

Our associates will ensure the tool works properly before you leave the store. If you experience issues with the tool while completing your project, simply bring it back to the Tool Rental Center to get a replacement. If you purchase Damage Protection at the time of your rental, you are not responsible for repair costs for tools that break due to normal use.

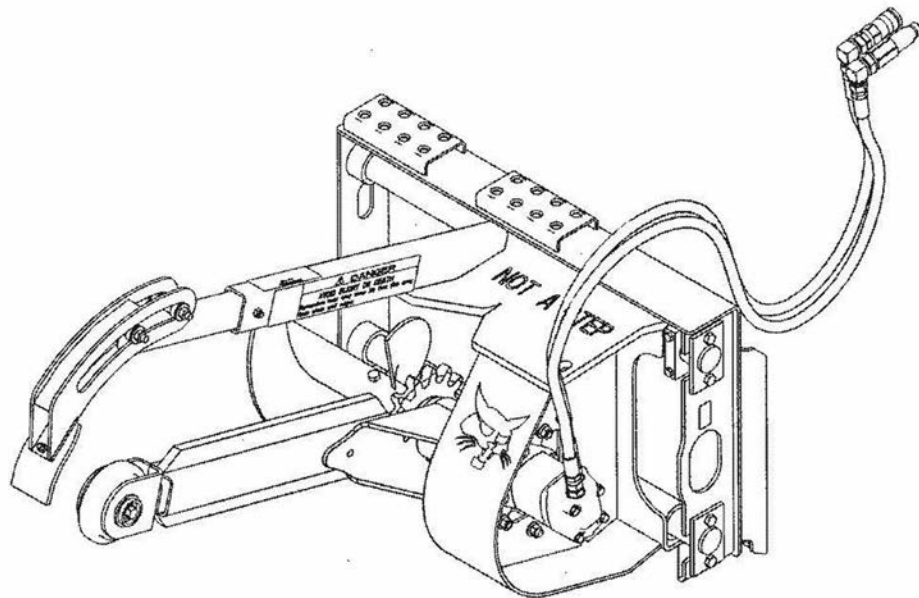


Video for demonstration purposes only ↑



Bobcat®

Operation & Maintenance Manual



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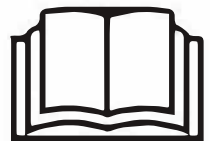
Trencher

(LT112 Trencher) S/N 045200101 & Above

(MX112 Trencher) S/N 045100101 & Above

(LT113 Trencher) S/N 233800101 & Above

(LT113 Trencher) S/N B3WV00101 & Above



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REFERENCE INFORMATION

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

Attachment Serial Number _____

NOTES:

YOUR BOBCAT DEALER:

ADDRESS:

PHONE:

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

Doosan Bobcat EMEA s.r.o.
U Kodetky 1810
263 12 Dobris
CZECH REPUBLIC

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FOREWORD

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

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BOBCAT COMPANY IS ISO 9001 CERTIFIED



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

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

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



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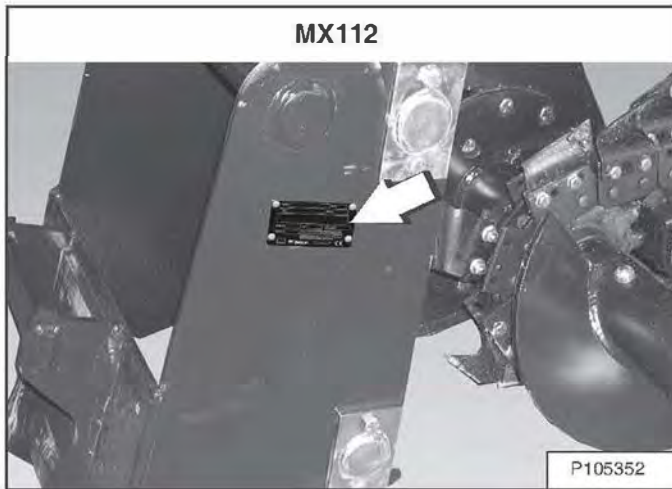
SERIAL NUMBER LOCATION

Attachment Serial Number

Figure 1



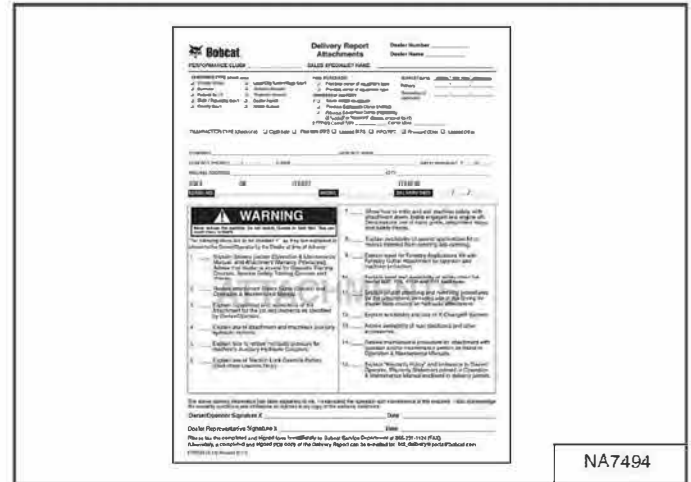
Figure 2



Always use the serial number of the trencher when requesting service information or when ordering parts. Early or later models (identification made by serial number) may use different parts, or it may be necessary to use a different procedure in doing a specific service operation [Figure 1] or [Figure 2].

DELIVERY REPORT

Figure 3



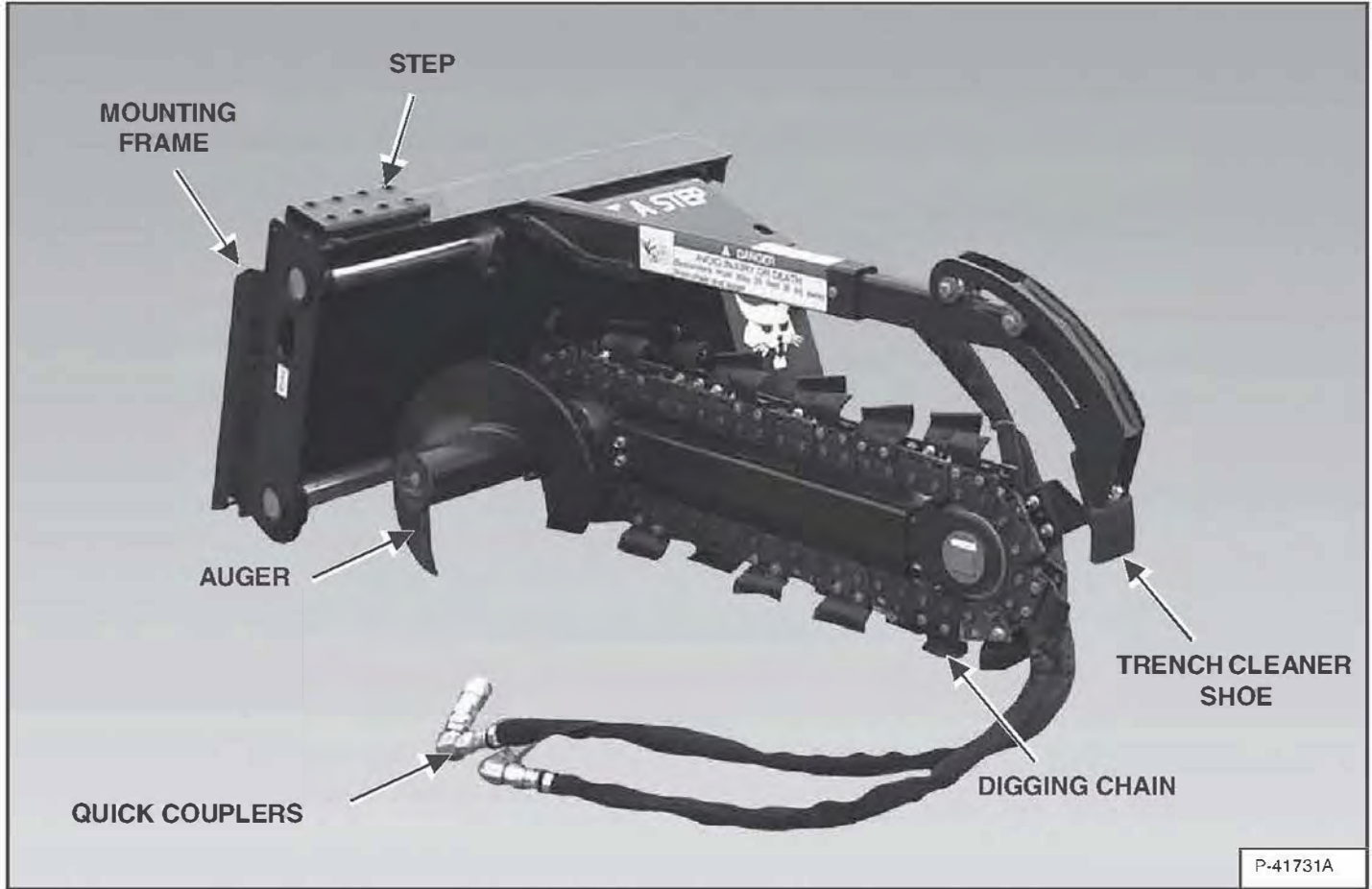
The delivery report [Figure 3] contains a list of items that must be explained or shown to the owner or operator by the dealer when the Bobcat trencher is delivered.

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

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ATTACHMENT IDENTIFICATION

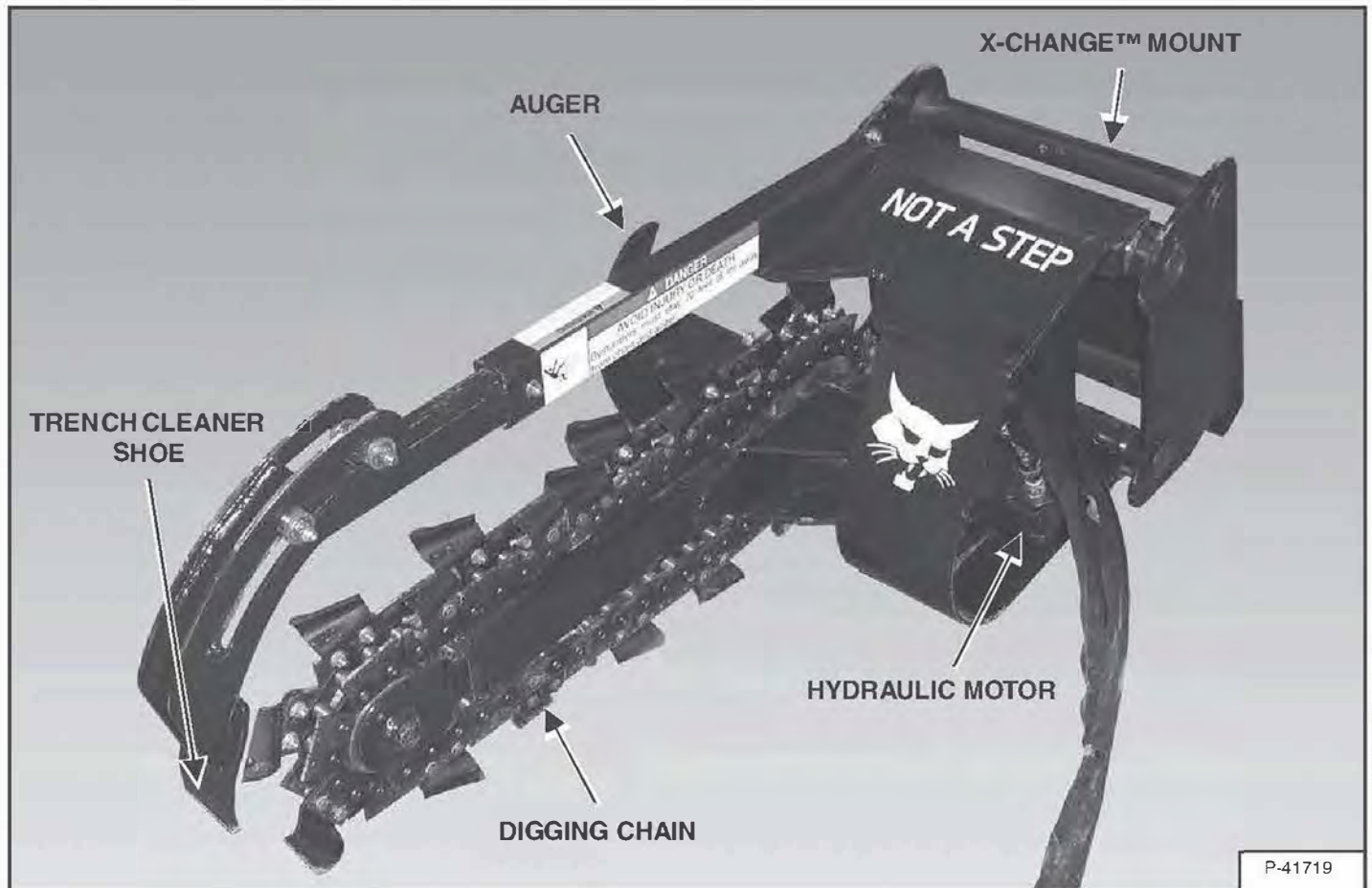
LT112 And LT113 Trencher



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ATTACHMENT IDENTIFICATION (CONT'D)

MX112 Trencher



P-41719

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FEATURES AND ACCESSORIES

Standard Items

The trencher is equipped with the following Standard items:

- Large Diameter Auger With A Tapered Design

Optional Items

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

- Single Standard Pattern Chain And Widths
- Double Standard Pattern Chain And Widths
- Shark Tooth Digging Chain
- Conical Carbide Digging Chain

TRENCHER CHAIN SELECTION GUIDE

Single Standard Cup

Single Standard Cup chains are a double standard chain with a cup at every other station (chain selection) and are designed to give the most production in wet, sticky conditions such as gumbo, wet clay, etc. Single Standard Cup chains allow sticky soils to be discharged as it comes around a sprocket, allowing the auger to deposit soil to the side of the trench.

Double Standard Cup

Double Standard Cup chains have a cup at every station and are designed for standard digging conditions such as light to moderately compacted, sandy, loam soils, and loosely packed gravelly soils in generally good digging conditions.

The Double Standard chain tends to hold sticky soils causing build-up in the chain and loss of production in wet sticky soils such as gumbo, wet clay, etc.

Shark Tooth/Cup Combination

Shark Tooth chains can be used in compact soils, light frozen ground, backed hard clay, shale or rocky soils which contain smaller tree roots. The shark teeth will slice, break and relieve tough soils, allowing the cup teeth to follow and clean the trench.

The Shark Tooth chain is a good middle ground option between the cup chain and Carbide/Cup chain.

Conical Carbide/Cup Combination

The Cup/Carbide chain will give the highest production in frozen ground, highly compacted soils and rock, allowing the cup teeth to pick up and clean the trench. Cup and Carbide chains are very aggressive in tough conditions, but is not as productive in lighter, normal digging conditions.

In normal, lighter soil conditions, the Cup/Carbide and Shark Tooth/Cup will not be as productive as a Double Standard Cup chain.

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SAFETY INSTRUCTIONS

Safe Operation Is The Operator's Responsibility

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

	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, and hearing protection are required for some work. See your Bobcat dealer about Bobcat safety equipment for your machine.

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SAFETY INSTRUCTIONS (CONT'D)

Use Safety Rules

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

Call Before You Dig



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.

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

Starting

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

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

Spark Arrester Exhaust System

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

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

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SI ATT-0819

FIRE PREVENTION (CONT'D)

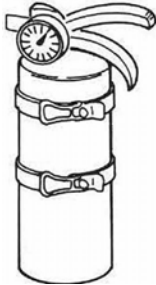
Welding And Grinding

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

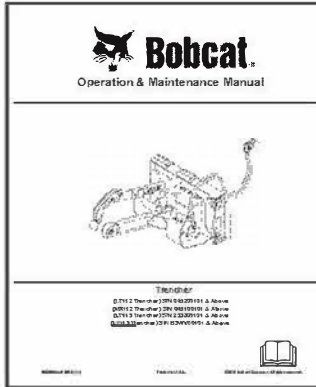


Know where fire extinguishers and first aid kits are located and how to use them. Inspect the fire extinguisher and service the fire extinguisher regularly. Obey the recommendations on the instructions plate.

