

042014

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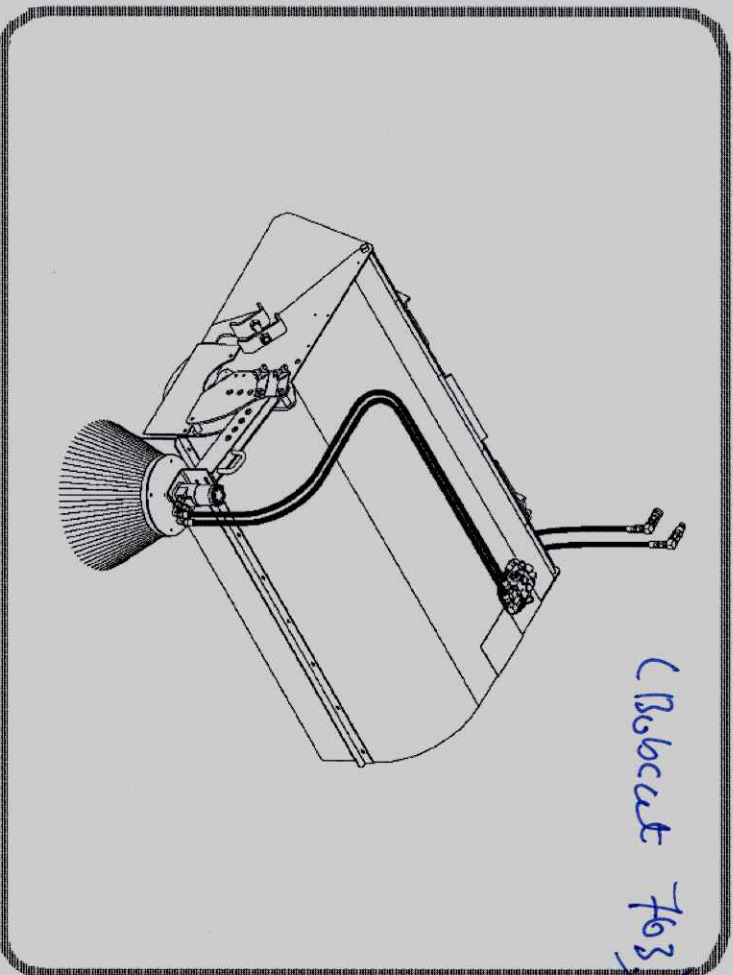
Bobcat®

Operation & Maintenance Manual

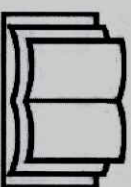
Sweeper

(54 Sweeper) S/N 782600101 & Above
(60 Sweeper) S/N 714400101 & Above
(72 Sweeper) S/N 783700101 & Above

Plant # 07106001 Bobcat Sweeper attachment



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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:

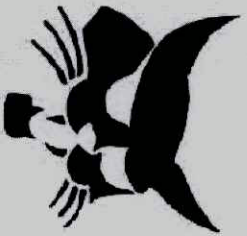
ADDRESS: _____

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

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FOREWORD

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

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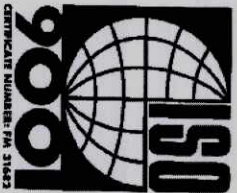
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BOBCAT COMPANY IS ISO 9001 CERTIFIED



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

British Standards Institute (BSI) is the Certified Registrar Bobcat Company chose to assess the Company's compliance with the ISO 9001 at Bobcat's manufacturing facilities in Gwinner and Bismarck, North Dakota (U.S.A.), Pontchatreau (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.

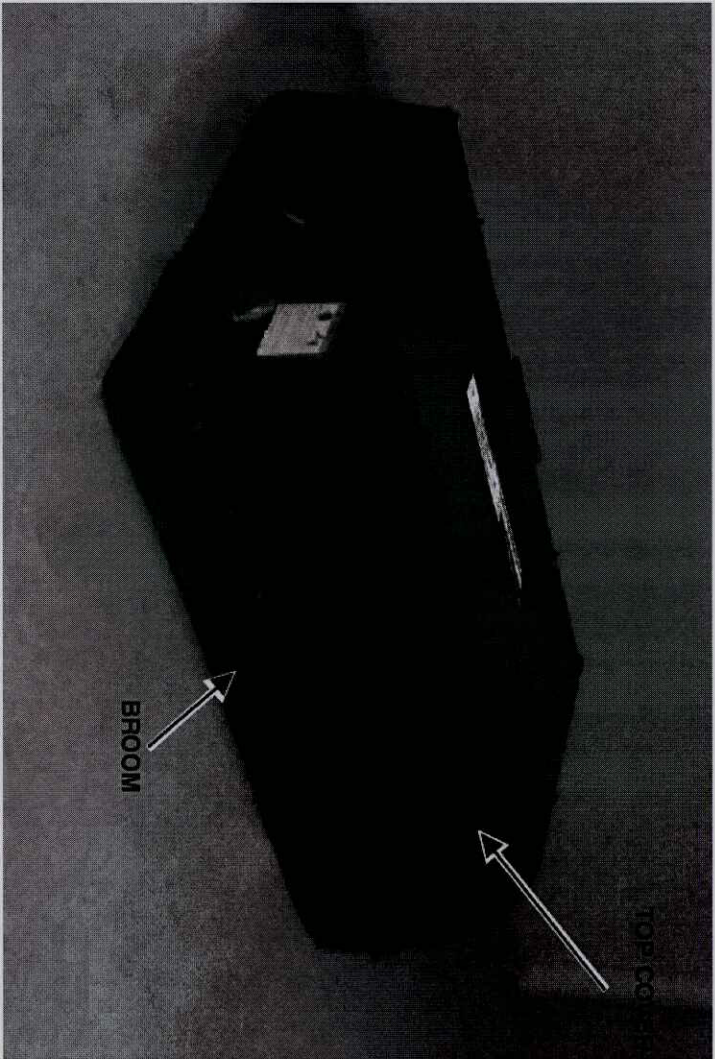
CALIFORNIA PROPOSITION 65 WARNING
Diesel engine exhaust and some of its constituents are known to the state of California to cause cancer, birth defects and other reproductive harm.

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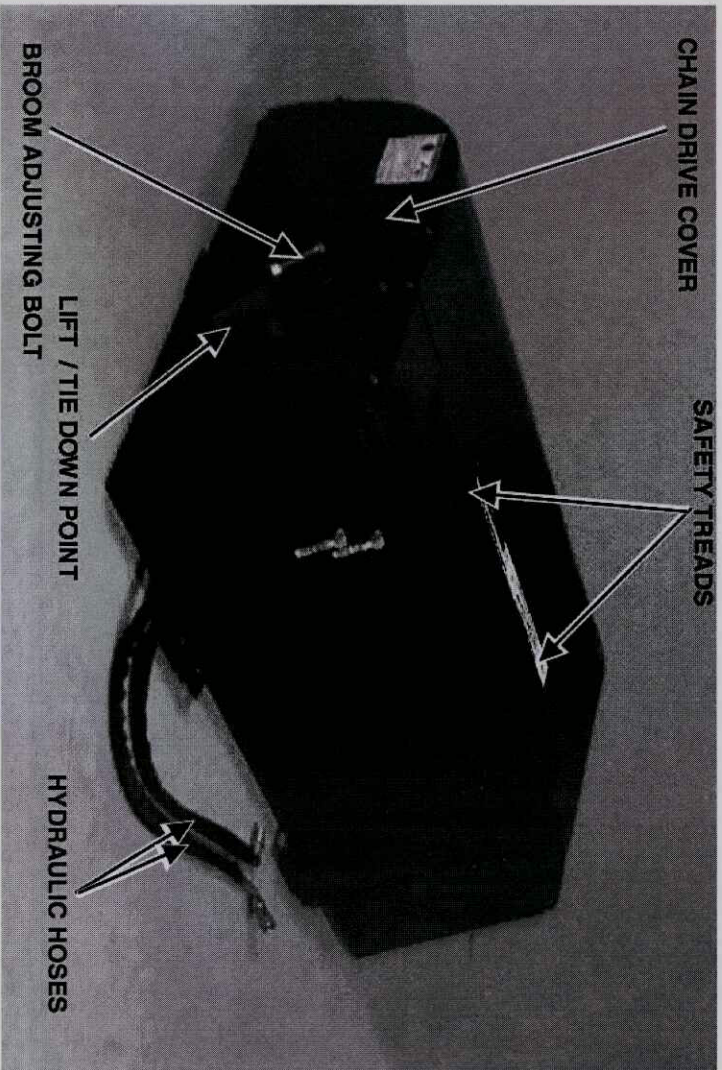


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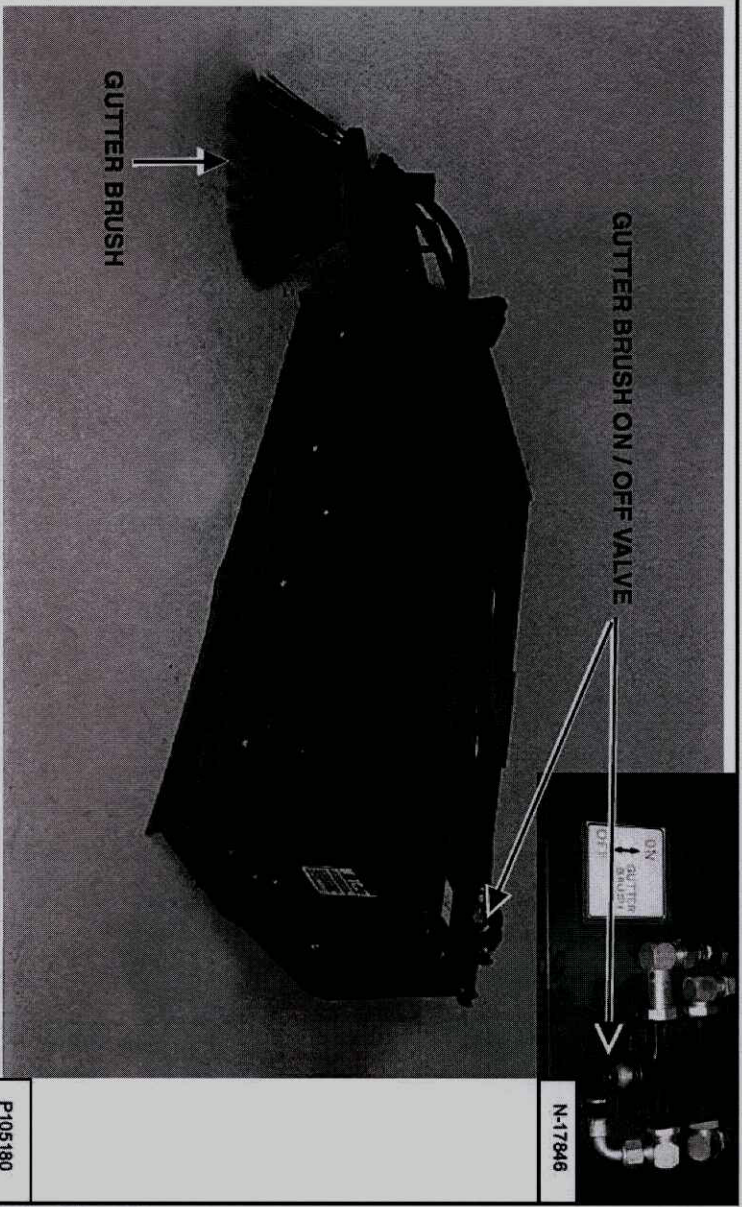


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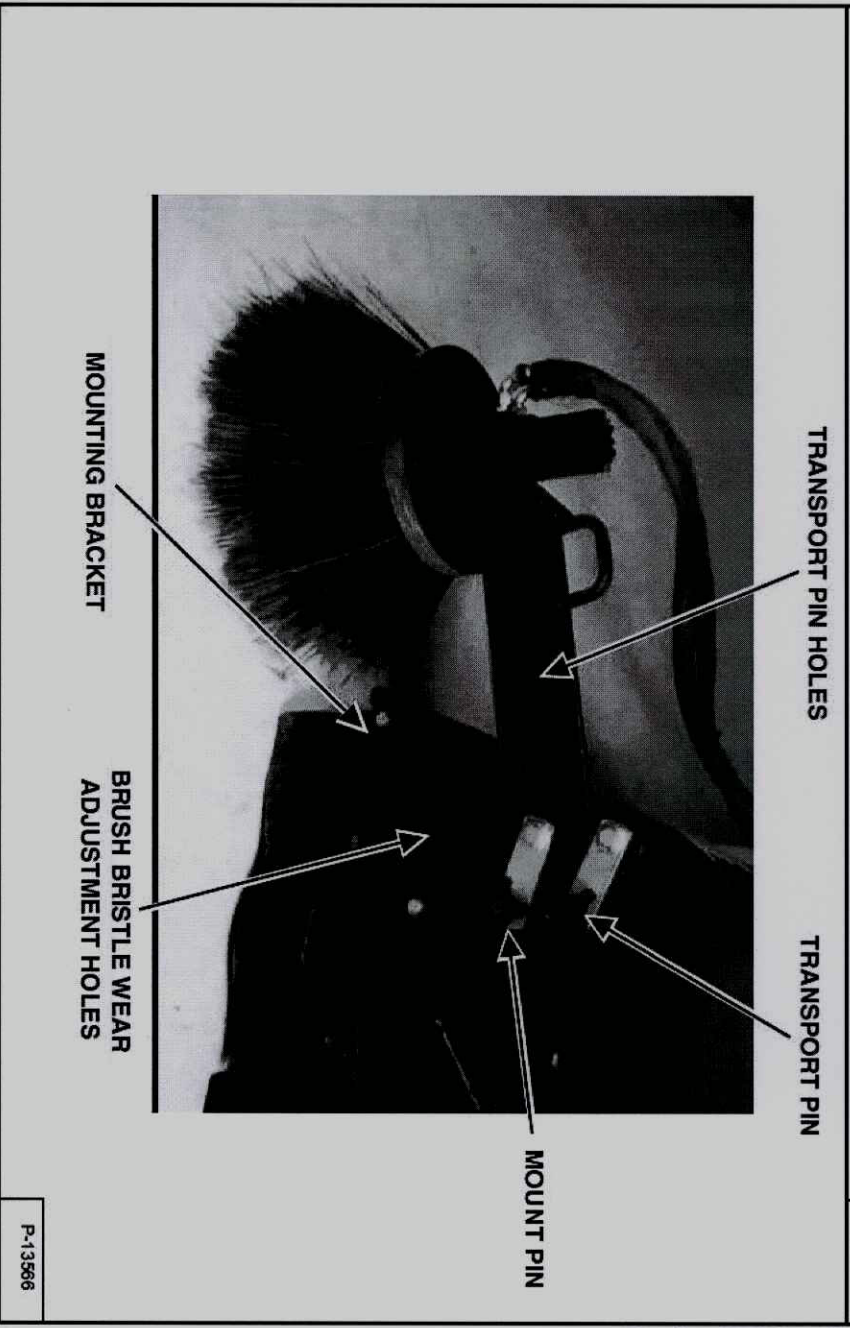
ATTACHMENT IDENTIFICATION (CONT'D)

Gutter Brush (Option)



N-17846

P105180



P-13566

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FEATURES AND ACCESSORIES

Standard Items

The sweeper is equipped with the following Standard items:

- Polypropylene Bristles
- Reversible Cutting Edge

Options And Accessories

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

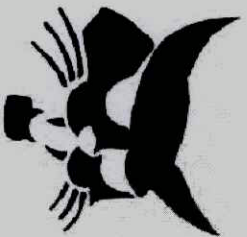
- Steel Bristles
- Gutter Brush
- Quick-Tach Water Kit
- Spray Nozzle Kit

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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.



WARNING

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

W-2001-0502

IMPORTANT

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

I-2019-0284



DANGER

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

D-1002-1107



WARNING

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

W-2044-1107

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

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

Safe Operation Needs A Qualified Operator

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

A Qualified Operator Must Do The Following:

Understand the Written Instructions, Rules and Regulations

- The written instructions from Bobcat Company include the Delivery Report, Operation & Maintenance Manual, Operator's Handbook, Safety Manual and machine signs (decals).

- Check the rules and regulations at your location. The rules may include an employer's work safety requirements. Regulations may apply to local driving requirements or use of a Slow Moving Vehicle (SMV) emblem. 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. Call local utilities or the TOLL FREE phone number found in the *Call Before You Dig* section of this manual.
- Wear tight fitting clothing. Always wear safety glasses when doing maintenance or service. Safety glasses, respiratory equipment, hearing protection, Special Applications Kits or a Front Window Guard are required for some work. See your Bobcat dealer about Bobcat safety equipment for your machine.

