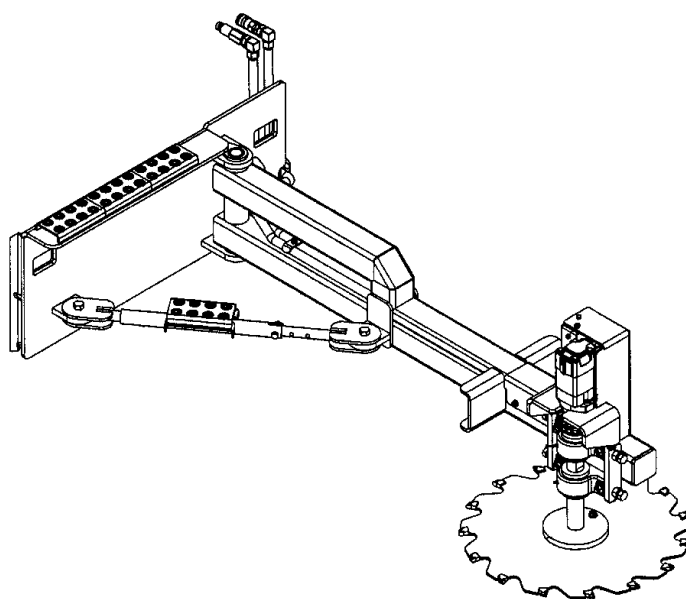




EN

Bobcat®

Operation & Maintenance Manual



Brush Saw

(Brush Saw) S/N A13P00101 & Above



OPERATOR SAFETY WARNINGS



WARNING

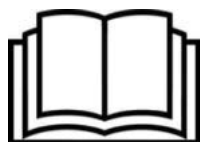
Operator must have instructions before operating the machine. Untrained operators can cause injury or death.

W-2001-0502



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

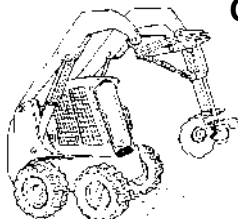
CORRECT



B-90216

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

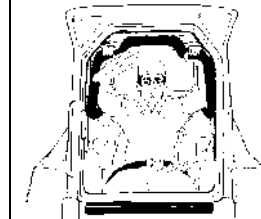
CORRECT



B-19844

- ⚠ Always install approved lift arm support device when servicing the Brush Saw. Raise lift arms and tilt Bob-Tach fully forward.

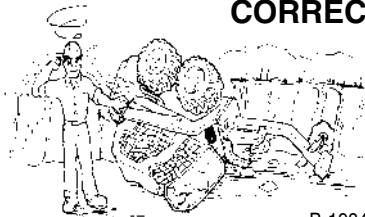
CORRECT



B-19869

- ⚠ Always use the seat bar and fasten seat belt snugly.
- ⚠ Always keep feet on the pedals when operating loader.

CORRECT



B-19846

- ⚠ Always check work area before operating Brush Saw.
- ⚠ Never use loader without operator cab with ROPS and FOPS approval. Fasten your seat belt.

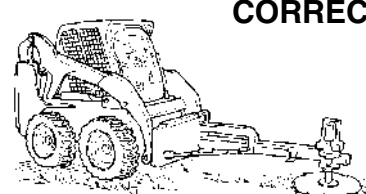
WRONG



B-19845

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

CORRECT



B-19568

- ⚠ To park, engage parking brake and put attachment flat on the ground and stop engine.

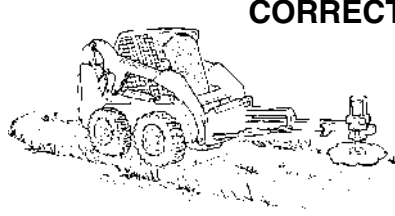
WRONG



B-19866

- ⚠ Keep bystanders away when operating Brush Saw.
- ⚠ Keep hands, feet, and objects away from disc when engine is running.

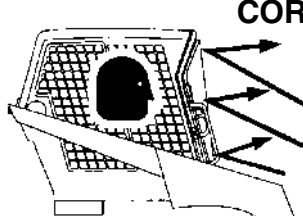
CORRECT



B-19867

- ⚠ Always carry attachment as low as possible.
- ⚠ Do not travel or turn with lift arms up.
- ⚠ Never operate the Brush Saw in a raised position.

CORRECT



B-19865

- ⚠ Always install the Special Applications Kit on the loader when using the Brush Saw.

SAFETY EQUIPMENT

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

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

OSW41-0409



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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
263 12 Dobris
CZECH REPUBLIC



Bobcat®

FOREWORD

This Operation & Maintenance Manual was written to give the owner / operator instructions on the safe operation and maintenance of the Bobcat attachment. READ AND UNDERSTAND THIS OPERATION & MAINTENANCE MANUAL BEFORE OPERATING YOUR BOBCAT ATTACHMENT. If you have any questions, see your Bobcat dealer.

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**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 Benelux SA
Drève Richelle 167
B-1410 Waterloo
BELGIUM

Description of Equipment

Type of Interchangeable Equipment:	Brush Saw
Model Name:	Brush Saw
Model Code:	
Lot Series:	A13P00101 & 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: April 13, 2010
Place: Bismarck, North Dakota, USA



**UK Declaration of Conformity
for Interchangeable Equipment
Supply of Machinery (Safety) Regulations 2008
Paragraph 3(b)**

Manufacturer

Bobcat®

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

**Equipment Also Compliant to Other UK
Regulations(s) or Standard(s) Listed Below:**

Technical Documentation

Homologation Manager
Doosan Bobcat EMEA s.r.o.
U Kodetky 1810
26312 Dobříš
CZECH REPUBLIC

Description of Equipment

Type of Interchangeable Equipment:	Brush Saw
Model Name:	Brush Saw
Model Code:	
Lot Series:	A13P00101 & above

Declaration of Conformance

This equipment conforms to the requirements of an interchangeable equipment as specified in Supply of Machinery (Safety) Regulations 2008, paragraph 3(b), and any other regulations 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: April 13, 2010
Place: Bismarck, North Dakota, USA



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.

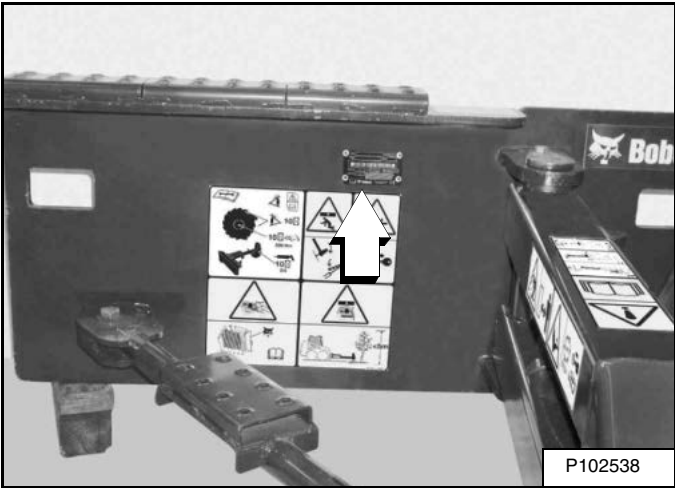
ISO 9001 means that as a company we say what we do and do what we say. In other words, we have established procedures and policies, and we provide evidence that the procedures and policies are followed.



SERIAL NUMBER LOCATION

Attachment Serial Number

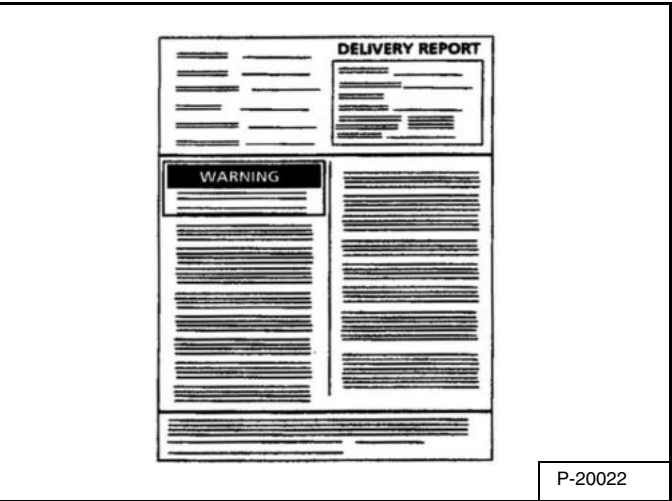
Figure 1



Always use the serial number of the brush saw when requesting service information or when ordering parts. Earlier 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

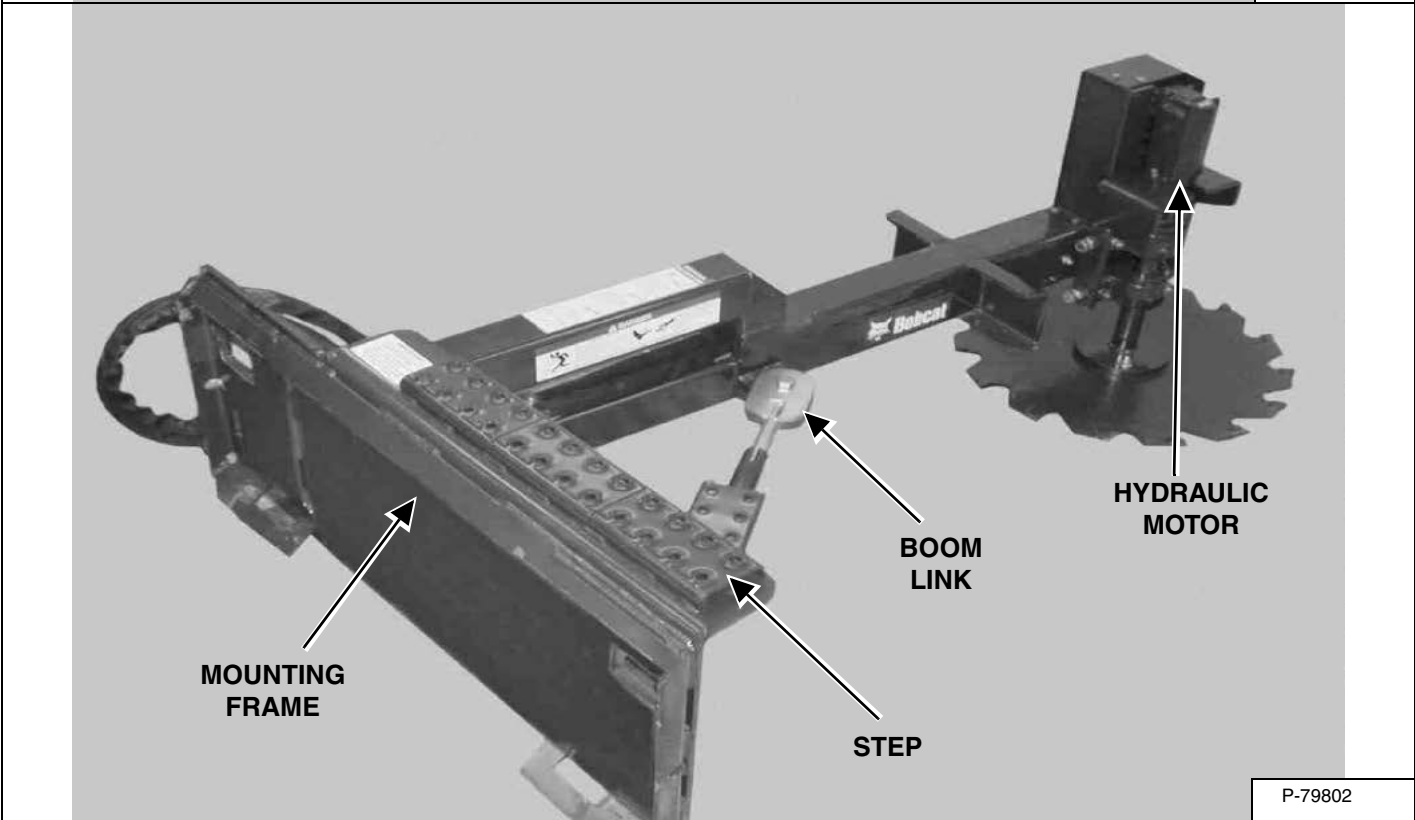
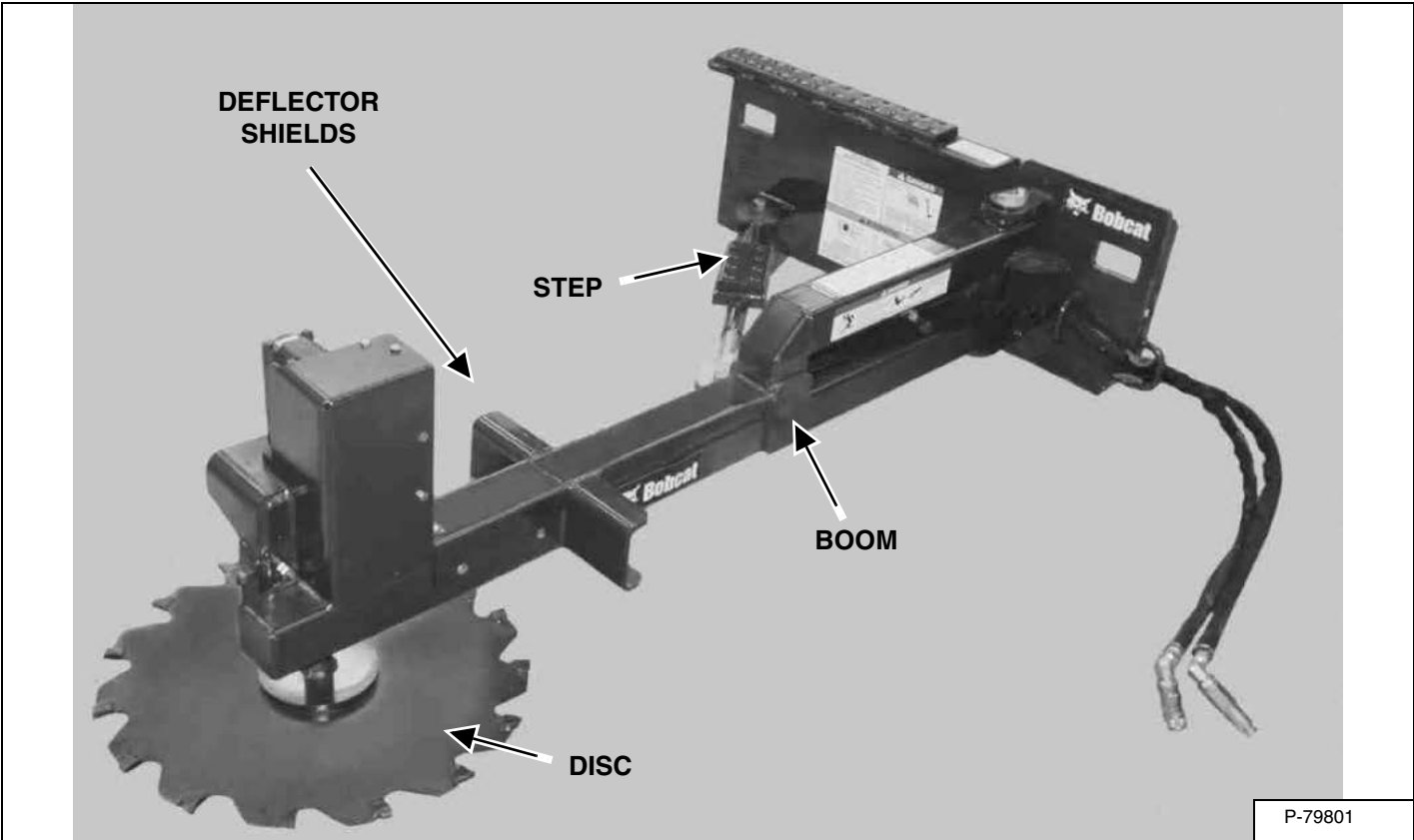
Figure 2



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 brush saw 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 brush saw is equipped with the following standard items:

- High-Torque Motor
- Three Boom-Setting Positions
- High Tensile Cutting Disc
- Replaceable Weld-on Carbide Tipped Teeth
- Steel Deflector Shields

Special Applications Kit For Loaders



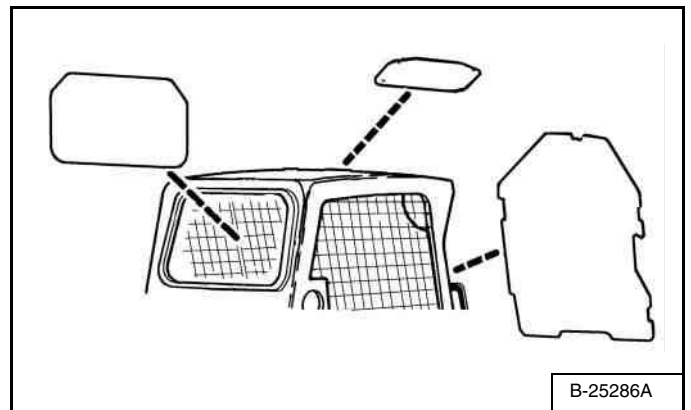
WARNING

AVOID INJURY OR DEATH

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

W-2737-0917

Figure 3



Available for special applications to restrict material from entering cab openings. Kit includes 12,7 mm (0.5 in) thick polycarbonate front door, top and rear windows [Figure 3].