PUBLICATIONS AND TRAINING RESOURCES

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

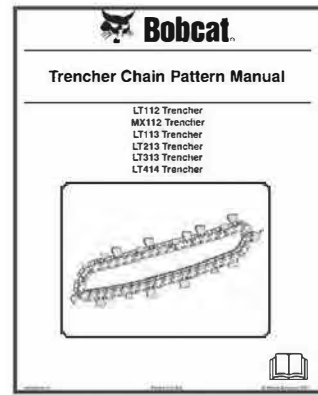
For the latest information on Bobcat products and the Bobcat Company, visit our web site at Bobcat.com



OPERATION & MAINTENANCE MANUAL

6902550enUS

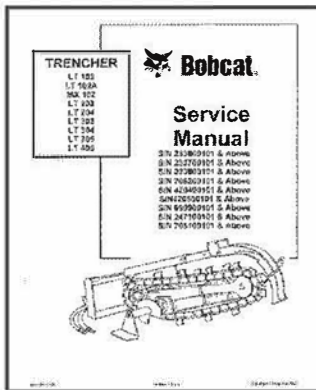
Complete instructions on the correct operation and the routine maintenance of the Bobcat attachment.



TRENCHER CHAIN PATTERN MANUAL

6903853

Complete maintenance and overhaul instructions for your trencher chain.



SERVICE MANUAL

6900899

Complete maintenance and overhaul instructions for your Bobcat attachment.

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ATTACHMENT SIGNS (DECALS)

LT112 And LT113 Trencher

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.

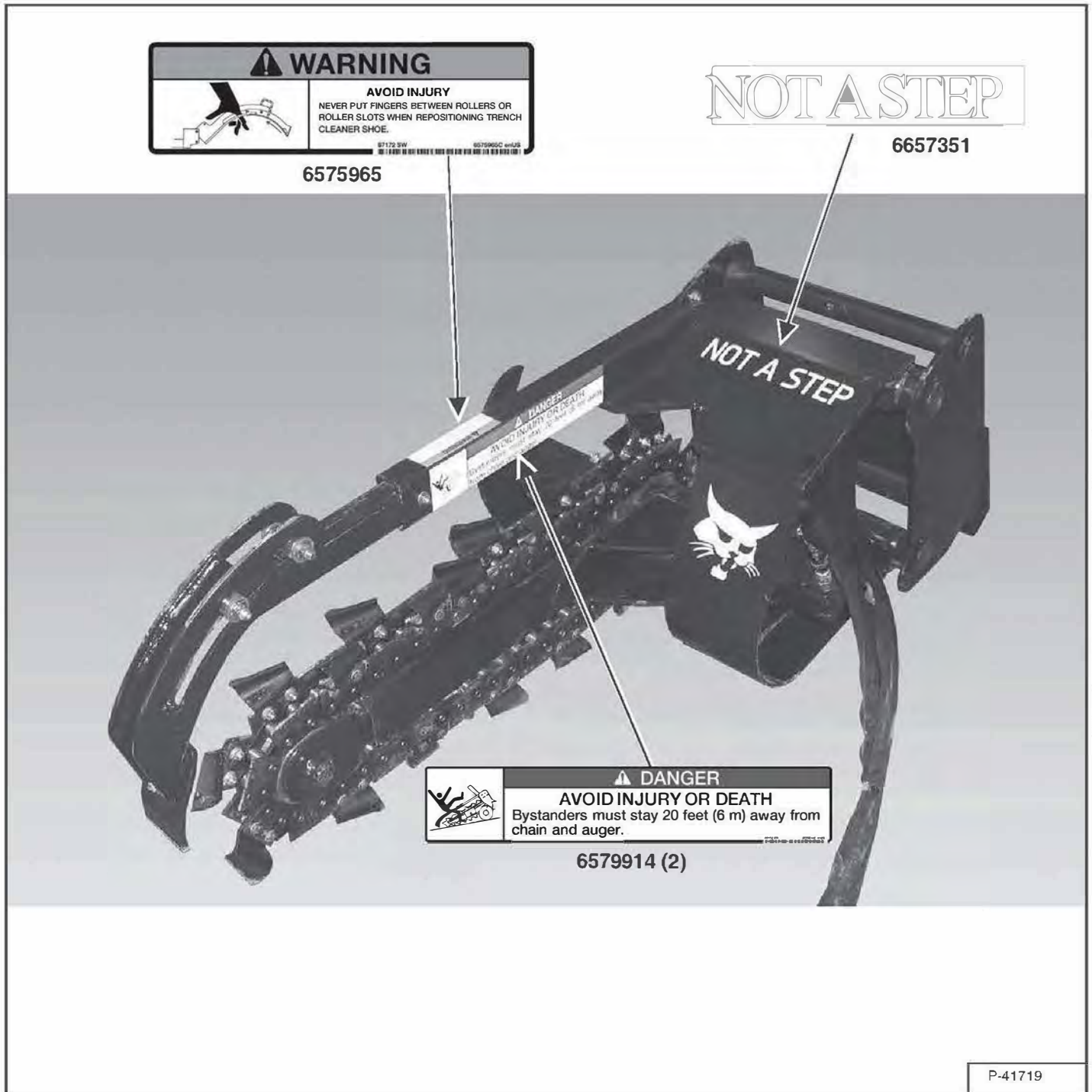


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ATTACHMENT SIGNS (DECALS) (CONT'D)

MX112 Trencher

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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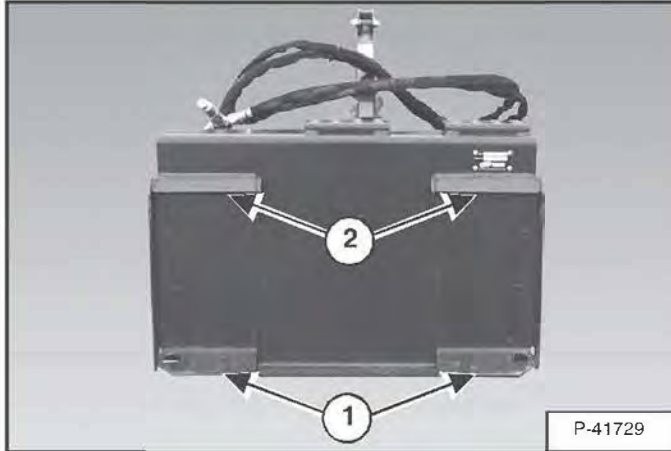
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DAILY INSPECTION

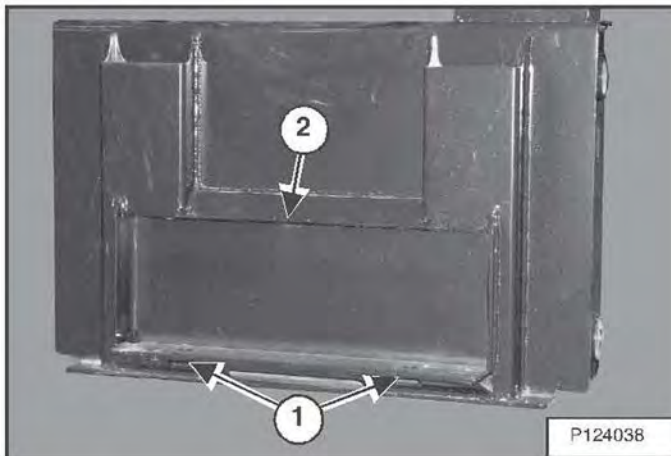
Attachment Mounting Frame

Figure 4



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

Figure 5



Common Industry Interface: Inspect the Common Industry Interface mounting holes (Item 1), mounting flange (Item 2) [Figure 5] and all welds on the trencher for wear and damage each time the trencher is removed from the machine.

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

DAILY INSPECTION (CONT'D)

Bob-Tach

Hand Lever Bob-Tach

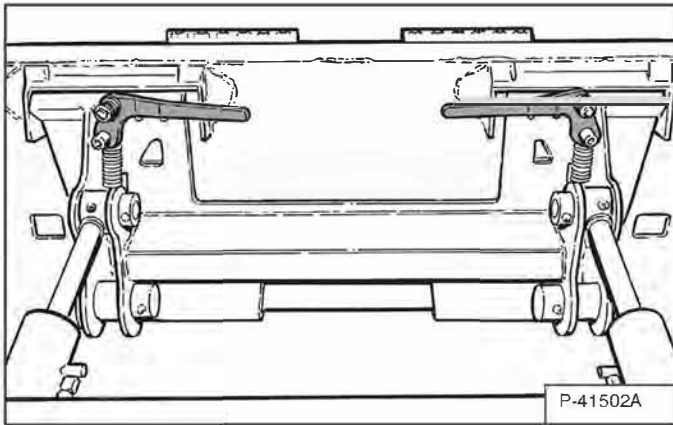
WARNING

AVOID INJURY OR DEATH

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

W-2715-0208

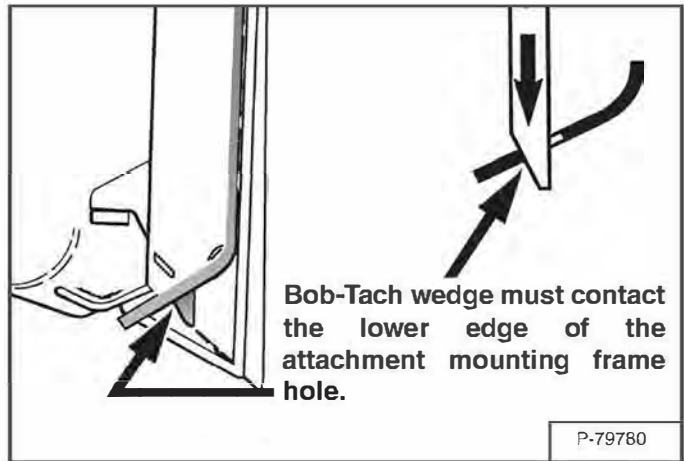
Figure 6



Push down on the Bob-Tach levers until they are fully engaged in the locked position [Figure 6] (wedges fully extended through the attachment mounting frame holes).

The levers and wedges must move freely [Figure 6].

Figure 7



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 7].

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 machine. (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.)

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Operation With The Excavator

Excavator Trenching Procedure

WARNING

AVOID INJURY OR DEATH

When operating the machine:

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

W-2777-1208

DANGER

AVOID INJURY OR DEATH

Bystanders must stay 6 m (20 ft) away from chain and auger.

D-1019-0910

WARNING

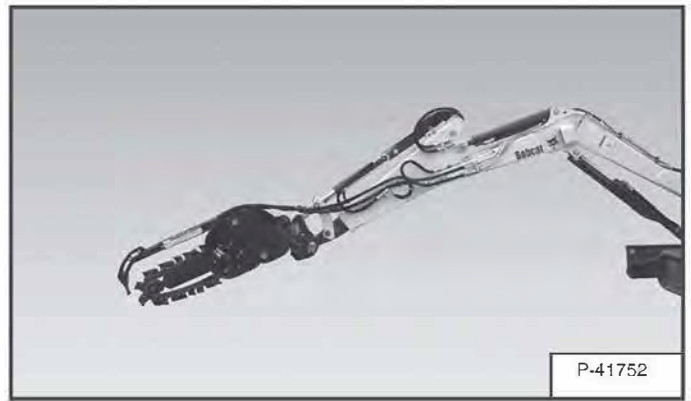
AVOID INJURY OR DEATH

Check for underground utility lines before digging.

W-2120-0788

Move to the operator's seat, fasten seat belt and start the excavator.

Figure 89



Raise the boom and arm and tilt the trencher forward until the trencher is at a 20 - 25° angle to the ground [Figure 89].

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

Start the trencher. (See Control Functions on Page 57.)

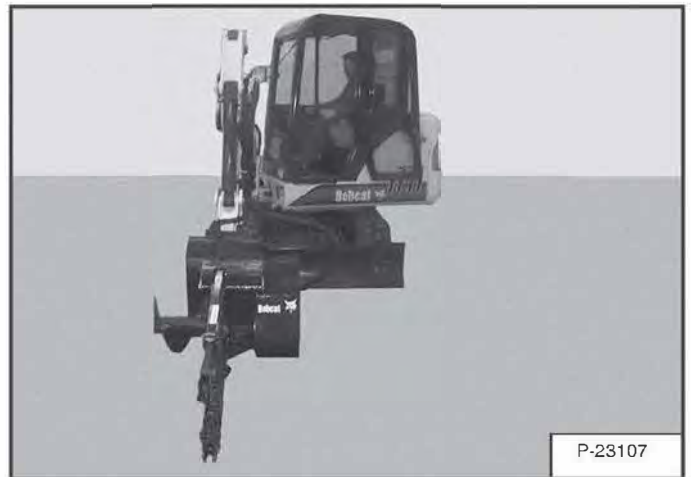
Lower the boom until the end of the attachment contacts the ground and starts digging the trench. Continue to lower the boom while the trencher is digging until the trencher is fully lowered.

Slowly tilt the trencher into the ground until the trencher is approximately at a 60° angle to the ground.

When the attachment reaches this angle, it is at the best digging position.

Drive backward and continue trenching until the desired length of the trench is reached.

Figure 90



To dig closer to a building or other structure, extend the boom swing cylinder and swing the upper structure until the trencher is in the position shown [Figure 90].

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OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal

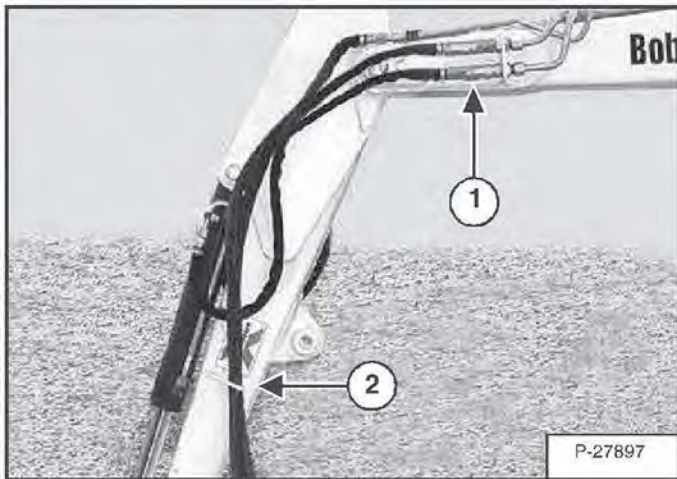
Bolt-On X-Change

Park the excavator on a flat, level surface. Put the attachment on the ground.

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

Exit the excavator. (See Entering And Exiting the Excavator on Page 39.)

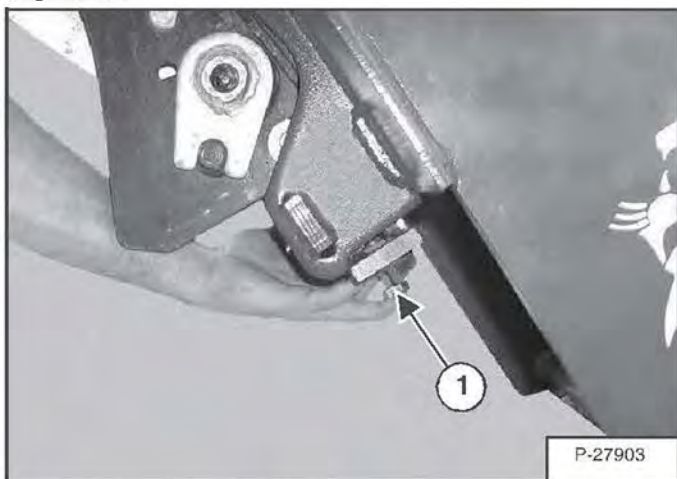
Figure 91



Disconnect the auxiliary couplers (Item 1) [Figure 91]. (See Hydraulic Quick Couplers on Page 56.)

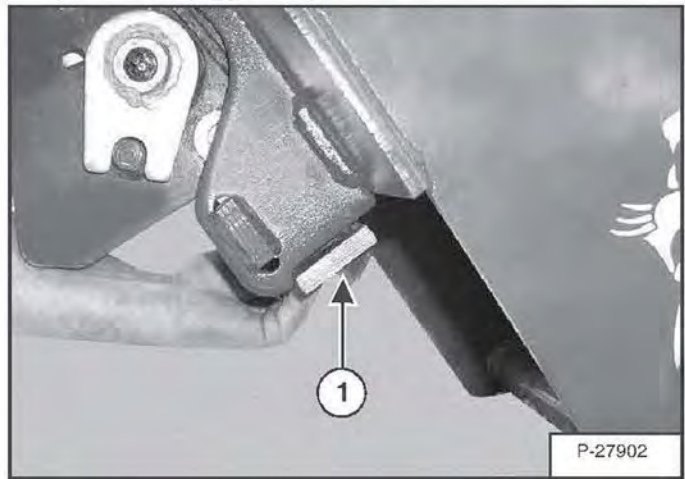
Remove the hoses from the hose retainer (Item 2) [Figure 91].

