



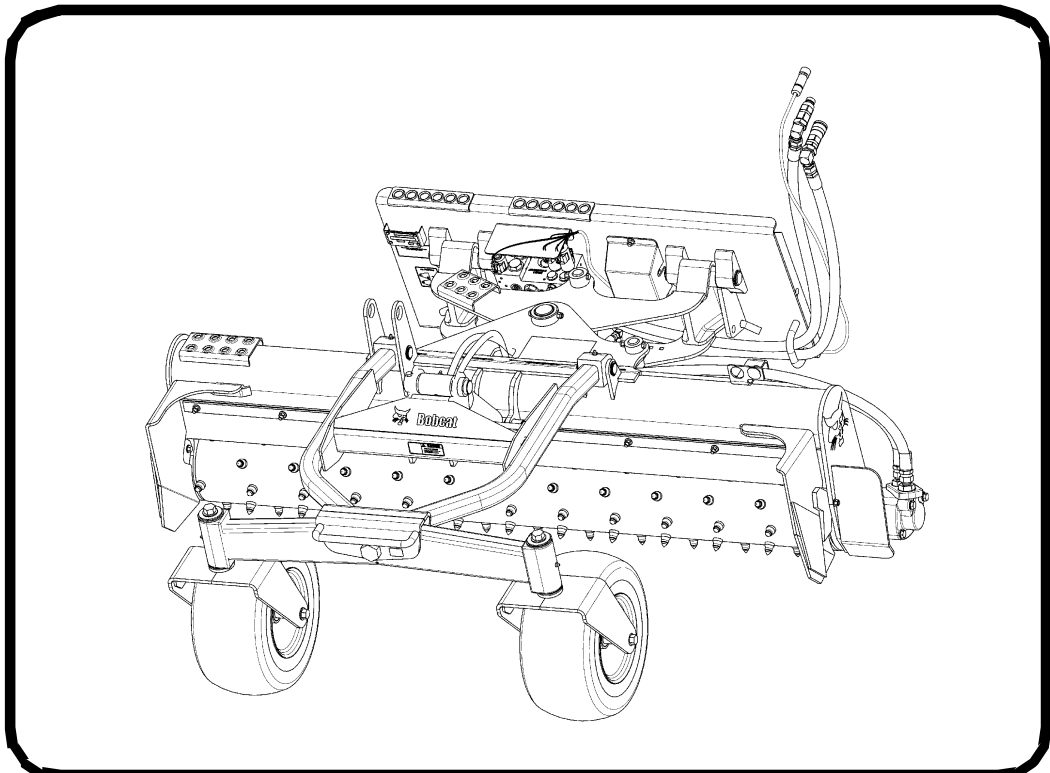
Bobcat®

EN

Operation & Maintenance Manual

Soil Conditioner

(60SCH) S/N A86R00101 & Above
(72SCM) S/N 651300101 & Above
(72SCH) S/N S6TE00101 & Above
(72SCHHF) S/N A6TD00101 & Above
(84SCH) S/N A6TG00101 & Above
(84SCHHF) S/N A6TH00101 & 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 Benelux SA
Drève Richelle 167
B-1410 Waterloo
BELGIUM



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)"**

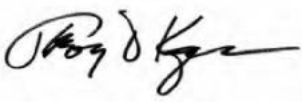
<p>Manufacturer</p>  <p>Bobcat Company World Headquarters 250 East Beaton Drive West Fargo, ND 58078-6000 UNITED STATES OF AMERICA</p>	<p>Equipment Also Compliant to Other EC Directive(s) or Standard(s) Listed Below:</p>
<p>Technical Documentation Doosan Benelux SA Drève Richelle 167 B-1410 Waterloo BELGIUM</p>	

Description of Equipment

Type of Interchangeable Equipment:	Soil Conditioner			
Model Name:	48SCM	60SCM	60SCH	72SCM
Model Code:				
Lot Series:	651500101 & above	A5PS00101 & above	A86R00101 & above	651300101 & above
Model Name:	72SCH	72SCHHF	84SCH	84SCHHF
Model Code:				
Lot Series:	S6TE00101 & above	A6TD00101 & above	A6TG00101 & above	A6TH00101 & above

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

Authorized Signatory and Place of Declaration



Troy Kraft
Vice President Engineering

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



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

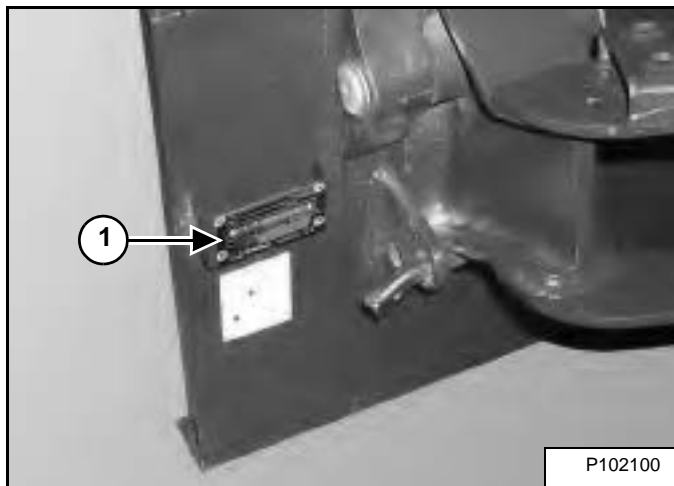
ISO 9001 means that as a company we say what we do and do what we say. In other words, we have established procedures and policies, and we provide evidence that the procedures and policies are followed.



SERIAL NUMBER LOCATION

Attachment Serial Number

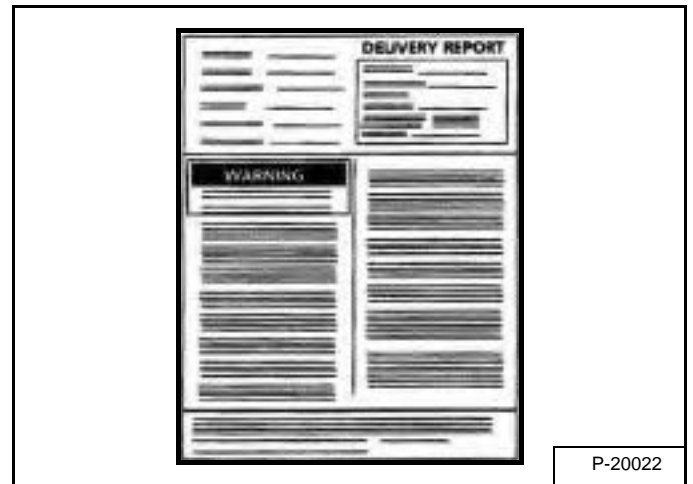
Figure 1



Always use the serial number (Item 1) **[Figure 1]** of the soil conditioner 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.

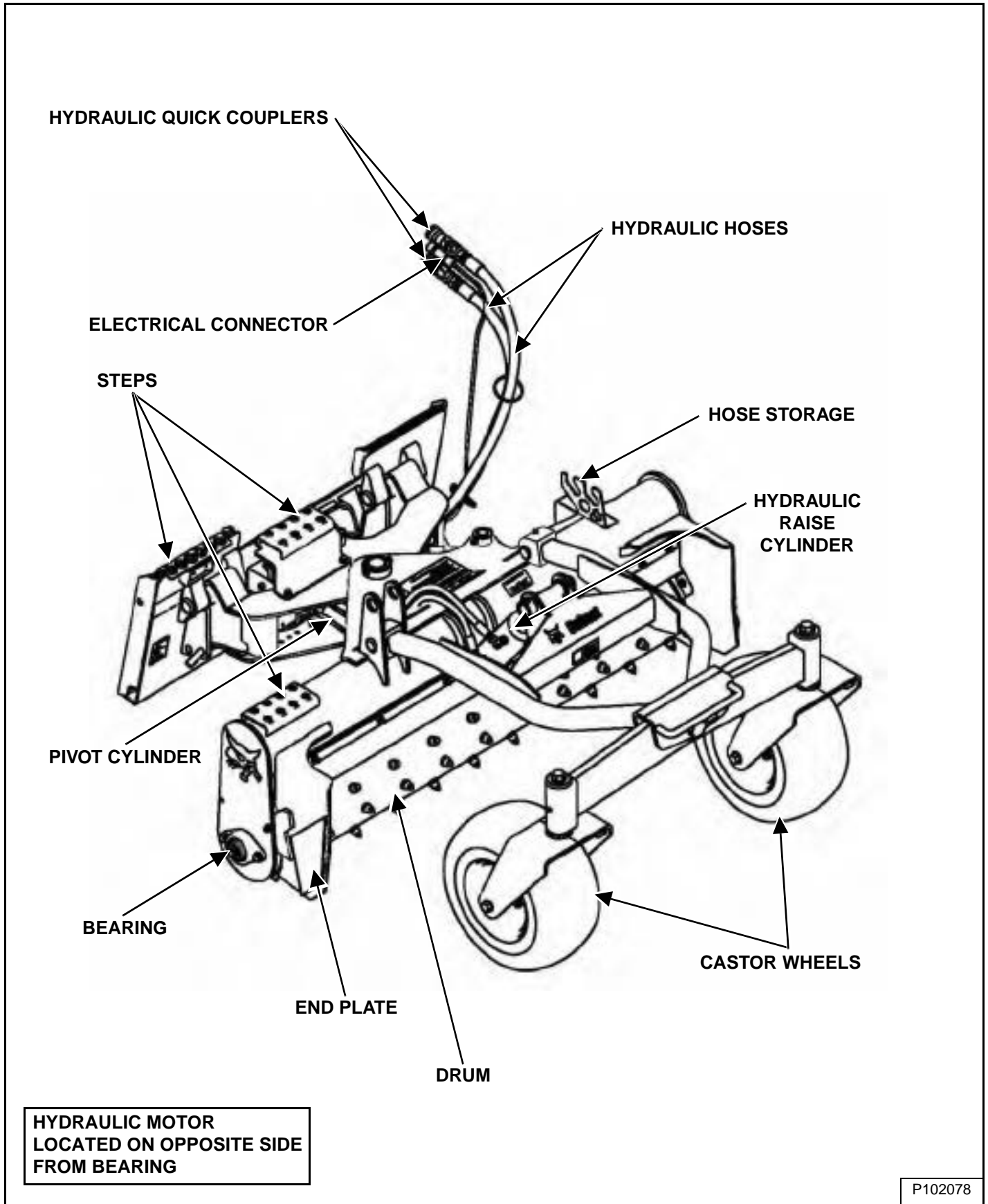
DELIVERY REPORT

Figure 2



The delivery report **[Figure 2]** must be completed by the dealer and signed by the owner or operator when the Bobcat soil conditioner is delivered. An explanation of the form must be given to the owner.

ATTACHMENT IDENTIFICATION



FEATURES AND ACCESSORIES

Standard Items

The soil conditioner is equipped with the following Standard Items:

- Flip-Up Front Bolster - Allows To Get Closer To Buildings and For Transporting.
- Direct-Drive Hydraulic Motor.
- Attachable End Plates For Box-Blade Effect.
- Manually or Hydraulically Angled.



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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.



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

W-2001-0502



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

I-2019-0284



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



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.

SI ATT EMEA-0909

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.

Starting

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

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

Spark Arrester Exhaust System

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

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

FIRE PREVENTION (CONT'D)

Welding And Grinding

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

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

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

Fire Extinguishers



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

PUBLICATIONS AND TRAINING RESOURCES

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

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



OPERATION & MAINTENANCE MANUAL

6986686

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



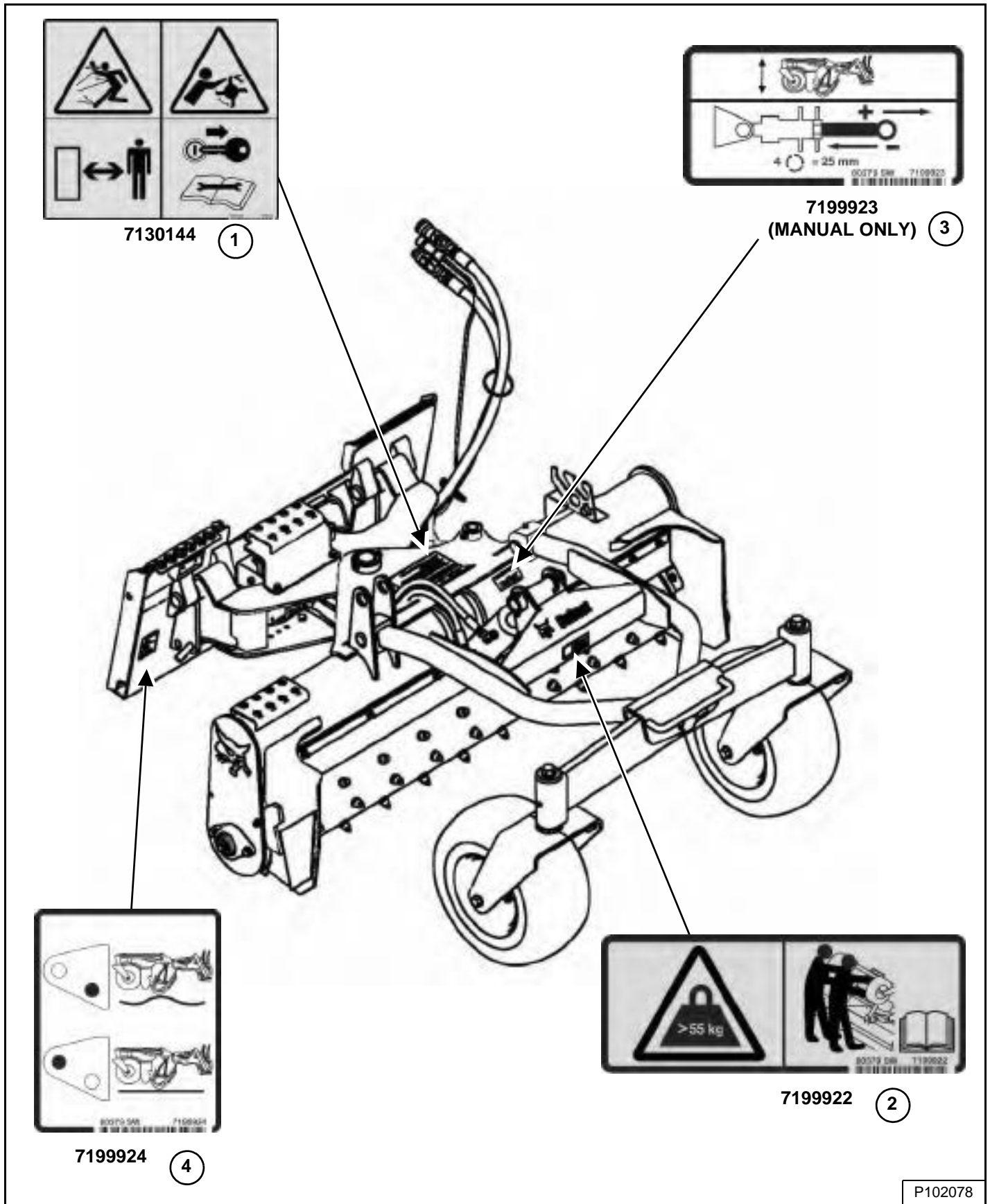
SERVICE MANUAL

6901113

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.

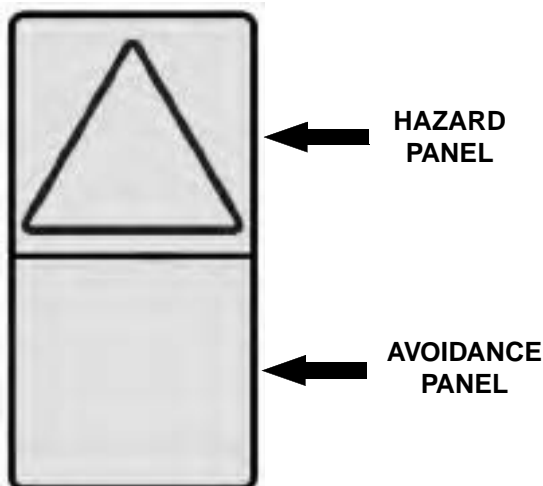


ATTACHMENT SIGNS (DECALS) (CONT'D)

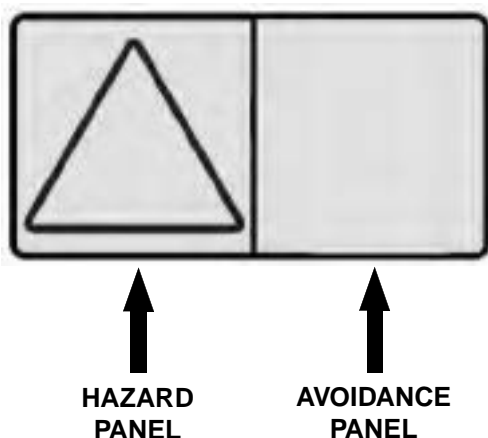
No-Text Safety Signs

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

Vertical Configuration



Horizontal Configuration



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

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

Avoidance panels depict actions required to avoid the hazards.

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

NOTE: See the numbered ATTACHMENT SIGNS (DECALS) on Page 20 for the location of each correspondingly numbered no-text decal.

1. Warning (7130144)

This safety sign is located on the top of the soil conditioner pivot frame.



FLYING OBJECTS AND ROTATING PARTS CAN CAUSE INJURY OR DEATH

- Stay at least 3 m (10 ft) away from operating equipment.
- Stop engine before cleaning or servicing.
- Keep all guards in place.

W-2706-0910

ATTACHMENT SIGNS (DECALS) (CONT'D)

No-Text Safety Signs (Cont'd)

2. Warning (7199922)

This safety sign is located on the front of the soil conditioner frame.



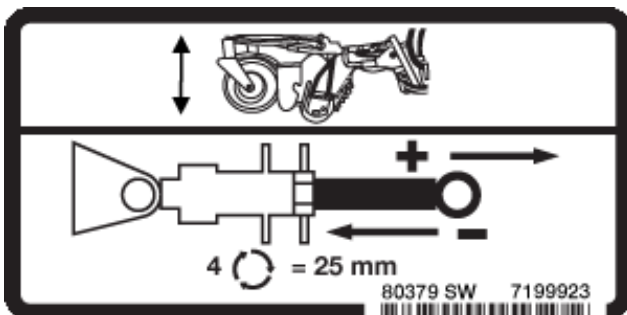
AVOID INJURY OR DEATH

- Heavy tyre assembly requires two persons to lift.
- Use pin to lock in up position.

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3. Depth Adjustment (7199923)

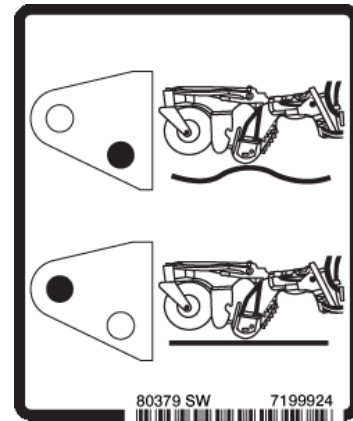
This operation sign is located on the soil conditioner frame.



For more information on depth adjustment (See Depth Adjustment Guidelines on Page 45.)

4. Float / Lock Positions (7199924)

This operation sign is located on the front right side of the soil conditioner mounting frame.



For more information on float / lock positions (See Float / Lock Position on Page 46.)