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



WARNING

AVOID SERIOUS INJURY OR DEATH

- Special Applications Kit must be used when operating the Brush Saw. (See Bobcat dealer for Special Applications Kit.)
- Cut brush at ground level.

W-2602-0108



Bobcat®

SAFETY AND TRAINING RESOURCES

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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 co-ordination while working. An operator who is taking prescription drugs must get medical advice to determine if he or she can safely operate a machine and the attachment.

A Qualified Operator Must Do The Following:

Understand the Written Instructions, Rules and Regulations

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

Have Training with Actual Operation

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

Know the Work Conditions

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

SI ATT EMEA-0817

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)

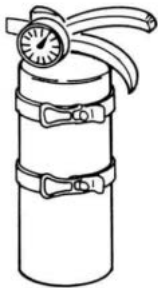
Welding And Grinding

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

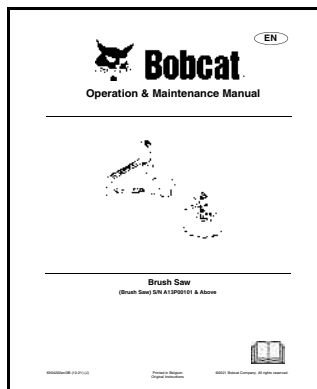


Know where fire extinguishers and first aid kits are located and how to use them. Inspect the fire extinguisher and service the fire extinguisher regularly. Obey the recommendations on the instructions plate.

PUBLICATIONS AND TRAINING RESOURCES

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

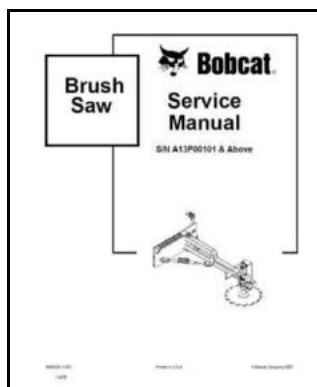
For the latest information on Bobcat products and the Bobcat Company, visit our web site at **Bobcat.com**



OPERATION & MAINTENANCE MANUAL

6904202enGB

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



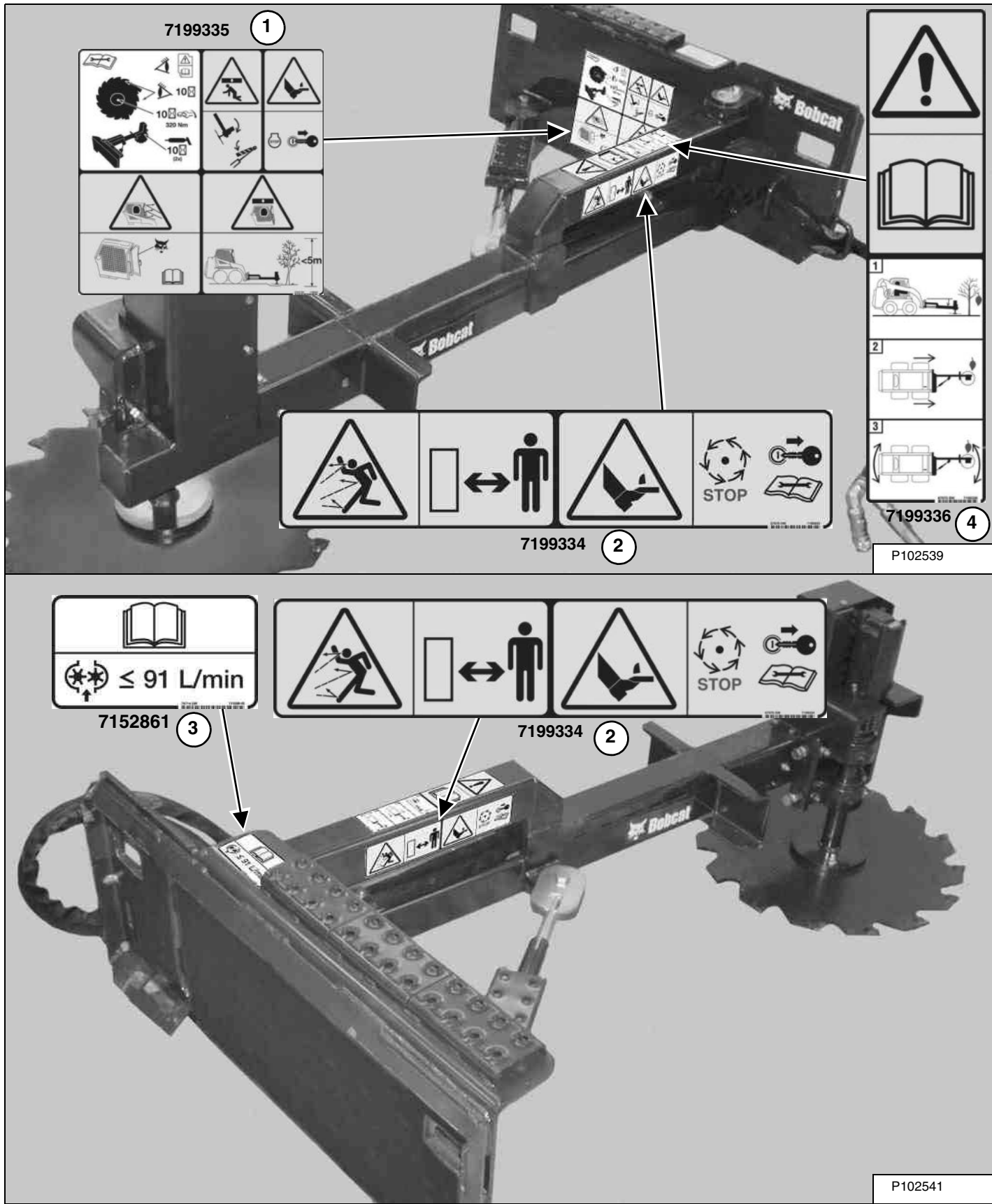
SERVICE MANUAL

6904204

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.



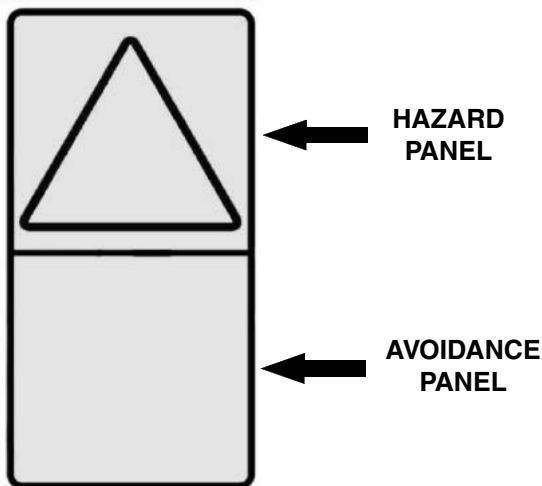
ATTACHMENT SIGNS (DECALS) (CONT'D)

Pictorial Only Safety Signs

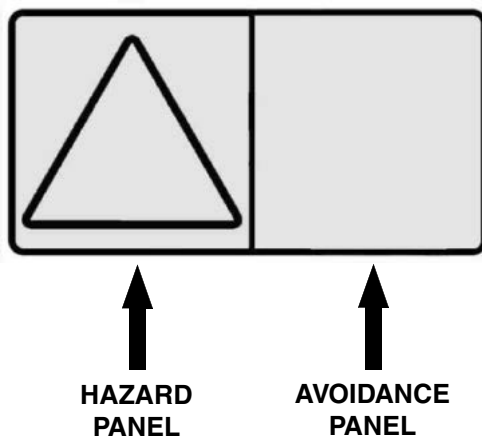
Safety signs are used to alert the equipment operator or maintenance person to hazards that may be encountered in the use and maintenance of the equipment. The location and description of the safety signs are detailed in this section. Please become familiarised with all safety signs installed on the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

NOTE: See the numbered ATTACHMENT SIGNS (DECALS) on Page 24 for the location of each correspondingly numbered pictorial only decal.

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.

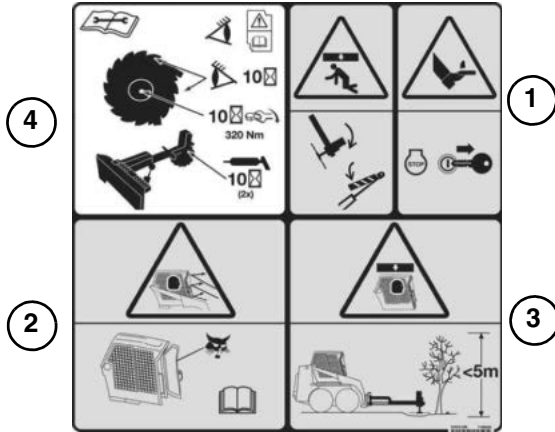
A safety sign may contain more than one hazard panel and more than one avoidance panel.

ATTACHMENT SIGNS (DECALS) (CONT'D)

Pictorial Only Safety Signs Cont'd)

1. Flying Debris / Falling Object Hazard / Service Schedule (7199335)

This safety sign is located on the brush saw.



Item 1



**BRUSH SAW AND LIFT ARMS CAN DROP OR DISC
CAN ROTATE CAUSING SERIOUS
INJURY OR DEATH**

Before servicing under the raised brush saw:

1. Disconnect the auxiliary hydraulic hoses.
2. Raise the lift arms and tilt brush saw fully down.
3. Install approved lift arm support device.
4. Stop the engine.

D-1029-1010

Item 2



AVOID SERIOUS INJURY OR DEATH

- Special Applications Kit must be used when operating the Brush Saw. (See Bobcat dealer for Special Applications Kit.)
- Cut brush at ground level.

W-2602-0108

Item 3



AVOID INJURY OR DEATH

Never cut material taller than 5 m (15 ft).

W-2708-0910

Item 4

Daily Inspection

- Check for damaged or missing decals. Replace if necessary
- Check disc and cutting teeth for cracks or damage. Replace if necessary.
- Check disc mounting hardware for proper torque 320 N•m (235 ft-lb).
- Check shields for damage. Repair or replace if necessary.
- Check for damaged or leaking hydraulic hoses or fittings. Replace if necessary.
- Remove entangled debris from disc shaft.
- Lubricate shaft bearings (2).

ATTACHMENT SIGNS (DECALS) (CONT'D)

Pictorial Only Safety Signs Cont'd)

2. Thrown Objects / Rotating Disc Hazard (7199334)

This safety sign is located on the brush saw.



DANGER

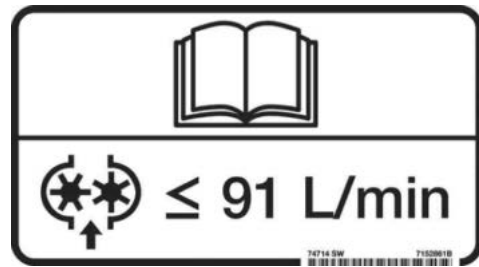
THROWN OBJECTS OR ROTATING DISC WILL CAUSE SERIOUS INJURY OR DEATH

- Never operate saw in vicinity of other persons. Objects can be thrown more than 15 m (50 ft).
- Keep hands, feet and objects away from rotating disc when engine is running.
- Stop engine before leaving loader or servicing.
- No riders.
- Keep all shields installed. Repair or replace if damaged or missing.
- Check cutting disc and mounting hardware. Replace if damaged. Never weld or modify.
- Clear cutting area of debris.

D-1013-0910

3. Hydraulic Flow Information (7152861)

This safety sign is located on the brush saw.



IMPORTANT

- Operate auxiliary hydraulics on STANDARD flow only.
- Never exceed 91 L/min (24 U.S. gpm) auxiliary hydraulic flow. Hydraulic flow higher than recommended will cause attachment damage.

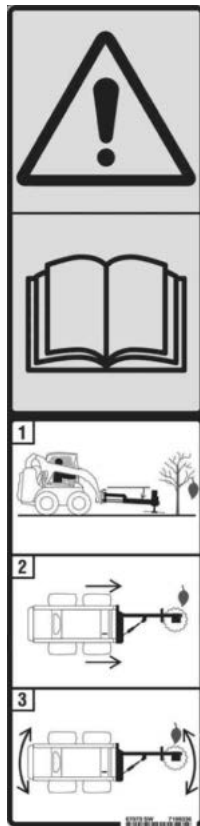
I-2216-0910

ATTACHMENT SIGNS (DECALS) (CONT'D)

Pictorial Only Safety Signs Cont'd)

4. Operation Instructions (7199336)

This safety sign is located on the brush saw.



1. Raise loader arms slightly and tilt brush saw forward to achieve a slight downward angle with the cutting disc. Engage the auxiliary hydraulics to start disc rotation. Increase engine speed to full RPM to achieve maximum disc speed.
 2. Approach the tree or brush so the tree or brush will be cut using the portion of the rotating disc that is to the left of the brush saw boom. SLOWLY drive the machine forward until the disc passes through the tree or brush.
 3. If the forward pass does not cut the tree or brush, slowly move the disc side-to-side to finish the cut.
- The brush saw may be used to cut trees or brush slightly below ground level.
 - DO NOT force the disc into the material. This can cause the disc to stall.

OPERATING INSTRUCTIONS

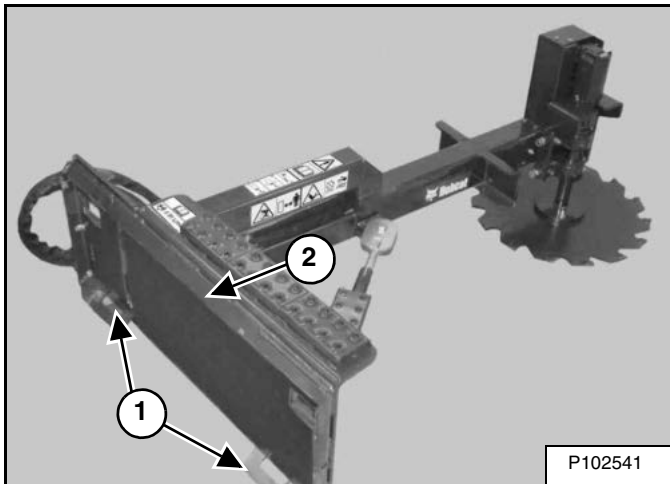
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DAILY INSPECTION

Attachment Mounting Frame

Figure 4



Inspect the Bob-Tach wedge mounts (Item 1), mounting flange (Item 2) **[Figure 4]** and all welds on the brush saw mount for wear and damage each time the brush saw is removed from the loader.