Figure 92



Remove the two bolts (Item 1) [Figure 92].

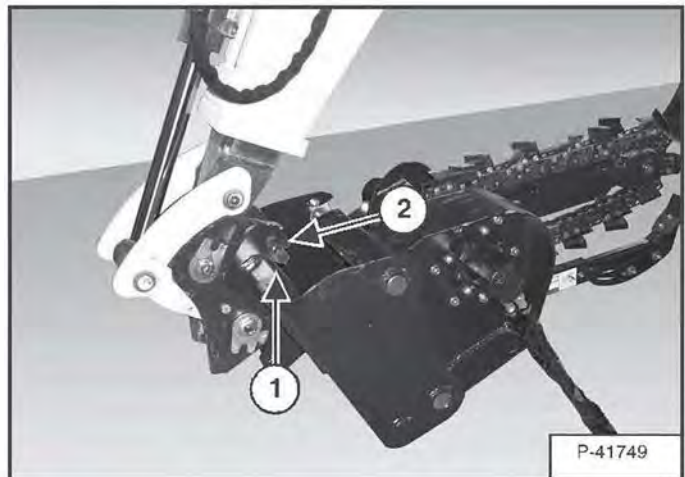
Figure 93



Remove the plate (Item 1) [Figure 93].

Enter the excavator and start the engine.

Figure 94



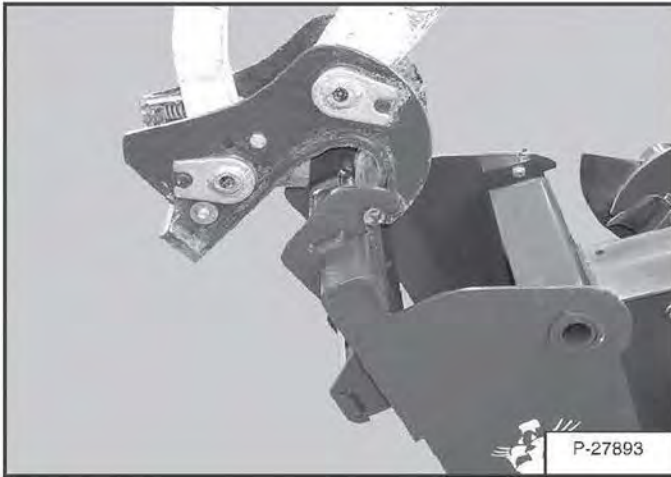
Lift the boom approximately 304,8 mm (1 ft) and extend the bucket cylinder until the X-Change pins (Item 1) engage the hooks (Item 2) on the trencher frame [Figure 94].

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

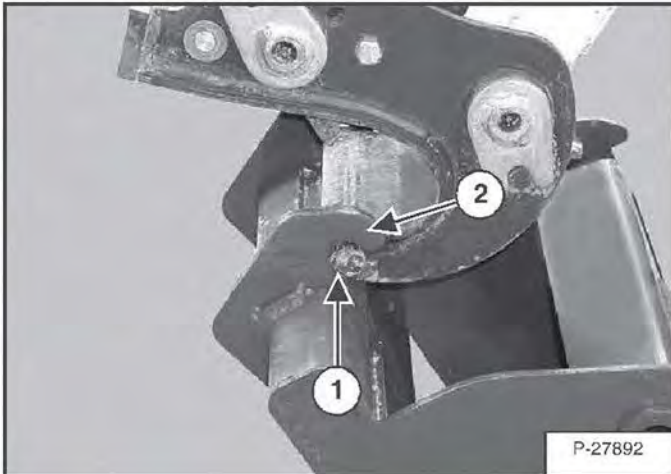
Bolt-On X-Change (Cont'd)

Figure 95



Retract the bucket cylinder and lower the boom until the trencher is on the ground **[Figure 95]**.

Figure 96



Lower the boom until the pins (Item 1) disengage the hooks (Item 2) **[Figure 96]**.

Move the arm toward the excavator and raise the boom until it is clear of the trencher.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

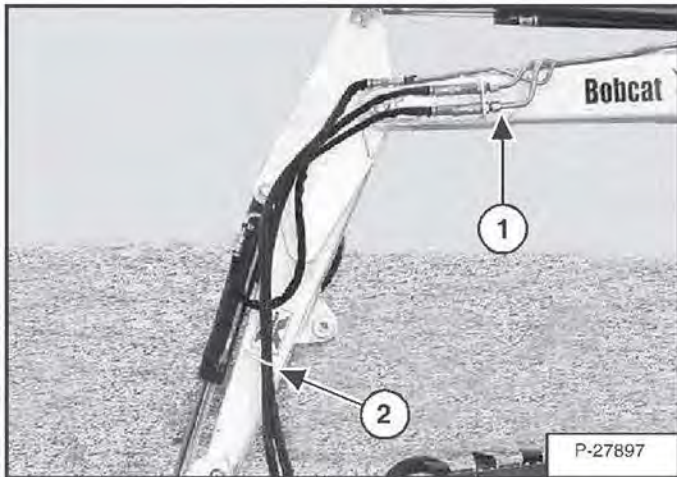
X-Change System

Park the excavator on a flat, level surface. Put the attachment on the ground.

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

Exit the excavator. (See Entering And Exiting the Excavator on Page 39.)

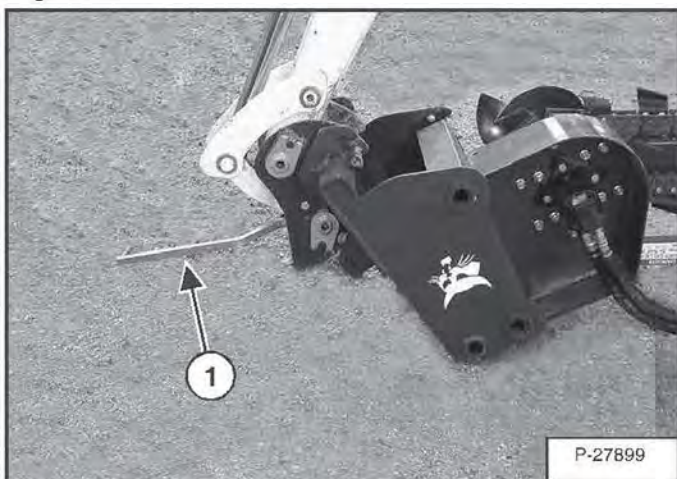
Figure 97



Disconnect the auxiliary couplers (Item 1) [Figure 97]. (See Hydraulic Quick Couplers on Page 56.)

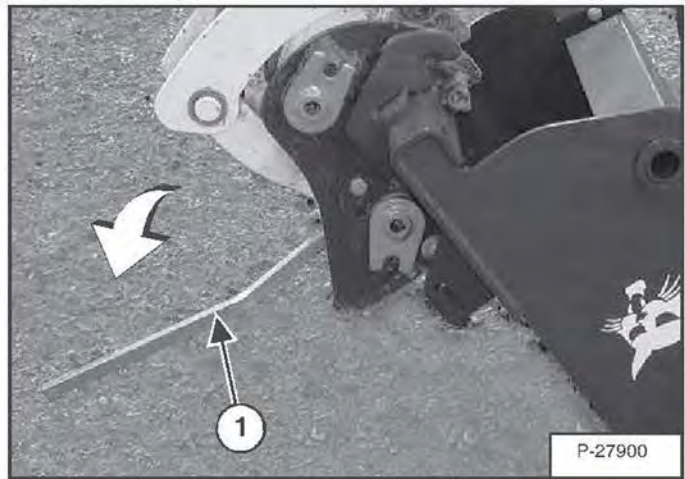
Remove the hoses from the hose retainer (Item 2) [Figure 97].

Figure 98



Install the X-Change tool (Item 1) [Figure 98] into the latch.

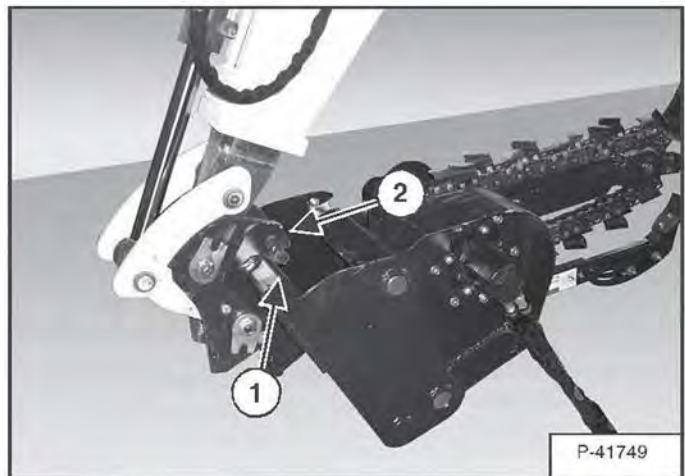
Figure 99



Push down on the X-Change tool (Item 1) [Figure 99] to unlock the latch. Remove the tool.

Enter the excavator and start the engine.

Figure 100



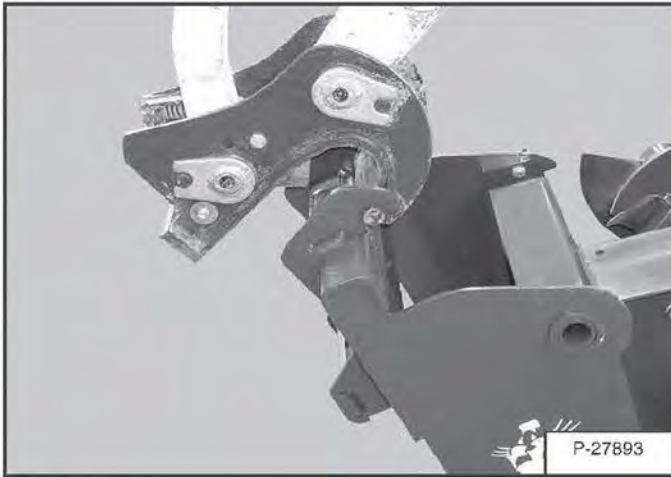
Lift the boom approximately 304,8 mm (1 ft) and extend the bucket cylinder until the X-Change pins (Item 1) engage the hooks (Item 2) [Figure 100] on the trencher frame.

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

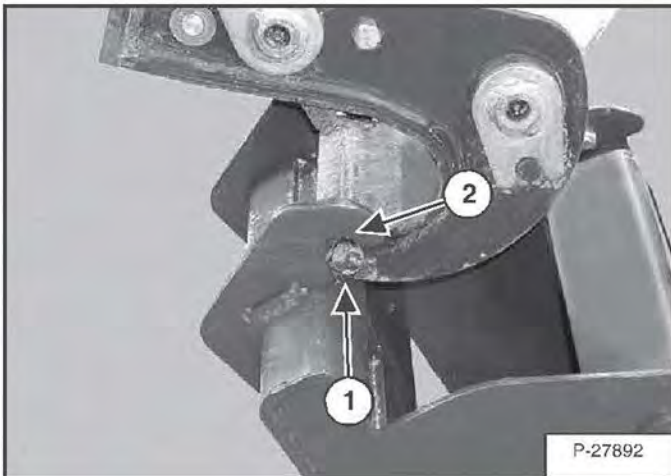
X-Change System (Cont'd)

Figure 101



Retract the bucket cylinder and lower the boom until the trencher is on the ground [Figure 101].

Figure 102



Lower the boom until the pins (Item 1) disengage the hooks (Item 2) [Figure 102].

Move the arm toward the excavator and raise the boom until it is clear of the trencher.

Fully retract the bucket cylinder to reset the X-Change latch.

Pin-On X-Change

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

WARNING

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

W-2662-0108

Figure 103



Park the excavator on a flat level surface. Put the attachment on the ground [Figure 103].

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

Exit the excavator. (See Entering And Exiting the Excavator on Page 39.)

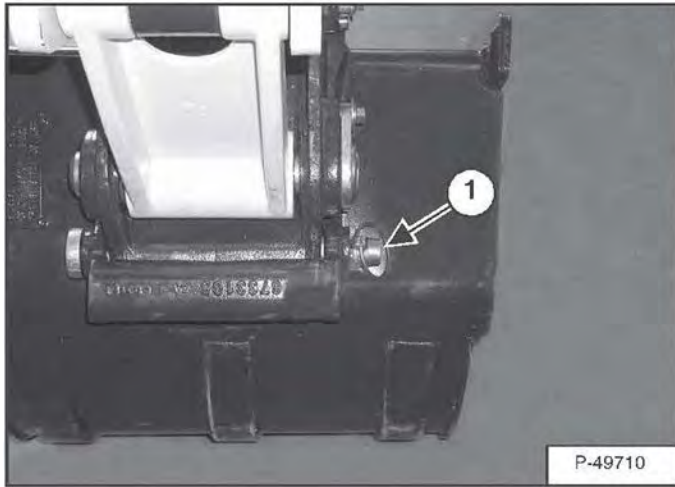
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**OPERATING PROCEDURE WITH EXCAVATORS
(CONT'D)**

Removal (Cont'd)

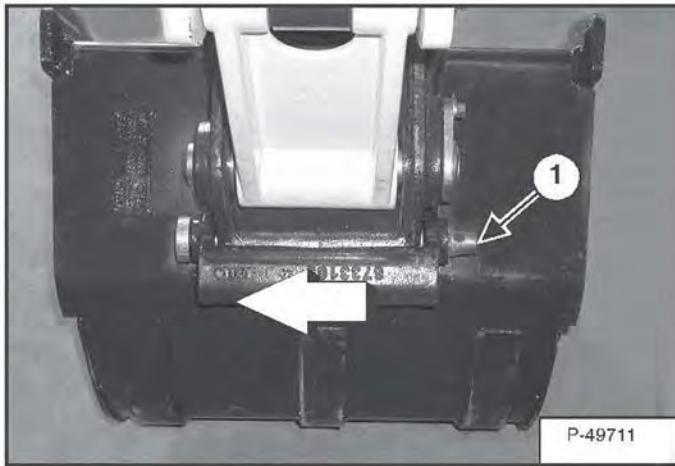
Pin-On X-Change (Cont'd)

Figure 104



Remove the retainer pin (Item 1) [Figure 104].

Figure 105



Drive the pin (Item 1) [Figure 105] out of the attachment and X-Change mount.

! WARNING

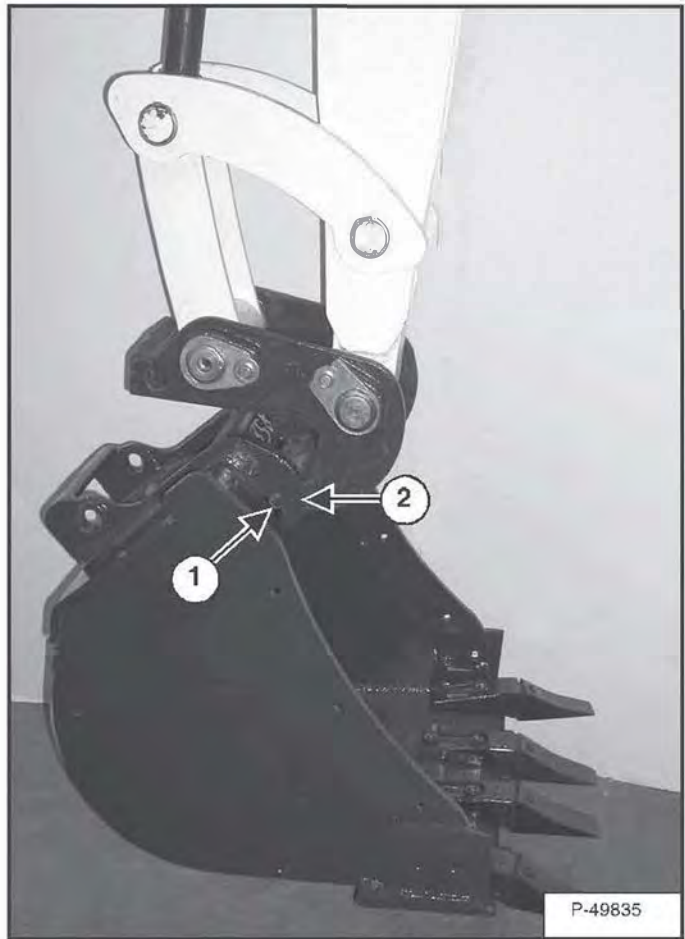
AVOID INJURY OR DEATH

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

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

W-2019-0907

Figure 106



Start the engine, raise the boom approximately 305 mm (12 in) and retract the bucket cylinder until the X-Change pins (Item 1) engage the hooks (Item 2) [Figure 106] on the attachment.

