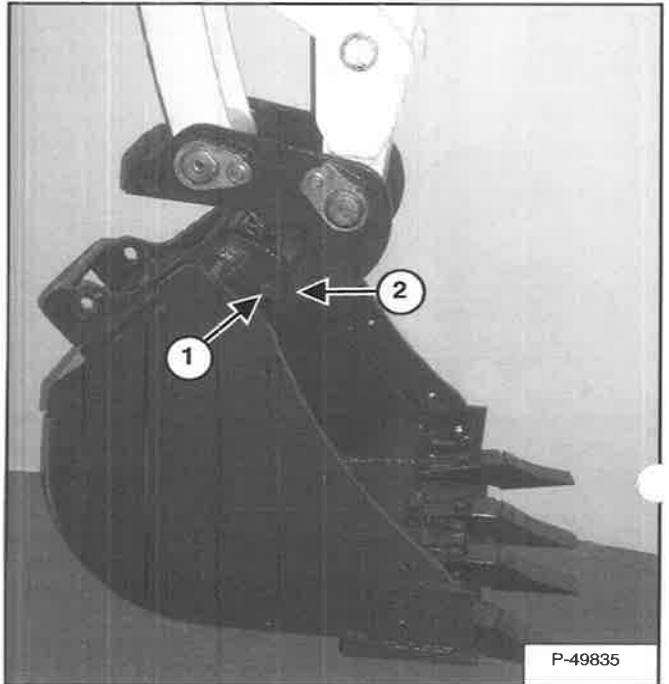
Exit the excavator. (See Entering And Exiting The Excavator on Page 54.)

Figure 129



Remove the two bolts (Item 1) and plate (Item 2) [Figure 129].

Figure 130



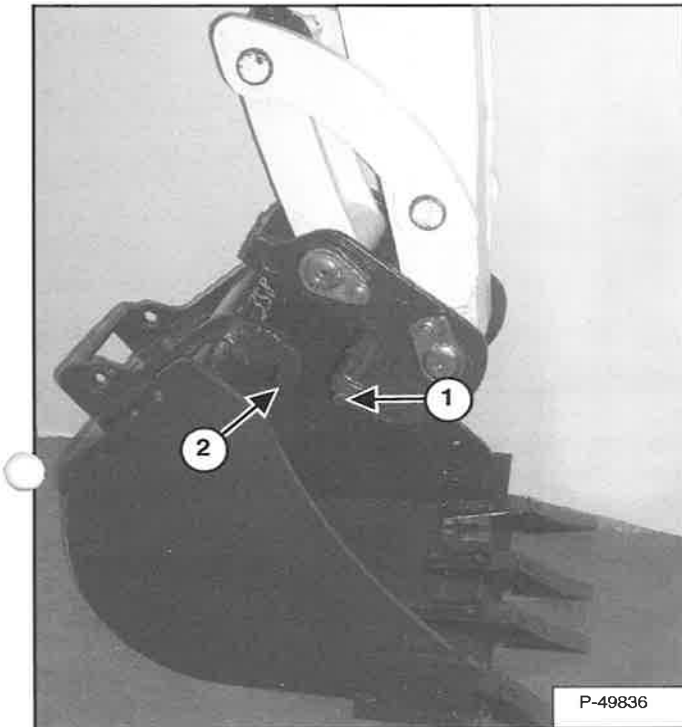
Start the engine, raise the boom approximately 305 mm (12 in) and extend the bucket cylinder until the X-Change pins (Item 1) engage the hooks (Item 2) [Figure 130] on the attachment.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Bolt-On X-Change (Cont'd)

Figure 131



Fully retract the bucket cylinder and lower the boom and arm until the attachment is on the ground, and the X-Change pins (Item 1) are disengaged from the hooks (Item 2) [Figure 131].

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

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.

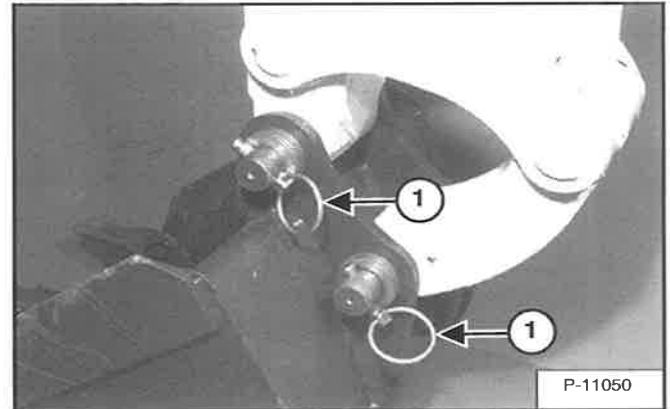
W-2662-0108

Pin-On Attachment

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

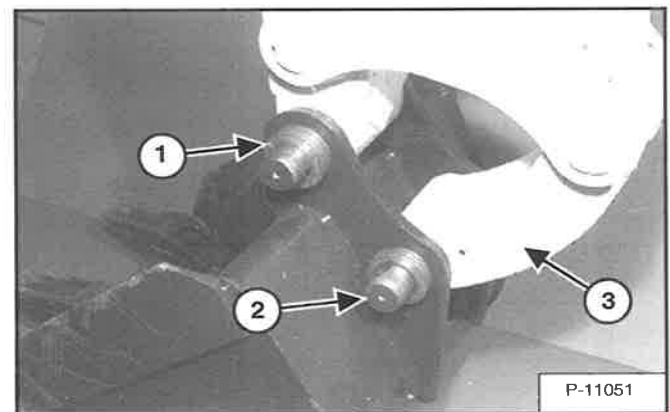
Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 54.)

Figure 132



Remove the two retainer pins (Item 1) [Figure 132].

Figure 133



Remove the washers and pins (Item 1 and 2) [Figure 133].

Do not damage the dust seals in the arm.

Enter the excavator and start the engine. (See Entering And Exiting The Excavator on Page 54.)

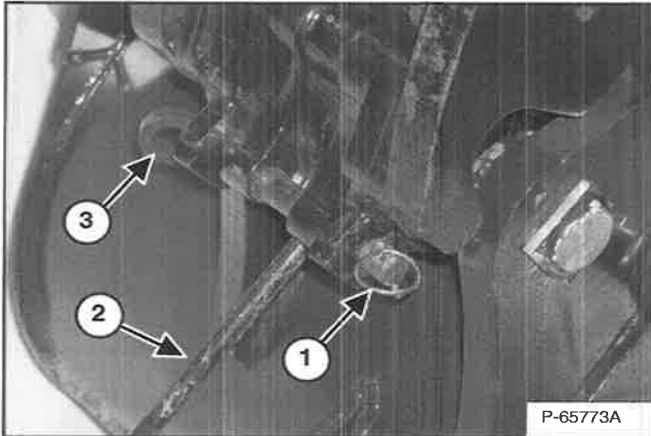
Remove the arm and the link (Item 3) [Figure 133] from the attachment.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Manual Spring Loaded Coupler (442 Only)

Figure 134



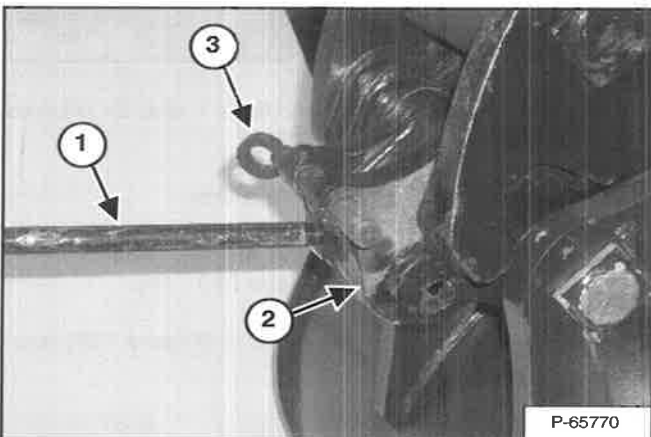
Position the attachment flat on the ground.

Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 54.)

Remove the retainer pin (Item 1) [Figure 134].

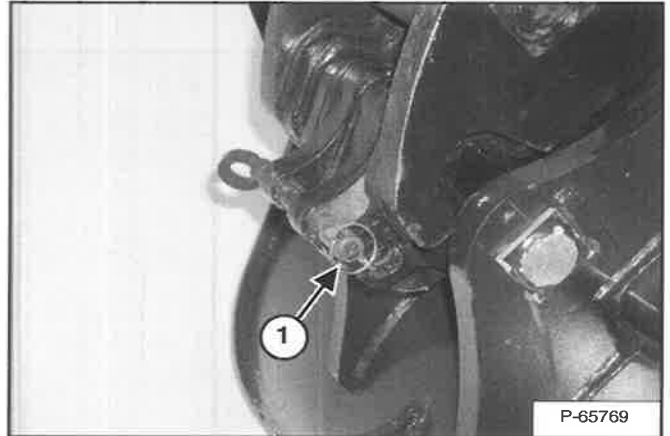
Insert the release bar (Item 2) and rotate the release bar upward slightly and remove the locking pin (Item 3) [Figure 134].

Figure 135



Using the release bar (Item 1), rotate the locking hooks (Item 2) upward to the unlock position and install the locking pin (Item 3) [Figure 135].

Figure 136



Install the retainer pin (Item 1) [Figure 136] to hold the locking hooks in the open position. Remove the release bar.

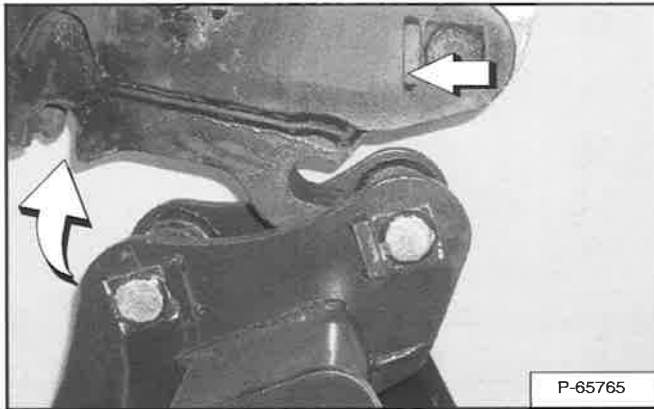
Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting The Excavator on Page 54.)

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Manual Spring Loaded Coupler (442 Only)

Figure 137



- Retract the bucket cylinder and move the arm forward until the manual spring loaded coupler is clear of the attachment [Figure 137].

! 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)

Removal (Cont'd)

Quick Coupler (Klac™ System)

Park the excavator on a level surface.

Position the attachment flat on the ground.

Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 54.)

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.).

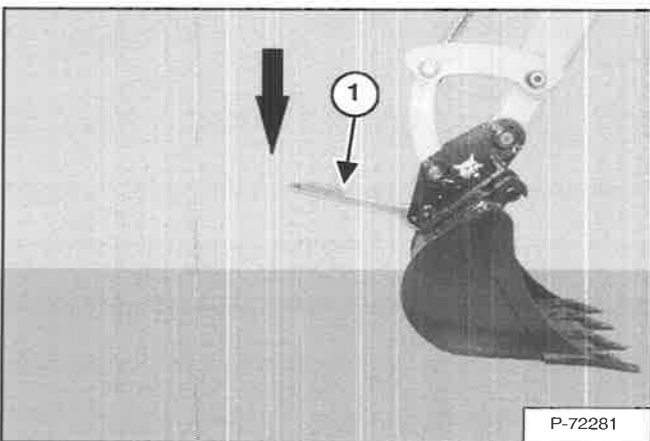


AVOID INJURY

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

W-2541-1105

Figure 138



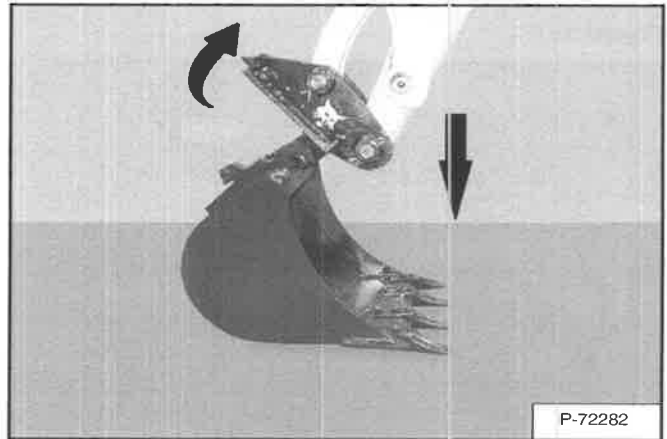
Install the quick coupler tool (Item 1) [Figure 138] into the hole in the quick coupler.