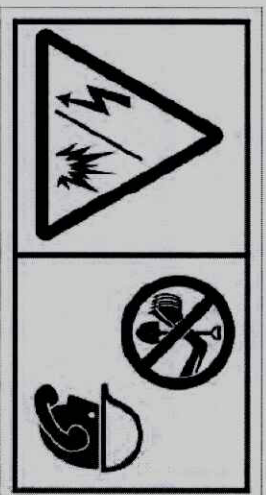
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SAFETY INSTRUCTIONS (CONT'D)

Call Before You Dig

Use Safety Rules

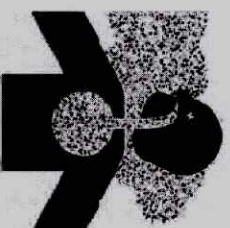
- Read and follow instructions in the machine and the attachment's Operation & Maintenance Manual before operating.
- Check for underground lines before operating attachment (if applicable).
- In addition to the design and configuration of equipment, hazard control and accident prevention are dependent 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.



Call Before You Dig
Dial 811 (USA Only)
1-888-258-0808 (USA & Canada)

When you call, you will be directed to a location in your state / province, or city for information about buried lines (telephone, cable TV, water, sewer, gas, etc.).

Avoid Silica Dust



Cutting or drilling concrete containing sand or rock containing quartz may result in exposure to silica dust. Do not exceed Permissible Exposure Limits (PEL) to silica dust as determined by OSHA or other job site Rules and Regulations. Use a respirator, water spray or other means to control dust. Silica dust can cause lung disease and is known to the state of California to cause cancer.

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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 coolant 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 gasoline or diesel fuel for cleaning parts. Use commercial nonflammable 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).

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FIRE PREVENTION (CONT'D)

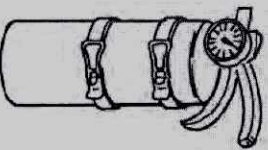
Welding And Grinding

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 nonmetallic 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

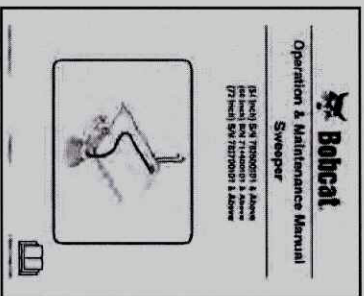


Know where fire extinguishers and first aid kits are located and how to use them. Inspect the fire extinguisher and service the fire extinguisher regularly. Obey the recommendations on the instructions plate.

PUBLICATIONS AND TRAINING RESOURCES

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

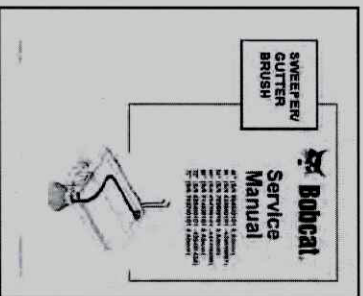
For the latest information on Bobcat products and the Bobcat Company, visit our web site at www.bobcat.com



OPERATION & MAINTENANCE MANUAL

6724016

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



SERVICE MANUAL

6900898

Complete maintenance and overhaul instructions for your Bobcat attachment.

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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.

6708822 (2)

7141748 (54 SWEEPER ONLY)

6708822 (2)

⚠ WARNING

FLYING OBJECTS AND ROTATING PARTS CAN CAUSE INJURY OR DEATH

- STAY AT LEAST 10 FEET (3M) AWAY FROM OPERATING EQUIPMENT.
- STOP ENGINE BEFORE CLEANING OR SERVICING.
- KEEP ALL GUARDS IN PLACE.

⚠ WARNING

AVOID INJURY OR DEATH

• UFT RESTRICTION - WHILE CARRYING A LOADED SWEEPER, THE LOWEST PART OF THE SWEEPER SHOULD NOT EXCEED 1 FT. (0.3 m) FROM THE LOWER SWEEPER TO GROUND AND STOP ENGINE BEFORE CLEANING, SERVICING OR TRAVELING.

LEFT RESTRICTION

• UFT RESTRICTION - WHILE CARRYING A LOADED SWEEPER, THE LOWEST PART OF THE SWEEPER SHOULD NOT EXCEED 1 FT. (0.3 m) FROM THE LOWER SWEEPER TO GROUND AND STOP ENGINE BEFORE CLEANING, SERVICING OR TRAVELING.

APPROVED AND NON-APPROVED LOADS - SWEEPER COMBINATION

APPROVED	NON-APPROVED			
	1000	1200	1600	1800
Capacity (kg)	1000	1200	1600	1800
Capacity (lb)	2200	2600	3500	4000

LOADS IN EXCESS OF OPERATING CAPACITY CAN CAUSE INJURY OR DEATH.

7127607 (60 AND 72 SWEEPER)

⚠ WARNING

AVOID INJURY OR DEATH

• UFT RESTRICTION - WHILE CARRYING A LOADED SWEEPER, THE LOWEST PART OF THE SWEEPER SHOULD NOT EXCEED 1 FT. (0.3 m) FROM THE LOWER SWEEPER TO GROUND AND STOP ENGINE BEFORE CLEANING, SERVICING OR TRAVELING.

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APPROVED AND NON-APPROVED LOADS - SWEEPER COMBINATION

APPROVED	NON-APPROVED			
	1000	1200	1600	1800
Capacity (kg)	1000	1200	1600	1800
Capacity (lb)	2200	2600	3500	4000

LOADS IN EXCESS OF OPERATING CAPACITY CAN CAUSE INJURY OR DEATH.

7105178

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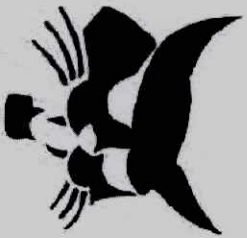
ATTACHMENT SIGNS (DECALS) (CONT'D)

Gutter Brush (Option)

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.



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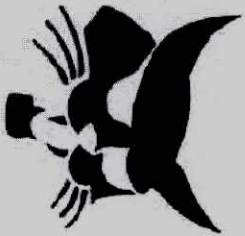
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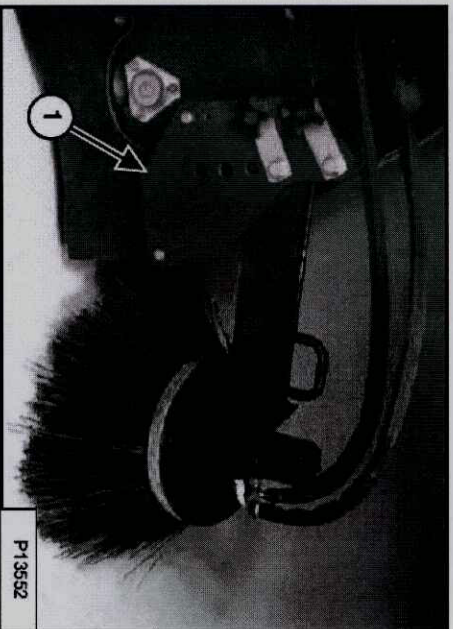
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INITIAL SETUP

Gutter Brush (If Equipped)

NOTE: The gutter brush can be mounted on either side of the sweeper.

Figure 3



An extra mounting bracket (Item 1) [Figure 3] can be ordered from Bobcat Parts.

Figure 4

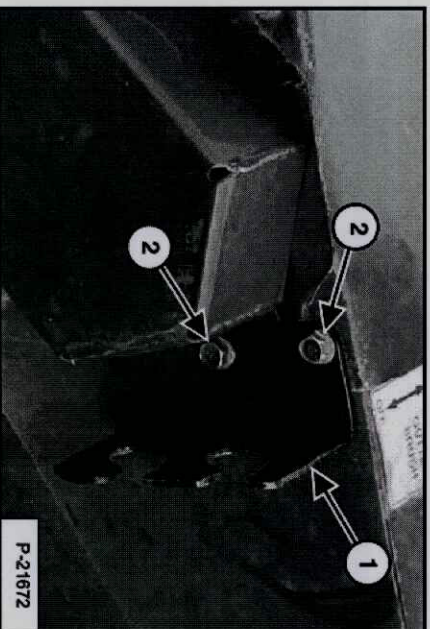


When the gutter brush is moved from the right side to the left side of the sweeper, the hydraulic hoses (Item 1 and 2) [Figure 4] must be switched for correct brush rotation.

Tighten the hose connections to 81 N•m (60 ft-lb) torque.

Hose Hanger Bracket

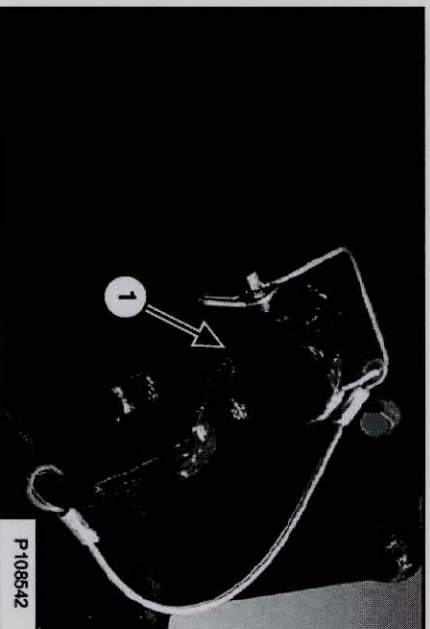
Figure 5



On some sweepers, the hose hanger bracket (Item 1) is not installed. The bracket will then be included in the shipping bag. Remove the two existing bolts (Item 2) and install the hose hanger bracket (Item 1) [Figure 5].

Removable Hose Guide (If Equipped)

Figure 6



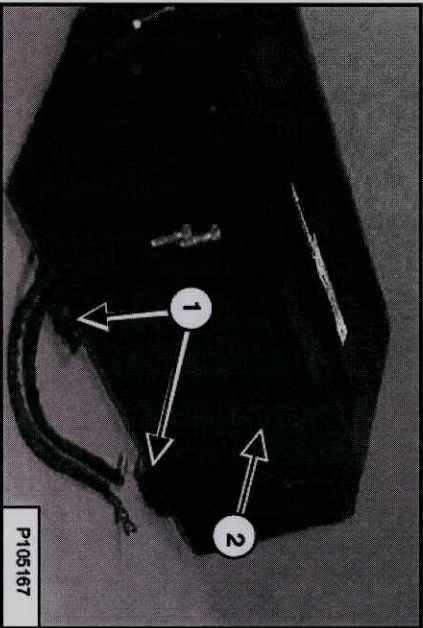
On some sweepers, the removable hose guide (Item 1) [Figure 6] is located on the left side of the sweeper.

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DAILY INSPECTION

Attachment Mounting Frame

Figure 7



Inspect the Bob-Tach™ wedge mounts (Item 1), mounting flange (Item 2) [Figure 7] and all welds on the sweeper for wear and damage each time the sweeper is removed from the machine.

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

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DAILY INSPECTION (CONT'D)

Bob-Tach

Hand Lever Bob-Tach

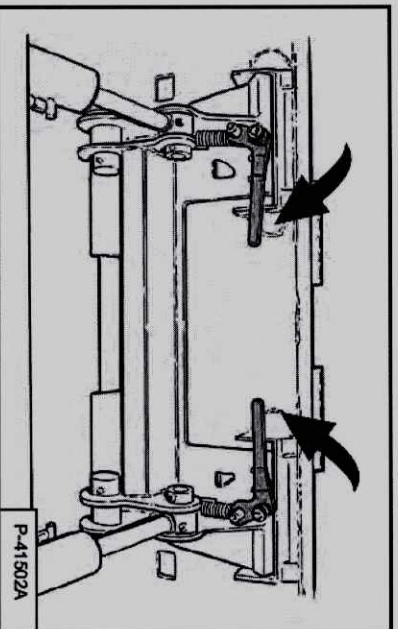


AVOID INJURY OR DEATH

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

W-2715-0208

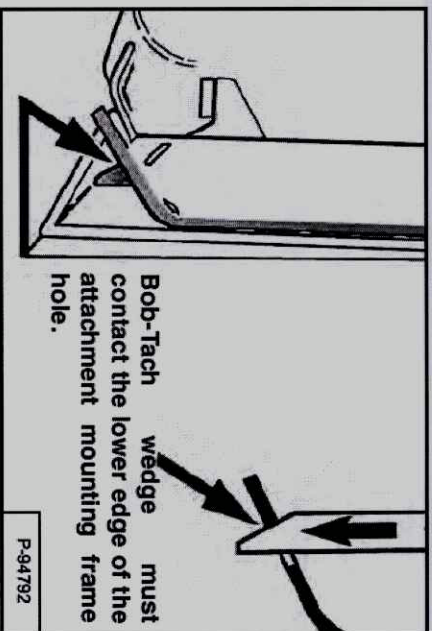
Figure 8



Push down on the Bob-Tach levers until they are fully engaged in the locked position [Figure 8] (wedges fully extended through the attachment mounting frame holes).

The levers and wedges must move freely [Figure 8].

Figure 9



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

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

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

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

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DAILY INSPECTION (CONT'D)

Figure 12

Bob-Tach (Cont'd)

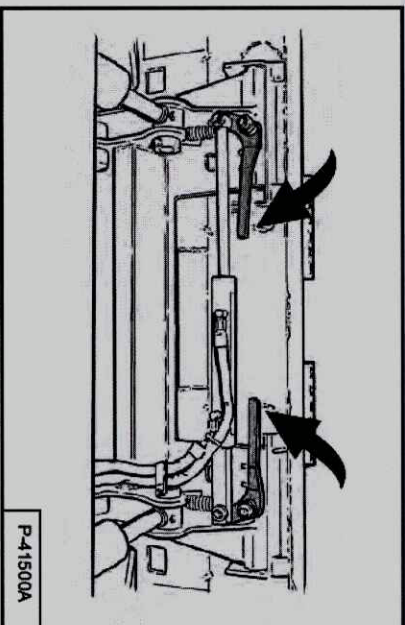
Power Bob-Tach



AVOID INJURY OR DEATH

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

W-2715-0208



Push and hold the BOB-TACH "WEDGES DOWN" switch (Item 1) [Figure 10] and [Figure 11] until the levers are fully engaged in the locked position [Figure 12] (wedges fully extended through the attachment mounting frame holes).

Figure 10

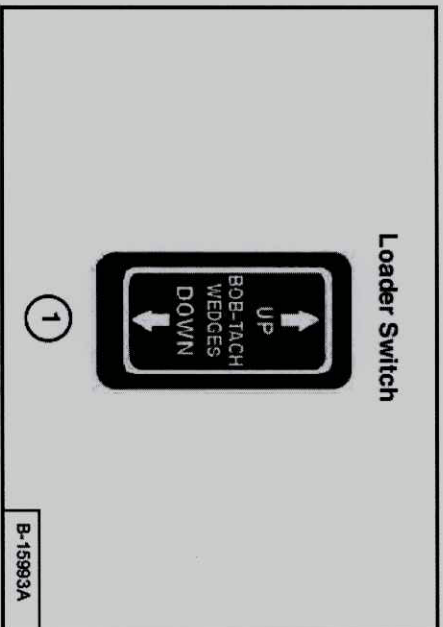


Figure 13

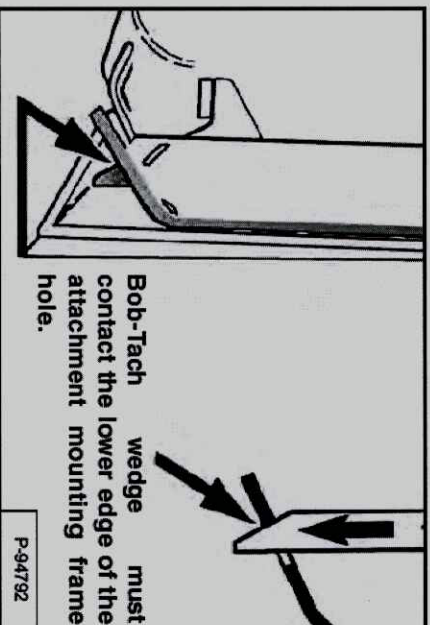
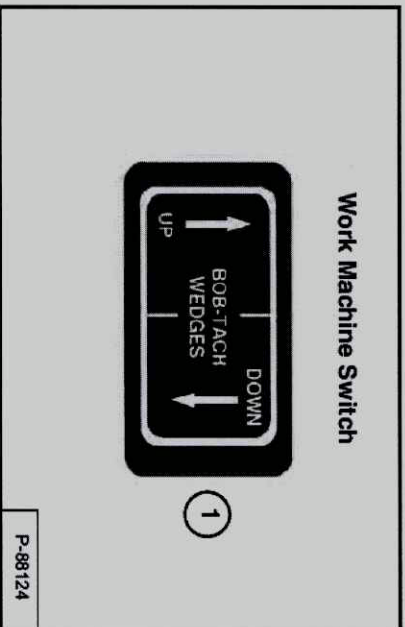


Figure 11



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

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

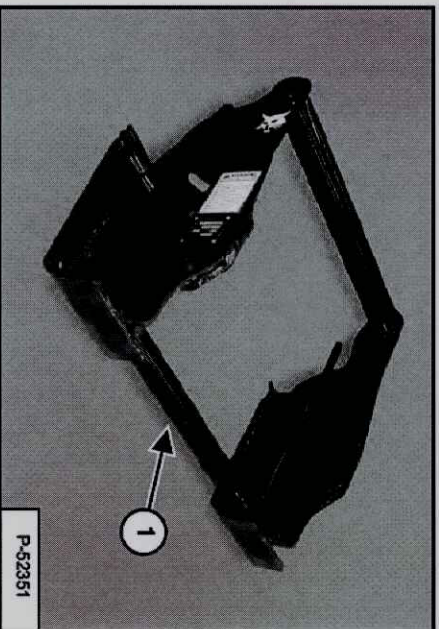
Inspect the mounting frame on the attachment. (See the machine's Operation & Maintenance Manual for inspecting the Bob-Tach). Replace any parts that are damaged, bent or missing. Keep all fasteners tight. Look for cracked welds. Contact your Bobcat dealer for repair or replacement parts.