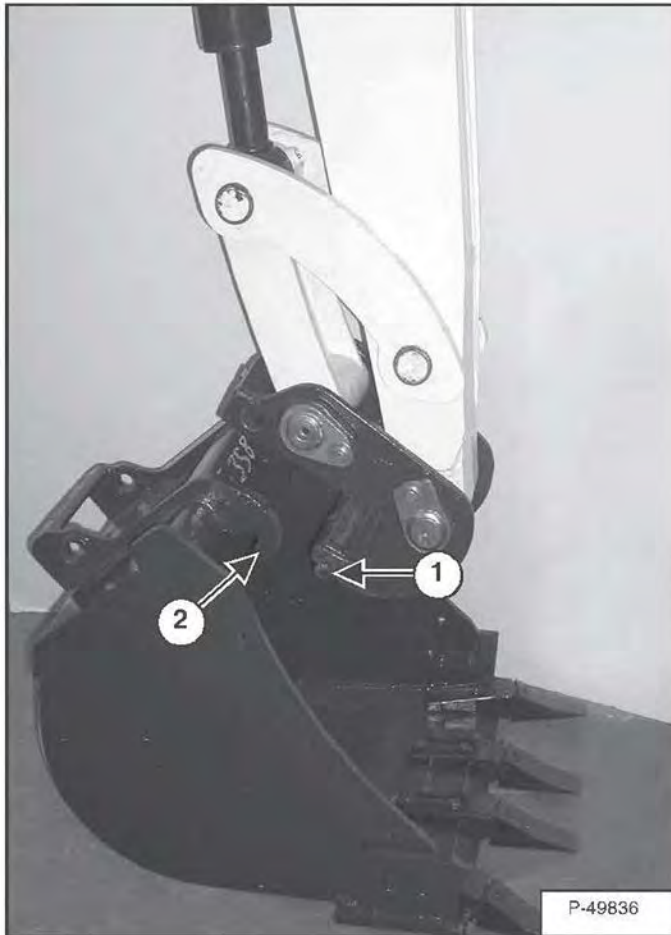
Dealer Copy -- Not for Resale

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Pin-On X-Change (Cont'd)

Figure 107



Fully retract the bucket cylinder and lower the boom and arm until the attachment is on the ground, and the X-Change pins (Item 1) are disengaged from the hooks (Item 2) [Figure 107].

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

Hydraulic X-Change

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

WARNING

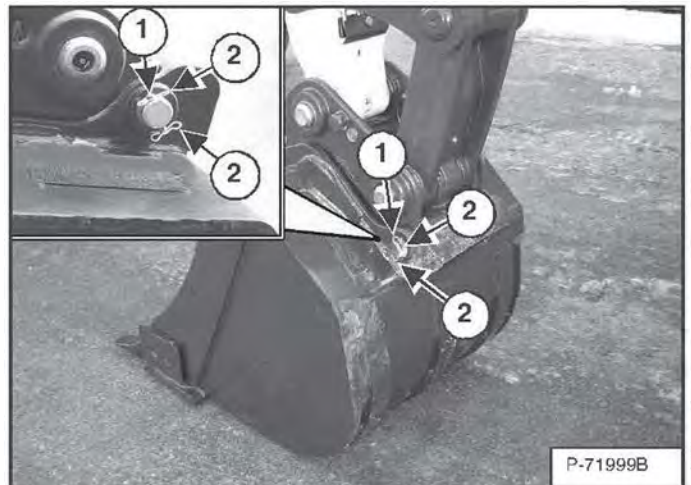
AVOID INJURY OR DEATH

Before leaving the machine:

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

W-2196-0595

Figure 108



Park the excavator on a flat level surface. Put the attachment on the ground.

Stop the engine.

Exit the excavator. (See Entering And Exiting the Excavator on Page 39.)

Remove retainer pin (Item 1) and retainer clips (Item 2) [Figure 108] from the hydraulic pin (both sides).

OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Hydraulic X-Change (Earlier Models)

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

Park the excavator on a flat level surface. Lower the work equipment to the ground.

Lower the blade to the ground.

Stop the engine and remove the key.

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

Exit the excavator. (See Entering And Exiting the Excavator on Page 39.)

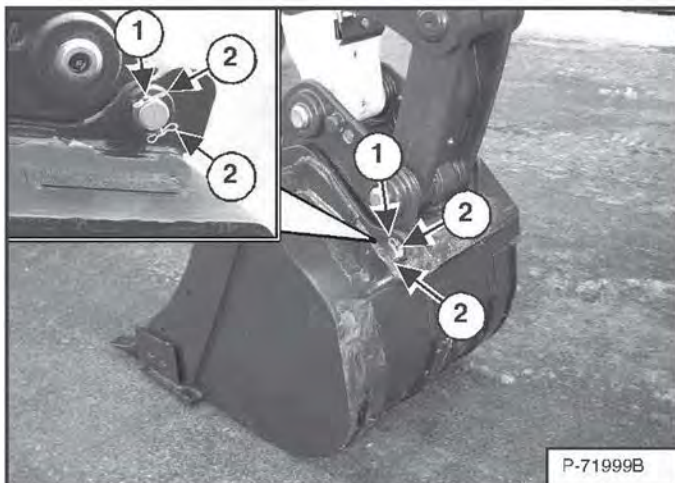
Disconnect the auxiliary hoses. (See Hydraulic Quick Couplers on Page 56.)



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

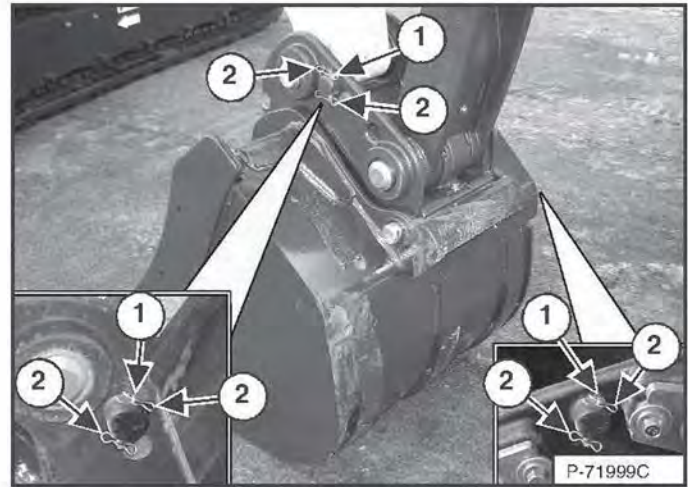
W-2119-0910

Figure 109



Remove retainer pin (Item 1) and retainer clips (Item 2) [Figure 109] from the hydraulic pin (both sides).

Figure 110



Install both retainer pins (Item 1) and clips (Item 2) [Figure 110] in the storage location.

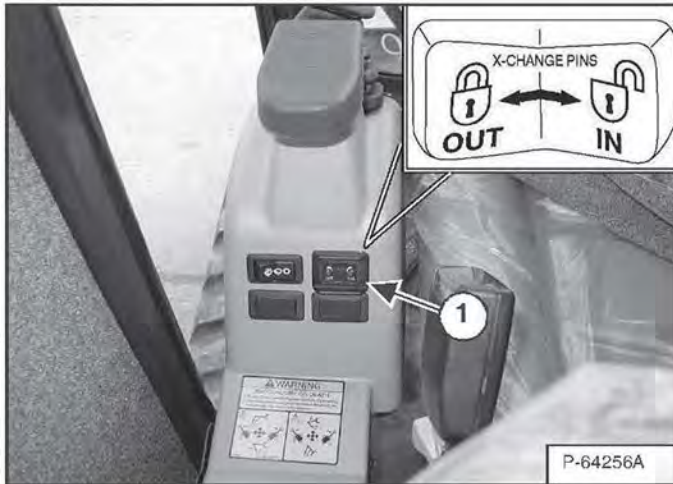
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OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Hydraulic X-Change (Earlier Models) (Cont'd)

Figure 111

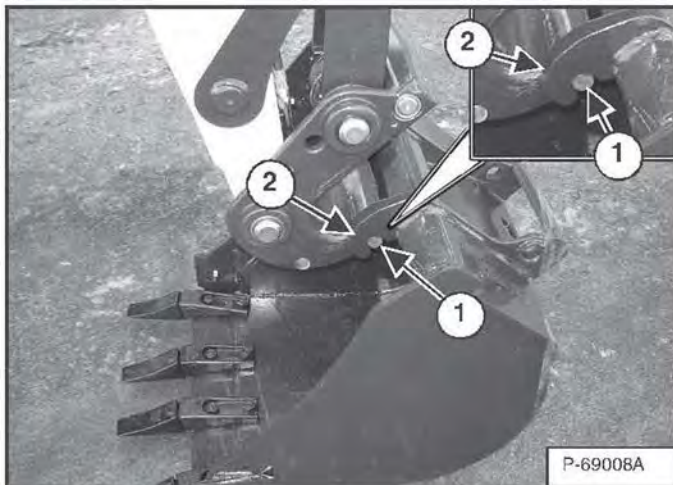


Enter the excavator. (See Entering And Exiting the Excavator on Page 39.)

Start the engine.

Press and hold the X-Change switch (Item 1) [Figure 111] on the left console to the right to **FULLY RETRACT** the hydraulic pins.

Figure 112



Raise the boom and retract the bucket cylinder until the X-Change pins (Item 1) engage the attachment hooks (Item 2) [Figure 112] on the attachment.

Figure 113



Fully retract the bucket cylinder (bucket dump).

Lower the boom and arm until the attachment is on the ground and the X-Change pins are disengaged from the attachment hooks.

Move the arm toward the excavator until the X-Change pins are clear of the attachment [Figure 113].

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

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OPERATING PROCEDURE WITH EXCAVATORS (CONT'D)

Removal (Cont'd)

Hydraulic X-Change (Later Models)

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

WARNING

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

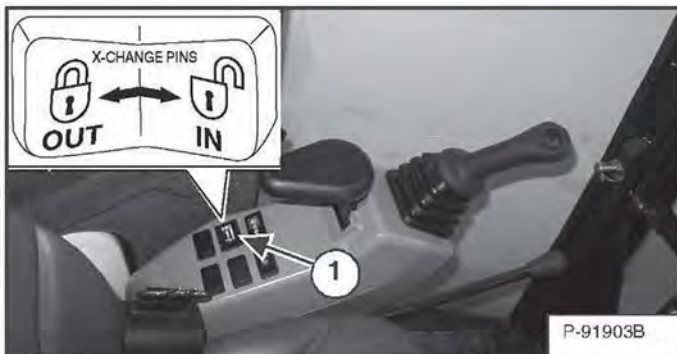
W-2119-0910

Figure 114



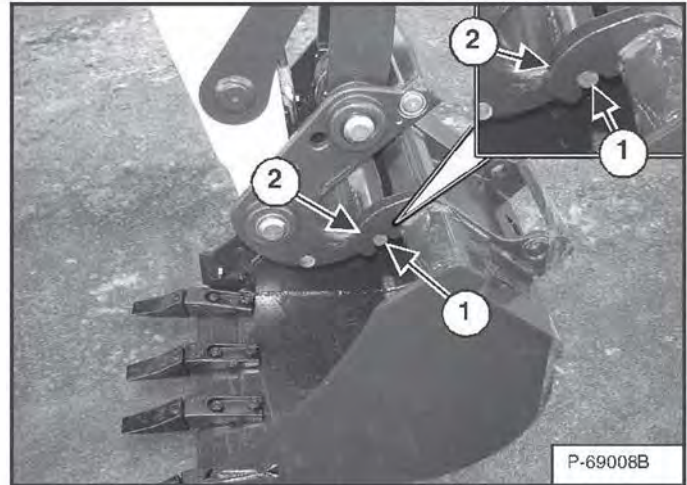
Park the excavator on a flat level surface. Put the attachment on the ground [Figure 114].

Figure 115



Press and hold the X-Change switch (Item 1) [Figure 115] on the left console to the right (IN) to **FULLY RETRACT** the hydraulic pins.

Figure 116



Raise the boom and retract the bucket cylinder until the X-Change pins (Item 1) engage the attachment hooks (Item 2) [Figure 116] on the bucket.

Figure 117



Fully retract the bucket cylinder (bucket dump).

Lower the boom and arm until the attachment is on the ground and the X-Change pins are disengaged from the attachment hooks.

Move the arm toward the excavator until the X-Change pins are clear of the attachment [Figure 117].

OPERATING PROCEDURE WITH MINI TRACK LOADERS

Approved Mini Track Loader Models And Requirements

Figure 118

MINI TRACK LOADER MODEL	LT112	LT113
MT50	X	X
MT52	X	X
MT55	X	X
MT85	X	X
MT100	X	X

X = Approved

The chart [Figure 118] shows the approved trencher models for each mini track 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

Figure 119



The loader must be equipped with front auxiliary hydraulics [Figure 119] for proper operation of the trencher. See your Bobcat dealer for available kits.

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Entering And Leaving The Operator's Position

WARNING

AVOID INJURY OR DEATH

When operating the machine:

- Operate only from the operator's position at the rear of the loader.
- Always keep your hands on the controls.
- Stay away from the tracks.

W-2407-0801

WARNING

AVOID INJURY OR DEATH

- Movement of the attachment will occur if the tilt control is NOT in neutral when the engine is started.
- Always check that all levers are in neutral before starting the engine.

W-2482-1003

WARNING

AVOID INJURY OR DEATH

When using the ride-on platform:

- Operate only with feet on platform and hands on controls or grab handles.
- Always look in the direction of travel.
- Make sure swing area is clear of bystanders and objects.
- Avoid drop-offs and obstacles.

W-2480-1003

Entering

Enter the operator's position at the rear of the mini track loader.

Check the parking brake is engaged and all controls are in NEUTRAL.

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

Leaving

Figure 120



Stop the mini track loader on level ground [Figure 120].

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

Disengage the auxiliary hydraulics.

Engage the parking brake.

Stop the engine.

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

Leave the operator's position.

WARNING

AVOID INJURY OR DEATH

Before you leave the operator's position:

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

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

W-2722-0208

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Installation

Hand Lever Bob-Tach

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

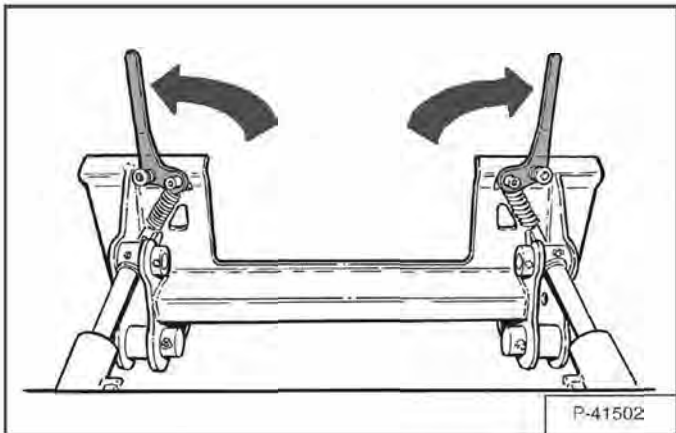
WARNING

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 mini track loader's Bob-Tach and the attachment mounting frame before installation. See the mini track loader's Operation & Maintenance Manual. (See DAILY INSPECTION on Page 23.)