Push down on the tool (Item 1) [Figure 138] to unlock the latch.

Remove the tool.

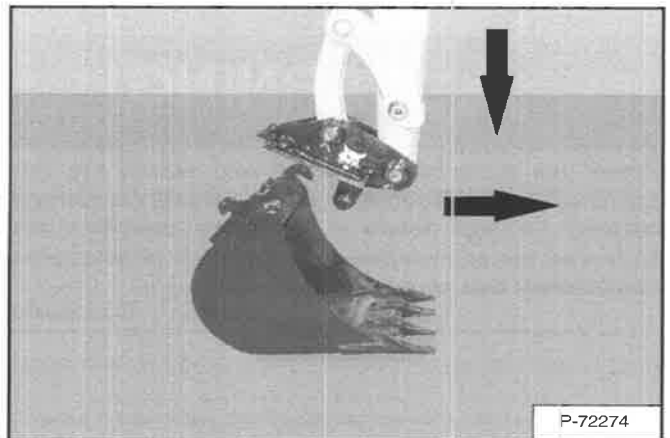
Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting The Excavator on Page 54.)

Figure 139



Retract the bucket cylinder fully and lower the boom [Figure 139].

Figure 140



Continue to lower the boom and move the arm toward the excavator away from the attachment [Figure 140].

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

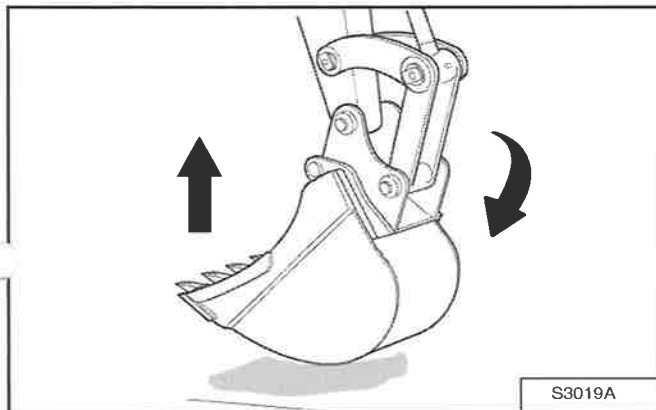
Removal (Cont'd)

Quick Coupler (Lehnhoff® System)

Park the excavator on a level surface.

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

Figure 141

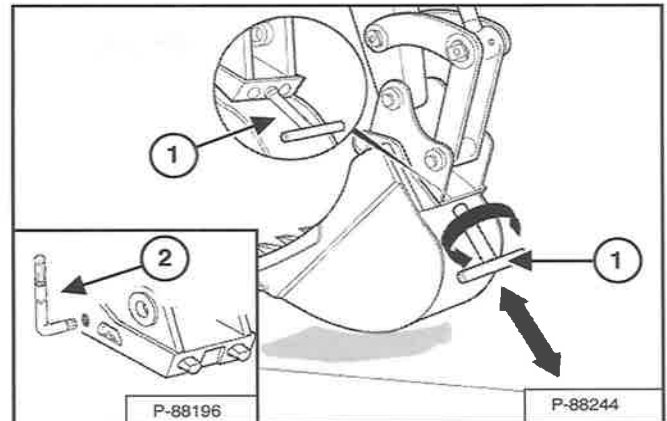


Raise the boom and extend the bucket cylinder until the attachment is slightly off the ground [Figure 141].

Engage the parking brake.

Stop the engine and exit the excavator. (See Entering And Exiting The Excavator on Page 54.)

Figure 142

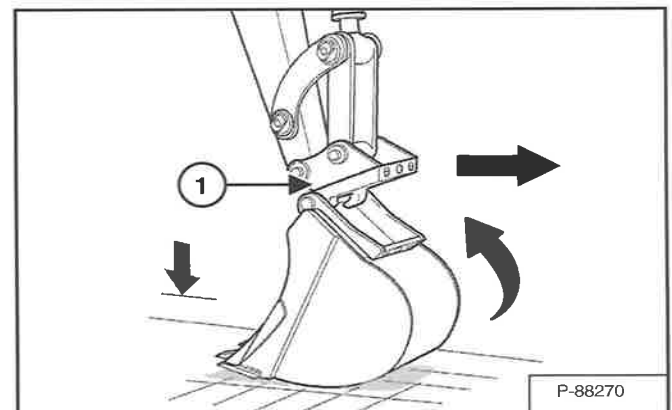


Install the supplied wrench (Item 1) or (Item 2) [Figure 142] and turn anticlockwise until the locking pins are disengaged. Remove the wrench.

Enter the excavator, fasten the seat belt and start the engine. (See Entering And Exiting The Excavator on Page 54.)

Lower the attachment to the ground.

Figure 143



Retract the bucket cylinder to rotate the coupler (Item 1) [Figure 143] 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 143].

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS

Approved Telescopic Handler Models And Requirements

Figure 144

TELESCOPIC HANDLER MODEL	15C	15H	30C	30H
T2250	X	X	X	X
T2556	X	X	X	X
T2566	X	X	X	X
T3571	X	X	X	X
T3571L	X	X	X	X
T35100SL	X	X	X	X
T35120L	X	X	X	X
T35120SL	X	X	X	X
T40140	X	X	X	X
T40170	X	X	X	X

(X = Approved)

The chart [Figure 144] shows the approved direct drive auger models for each telescopic handler model.

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

IMPORTANT

Never use auger bits which are not approved by Bobcat. Damage to the auger casting will occur. The use of unapproved auger bits will void warranty on the attachment. See your Bobcat dealer for a list of approved auger bits.

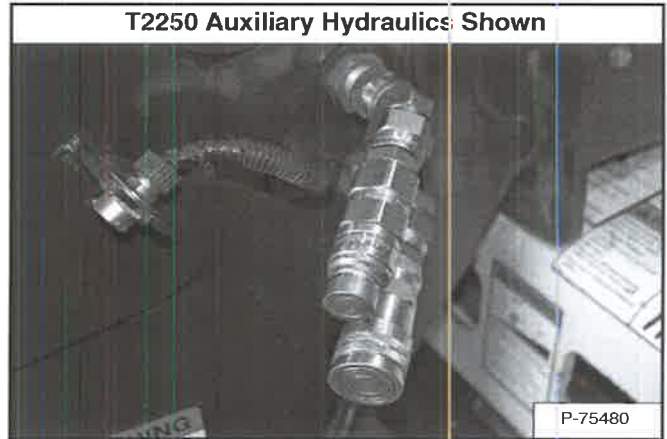
I-2388-1117

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.

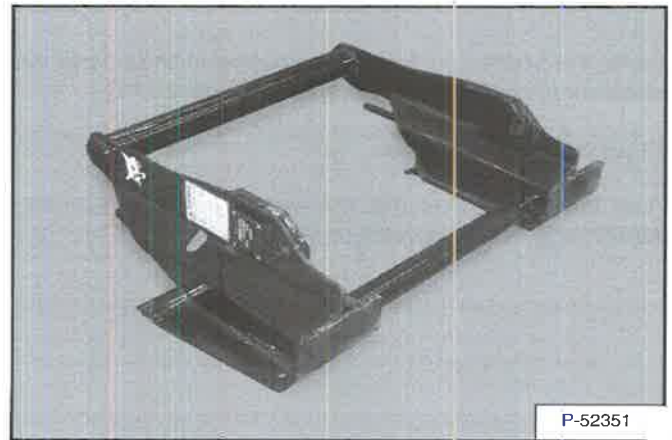
W-2662-0108

Figure 145



The telescopic handler must be equipped with front auxiliary hydraulics [Figure 145] for proper operation of the direct drive auger. See your Bobcat dealer for available kits.

Figure 146



The telescopic handler must be equipped with the adapter frame [Figure 146] (or Bob-Tach) for proper operation of the direct drive auger.

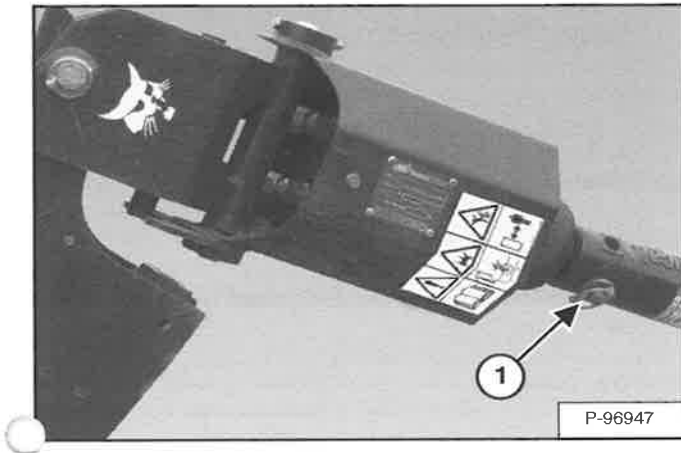
NOTE: Additional kits may need to be installed before using the auger on some model telescopic handler. See your Bobcat dealer for available kits.

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Machine / Attachment Setup

NOTE: Make sure the decals are clearly visible on the direct drive auger drive.

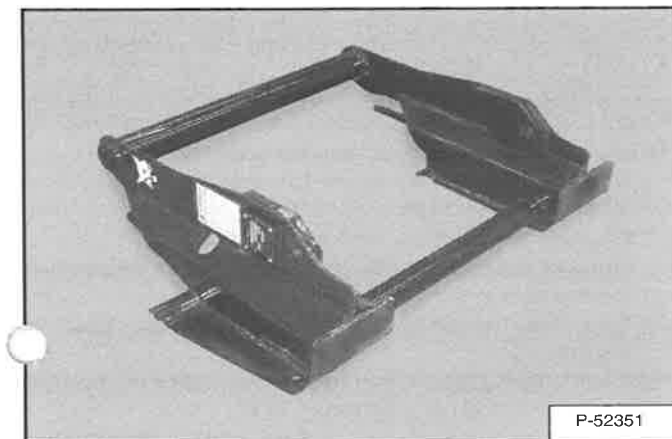
Figure 147



Install the auger bit on the drive shaft [Figure 147].

Install the pin (Item 1) [Figure 147] through the auger bit and the drive shaft. Install the washer and retaining clip.

Figure 148



Install the adapter frame [Figure 148] on the telescopic handler. See the adapter frame Operation & Maintenance Manual for proper installation of the adapter frame.

NOTE: Additional kits may need to be installed before using the auger on some model telescopic handlers. See your Bobcat dealer for available kits.

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Entering And Exiting The Telescopic Handler

Entering



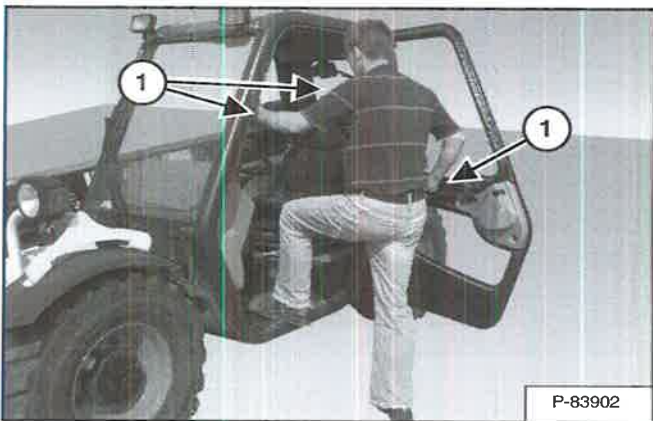
AVOID INJURY OR DEATH

When operating the machine:

- Keep the seat belt fastened snugly.
- Lower the restraint bar (if equipped).
- Keep your feet and arms inside the cab.

W-2810-1109

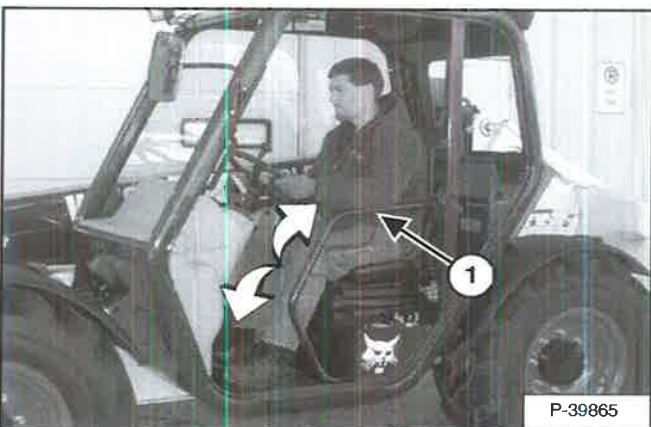
Figure 149



Use the hand grabs (Item 1) [Figure 149] to enter the operator cab.