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

DAILY INSPECTION (CONT'D)

VersaHANDLER® Adapter Frame

Figure 14



Inspect the adapter frame (Item 1) [Figure 14] and all welds on the attachment mount for wear and damage each time the attachment is removed from the VersaHANDLER.

Repair or replace damaged parts.

OPERATING PROCEDURE WITH LOADERS

Approved Loader Models And Requirements

Figure 15

LOADER MODEL	*54 SWEEPER	*60 SWEEPER	72 SWEEPER
553	X		
751	X	X	
753	X	X	
763		X	
773		X	X
863		X	X
864		X	X
873			X
963			X
A300			X
A770			X+
S100	X		
S130	X	X	
S150		X	X
S160		X	X
S175		X	X
S185		X	X
S205		X	X
S220			X+
S250			X+
S300		X	X+
S330			X+
S510		X	X
S530		X	X
S550		X	X
S570		X	X
S590		X	X
S630			X+
S650			X+
S750			X+
S770			X+
T110	X		
T140	X	X	
T180		X	
T190		X	X
T550		X	X
T590		X	X
T630			X+
T650			X+

X = Approved

* These sweeper models are not supplied with a removable hose guide.

+ These sweeper / loader combinations are approved to use the removable hose guide. If your combination is not approved, remove the hose guide from the hoses. See your Bobcat dealer for available hose guide kits.

The chart [Figure 15] shows the approved sweeper models for each loader model.

⚠ WARNING

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

W-2662-0108

Figure 16

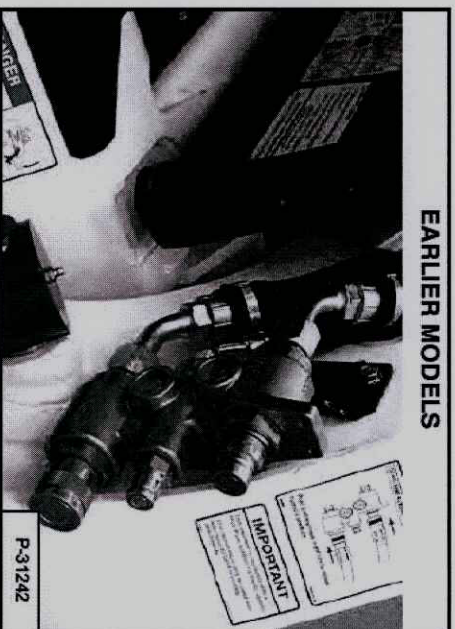
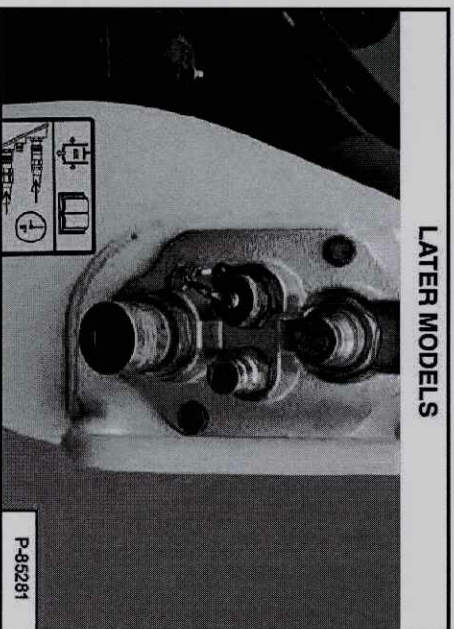


Figure 17



The loader must be equipped with front auxiliary hydraulics [Figure 16] or [Figure 17] for proper operation of the sweeper. See your Bobcat Loader dealer for available kits for your model loader.

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.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

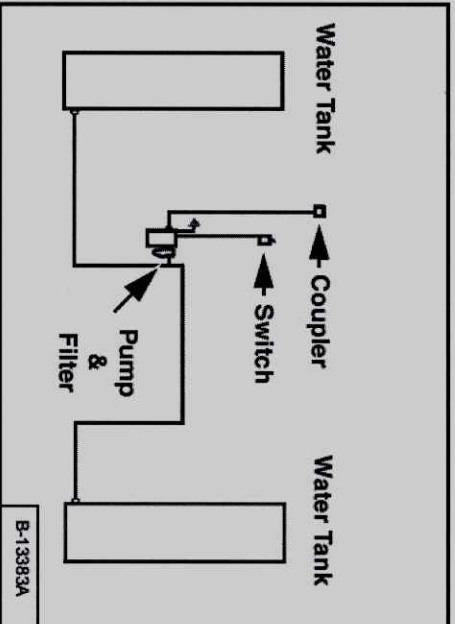
Spray Nozzle Kit

Machine / Attachment Setup

Quick-Tach Water Kit

Quick-Tach Water kits are available and are rear mounted on the loaders and provide water to the Spray Nozzle kit.

Figure 18



The illustration shows a typical arrangement and routing of the water kits [Figure 18].

See your Bobcat dealer for available water kits.

The Spray Nozzle kit helps control dust when the sweeper is mounted on the loader. See your Bobcat dealer for available spray kits.

Use the following procedure to install the nozzles on the sweeper:

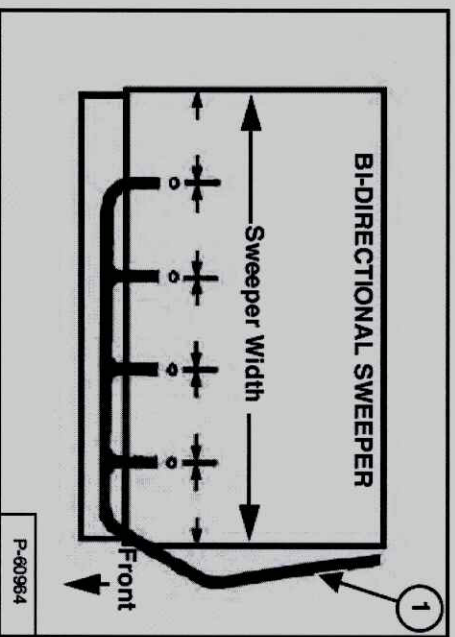
! WARNING

AVOID INJURY OR DEATH

Wear safety goggles to prevent eye injury when drilling or grinding.

W-2108-1186

Figure 19



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Install the four fittings and nozzles in the pre-drilled holes [Figure 19].

NOTE: Install the nozzles so the spray is directed parallel with the brush working surface.

Cut the hose to fit between the fittings, clamp the hoses in place.

Install the remaining hose (Item 1) [Figure 19] on the left fitting and cut the length to reach the lift arm coupler.

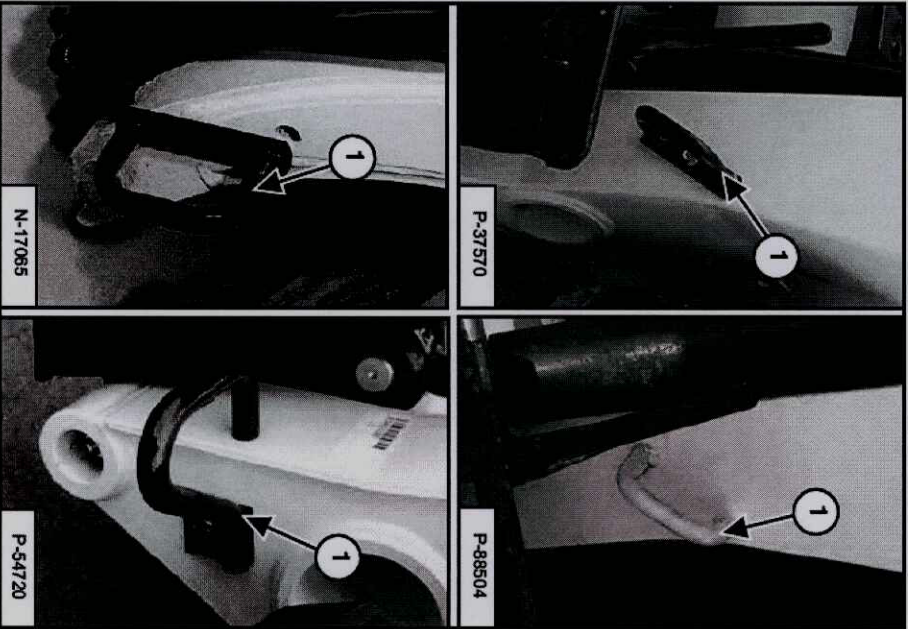
Install the adapter on the hose, clamp the hose and install the coupler on the adapter.

Use the cable tie to hold the long section of the hose to prevent the hose from breaking or wearing against the attachment.

Machine / Attachment Setup (Cont'd)

Hose Guide Installation (Earlier Version)

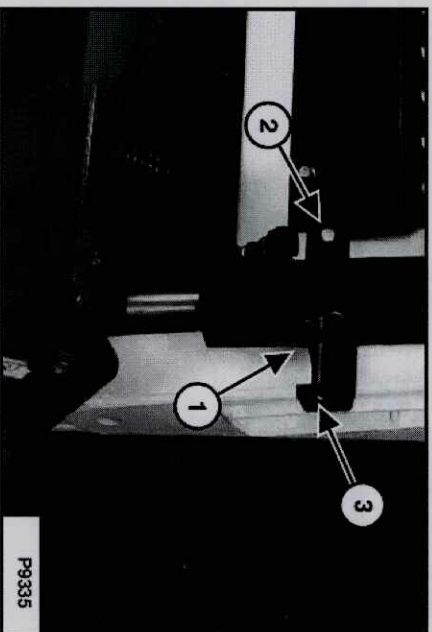
Figure 20



Install the correct hose guide (Item 1) [Figure 20] 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.

Figure 21



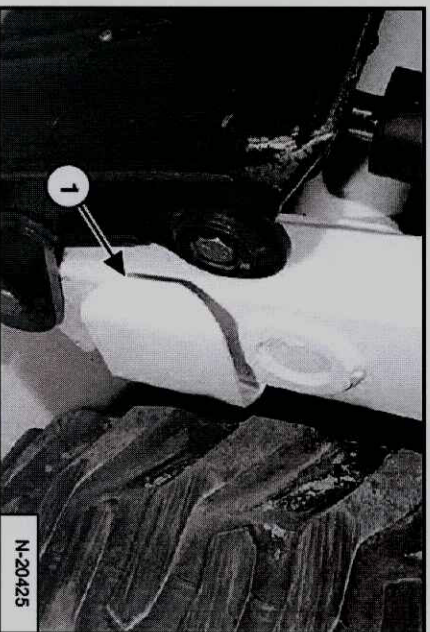
Install the hose clamp (Item 1) [Figure 21] over the tilt cylinder rod and slide the clamp onto the cylinder housing.

Install the bolt (Item 2) [Figure 21] and nut and tighten.

Install the clevis pin (Item 3) [Figure 21] and cotter pin.

Hose Guide Installation (Model 963)

Figure 22



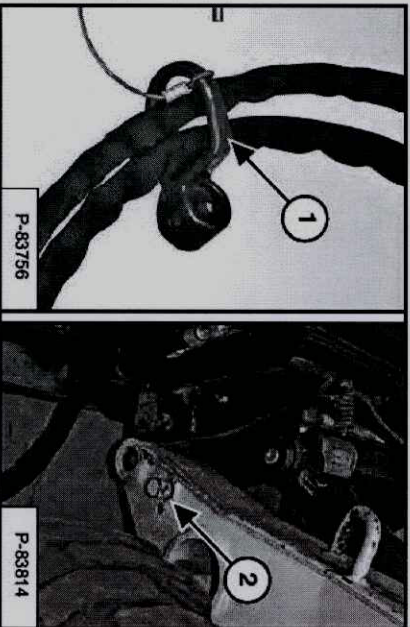
Install the hose guide (Item 1) [Figure 22].

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Machine / Attachment Setup (Cont'd)

Hose Guide Installation (Removable - If Equipped)

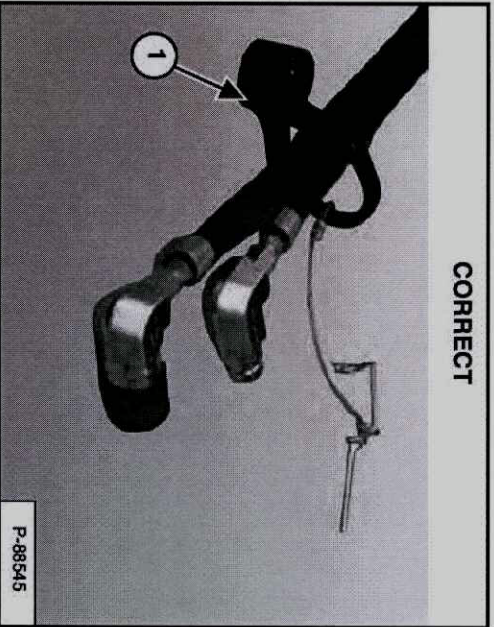
Figure 23



NOTE: Some attachments are factory equipped with a removable hose guide (item 1) installed on the hydraulic hoses. The removable hose guide is factory installed for use with Bobcat loaders equipped with a mounting post (item 2) [Figure 23]. Removable hose guide and mounting post kits are available through your Bobcat dealer.

Installation of removable hose guide is done during hose routing. (See Hose Routing (Removable - If Equipped) on Page 39.)

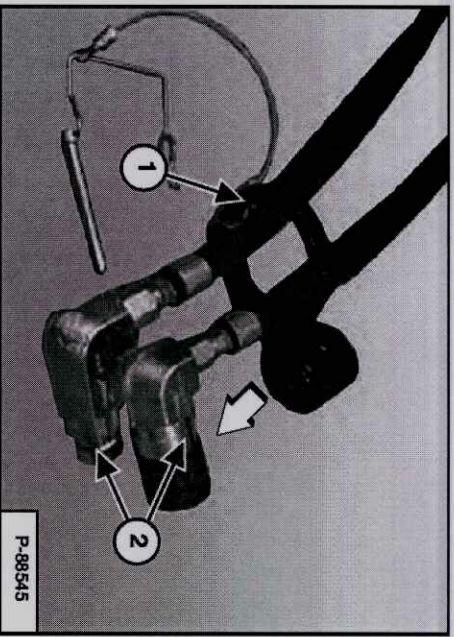
Figure 24



Shown is the removable hose guide (item 1) [Figure 24] correct orientation for a loader.

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

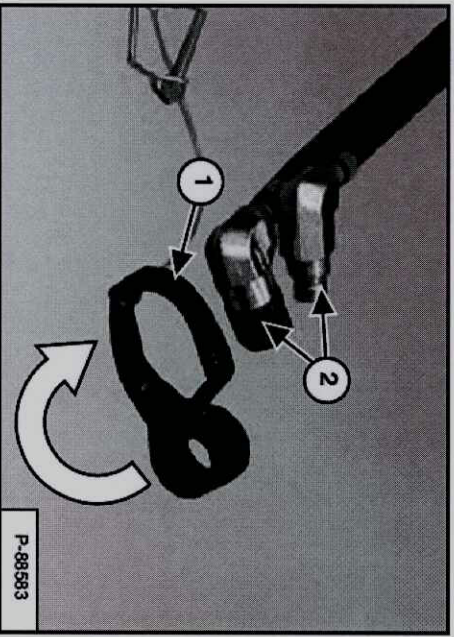
Figure 25



To change the removable hose guide (item 1) [Figure 25] orientation, slide the removable hose guide off the hoses.