Figure 121

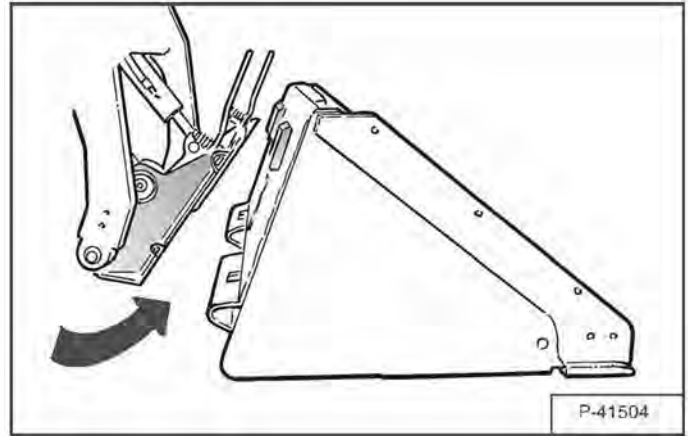


Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) [Figure 121].

Move to the operator's position.

Start the engine and release the parking brake.

Figure 122

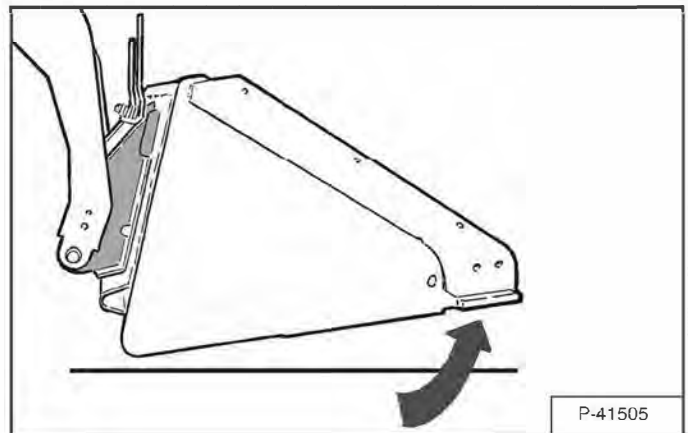


Lower the lift arms and tilt the Bob-Tach forward.

Drive the mini track loader slowly forward until the top edge of the Bob-Tach is completely under the top flange of the attachment [Figure 122].

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

Figure 123



Tilt the Bob-Tach backward until the attachment is slightly off the ground [Figure 123]. This will cause the attachment mounting frame to fit up against the front of the Bob-Tach.

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

Stop the engine and leave the operator's position. (See Entering And Leaving The Operator's Position on Page 70.)

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OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

! WARNING

AVOID INJURY OR DEATH

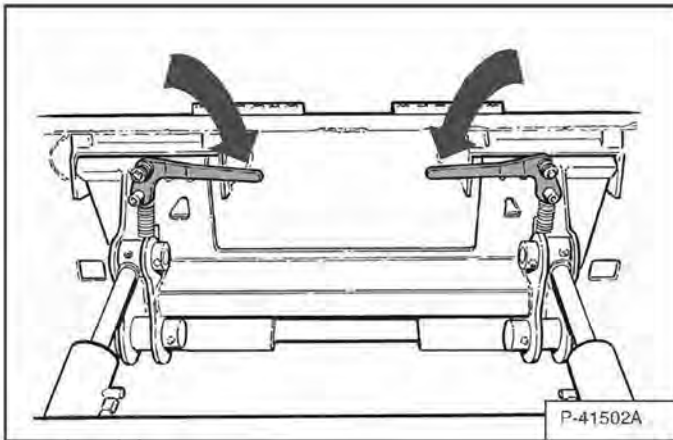
Before you leave the operator's position:

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

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

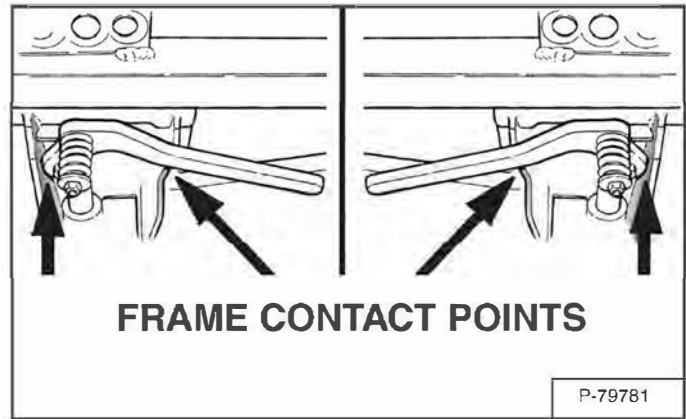
W-2722-0208

Figure 124



Push down on the Bob-Tach levers until they are fully engaged in the locked position [Figure 124] (wedges fully extended through the attachment mounting frame holes).

Figure 125



FRAME CONTACT POINTS

Both levers must contact the frame as shown when locked [Figure 125].

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

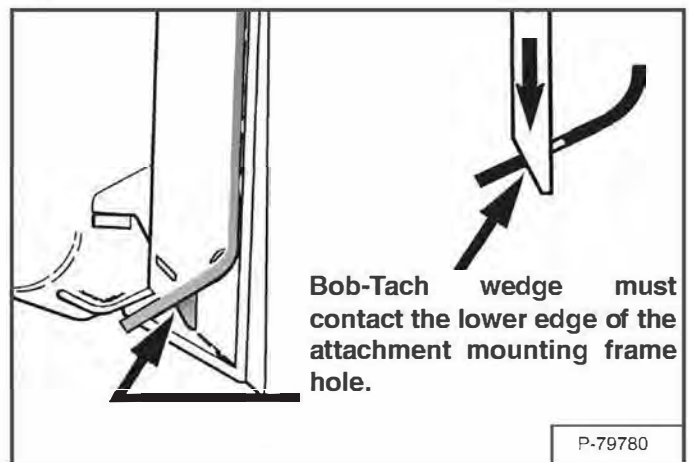
! WARNING

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 126



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 126].

Connect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 76.)

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Installation

Common Industry Interface (CII)

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 Common Industry Interface and the lower part of the frame is designed to receive the locking pins.

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 Common Industry Interface and the attachment mounting frame before installation. See the loader's Operation & Maintenance Manual. (See DAILY INSPECTION on Page 23.)

Figure 127

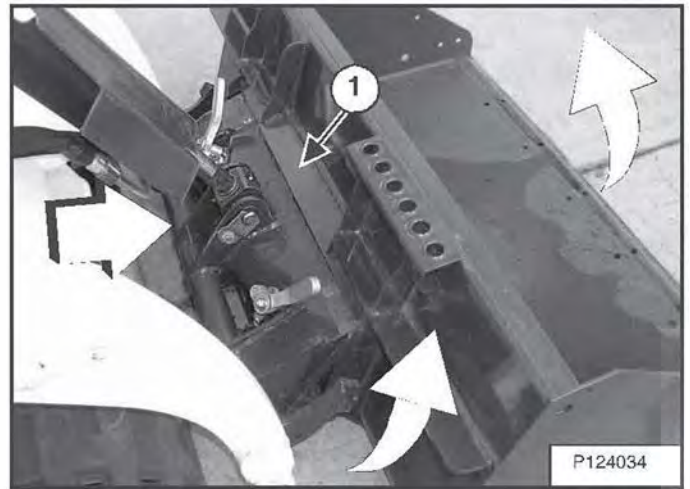


Pull the CII locking pin levers up until they are fully raised [Figure 127].

Enter the loader. (See Entering And Exiting The Loader on Page 28.)

Start the engine, and release the parking brake.

Figure 128



Lower the lift arms and tilt the CII forward.

Drive the loader slowly forward until the top edge of the CII is completely under the top flange of the attachment mounting frame (Item 1) [Figure 128].

Tilt the CII backward until the attachment is slightly off the ground [Figure 128]. This will cause the attachment mounting frame to fit up against the front of the CII.

NOTE: Before leaving the operator position to install an attachment, tilt the attachment until it is slightly off the ground.

Stop the engine and exit the operator position.

WARNING

The Neutral Start Interlock, Auxiliary Hydraulic Interlock, and Lift / Tilt Lockouts must function properly.

- The Neutral Start Interlock must prohibit the engine from cranking when the Drive / Steering Joystick is not in the NEUTRAL position.
- The Auxiliary Hydraulic Interlock must prohibit the engine from cranking when the Auxiliary Hydraulic Control Lever is not in the center position.
- The Lift / Tilt Lockouts must deactivate the lift and tilt functions when engine is off.

If any of these do not function properly, contact your dealer for service. DO NOT modify system.

W-2998-1015

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OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Installation (Cont'd)

Common Industry Interface (Cont'd)

Figure 129



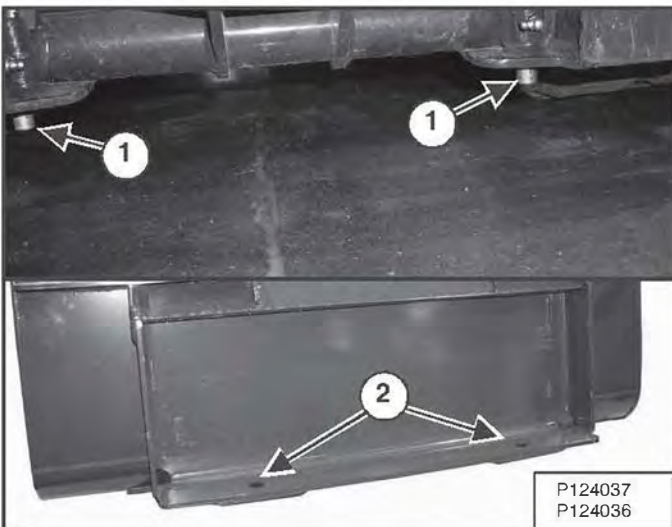
Push down on the CII locking pin levers until they are fully engaged in the locked position [Figure 129] (pins fully extended through the attachment mounting frame holes).

WARNING

The Common Industry Interface locking pins must extend through the holes in attachment frame. Levers must be fully down and locked. Failure to secure the locking pins can allow attachment to come off and cause serious injury or death.

W-2996-1015

Figure 130



The pins (Item 1) must extend through the holes in the attachment mounting frame (Item 2) [Figure 130], securely fastening the attachment to the interface.

Connect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 33.)

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Installation (Cont'd)

For First Time Installation

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

IMPORTANT

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

I-2278-0608

With the mini track loader engine off and using the hose guides (if equipped), route the attachment hydraulic hoses to the mini track loader. Connect the attachment hydraulic quick couplers to the mini track loader couplers. (See Hydraulic Quick Couplers on Page 76.)

Check the attachment hydraulic hoses so they are not twisted or contacting any moving parts of the mini track loader or attachment.

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

! WARNING

AVOID INJURY OR DEATH

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

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

W-2019-0907

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

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

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

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

Enter the operator's position. (See Entering And Leaving The Operator's Position on Page 70.)

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

Engage auxiliary hydraulics. (See the mini track loader's Operation & Maintenance Manual 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 MINI TRACK LOADERS (CONT'D)

Hydraulic Quick Couplers

IMPORTANT

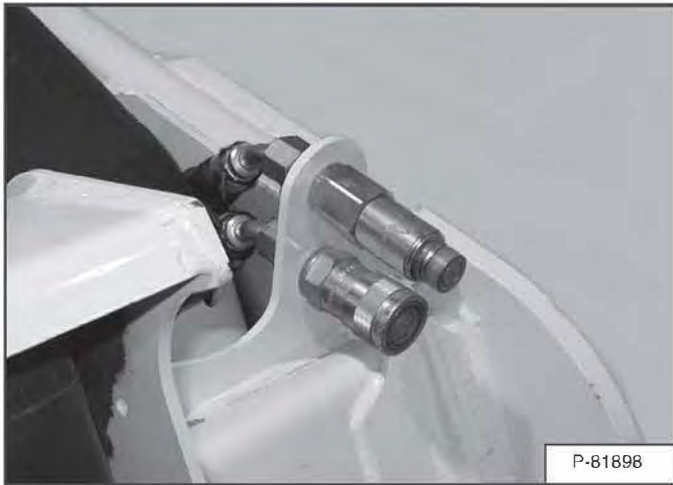
- Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.
- Contain and dispose of any oil leakage in an environmentally safe manner.

I-2278-0608

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

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

Figure 131



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 131].

Install the male coupler into the female coupler. Full connection is made when the ball release sleeve slides forward on the female coupler [Figure 131].

NOTE: Check the attachment hydraulic hoses so they are not twisted or contacting any moving parts of the mini track loader or attachment. (See For First Time Installation on Page 75.) for proper adjustment.

To Disconnect

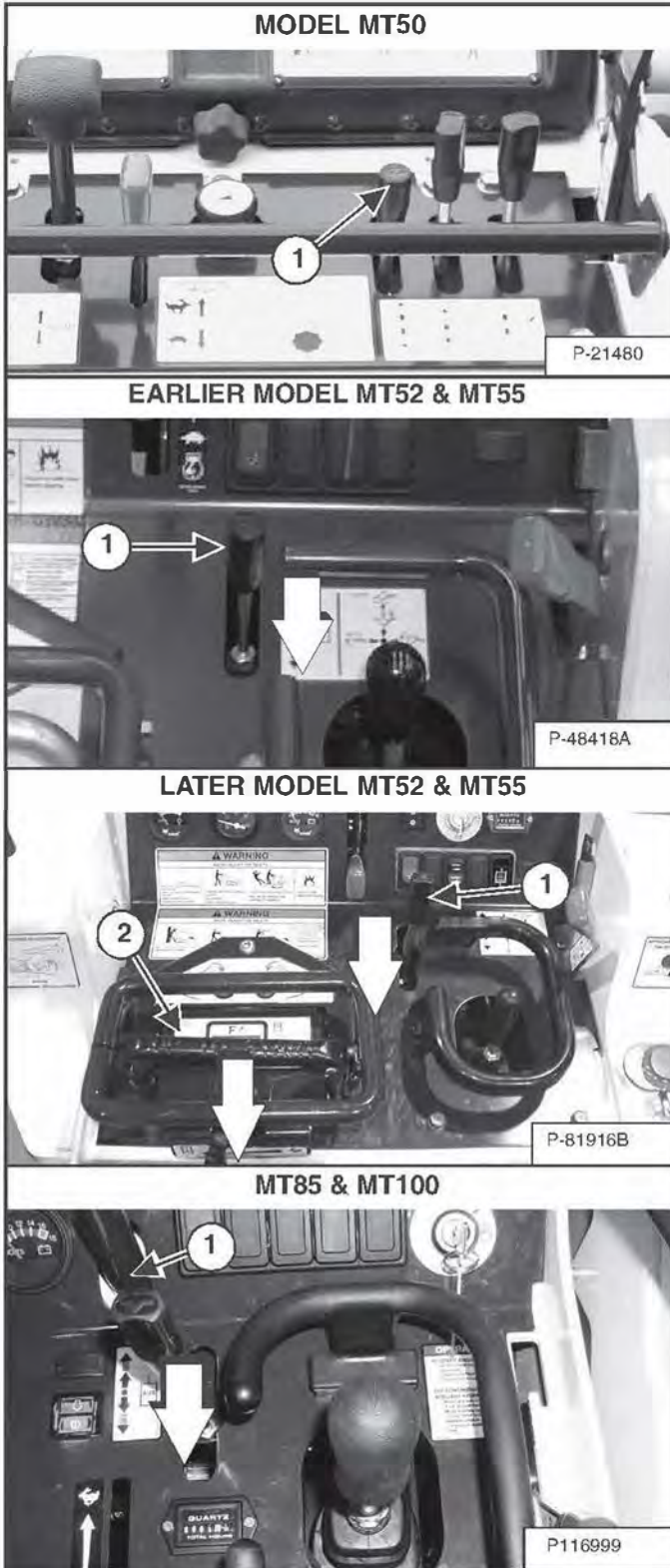
Relieve hydraulic pressure. (See the mini track loader's Operation & Maintenance Manual for correct procedure.)

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

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Control Functions

Figure 132



With the operator at the operator's position at the rear of the mini track loader, start the engine. Move the auxiliary control lever (Item 1) [Figure 132] rearward to activate the front auxiliary hydraulics. The trencher chain and auger will start to rotate.

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

! WARNING

AVOID INJURY OR DEATH

When operating the machine:

- Operate only from the operator's position at the rear of the loader.
- Always keep your hands on the controls.
- Stay away from the tracks.

W-2407-0801

! WARNING

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

W-2119-0910

Variable Flow:

With the operator at the operator's position at the rear of the mini track loader, start the engine. Pull the auxiliary hydraulic control lever (Item 1) [Figure 132] back for auxiliary hydraulic oil flow to the front female coupler. The trencher chain and auger will start to rotate. (See the mini track loader's Operation & Maintenance Manual for a complete description on mini track loader controls.)