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

Figure 150



Fasten seat belt and lower the restraint bar (Item 1) [Figure 150] (if equipped), and engage the parking brake.

Put the Travel Direction Control lever and joystick in NEUTRAL.

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

Exiting

Put the Travel Direction Control Lever and the Joystick in NEUTRAL.

Engage the parking brake.

Retract and lower the boom and attachment flat on the ground.

Stop the engine.

Raise the restraint bar (if equipped) and make sure the lift, tilt, boom extend, auxiliary hydraulic and traction drive functions are deactivated.

Remove the key.

Exit the telescopic handler.



Before you leave the operator's position:

- Put the travel Direction Control Lever and the Joystick in neutral.
- Engage the parking brake.
- Retract and lower the boom and attachment flat on the ground.
- Stop the engine. Raise the restraint bar (if equipped).

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

W-2637-0607

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (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.

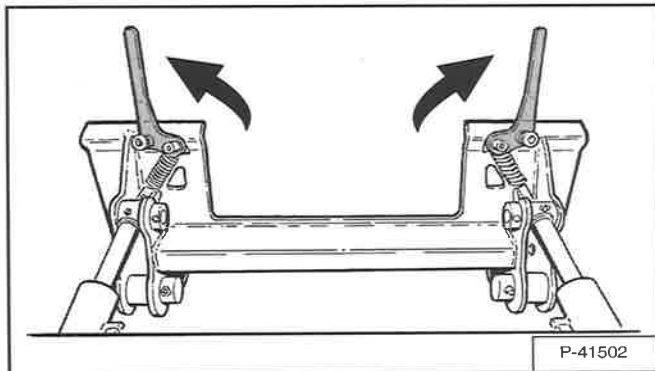


Warnings on the machine and in the manuals are for your safety. Failure to obey warnings can cause serious injury or death.

W-2744-0608

Always inspect the telescopic handler's Bob-Tach and the attachment mounting frame before installation. See the telescopic handler's Operation & Maintenance Manual. (See DAILY INSPECTION on Page 28.)

Figure 151

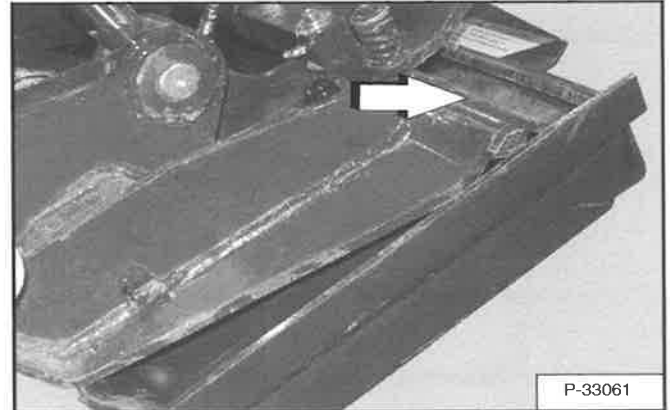


Push all the Bob-Tach levers up until they are fully raised (wedges fully raised) [Figure 151].

Enter the telescopic handler. (See Entering And Exiting The Telescopic Handler on Page 90.)

Start the engine and release the parking brake.

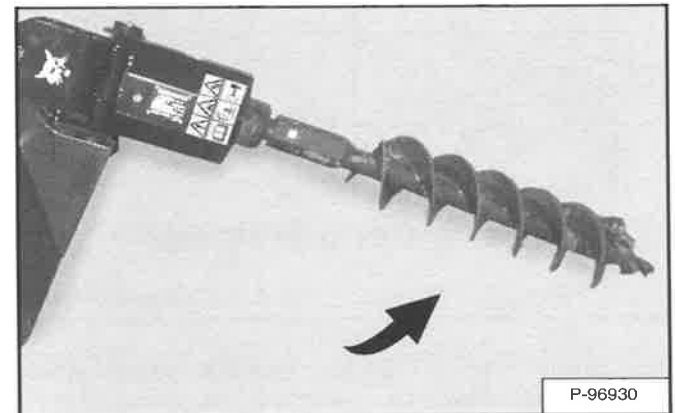
Figure 152



Tilt the Bob-Tach forward. Drive the telescopic handler forward until the top edge of the Bob-Tach is completely under the flange of the attachment mounting frame [Figure 152].

Be sure the Bob-Tach levers do not hit the direct drive auger.

Figure 153



Tilt the Bob-Tach backward until the Bob-Tach is tight against the lower part of the attachment mounting frame [Figure 153].

Do not raise the boom. This can cause the attachment mounting frame to move away from the Bob-Tach.

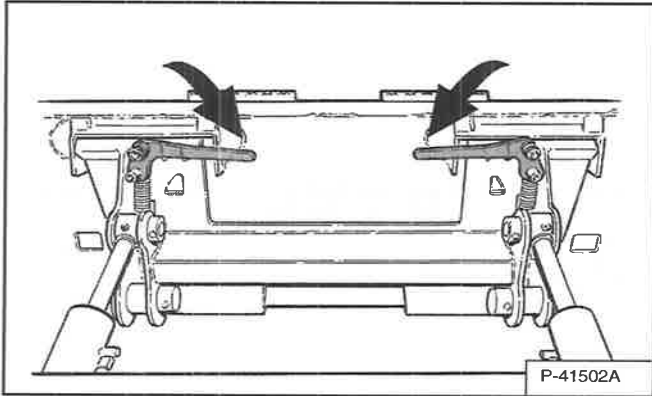
Stop the engine, engage the parking brake and exit the telescopic handler.

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Installation (Cont'd)

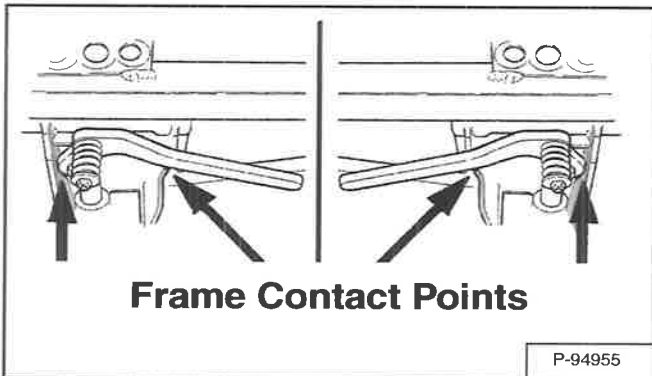
Hand Lever Bob-Tach (Cont'd)

Figure 154



Push down on the Bob-Tach levers until they are fully engaged in the locked position [Figure 154] (wedges fully extended through the attachment mounting frame holes).

Figure 155



Both levers must contact the frame as shown when locked [Figure 155].

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

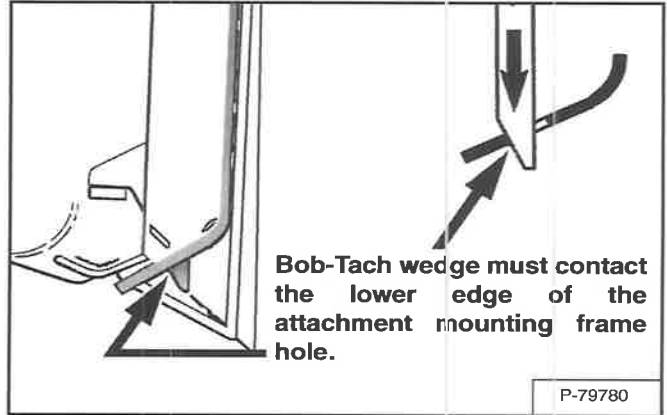
! WARNING

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 156



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 156].

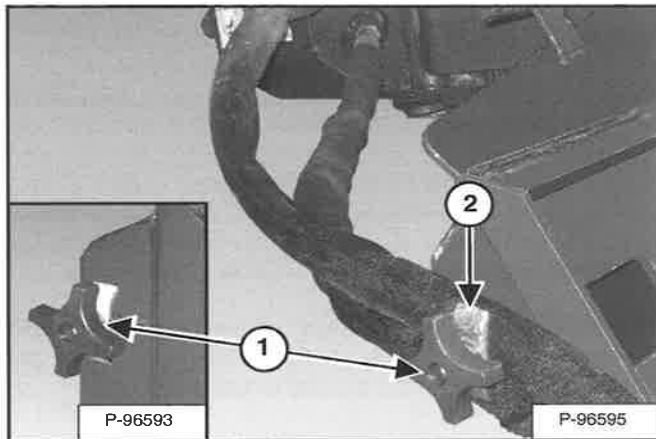
Connect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 95.)

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Installation (Cont'd)

Auger Hose Clamp

Figure 157



Loosen knob (Item 1) [Figure 157] and clamp until there is adequate space for hydraulic hoses.

Place the auger hydraulic hoses between the clamp (Item 2) [Figure 157] and auger mounting frame.

NOTE: Do not pull the auger hydraulic hoses tight. Allow enough free hose for the auger drive to pivot freely.

Tighten knob and clamp against the auger hydraulic hoses.



OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Installation (Cont'd)

For First Time Installation

New attachments and new telescopic handlers 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 telescopic handler. 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 telescopic handler engine off and using the hose guides (if equipped), route the attachment hydraulic hoses to the telescopic handler. Connect the attachment hydraulic quick couplers to the telescopic handler couplers. (See Hydraulic Quick Couplers on Page 95.)

Check that the attachment hydraulic hoses are not twisted or contacting any moving parts of the telescopic handler 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 telescopic handler. 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 telescopic handler 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 telescopic handler. This will help hold the hydraulic hoses in position while tightening.

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

Enter the telescopic handler. (See Entering And Exiting The Telescopic Handler on Page 90.)

Start the engine and release the parking brake.

Engage auxiliary hydraulics. (See the telescopic handler'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.

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Hydraulic Quick Couplers

! 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

IMPORTANT

Contain and dispose of any oil leakage in an environmentally safe manner.

I-2066-0395

IMPORTANT

Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.

I-2178-0698

New attachments and new telescopic handler's 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 telescopic handler. 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.

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 158



To Connect:

Install the male coupler into the female coupler. Full connection is made when the ball release sleeve slides forward on the female coupler [Figure 158].

NOTE: Check that the attachment hydraulic hoses are not twisted or contacting any moving parts of the telescopic handler or attachment. (See For First Time Installation on Page 94.) for proper adjustment.

To Disconnect:

Relieve hydraulic pressure. (See the telescopic handler's Operation & Maintenance Manual for correct procedure.) Retract the sleeve on the female coupler until the couplers disconnect [Figure 158].

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Control Functions

IMPORTANT

When using ground engaging attachments, boom extension must not exceed 250 mm (9.8 in). Exceeding this limit can cause boom and / or hydraulic cylinder damage.

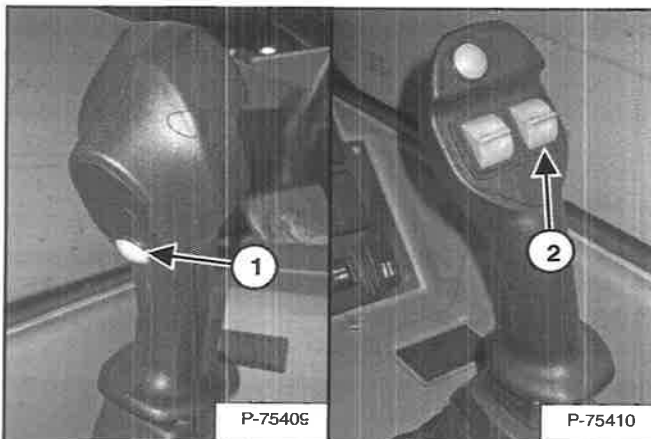
I-2266-0910

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

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

Move to the operator position, fasten seat belt and lower the restraint bar (*if equipped*), start engine and disengage the parking brake.

Figure 159



Press the button (Item 1) [Figure 159] to start auger clockwise rotation.

Press the button (Item 1) [Figure 159] a second time to stop auger rotation.

Continuous (Detent) Anticlockwise Direction Operation

For anticlockwise auger rotation, press the switch (Item 2) [Figure 159] up.

For continuous anticlockwise auger rotation, press and hold the right thumbwheel (Item 2) up while pressing the button (Item 1) [Figure 159] once. Let go of the thumbwheel and button and the auger will continue to rotate in the anticlockwise direction.