Frequently inspect the brush saw to ensure that all components are secure and that all bolts and nuts are thoroughly tightened.

DAILY INSPECTION (CONT'D)

Bob-Tach

Hand Lever Bob-Tach

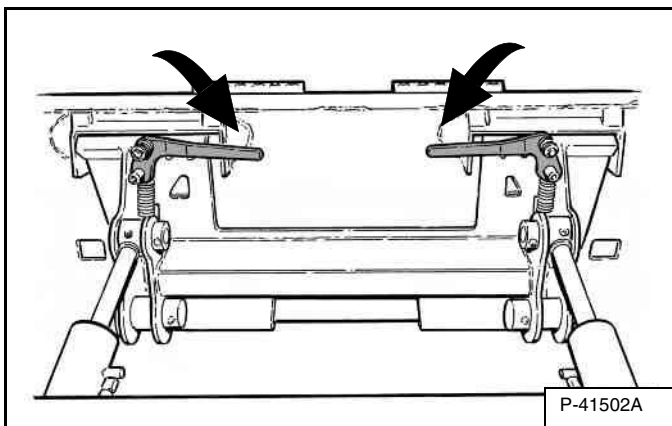
! WARNING

AVOID INJURY OR DEATH

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

W-2715-0208

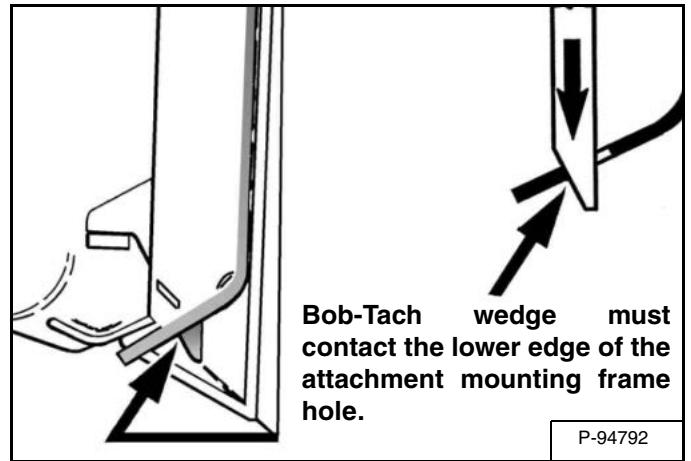
Figure 5



Push down on the Bob-Tach levers until they are fully engaged in the locked position **[Figure 5]** (wedges fully extended through the attachment mounting frame holes).

The levers and wedges must move freely **[Figure 5]**.

Figure 6



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach **[Figure 6]**.

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

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

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

DAILY INSPECTION (CONT'D)

Bob-Tach (Cont'd)

Power Bob-Tach

WARNING

AVOID INJURY OR DEATH

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

W-2715-0208

Figure 7

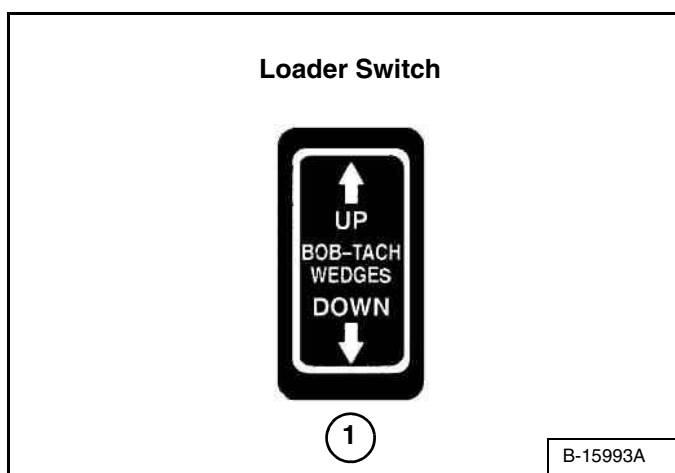
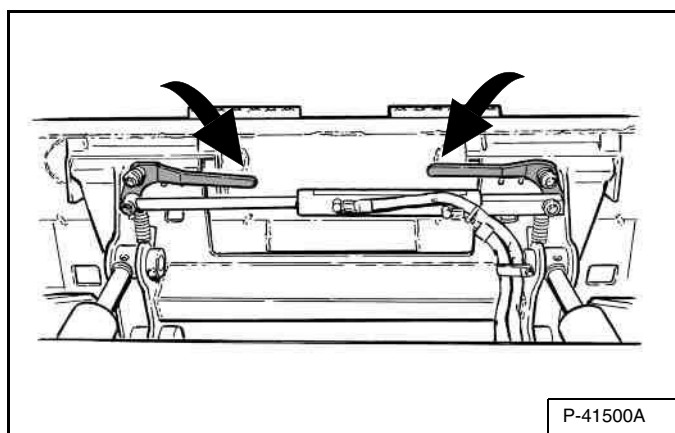
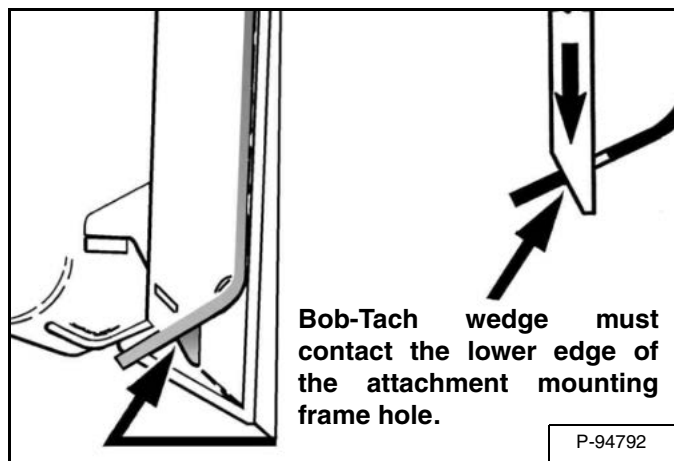


Figure 8



Push and hold the BOB-TACH "WEDGES DOWN" switch (Item 1) [Figure 7] until the levers are fully engaged in the locked position [Figure 8] (wedges fully extended through the attachment mounting frame holes).

Figure 9



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 9].

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

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

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

DAILY INSPECTION (CONT'D)

Brush Saw

Check disc and cutting teeth for cracks or damage.
Replace if necessary.

Check disc mounting hardware for proper torque 320 N•m (235 ft-lb).

Check shields for damage. Repair or replace if necessary.

Check for damaged or missing decals. Replace if necessary.

Check for damaged or leaking hydraulic hoses or fittings.
Replace if necessary.

Remove entangled debris from disc shaft.

Lubricate shaft bearings (2).

OPERATING PROCEDURE WITH LOADERS

Approved Loader Models And Requirements

Figure 10

LOADER MODEL	BRUSH SAW
A300	X
A770	X
S100	X
S130	X
S150	X
S160	X
S175	X
S185	X
S205	X
S220	X
S250	X
S300	X
S330	X
S450	X
S510	X
S530	X
S550	X
S570	X
S590	X
S630	X
S650	X
S740	X
S770	X
S850	X
S66	X
S76	X
T110	X
T140	X
T180	X
T190	X
T250	X
T300	X
T320	X
T450	X
T550	X
T590	X
T650	X
T770	X
T870	X
T66	X

X = Approved

The chart [Figure 10] lists the loader models approved for use with the brush saw.

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



WARNING

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

W-2662-0108

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Approved Loader Models And Requirements (Cont'd)

Figure 11

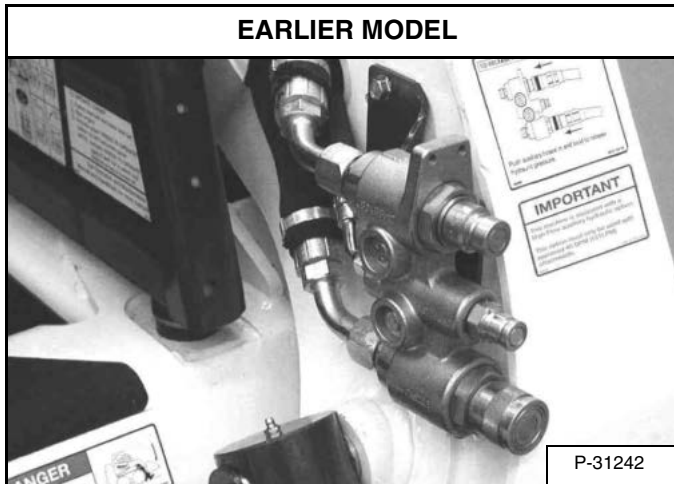
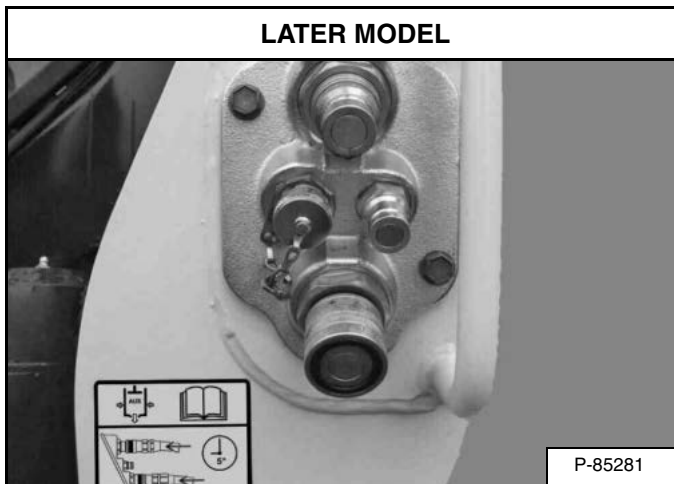


Figure 12



The loader must be equipped with front auxiliary hydraulics [Figure 11] or [Figure 12] for proper operation of the attachment. See your Bobcat dealer for available kits.

IMPORTANT

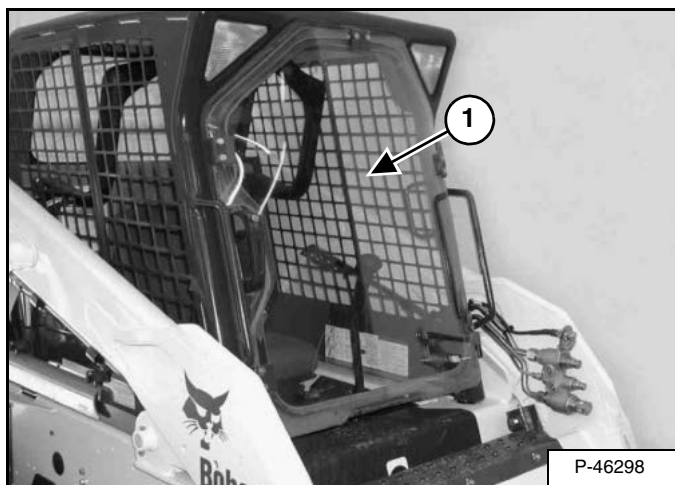
- Operate auxiliary hydraulics on STANDARD flow only.
- Never exceed 91 L/min (24 U.S. gpm) auxiliary hydraulic flow. Hydraulic flow higher than recommended will cause attachment damage.

I-2216-0910

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Special Applications Kit

Figure 13



The loader must be equipped with the Special Application Door (Item 1) [Figure 13].

See your Bobcat dealer for available kits.

WARNING

AVOID SERIOUS INJURY OR DEATH

- **Special Applications Kit must be used when operating the Brush Saw. (See Bobcat dealer for Special Applications Kit.)**
- **Cut brush at ground level.**

W-2602-0108

Special Applications Kit Inspection And Maintenance

Inspect the Special Applications Door for damage. Replace it with Bobcat approved service parts only.

Inspect for cracks or damage. Replace if required.

Pre-rinse with water to remove gritty materials.

Wash with a mild household detergent and warm water.

Use a sponge or soft cloth. Rinse well with water and dry with a clean soft cloth or rubber squeegee.

Do not use abrasive or highly alkaline cleaners.

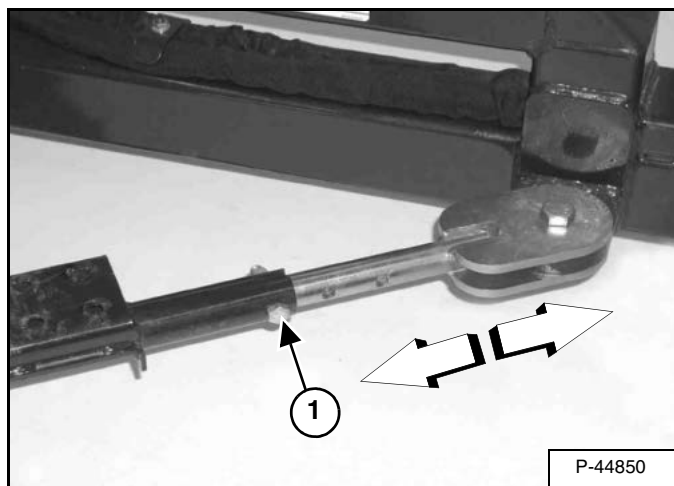
Do not clean with metal blades or scrapers.

Machine / Attachment Setup

Boom Link Adjustment

The brush saw is shipped with the boom installed at a 90° angle to the mount frame. The boom may be angled to the left or right as desired by the operator.

Figure 14



Remove the bolt (Item 1) [Figure 14].

Move the boom to the left to angle the boom to the left or to the right to angle the boom to the right.

Align the hole in the rod with the hole in the tube and install the bolt and nut.

Tighten the bolt to 125 - 135 N•m (90 - 100 ft-lb) torque.

NOTE: Left and right as viewed from the operators seat.

WARNING

Never operate the Brush Saw with the Boom Link removed. Uncontrolled movement of the Brush Saw Boom can cause serious injury, death, damage to equipment, or damage to property.

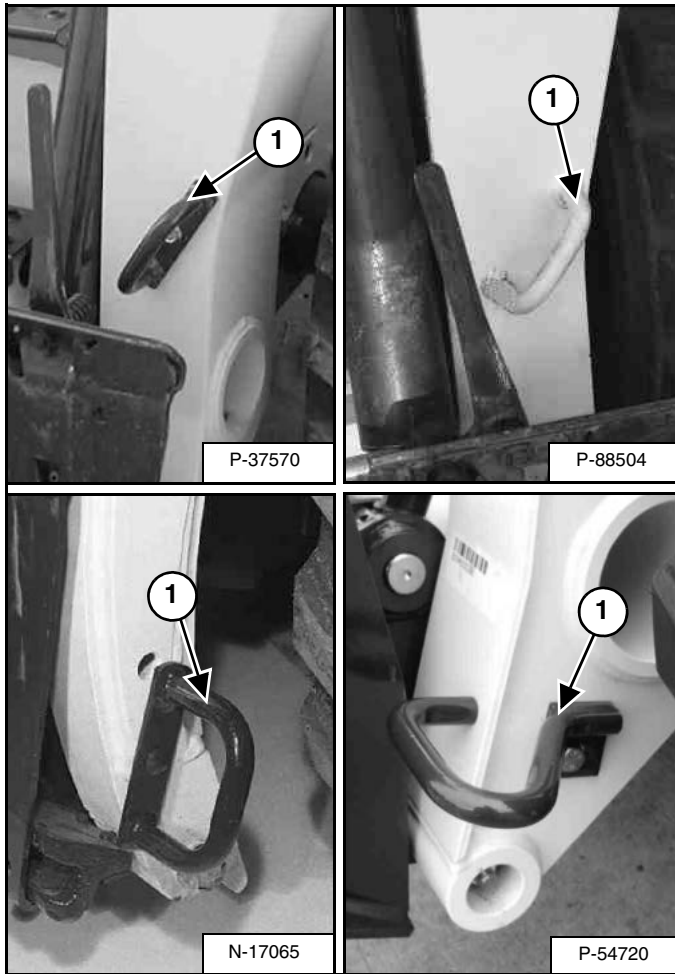
W-2464-0306

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Machine / Attachment Setup (Cont'd)

Hose Guide Installation (Earlier Version)

Figure 15

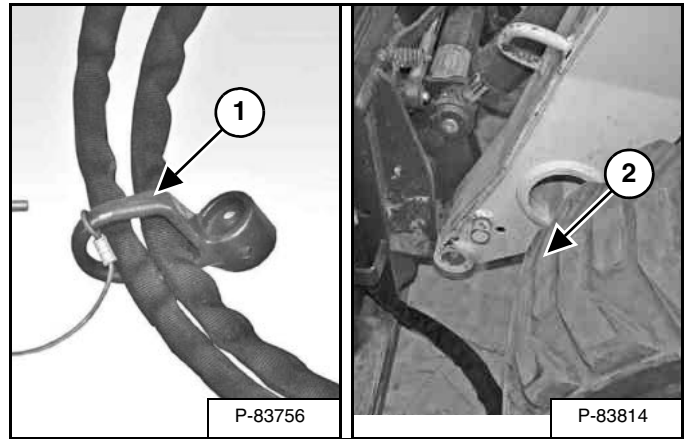


Install the correct hose guide (Item 1) [Figure 15] on the loader.