NOTE: Hydraulic oil flow increases to the coupler as the lever (Item 1) [Figure 132] is moved further from the NEUTRAL position.

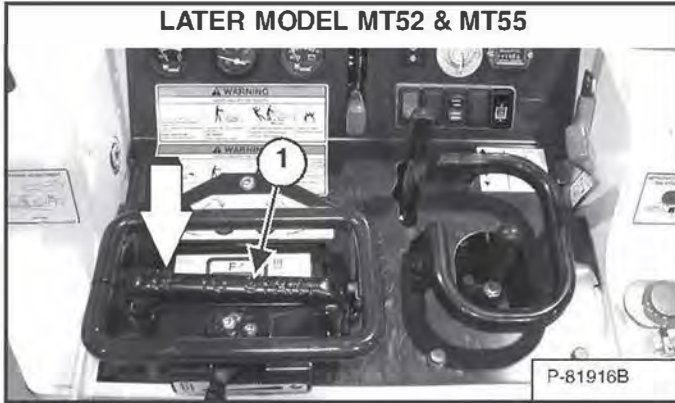
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OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Control Functions (Cont'd)

Continuous Flow

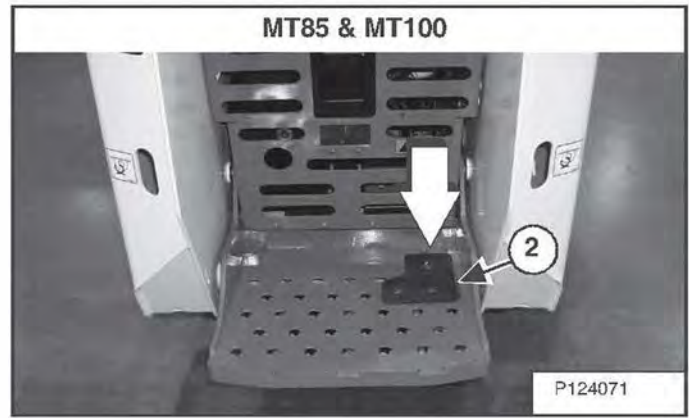
Figure 133



For Later Model MT52 And MT55:

- While holding the Continuous Flow Shutoff Lever (Item 1) [Figure 133] down, pull the auxiliary hydraulic control lever (Item 1) [Figure 132] all the way back until it locks (DETENT position) for continuous hydraulic oil flow to the front female coupler. The trencher chain and auger will start and continue to rotate. (See the mini track loader's Operation & Maintenance Manual for a complete description on mini track loader controls.)
- To stop the trencher operation, release the Continuous Flow Shutoff Lever (Item 1) [Figure 133]. The auxiliary hydraulic control lever (Item 1) [Figure 132] will return to NEUTRAL in one to three seconds.

Figure 134



For MT85:

- While standing on the operator platform and depressing the Continuous Flow Shutoff Pedal (Item 1) [Figure 134], pull the auxiliary hydraulic control lever (Item 1) [Figure 132] all the way back until it locks (DETENT position) for continuous hydraulic oil flow to the front female coupler. The trencher chain and auger will start and continue to rotate. (See the mini track loader's Operation & Maintenance Manual for a complete description on mini track loader controls.)
- To stop the trencher operation, release the Continuous Flow Shutoff Pedal (Item 1) [Figure 134]. The auxiliary hydraulic control lever (Item 1) [Figure 132] will return to NEUTRAL in one to three seconds.

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Operation With The Mini Track Loader

Manual Side Shift

Always park on flat level ground.

Lower the trencher keeping slightly off the ground.

Stop the engine and exit the operator's position. (See Entering And Leaving The Operator's Position on Page 70.)

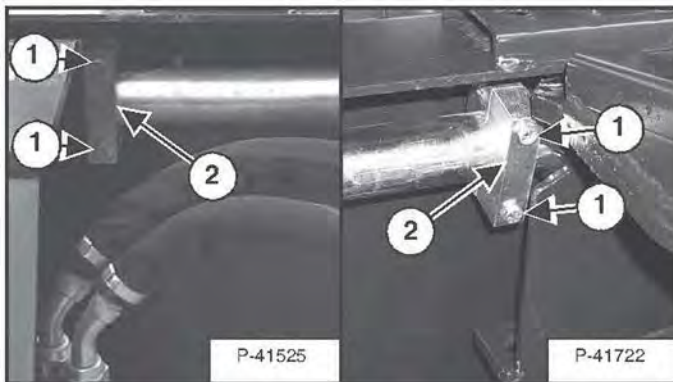
WARNING

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

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

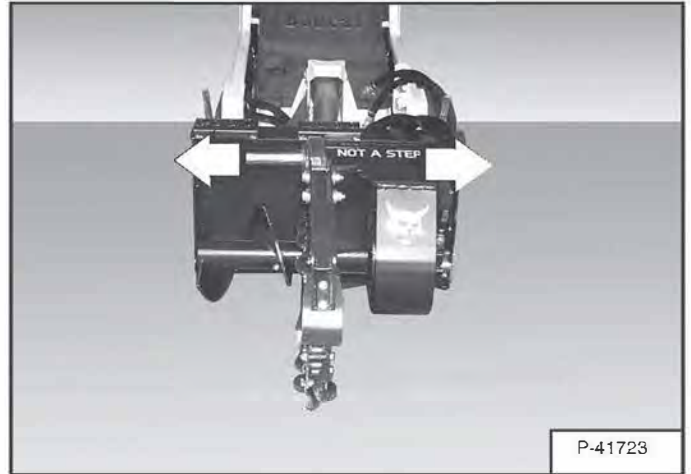
W-2416-1015

Figure 135



Loosen the two bolts (Item 1) from both the left and right blocks (Item 2) [Figure 135] holding the trencher in the desired position.

Figure 136



Move the trencher to the desired position [Figure 136].

Slide the blocks (Item 2) [Figure 136] against the trencher frame, then tighten the bolts to 34 - 38 N•m (25 - 28 ft-lb) torque.

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Operation With The Mini Track Loader (Cont'd)



DANGER

AVOID INJURY OR DEATH

Bystanders must stay 6 m (20 ft) away from chain and auger.

D-1019-0910



WARNING

AVOID INJURY OR DEATH

Check for underground utility lines before digging.

W-2120-0788

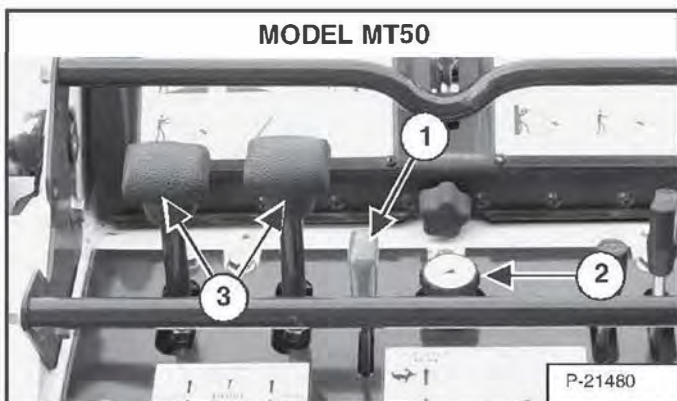
Mini Track Loader (MT50) Trenching Procedure

Move to the operator's position at the rear of the mini track loader, start the engine.

Move the mini track loader / attachment to the starting point.

Move the travel levers to the NEUTRAL position.

Figure 137



Move the engine speed control lever to the low idle position. Pull the operation mode selector (Item 1) [Figure 137] back to the speed control position.

Turn the speed control knob (Item 2) fully clockwise (no travel speed), engage the travel levers (Item 3) [Figure 137] in the reverse travel direction.

Turn the speed control knob (Item 2) [Figure 137] clockwise until the desired loader speed is obtained. Return the travel levers to the NEUTRAL position.

NOTE: The operator can vary the amount of turns on the speed control knob to fit the attachment speed and is variable from 1/2 maximum high range to no travel speed. It may be adjusted while the attachment is operating.

Figure 138



Raise the lift arms and tilt the trencher forward until the trencher is at a 20 - 25° angle to the ground [Figure 138].

Start the trencher. (See Control Functions on Page 77.)

Move the engine speed control lever to the high idle position.

Lower the lift arms until the end of the attachment contacts the ground and starts digging the trench. Continue to lower the lift arms while the trencher is digging until the lift arms are fully lowered.

Slowly tilt the Bob-Tach into the ground until the trencher boom is approximately at a 60° angle to the ground. When the attachment reaches this angle, it is at the best digging position.

Drive backward and continue trenching until the desired length of the trench is reached.

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Operation With The Mini Track Loader (Cont'd)

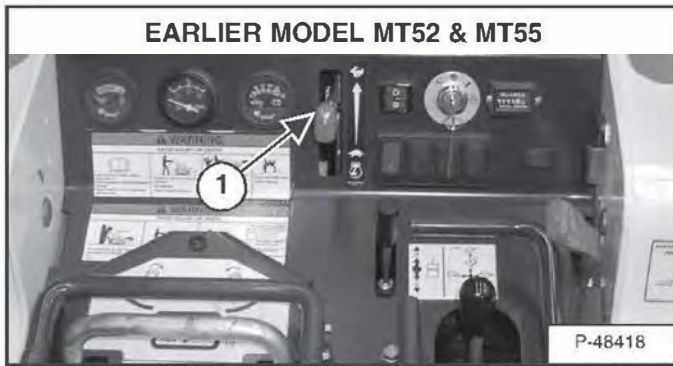
Earlier Mini Track Loader (MT52 And MT55) Trenching Procedure

Move to the operator's position at the rear of the mini track loader, start the engine.

Move the mini track loader / attachment to the starting point.

Move the travel levers to the NEUTRAL position.

Figure 139

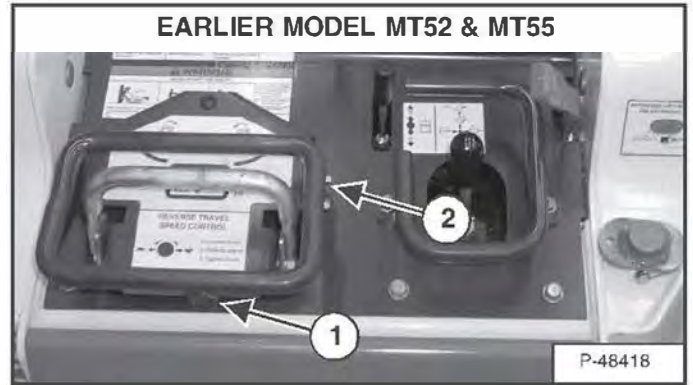


Move the lever (Item 1) [Figure 139] up to increase engine speed. Move the lever down to decrease engine speed.

NOTE: For maximum performance, run the engine at full speed.

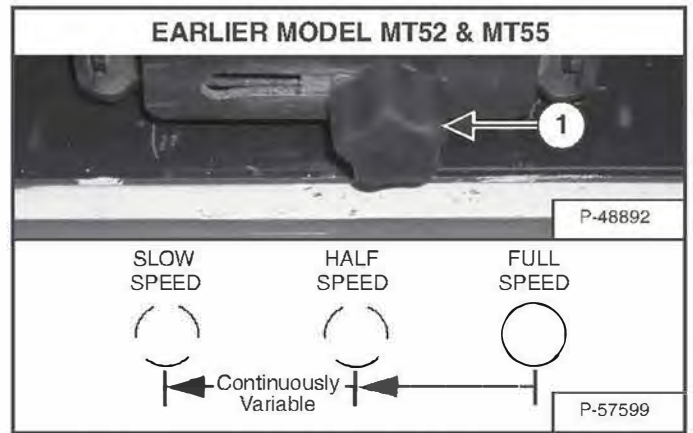
The Reverse Travel Speed Control allows the operator to move the mini track loader backward at slower speeds to optimize efficiency with certain attachments.

Figure 140



The Reverse Travel Speed Control (Item 1) [Figure 140] can be used when a constant slower speed is desired.

Figure 141



- Put the Drive / Steering Control (Item 2) [Figure 140] in the NEUTRAL position.
- Loosen the knob (Item 1) [Figure 141].
- Slide the knob to the left to reduce travel speed. The initial move of the control will reduce the travel speed to 1/2; any addition movement of the control will continue to reduce the travel speed until it approaches very slow travel speed.
- Tighten the knob.

NOTE: You can vary the amount that you move the Speed Control Knob to fit your needs. The travel speed is variable from 1/2 of the normal reverse speed to very slow.

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OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Operation With The Mini Track Loader (Cont'd)

Later Mini Track Loader (MT52 And MT55) Trenching Procedure

Move to the operator's position at the rear of the mini track loader, start the engine.

Move the mini track loader / attachment to the starting point.

Place the Drive / Steering Control in the NEUTRAL position.

Figure 142



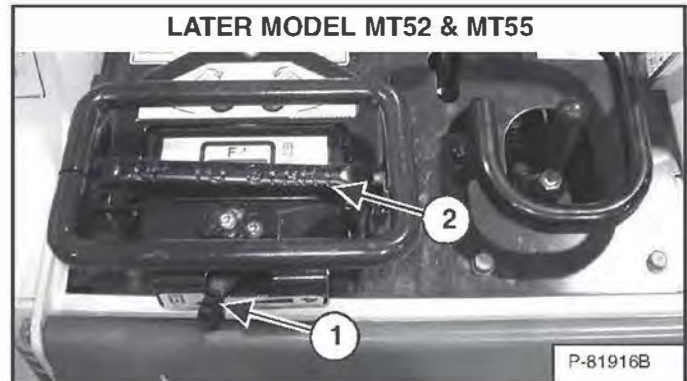
Move the engine speed control lever (Item 1) [Figure 142] up to increase engine speed. Move the lever down to decrease engine speed.

NOTE: For maximum performance, run the engine at full speed.

Use the Drive / Steering Control (Item 2) [Figure 142] for directional travel. (See the mini track loader's Operation & Maintenance Manual for correct procedure.)

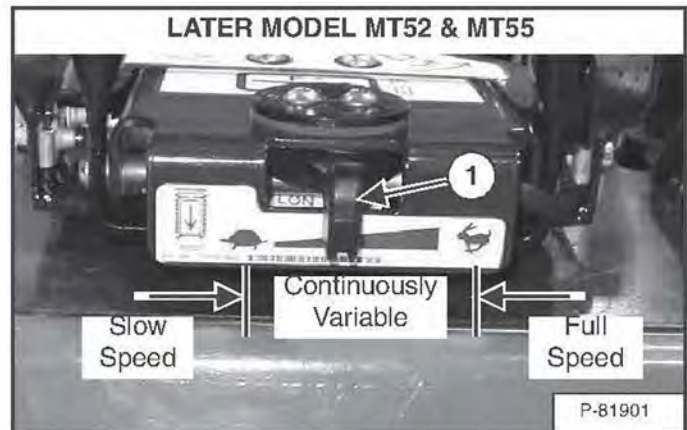
The Reverse Travel Speed Control Lever is used with the Drive / Steering Control to limit the mini track loader reverse travel speeds to optimize efficiency with certain attachments.

Figure 143



The Reverse Travel Speed Control (Item 1) [Figure 143] can be used when a constant slower speed is desired.

Figure 144



- Put the Drive / Steering Control (Item 2) [Figure 143] in the NEUTRAL position.
- Slide the lever (Item 1) [Figure 144] to the left to reduce the reverse travel speed. Move the Drive / Steering Control fully backward and the mini track loader will travel in reverse at the set speed. To adjust the reverse travel speed again, return the Drive / Steering Control to the NEUTRAL position and slide the lever to the desired position.

NOTE: You can vary the amount that you move the Reverse Speed Control Lever to fit your needs. The travel speed is variable from full speed reverse to slow speed.

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Operation With The Mini Track Loader (Cont'd)

Mini Track Loader (MT52 And MT55) Trenching Procedure (Cont'd)

Figure 145



Raise the lift arms and tilt the trencher forward until the trencher is at a 20 - 25° angle to the ground [**Figure 145**].

Start the trencher. (See Control Functions on Page 77.)

Move the engine speed control lever to the high idle position.

Lower the lift arms until the end of the attachment contacts the ground and starts digging the trench. Continue to lower the lift arms while the trencher is digging until the lift arms are fully lowered.