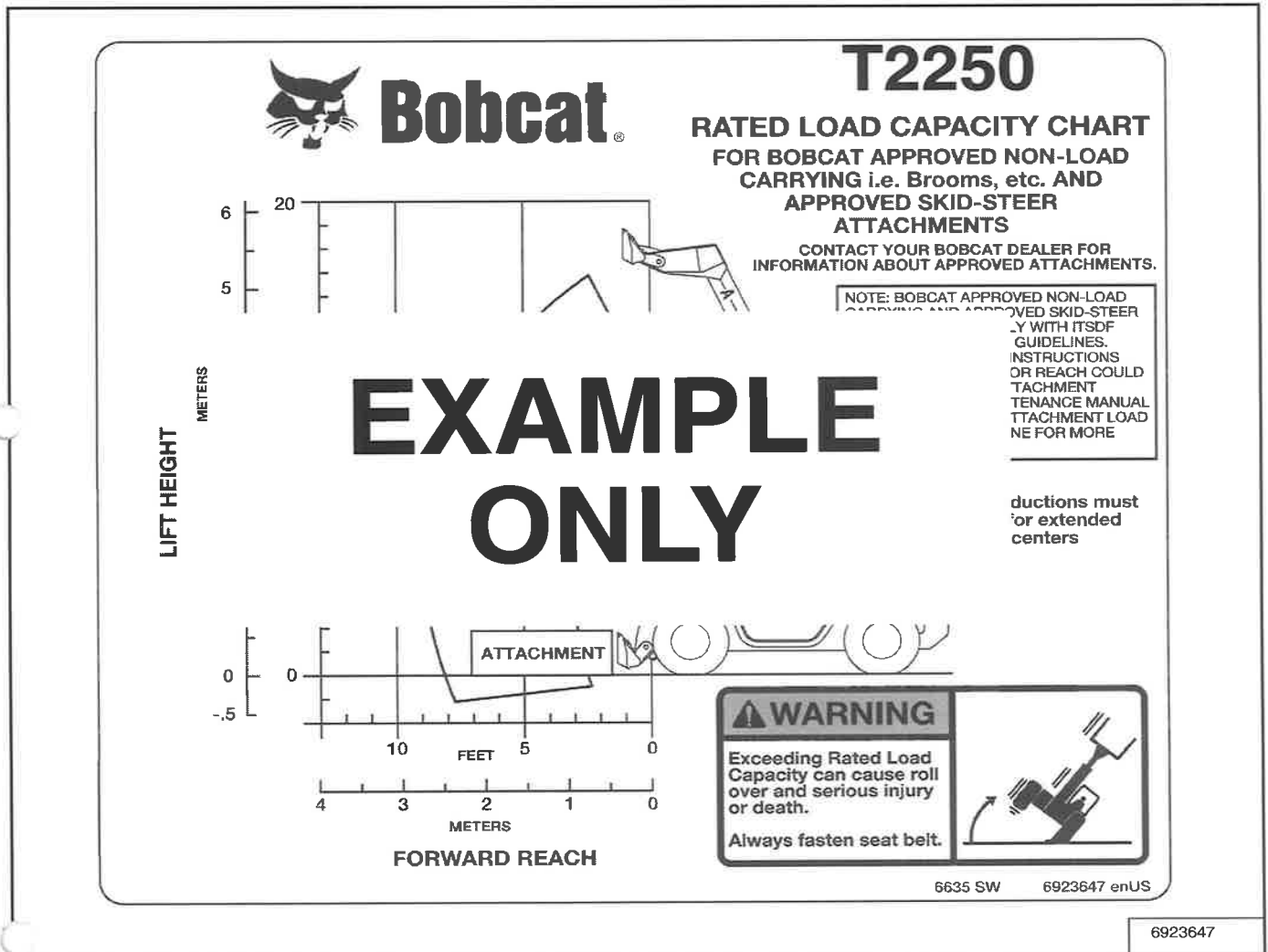
To stop anticlockwise rotation, press the button (Item 1) [Figure 159] a second time.

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Operation With The Telescopic Handler

Load Capacity Chart

Figure 160



The Load Capacity Chart [Figure 160] is an “EXAMPLE ONLY”. See the telescopic handler’s Operation & Maintenance Manual and Operator’s Handbook for more information on the Load Capacity Charts for your telescopic handler.

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Operation With The Telescopic Handler (Cont'd)

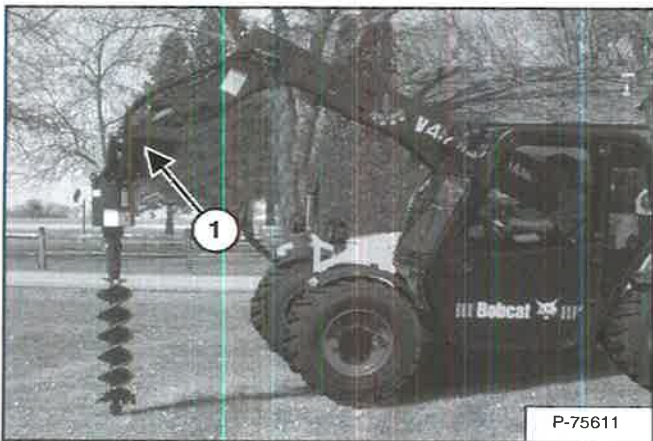


AVOID INJURY OR DEATH

- Check for underground utility lines before digging.
- Keep bystanders away from rotating auger and cutting head.
- Do not operate the auger if the point of the auger is not touching the ground.

W-2711-0208

Figure 161



Raise the boom and tilt the Bob-Tach forward until the auger is not contacting the rubber stop on the transport bar (Item 1) [Figure 161]. In this position, the auger will be free floating in the mounting frame and will allow for a vertical hole to be drilled.

Lower the boom until the pivot point of the auger touches the ground.

Engage the auxiliary hydraulics on the telescopic handler so that the auger turns in a clockwise direction [Figure 161].

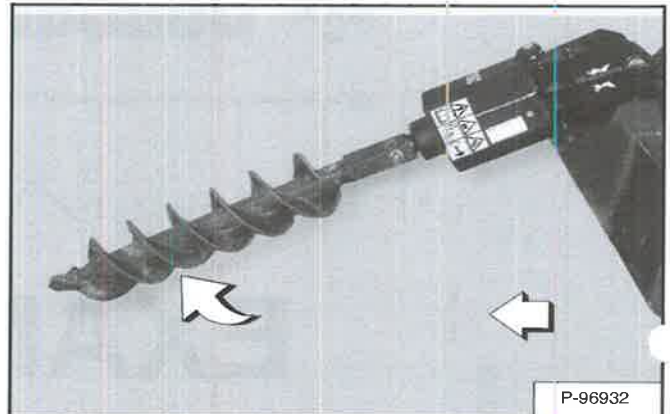
At the same time, slowly lower the boom to drill into the soil.

Raise the boom often while the auger is turning, to remove the dirt from the hole. Stop the auger when the point is above the ground.

Moving The Telescopic Handler With The Direct Drive Auger Installed

Raise the auger bit, stop the auger bit rotation, raise the auger just above ground, and tilt the Bob-Tach fully back.

Figure 162



Lower the boom so the auger does not touch the ground. Drive the telescopic handler to the next location to be drilled [Figure 162].



Do not side load the auger while drilling. Excessive pressure can damage the auger or machine.

I-2189-0807

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Removal



AVOID BURNS

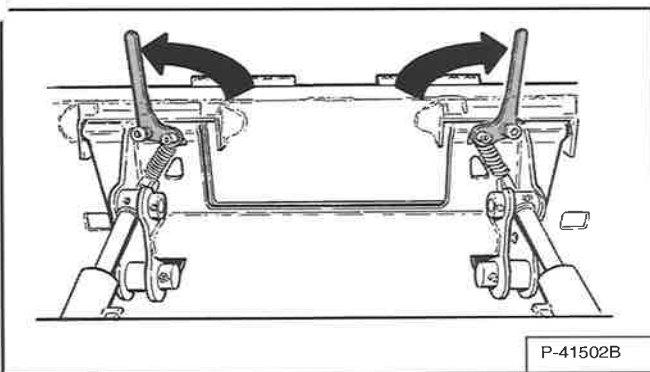
Hydraulic fluid, tubes, fittings and quick couplers can get hot when running machine and attachments. Be careful when connecting and disconnecting quick couplers.

W-2220-0396

Relieve hydraulic pressure. (See the telescopic handler's Operation & Maintenance Manual for correct procedure.)

Disconnect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 95.)

Figure 163



Pull the Bob-Tach levers all the way up [Figure 163].

Move to the operator position, fasten seat belt and lower the restraint bar (If equipped), start engine and disengage the parking brake.



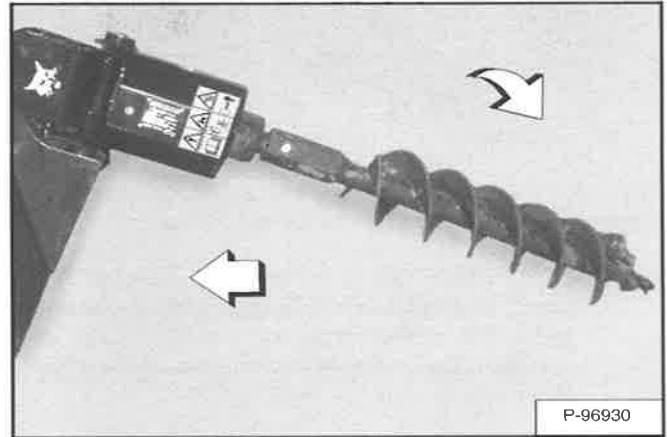
Before you leave the operator's position:

- Put the travel Direction Control Lever and the Joystick in neutral.
- Engage the parking brake.
- Retract and lower the boom and attachment flat on the ground.
- Stop the engine. Raise the restraint bar (if equipped).

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

W-2637-0607

Figure 164



Tilt the Bob-Tach forward while backing the telescopic handler away from the attachment [Figure 164].

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 telescopic handler.

OPERATING PROCEDURE WITH MINI TRACK LOADERS

Approved Mini Track Loader Models And Requirements

Figure 165

MINI TRACK LOADER MODEL	DIRECT DRIVE AUGER				
	10	15C	15H	30C	30H
MT55	X				

(X = Approved)

The chart [Figure 165] shows the approved direct drive auger models for the MT55 mini track loader.

NOTE: When using the direct drive auger with MT55 mini track loaders, the direct drive auger must have the swing stop kit installed and use shorter auger bits (identified by white paint). (See Swing Stop Kit on Page 101.)

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

IMPORTANT

Never use auger bits which are not approved by Bobcat. Damage to the auger casting will occur. The use of unapproved auger bits will void warranty on the attachment. See your Bobcat dealer for a list of approved auger bits.

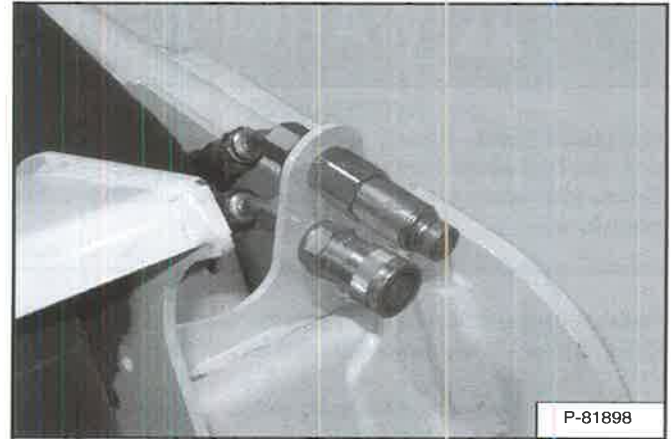
I-2388-1117

! 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 166



The mini track loader must be equipped with front auxiliary hydraulics [Figure 166].

! 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 TRACK LOADERS (CONT'D)

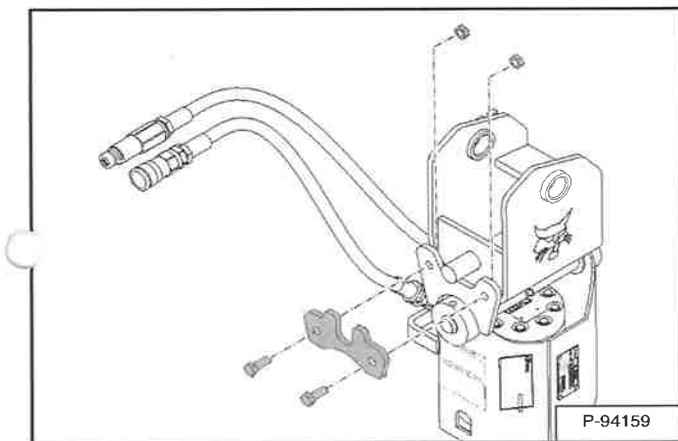
Machine / Attachment Setup

NOTE: Make sure the decals are clearly visible on the direct drive auger drive.