OPERATING INSTRUCTIONS

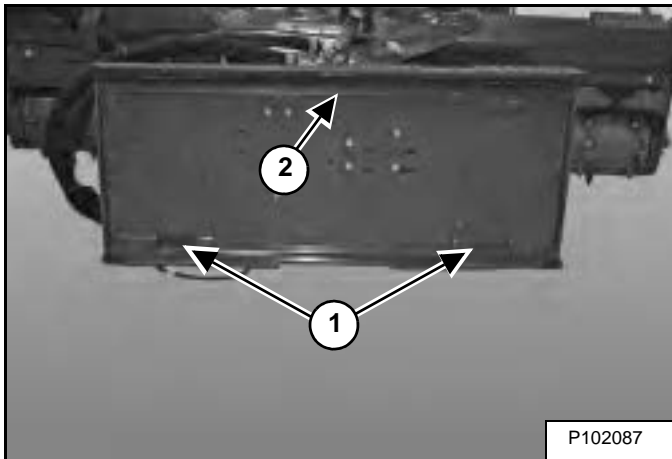
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DAILY INSPECTION

Attachment Mounting Frame

Figure 3



Inspect the Bob-Tach™ wedge mounts (Item 1) mounting flange (Item 2) [Figure 3], and all welds on the attachment mount for wear or damage each time the attachment is removed from the machine.

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

Bob-Tach

Hand Lever Bob-Tach

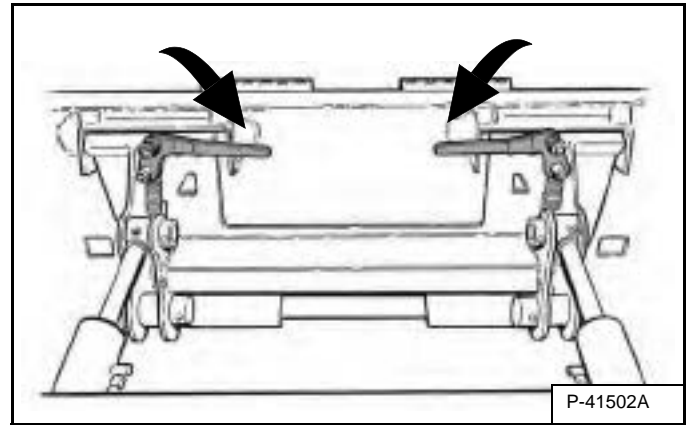
WARNING

AVOID INJURY OR DEATH

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

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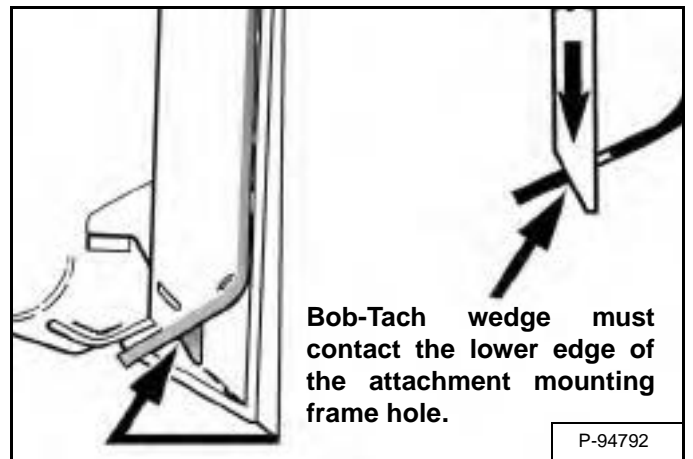
Figure 4



Push down on the Bob-Tach levers until they are fully engaged in the locked position [Figure 4] (wedges fully extended through the attachment mounting frame holes).

The levers and wedges must move freely [Figure 4].

Figure 5



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 5].

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 6

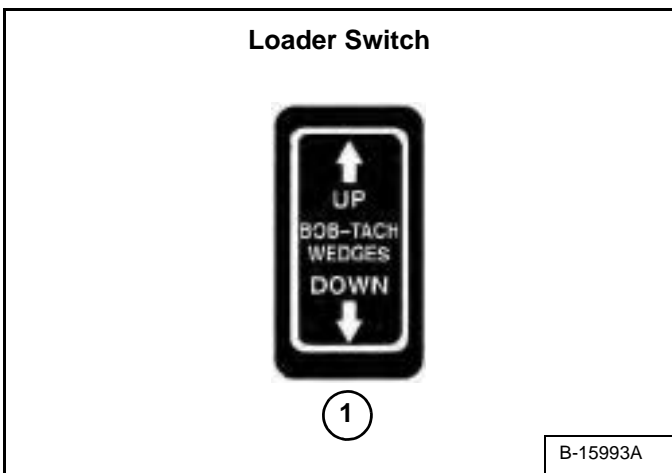
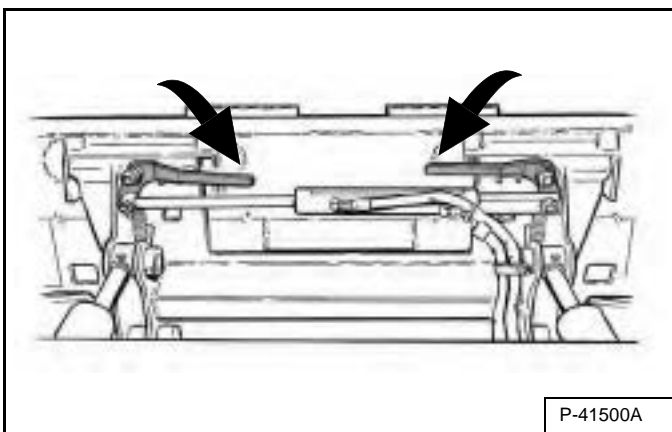
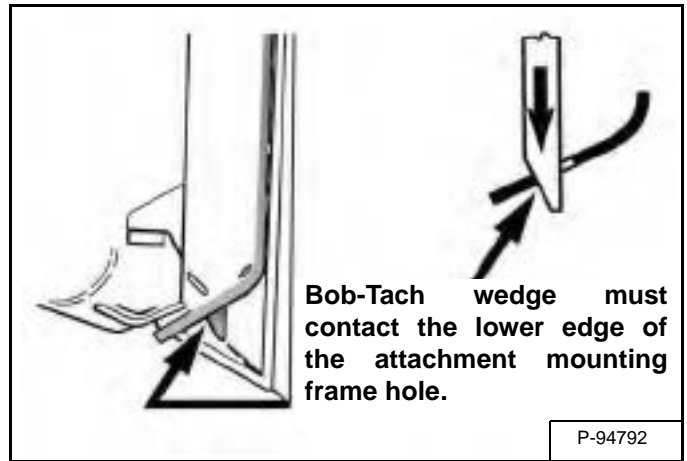


Figure 7



Push and hold the BOB-TACH "WEDGES DOWN" switch (Item 1) [Figure 6] until the levers are fully engaged in the locked position [Figure 7] (wedges fully extended through the attachment mounting frame holes).

Figure 8



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 8].

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 and 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.)

OPERATING PROCEDURE WITH LOADERS

Approved Loader Models And Requirements

Figure 9

LOADER MODEL	SOIL CONDITIONER					
	60SCH	72SCM	72SCH	72SCHHF	84SCH	84SCHHF
A300		X	X	X	X	X
S100	X					
S130	X	X	X			
S150	X	X	X			
S160	X	X	X	X		
S175	X	X	X		X	
S185	X	X	X	X	X	
S205	X	X	X	X	X	
S220		X	X	X	X	X
S250		X	X	X	X	X
S300		X	X	X	X	X
S330		X	X	X	X	X
S510	X	X	X		X	
S530	X	X	X		X	
S550	X	X	X	X	X	
S570	X	X	X	X	X	
S590	X	X	X	X	X	
S630		X	X	X	X	X
S650		X	X	X	X	X
S770		X	X	X	X	X
S850					X	X
T110	X					
T140	X	X	X			
T180	X	X	X	X	X	
T190	X	X	X	X	X	
T250				X	X	X
T300				X	X	X
T550	X	X	X	X	X	
T590	X	X	X	X	X	
T320				X	X	X
T650		X	X	X	X	X
T770					X	X
T870					X	X

X = Approved

The chart [Figure 9] shows the approved soil conditioner models for each loader 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.



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 10

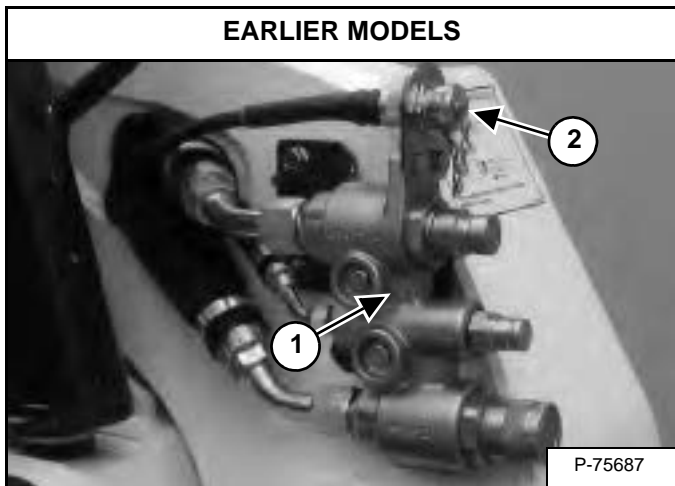
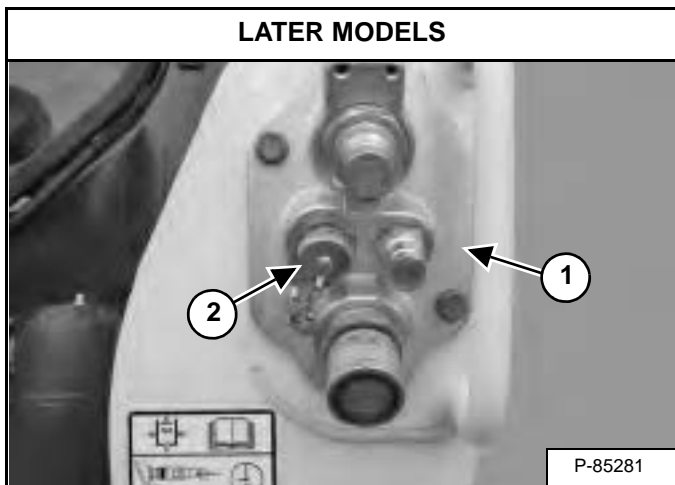


Figure 11



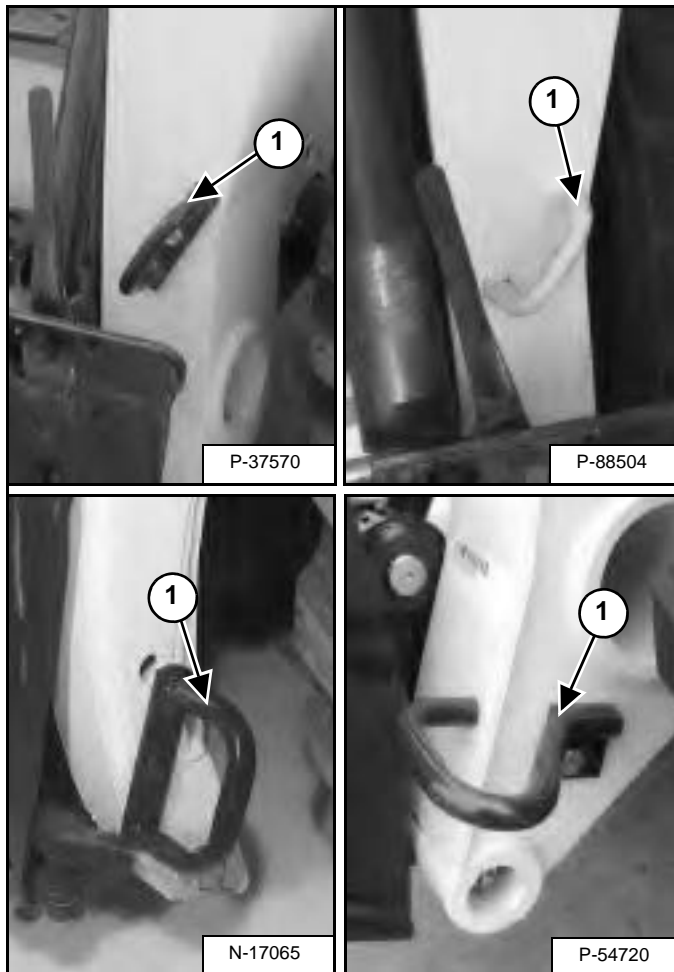
The loader must be equipped with front auxiliary hydraulics (Item 1) and a 7 pin electrical attachment control kit (Item 2) [Figure 10] or [Figure 11]. See your Bobcat Loader dealer for available kits for your model loader.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Machine / Attachment Setup

Hose Guide Installation (Earlier Version)

Figure 12



Install the correct hose guide (Item 1) [Figure 12] 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

Always enter and exit the loader from the right side.

NOTE: The right and left side of the loader as viewed from the operator seat.

 **WARNING**

AVOID INJURY

Enter the loader from the right side only.

W-2192-0595

 **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

Entering

Figure 13



Use the attachment steps, grab handles and safety treads (on the loader lift arms and frame) to get on and off the loader [Figure 13]. Do not jump.

Figure 14



Enter the loader. Fasten the seat belt and adjust it so the buckle is centred between your hips [Figure 14].

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Entering And Exiting The Loader (Cont'd)

Exiting (Cont'd)

Figure 15



Lower the seat bar and engage parking brake [Figure 15].

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.

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 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.

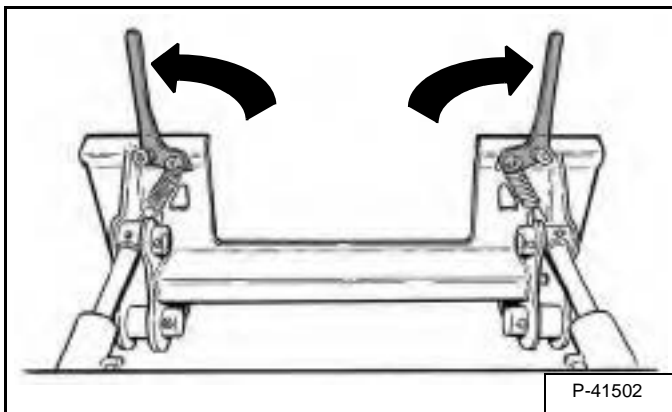
WARNING

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 25.)

Figure 16

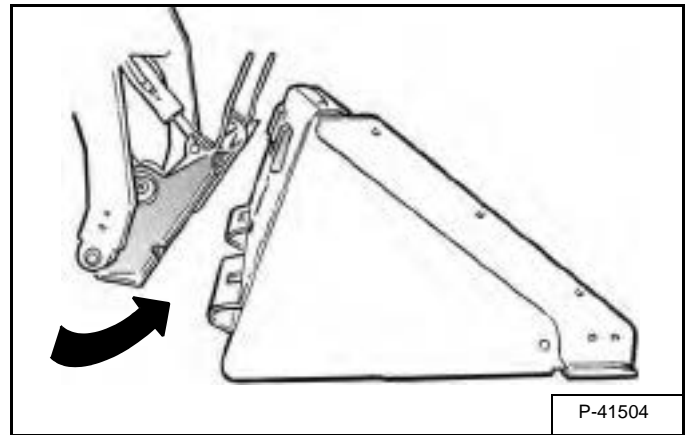


Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) [Figure 16].

Enter the loader. (See Entering And Exiting The Loader on Page 30.)

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

Figure 17

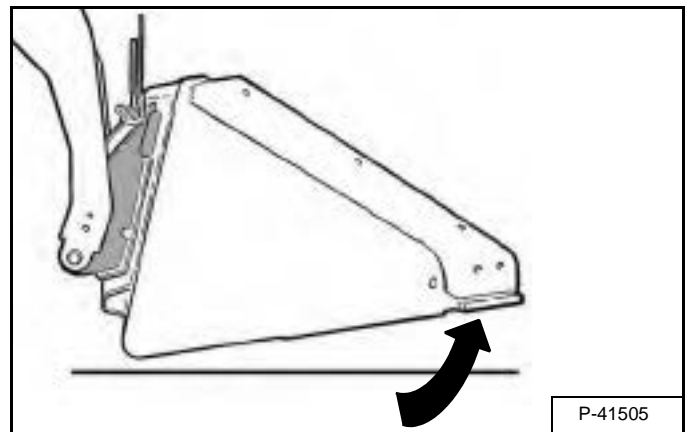


Lower the lift arms and tilt the Bob-Tach forward.

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 17].

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

Figure 18



Tilt the Bob-Tach backward until the attachment is slightly off the ground [Figure 18]. 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 30.)

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

! WARNING

AVOID INJURY OR DEATH

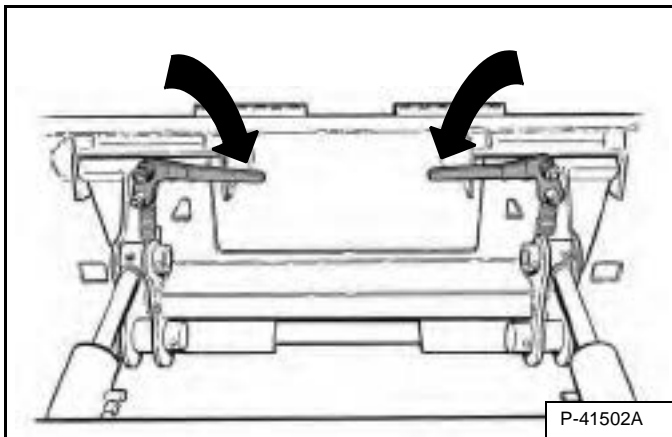
Before you leave the operator's seat:

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

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

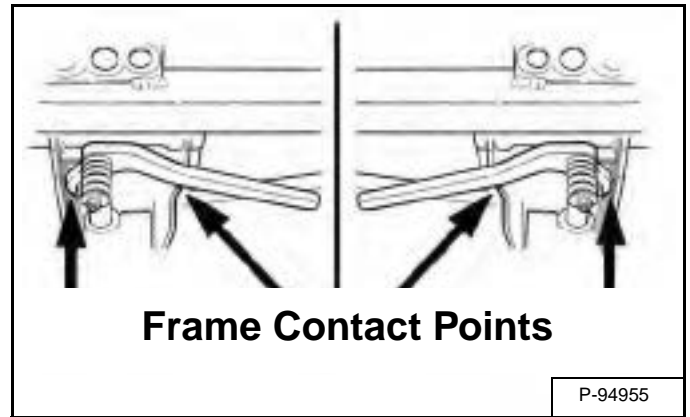
W-2463-1110

Figure 19



Push down on the Bob-Tach levers until they are fully engaged in the locked position [Figure 19] (wedges fully extended through the attachment mounting frame holes).

Figure 20



Both levers must contact the frame as shown when locked [Figure 20].

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

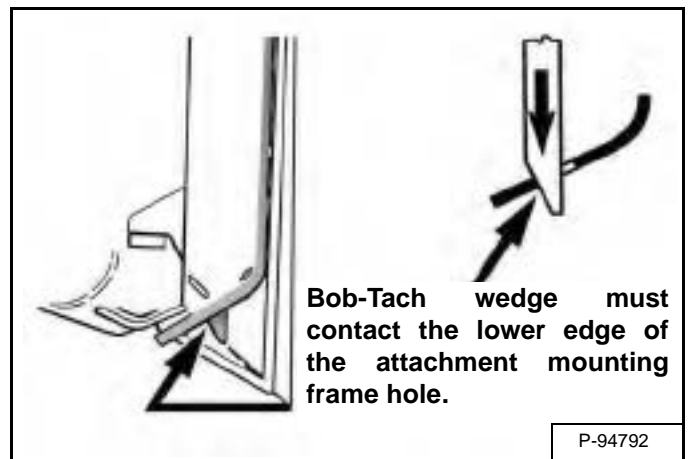
! WARNING

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 21



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 21].

Connect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 38.)

Connect wire harness. (See Electrical Harness on Page 39.)

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 30.)