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.

Hose Guide Installation (Removable - If Equipped)

Figure 16



NOTE: Some attachments are factory equipped with a removable hose guide (Item 1) installed on the hydraulic hoses. The removable hose guide is factory installed for use with Bobcat loaders equipped with a mounting post (Item 2) [Figure 16]. Removable hose guide and mounting post kits are available through your Bobcat dealer.

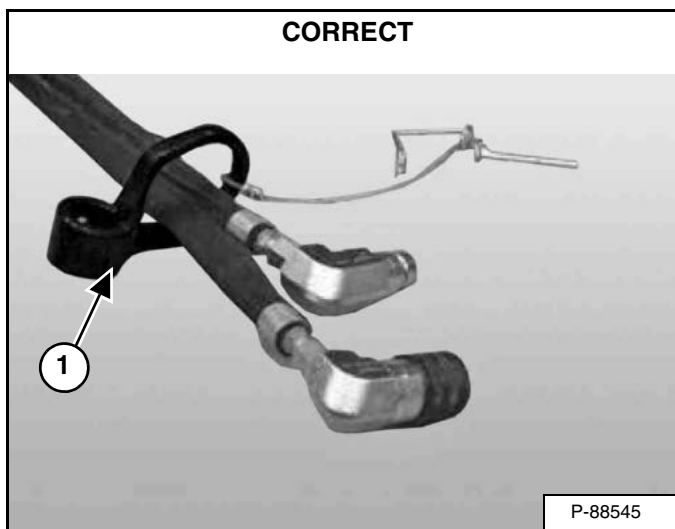
Installation of removable hose guide is done during hose routing. (See Hose Routing (Removable - If Equipped) on Page 48.)

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Machine / Attachment Setup (Cont'd)

*Hose Guide Installation (Removable - If Equipped)
(Cont'd)*

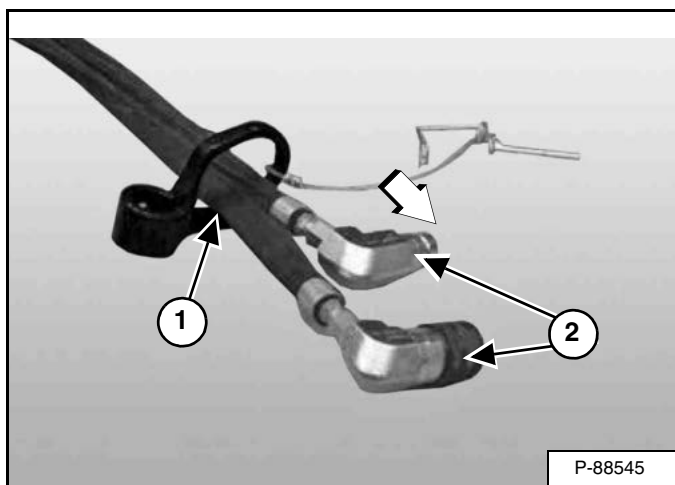
Figure 17



Shown is the removable hose guide (Item 1) [Figure 17] correct orientation for a loader.

NOTE: The removable hose guide orientation may need to be changed for correct installation onto the loader.

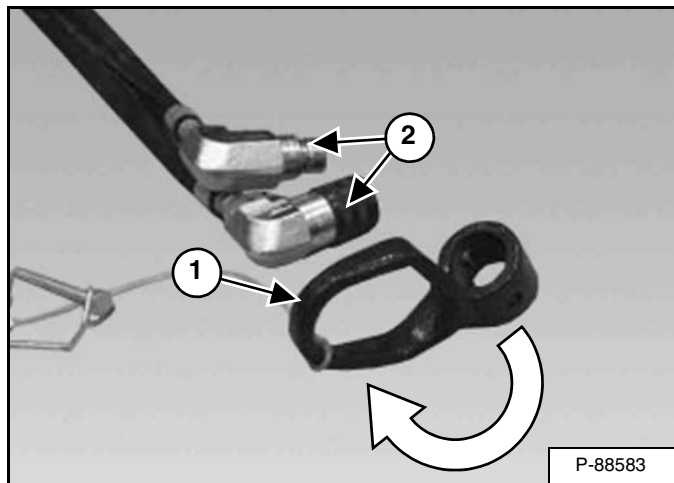
Figure 18



To change the removable hose guide (Item 1) [Figure 18] orientation, slide the removable hose guide off the hoses.

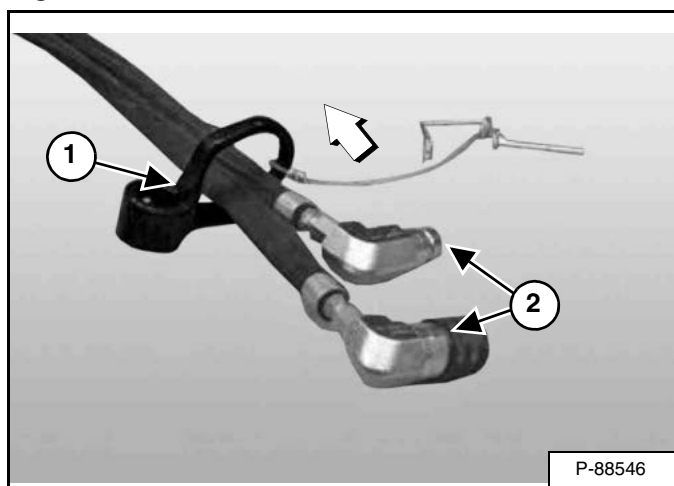
NOTE: It may be necessary to remove the hose couplers (Item 2) [Figure 18].

Figure 19



Flip the removable hose guide (Item 1) over to reverse its orientation on the hoses (Item 2) [Figure 19].

Figure 20



Slide the removable hose guide (Item 1) [Figure 20] back onto the hoses.

NOTE: If the couplers (Item 2) [Figure 20] were removed, reinstall at this time.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Entering And Exiting The Loader

! WARNING

AVOID INJURY OR DEATH

When operating the machine:

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

W-2261-0909

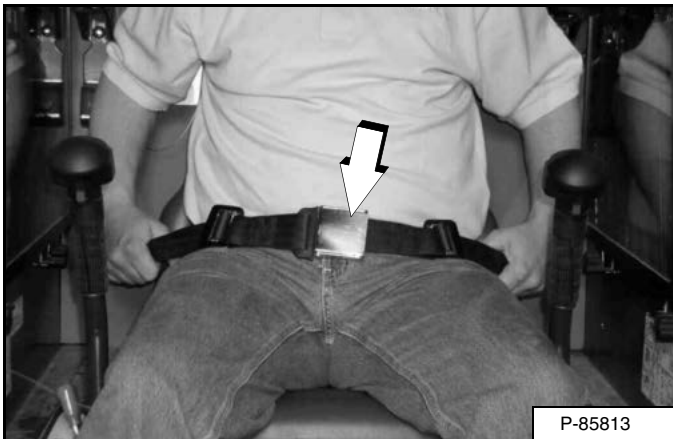
Entering

Figure 21



Use the attachment steps, grab handles and safety treads (on the loader lift arms and frame) to get on and off the loader [Figure 21].

Figure 22



Enter the loader. Fasten the seat belt and adjust it so the buckle is centred between your hips [Figure 22].

Figure 23



Lower the seat bar and engage parking brake [Figure 23].

Put the foot pedals or hand controls in NEUTRAL position.

NOTE: Keep the 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.



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 illustrations and instructions provided explain how to install a bucket attachment on to a loader. Follow these same instructions if you are installing different attachments such as a grapple, tiller, combo bucket, etc.

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

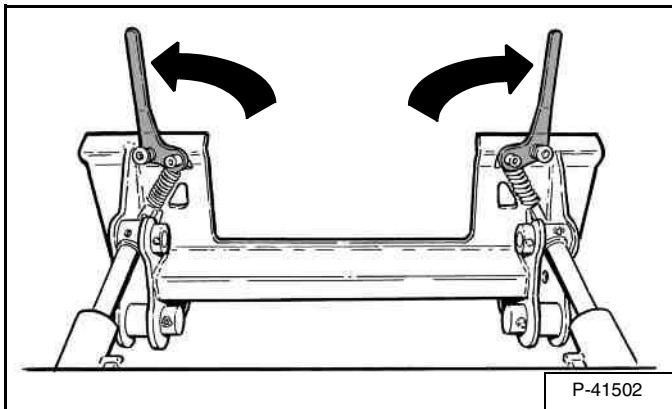
! WARNING

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

W-2744-0608

Always inspect the loader's Bob-Tach and the attachment mounting frame before installation. See the loader's Operation & Maintenance Manual. (See DAILY INSPECTION on Page 31.)

Figure 24

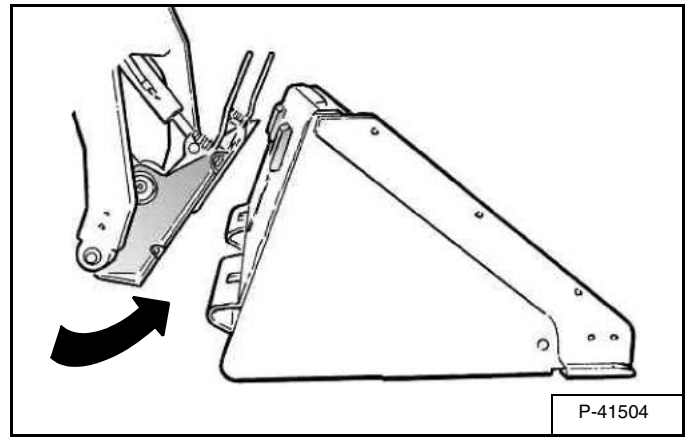


Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) [Figure 24].

Enter the loader. (See Entering And Exiting The Loader on Page 40.)

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

Figure 25



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 25].

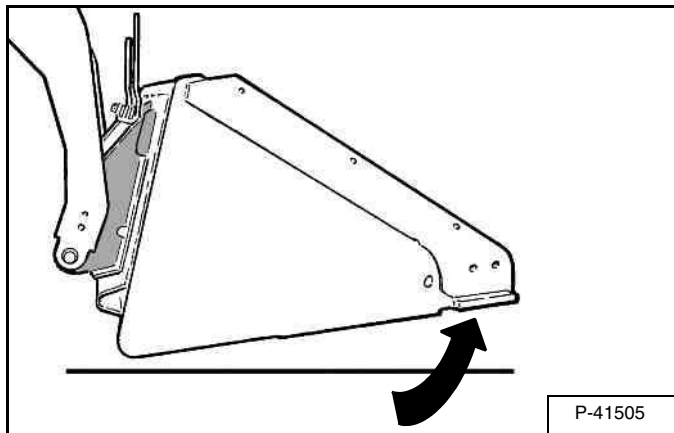
NOTE: Be sure the Bob-Tach levers do not hit the attachment.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 26

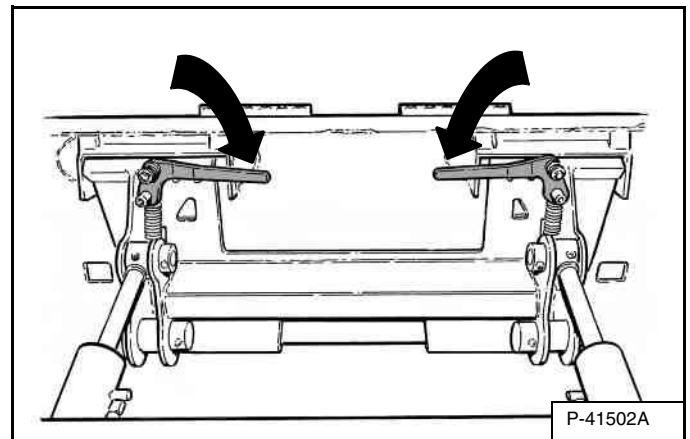


Tilt the Bob-Tach backward until the attachment is slightly off the ground [Figure 26]. This will cause the attachment mounting frame to fit up against the front of the Bob-Tach.

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 40.)

Figure 27



Push down on the Bob-Tach levers until they are fully engaged in the locked position [Figure 27] (wedges fully extended through the attachment mounting frame holes).

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.

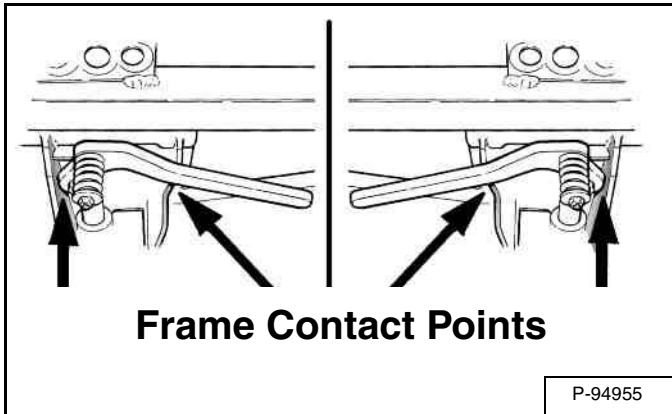
W-2463-1110

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 28



Both levers must contact the frame as shown when locked [Figure 28].

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

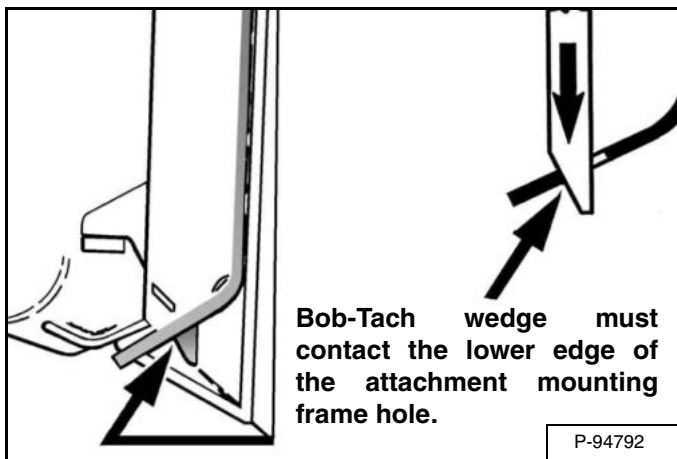
WARNING

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 29



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 29].

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Power Bob-Tach

WARNING

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

W-2744-0608

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

Enter the loader. (See Entering And Exiting The Loader on Page 40.)