Swing Stop Kit

NOTE: When using the direct drive auger with MT55 mini track loaders, the direct drive auger must have the swing stop kit installed and use shorter auger bits (identified with white paint).

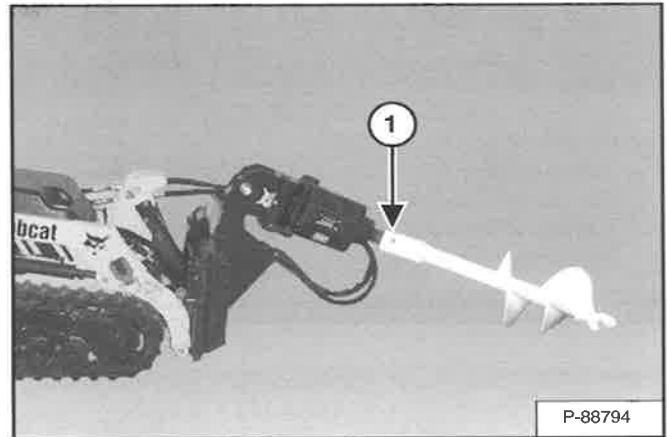
Figure 167



Available for direct drive auger operation with MT55 Bobcat mini track loaders. Kit includes swing stop, bolts and nuts [Figure 167].

See your Bobcat dealer for available kits for your model mini track loader.

Figure 168



Install the auger bit on the drive shaft [Figure 168].

Install the pin (Item 1) [Figure 168] through the auger bit and the drive shaft. Install the washer and retaining clip.

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Entering And Leaving The Operator's Position



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



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



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 track loader.

Engage the parking brake and place all controls in NEUTRAL.

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

Leaving

Figure 169



Stop the mini track loader on level ground [Figure 169].

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

Disengage the auxiliary hydraulics.

Engage the parking brake.

Stop the engine.

Remove the key to prevent operation of the mini track loader by unauthorised personnel.

Leave the operator's position.



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 TRACK LOADERS (CONT'D)

Installation

Hand Lever Bob-Tach

NOTE: For use with MT55 mini track loaders, the direct drive auger must have the swing stop kit installed (Kit #6811444) and use shorter auger bits (identified by white paint). (See Page 101 for Swing Stop Kit illustration.) See Your Bobcat dealer for more information.

Always install an approved direct drive auger with the swing stop kit installed and use the approved auger bits on the mini track loader. (See Approved Mini Track Loader Models And Requirements on Page 100.) for mini track loader options. See your Bobcat dealer for more information.

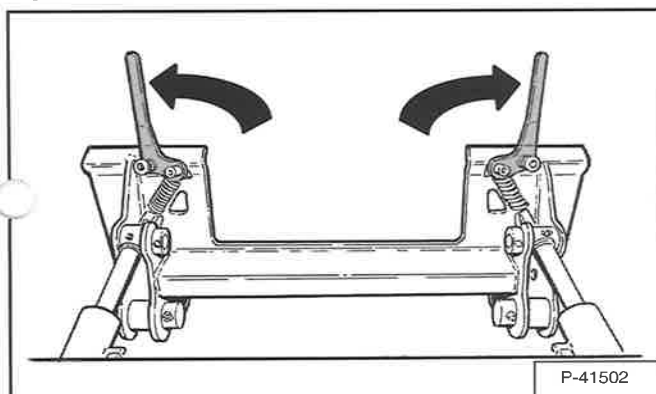
WARNING

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 track loader's Bob-Tach and the attachment mounting frame before installation. See the mini track loader's Operation & Maintenance Manual. (See DAILY INSPECTION on Page 28.)

Figure 170

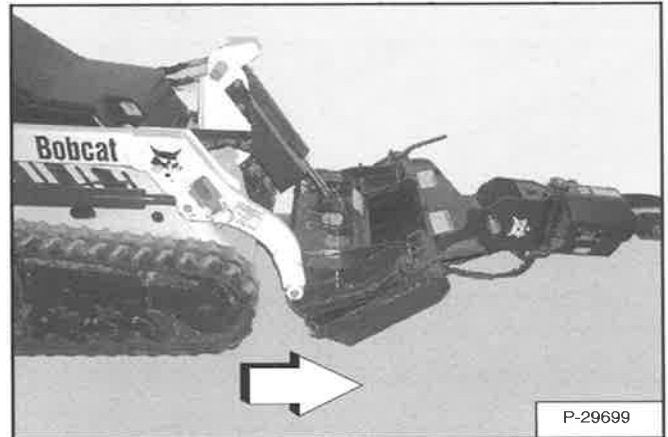


Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) [Figure 170].

Move to the operator's position.

Start the engine and release the parking brake.

Figure 171



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

Drive the mini track loader slowly forward until the top edge of the Bob-Tach is completely under the top flange of the attachment [Figure 171].

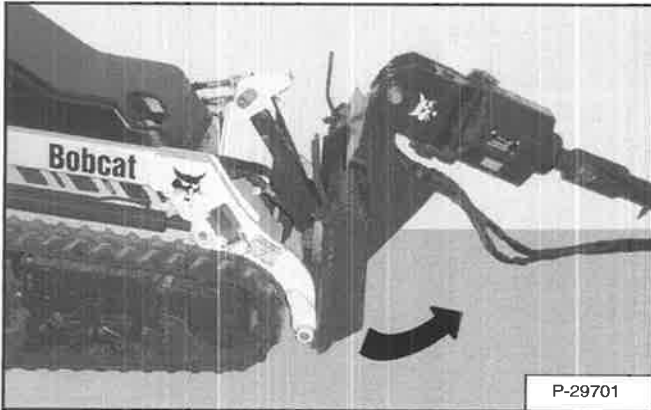
NOTE: Be sure the Bob-Tach levers do not hit the attachment.

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 172



Tilt the Bob-Tach backward until the attachment is slightly off the ground [Figure 172]. 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.

Stop the engine and leave the operator's position. (See Entering And Leaving The Operator's Position on Page 102.)



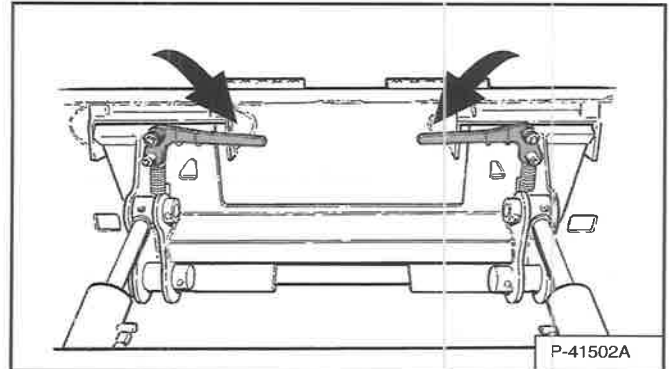
WARNING

Before you leave the operator's position at the rear of the loader:

- Lower lift arms and put attachment flat on ground.
- Disengage auxiliary hydraulic system.
- Engage parking brake.
- Stop engine. Remove key.

W-2416-1015

Figure 173



Push down on the Bob-Tach levers until they are fully engaged in the locked position [Figure 173].

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 174

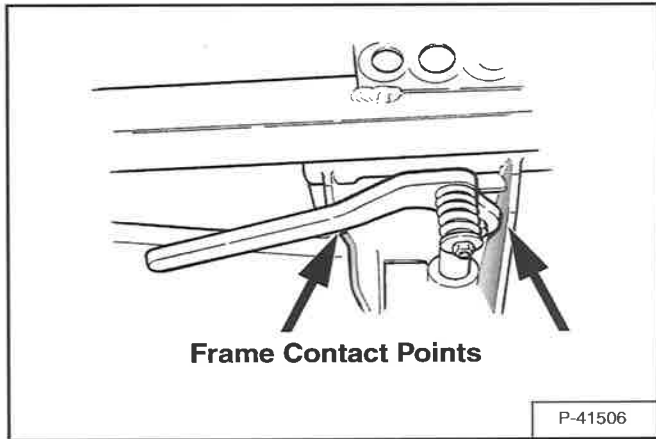
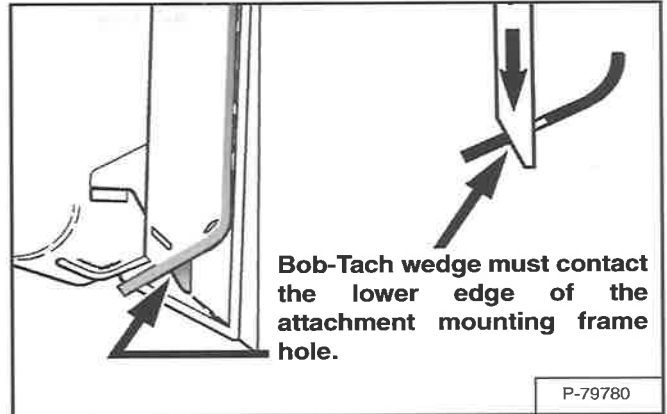


Figure 175



The wedges must extend through the holes in the mounting frame of the attachment, securely fastening the attachment to the Bob-Tach [Figure 175].

The levers must contact the frame as shown when locked [Figure 174].

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

WARNING

Bob-Tach wedges must extend through the holes in attachment. Lever(s) must be fully down and locked. Failure to secure wedges can allow attachment to come off and cause injury or death.

W-2102-0497

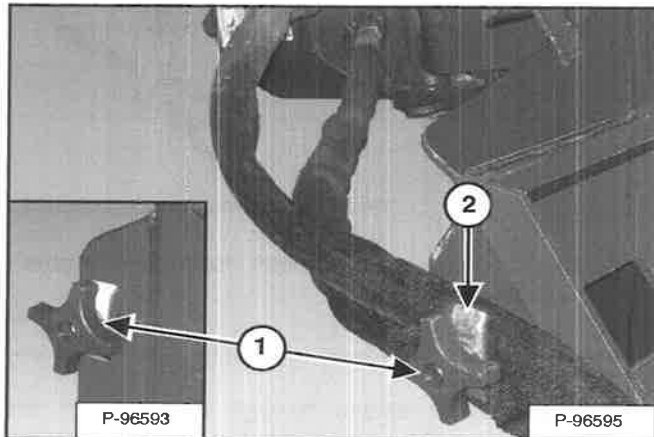
Connect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 108.)

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Installation (Cont'd)

Auger Hose Clamp

Figure 176



Loosen knob (Item 1) [Figure 176] and clamp until there is adequate space for hydraulic hoses.

Place the auger hydraulic hoses between the clamp (Item 2) [Figure 176] and auger mounting frame.

NOTE: Do not pull the auger hydraulic hoses tight. Allow enough free hose for the auger drive to pivot freely.

Tighten knob and clamp against the auger hydraulic hoses.



OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Installation (Cont'd)

For First Time Installation

New attachments and new mini track 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 track 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 track loader engine off and using the hose guides (if equipped), route the attachment hydraulic hoses to the mini track loader. Connect the attachment hydraulic quick couplers to the mini track loader couplers. (See Hydraulic Quick Couplers on Page 108.)

Check that the attachment hydraulic hoses are not twisted or contacting any moving parts of the mini track 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 track 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 track 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 track loader. This will help hold the hydraulic hoses in position while tightening.

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

Move to the operator's position. (See Entering And Leaving The Operator's Position on Page 102.)

Start the engine and release the parking brake.

Engage auxiliary hydraulics. (See the mini track 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.

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Hydraulic Quick Couplers

IMPORTANT

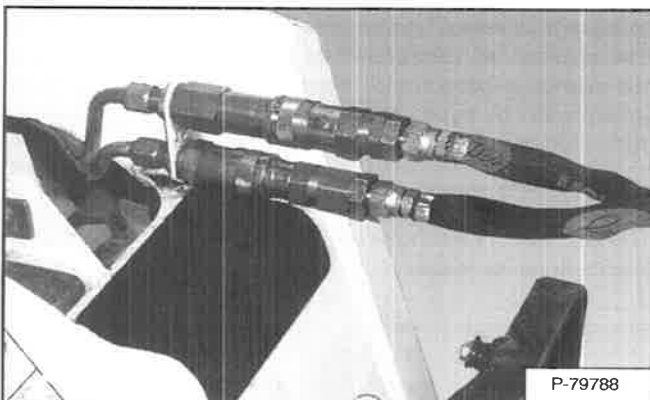
- Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.
- Contain and dispose of any oil leakage in an environmentally safe manner.