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

Figure 22

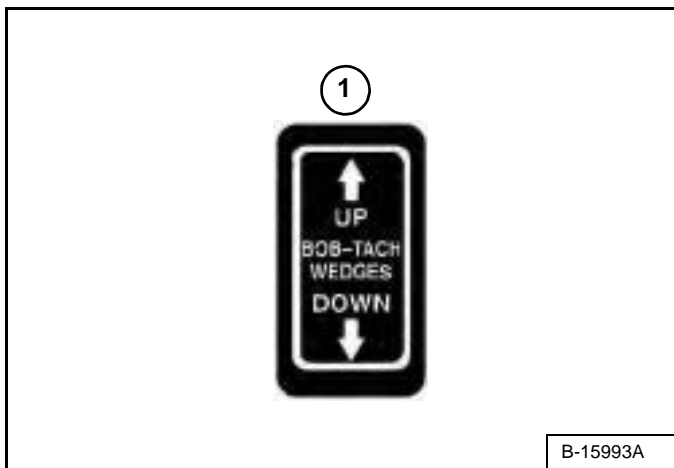
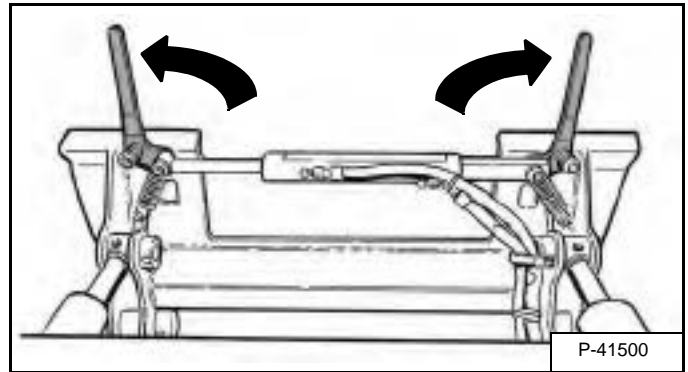
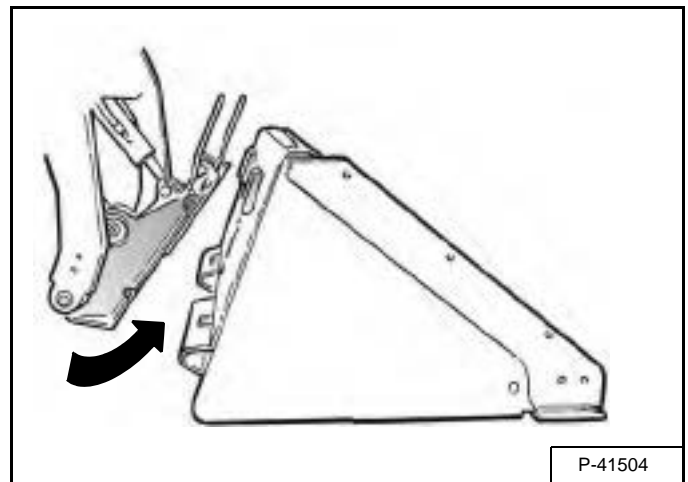


Figure 23



Push and hold the BOB-TACH "WEDGES UP" switch (Item 1) [Figure 22] until the levers are fully raised (wedges fully raised) [Figure 23].

Figure 24



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 24].

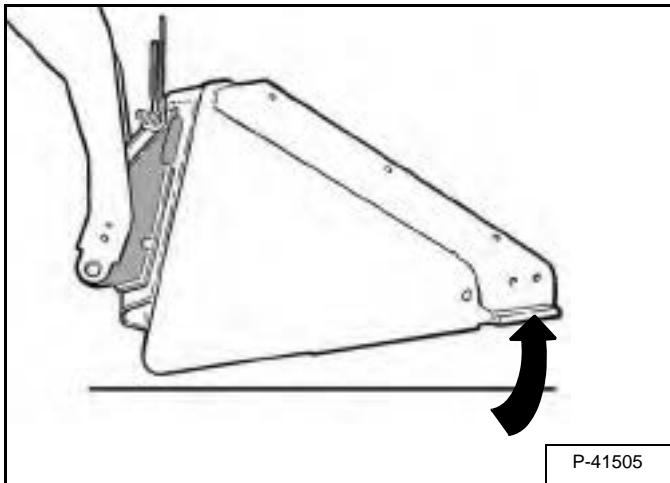
NOTE: Be sure the Bob-Tach levers do not hit the attachment.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

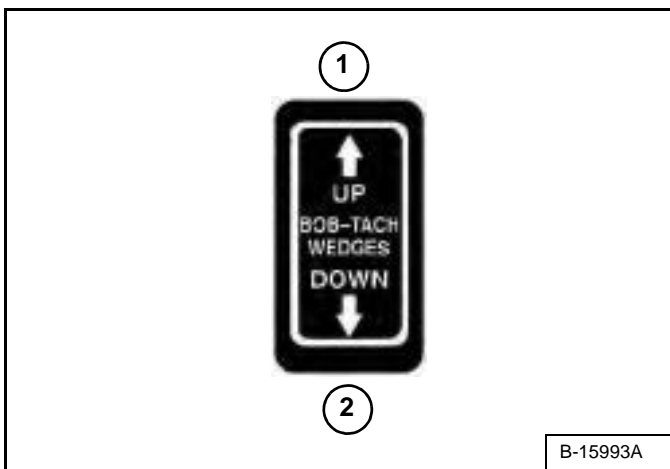
Power Bob-Tach (Cont'd)

Figure 25



Tilt the Bob-Tach backward until the attachment is slightly off the ground [Figure 25]. This will cause the attachment mounting frame to fit up against the front of the Bob-Tach.

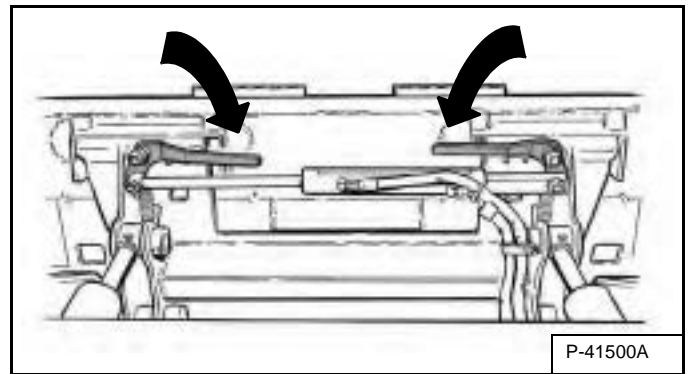
Figure 26



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.

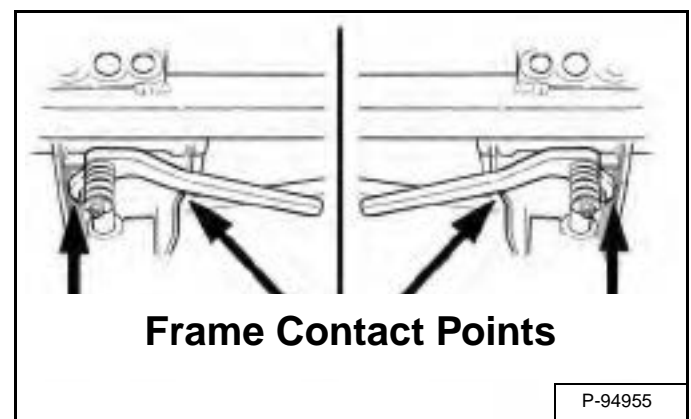
Push and hold the BOB-TACH “WEDGES UP” switch (Item 1) [Figure 26] until the levers are fully raised (wedges fully raised).

Figure 27



Push and hold the BOB-TACH “WEDGES DOWN” switch (Item 2) [Figure 26] until the levers are fully engaged in the locked position [Figure 27] (wedges fully extended through the attachment mounting frame holes).

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.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Power Bob-Tach (Cont'd)

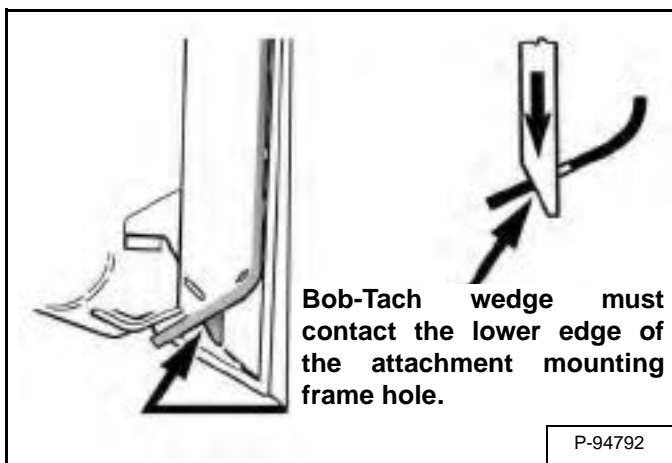
! WARNING

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]**.

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 30.)

! WARNING

AVOID INJURY OR DEATH

Before you leave the operator's seat:

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

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

W-2463-1110

Connect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 38.)

Connect wire harness. (See Electrical Harness on Page 39.)

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 38.)

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 30.)

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

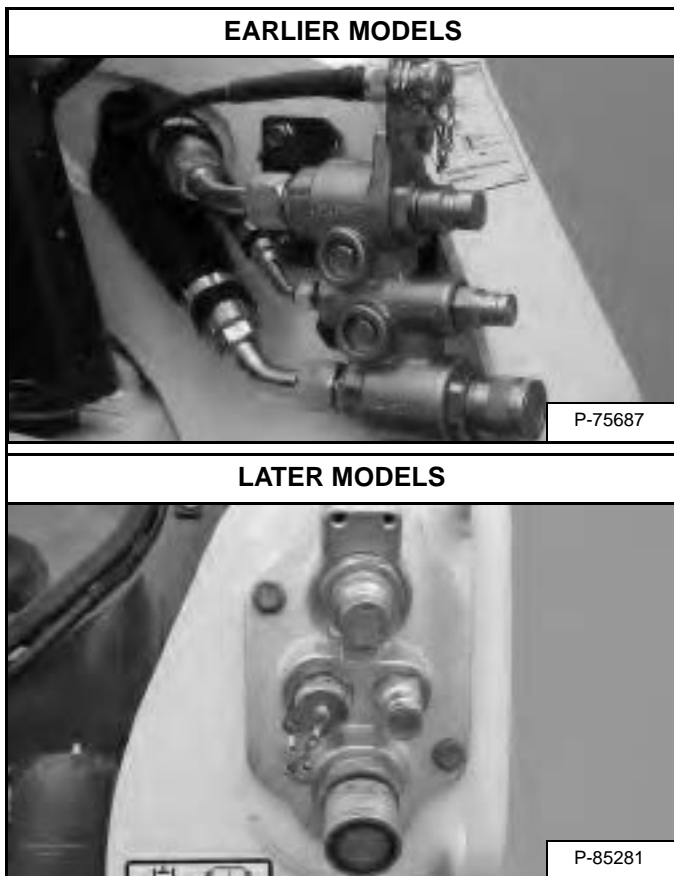
- Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.
- Contain and dispose of any oil leakage in an environmentally safe manner.

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 30



! 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 30].

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 attachment or loader. (See For First Time Installation on Page 37.) for proper adjustment.

To Disconnect:

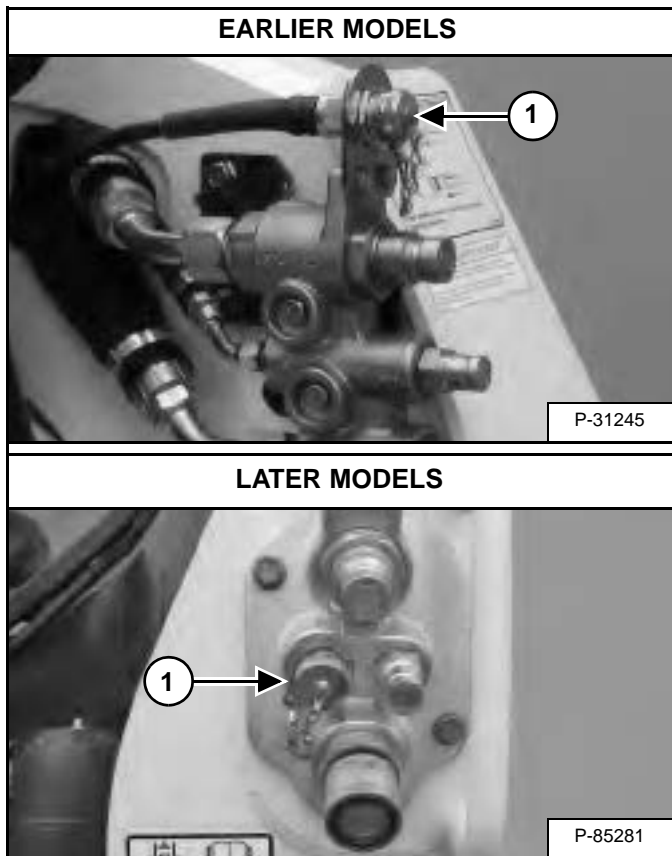
Relieve hydraulic pressure. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

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

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Electrical Harness

Figure 31



Connect the 7-pin attachment wire harness (Item 1) [Figure 31] to the electrical connector on the loader.

NOTE: A kit is available to convert new attachments with 7-pin connectors (Item 1) [Figure 31] to a 14-pin harness connector for use with older loaders. See your Bobcat dealer for available kits.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

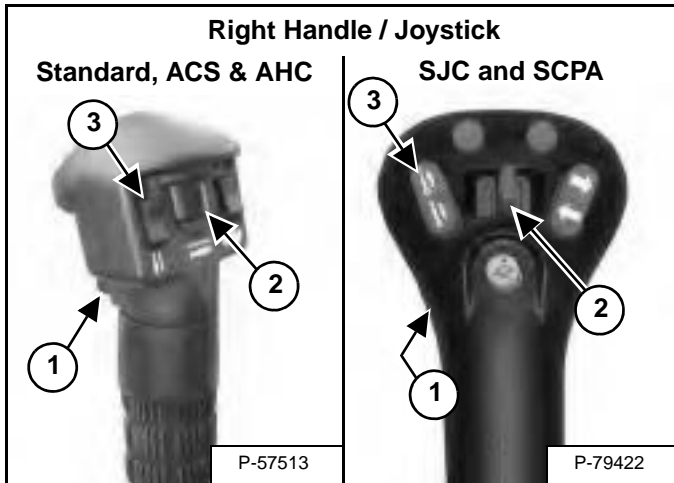
Control Functions

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.

7-Pin Electric Auxiliary Hydraulic Controls

Figure 32



Tilt the soil conditioner backward so the teeth are above the ground.

To start the drum in forward rotation, push the trigger switch (Item 1) [Figure 32]. To stop the drum, push the trigger switch a second time.

To start the drum in momentary reverse rotation, push and hold the switch (Item 2) [Figure 32] to the left. To stop the drum rotating, let go of switch.

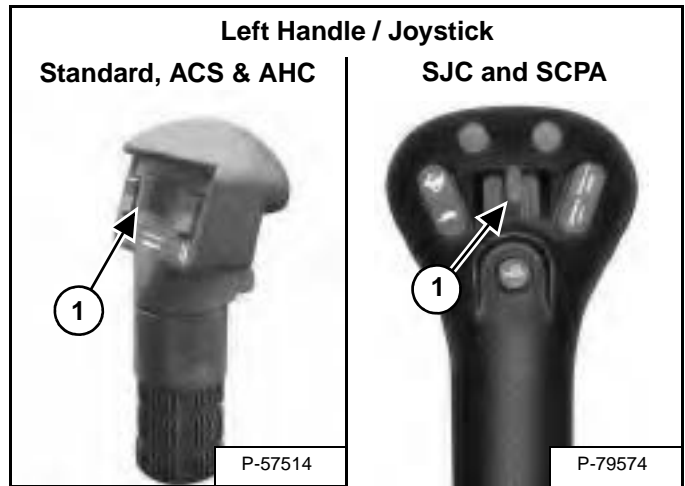
To start the drum in constant reverse rotation, push the switch (Item 2) to the left and push the trigger switch (Item 1) [Figure 32]. To stop the drum rotating, push the trigger switch a second time.

To raise the drum, push the switch (Item 3) up. To lower the drum, push the switch (Item 3) [Figure 32] down.

NOTE: Switch (Item 3) [Figure 32] requires the drum to be rotating to be activated.

To Angle The Soil Conditioner (Hydraulic Version)

Figure 33



To angle to the right, push the switch (Item 1) [Figure 33] to the right.

To angle to the left, push the switch (Item 1) [Figure 33] to the left.

NOTE: Switch (Item 1) [Figure 33] requires the drum to be rotating to be activated.

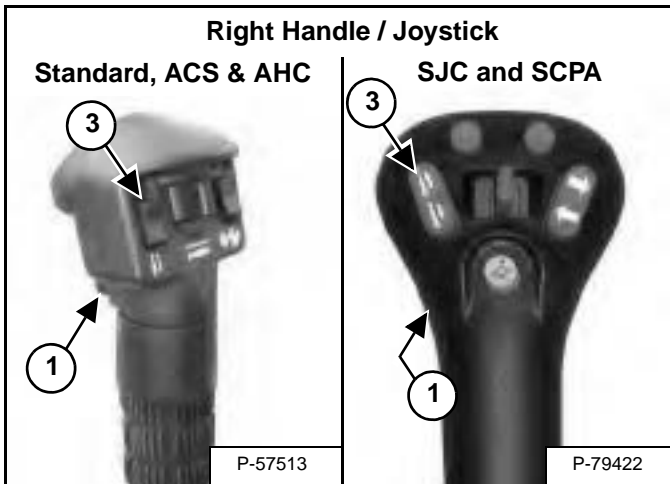
OPERATING PROCEDURE WITH LOADERS (CONT'D)

To Angle The Soil Conditioner (Hydraulic Version)

Control Functions (Cont'd)

14-Pin Electric Auxiliary Hydraulic Controls

Figure 34



Tilt the soil conditioner backward so the teeth are above the ground.

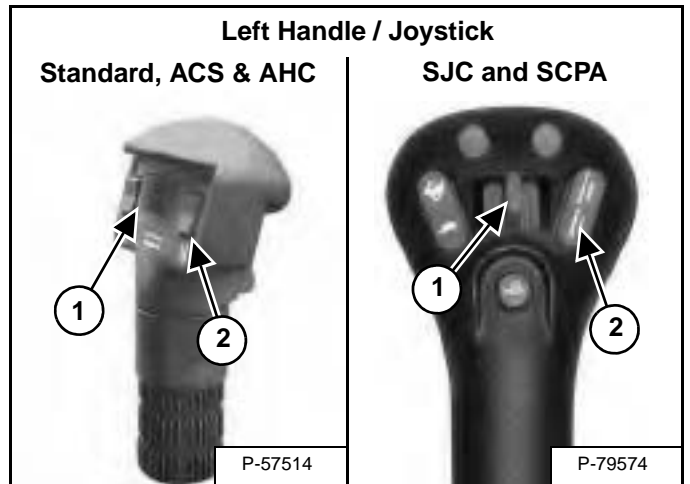
To start the drum in forward rotation, push the trigger switch (Item 1). To stop the drum, push the trigger switch (Item 1) [Figure 34] a second time.

To start the drum in momentary reverse rotation, push and hold the switch (Item 2) [Figure 35] down. To stop the drum rotating, let go of switch.

To start the drum in constant reverse rotation, push and hold the switch (Item 2) [Figure 35] down while pushing the trigger switch (Item 1) [Figure 34]. To stop the drum rotating, push the trigger switch (Item 1) [Figure 34] a second time.

To raise the drum, push the switch (Item 3) up. To lower the drum, push the switch (Item 3) [Figure 34] down.

Figure 35



To angle to the right, push the switch (Item 1) [Figure 35] to the right.

To angle to the left, push the switch (Item 1) [Figure 35] to the left.