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

Figure 30

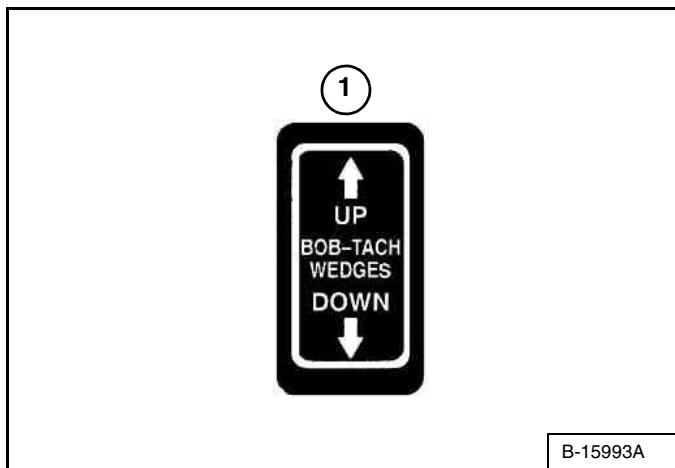
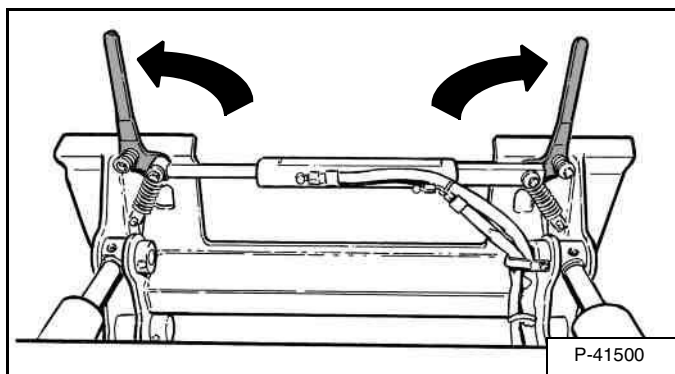
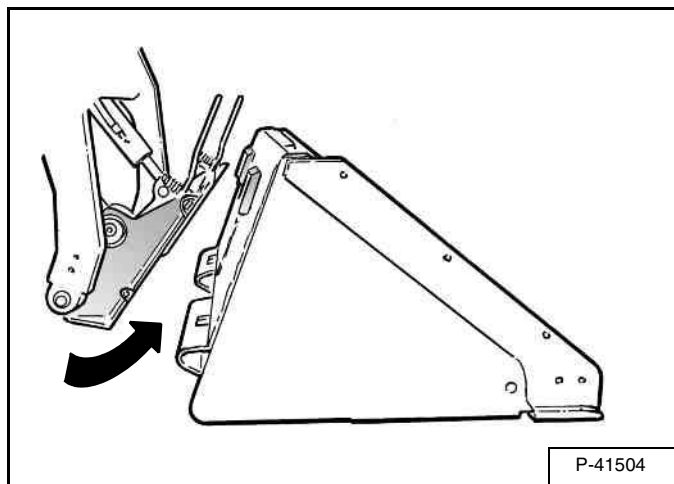


Figure 31



Push and hold the BOB-TACH “WEDGES UP” switch (Item 1) [Figure 30] until the levers are fully raised (wedges fully raised) [Figure 31].

Figure 32



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

Drive the loader slowly forward until the top edge of the Bob-Tach is completely under the top flange of the attachment mounting frame [Figure 32].

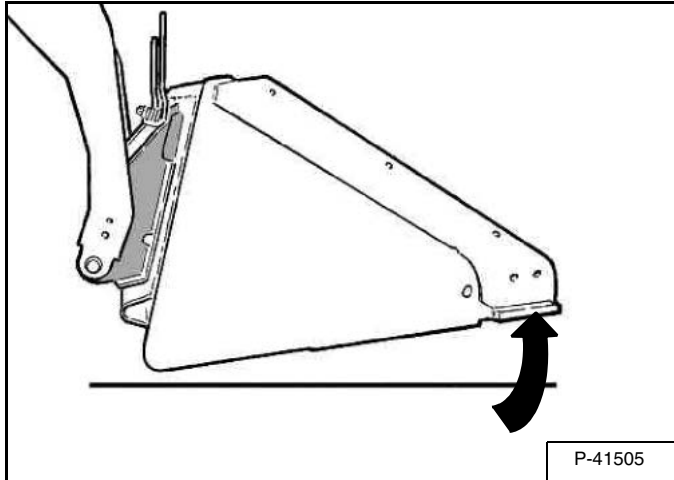
NOTE: Be sure the Bob-Tach levers do not hit the attachment.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

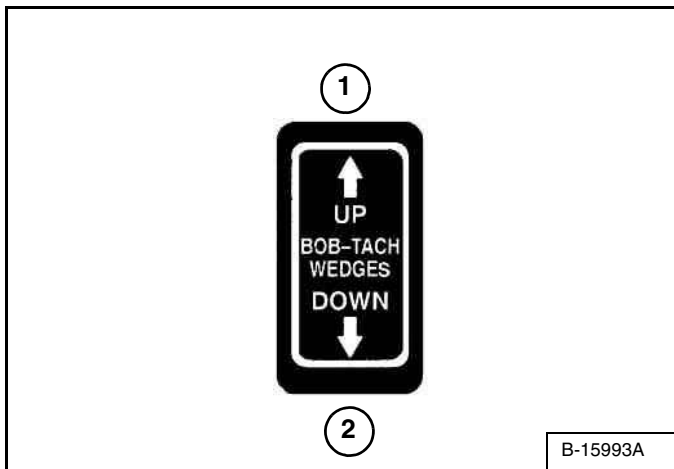
Power Bob-Tach (Cont'd)

Figure 33



Tilt the Bob-Tach backward until the attachment is slightly off the ground [Figure 33]. This will cause the attachment mounting frame to fit up against the front of the Bob-Tach.

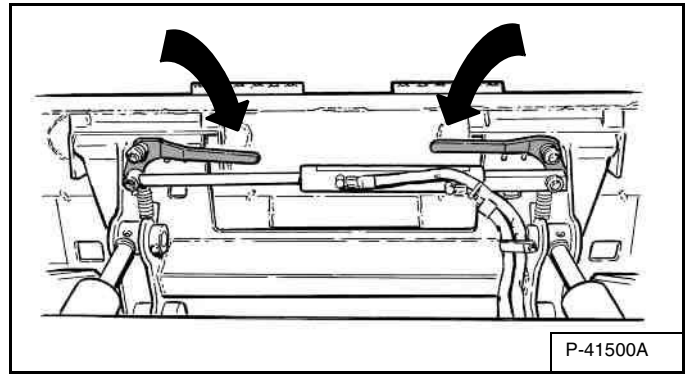
Figure 34



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

Figure 35



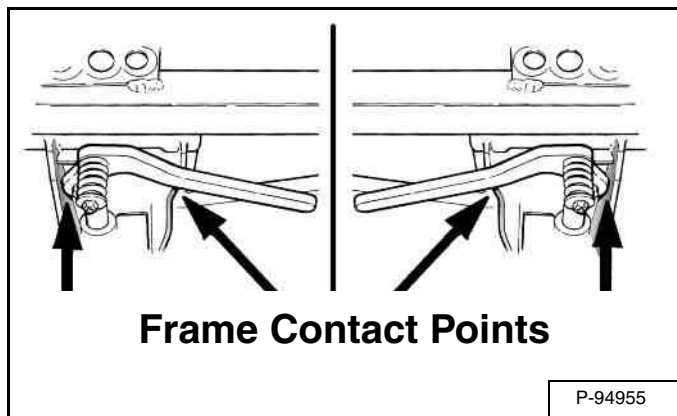
Push and hold the BOB-TACH “WEDGES DOWN” switch (Item 2) [Figure 34] until the levers are fully engaged in the locked position [Figure 35] (wedges fully extended through the attachment mounting frame holes).

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Power Bob-Tach (Cont'd)

Figure 36



Both levers must contact the frame as shown when locked [Figure 36].

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

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

Stop the engine and exit the loader. (See Entering And Exiting The Loader on Page 40.)

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

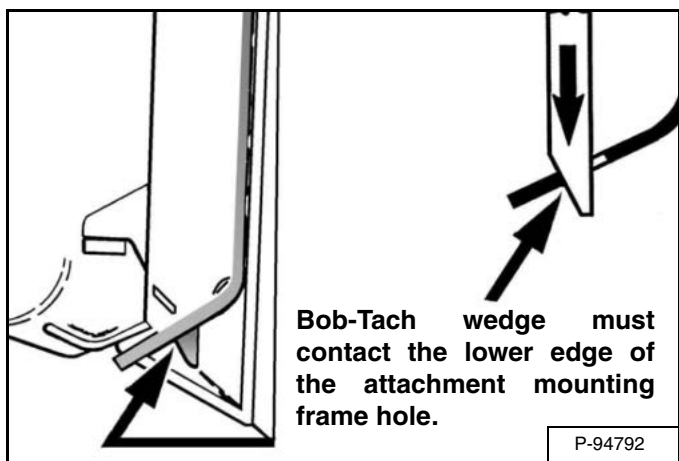
WARNING

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 37



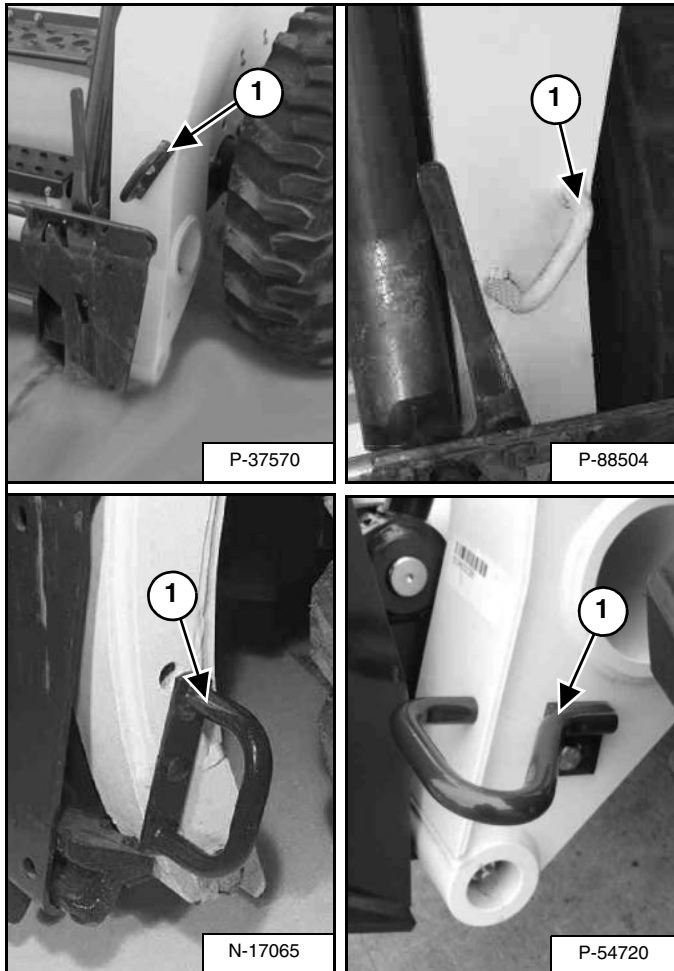
The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 37].

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Hose Routing (Earlier Version)

Figure 38

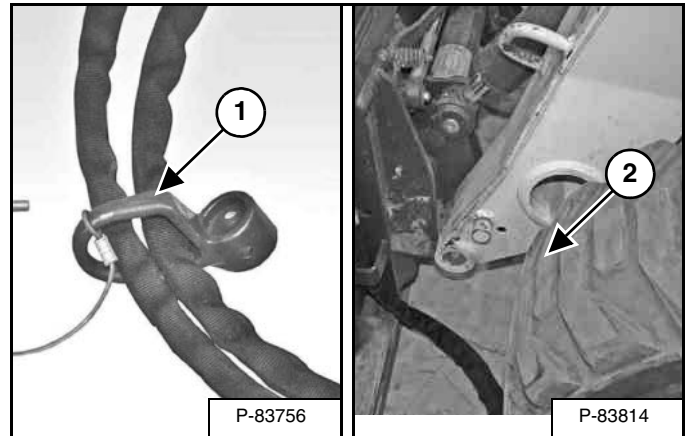


Route hoses through hose guide (Item 1) [Figure 38] and connect quick couplers to the loader. (See Hydraulic Quick Couplers on Page 51.)

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.

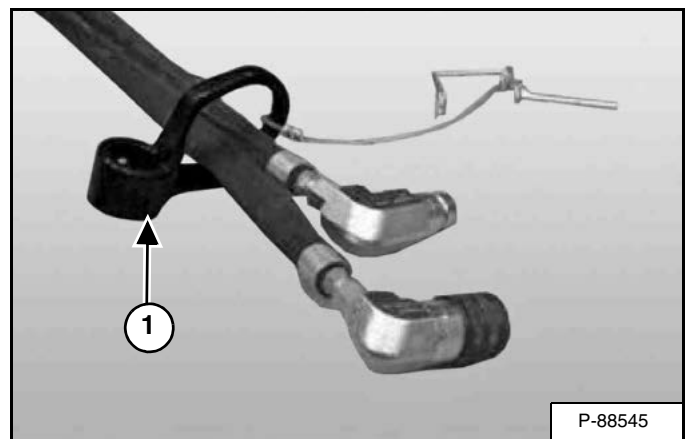
Hose Routing (Removable - If Equipped)

Figure 39



NOTE: Some attachments include removable hose guide (Item 1) for use on loaders equipped with a mounting post (Item 2) [Figure 39]. Removable hose guide and mounting post kits are available through your Bobcat dealer.

Figure 40



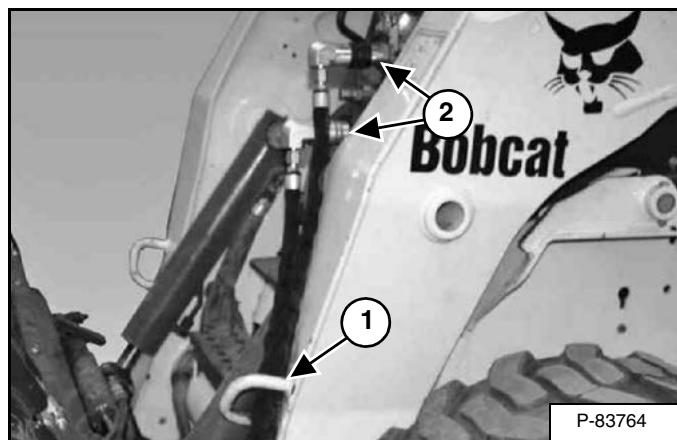
The removable hose guide (Item 1) [Figure 40] is pre-installed on the hydraulic hoses. If the orientation of the hose guide needs to be changed. (See Hose Guide Installation (Removable - If Equipped) on Page 38.)

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

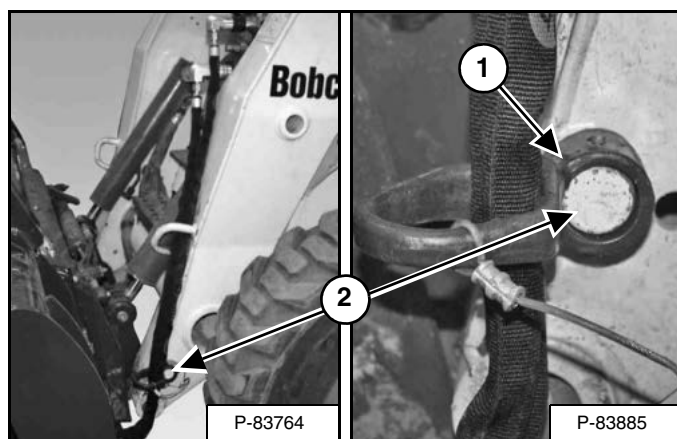
Hose Routing (Removable - If Equipped) (Cont'd)

Figure 41



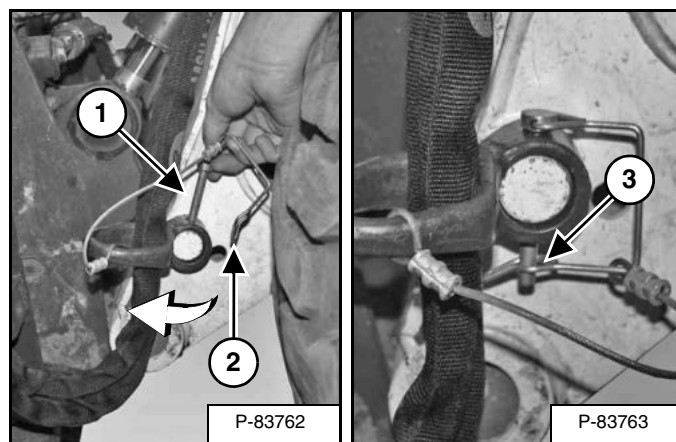
If the loader has an earlier version hose guide, route the attachment hydraulic hoses through the hose guide (Item 1). Connect the quick couplers to the loader (Item 2) [Figure 41] (See Hydraulic Quick Couplers on Page 51.)