I-2278-0608

New attachments and new mini track 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 track 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 177



P-79788

! 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 177].

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 track loader or attachment. (See For First Time Installation on Page 107.) for proper adjustment.

To Disconnect:

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

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

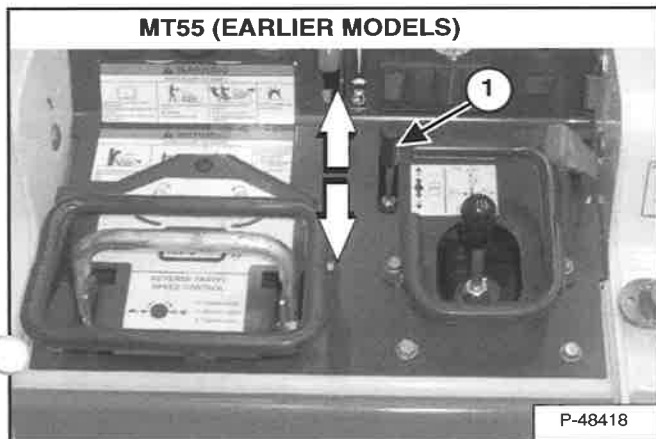
OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Control Functions

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

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

Figure 178



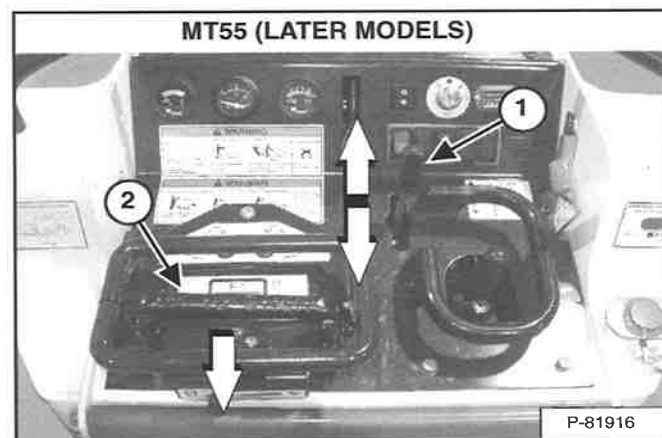
With the operator at the operator's position at the rear of the mini track loader, start the engine. Pull the auxiliary control lever (Item 1) [Figure 178] fully rearward to activate the front auxiliary hydraulics. The direct drive auger will rotate in the clockwise position.

Move the auxiliary control lever to the NEUTRAL position to disengage the auxiliary hydraulics. The direct drive auger will stop. (See the mini track loader's Operation & Maintenance Manual for a complete description on mini track loader controls.)

Push the auxiliary control lever (Item 1) [Figure 178] fully forward to rotate the bit anticlockwise.

Move the auxiliary control lever to the NEUTRAL position to disengage the auxiliary hydraulics. The direct drive auger will stop.

Figure 179



Variable Flow:

With the operator at the operator's position at the rear of the mini track loader, start the engine. Pull the auxiliary hydraulic control lever (Item 1) [Figure 179] back for auxiliary hydraulic oil flow to the front female coupler. The direct drive auger will rotate in the clockwise direction. (See the mini track loader's Operation & Maintenance Manual for a complete description on mini track loader controls.)

NOTE: Hydraulic oil flow increases to the coupler as the lever (Item 1) [Figure 179] is pushed forward.

Continuous Flow:

While holding the Continuous Flow Shutoff Lever (Item 2) down, pull the auxiliary hydraulic control lever (Item 1) [Figure 179] all the way back until it locks (detent position) for continuous hydraulic oil flow to the front female coupler. The direct drive auger will rotate in the clockwise direction. (See the mini track loader's Operation & Maintenance Manual for a complete description on mini track loader controls.)

If the Continuous Flow Shutoff Lever (Item 1) [Figure 179] is released while in continuous flow, the Auxiliary Hydraulic Control Lever (Item 1) [Figure 178] will return to NEUTRAL after one to three seconds and the auxiliary hydraulic oil flow will stop.

To resume the continuous flow operation, make sure the Auxiliary Hydraulic Control Lever (Item 1) [Figure 178] is in NEUTRAL and press down on the Continuous Flow Shutoff Lever (Item 1) [Figure 179] all the way forward or all the backward until it locks (detent position).

NOTE: The Continuous Flow Shutoff Lever (Item 1) [Figure 179] must be in the UP position and the Auxiliary Hydraulic Control Lever (Item 1) [Figure 178] must be in NEUTRAL to start the engine.

NOTE: The Continuous Flow Shutoff Lever (Item 1) [Figure 179] must return to the UP position when it is released.

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Operation With The Mini Track Loader

⚠ WARNING

AVOID INJURY OR DEATH

- Check for underground utility lines before digging.
- Keep bystanders away from rotating auger and cutting head.
- Do not operate the auger if the point of the auger is not touching the ground.

W-2711-0208

Make sure that the direct drive auger is properly equipped for use on the mini track loader before operating. (See Approved Mini Track Loader Models And Requirements on Page 100.) for additional information.

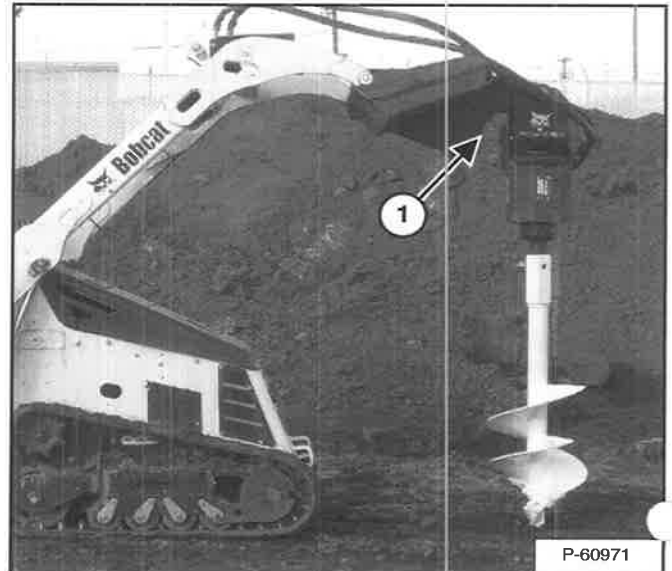
The direct drive auger must have a Swing Stop Kit installed.

Figure 180



Tilt the direct drive auger back and move the mini track loader / attachment to the starting point [Figure 180].

Figure 181



Raise the lift arms and tilt the Bob-Tach forward until the auger is not contacting the rubber stop on the transport bar (Item 1) [Figure 181]. In this position, the auger will be free floating in the mounting frame and will allow for a vertical hole to be drilled.

Lower the lift arms until the point of the auger touches the ground.

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Operation With Mini Track Loaders (Cont'd)

! WARNING

AVOID INJURY OR DEATH

- Check for underground utility lines before digging.
- Keep bystanders away from rotating auger and cutting head.
- Do not operate the auger if the point of the auger is not touching the ground.

W-2711-0208

IMPORTANT

Do not side load the auger while drilling. Excessive pressure can damage the auger or machine.

I-2189-0807

See the mini track loader's Operation & Maintenance Manual for a complete description on mini track loader controls.

Figure 182



Engage the auxiliary hydraulics on the mini track loader so that the auger turns in a clockwise direction [Figure 182].

At the same time, slowly lower the lift arms to drill into the soil.

Raise the lift arms often while the auger is turning, to remove the dirt from the hole. Stop the auger when the point is above the ground.

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Operation With Mini Track Loaders (Cont'd)

Moving The Mini Track Loader With The Direct Drive Auger Installed

Raise the auger bit, stop the auger bit rotation, raise the auger just above ground, and tilt the Bob-Tach back.

Figure 183



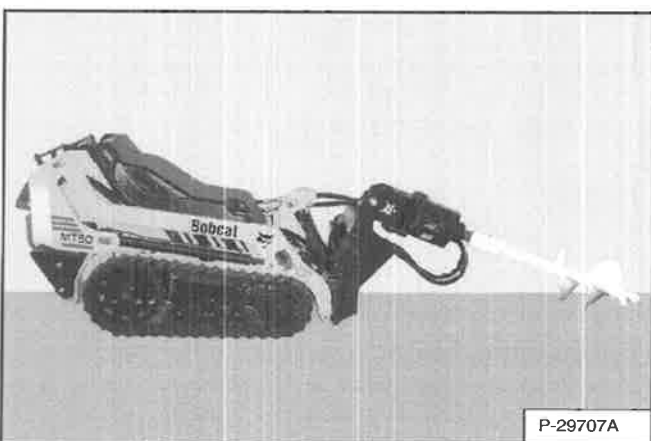
Lower the lift arms so the auger does not touch the ground [Figure 183].

Drive the mini track loader to the next location to be drilled.

Parking The Mini Track Loader

Stop the mini track loader on level ground.

Figure 184



Lower the lift arms fully and put the point of the auger on the ground [Figure 184].

Move the engine speed control lever to the low idle position. Turn the key switch to the OFF position.

Engage the parking brake.

Remove the key to prevent operation of the loader by unauthorised personnel.

WARNING

Before you leave the operator's position at the rear of the loader:

- Lower lift arms and put attachment flat on ground.
- Disengage auxiliary hydraulic system.
- Engage parking brake.
- Stop engine. Remove key.

W-2416-1015

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Removal



AVOID BURNS

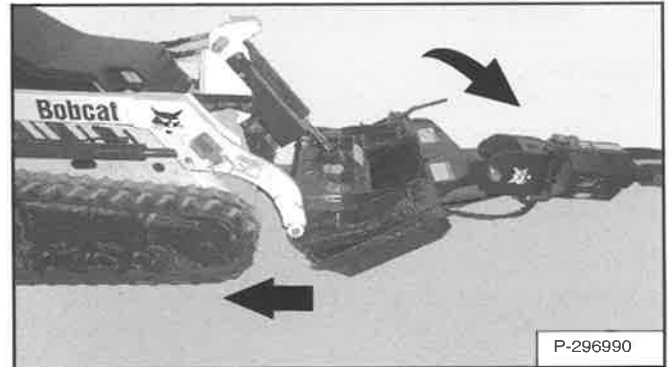
Hydraulic fluid, tubes, fittings and quick couplers can get hot when running machine and attachments. Be careful when connecting and disconnecting quick couplers.

W-2220-0396

Relieve hydraulic pressure. (See the mini track loader's Operation & Maintenance Manual for correct procedure.)

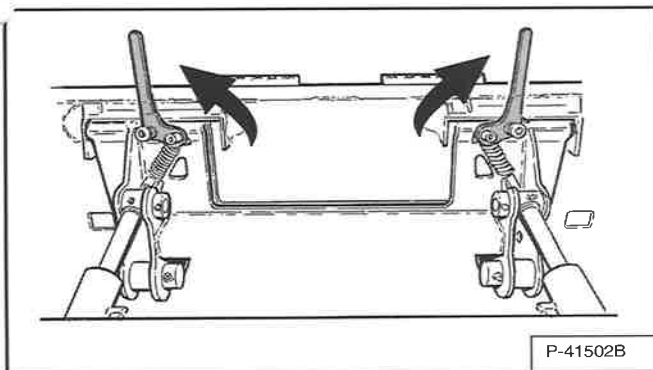
Disconnect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 108.)

Figure 186



Tilt the Bob-Tach forward while backing away from the direct drive auger [Figure 186].

Figure 185



Pull the Bob-Tach levers all the way up [Figure 185].

Move to the operator's position, fasten seat belt and lower the seat bar or arm rest.

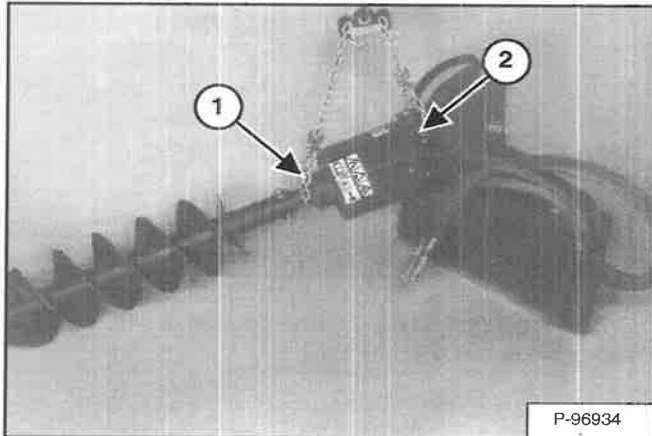
Start the engine and release the parking brake.