NOTE: Attachment auxiliaries are NOT required to be activated when adjusting the depth or angle of the drum. If the soil conditioner is not already rotating, angling or raising the drum will cause momentary drum rotation. Caution should be taken when loading on a trailer, or placing the soil conditioner on a hard surface (i.e. parking lot).



WARNING

AVOID INJURY OR DEATH

Drum will start rotating immediately when either the angle or height controls are activated. Keep a safe distance of 3 m (10 ft) away when in operation.

W-2725-0910

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Control Functions (Cont'd)

To Angle The Soil Conditioner (Manual Version)

Stop the engine and exit the loader.

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 36

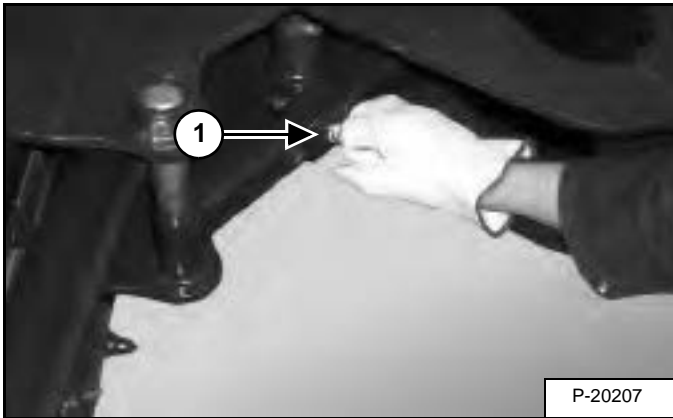
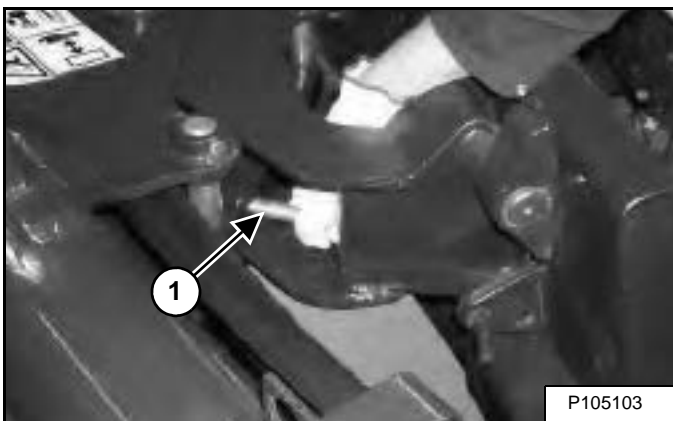


Figure 37



To manually angle the soil conditioner to the left or the right, remove the pin (Item 1) [Figure 36], angle the soil conditioner to the left or right, reinstall the pin (Item 1) [Figure 37].

Operation With The Loader

! WARNING

FLYING OBJECTS AND ROTATING PARTS CAN CAUSE INJURY OR DEATH

- Stay at least 3 m (10 ft) away from operating equipment.
- Stop engine before cleaning or servicing.
- Keep all guards in place.

W-2706-0910

Figure 38



The soil conditioner [Figure 38] is used to clear rocks, debris, grass, weeds, and other materials. The soil conditioner prepares the soil by making it level, smooth and ready for landscaping.

Figure 39

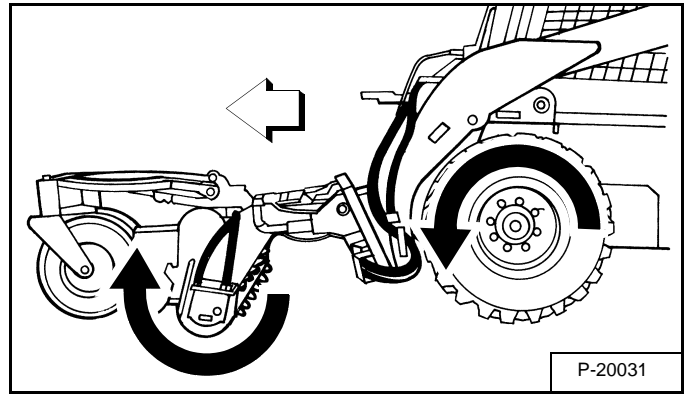
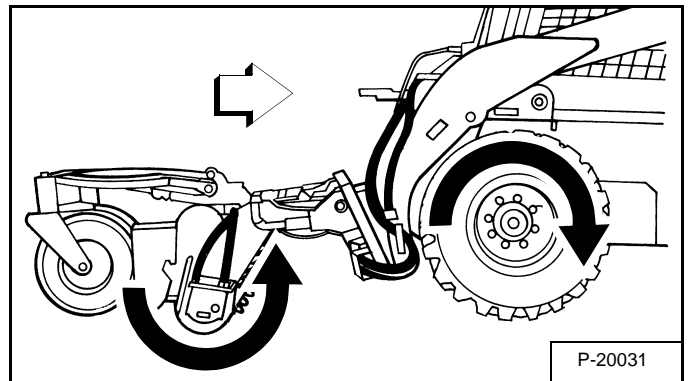


Figure 40



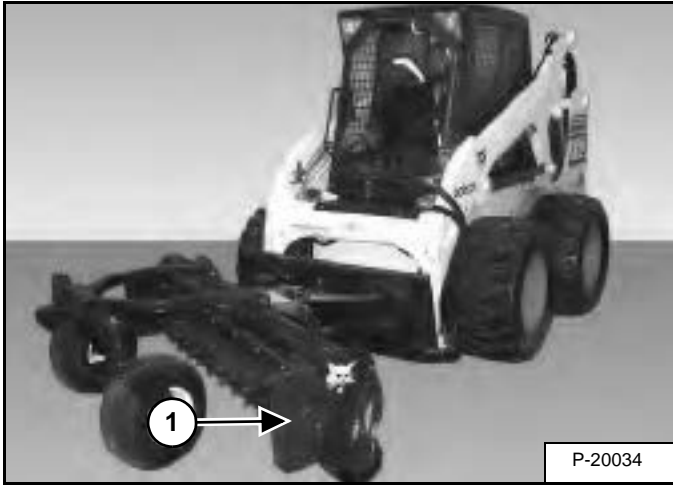
The drum rotates the opposite direction of the tyres, forward travel [Figure 39] or reverse travel [Figure 40].

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Operation With The Loader (Cont'd)

End Plates

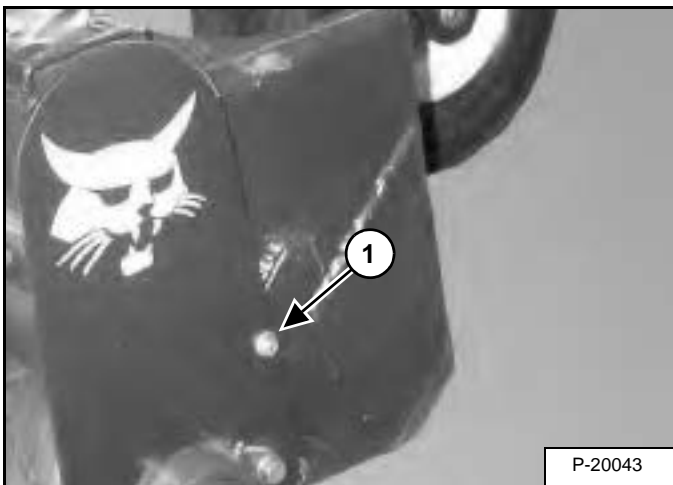
Figure 41



The end plates (Item 1) [Figure 41] located at each end of the frame help contain the material in front of the drum.

Each end plate can be removed individually if material needs to be angled to the outside.

Figure 42



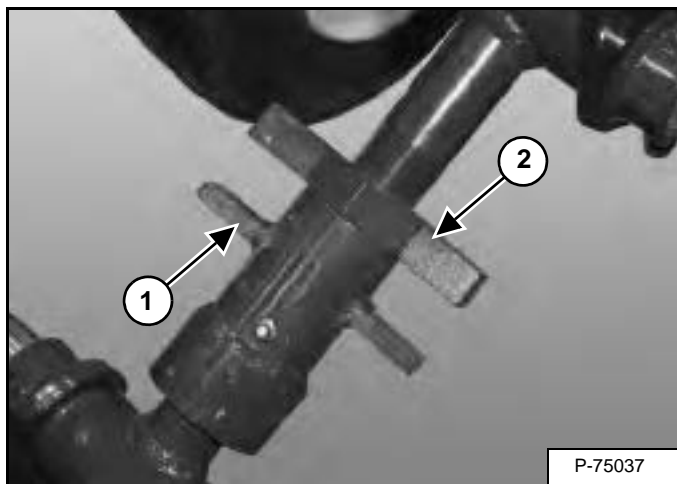
To remove the end plate, remove the nut and bolt (Item 1) [Figure 42] holding the end plate to the frame.

Installation: Tighten the bolt and nut to 54 N•m (40 ft-lb) torque.

Operating With The Loader (Cont'd)

Manual Height Adjustment

Figure 43

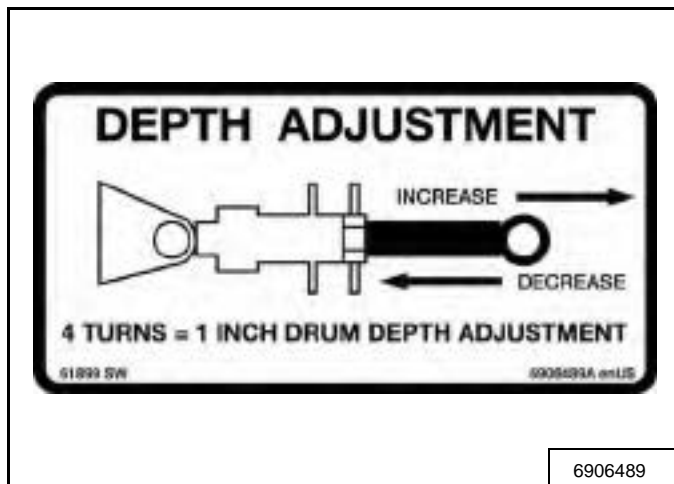


To adjust the operating depth of the soil conditioner, loosen the bottom nut (Item 1) [Figure 43] with a hammer.

Adjust the bottom nut (Item 1) and top nut (Item 2) [Figure 43] to proper location. (See Depth Adjustment Guidelines on Page 45.)

Tighten the bottom nut (Item 1) [Figure 43] with a hammer.

Figure 44



The thread length [Figure 44] determines the depth of the soil conditioner.

NOTE: Increasing the thread length will increase the depth.

Figure 45

MAXIMUM DRUM DEPTH	THREAD LENGTH	
	FLOAT	LOCKED
25,4 mm. (1 in)	31,8 mm (1.25 in)	12,7 mm (0.5 in)
51 mm (2 in)	38,1 mm (1.5 in)	25,4 mm (1 in)
76,2 mm (3 in)	50,8 mm (2 in)	38,1 mm (1.5 in)

The chart [Figure 45] shows the thread length needed to achieve a certain depth in the float or locked position.



AVOID INJURY OR DEATH

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

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

W-2019-0907

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Operating With The Loader (Cont'd)

Float / Lock Position

The float setting allows you to control the height of the drum by using the loader tilt function. When in the float position the wheels follow the ground contours.

Figure 46

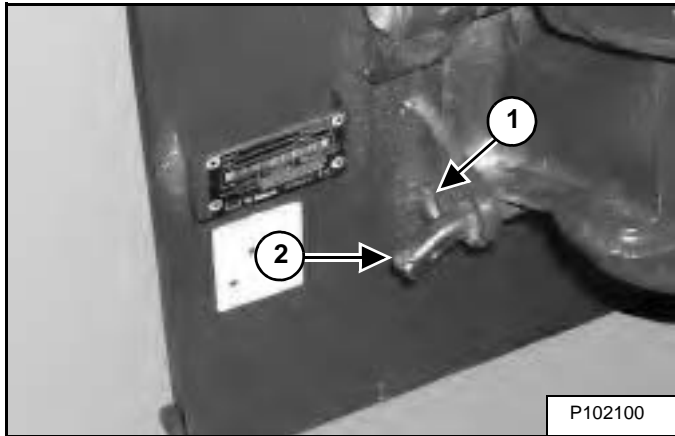
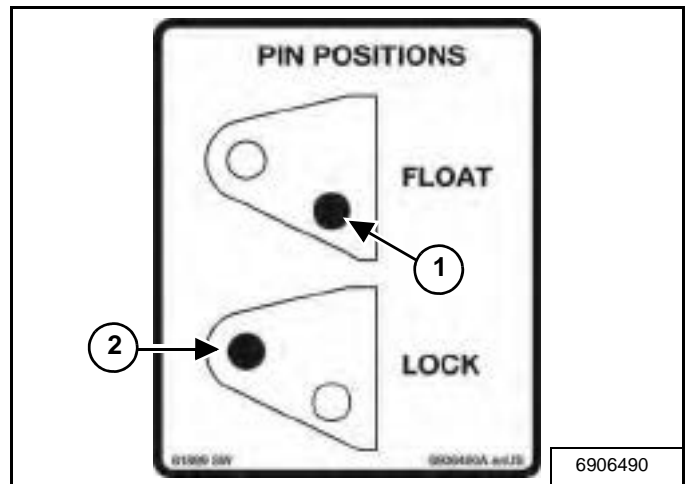


Figure 47



Set the pins (one on each side) to the float position (Item 1) [Figure 46] and [Figure 47].

Use the loader tilt function to control how deep the drum goes into the soil.

Start the drum rotating in forward or reverse. Drive in forward or reverse slowly, increase speed as required.

The locked setting allows you to set a constant height and maintain that height while in the soil.

Set the pins (one on each side) to the locked position (Item 2) [Figure 46] and [Figure 47].

Fully lower the lift arms. Use the loader tilt function to position the drum into the soil, enough to lift the front tyres of the loader slightly off the ground.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Operating With The Loader (Cont'd)

Float / Lock Position (Cont'd)

NOTE: The lift arms may raise slightly while operating in the locked setting. Check periodically to make sure the lift arms are fully lowered.

Start the drum rotating in forward or reverse.

Drive in forward or reverse slowly to make sure the height setting is correct. Adjust the loader tilt function if needed. Increase speed as required.

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

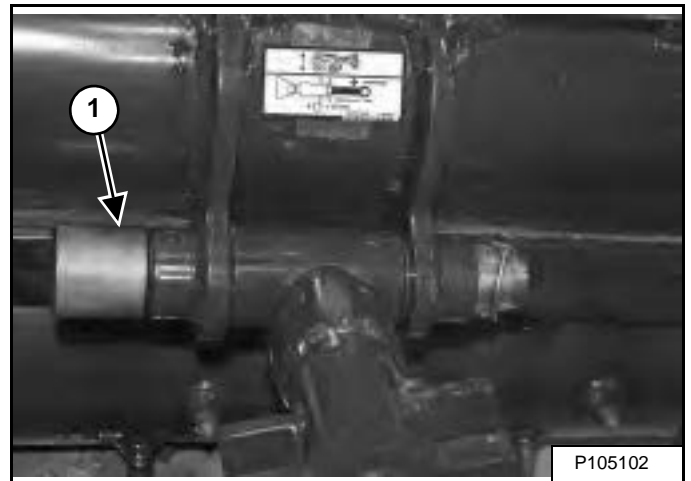
Raising The Tyre Assembly

Figure 48



The tyre assembly can be positioned upright to operate closer to an edge or fence line [Figure 48].

Figure 49



To move the tyre assembly to the upright position, remove the pin (Item 1) [Figure 49].

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Operating With The Loader (Cont'd)

Raising The Tyre Assembly (Cont'd)

WARNING

AVOID INJURY OR DEATH

- Heavy tyre assembly requires two persons to lift.
- Use pin to lock in up position.

W-2707-EN-0210

NOTE: Two people are required to lift or lower the tyre assembly.

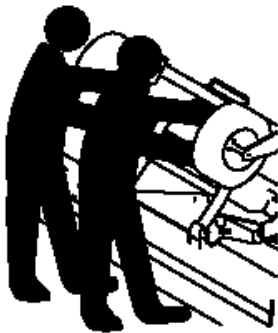
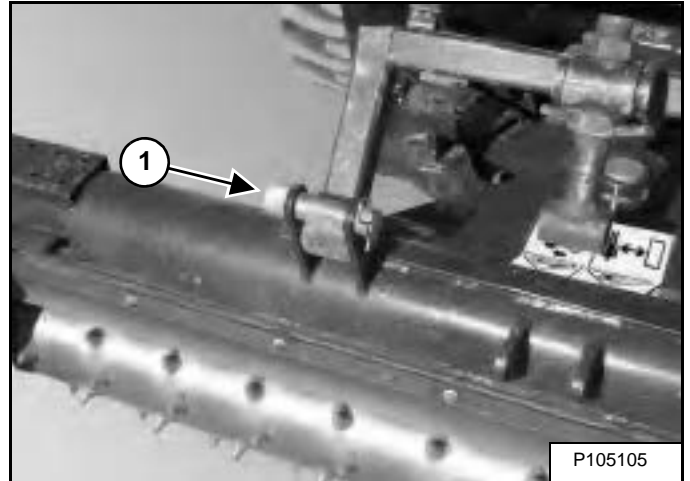


Figure 50



Rotate the tyre assembly up [Figure 50].

Figure 51



Reinstall the pin to lock up the tyre assembly (Item 1) [Figure 51].

Removal

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 30.)



AVOID INJURY OR DEATH

- Always lower the bolster wheels before removing the soil conditioner from the machine.
- Removing the soil conditioner with the bolster wheels raised can cause the soil conditioner to tip or roll resulting in serious injury or death.

W-2891-0810

Figure 52

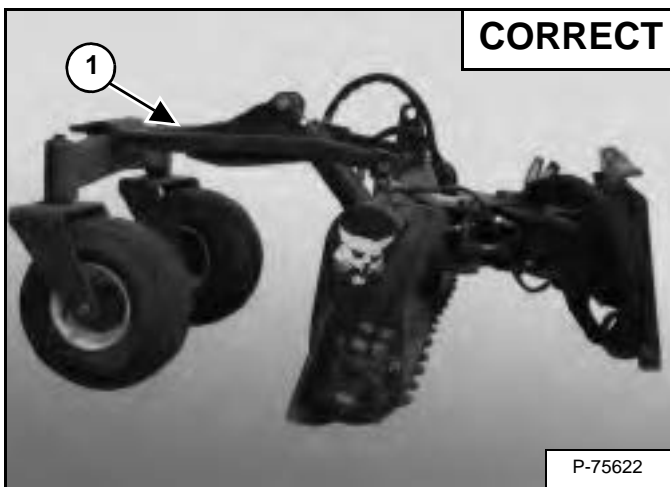
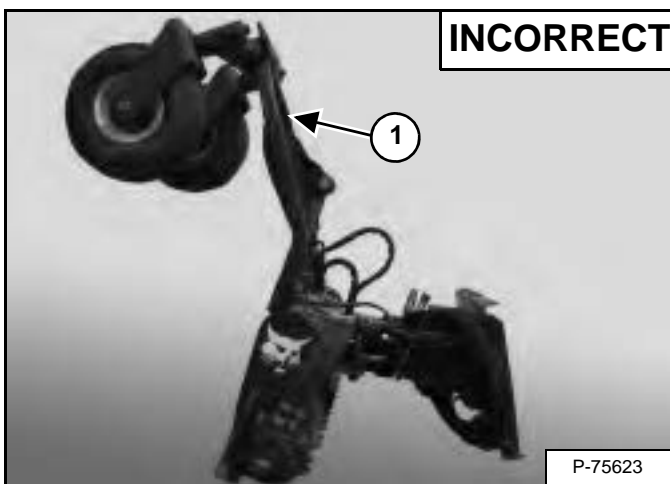


Figure 53



Bolster wheels (Item 1) [Figure 52] and [Figure 53] must be in the lowered position [Figure 52] when attachment is detached from the loader.