Figure 42



Install the removable hose guide (Item 1) onto the mounting post (Item 2) [Figure 42] located on the side of the loader lift arm.

Figure 43



Insert lock pin (Item 1) through the removable hose guide and mounting post and latch eyelet (Item 2) onto the lock pin (Item 3) [Figure 43].

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 51.)

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 40.)

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

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

! WARNING

AVOID INJURY OR DEATH

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

W-2072-EN-0909

Check the attachment hydraulic quick coupler connections for leaks.

Hydraulic Quick Couplers

IMPORTANT

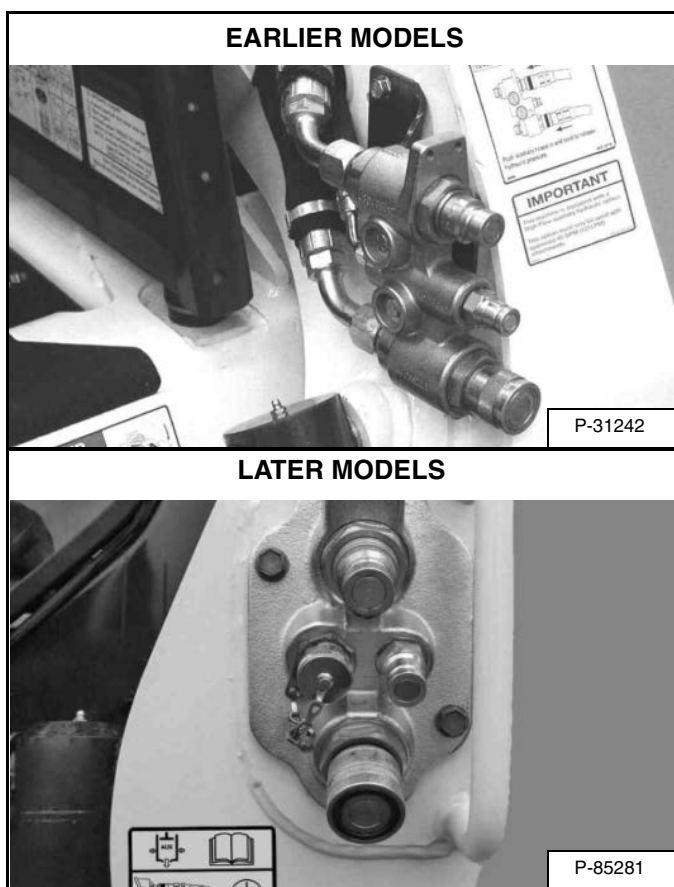
- Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.
- Contain and dispose of any oil leakage in an environmentally safe manner.

I-2278-0608

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

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

Figure 44



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 44].

Install the male coupler into the female coupler. Full connection is made when the ball release sleeve slides forward on the female coupler [Figure 44].

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 50.) 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)

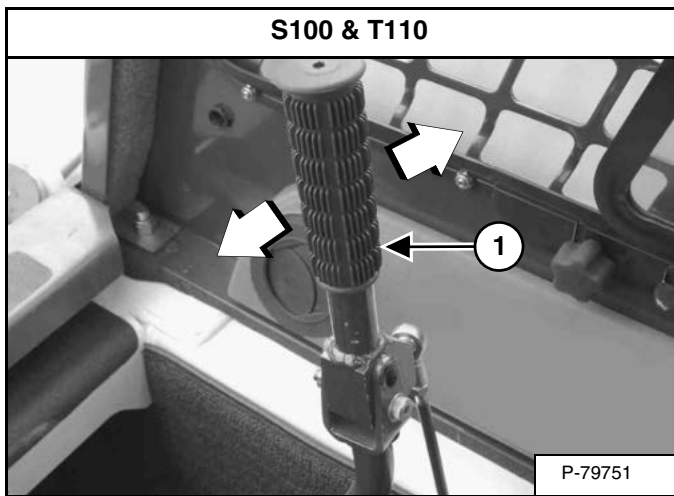
Control Functions

NOTE: Attachment is NOT approved for operation in high flow mode or with loaders equipped with optional high flow hydraulics. Attachment damage may occur if operated in high flow mode. For recommended hydraulic flow range (See Performance on Page 77.)

Enter the loader and close the door. (See Entering And Exiting The Loader on Page 40.) Start the engine and release the parking brake.

Manual Auxiliary Hydraulic Controls

Figure 45



NOTE: Remove the hydraulic control lockout bolt from the right control lever before using the auxiliary control for the first time. See the loader's Operation & Maintenance Manual for correct procedure.

To start the disc rotation, move the right steering lever handle (Item 1) [Figure 45] to the right.

For continuous forward rotation, move the right steering handle (Item 1) [Figure 45] fully to the right.

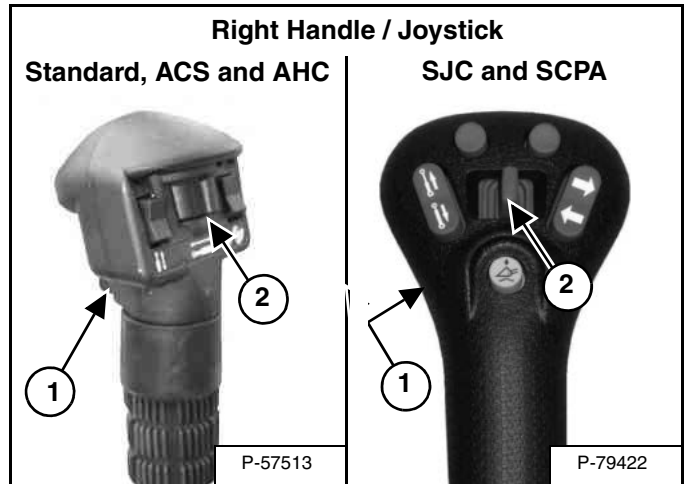
To stop the disc rotation, move the right steering lever handle (Item 1) [Figure 45] to the centre position.

Electric Auxiliary Hydraulic Controls

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

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

Figure 46



Press the switch (Item 1) [Figure 46] on the right steering lever or joystick to start disc rotation. Press the switch a second time to stop disc rotation.

Moving the centre paddle switch (Item 2) [Figure 46] to the right also rotates the disc forward.

IMPORTANT

- Operate auxiliary hydraulics on STANDARD flow only.
- Never exceed 91 L/min (24 U.S. gpm) auxiliary hydraulic flow. Hydraulic flow higher than recommended will cause attachment damage.

I-2216-0910

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Operation With The Loader

NOTE: Make sure the loader is equipped with a special applications kit before operating. See your Bobcat dealer for kits for your model.

The brush saw can be used to cut brush and small trees. Never cut material taller than 5 m (15 ft). Always cut at ground level. Falling objects can cause serious injury or death. Always keep the special applications kit door closed when operating the brush saw.

WARNING

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

W-2001-0502

WARNING

AVOID INJURY OR DEATH

When operating the machine:

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

W-2261-0909

The boom may be angled to the left or right as desired by the operator. (See Boom Link Adjustment on Page 37.)

Enter the loader. (See Entering And Exiting The Loader on Page 40.)

Start the engine and release the parking brake.

Carry the brush saw low to the ground when driving.

WARNING

AVOID INJURY OR DEATH

Never operate with covers or guards removed.

W-2121-0788

Figure 47



Raise loader lift arms so that the brush saw is slightly above ground height. Tilt the brush saw forward to achieve a slight downward angle with the cutting disc [Figure 47].

WARNING

AVOID INJURY OR DEATH

Never cut material taller than 5 m (15 ft).

W-2708-0910

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

Increase engine speed to full rpm to achieve maximum disc speed.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Operation With The Loader (Cont'd)

DANGER

**THROWN OBJECTS OR ROTATING DISC WILL
CAUSE SERIOUS INJURY OR DEATH**

- Never operate saw in vicinity of other persons. Objects can be thrown more than 15 m (50 ft).
- Keep hands, feet and objects away from rotating disc when engine is running.
- Stop engine before leaving loader or servicing.
- No riders.
- Keep all shields installed. Repair or replace if damaged or missing.
- Check cutting disc and mounting hardware. Replace if damaged. Never weld or modify.
- Clear cutting area of debris.

D-1013-0910

Figure 48



Approach the tree or brush so the tree or brush will be cut using the portion of the rotating disc that is to the left of the brush saw boom [Figure 48].

Figure 49



SLOWLY drive loader forward until disc passes through the tree or brush [Figure 49].

If the forward pass does not completely cut the tree or brush, slowly move the disc side-to-side to finish the cut.

WARNING

AVOID SERIOUS INJURY OR DEATH

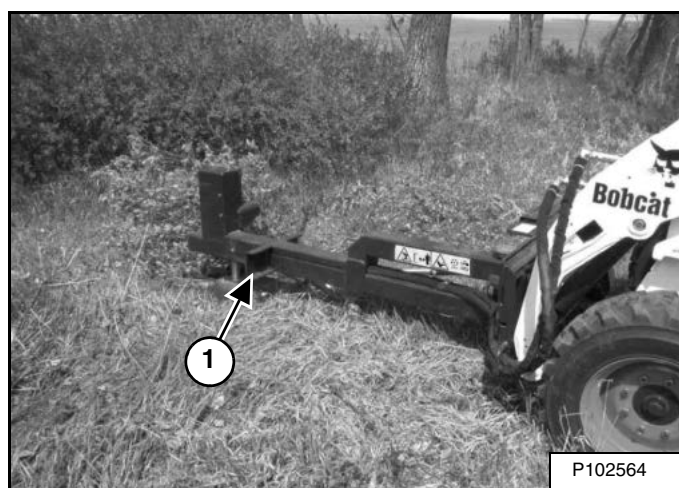
- Cut brush at ground level.
- Use the frame to push brush away from loader while cutting.

W-2603-1007

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Operation With The Loader (Cont'd)

Figure 50



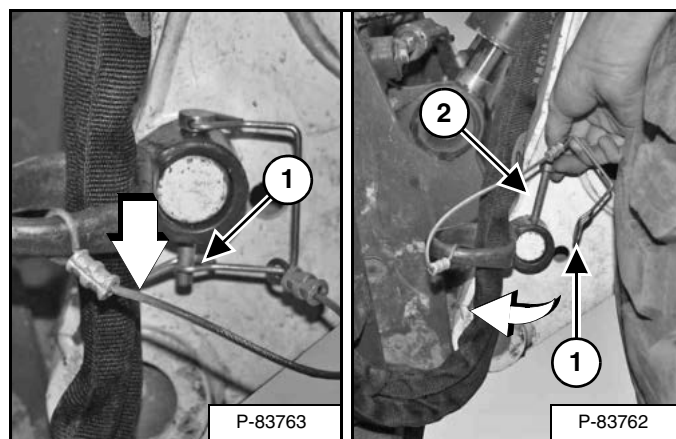
Use the frame (Item 1) [Figure 50] to push the cut material out of the loader path.

NOTE: The boom can be adjusted to the right or left as needed. (See Boom Link Adjustment on Page 37.)

Removal

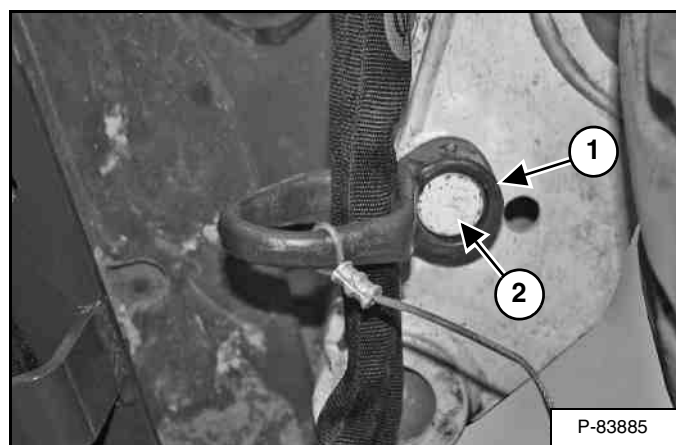
Hose Removal (Removable - If Equipped)

Figure 51



Unlatch eyelet (Item 1) from the lock pin (Item 2). Remove lock pin (Item 2) [Figure 51] from the removable hose guide and mounting post.

Figure 52



Remove the removable hose guide (Item 1) from the mounting post (Item 2) [Figure 52].

Disconnect the hydraulic quick couplers. (See Hydraulic Quick Couplers on Page 51.)

Remove hoses from hose guide (earlier version).

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Removal (Cont'd)

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 40.)

! WARNING

AVOID INJURY OR DEATH

Before you leave the operator's seat:

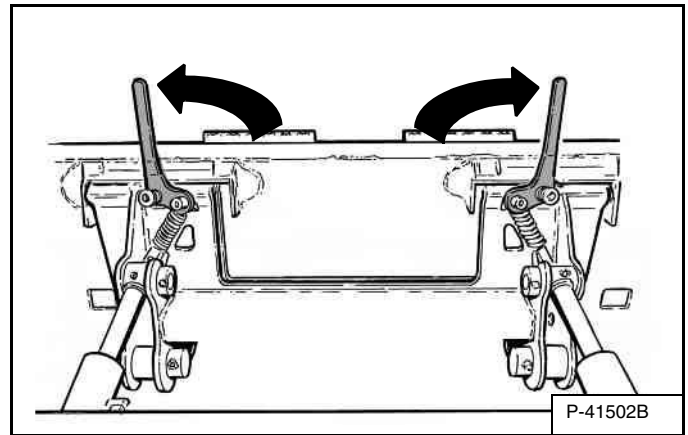
- Lower the lift arms and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Raise the seat bar.
- Move all controls to the **NEUTRAL / LOCKED** position to make sure the lift, tilt and traction drive functions are deactivated.

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

W-2463-1110

Disconnect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 51.)

Figure 53



Pull the Bob-Tach levers up [Figure 53] until they are fully raised (wedges fully raised).

! WARNING

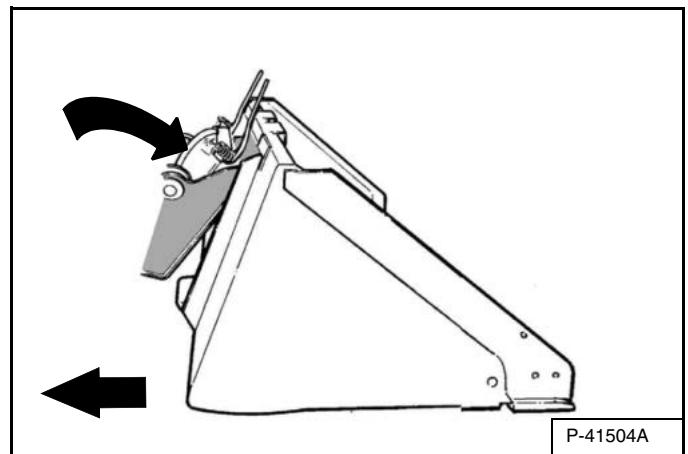
Bob-Tach levers have spring tension. Hold lever tightly and release slowly. Failure to obey warning can cause injury.