NOTE: It may be necessary to remove the hose couplers (item 2) [Figure 25].

Figure 26



Flip the removable hose guide (item 1) over to reverse its orientation on the hoses (item 2) [Figure 26].

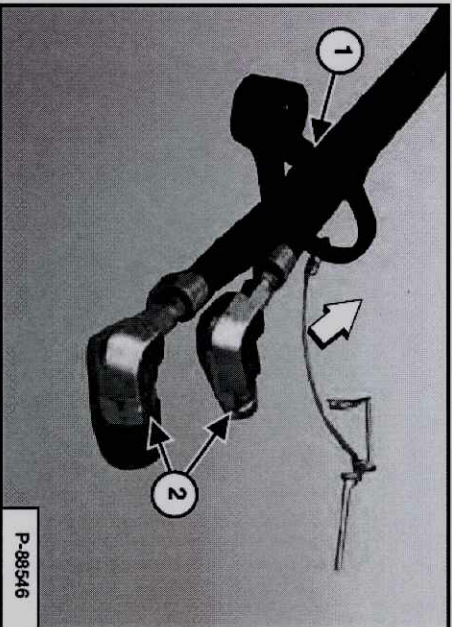
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OPERATING PROCEDURE WITH LOADERS (CONT'D)

Machine / Attachment Setup (Cont'd)

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

Figure 27



Slide the removable hose guide (Item 1) [Figure 27] back onto the hoses.

NOTE: If the couplers (Item 2) [Figure 27] were removed, reinstall at this time.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Entering And Exiting The Loader

⚠ WARNING

AVOID INJURY OR DEATH

When operating the machine:

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

W-2261-0909

Entering

Figure 28



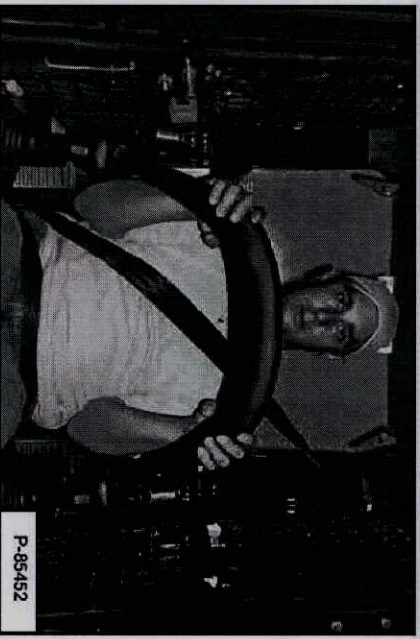
Use the attachment steps, grab handles and safety treads (on the loader lift arms and frame) to get on and off the loader [Figure 28].

Figure 29



Enter the loader. Fasten the seat belt and adjust it so the buckle is centered between your hips [Figure 29].

Figure 30



Lower the seat bar and engage the parking brake [Figure 30].

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

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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.

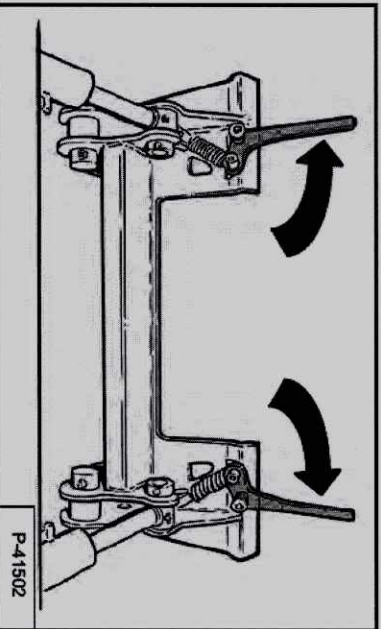
⚠ WARNING

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 24.)

Figure 31

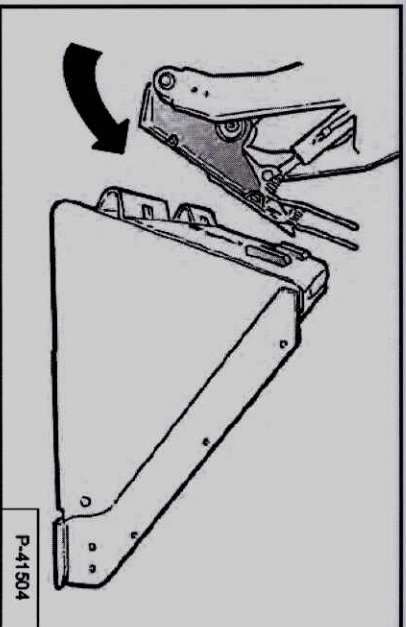


Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) [Figure 31].

Enter the loader. (See Entering And Exiting The Loader on Page 33.)

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

Figure 32

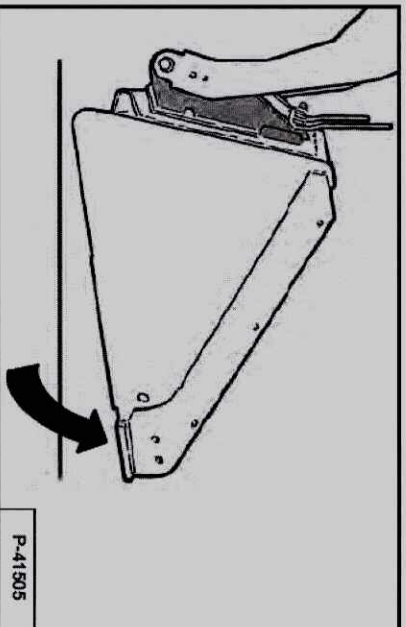


Lower the lift arms and tilt the Bob-Tach forward.

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 32].

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

Figure 33



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

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 33.)

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Figure 35

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

! WARNING

AVOID INJURY OR DEATH

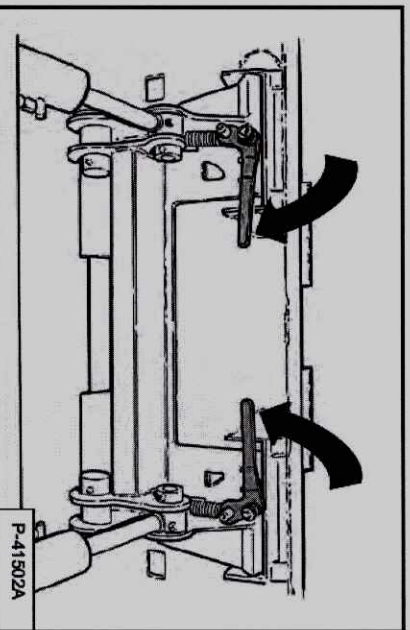
Before you leave the operator's seat:

- 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 NEUTRA L / LOCK ED position to make sure the lift, tilt and traction drive functions are deactivated.

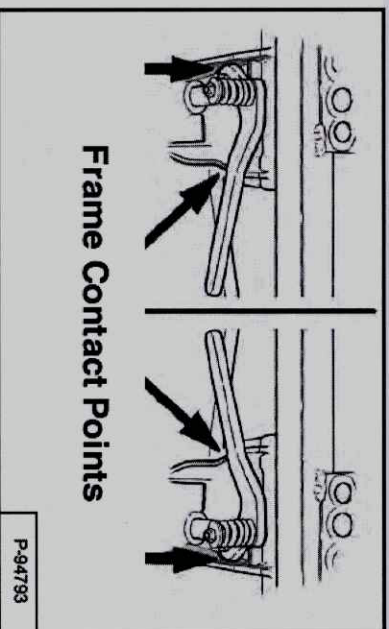
The seat bar system must deactivate these functions when the seat bar is up. See your Bobcat dealer for service if controls do not deactivate.

W-2463-1110

Figure 34



Push down on the Bob-Tach levers until they are fully engaged in the locked position [Figure 34] (wedges fully extended through the attachment mounting frame holes).



Frame Contact Points

Both levers must contact the frame as shown when locked [Figure 35].

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

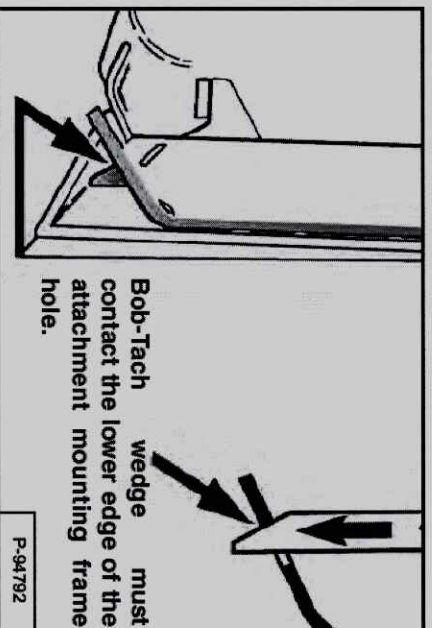
! WARNING

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 36



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

The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 36].

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OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Power Bob-Tach

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 38].

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



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 33.)

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

Figure 37

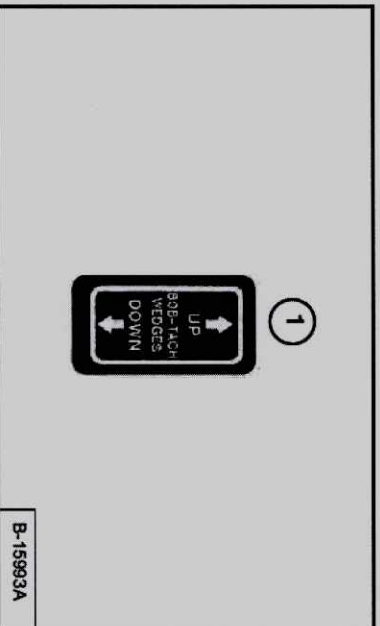
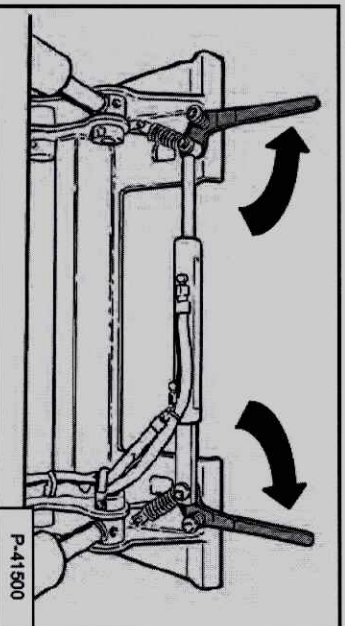
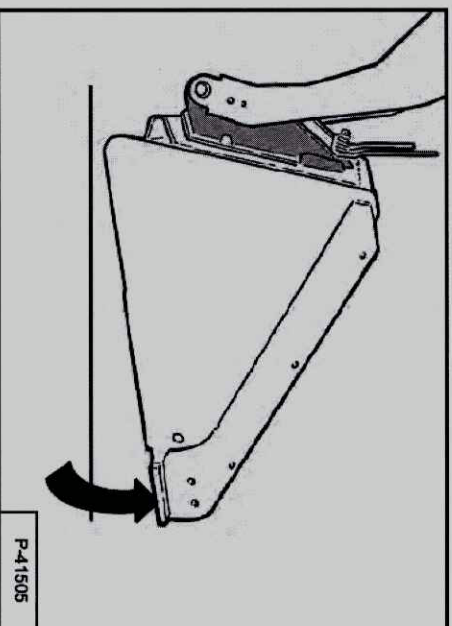


Figure 38



Push and hold the BOB-TACH "WEDGES UP" switch (Item 1) [Figure 37] until the levers are fully raised (wedges fully raised) [Figure 38].

Figure 39



Tilt the Bob-Tach backward until the attachment is slightly off the ground [Figure 39]. This will cause the attachment mounting frame to fit up against the front of the Bob-Tach.

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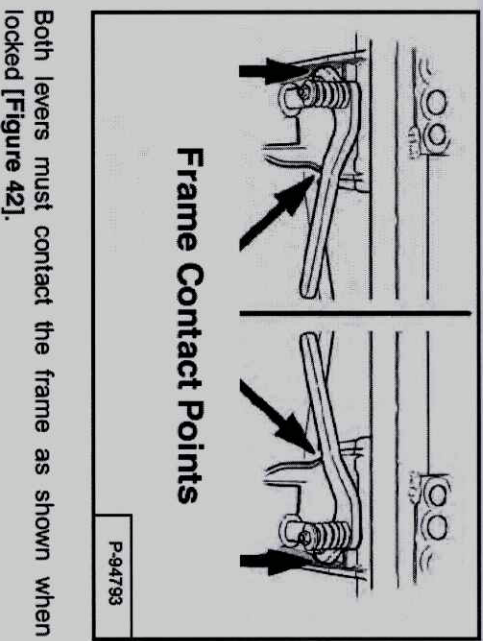
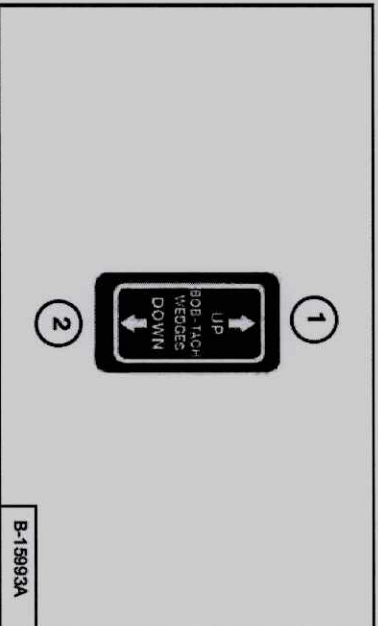
OPERATING PROCEDURE WITH LOADERS (CONT'D)

Figure 42

Installation (Cont'd)

Power Bob-Tach (Cont'd)

Figure 40



Frame Contact Points

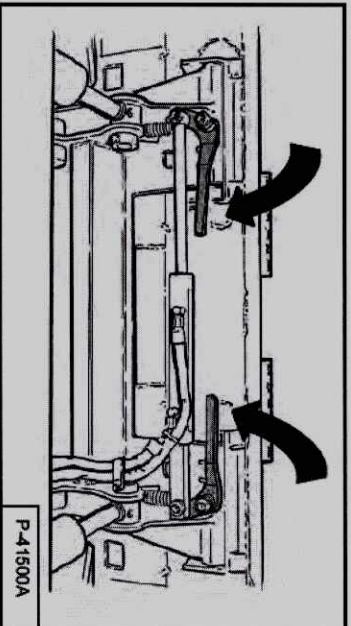
Both levers must contact the frame as shown when locked [Figure 42].

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

NOTE: The Power Bob-Tach system has continuous pressurized 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 40] until the levers are fully raised (wedges fully raised).

Figure 41



Push and hold the BOB-TACH “WEDGES DOWN” switch (Item 2) [Figure 40] until the levers are fully engaged in the locked position [Figure 41] (wedges fully extended through the attachment mounting frame holes).

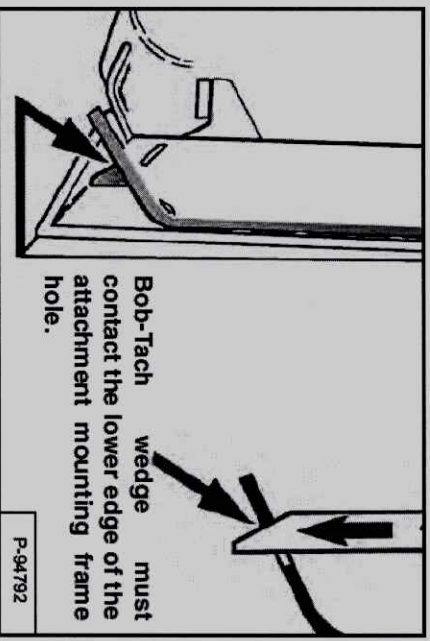


AVOID INJURY OR DEATH

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 43



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

The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 43].

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

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

Power Bob-Tach (Cont'd)

Stop the engine and exit the loader. (See Entering And Exiting The Loader on Page 33.)