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 38.)

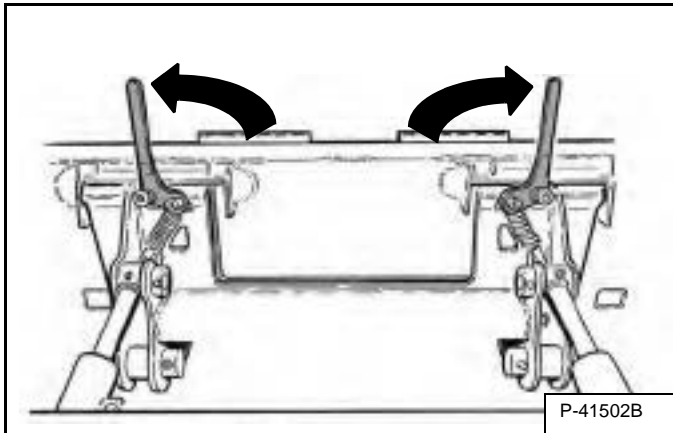
Disconnect wire harness. (See Electrical Harness on Page 39.)

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Removal (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 54



Pull the Bob-Tach levers up [Figure 54] until they are fully raised (wedges fully raised).

WARNING

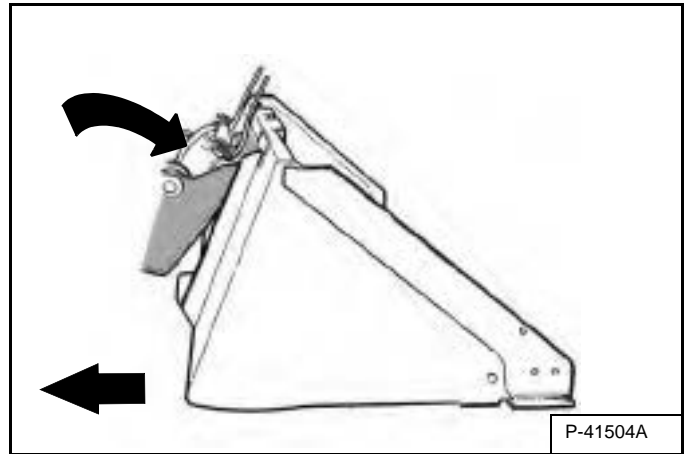
Bob-Tach levers have spring tension. Hold lever tightly and release slowly. Failure to obey warning can cause injury.

W-2054-1285

Enter the loader. (See Entering And Exiting The Loader on Page 30.)

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

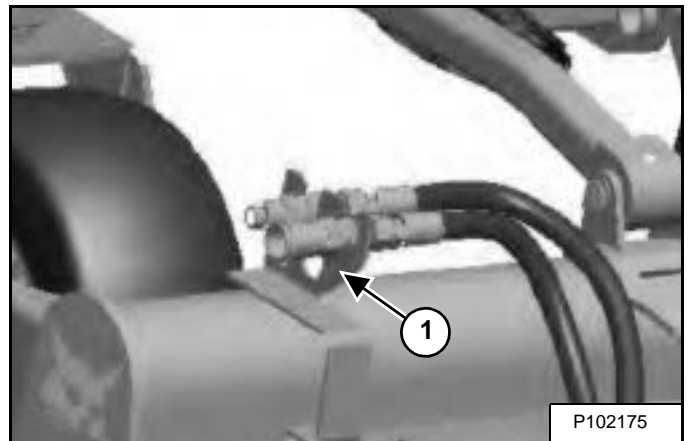
Figure 55



Tilt the Bob-Tach forward and drive the loader backward, away from the attachment [Figure 55].

Hose Storage (If Equipped)

Figure 56



Store the hydraulic hose couplers in the storage bracket (Item 1) [Figure 56] when not in use.

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 30.)

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 38.)

Disconnect wire harness. (See Electrical Harness on Page 39.)

Enter the loader. (See Entering And Exiting The Loader on Page 30.)

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

Figure 57

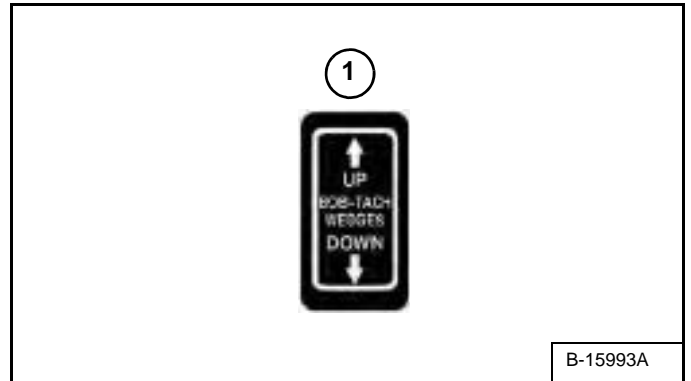
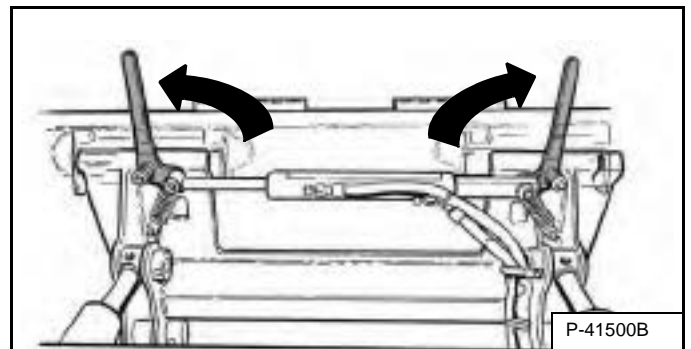


Figure 58



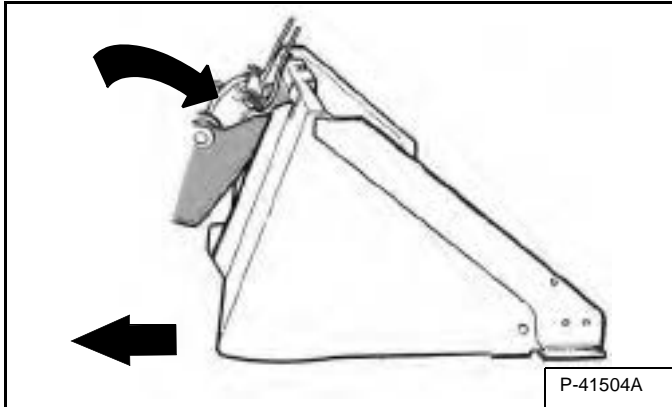
Push and hold the BOB-TACH "WEDGES UP" switch (Item 1) [Figure 57] (Front Panel) until the levers [Figure 58] are fully raised (wedges fully raised).

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Removal (Cont'd)

Power Bob-Tach (Cont'd)

Figure 59

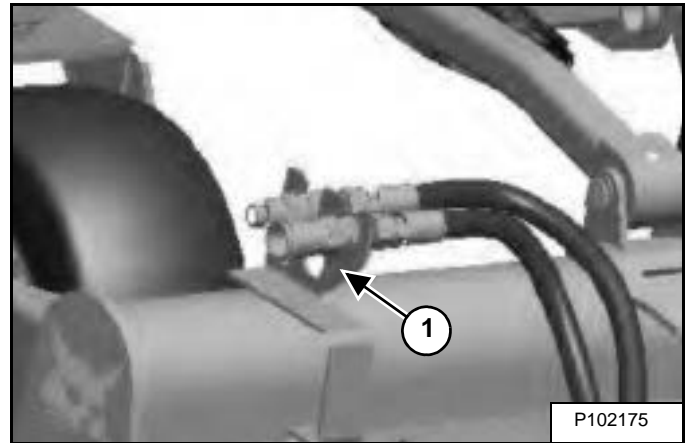


Tilt the Bob-Tach forward and drive the loader backward, away from the attachment [Figure 59].

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.

Hose Storage (If Equipped)

Figure 60



Store the hydraulic hose couplers in the storage bracket (Item 1) [Figure 60] when not in use.

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS

Approved Telescopic Handler Models And Requirements

Figure 61

TELESCOPIC HANDLER MODEL	SOIL CONDITIONER
	84SCH
T2250	X

X = Approved

The chart [Figure 61] shows the approved soil conditioner model for the T2250 Telescopic Handler.

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.



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 62



The Telescopic Handler must be equipped with an electrical attachment control kit and front auxiliary hydraulics [Figure 62] for proper operation of the angle broom. See your Bobcat dealer for available kits.

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Entering And Exiting The Telescopic Handler

! WARNING

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

Entering

Figure 63



Use the hand grabs (Item 1) [Figure 63] to enter and exit the operator cab.

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

Figure 64



Fasten seat belt and lower the restraint bar (Item 1) [Figure 64] (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.

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Entering And Exiting The Telescopic Handler (Cont'd)

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 illustrations and instructions provided explain how to install a bucket attachment on to a Telescopic Handler. 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.

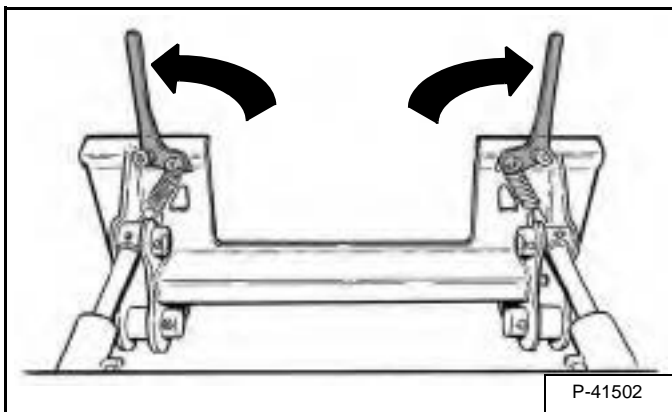
WARNING

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

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 25.)

Figure 65

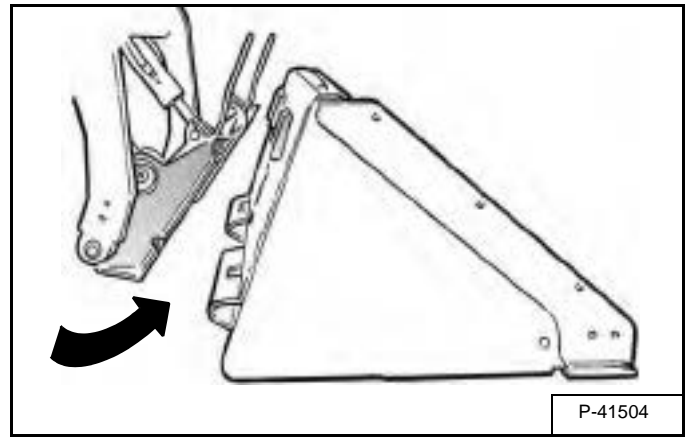


Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) [Figure 65].

Enter the Telescopic Handler. (See Entering And Exiting The Telescopic Handler on Page 54.)

Start the engine and release the parking brake.

Figure 66

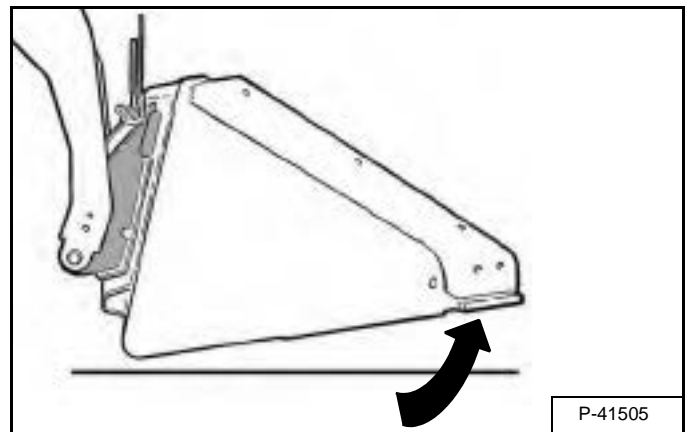


Lower the boom and tilt the Bob-Tach forward.

Drive the Telescopic Handler slowly forward until the top edge of the Bob-Tach is completely under the top flange of the attachment mounting frame [Figure 66].

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

Figure 67



Tilt the Bob-Tach backward until the attachment is slightly off the ground [Figure 67]. 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 Telescopic Handler. (See Entering And Exiting The Telescopic Handler on Page 54.)

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

! WARNING

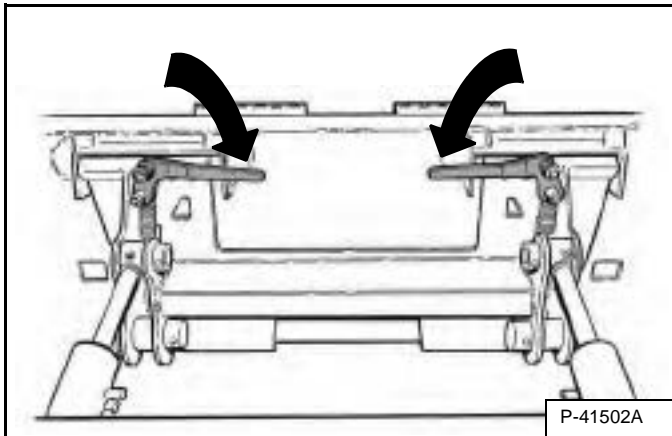
Before you leave the operator's position:

- 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.

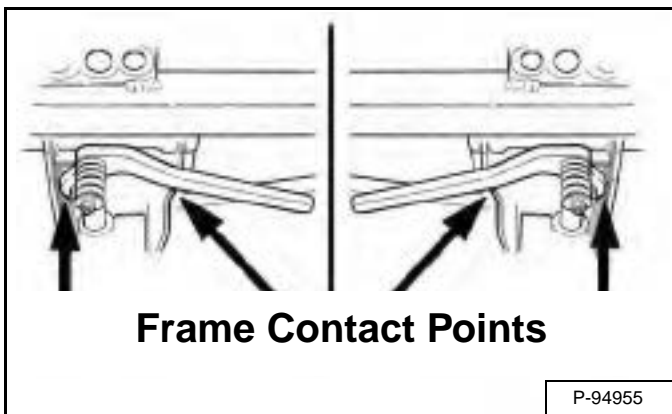
W-2637-0607

Figure 68



Push down on the Bob-Tach levers until they are fully engaged in the locked position [Figure 68] (wedges fully extended through the attachment mounting frame holes).

Figure 69



Both levers must contact the frame as shown when locked [Figure 69].

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

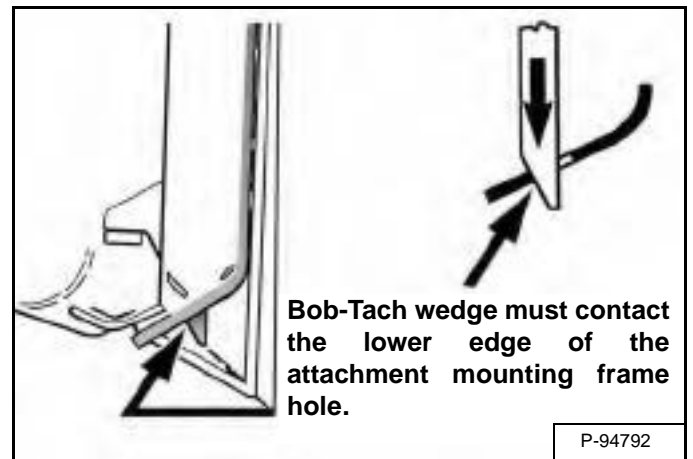
! WARNING

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 70



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 70].

Connect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 59.)

Connect electrical harness (if applicable). (See Electrical Harness on Page 60.)

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 59.)

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 54.)

Start the engine and release the parking brake (if equipped).

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.

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 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.

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 71



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 71].

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 Telescopic Handler or attachment. (See For First Time Installation on Page 58.) for proper adjustment.

To Disconnect:

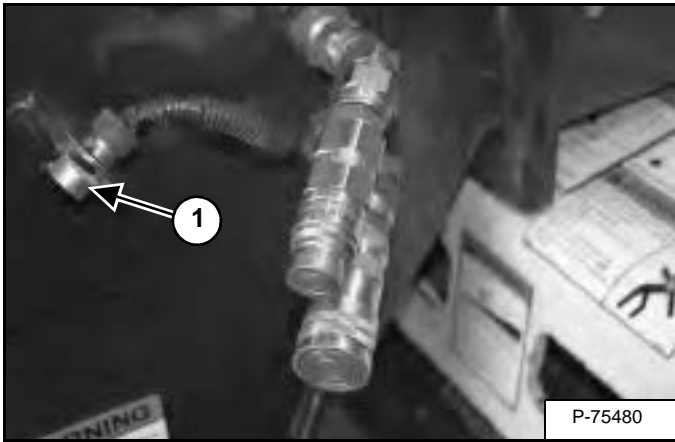
Relieve hydraulic pressure. (See the Telescopic Handler's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

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

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Electrical Harness

Figure 72



Connect the 7-pin attachment wire harness to the electrical connector (Item 1) **[Figure 72]** on the Telescopic Handler.

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.

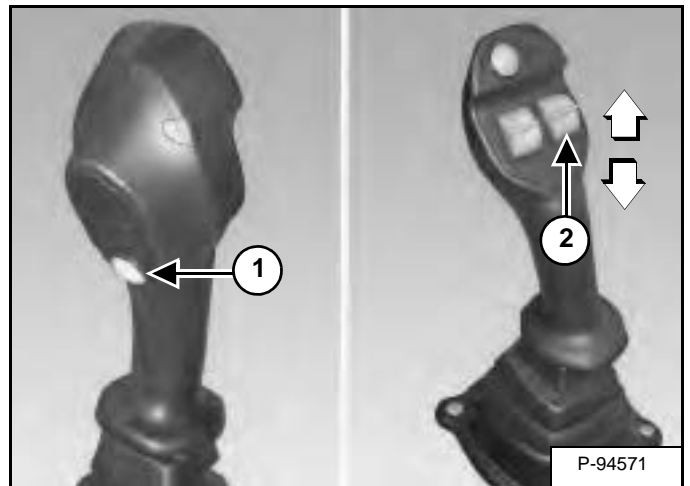
I-2266-0910

Move to the operator position, fasten seat belt and lower the restraint bar (If Equipped), and start the engine.

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

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

Figure 73



Tilt the soil conditioner backward so the teeth are above the ground.

To start the drum in forward rotation, push the button (Item 1). To stop the drum, push the button (Item 1) [Figure 73] a second time.

To start the drum in momentary reverse rotation, push and hold the right switch (Item 2) [Figure 73] down. To stop the drum rotating, let go of the switch.

To start the drum in constant reverse rotation, push the right switch (Item 2) down and push the button (Item 1). To stop the drum rotating, push the button (Item 1) [Figure 73] a second time.