Slowly tilt the Bob-Tach into the ground until the trencher boom is approximately at a 60° angle to the ground. When the attachment reaches this angle, it is at the best digging position.

Drive backward and continue trenching until the desired length of the trench is reached.

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

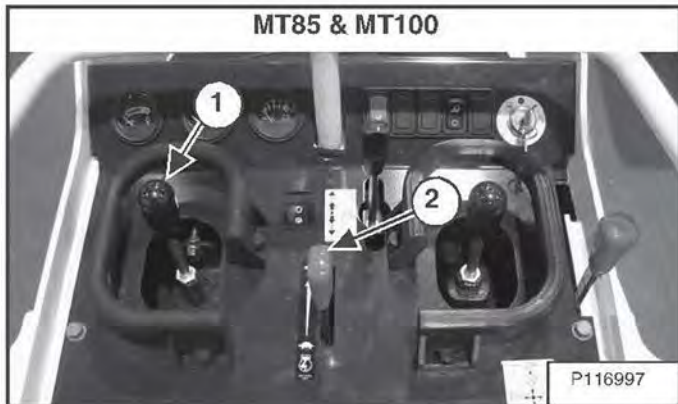
Operation With The Mini Track Loader (Cont'd)

MT85 And MT100 Trenching Procedure

Move to the operator's position at the rear of the mini track loader, start the engine.

Move the mini track loader / attachment to the starting point.

Figure 146



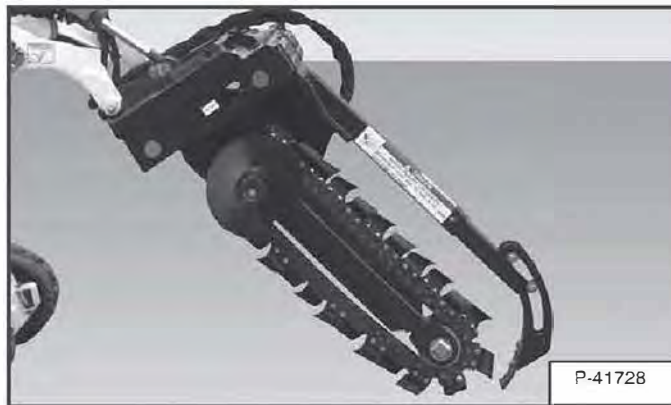
Place the Drive / Steering Control (Item 1) [Figure 146] in the NEUTRAL position.

Move the engine speed control lever (Item 2) [Figure 146] up to increase engine speed. Move the lever down to decrease engine speed.

NOTE: For maximum performance, run the engine at full speed.

Use the Drive / Steering Control (Item 1) [Figure 146] for directional travel. (See the mini track loader's Operation & Maintenance Manual for correct procedure.)

Figure 147



Raise the lift arms and tilt the trencher forward until the trencher is at a 20 - 25° angle to the ground [Figure 147].

Start the trencher. (See Control Functions on Page 77.)

Move the engine speed control lever to the high idle position.

Lower the lift arms until the end of the attachment contacts the ground and starts digging the trench. Continue to lower the lift arms while the trencher is digging until the lift arms are fully lowered.

Slowly tilt the attachment into the ground until the trencher boom is approximately at a 60° angle to the ground. When the attachment reaches this angle, it is at the best digging position.

Drive backward and continue trenching until the desired length of the trench is reached.

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Removal

Hand Lever Bob-Tach

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

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

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

Leave the operator's position. (See Entering And Leaving The Operator's Position on Page 70.)

WARNING

AVOID INJURY OR DEATH

Before you leave the operator's position:

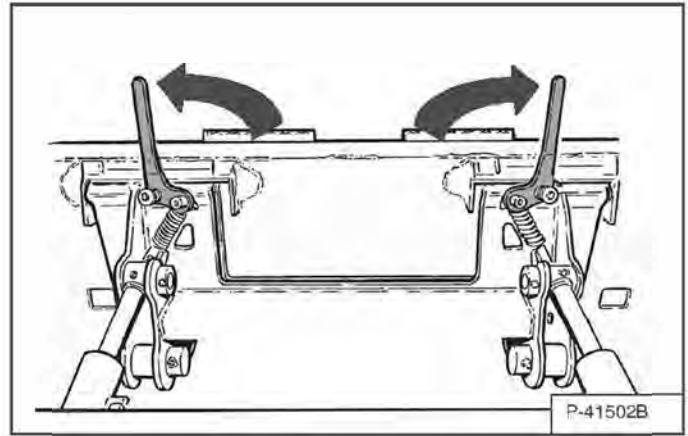
- Lower the lift arms, put the attachment flat on the ground.
- Stop the engine and engage the parking brake.
- Move all pedals, handles, joysticks, and other controls until they are LOCKED or in the NEUTRAL position.

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

W-2722-0208

Disconnect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 76.)

Figure 148



Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) [Figure 148].

WARNING

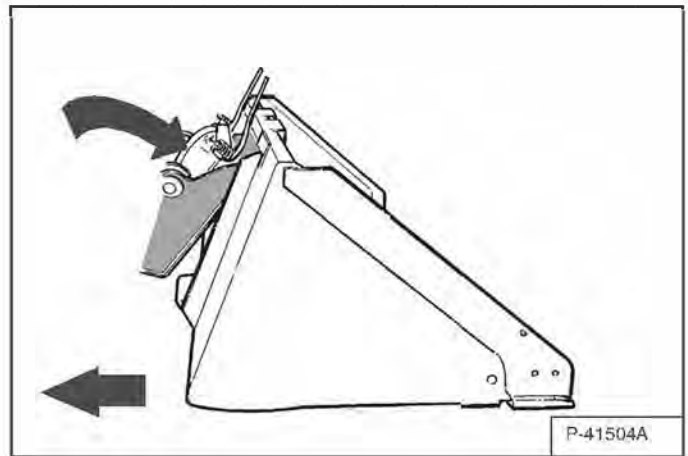
Bob-Tach levers have spring tension. Hold lever tightly and release slowly. Failure to obey warning can cause injury.

W-2054-1285

Enter the operator's position. (See Entering And Leaving The Operator's Position on Page 70.)

Start the engine and release the parking brake.

Figure 149



Tilt the Bob-Tach forward and drive the mini track loader backward, away from the attachment [Figure 149].

OPERATING PROCEDURE WITH MINI TRACK LOADERS (CONT'D)

Removal

Common Industry Interface (CII)

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

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

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

Leave the operator's position. (See Entering And Leaving The Operator's Position on Page 70.)

WARNING

The Neutral Start Interlock, Auxiliary Hydraulic Interlock, and Lift / Tilt Lockouts must function properly.

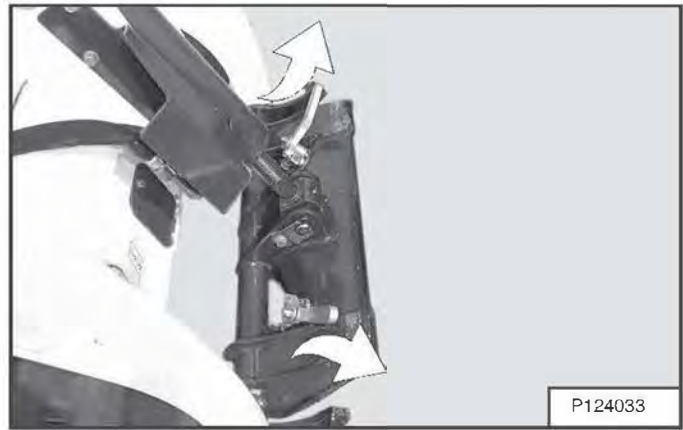
- The Neutral Start Interlock must prohibit the engine from cranking when the Drive / Steering Joystick is not in the NEUTRAL position.
- The Auxiliary Hydraulic Interlock must prohibit the engine from cranking when the Auxiliary Hydraulic Control Lever is not in the center position.
- The Lift / Tilt Lockouts must deactivate the lift and tilt functions when engine is off.

If any of these do not function properly, contact your dealer for service. DO NOT modify system.

W-2998-1015

Disconnect auxiliary hydraulic hoses (if applicable). (See Hydraulic Quick Couplers on Page 76.)

Figure 150



Pull the CII locking pin levers up until they are fully raised (pins fully raised) [Figure 150].

WARNING

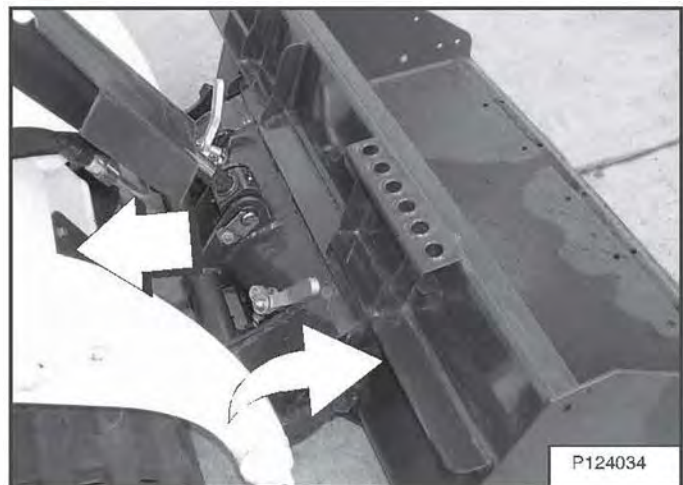
Locking pin levers have spring tension. Hold lever tightly and release slowly. Failure to obey warning can cause injury.

W-2997-1015

Enter the operator's position. (See Entering And Leaving The Operator's Position on Page 70.)

Start the engine and release the parking brake.

Figure 151



Tilt the CII forward and drive the mini track loader backward, away from the attachment [Figure 151].

OPERATING PROCEDURE WITH SMALL ARTICULATED LOADERS

Approved Small Articulated Loaders Models And Requirements

Figure 152

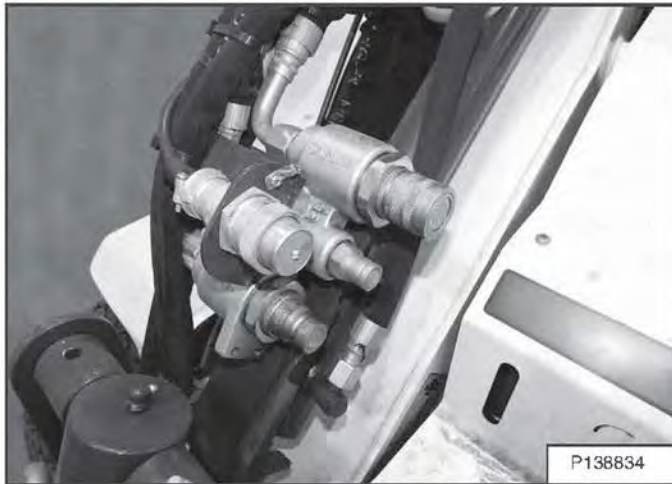
SMALL ARTICULATED LOADER MODEL	LT112	LT113
L23	X	X
L28	X	X

X = Approved

The chart [Figure 152] shows the approved trencher models for each small articulated loader model.

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

Figure 153



The small articulated loader must be equipped with front auxiliary hydraulics [Figure 153] for proper operation of the trencher. See your Bobcat dealer for available kits.

WARNING

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

W-2662-0108

OPERATING PROCEDURE WITH SMALL ARTICULATED LOADERS (CONT'D)

Entering And Exiting The Small Articulated Loader

Entering

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

WARNING

AVOID INJURY OR DEATH

When operating the machine:

- Keep the seat belts fastened snugly.
- The arm rest must be lowered.
- Keep your feet and arms inside the cab.

W-2454-1102

NOTE: The following picture may not show your exact machine but the procedure is the same.

Figure 154



Use the grab handles (Item 1) and step (item 2) [Figure 154] (on cab) to enter and exit the small articulated loader.

Figure 155



Enter the small articulated loader and fasten the seat belt [Figure 155].

Figure 156



Fully lower the arm rest and engage parking brake [Figure 156].

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

OPERATING PROCEDURE WITH SMALL ARTICULATED LOADERS (CONT'D)

Entering And Exiting The Small Articulated Loader (Cont'd)

Exiting

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

Stop the engine and engage the parking brake.

Lift the arm rest and make sure the lift, tilt, auxiliary hydraulics, drive functions and telescopic (if equipped) are deactivated.

Remove the key.

Exit the small articulated loader.



AVOID INJURY OR DEATH

Before you leave the operator's seat:

- Lower the lift arm and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Raise the arm rest.
- Move all controls to the **NEUTRAL / LOCKED** position to make sure the lift, tilt, telescoping, auxiliary hydraulics and traction drive functions are deactivated.
- The Operator Interlock Control System (OICS) must deactivate these functions when the armrest is up. See your Bobcat dealer for service if controls do not activate.

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

W-3095-0220

OPERATING PROCEDURE WITH SMALL ARTICULATED LOADERS (CONT'D)

Installation

Hand Lever Bob-Tach

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

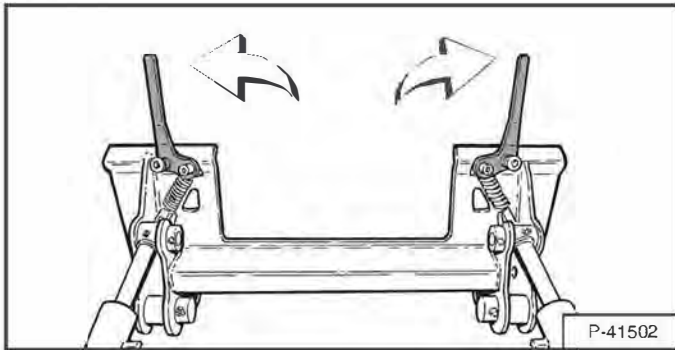
WARNING

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 small articulated loader's Bob-Tach and the attachment mounting frame before installation. See the small articulated loader's Operation & Maintenance Manual. (See DAILY INSPECTION on Page 23.)

Figure 157

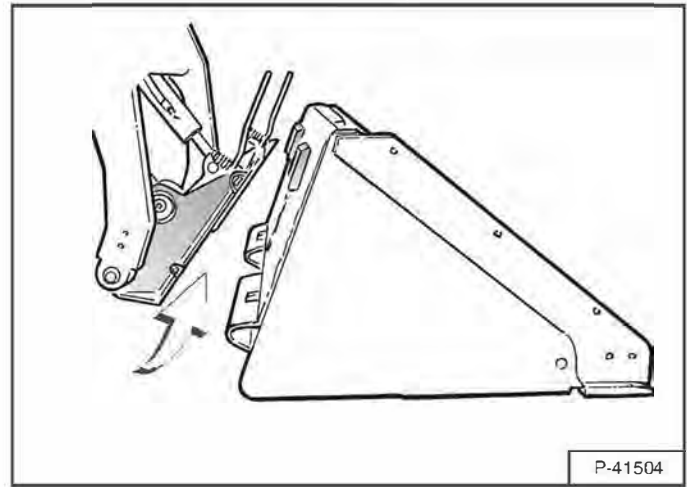


Pull the Bob-Tach levers up until they are fully raised (wedges fully raised) [Figure 157].

Enter the small articulated loader. (See Entering And Exiting The Small Articulated Loader on Page 88.)

Start the engine, press the operate switch and release the parking brake.

Figure 158

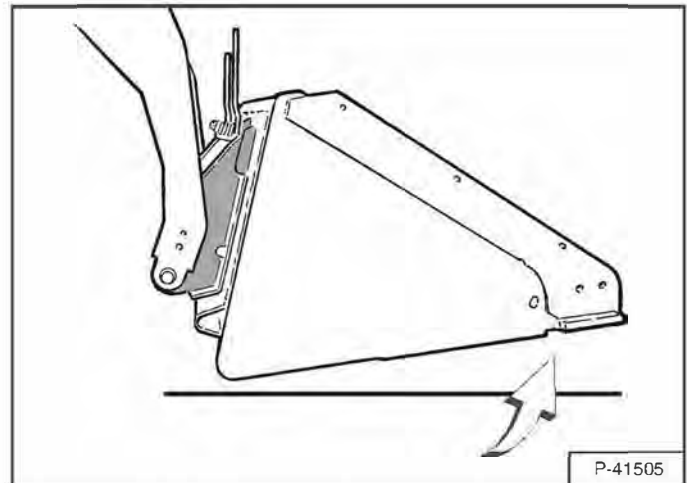


Lower the lift arm and tilt the Bob-Tach forward.