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 NEUTRA L / LOCK ED 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

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OPERATING PROCEDURE WITH LOADERS (CONT'D)

Hose Routing (Removable - If Equipped)

Installation (Cont'd)

Hose Routing (Earlier Version)

Figure 45

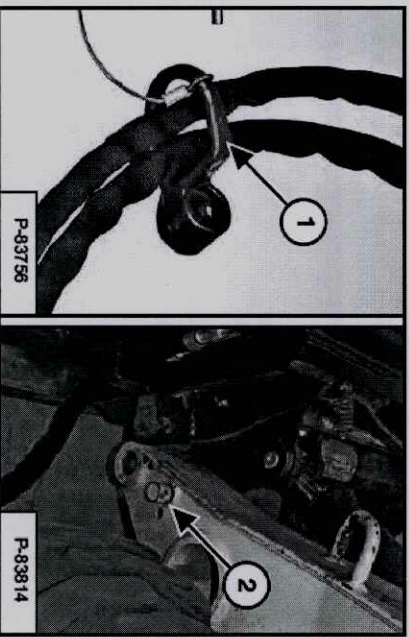
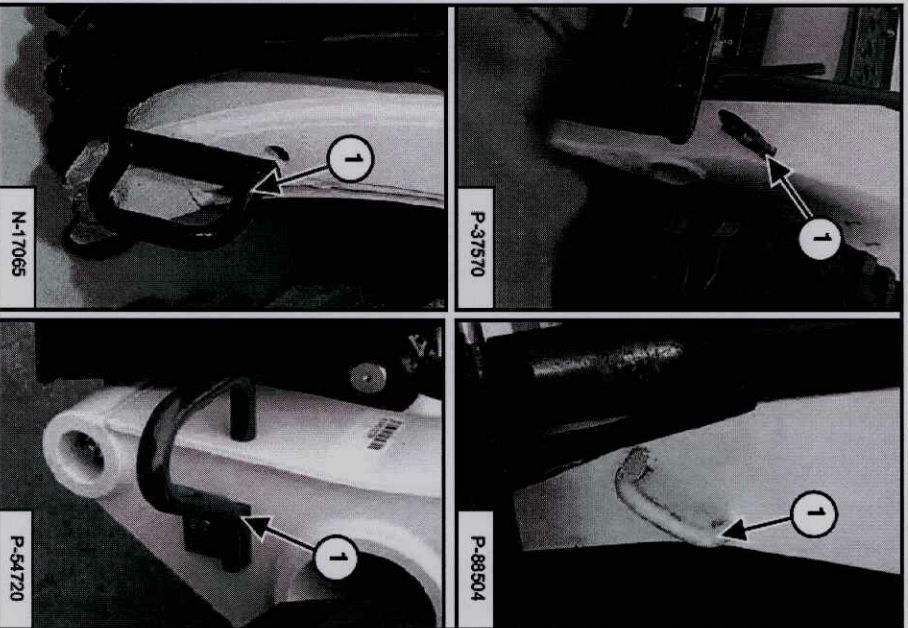


Figure 44

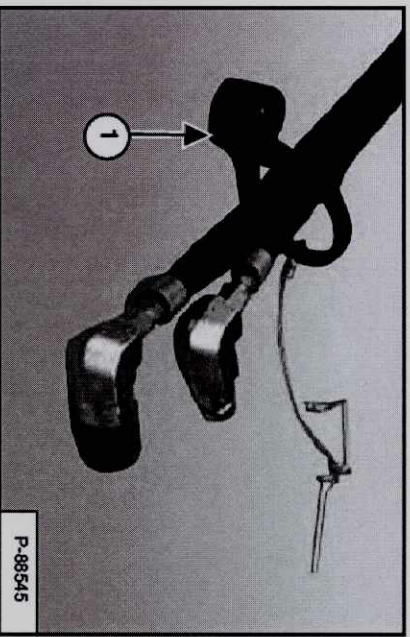


Route hoses through hose guide (Item 1) [Figure 44] and connect quick couplers to the loader. (See Hydraulic Quick Couplers on Page 42.)

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.

NOTE: Some attachments include removable hose guide (Item 1) for use on loaders equipped with a mounting post (Item 2) [Figure 45]. Removable hose guide and mounting post kits are available through your Bobcat dealer.

Figure 46



The removable hose guide (Item 1) [Figure 46] is pre-installed on the hydraulic hoses. If the orientation of the hose guide needs to be changed. (See Hose Guide Installation (Removable - If Equipped) on Page 31.)

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OPERATING PROCEDURE WITH LOADERS (CONT'D)

Installation (Cont'd)

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

Figure 47

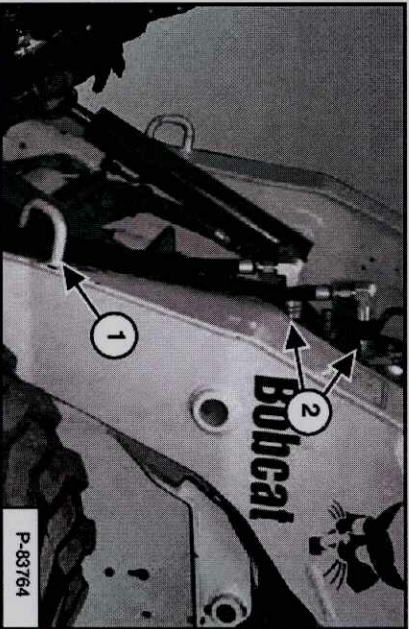
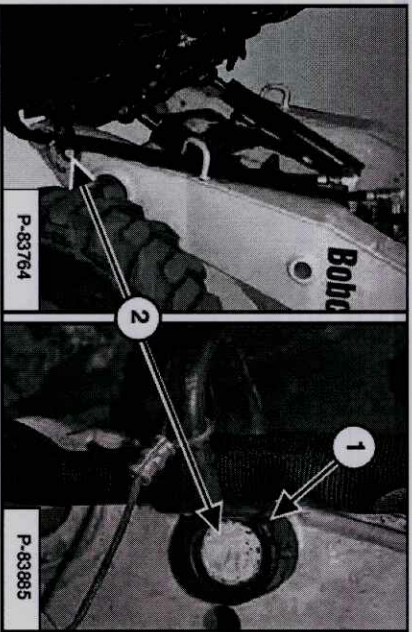
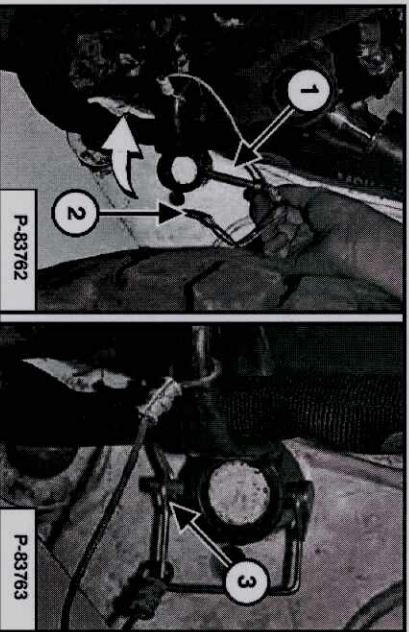


Figure 49



Install the removable hose guide (Item 1) onto the mounting post (Item 2) [Figure 49] located on the side of the loader lift arm.

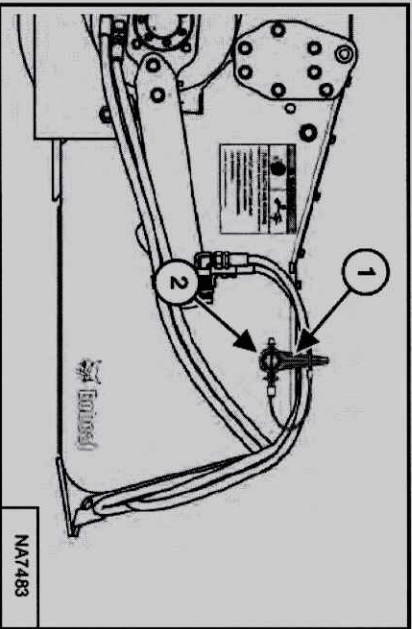
Figure 50



Insert lock pin (Item 1) through the removable hose guide and mounting post and latch eyelet (Item 2) onto the lock pin (Item 3) [Figure 50].

If your loader has an earlier version hose guide, route the attachment hydraulic hoses through the hose guide (Item 1). Connect the quick couplers to the loader (Item 2) [Figure 47]. (See Hydraulic Quick Couplers on Page 42.)

Figure 48



Remove the removable hose guide (Item 1) from the storage post (Item 2) [Figure 48] (if equipped).

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 42.)

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 33.)

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 physician familiar with this injury.

W-2072-0807

Check the attachment hydraulic quick coupler connections for leaks.

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OPERATING PROCEDURE WITH LOADERS (CONT'D)

Hydraulic Quick Couplers

IMPORTANT

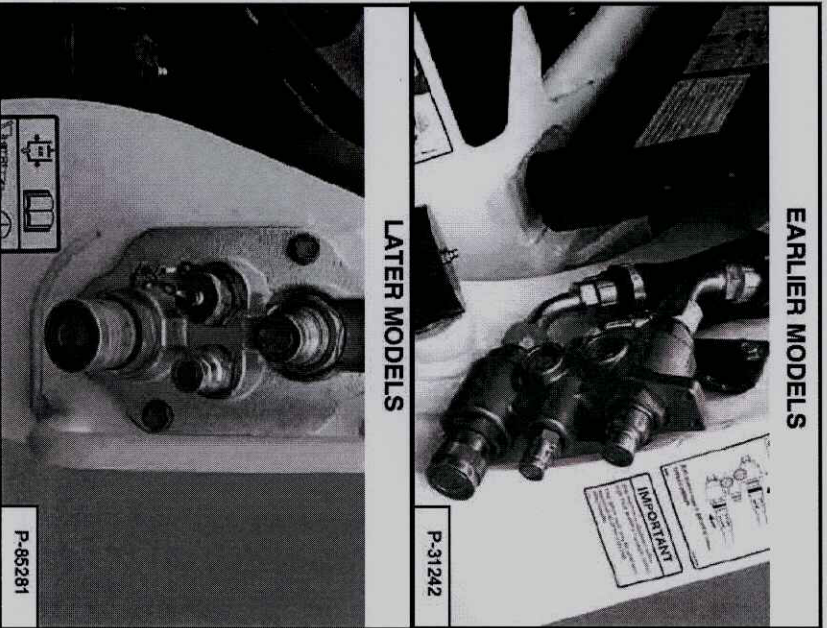
- Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.
- Contain and dispose of any oil leakage in an environmentally safe manner.

I-2278-0608

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 51



⚠ 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 51].

Install the male coupler into the female coupler. Full connection is made when the ball release sleeve slides forward on the female coupler [Figure 51].

NOTE: Check that the attachment hydraulic hoses are not twisted or contacting any moving parts of the loader or attachment. (See For First Time Installation on Page 41.) 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.

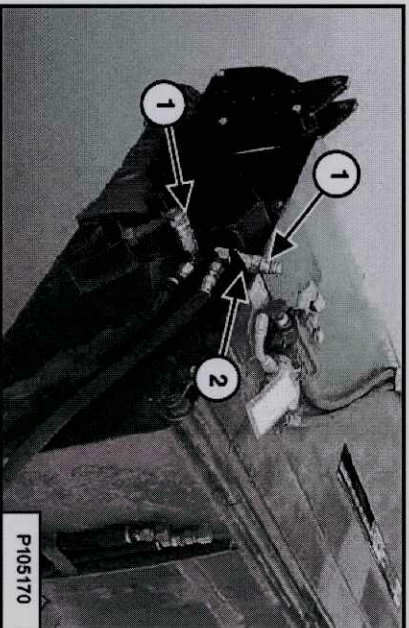
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OPERATING PROCEDURE WITH LOADERS (CONT'D)

Control Functions

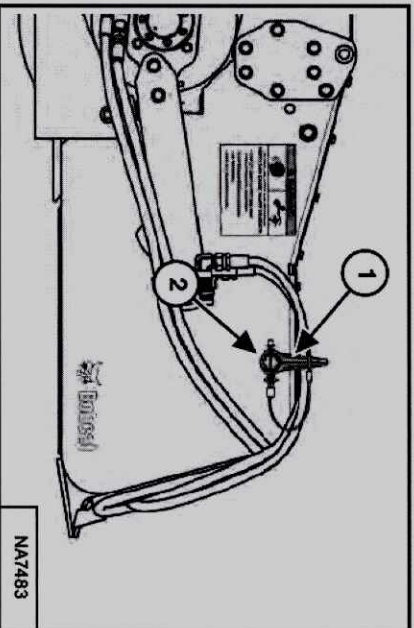
Hydraulic Quick Couplers (Cont'd)

Figure 52



When the sweeper is not connected to the loader, install the hoses (Item 1) into the hose hanger bracket (Item 2) [Figure 52] (if equipped).

Figure 53



When the sweeper is not connected to the loader, install the removable hose guide (Item 1) onto the storage post (Item 2) [Figure 53] (if equipped).

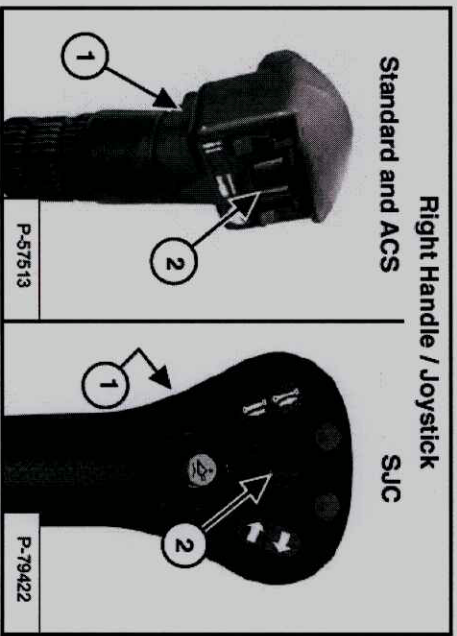
NOTE: The auxiliary hydraulics must be activated prior to attachment operation.

Enter the loader. (See Entering And Exiting The Loader on Page 33.)

Start the engine and release the parking brake.

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

Figure 54



Push the front button (Item 1) [Figure 54] on the right steering lever once for continuous flow, the brush will rotate counterclockwise to sweep in a forward direction.

Push the button (Item 1) [Figure 54] a second time to disengage continuous flow (detent).

To reverse the sweeper rotation, press the switch (Item 2) [Figure 54] to the left.

Continuous (Detent) Reverse Direction Operation

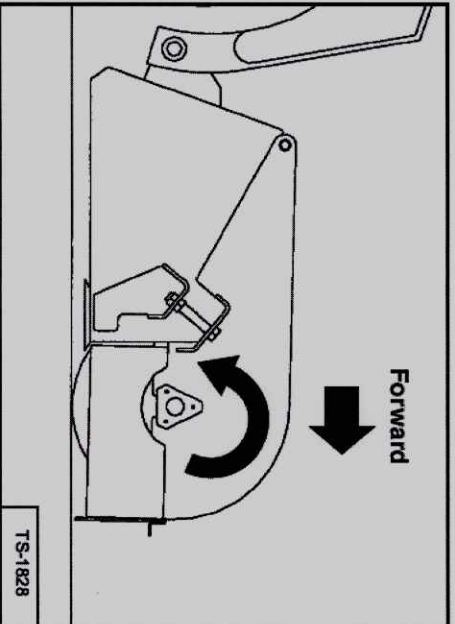
To activate continuous reverse sweeper rotation, hold the switch (Item 2) to the left and press the button (Item 1) [Figure 54].

To deactivate continuous reverse operation, push the button (Item 1) [Figure 54] a second time.

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Operation With The Loader**Sweeper Operation**

Figure 55



Lower the sweeper slowly to the surface. Make sure the cutting edge of the sweeper bucket is level and just above the surface and the brushes are in contact with the surface [Figure 55].

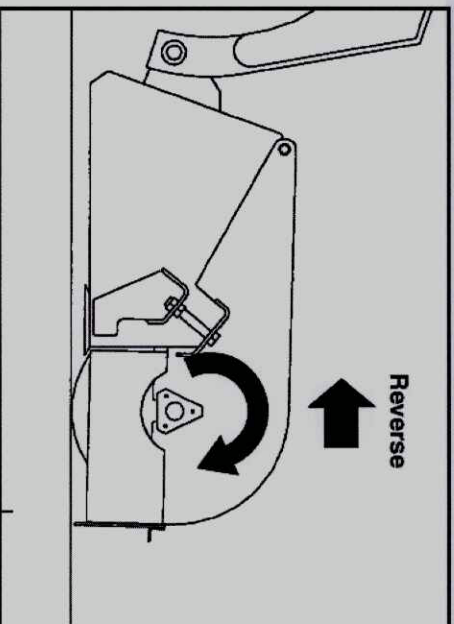
Put the loader lift arms in the float position and use the tilt function to level the sweeper. (See the loader's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

⚠ WARNING

AVOID INJURY OR DEATH

- Bystanders must keep at least 3 m (10 ft) away from the machine and attachment when operating.
- Never leave the operating position when the engine is running.

W-2320-0910



If the debris is packed (or stuck) on the surface and the broom will not sweep it up, reverse broom rotation. (See Control Functions on Page 43.) Lower the cutting edge to the surface and move the loader backward. The attachment cutting edge will scrape the surface while the broom sweeps the debris into the bucket [Figure 56].