W-2054-1285

Enter the loader. (See Entering And Exiting The Loader on Page 40.)

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

Figure 54



Tilt the Bob-Tach forward and drive the loader backward, away from the attachment [Figure 54].

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 40.)



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 51.)

Enter the loader. (See Entering And Exiting The Loader on Page 40.)

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

Figure 55

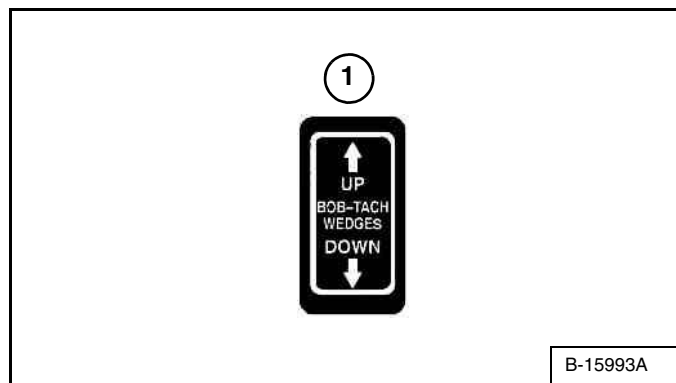
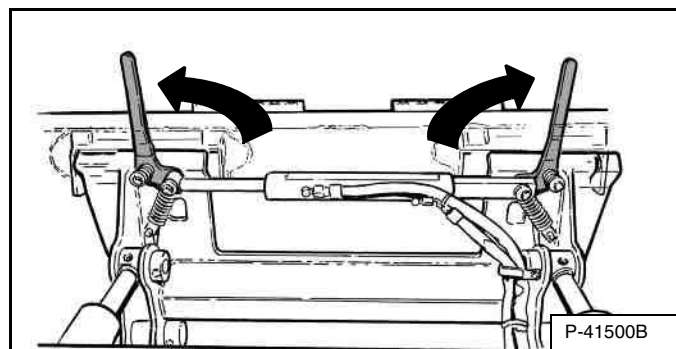


Figure 56



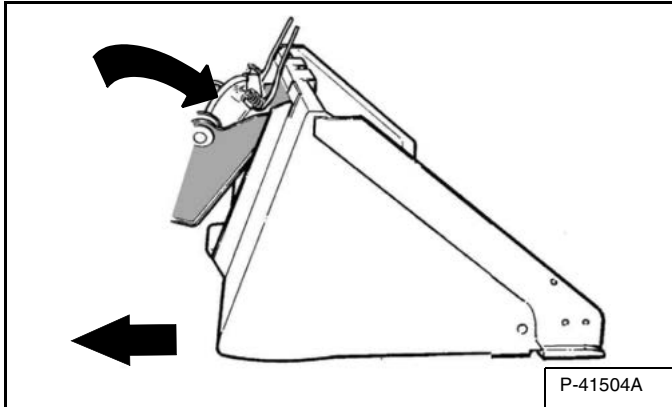
Push and hold the BOB-TACH “WEDGES UP” switch (Item 1) [Figure 55] (Front Panel) until the levers [Figure 56] are fully raised (wedges fully raised).

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Removal (Cont'd)

Power Bob-Tach (Cont'd)

Figure 57



Tilt the Bob-Tach forward and drive the loader backward, away from the attachment [Figure 57].

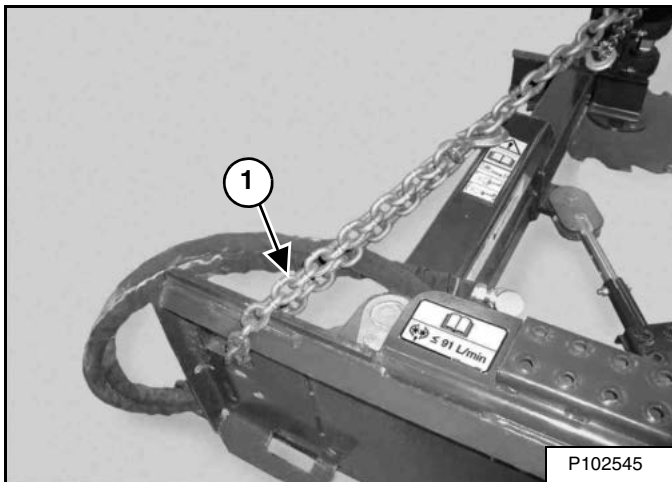
NOTE: The Power Bob-Tach system has continuous pressurised hydraulic oil to keep the wedges in the engaged position and prevent attachment disengagement. Because the wedges can slowly lower, the operator may need to reactivate the switch (BOB-TACH “WEDGES UP”) when removing an attachment to be sure both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

LIFTING THE ATTACHMENT

Procedure

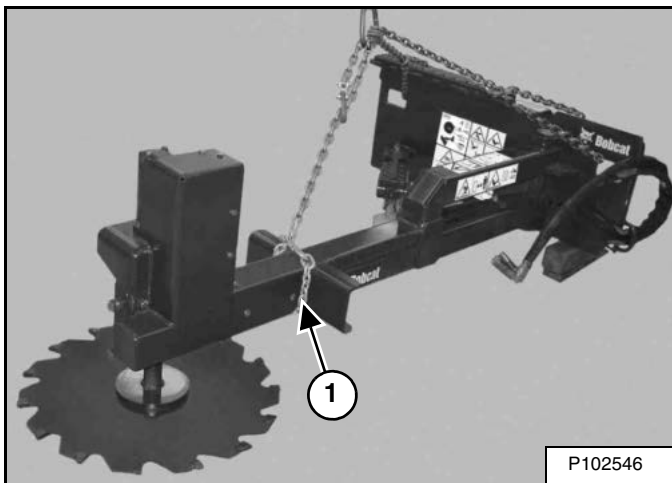
NOTE: Use chains that are in good condition and of adequate size to lift the attachment.

Figure 58



Install the chain (Item 1) around the mounting plate [Figure 58].

Figure 59

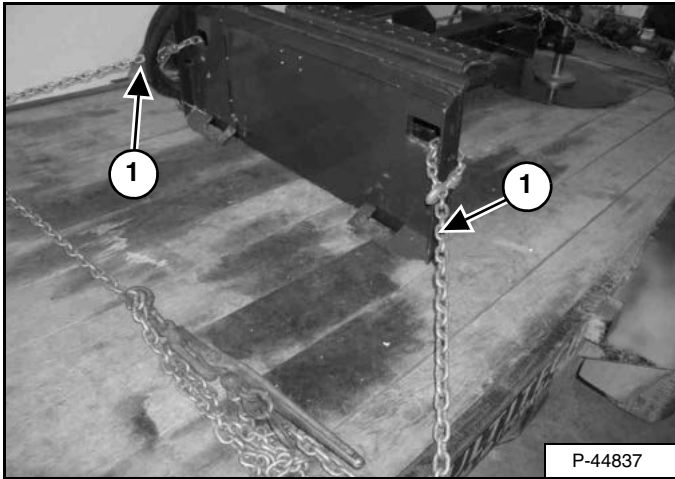


Install the chains around the boom [Figure 59].

TRANSPORTING THE ATTACHMENT ON A TRAILER

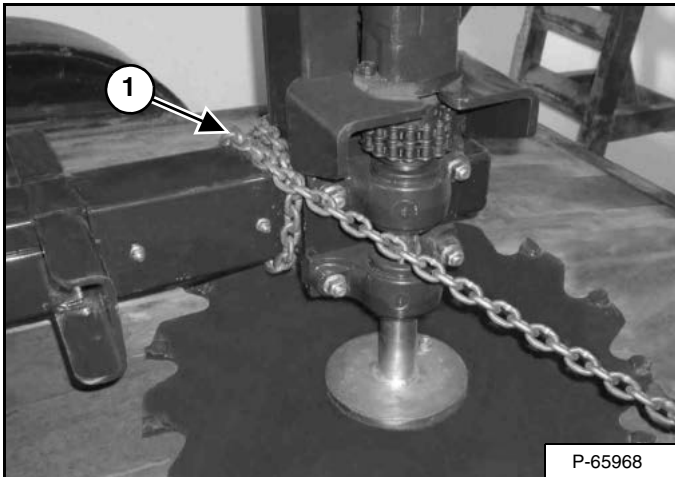
Fastening

Figure 60



Install chains (Item 1) [Figure 60] on the mounting plate.

Figure 61



Install chains (Item 1) [Figure 61] around the boom.

Figure 62

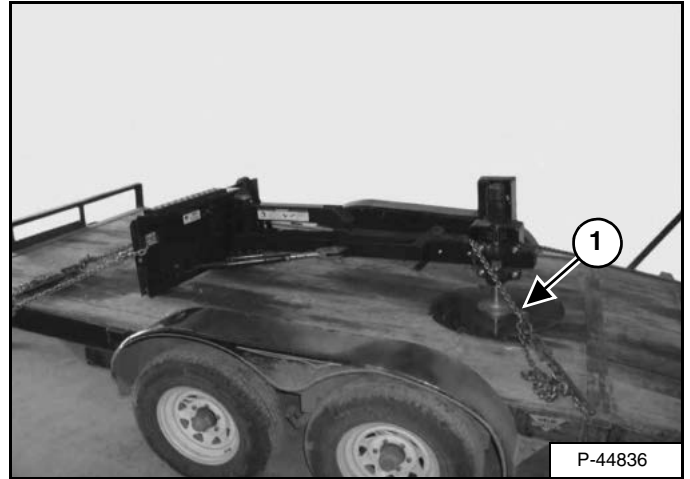
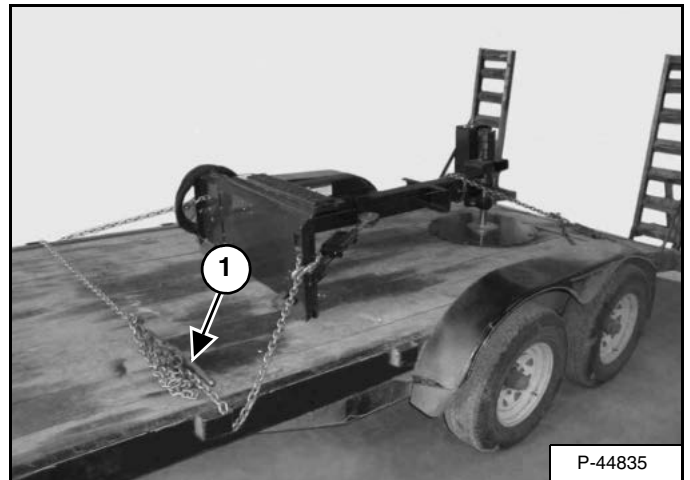


Figure 63



Use chain binders (Item 1) [Figure 62] and [Figure 63] to prevent the brush saw from moving during transportation.

TRANSPORTING THE ATTACHMENT AND MACHINE ON A TRAILER

Loading And Fastening



AVOID SERIOUS INJURY OR DEATH

Adequately designed ramps of sufficient strength are needed to support the weight of the machine when loading onto a transport vehicle. Wood ramps can break and cause personal injury.

W-2058-0807

Be sure the transport and towing vehicles are of adequate size and capacity for weight of machine and attachment combination. (See machine and attachment Operation & Maintenance Manuals for specifications.)

Loading

The rear of the trailer must be blocked or supported when loading and unloading to prevent the front of the trailer from raising.

- Load the heaviest end of the machine and attachment combination first.
- Lower the attachment to the floor.
- Stop the engine.
- Engage the parking brake (if equipped).
- Exit the machine. (See the machine's Operation & Maintenance Manual for the correct procedure.)

Fastening

- Install 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.



Bobcat®

PREVENTIVE MAINTENANCE

MAINTENANCE SAFETY 65

TROUBLESHOOTING 67

 Chart 67

SERVICE SCHEDULE 68

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LUBRICATING THE ATTACHMENT 69

 Lubrication Locations 69

REMOVAL AND INSTALLATION 70

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 Cutting Teeth 72

ATTACHMENT STORAGE AND RETURN TO SERVICE 73

 Storage 73

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MAINTENANCE SAFETY



WARNING

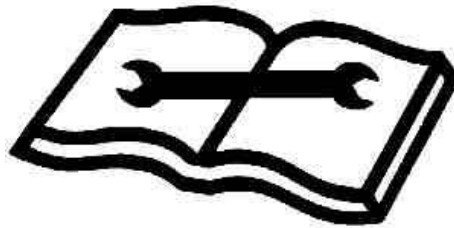
Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after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

CORRECT



NA3047

-  **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.



TROUBLESHOOTING

Chart



WARNING

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

W-2003-0807

If the brush saw is not working correctly, check the hydraulic system of the machine thoroughly before making any repairs on the saw. Brush saw problems can be affected by a hydraulic system that is not operating to specifications or such problems as a plugged fuel filter or hydraulic filter in the machine. Connect a flow meter to the machine to check the hydraulic pump output, relief valve setting and tubelines 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 brush saw.

PROBLEM	CAUSE	CORRECTION
Poor cutting.	Travel speed too fast.	Reduce travel speed.
	Damaged motor.	Repair or replace motor.
	Low disc rpm.	Check auxiliary flow and pressure.
	Worn, damaged or missing cutting teeth.	Replace cutting teeth.
Disc will not rotate.	Loader fluid level too low.	Add hydraulic fluid to the fluid reservoir on the loader.
	Damaged quick couplers.	Replace quick couplers.
	Damaged hydraulic hoses.	Repair or replace hoses.
	Loader main relief valve set too low.	Adjust main relief valve to correct setting.
Vibration.	Loose or cracked hardware.	Repair or replace as needed.
	Disc worn or broken.	Replace the disc.
	Disc spindle bent.	Replace spindle.

SERVICE SCHEDULE

Chart

Maintenance work must be done at regular intervals. Failure to do so will result in excessive wear and early failures. The service schedule is a guide for correct maintenance of the Bobcat product.



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

SERVICE SCHEDULE		HOURS
ITEM	SERVICE REQUIRED	10
General Items.	Check disc and cutting teeth for cracks or damage.	
	Check mounting hardware for proper torque 320 N•m (235 ft-lb).	
	Check shields for damage.	
	Check for damaged or missing decals.	
	Check for damaged or leaking hydraulic hoses or fittings.	
	Remove entangled debris from disc shaft.	
Grease Shaft Bearings.	* Use a multipurpose lithium based grease.	

* - (See Lubrication Locations on Page 69.)

LUBRICATING THE ATTACHMENT

Lubrication Locations

Always use a good quality lithium base multi-purpose grease when lubricating the attachment. Apply the lubricant until extra grease shows.

IMPORTANT

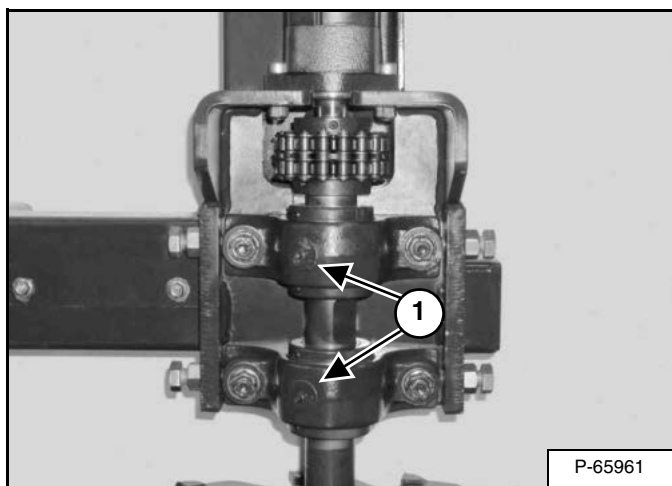
Fluid such as engine oil, hydraulic fluid, coolants, grease, etc. must be disposed of in an environmentally safe manner. Some regulations require that certain spills and leaks on the ground must be cleaned in a specific manner. See local regulations for the correct disposal.