LIFTING THE ATTACHMENT

Procedure

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

Figure 187

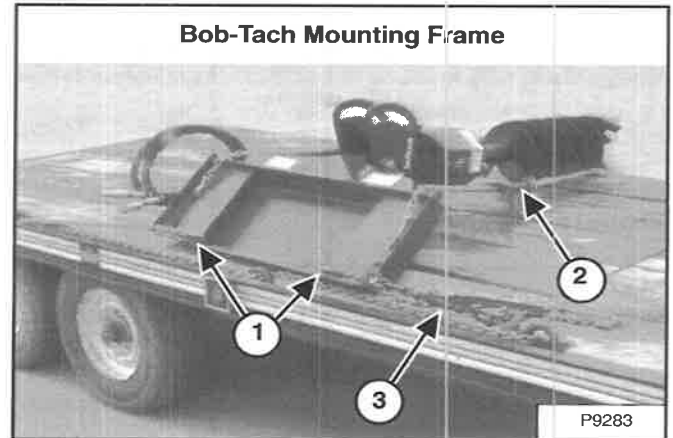


Wrap chains around the direct drive auger drive shaft (Item 1) and around the drive pivot pin (Item 2) [Figure 187].

TRANSPORTING THE ATTACHMENT ON A TRAILER

Fastening

Figure 188

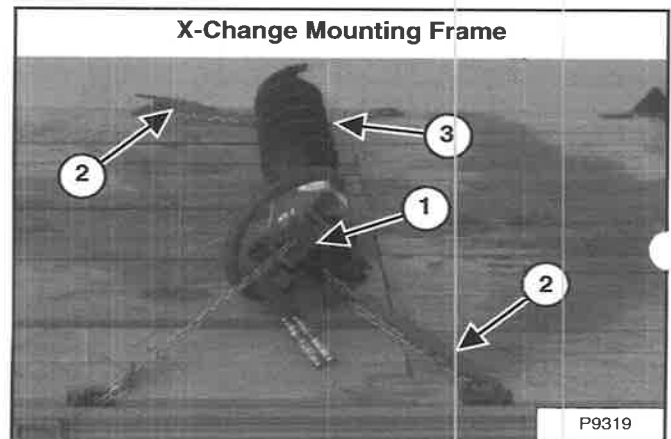


When on the transport vehicle, connect chains to the Bob-Tach holes (Item 1) and use a chain binder (Item 3, [Figure 188]) to secure the frame.

Wrap a chain around the auger bit (Item 2) and use a chain binder (Item 3) [Figure 188] to secure the direct drive auger.

Use chain binders to prevent the direct drive auger from moving during transportation.

Figure 189



When on the transport vehicle, connect chains through the direct drive auger drive pivot pin (Item 1) and use a chain binder (Item 2) [Figure 189] to secure the frame.

Wrap a chain around the auger bit (Item 3) and use a chain binder (Item 2) [Figure 189] to secure the direct drive auger.



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 (if equipped) to the floor.
- Stop the engine.
- Engage the parking brake.
- Exit the machine. (See the machine's Operation & Maintenance Manual for the correct procedure.)

Fastening

- Install 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.



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PREVENTIVE MAINTENANCE

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MAINTENANCE SAFETY



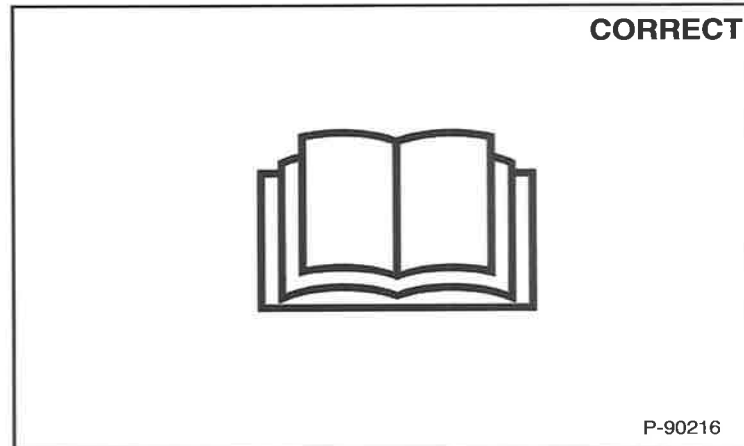
WARNING

Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

W-2003-0807



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



- ⚠ **Never service attachments / implements without instructions. See Operation & Maintenance Manual and Attachment / Implement Service Manual.**
- ⚠ **Cleaning and maintenance are required daily.**
- ⚠ **Never service or adjust attachment / implement with the engine running unless instructed to do so in manual.**
- ⚠ **Always lower the attachment / implement to the ground before lubricating or servicing.**
- ⚠ **Avoid contact with leaking hydraulic fluid or diesel fuel under pressure. It can penetrate skin or eyes.**
- ⚠ **Stop, cool and clean engine of flammable materials before checking fluids.**
- ⚠ **Keep body, loose objects and clothing away from moving parts, electrical contacts, hot parts and exhaust.**
- ⚠ **Safety glasses are needed for eye protection from electrical arcs, battery acid, compressed springs, fluids under pressure and flying debris or when tools are used. Use eye protection approved for type of welding.**

Maintenance procedures which are given in the Operation & Maintenance Manual can be performed by the owner/operator without any specific technical training. Maintenance procedures which are **not** in the Operation & Maintenance Manual must be performed **ONLY BY QUALIFIED BOBCAT SERVICE PERSONNEL**. Always use genuine Bobcat replacement parts.




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TROUBLESHOOTING

Chart

 <b style="font-size: 24px; margin-left: 10px;">WARNING	<p>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.</p> <p style="text-align: right; font-size: 10px;">W-2003-0807</p>
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If the direct drive auger is not working correctly, check the hydraulic system of the machine thoroughly before making any repairs on the direct drive auger. Direct drive auger 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.)

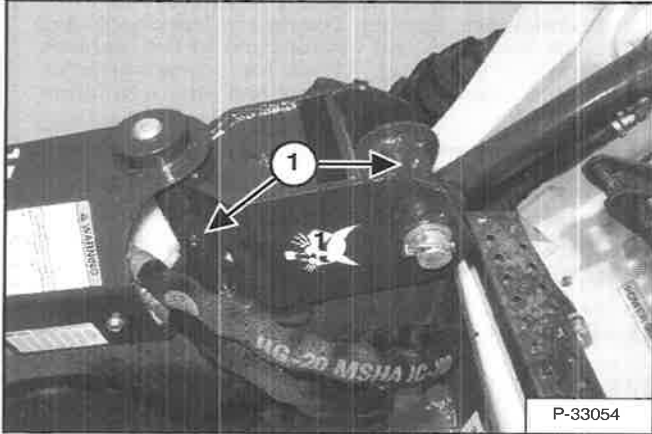
Use the following troubleshooting chart to locate and correct problems which most often occur with the direct drive auger.

PROBLEM	CAUSE	CORRECTION
Auger does not mount properly on the Bob-Tach.	Bob-Tach wedges are not fully retracted.	Retract Bob-Tach wedges.
	Mud, dirt or stones are lodged between the Bob-Tach and the auger mount.	Remove debris from between Bob-Tach and auger mount.
Auger does not rotate.	No hydraulic flow.	Activate loader front auxiliary hydraulics. Check quick couplers connection. Check for damaged hose ends and fittings.
	Auger pin missing or broken.	Replace auger pin.
Auger does not dig efficiently.	Worn or damaged auger teeth.	Replace teeth.
Auger does not reverse.	Direct to tank valve not ON.	Turn Direct To Tank Valve OFF. (See the E80's or E85's Operation & Maintenance Manual and Operator's Handbook for the correct procedure.)

LUBRICATING THE ATTACHMENT

Lubrication Locations

Figure 186



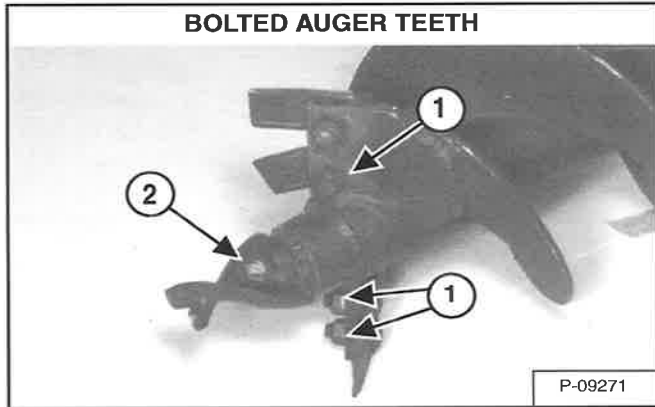
Lubricate the two grease fittings (Item 1) [Figure 186] every 8 hours of operation.

REMOVAL AND INSTALLATION OF AUGER TEETH

Procedure

Bolted Auger Teeth

Figure 187



Remove the nuts and bolts (Item 1) [Figure 187]. Replace the nuts and bolts when replacing teeth.

Remove the nut and bolt (Item 2) [Figure 187] to replace the point tooth. Replace the nut and bolt when replacing the tooth.

WARNING

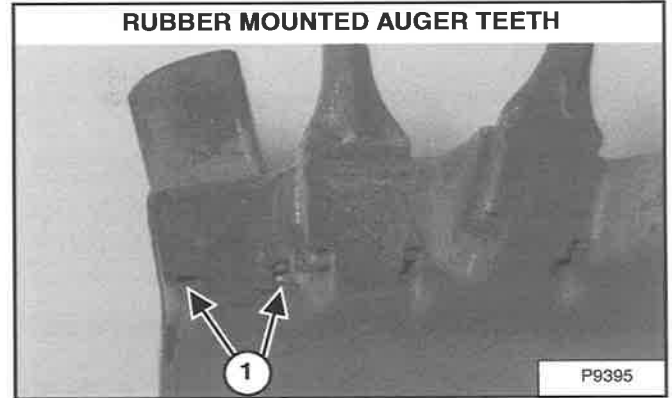
AVOID INJURY

DO NOT sharpen the carbide tips. **DO NOT** strike the carbide tips with a hammer, the carbide tips can break and hit you causing eye or bodily injury.

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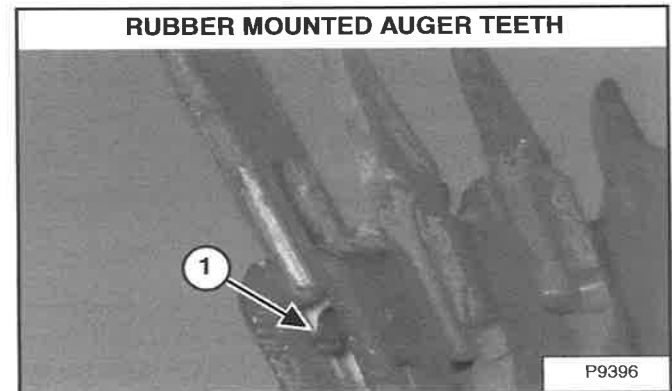
Rubber Mounted Auger Teeth

Figure 188



Use a punch and a hammer to drive the tooth out of the holder. Each tooth has two holes (Item 1) [Figure 188] for removal.

Figure 189



Check the condition of the rubber cord (Item 1) [Figure 189]. Replace as needed.

Install the tooth and use a rubber hammer to drive the teeth into position.



ATTACHMENT STORAGE AND RETURN TO SERVICE

Storage

Sometimes it may be necessary to store your direct drive auger for an extended period of time. Below is a list of items to perform before storage.

- Thoroughly clean the direct drive auger.
- Lubricate the direct drive auger as shown in the Operation & Maintenance Manual. (See LUBRICATING THE ATTACHMENT on Page 122.)
- Replace worn or damaged parts.
- Put grease on the auger teeth.
- Park the direct drive auger in a dry protected shelter.
- Tag the machine to indicate that it is in storage condition.
- Check for damaged or missing decals. Replace if necessary.

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.

Return To Service

After the Bobcat direct drive auger has been in storage, it is necessary to follow a list of items to return the direct drive auger to service.

- Remove grease from auger teeth.
- Lubricate the direct drive auger as shown in the Operation & Maintenance Manual. (See LUBRICATING THE ATTACHMENT on Page 122.)
- Operate direct drive auger, check for correct function.