⚠ WARNING

AVOID INJURY OR DEATH

- Wear safety glasses to prevent eye injury when any of the following conditions exist:
- When fluids are under pressure.
 - Flying debris or loose material is present.
 - Engine is running.
 - Tools are being used.

W-2019-0907

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Bristles Types

Operation With The Loader (Cont'd)

Figure 57

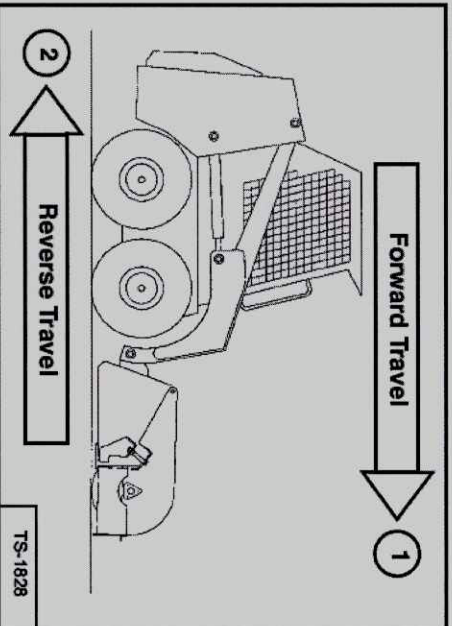
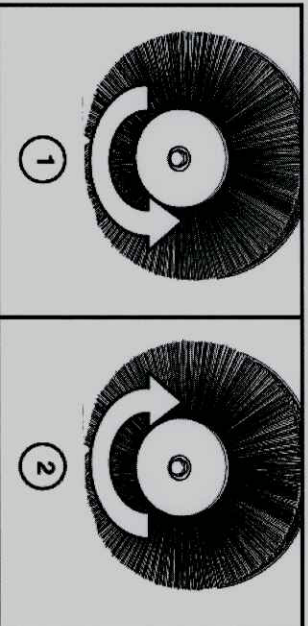


Figure 58



Forward Travel

When travelling in the forward direction (Item 1) [Figure 57] operate the sweeper in the counterclockwise direction (Item 1) [Figure 58] with the cutting edge slightly above the surface to be swept.

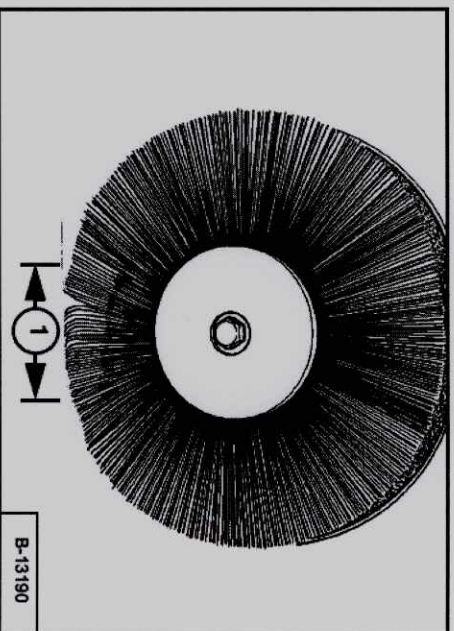
NOTE: Travelling in the forward direction (Item 1) [Figure 57] reduces wear on cutting edge and reduces scratching of swept surface.

Reverse Travel

When travelling in the reverse direction (Item 2) [Figure 57] operate the sweeper in the clockwise direction (Item 2) [Figure 58] with the cutting edge set on the surface to be swept.

1. High Carbon Wire - For use with aggressive conditions such as mud, rocks, etc.
2. Polypropylene - For use with normal conditions such as dirt, sand, leaves, etc.
3. Combination Of Bristles - For use with varying conditions such as dry sweeping. (Not as effective for aggressive conditions.)

Figure 59



A 50 - 76 mm (2 - 3 in) (Item 1) [Figure 59] pattern is recommended for ground contact and allows the tips, or ends of the bristles, to dig and break up the debris then throw the debris off the swept surface into the bucket.

Excessive down pressure can result in the following problems which will reduce broom performance:

1. The sides of the bristles trying to dig and break up the debris and cause increased wear at the contact point.
2. The bristles are stressed and can break off in full length pieces.

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OPERATING PROCEDURE WITH LOADERS (CONT'D)

Figure 60

Operation With The Loader (Cont'd)

Dumping The Sweeper



AVOID INJURY OR DEATH

LIFT RESTRICTION - While dumping a loaded sweeper, the lowest part of the sweeper should not exceed 0,3 m (1 ft) from the ground. Tipping can result.

Lower sweeper to ground and stop engine before cleaning, servicing or repairing.

Consult the **LIFT RESTRICTION** decal before lifting or dumping.

W-2525-0910

NOTE: (See **ATTACHMENT SIGNS (DECALS)** on Page 18.) for location of lift restriction decal.



Lift the attachment off the ground. Tilt the sweeper attachment forward until it is empty [Figure 60]. The broom can be rotated to help empty the attachment. See Lift Restriction decal, before lifting or dumping.

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OPERATING PROCEDURE WITH LOADERS (CONT'D)

Operation With The Loader (Cont'd)

Gutter Brush Operation (If Equipped)

Figure 61

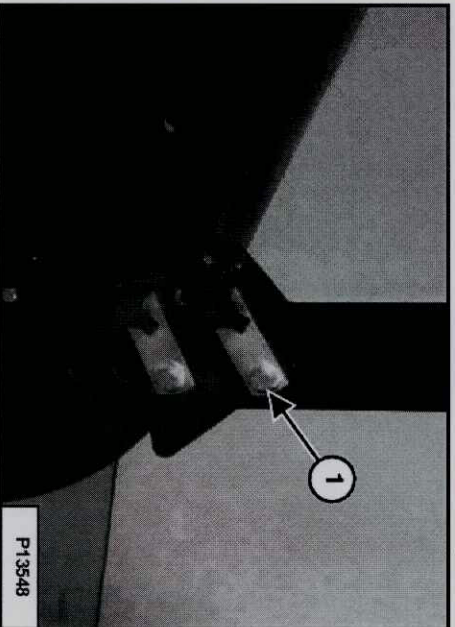
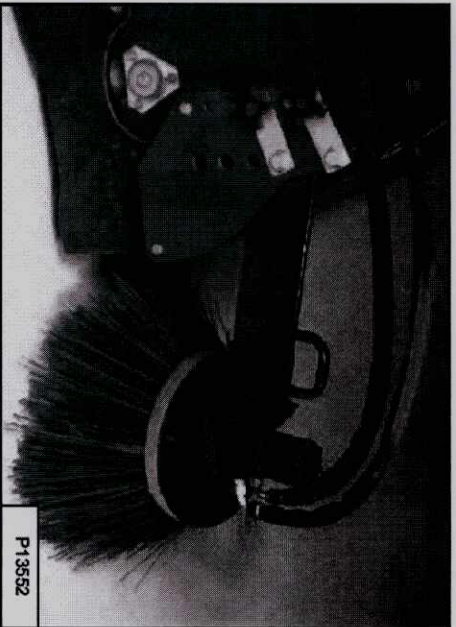
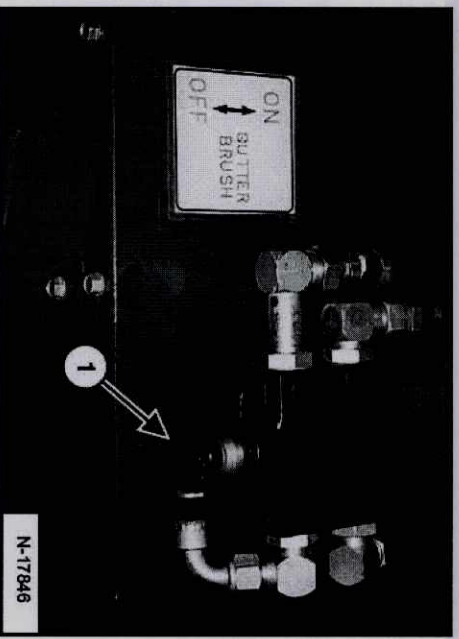


Figure 62



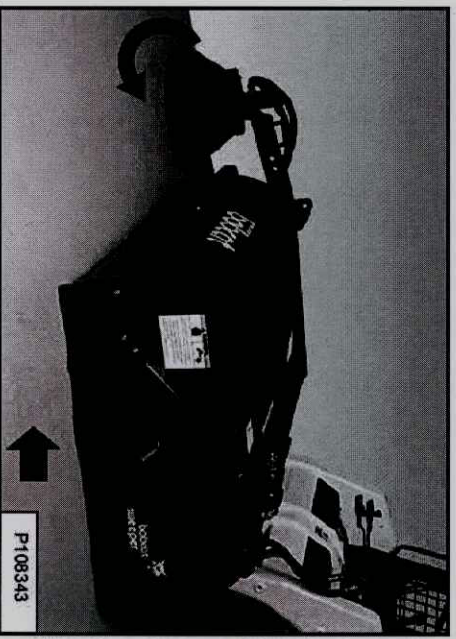
Remove the transport pin (Item 1) [Figure 61] and lower the gutter brush to the sweeping position [Figure 62].

Figure 63



Push the knob (Item 1) [Figure 63] into the ON position. The gutter brush will start to turn with the sweeper brush when the auxiliary hydraulics is engaged.

Figure 64



Dealer Copy -- Not for Resale

The gutter brush is designed to sweep debris from a curb or gutter out in front of the sweeper with the sweeper in a forward travel direction [Figure 64].

If the bucket sweeper is used in the reverse mode (scraping / sweeping) for any length of time, the gutter brush should be switched OFF and lifted to the transport position or removed from the sweeper.

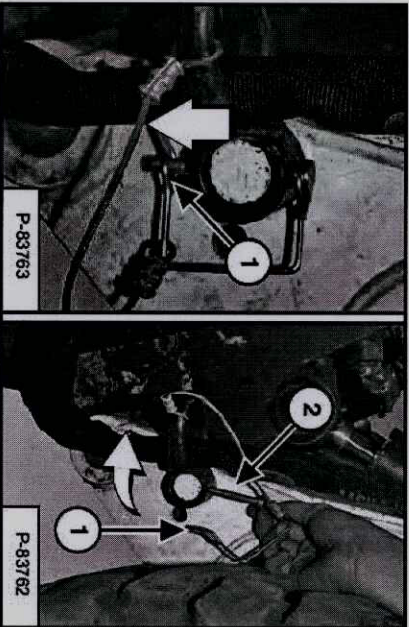
The gutter brush can be mounted on either side of the sweeper. (See Gutter Brush (If Equipped) on Page 23.)

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Removal

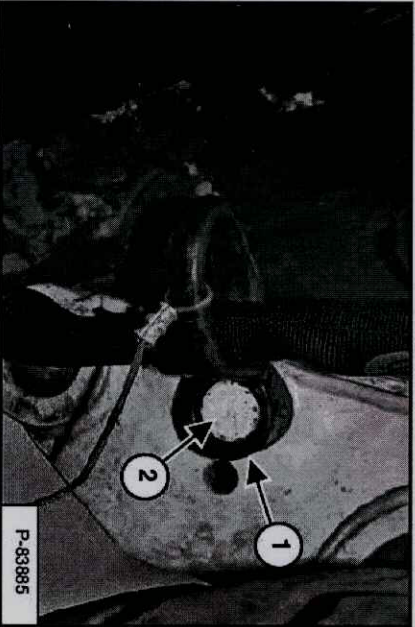
Hose Removal (Removable - If Equipped)

Figure 65



Unlatch eyelet (Item 1) from the lock pin (Item 2).
Remove lock pin (Item 2) [Figure 65] from the removable hose guide and mounting post.

Figure 66

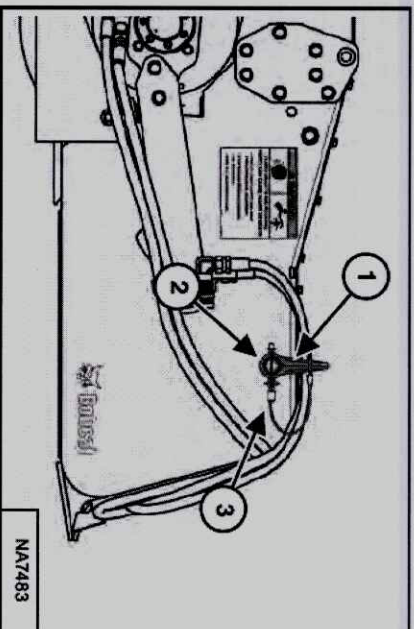


Remove the removable hose guide (Item 1) from the mounting post (Item 2) [Figure 66].

Disconnect the hydraulic quick couplers. (See Hydraulic Quick Couplers on Page 42.)

Remove hoses from hose guide (earlier version).

Figure 67



Install the removable hose guide (Item 1) onto the storage post (Item 2) [Figure 66] (if equipped).

Insert lock pin (Item 3) [Figure 66] through the removable hose guide and storage post. Latch eyelet onto the lock pin.

OPERATING PROCEDURE WITH LOADERS (CONT'D)

Removal (Cont'd)

Hand Lever Bob-Tach

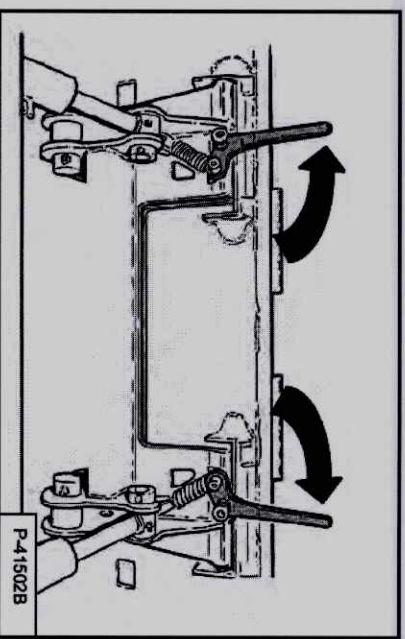
Lower the lift arms and put the attachment flat on the ground. Lower or close the hydraulic equipment (if equipped).

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

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

Exit the loader. (See Entering And Exiting The Loader on Page 33.)

Figure 68



Pull the Bob-Tach levers up [Figure 68] until they are fully raised (wedges fully raised).

⚠ WARNING

AVOID INJURY OR DEATH

Before you leave the operator's seat:

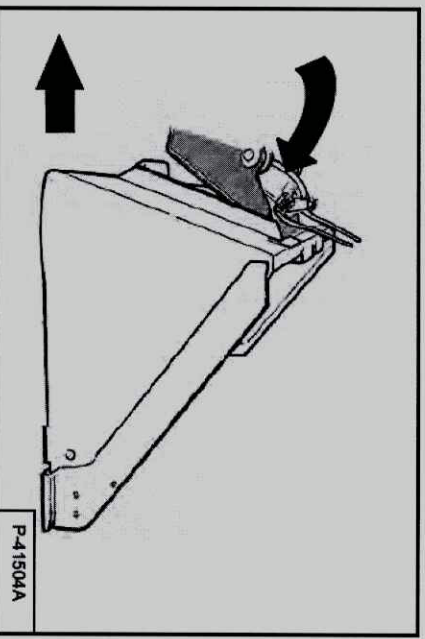
- Lower the lift arms and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Raise the seat bar.
- Move all controls to the **NEUTRAL / LOCKED** position to make sure the lift, tilt and traction drive functions are deactivated.

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

W-2463-1110

Disconnect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 42.)

Figure 69



Tilt the Bob-Tach forward and drive the loader backward, away from the attachment [Figure 69].

⚠ WARNING

Bob-Tach levers have spring tension. Hold levers 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 33.)

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

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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 33.)

WARNING

AVOID INJURY OR DEATH

Before you leave the operator's seat:

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

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

W-2463-1110

Disconnect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 42.)

Enter the loader. (See Entering And Exiting The Loader on Page 33.)