I-2067-EN-0711

Lubricate the two grease fittings on the brush saw **every 10 hours** of operation.

Lubricate the following locations:

Figure 64



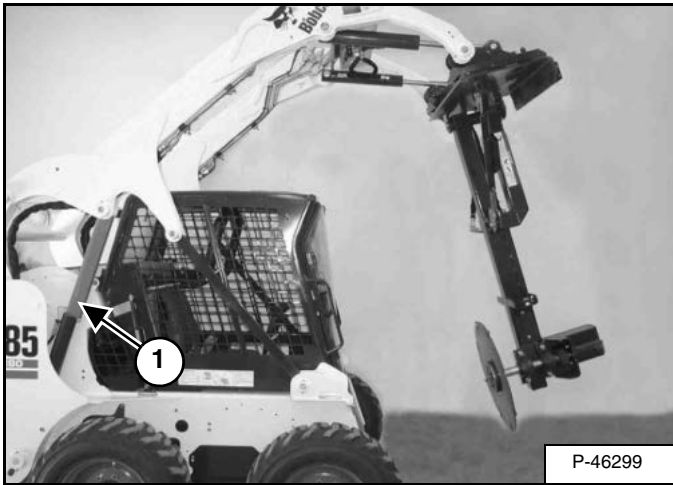
Disc shaft (Item 1) [Figure 64].

REMOVAL AND INSTALLATION

Disc

Disconnect the auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 51.)

Figure 65



Position the brush saw as shown [Figure 65] by raising the lift arms and tilting the attachment down.

Before servicing, be sure the brush saw is tilted fully down, AN APPROVED LIFT ARM SUPPORT DEVICE (Item 1) [Figure 65] IS INSTALLED, auxiliary hydraulic hoses are disconnected and engine is stopped.

NOTE: Approved lift arm support device styles can vary. See the machine's Operation & Maintenance Manual for additional information.

WARNING

Never work on a machine with the lift arms up unless the lift arms are secured by an approved lift arm support device. Failure to use an approved lift arm support device can allow the lift arms or attachment to fall and cause injury or death.

Service lift arm support device if damaged or if parts are missing. Using a damaged lift arm support or with missing parts can cause lift arms to drop causing injury or death.

W-2572-0407

WARNING

AVOID INJURY OR DEATH

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

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

W-2019-0907

REMOVAL AND INSTALLATION (CONT'D)

Disc (Cont'd)

Figure 66

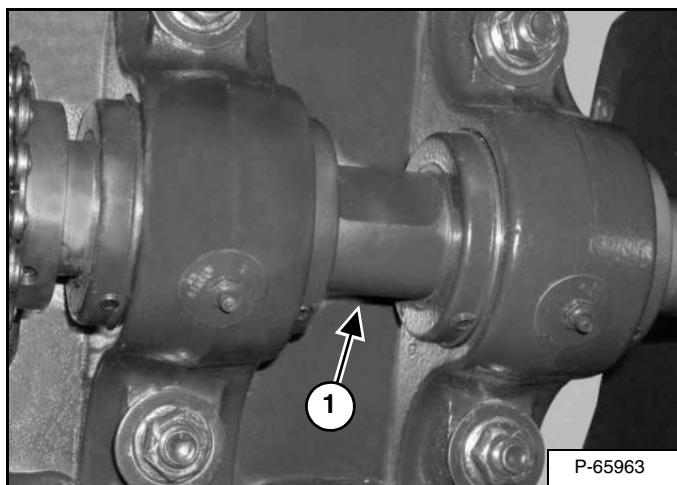
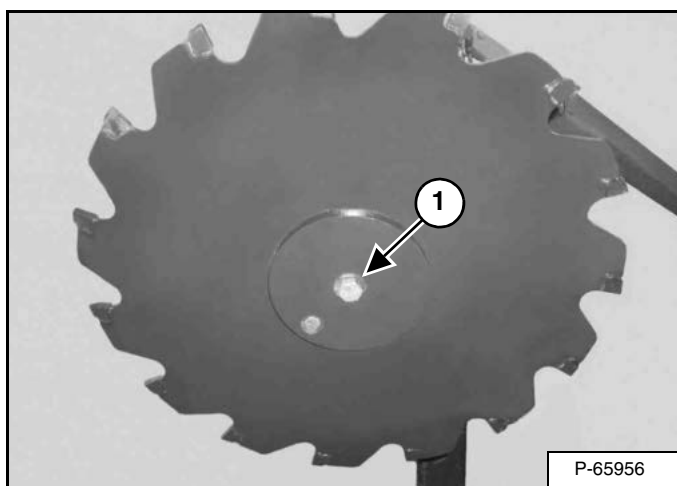


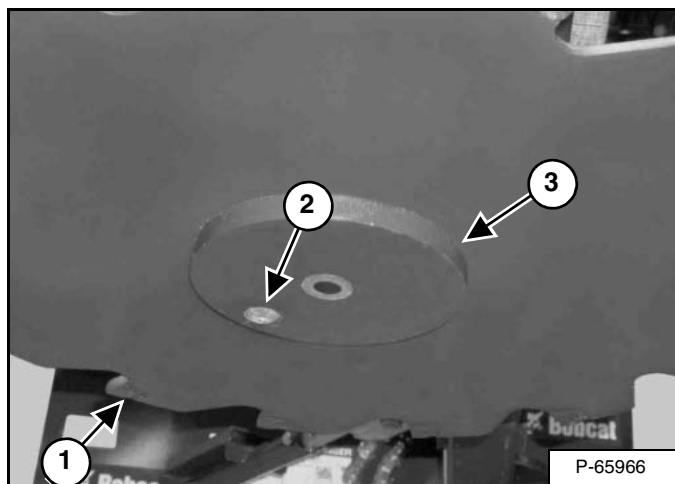
Figure 67



Use a wrench to hold the shaft (Item 1) [Figure 66] and remove the bolt (Item 1) [Figure 67].

Installation: Tighten the bolt to 320 N•m (235 ft-lb) torque.

Figure 68



Support the disc (Item 1) and remove the bolt (Item 2) and nut. Remove the plate (Item 3) [Figure 68] and disc.

Installation: Tighten the bolt to 125 - 135 N•m (90 - 100 ft-lb) torque.

REMOVAL AND INSTALLATION (CONT'D)

Cutting Teeth

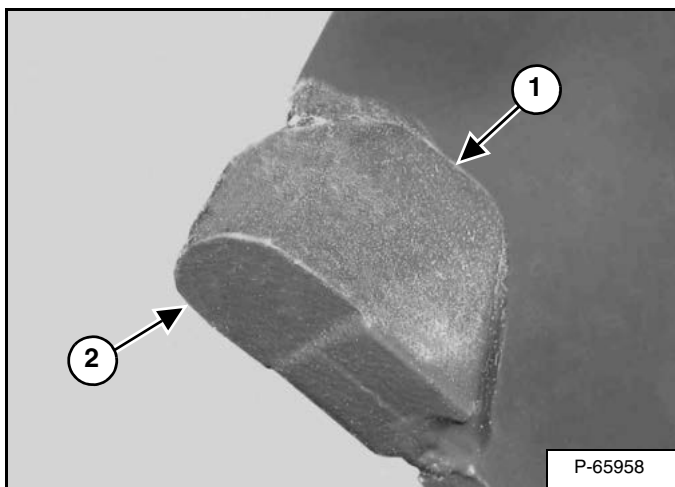
The cutting teeth are all offset the same direction from the disk. Note the position of the tooth before removal.

WARNING

Eye and body protection is required when welding or grinding. Wear approved goggles, helmet and clothing. Failure to wear eye and body protection can result in serious injury.

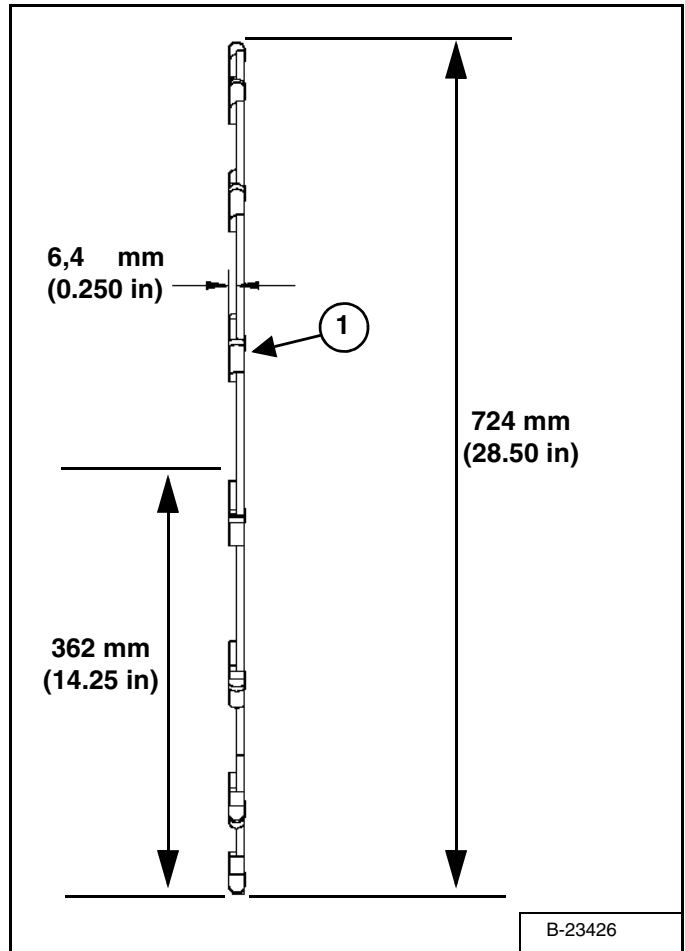
W-2009-1285

Figure 69



Grind the weld (Item 1) and remove the tooth (Item 2) [Figure 69].

Figure 70



Install the tooth (Item 1) [Figure 70] 6,4 mm (0.25 in) from the face of the disc, tack weld the tooth to the disc.

Repeat the pattern for the remaining cutting teeth.

Check the outside edge of the tooth to the outside edge of the opposite tooth as shown [Figure 70]. The dimension must be 724 mm (28.50 in).

Check the centre line of the disc to the outside edge of the tooth as shown [Figure 70]. The dimension must be 362 mm (14.25 in).

When the above dimensions are correct, final weld the teeth to the disc.

ATTACHMENT STORAGE AND RETURN TO SERVICE

Storage

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

- Thoroughly clean the attachment.
- Lubricate the attachment.
- Inspect the Bob-Tach wedge mounts, mounting flange and all welds on the attachment for wear and damage.
- Check for loose hardware, missing guards, or damaged parts.
- Replace worn or damaged parts.
- Check for damaged or missing decals. Replace if necessary.
- Place the attachment in a dry protected shelter.
- Place the attachment flat on the ground.

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

Return To Service

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

- Be sure all shields and guards are in place.
- Lubricate the attachment.
- Install and operate attachment, check for correct function.
- Check for leaks. Repair as needed.



SPECIFICATIONS

BRUSH SAW SPECIFICATIONS	77
Dimensions	77
Performance	77

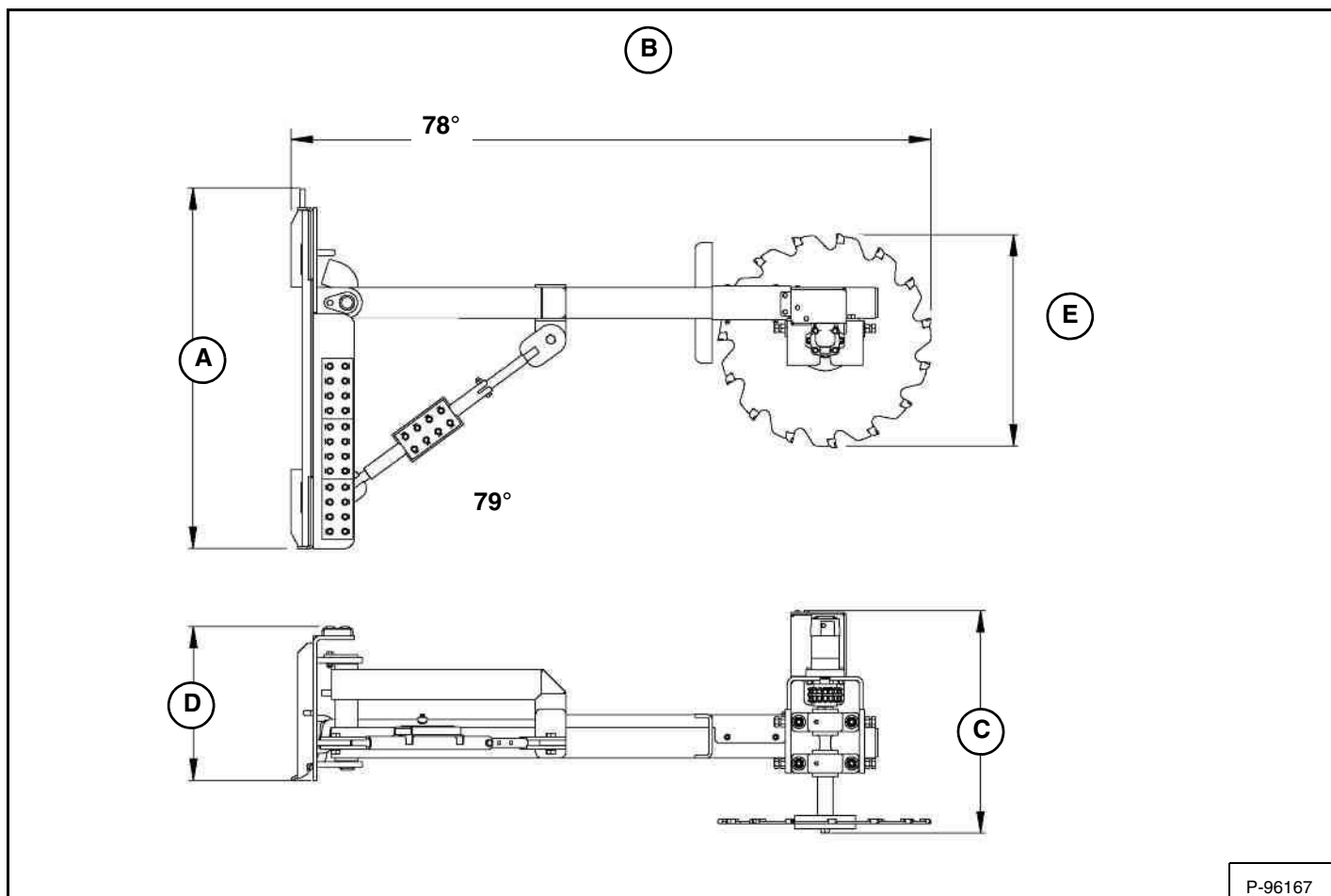
Certain specification(s) are based on engineering calculations and are not actual measurements. Specification(s) are provided for comparison purposes only and are subject to change without notice. Specification(s) for your individual Bobcat equipment will vary based on normal variations in design, manufacturing,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



BRUSH SAW SPECIFICATIONS

Dimensions

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



P-96167

Width (A)	1148,1 mm (45.20 in)
Length (B)	2158 mm (84.95 in)
Height @ mount (C)	748 mm (29.46 in)
Height @ motor (D)	518 mm (20.39 in)
Disc Diameter (E)	648 mm (25.4 in)

Performance

Weight	268 kg (590 lb)
Spindle Type	Ball Bearing
Flow Ranges	56,8 - 91 L/min (15 - 24 U.S. gpm)
Disc rpm @ 91 L/min (24 U.S. gpm)	436 rpm
Tip Speed - Cutting Teeth @ 91 L/min (24 U.S. gpm)	1000 m/min (3256 ft/min)
Number of Cutting Teeth	15
Motor Displacement	11.9 in 3 / Rev



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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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