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Control Functions (Cont'd)

To Angle The Soil Conditioner

Figure 74

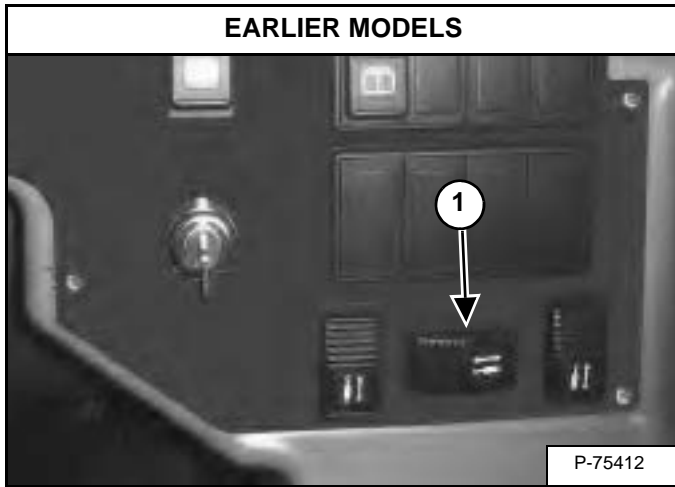
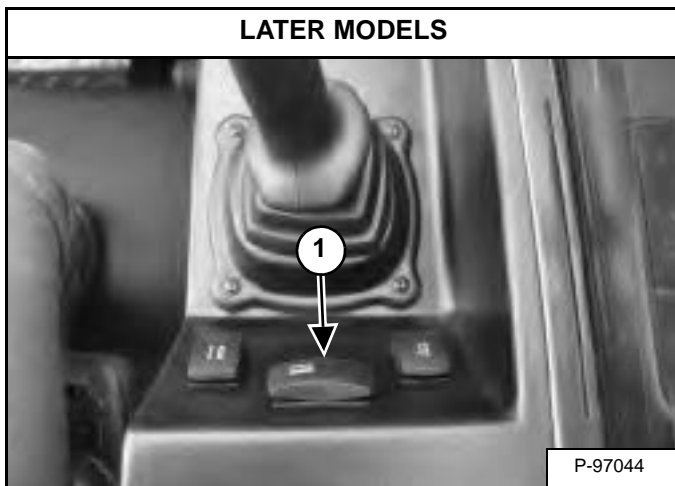


Figure 75



To angle the soil conditioner to the left, push the switch (Item 1) [Figure 74] or [Figure 75] to the left.

To angle the soil conditioner to the right, push the switch (Item 1) [Figure 74] or [Figure 75] to the right.

To Raise / Lower The Soil Conditioner Drum

Figure 76

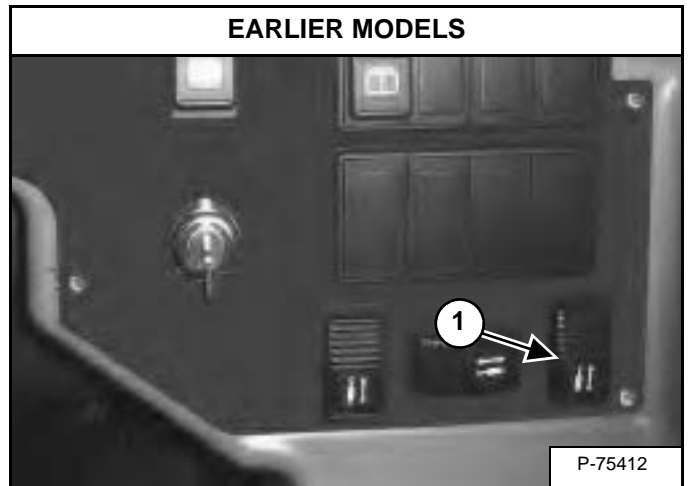
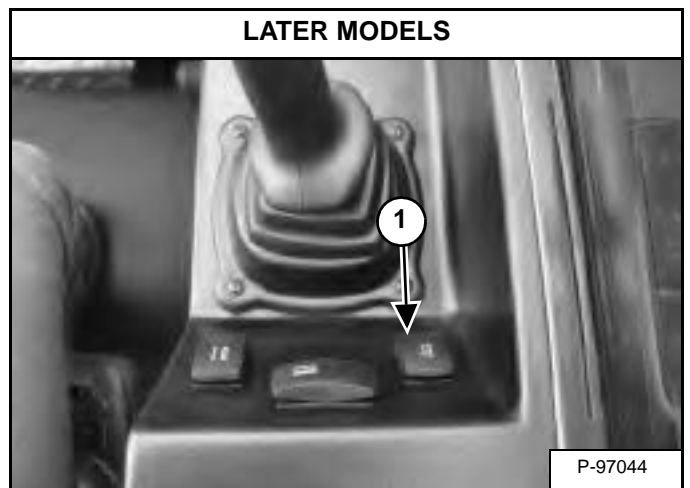


Figure 77



To raise the drum, push the top of switch (Item 1) [Figure 76] or [Figure 77].

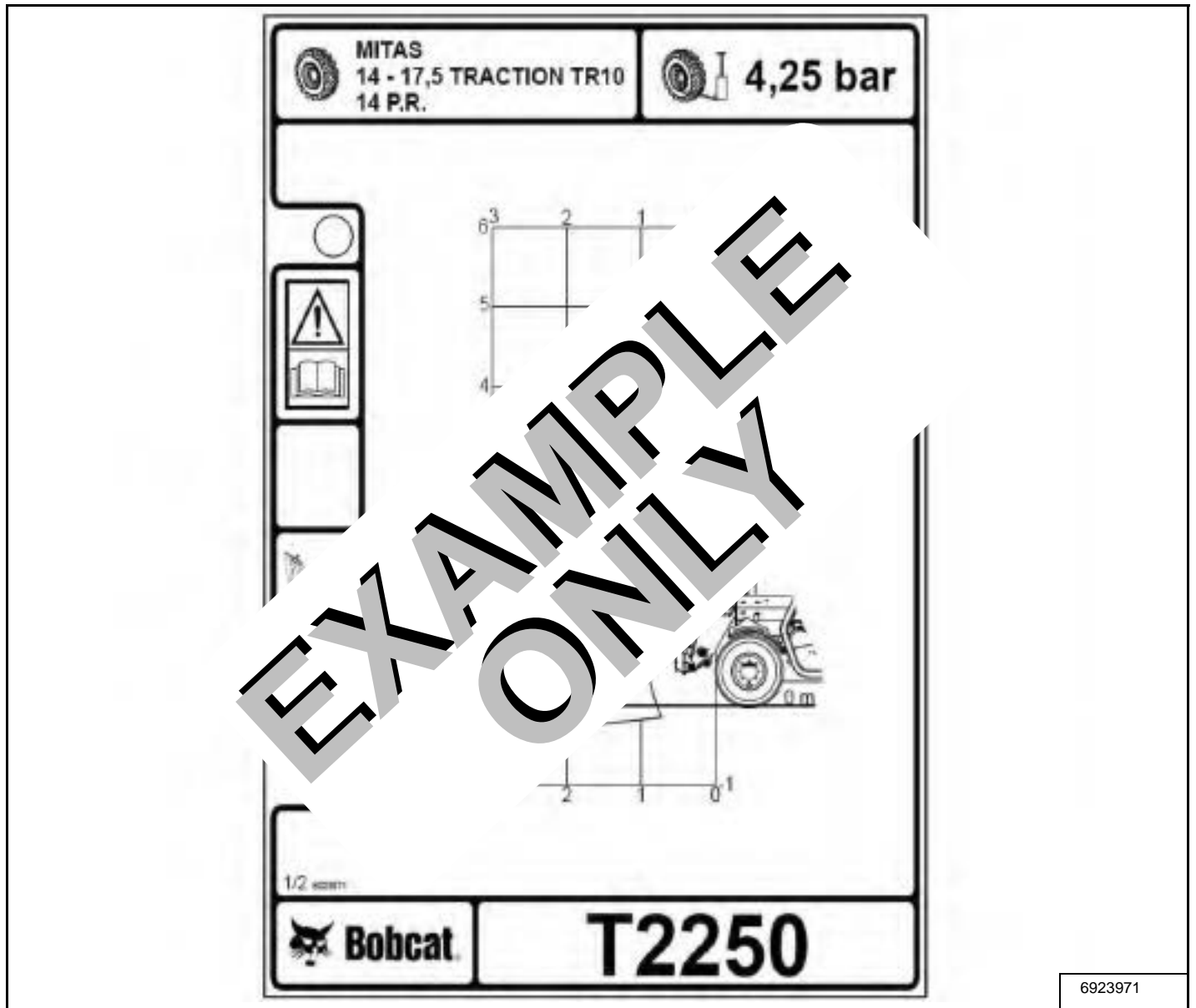
To lower the drum, push the bottom of switch (Item 1) [Figure 76] or [Figure 77].

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Operation With The Telescopic Handler

Load Capacity Chart

Figure 78



The Load Capacity Chart [Figure 78] is an “EXAMPLE ONLY”. See your 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)

! WARNING

FLYING OBJECTS AND ROTATING PARTS CAN CAUSE INJURY OR DEATH

- Stay at least 3 m (10 ft) away from operating equipment.
- Stop engine before cleaning or servicing.
- Keep all guards in place.

W-2706-0910

Travel Direction

Figure 79

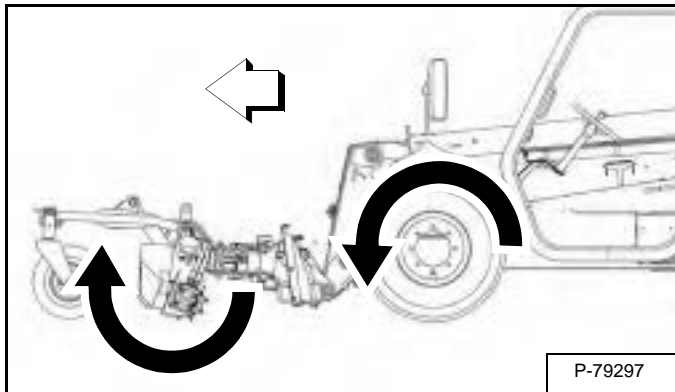
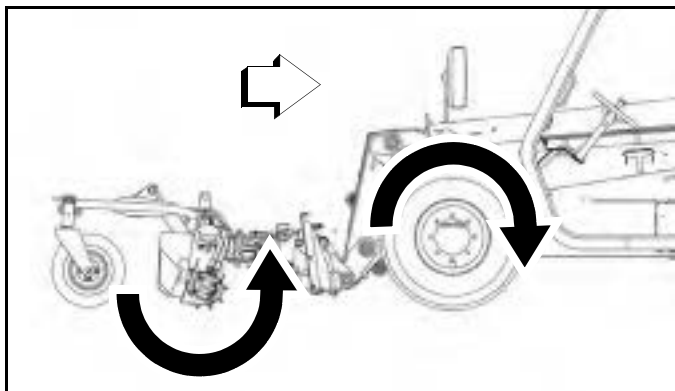


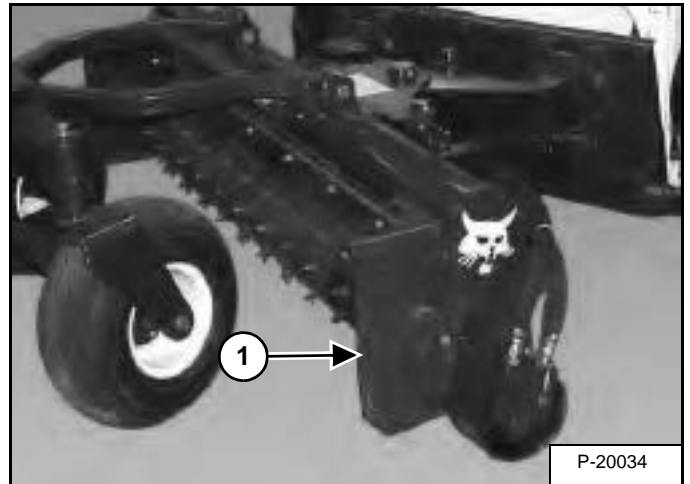
Figure 80



The drum rotates the opposite direction of the tyres, forward travel [Figure 79] or reverse travel [Figure 80].

End Plates

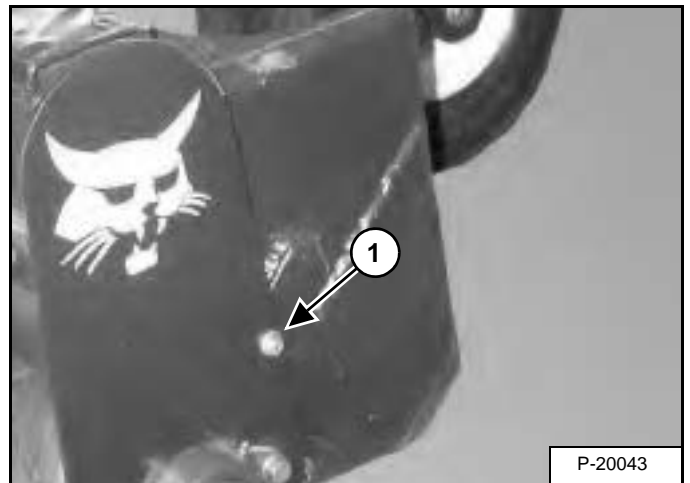
Figure 81



The end plates (Item 1) [Figure 81] located at each end of the frame help contain the material in front of the drum.

Each end plate can be removed individually if material needs to be angled to the outside.

Figure 82



To remove the end plate, remove the nut and bolt (Item 1) [Figure 82] holding the end plate to the frame.

Installation: Tighten the bolt and nut to 54 N•m (40 ft-lb) torque.

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Operation With The Telescopic Handler (Cont'd)

Float / Lock Position

The float setting allows you to control the height of the drum by using the Telescopic Handler tilt function. When in the float position the wheels follow the ground contours.

Figure 83

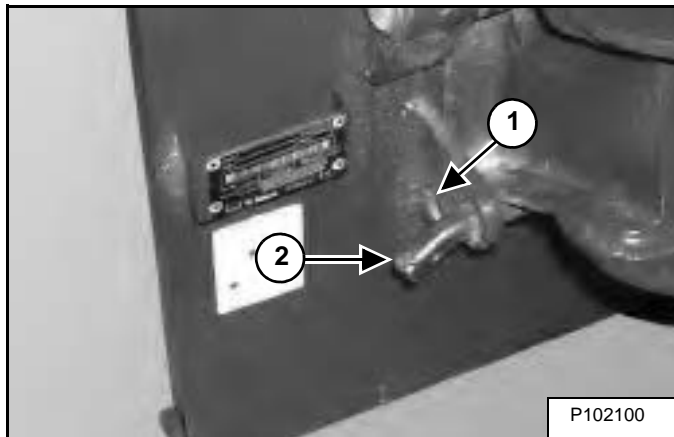
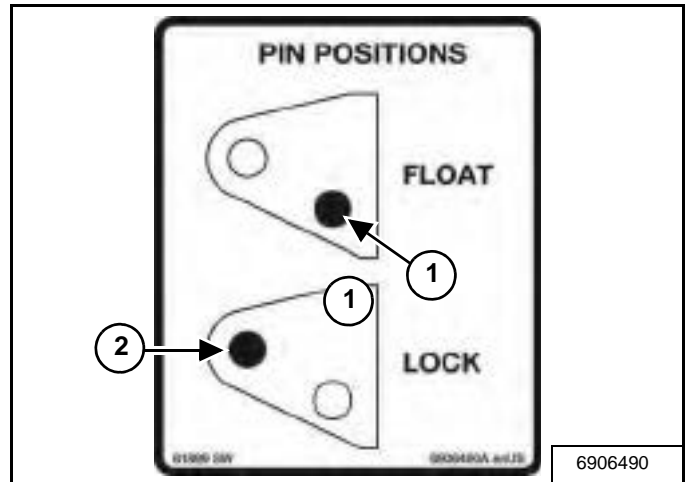


Figure 84



Set the pins (one on each side) to the float position (Item 1) [Figure 83] and [Figure 84].

Use the Telescopic Handler tilt function to control how deep the drum goes into the soil.

Start the drum rotating in forward or reverse. Drive in forward or reverse slowly, increase speed as required.

The locked setting allows you to set a constant height and maintain that height while in the soil.

Set the pins (one on each side) to the locked position (Item 2) [Figure 83] and [Figure 84].

Fully lower the boom. Use the Telescopic Handler's tilt function to position the drum into the soil, enough to lift the front tyres of the Telescopic Handler slightly off the ground.

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Operation With The Telescopic Handler (Cont'd)

Float / Lock Position (Cont'd)

NOTE: The boom may raise slightly while operating in the locked setting. Check periodically to make sure the boom is fully lowered.

Start the drum rotating in forward or reverse.

Drive in forward or reverse slowly to make sure the height setting is correct. Adjust the Telescopic Handler tilt function if needed. Increase speed as required.

WARNING

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

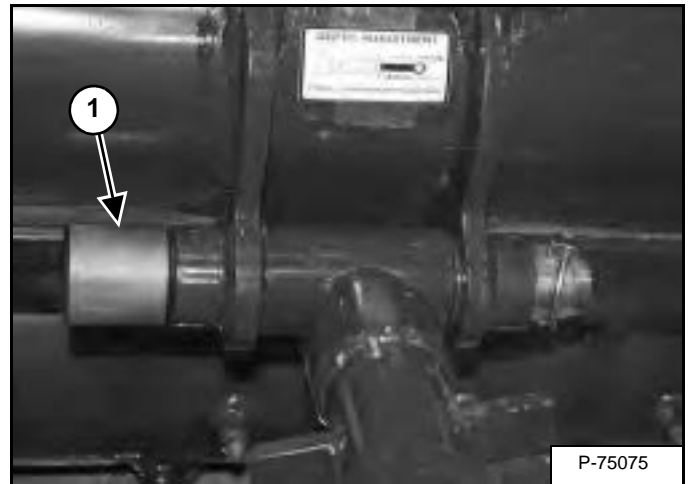
Raising The Tyre Assembly

Figure 85



The tyre assembly can be positioned upright to operate closer to an edge or fence line [Figure 85].

Figure 86



To move the tyre assembly to the upright position, remove the pin (Item 1) [Figure 86].

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Operation With The Telescopic Handler (Cont'd)

Raising The Tyre Assembly (Cont'd)

WARNING

AVOID INJURY OR DEATH

- Heavy tyre assembly requires two persons to lift.
- Use pin to lock in up position.

W-2707-EN-0210

NOTE: Two people are required to lift or lower the tyre assembly.

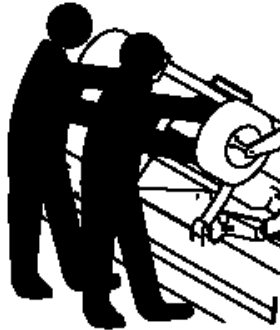
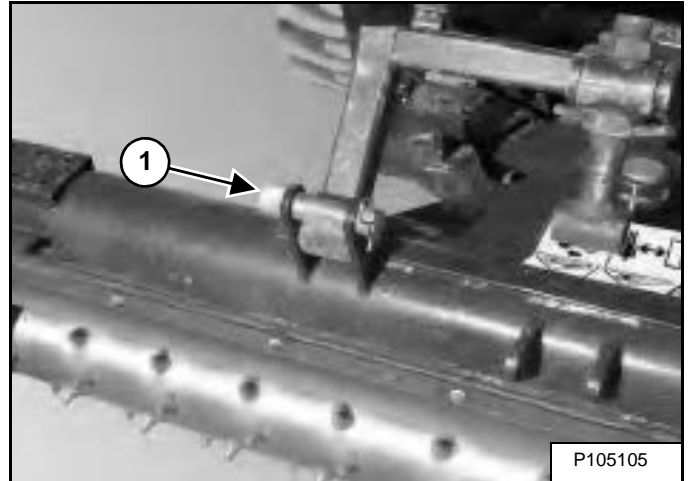


Figure 87



Rotate the tyre assembly up [Figure 87].

Figure 88



Reinstall the pin to lock the tyre assembly (Item 1) [Figure 88] in the up position.

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Removal

! WARNING

AVOID INJURY OR DEATH

- Always lower the bolster wheels before removing the soil conditioner from the machine.
- Removing the soil conditioner with the bolster wheels raised can cause the soil conditioner to tip or roll resulting in serious injury or death.