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

Figure 70

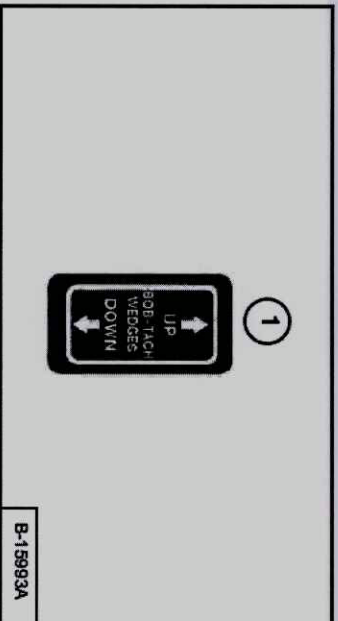
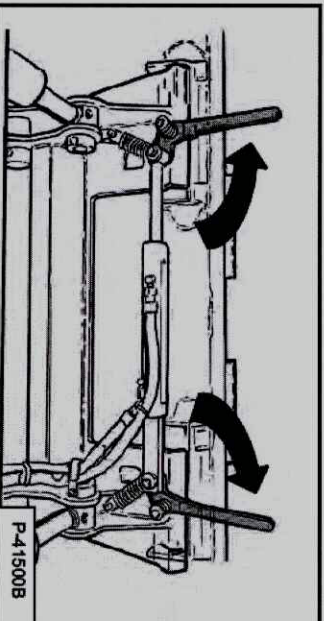


Figure 71



Push and hold the BOB-TACH "WEDGES UP" switch (Item 1) [Figure 70] (Front Panel) until the levers [Figure 71] are fully raised (wedges fully raised).

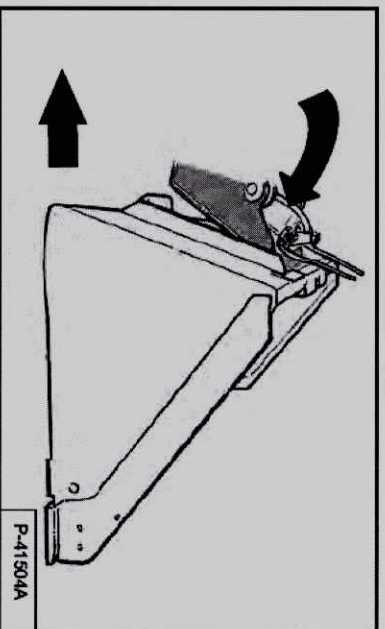
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OPERATING PROCEDURE WITH LOADERS (CONT'D)

Removal (Cont'd)

Power Bob-Tach (Cont'd)

Figure 72



Tilt the Bob-Tach forward and drive the loader backward, away from the attachment [Figure 72].

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

OPERATING PROCEDURE WITH VERSAHANDLERS

Approved VersaHANDLER® Models And Requirements

Figure 73

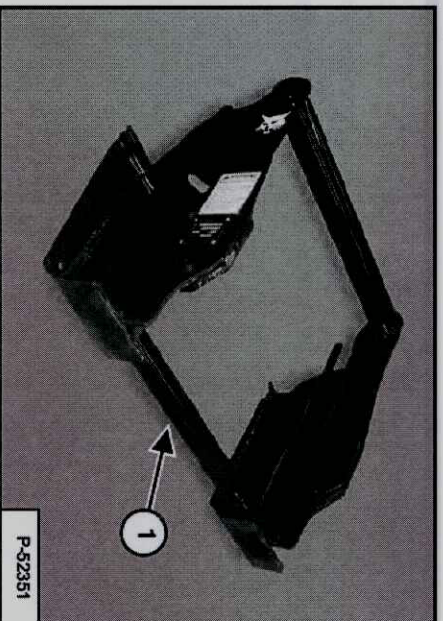
VERSAHANDLER MODEL	54 SWEEPER	60 SWEEPER	72 SWEEPER
V518			X
V723			X

X = Approved

The chart [Figure 73] shows the approved sweeper models for each VersaHANDLER® 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.

Figure 75



The adapter frame (item 1) [Figure 75] is required to properly mount the sweeper to the VersaHANDLER.

⚠ WARNING

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

W-2692-0108

Figure 74



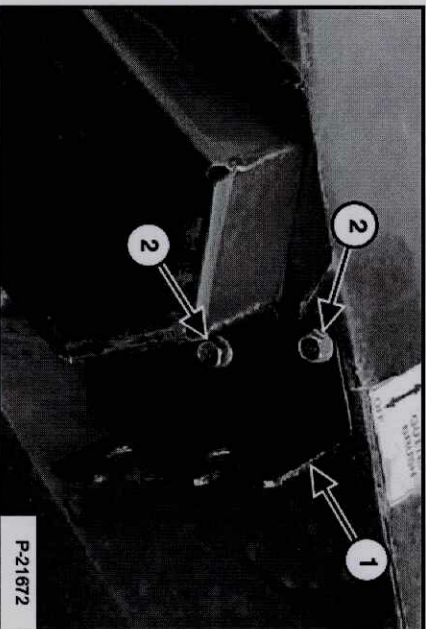
The VersaHANDLER must be equipped with front auxiliary hydraulics [Figure 74] for proper operation of the sweeper. See your Bobcat dealer for available kits.

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

Machine / Attachment Setup

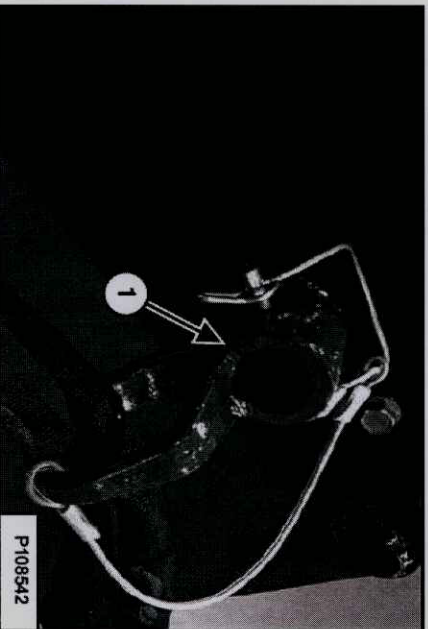
Hose Guide Installation (Sweeper)

Figure 76



On some sweepers, the hose hanger bracket (Item 1) is not installed. The bracket will then be included in the shipping bag. Remove the two existing bolts (Item 2) and install the hose hanger bracket (Item 1) [Figure 76].

Figure 77



On some sweepers, the removable hose guide (Item 1) [Figure 77] is located on the left side of the sweeper.

OPERATING PROCEDURE WITH VERSAHANDLERS (CONT'D)

Entering And Exiting The Versahandler

⚠ 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 78



Use the hand grabs (Item 1) [Figure 78] to enter the operator cab.

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

Figure 79



Fasten seat belt and lower the restraint bar (Item 1) [Figure 79] (if equipped), and engage the parking brake.

Put the Travel Direction Control lever and joystick in neutral.

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

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 Versahandler.

⚠ 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

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OPERATING PROCEDURE WITH VERSAHANDLERS (CONT'D)

Installation

Hand Lever Bob-Tach

NOTE: The illustrations and instructions provided explain how to install a bucket attachment on to a VersaHANDLER. 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.

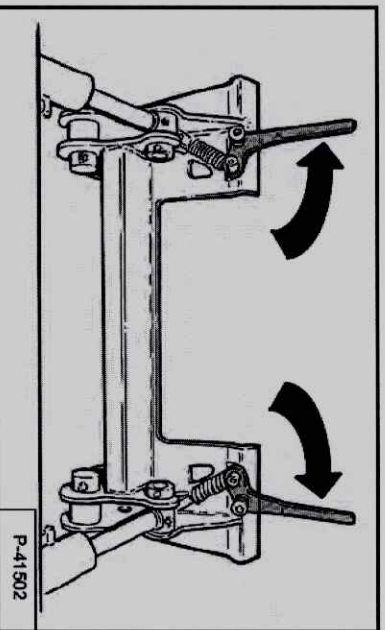
⚠ WARNING

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 VersaHANDLER's Bob-Tach, attachment mounting frame and the adapter frame before installation. See the VersaHANDLER's Operation & Maintenance Manual. (See DAILY INSPECTION on Page 24.)

Figure 80

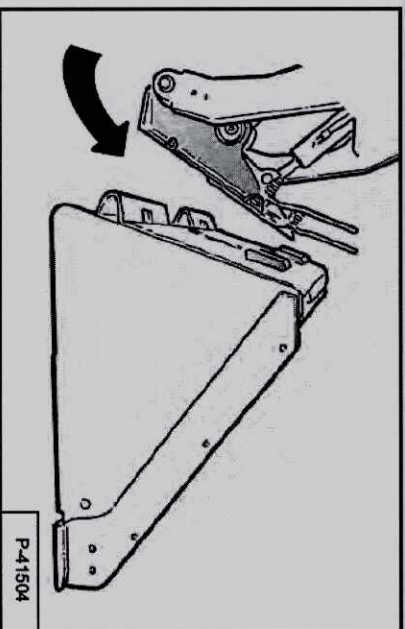


Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) [Figure 80].

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

Start the engine and release the parking brake.

Figure 81

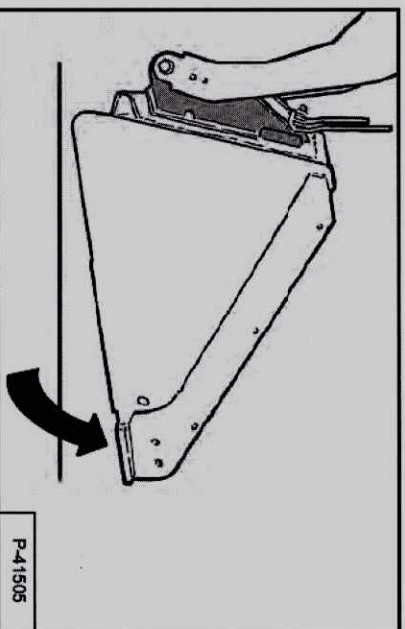


Lower the boom and tilt the Bob-Tach forward.

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

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

Figure 82



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

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

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

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

Figure 84

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)



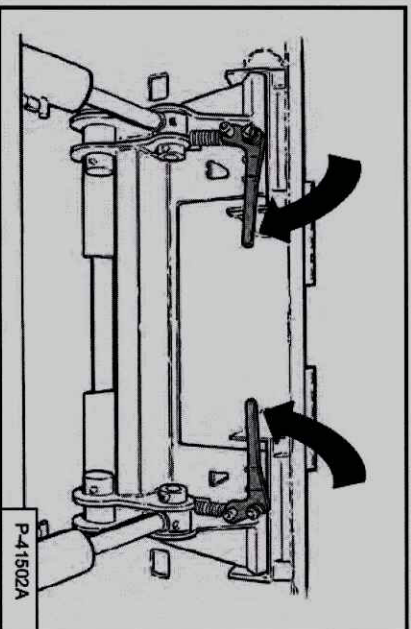
Before you leave the operator's position:

- 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).

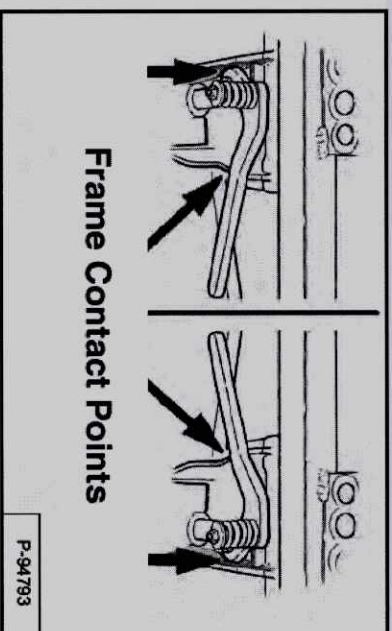
SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

W-2637-0607

Figure 83



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



Frame Contact Points

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

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

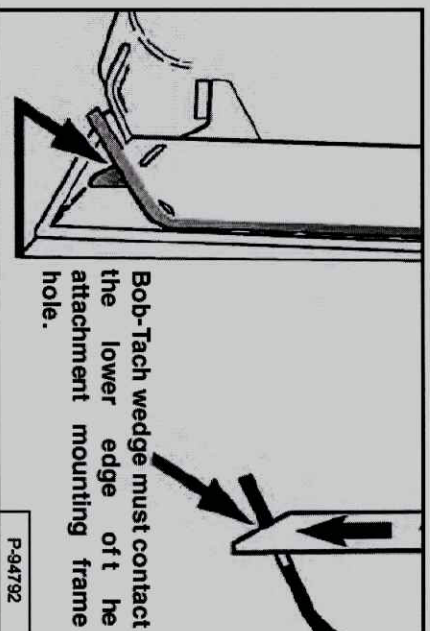


AVOID INJURY OR DEATH

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

W-2715-0208

Figure 85



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

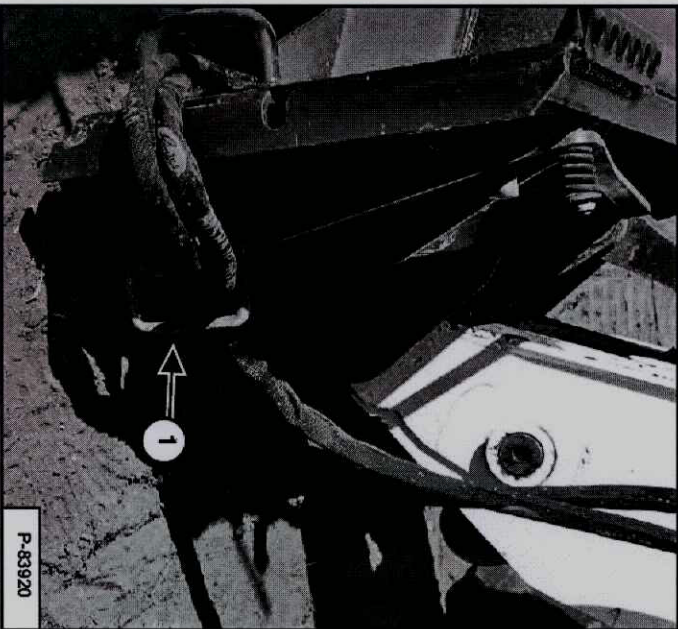
The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 85].

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

Installation (Cont'd)

Hose Routing

Figure 86



Route the hydraulic hoses through the hose guide (Item 1) [Figure 86] and connect quick couplers to the VERSAHANDLER. (See Hydraulic Quick Couplers on Page 59.)

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OPERATING PROCEDURE WITH VERSAHANDLERS (CONT'D)

Installation (Cont'd)

For First Time Installation

New attachments and new VersaHANDLERS 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 VersaHANDLER. 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 lea kage in a n environmentally safe manner.

I-2278-0608

With the VersaHANDLER engine off and using the hose guides (if equipped), route the attachment hydraulic hoses to the VersaHANDLER. Connect the attachment hydraulic quick couplers to the VersaHANDLER couplers. (See Hydraulic Quick Couplers on Page 59.)

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

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

Start the engine and release the parking brake.

Engage auxiliary hydraulics. (See the VersaHANDLER'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 physician familiar with this injury.

W-2072-0807

Check the attachment hydraulic quick coupler connections for leaks.

OPERATING PROCEDURE WITH VERSAHANDLERS
(CONT'D)

Hydraulic Quick Couplers

IMPORTANT

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

I-2278-0608

New attachments and new VersaHANDLERS 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 VersaHANDLER. 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 87



⚠ 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 87].

Install the male coupler into the female coupler. Full connection is made when the ball release sleeve slides forward on the female coupler [Figure 87].

NOTE: Check that the attachment hydraulic hoses are not twisted or contacting any moving parts of the VersaHANDLER or attachment. (See For First Time Installation on Page 58.) for proper adjustment.

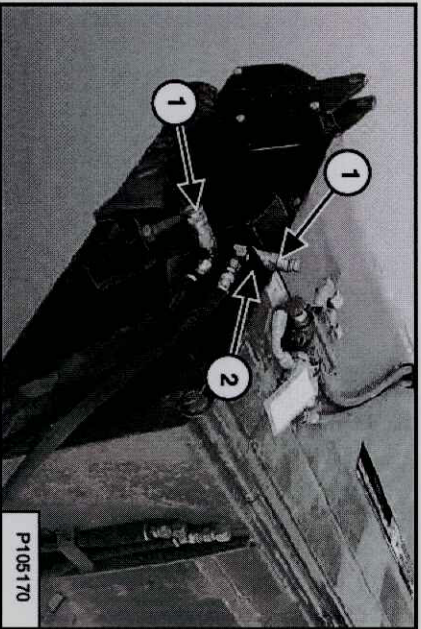
To Disconnect:

Relieve hydraulic pressure. (See the VersaHANDLER'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.

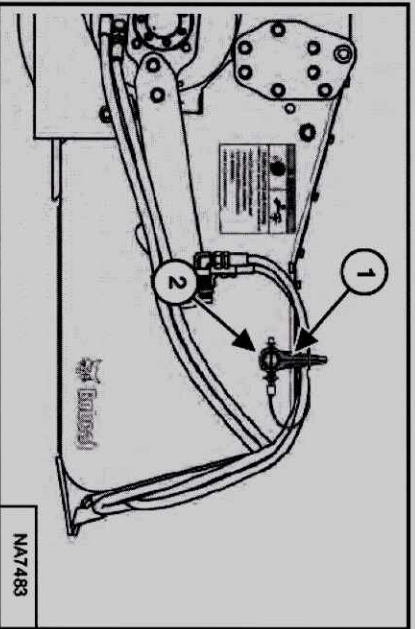
Hydraulic Quick Couplers (Cont'd)

Figure 88



When the sweeper is not connected to the VersaHANDLER, install the hoses (Item 1) into the hose hanger bracket (Item 2) [Figure 88].