SPECIFICATIONS

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Drive System	127
Performance	128
Hydraulic System	128



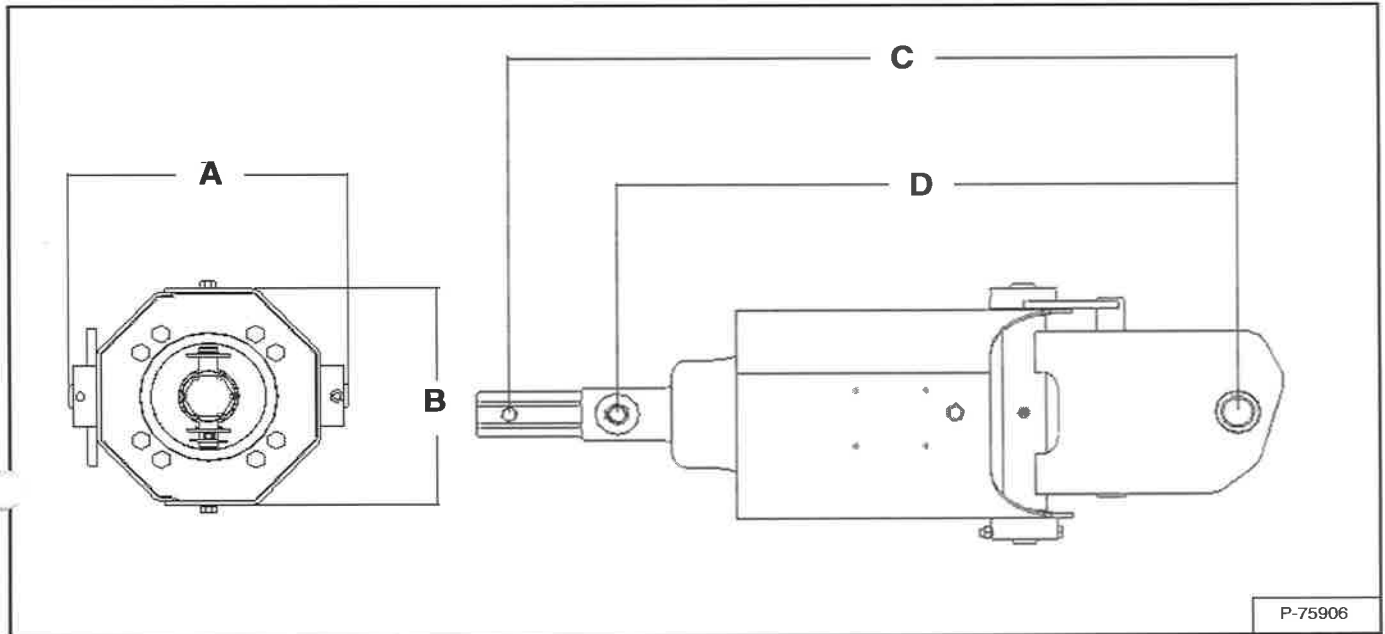
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(AUGER) SPECIFICATIONS

Dimensions

- Where applicable, specifications conform to **SAE and ISO** standards and are subject to change without notice.



DESCRIPTION	10 AUGER	15C AUGER	15H AUGER	30C AUGER	30H AUGER
HOUSING					
Width (A)	286 mm (11.26 in)	323,60 mm (12.74 in)	323,60 mm (12.74 in)	323,60 mm (12.74 in)	323,60 mm (12.74 in)
Height (B)	214,38 mm (8.44 in)	268,99 mm (10.59 in)	268,99 mm (10.59 in)	268,99 mm (10.59 in)	268,99 mm (10.59 in)
Distance to Hex (C)		846,07 mm (33.31 in)	753,11 mm (29.65 in)	846,07 mm (33.31 in)	753,11 mm (29.65 in)
Distance to Round (D)	675,39 mm (26.59 in)	720,85 mm (28.38 in)		720,85 mm (28.38 in)	

Drive System

DESCRIPTION	10 AUGER	15C AUGER	15H AUGER	30C AUGER	30H AUGER
DRIVE SYSTEM	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT



(AUGER) SPECIFICATIONS (CONT'D)

Performance

DESCRIPTION	10 AUGER	15C AUGER	15H AUGER	30C AUGER	30H AUGER
TORQUE*					
@ 11030 kPa (110.3 bar) (1600 psi)	1108 N•m (817 ft-lb)	1410 N•m (1040 ft-lb)	1410 N•m (1040 ft-lb)	2734 N•m (2016 ft-lb)	2734 N•m (2015 ft-lb)
@ 12409 kPa (124.1 bar) (1800 psi)	1246 N•m (919 ft-lb)	1587 N•m (1170 ft-lb)	1587 N•m (1170 ft-lb)	3075 N•m (2268 ft-lb)	3075 N•m (2268 ft-lb)
@ 13788 kPa (137.8 bar) (2000 psi)	1384 N•m (1021 ft-lb)	1763 N•m (1300 ft-lb)	1763 N•m (1300 ft-lb)	3417 N•m (2520 ft-lb)	3417 N•m (2520 ft-lb)
@ 15167 kPa (151.6 bar) (2200 psi)	1523 N•m (1123 ft-lb)	1939 N•m (1430 ft-lb)	1939 N•m (1430 ft-lb)	3759 N•m (2772 ft-lb)	3759 N•m (2772 ft-lb)
@ 17924 kPa (179.2 bar) (2600 psi)	1801 N•m (1328 ft-lb)	2292 N•m (1690 ft-lb)	2292 N•m (1690 ft-lb)	4442 N•m (3276 ft-lb)	4442 N•m (3276 ft-lb)
@ 20682 kPa (206.8 bar) (3000 psi)	2077 N•m (1532 ft-lb)	2644 N•m (1950 ft-lb)	2644 N•m (1950 ft-lb)	5126 N•m (3780 ft-lb)	5126 N•m (3780 ft-lb)
WEIGHT	64 kg (140 lb)	98 kg (215 lb)	95 kg (210 lb)	105 kg (231 lb)	102 kg (226 lb)

* Values are calculated, theoretical at 100% efficiency.

Hydraulic System

DESCRIPTION	10 AUGER	15C AUGER	15H AUGER	30C AUGER	30H AUGER
RPM*					
@ 23 L/min (6 U.S. gpm)	36 rpm	-	-	-	-
@ 30 L/min (8 U.S. gpm)	48 rpm	38 rpm	38 rpm	-	-
@ 49 L/min (13 U.S. gpm)	78 rpm	61 rpm	61 rpm	32 rpm	32 rpm
@ 57 L/min (15 U.S. gpm)	90 rpm	71 rpm	71 rpm	36 rpm	36 rpm
@ 68 L/min (18 U.S. gpm)	-	85 rpm	85 rpm	44 rpm	44 rpm
@ 95 L/min (25 U.S. gpm)	-	-	-	61 rpm	61 rpm
@ 106 L/min (28 U.S. gpm)	-	-	-	68 rpm	68 rpm

* Values are calculated, theoretical at 100% efficiency.



WARRANTY

WARRANTY 131



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WARRANTY

WARRANTY

BOBCAT ATTACHMENTS

Doosan Bobcat EMEA s.r.o. (“Doosan”) warrants to its authorized dealers who in turn warrants to the customer that the Bobcat Attachments sold by Doosan, under normal use and proper maintenance shall be free from defects in workmanship and material for twelve (12) months after delivery to the customer. During the warranty period, the authorized Doosan dealer shall repair or replace, at Doosan’s option, without charge for parts, labour and travel of technicians, any part of the Doosan product which fails because of defects in material or workmanship. The customer shall provide the authorized Doosan dealer with prompt written notice of the defect and allow reasonable time for replacement or repair. Doosan may, at its option, request failed parts to be returned to the factory or to any other designated location. Transportation of the Doosan product to the authorized Doosan dealer for warranty work is not the responsibility of Doosan. Service schedules must adhere to prescribed intervals and Bobcat genuine parts/lubricants must be used. The warranty does not apply to tyres, tracks or other accessories not manufactured by Doosan. For coverage on engines, consult with your Bobcat Dealer. For these non-covered items, the customer shall refer solely to the warranty, if any, of the respective manufacturers thereof, in accordance with the respective manufacturers warranty statement. Some Doosan parts are covered pro-rata depending on the expected life-time of the part. Coverage for batteries, air-conditioning refill, couplers and ignition system parts (glow plugs, fuel injection pumps, injectors) is reduced as failures generally originate from factors not under Doosan’s control such as, but not limited to, prolonged storage, abuse or fuel quality. Reduced coverage is, depending on the component, limited from 50 to 500 operating hours. The warranty does not cover: (i) Oils and lubricants, coolant fluids, filter elements, brake linings, tune-up parts, bulbs, fuses, alternator fan belts, drive belts, pins, bushings and other high-wear items. (ii) Damages resulting from abuse, accidents, alterations, use of the product with any bucket or attachment not approved by Doosan, air flow obstructions, or failure to maintain or use the Doosan product according to the instructions applicable to it. (iii) Ground engaging parts such as bucket teeth and cutting edges. (iv) Fuel or hydraulic system cleaning, engine tune-up, brake inspection or adjustment. (v) Adjustments or slight defects which generally do not affect the stability or reliability of the machine.

DOOSAN EXCLUDES OTHER CONDITIONS, WARRANTIES OR REPRESENTATIONS OF ALL KINDS, EXPRESSED OR IMPLIED, STATUTORY OR OTHERWISE (EXCEPT THAT OF TITLE) INCLUDING ALL IMPLIED WARRANTIES AND CONDITIONS RELATING TO MERCHANTABILITY, SATISFACTORY QUALITY AND FITNESS FOR A PARTICULAR PURPOSE. CORRECTIONS BY DOOSAN OF NONCONFORMITIES WHETHER PATENT OR LATENT, IN THE MANNER AND FOR THE TIME PERIOD PROVIDED ABOVE, SHALL CONSTITUTE FULFILLMENT OF ALL LIABILITIES OF DOOSAN FOR SUCH NONCONFORMITIES, WHETHER BASED ON CONTRACT, WARRANTY, TORT, NEGLIGENCE, INDEMNITY, STRICT LIABILITY OR OTHERWISE WITH RESPECT TO OR ARISING OUT OF SUCH PRODUCT. THE REMEDIES OF THE END-USER/OWNER SET FORTH UNDER THE PROVISIONS OF THE WARRANTY OUTLINED ABOVE ARE EXCLUSIVE AND THE TOTAL LIABILITY OF DOOSAN INCLUDING ANY HOLDING, SUBSIDIARY, ASSOCIATED OR AFFILIATED COMPANY OR DISTRIBUTOR WITH RESPECT TO THIS SALE OR THE PRODUCT AND SERVICE FURNISHED HEREUNDER IN CONNECTION WITH THE PERFORMANCE OR BREACH THEREOF, OR FROM DELIVERY, INSTALLATION, REPAIR OR TECHNICAL DIRECTION COVERED BY OR FURNISHED UNDER THIS SALE, WHETHER BASED ON CONTRACT, WARRANTY, TORT, NEGLIGENCE, INDEMNITY, STRICT LIABILITY OR OTHERWISE SHALL NOT EXCEED THE PURCHASE PRICE OF THE PRODUCT UPON WHICH SUCH LIABILITY IS BASED. DOOSAN INCLUDING ANY HOLDING, SUBSIDIARY, ASSOCIATED OR AFFILIATED COMPANY AND DISTRIBUTOR SHALL IN NO EVENT BE LIABLE TO THE END-USER/OWNER, ANY SUCCESSORS IN INTEREST OR ANY BENEFICIARY OR ASSIGNEE RELATING TO THIS SALE FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT, SPECIAL OR PUNITIVE DAMAGES ARISING OUT OF THIS SALE OR BY ANY BREACH THEREOF, OR ANY DEFECT IN, OR FAILURE OF, OR MALFUNCTION OF THE PRODUCT UNDER THIS SALE, WHETHER BASED UPON LOSS OF USE, LOST PROFITS OR REVENUE, INTEREST, LOST GOODWILL, WORK STOPPAGE, IMPAIRMENT OF OTHER GOODS, LOSS BY REASON OF SHUTDOWN OR NON-OPERATION, INCREASED EXPENSES OF OPERATION OR CLAIMS OF USER OR CUSTOMERS OF THE USER FOR SERVICE INTERRUPTION WHETHER OR NOT SUCH LOSS OR DAMAGE IS BASED ON CONTRACT, WARRANTY, TORT, NEGLIGENCE, INDEMNITY, STRICT LIABILITY OR OTHERWISE.



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