W-2891-0810

Figure 89

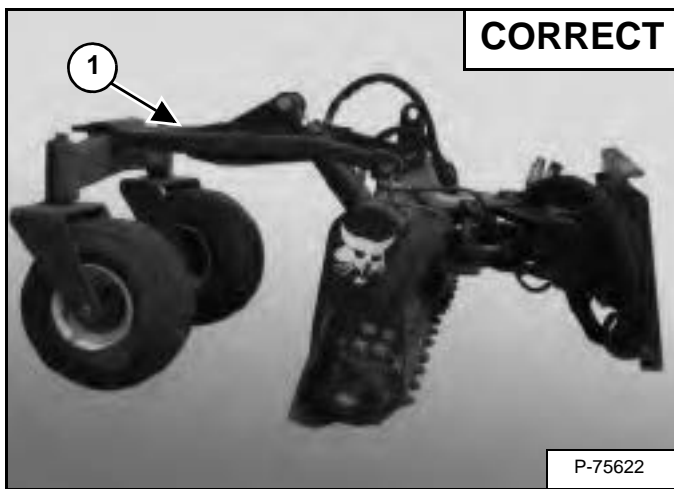
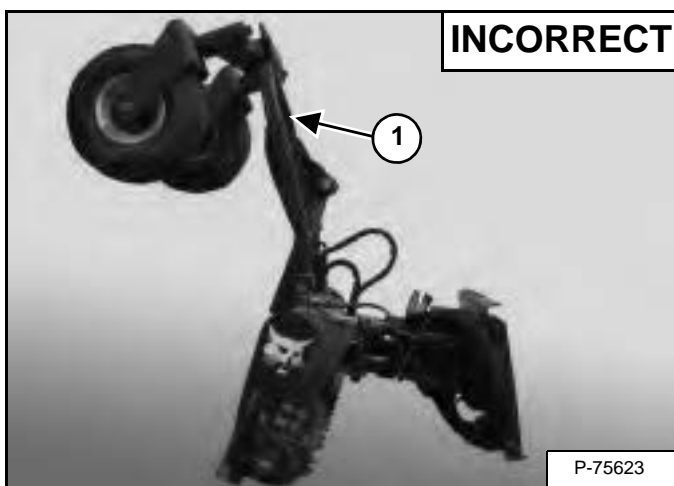


Figure 90



Bolster wheels (Item 1) [Figure 89] and [Figure 90] must be in the lowered position [Figure 89] when attachment is detached from the Telescopic Handler.

Hand Lever Bob-Tach

Lower the boom and put the attachment flat on the ground and 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 Telescopic Handler.

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

Exit the Telescopic Handler. (See Entering And Exiting The Telescopic Handler on Page 54.)

! WARNING

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

Disconnect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 59.)

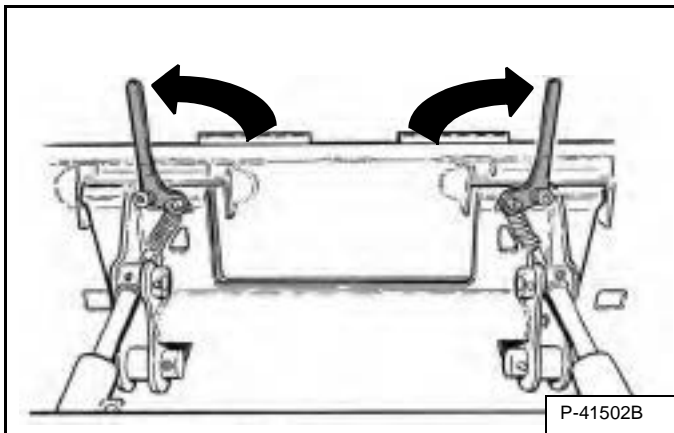
Disconnect electrical harness (if applicable). (See Electrical Harness on Page 60.)

OPERATING PROCEDURE WITH TELESCOPIC HANDLERS (CONT'D)

Removal (Cont'd)

Hand Lever Bob-Tach (Cont'd)

Figure 91



Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) [Figure 91].



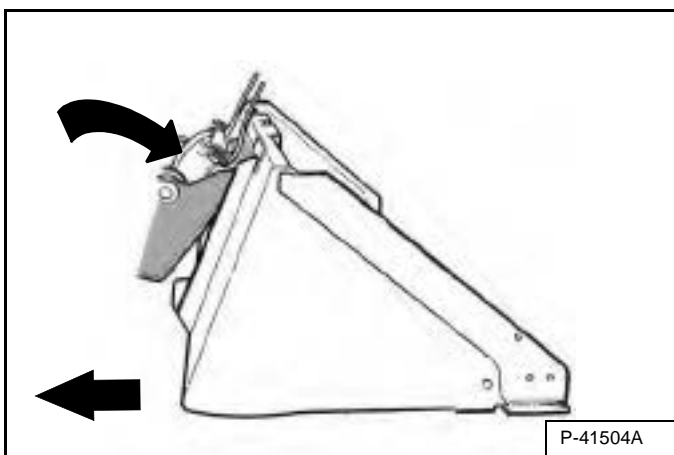
Bob-Tach levers have spring tension. Hold lever tightly and release slowly. Failure to obey warning can cause injury.

W-2054-1285

Enter the Telescopic Handler. (See Entering And Exiting The Telescopic Handler on Page 54.)

Start the engine and release the parking brake.

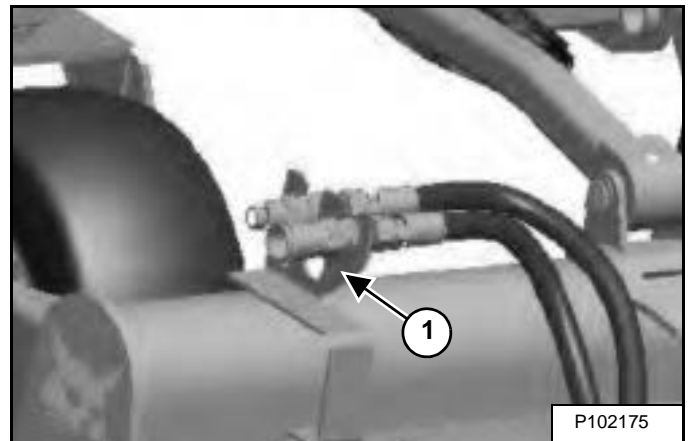
Figure 92



Tilt the Bob-Tach forward and drive the Telescopic Handler backward, away from the attachment [Figure 92].

Hose Storage (If Equipped)

Figure 93

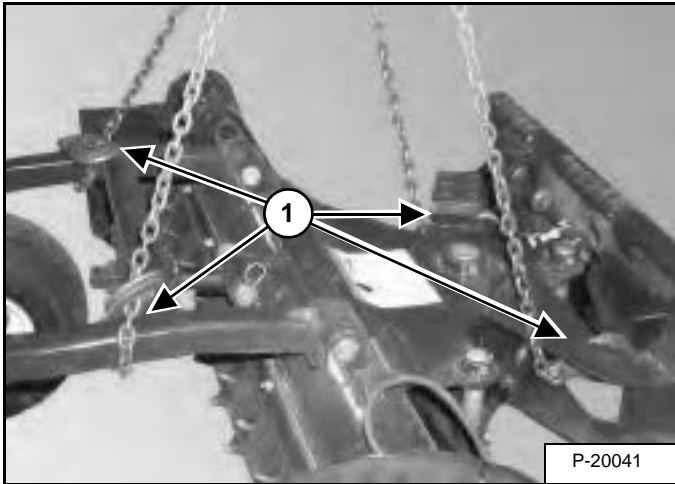


Store the hydraulic hose couplers in the storage bracket (Item 1) [Figure 93] when not in use.

LIFTING THE ATTACHMENT

Procedure

Figure 94



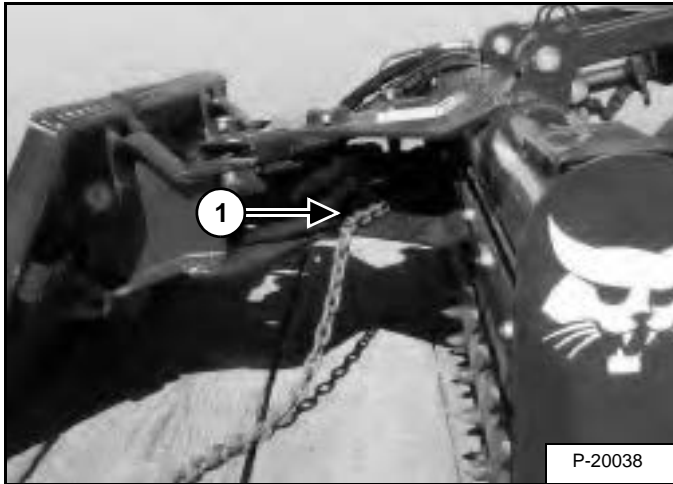
Fasten the chains to the soil conditioner (Item 1) [Figure 94].

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

TRANSPORTING THE ATTACHMENT ON A TRAILER

Fastening

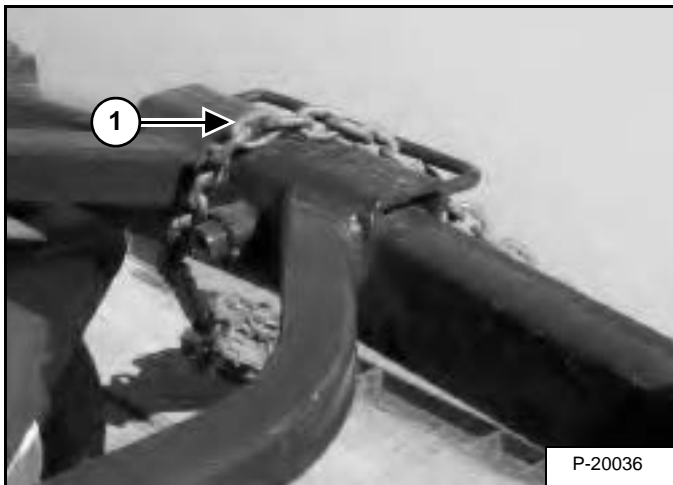
Figure 95



When on the transport vehicle, put the chain around the pivot section (Item 1) [Figure 95] of the soil conditioner.

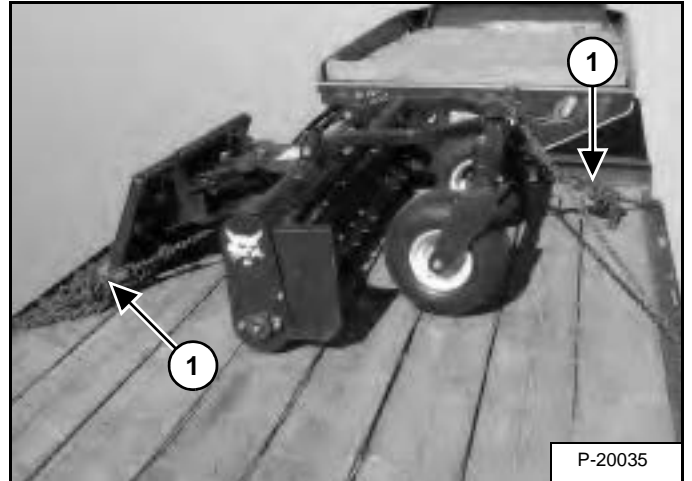
NOTE: Be sure to move hydraulic hoses above chain or damage could occur.

Figure 96



Put the second chain (Item 1) [Figure 96] around the bolster assembly.

Figure 97



Attach the ends of the chains to the transport vehicle.

Use chain binders (Item 1) [Figure 97] to tighten chains and prevent the soil conditioner from moving during transport.

Secure all hydraulic hoses and electrical harness to the soil conditioner.

TRANSPORTING THE ATTACHMENT AND MACHINE ON A TRAILER

Loading And Fastening



WARNING

AVOID SERIOUS INJURY OR DEATH

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

W-2058-0807

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

Loading

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

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

Fastening

- Install chains at the front and rear tie down positions on the machine. (See the machine's Operation & Maintenance Manual to properly chain the machine to the transport vehicle.)
- Install chains on the attachment (if needed).
- Fasten each end of the chain to the transport vehicle.

NOTE: Use chain binders to prevent the attachment and machine from moving during transport.

PREVENTIVE MAINTENANCE

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MAINTENANCE SAFETY



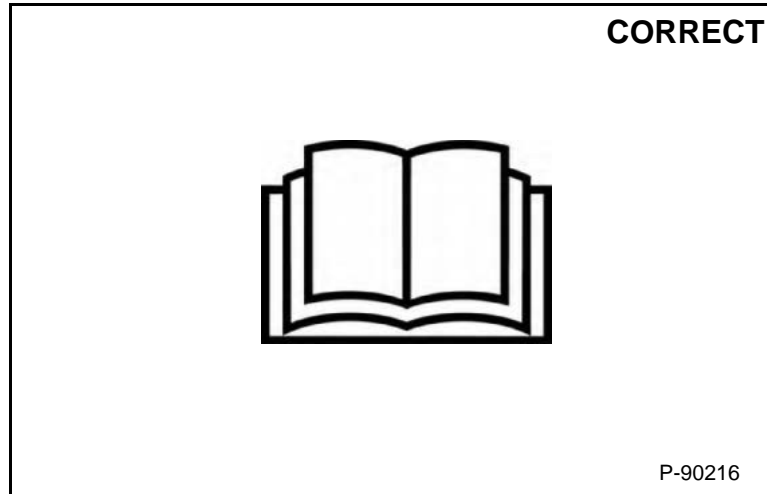
WARNING









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.

MSW30-0409



TROUBLESHOOTING

Chart

 <b style="font-size: 24pt; 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: 10pt;">W-2003-0807</p>
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If the soil conditioner is not working correctly, check the hydraulic system of the machine thoroughly before making any repairs on the soil conditioner. Soil conditioner 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 soil conditioner.

PROBLEM	CAUSE	CORRECTION
Soil conditioner does not mount properly on the Bob-Tach.	Bob-Tach wedges are not fully retracted before installation.	Retract Bob-Tach wedges before installation.
	Mud, dirt or stones are lodged between the Bob-Tach and the soil conditioner mount.	Remove debris between Bob-Tach and soil conditioner mount.
Soil conditioner drum does not rotate.	No hydraulic flow.	Activate machine front auxiliary hydraulics.
		Check quick couplers connection. Check for damaged hose ends and fittings.
Soil conditioner does not angle.	No hydraulic flow.	Activate machine front auxiliary hydraulics.
		Check quick couplers connection. Check for damaged hose ends and fittings.
	Electrical harness not installed.	Install harness from the soil conditioner to the machine.
	No electrical current flow through harness.	Check soil conditioner electrical harness for damage to connector or harness.
Soil conditioner is performing poorly.	Teeth on drum are worn.	Replace teeth.
	Improper depth adjustment.	Adjust depth.

REGULAR MAINTENANCE ITEMS

Drum Teeth Inspection

The soil conditioner and type of use will determine the life of the drum teeth.

Figure 98

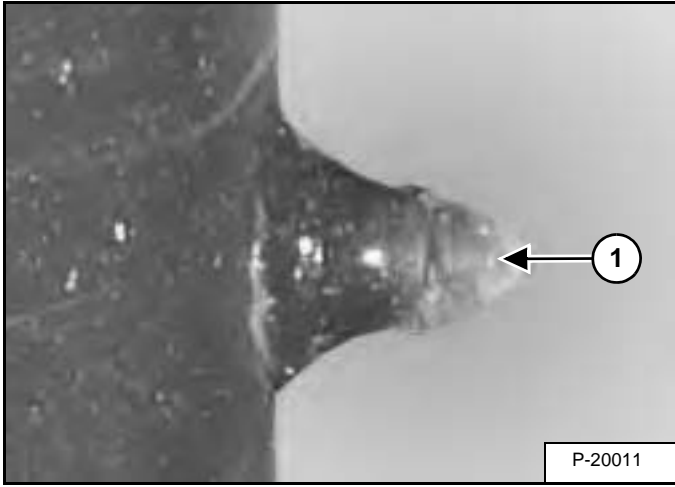
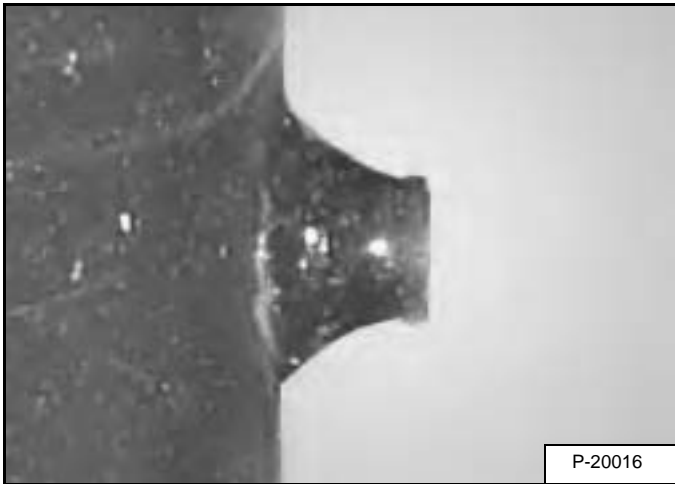


Figure 99



When the carbide tip (Item 1) **[Figure 98]** is worn to the holder **[Figure 99]**, the tooth needs to be replaced with a new carbide tip.

LUBRICATING THE ATTACHMENT

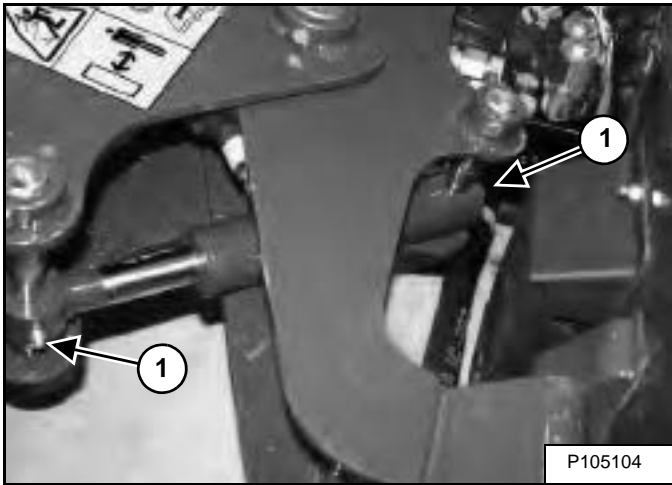
Lubrication Locations

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.

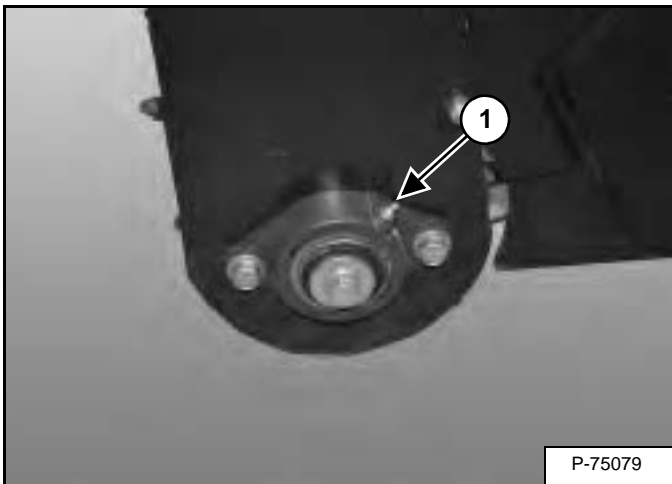
I-2067-EN-0711

Figure 100



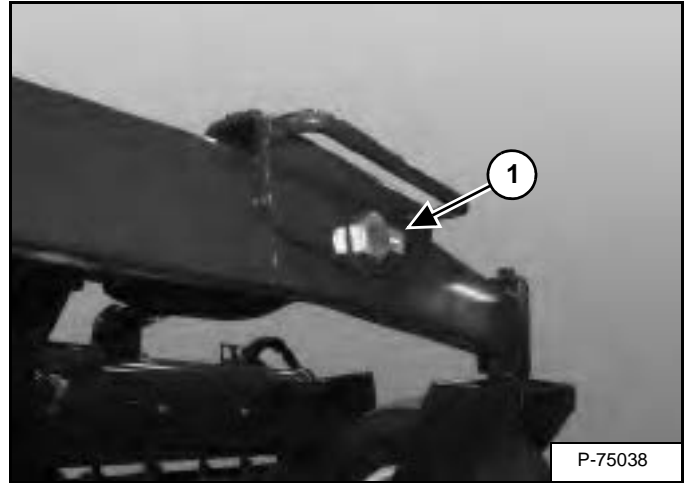
Add grease to the fittings on each end of the cylinder (Item 1) [Figure 100].