Figure 89



When the sweeper is not connected to the VersaHANDLER, install the removable hose guide (Item 1) onto the storage post (Item 2) [Figure 89] (if equipped).

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.

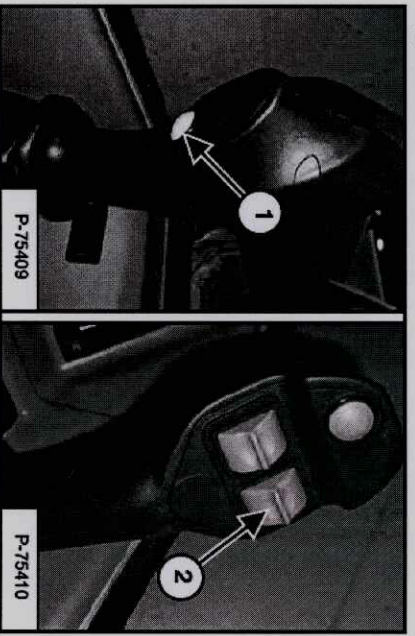
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Move to the operator position, fasten seat belt and lower the restraint bar (if equipped), start the engine and disengage the parking brake. (See Entering And Exiting The VersaHANDLER on Page 54.)

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

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

Figure 90



Press the button (Item 1) [Figure 90] to start the sweeper rotation. Press the button a second time to stop the sweeper.

To reverse the sweeper rotation, push and hold the switch (Item 2) down, then press the button (Item 1) [Figure 90]. Release both the switch and button for continuous sweeper rotation.

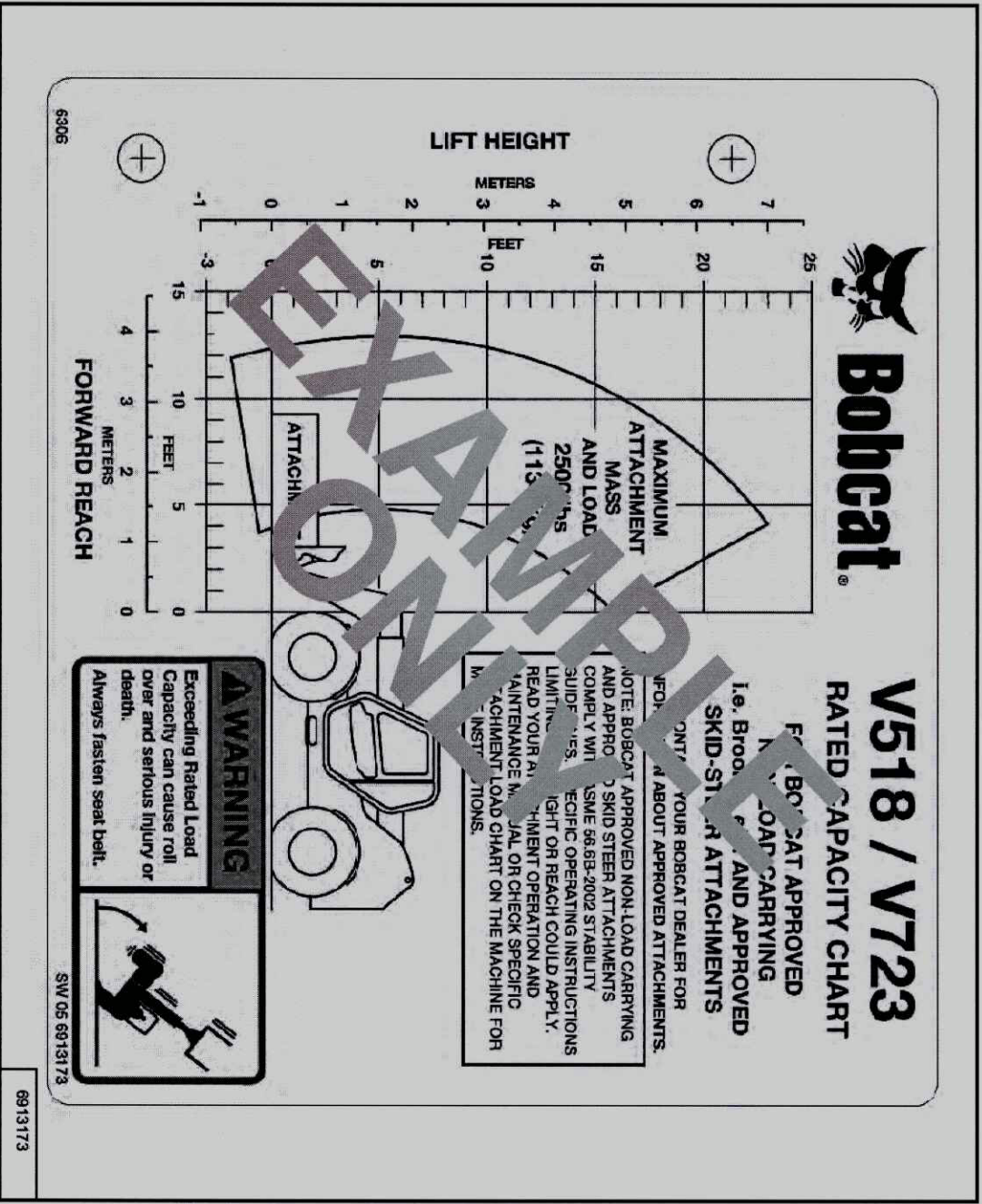
Press the button (Item 1) [Figure 90] a second time to stop the sweeper rotation.

OPERATING PROCEDURE WITH VERSAHANDLERS (CONT'D)

Operation With The VersaHANDLER

Load Capacity Chart

Figure 91



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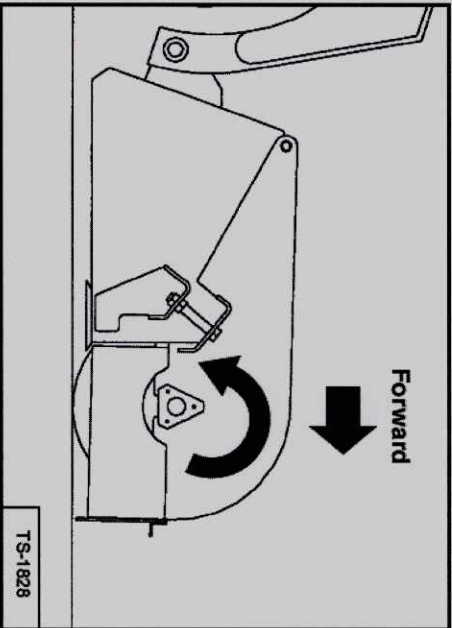
The Load Capacity Chart [Figure 91] is an "EXAMPLE ONLY". See the VersaHANDLER Operation & Maintenance Manual and Operator's Handbook for more information on the Load Capacity Charts for your VersaHANDLER.

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

Operation With The Versahandler (Cont'd)

Sweeper Operation

Figure 92



Lower the sweeper slowly to the surface. Make sure the cutting edge of the sweeper bucket is just above the surface, level with the surface and the brushes are in contact with the surface [Figure 92].

Put the Versahandler boom in the float position and use the tilt function to level the sweeper. (See the Versahandler's Operation & Maintenance Manual and Operator's Handbook for correct procedure.)

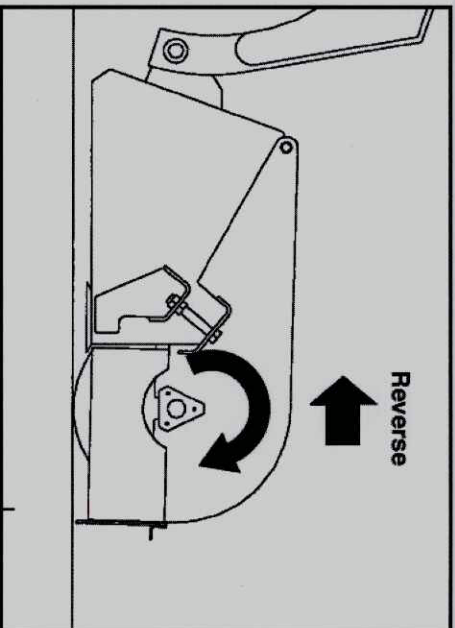


AVOID INJURY OR DEATH

- Bystanders must keep at least 3 m (10 ft) away from the machine and attachment when operating.
- Never leave the operating position when the engine is running.

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Figure 93



If the debris is packed (or stuck) on the surface and the broom will not sweep it up, reverse broom rotation. (See Control Functions on Page 60.) Lower the cutting edge to the surface and move the Versahandler backward. The attachment cutting edge will scrape the surface while the broom sweeps the debris into the bucket [Figure 93].



AVOID INJURY OR DEATH

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

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

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OPERATING PROCEDURE WITH VERSAHANDLERS (CONT'D)

Bristles Types

Operation With The Versahandler (Cont'd)

Sweeper Operation (Cont'd)

Figure 94

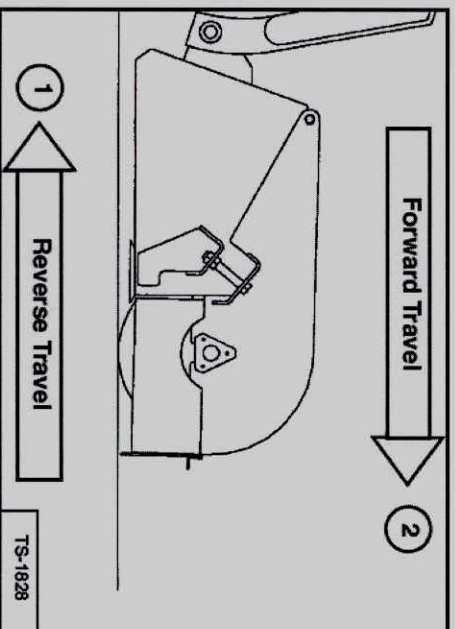
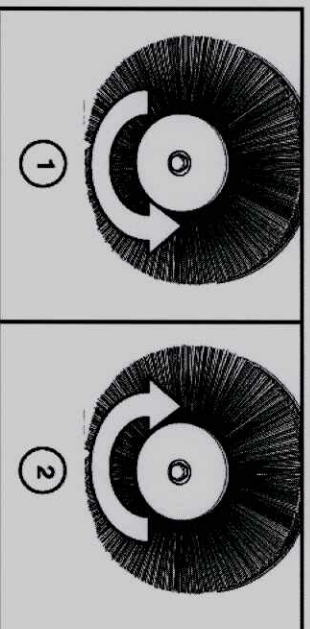


Figure 95



Forward Travel

When traveling in the forward direction (Item 1) [Figure 94] operate the sweeper in the counterclockwise direction (Item 1) [Figure 95] with the cutting edge slightly above the surface to be swept.

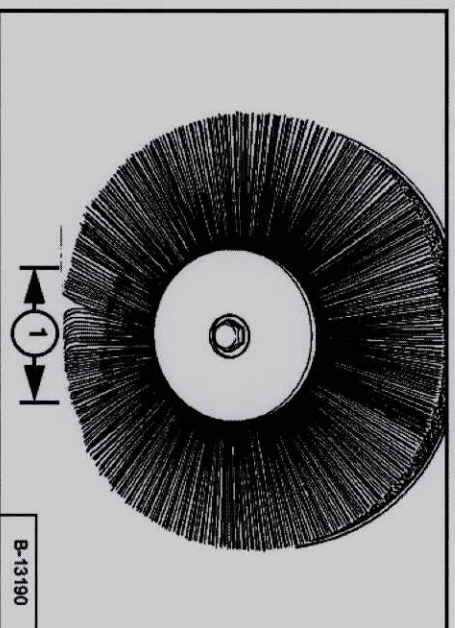
NOTE: Traveling in the forward direction (Item 1) [Figure 94] reduces wear on cutting edge and reduces scratching of swept surface.

Reverse Travel

When traveling in the reverse direction (Item 2) [Figure 94] operate the sweeper in the clockwise direction (Item 2) [Figure 95] with the cutting edge set on the surface to be swept.

1. High Carbon Wire - For use with aggressive conditions such as mud, rocks, etc.
2. Polypropylene - For use with normal conditions such as dirt, sand, leaves, etc.
3. Combination Of Bristles - For use with varying conditions such as dry sweeping. (Not as effective for aggressive conditions.)

Figure 96



A 50 - 76 mm (2 - 3 in) (Item 1) [Figure 96] pattern is recommended for ground contact and allows the tips, or ends of the bristles, to dig and break up the debris then throw the debris off the swept surface into the bucket.

Excessive down pressure can result in the following problems which will reduce broom performance:

1. The sides of the bristles trying to dig and break up the debris and cause Increased wear at the contact point.
2. The bristles are stressed and can break off in full length pieces.

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OPERATING PROCEDURE WITH VERSAHANDLERS (CONT'D)

Operation With The VersHANDLER (Cont'd)

Dumping The Sweeper

Figure 97

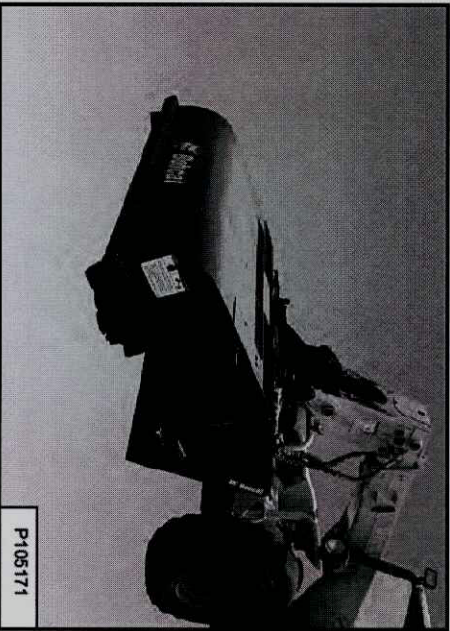
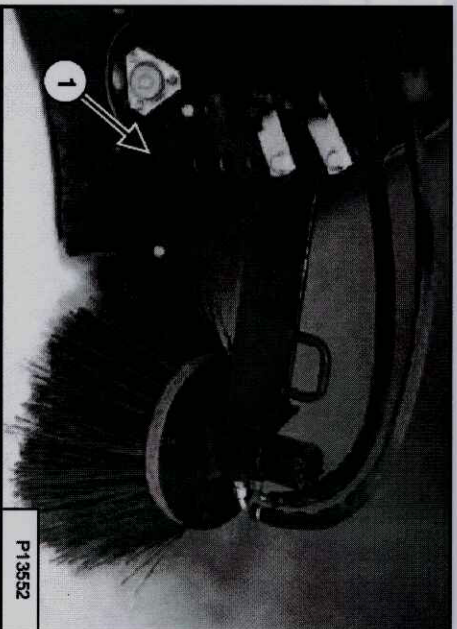
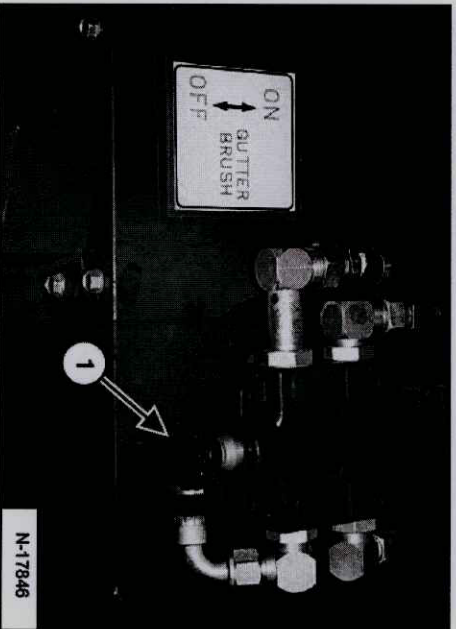


Figure 99



Remove the transport pin (Item 1) [Figure 98] and lower the gutter brush to the sweeping position [Figure 99].

Figure 100



Push the knob (Item 1) [Figure 100] into the ON position. The gutter brush will start to turn with the sweeper brush when the auxiliary hydraulics is engaged.

Lift the attachment off the ground. Tilt the sweeper attachment forward until it is empty [Figure 97]. The broom can be rotated to help empty the attachment.

Gutter Brush Operation (If Equipped)

Figure 98