Figure 101



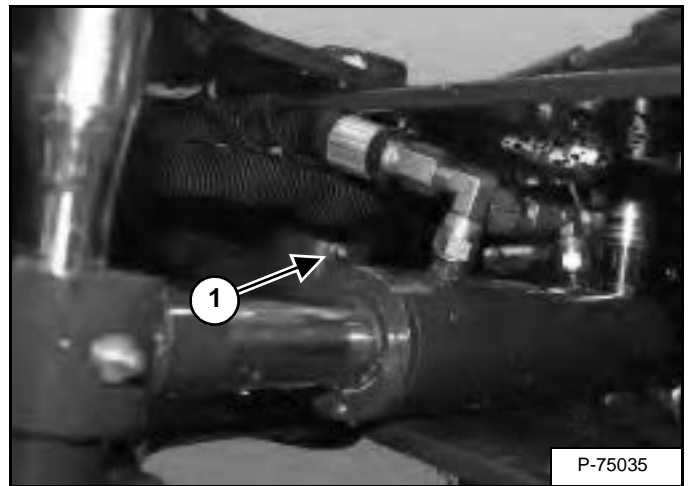
Lubricate the bearing at the end of the drum (Item 1) [Figure 101].

Figure 102



Add grease to the front pivot bushing (Item 1) [Figure 102].

Figure 103



Add grease to the centre pivot bushing (Item 1) [Figure 103].

REMOVAL AND INSTALLATION

Procedure(s)

Drum Teeth Replacement

If welding is to be done with the drum installed in the soil conditioner, clamp the ground cable directly to the drum to prevent current from passing through the bearings.

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

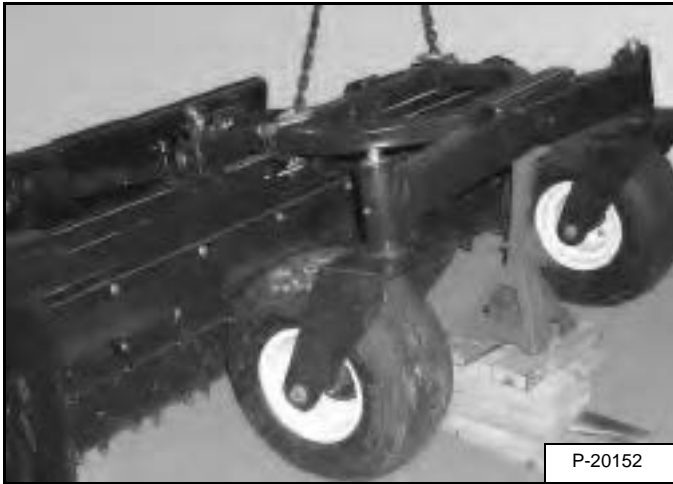
WARNING

AVOID INJURY OR DEATH

Securely block up the attachment before working underneath.

W-2795-0409

Figure 104



Support the soil conditioner with blocks and chains [Figure 104].

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

Figure 105



Grind the old tooth holder off the drum at the weld [Figure 105].

Figure 106



Knock the remainder of the tooth off the drum [Figure 106], then grind area smooth.

REMOVAL AND INSTALLATION (CONT'D)

Procedure(s) (Cont'd)

Drum Teeth Replacement (Cont'd)

Figure 107



Weld a new tooth to the drum **[Figure 107]**.

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, safety chains and guards are in place.
- Lubricate the attachment.
- Install and operate attachment, check for correct function.
- Check for leaks. Repair as needed.

SPECIFICATIONS

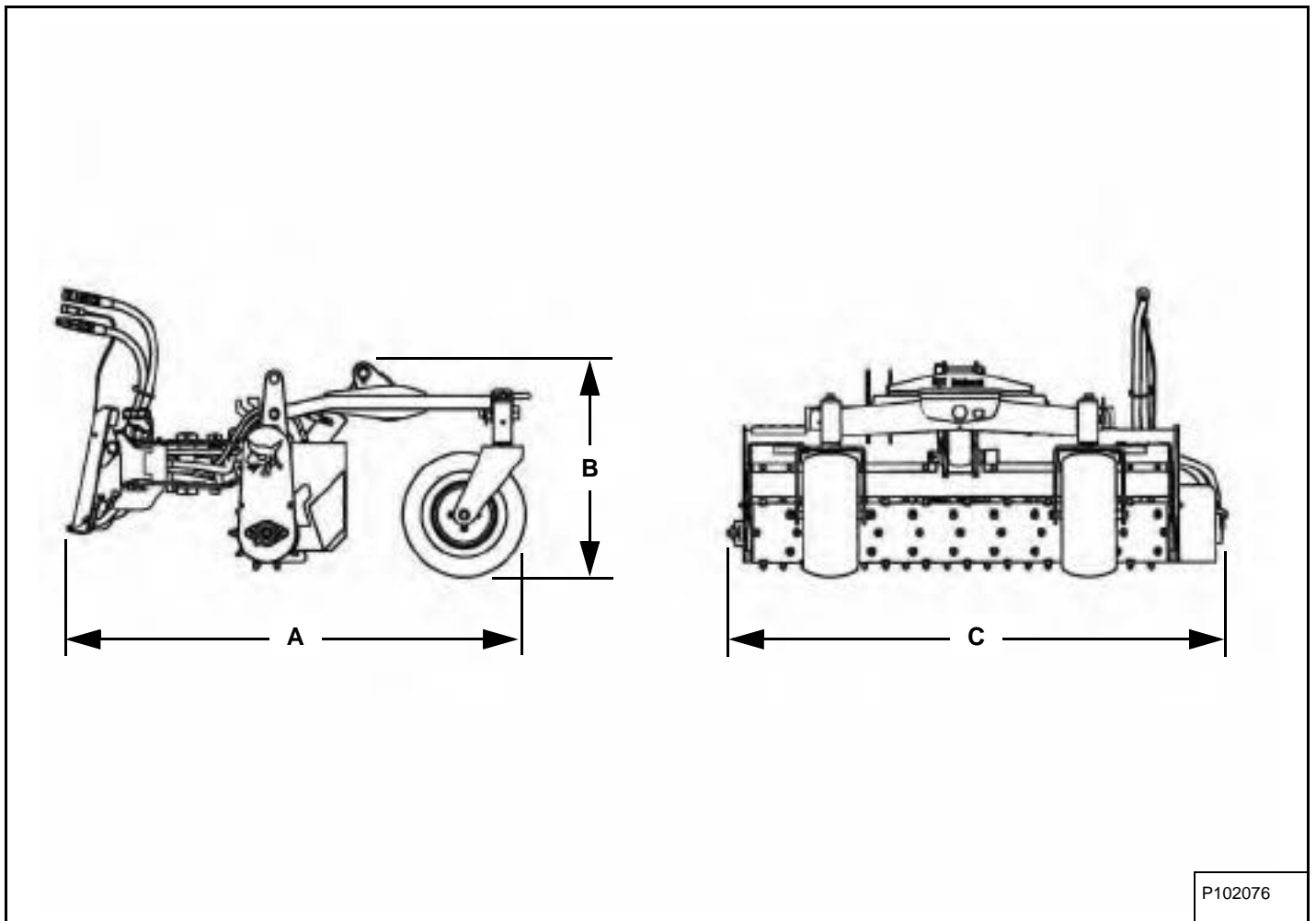
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Performance	90
Hydraulic System	90



(60SCH) SOIL CONDITIONER SPECIFICATIONS

Dimensions

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



DESCRIPTION	60SCH
Length (A)	1729,4 mm (68.09 in)
Height (B)	761,3 mm (29.97 in)
Width (C)	1821,2 mm (71.70 in)
Width (Fully Angled)	1381,8 mm (54.4 in)
Straight Working Width	1524 mm (60 in)

(60SCH) SOIL CONDITIONER SPECIFICATIONS (CONT'D)

Performance

DESCRIPTION	60SCH
Operating Weight	500 kg (1100 lb)
Maximum Drum Angle	± 25° (Left or Right)
Number of Teeth	101

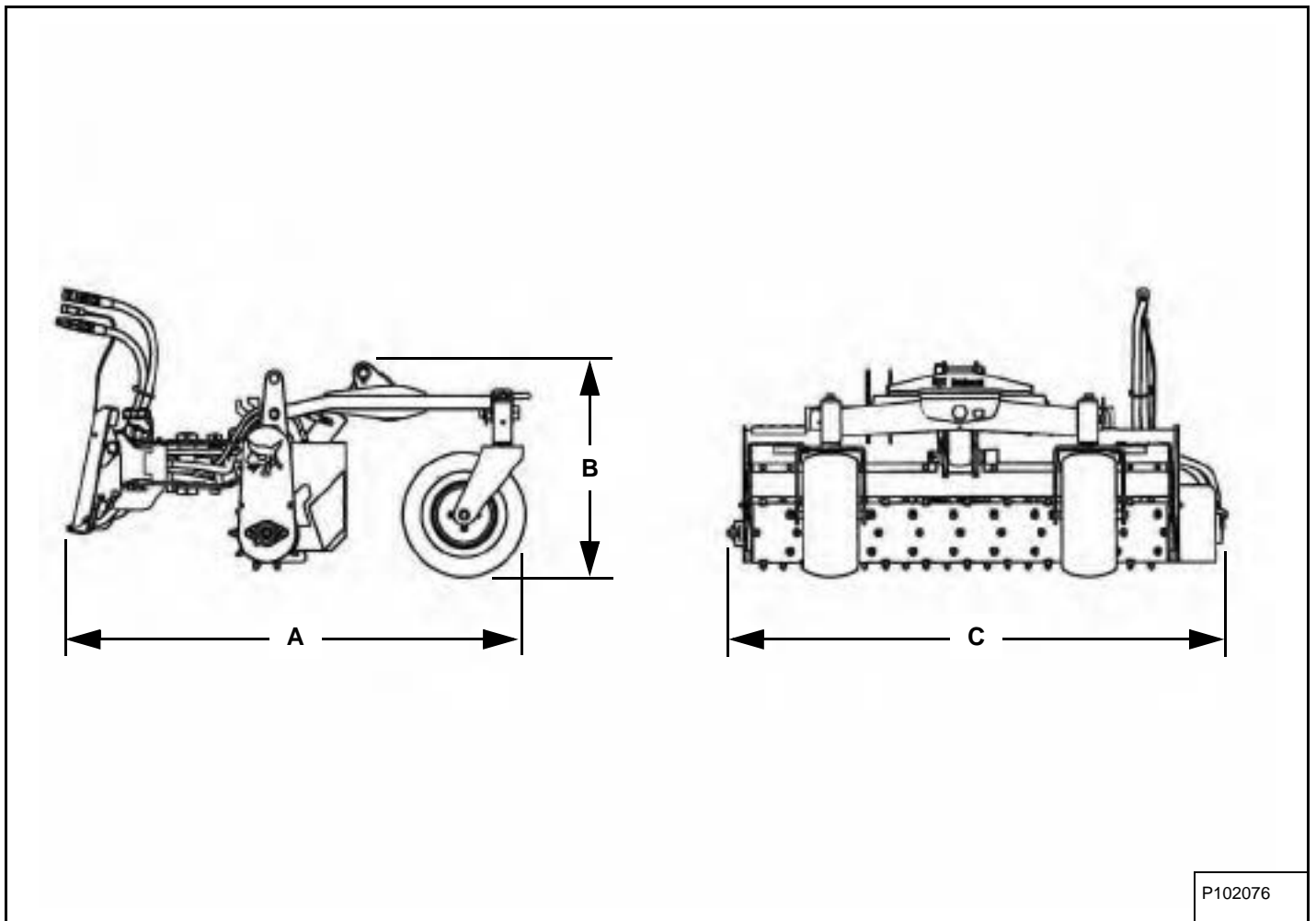
Hydraulic System

DESCRIPTION	60SCH
Maximum Operating Pressure	22,75 MPa (227,5 bar) (3300 psi)
Minimum Hydraulic Flow	49,2 L/min (13 U.S. gpm)
Maximum Hydraulic Flow	140 L/min (37 U.S. gpm)

(72SCM, 72SCH, 72SCHHF) SOIL CONDITIONER SPECIFICATIONS

Dimensions

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



P102076

DESCRIPTION	72SCM	72SCH	72SCHHF
Length (A)	1719,9 mm (67.71 in)		
Height (B)	761,3 mm (29.97 in)		
Width (C)	2190,6 mm (86.24 in)		
Width (Fully Angled)	1651 mm (65 in)		
Straight Working Width	1829 mm (72 in)		

(72SCM, 72SCH, 72SCHHF) SOIL CONDITIONER SPECIFICATIONS (CONT'D)**Performance**

DESCRIPTION	72SCM	72SCH	72SCHHF
Operating Weight	503,5 kg (1110 lb)		
Maximum Drum Angle	± 25° (Left or Right)		
Number of Teeth	121		

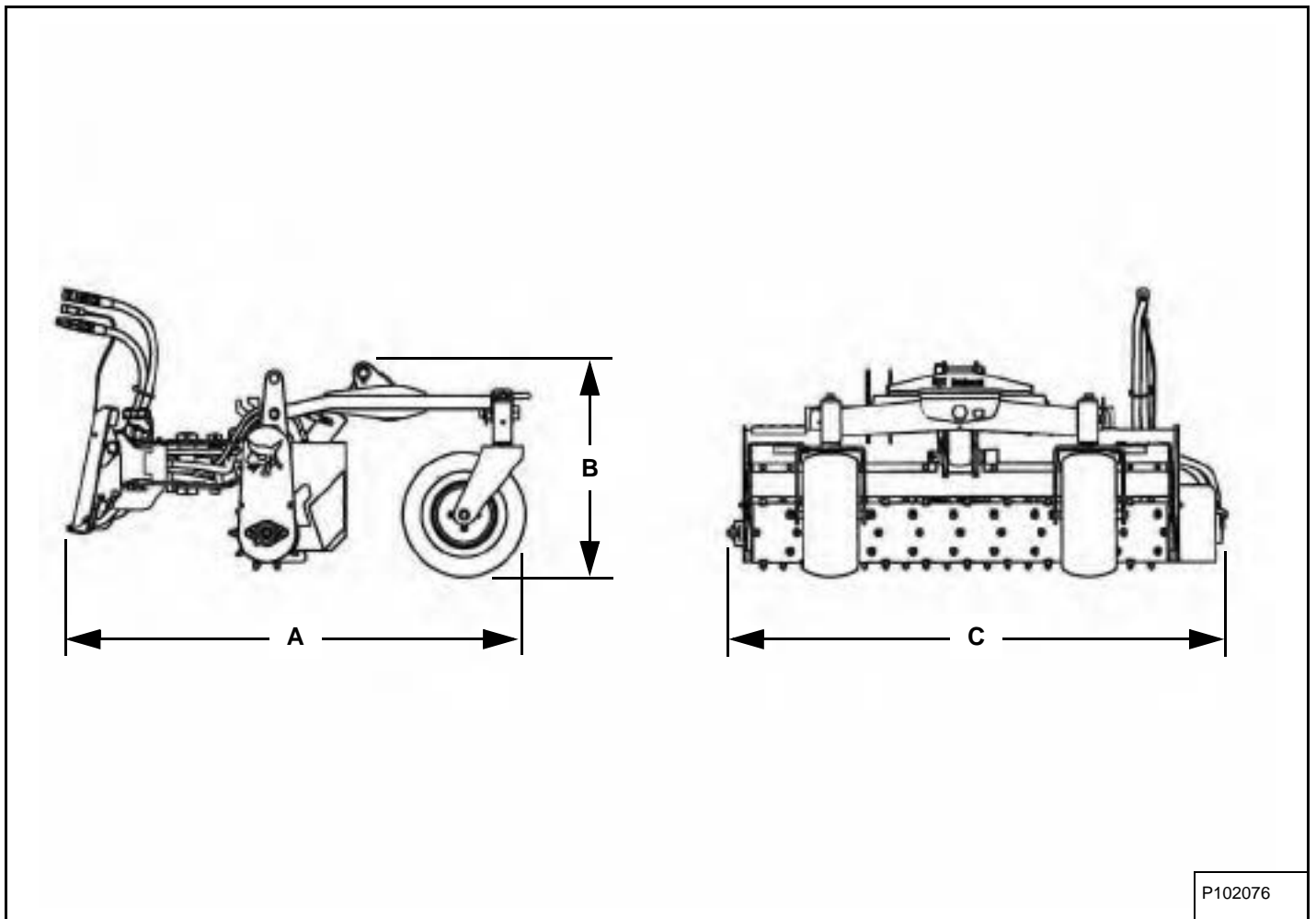
Hydraulic System

DESCRIPTION	72SCM	72SCH	72SCHHF
Maximum Operating Pressure	22,75 MPa (227,5 bar) (3300 psi)		
Minimum Hydraulic Flow	49,2 L/min (13 U.S. gpm)	49,2 L/min (13 U.S. gpm)	94,6 L/min (25 U.S. gpm)
Maximum Hydraulic Flow	140 L/min (37 U.S. gpm)		

(84SCH, 84SCHHF) SOIL CONDITIONER SPECIFICATIONS

Dimensions

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



DESCRIPTION	84SCH	84SCHHF
Length (A)	1725 mm (67.92 in)	
Height (B)	754,5 mm (29.70 in)	
Width (C)	2495,4 mm (98.24 in)	
Width (Fully Angled)	1930,4 mm (76 in)	
Straight Working Width	2134 mm (84 in)	

(84SCH, 84SCHHF) SOIL CONDITIONER SPECIFICATIONS (CONT'D)**Performance**

DESCRIPTION	84SCH	84SCHHF
Operating Weight	575 kg (1268 lb)	
Maximum Drum Angle	± 25° (Left or Right)	
Number of Teeth	141	

Hydraulic System

DESCRIPTION	84SCH	84SCHHF
Maximum Operating Pressure	22,75 MPa (227,5 bar) (3300 psi)	
Minimum Hydraulic Flow	68,1 L/min (18 U.S. gpm)	113,6 L/min (30 U.S. gpm)
Maximum Hydraulic Flow	140 L/min (37 U.S. gpm)	

WARRANTY

WARRANTY 93



WARRANTY

BOBCAT ATTACHMENTS

DOOSAN BENELUX S.A. warrants to its authorised dealers who in turn warrant to the end-user / owner that each Bobcat serial-numbered attachment will be free from proven defects in material and workmanship for twelve months after delivery to the end-user / owner. A Bobcat Attachment is defined as being manufactured by Bobcat or having been approved and sold by DOOSAN BENELUX S.A.

During the warranty period, the authorised Bobcat dealer shall repair or replace, at DOOSAN BENELUX S.A.'s option, without charge for parts, labour and travel time of mechanics any part of the Bobcat product which fails because of defects in material and workmanship. The end-user / owner shall provide the authorised dealer with prompt written notice of the defect and allow reasonable time for replacement or repair. DOOSAN BENELUX S.A. may, at its option, request that failed parts to be returned to the factory. Transportation of the Bobcat product to the authorised Bobcat attachment dealer for warranty work is the responsibility of the end-user / owner.

Service schedules must be adhered to, documented and genuine parts / lubricants must be used. The warranty does not cover oils, lubricants and replacement of scheduled service items and / or high wear items. Pins and bushings are considered to be normal consumable items and are not warranted.

The warranty does not cover damages resulting from abuse, accidents, alterations, use of the Bobcat product as an attachment on any equipment not approved by Bobcat, air flow obstructions, or failure to maintain or use the Bobcat product according to the instructions applicable to it.

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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 BENELUX S.A. 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.

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