Drive the small articulated loader slowly forward until the top edge of the Bob-Tach is completely under the top flange of the attachment mounting frame [Figure 158].

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

Figure 159



Tilt the Bob-Tach backward until the attachment is slightly off the ground [Figure 159]. This will cause the attachment mounting frame to fit up against the front of the Bob-Tach.

Stop the engine and exit the small articulated loader. (See Entering And Exiting The Small Articulated Loader on Page 88.)

OPERATING PROCEDURE WITH SMALL ARTICULATED LOADERS (CONT'D)

Installation (Cont'd)

Hand Lever Bob-Tach (Cont'd)

! WARNING

AVOID INJURY OR DEATH

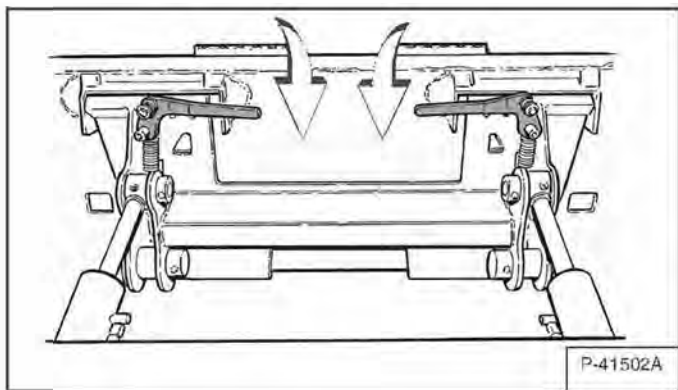
Before you leave the operator's seat:

- Lower the lift arm and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Raise the arm rest.
- Move all controls to the **NEUTRAL / LOCKED** position to make sure the lift, tilt, telescoping, auxiliary hydraulics and traction drive functions are deactivated.
- The **Operator Interlock Control System (OICS)** must deactivate these functions when the armrest is up. See your Bobcat dealer for service if controls do not activate.

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

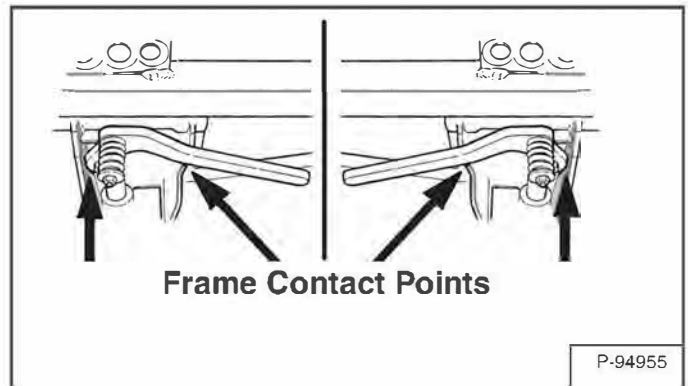
W-3095-0220

Figure 160



Push down on the Bob-Tach levers until they are fully engaged in the locked position [Figure 160] (wedges fully extended through the attachment mounting frame holes).

Figure 161



Both levers must contact the frame as shown when locked [Figure 161].

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

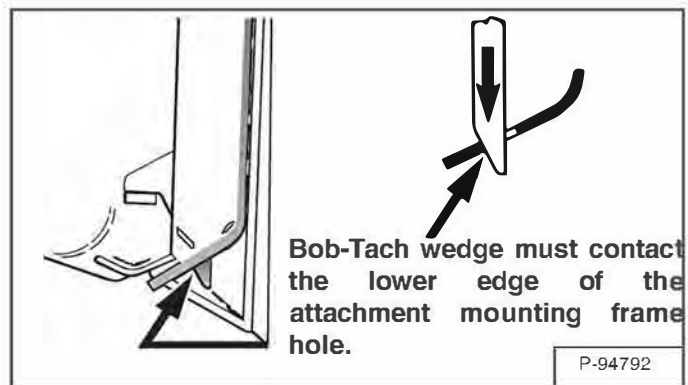
! WARNING

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 162



The wedges must extend through the holes (Item 2) in the attachment mounting frame, securely fastening the attachment to the Bob-Tach [Figure 162].

Connect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 96.)

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OPERATING PROCEDURE WITH SMALL ARTICULATED 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 small articulated loader may be equipped with a Power Bob-Tach.

Enter the small articulated loader. (See Entering And Exiting The Small Articulated Loader on Page 88.)

Start the engine, press the operate switch and release the parking brake.

Figure 163

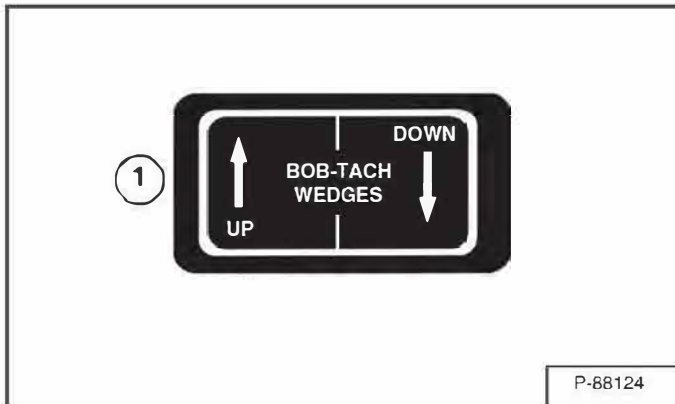
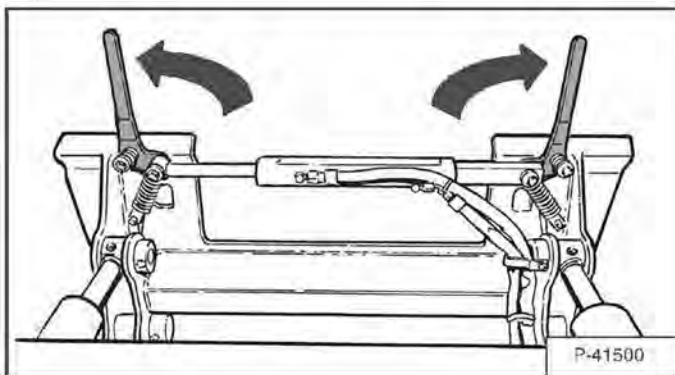
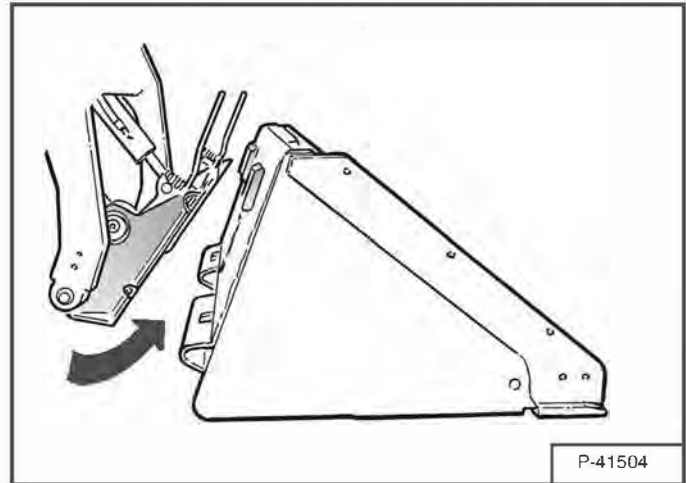


Figure 164



Push and hold the BOB-TACH “WEDGES UP” switch (item 1) [Figure 163] until the levers are fully raised (wedges fully raised) [Figure 164].

Figure 165

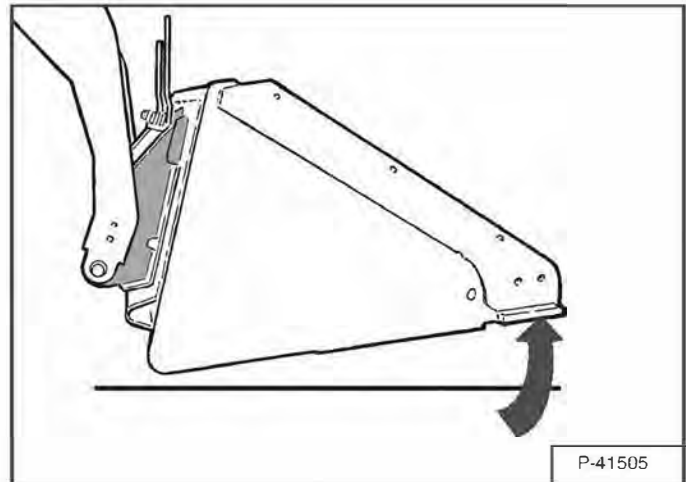


Lower the lift arm and tilt the Bob-Tach slightly forward.

Drive the small articulated loader slowly forward until the top edge of the Bob-Tach is completely under the top flange of the attachment mounting frame [Figure 165].

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

Figure 166



Tilt the Bob-Tach backward until the attachment is slightly off the ground [Figure 166]. This will cause the attachment mounting frame to fit up against the front of the Bob-Tach.

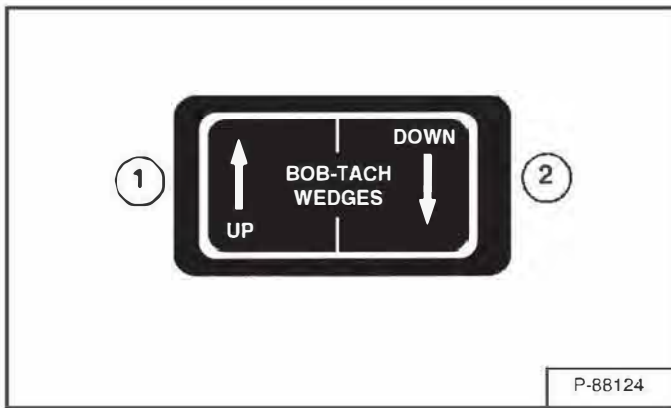
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OPERATING PROCEDURE WITH SMALL ARTICULATED LOADERS (CONT'D)

Installation (Cont'd)

Power Bob-Tach (Cont'd)

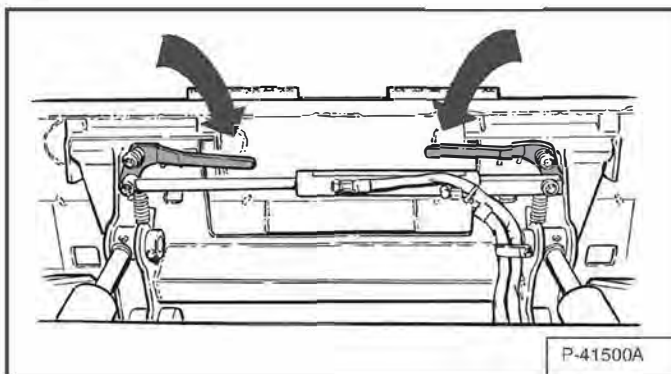
Figure 167



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.

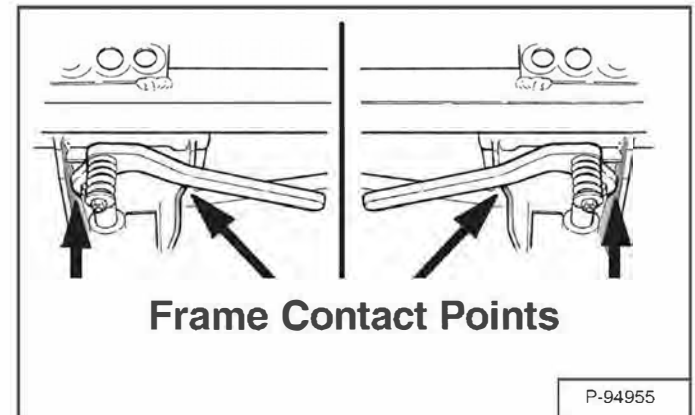
Push and hold the BOB-TACH "WEDGES UP" switch (Item 1) [Figure 167] until the levers are fully raised (wedges fully raised).

Figure 168



Push and hold the BOB-TACH "WEDGES DOWN" switch (Item 2) [Figure 167] until the levers are fully engaged in the locked position [Figure 168] (wedges fully extended through the attachment mounting frame holes).

Figure 169



Both levers must contact the frame as shown when locked [Figure 169].

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

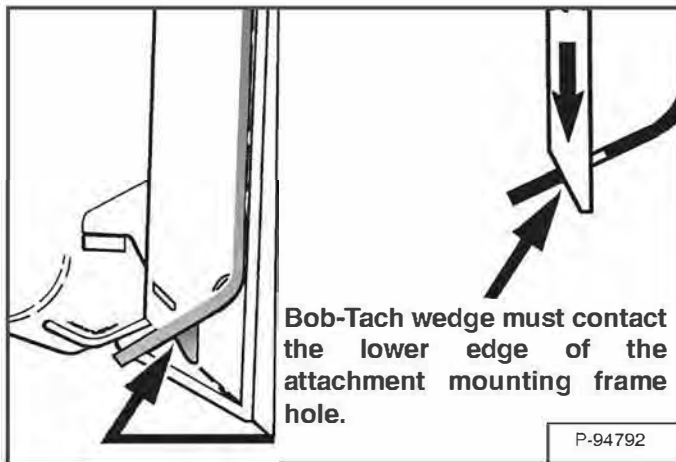
Dealer Copy -- Not for Resale

OPERATING PROCEDURE WITH SMALL ARTICULATED LOADERS (CONT'D)

Installation (Cont'd)

Power Bob-Tach (Cont'd)

Figure 170



The wedges must extend through the holes in the attachment mounting frame, securely fastening the attachment to the Bob-Tach **[Figure 170]**.

Connect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 96.)

OPERATING PROCEDURE WITH SMALL ARTICULATED LOADERS (CONT'D)

Installation (Cont'd)

For First Time Installation

New attachments and new small articulated 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 small articulated 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 small articulated loader engine off and using the hose guides (if equipped), route the attachment hydraulic hoses to the small articulated loader. Connect the attachment hydraulic quick couplers to the small articulated loader couplers. (See Hydraulic Quick Couplers on Page 96.)

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

Enter the small articulated loader. (See Entering And Exiting The Small Articulated Loader on Page 88.)

Start the engine, press the operate switch and release the parking brake.

Engage auxiliary hydraulics. (See the small articulated 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 SMALL ARTICULATED LOADERS (CONT'D)

Hydraulic Quick Couplers

IMPORTANT

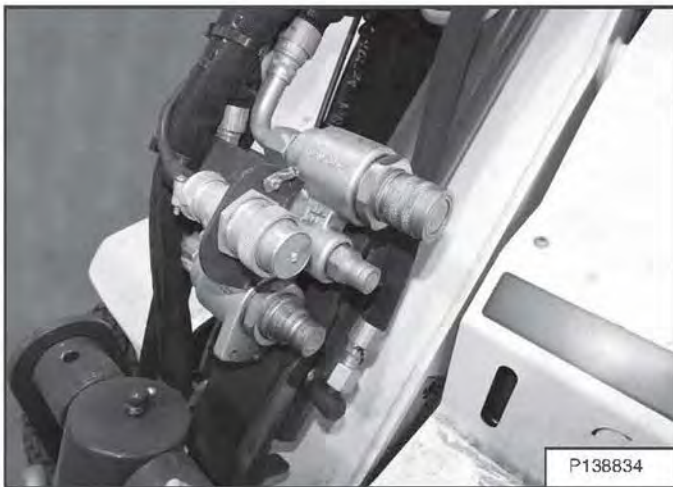
- **Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the system.**
- **Contain and dispose of any oil leakage in an environmentally safe manner.**

I-2278-0608

New attachments and new small articulated 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 small articulated 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 171



! 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 171].

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 small articulated loader or attachment. (See For First Time Installation on Page 32.) for proper adjustment.

To Disconnect:

Relieve hydraulic pressure. (See the small articulated 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 SMALL ARTICULATED LOADERS (CONT'D)

Control Functions

Enter the small articulated loader. Fasten the seat belt, lower the arm rest and start the engine. Press the operate switch and release the parking brake.

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

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

Figure 172



To start the trencher, press the switch (Item 1) forward. To stop the trencher, return the switch (Item 1) [Figure 172] to the center position.

Continuous Flow:

To start rotation push the switch (Item 1) forward and push the button (Item 2) [Figure 172] to initiate continuous flow.

Push the button (Item 2) [Figure 172] a second time to disengage continuous flow.

OPERATING PROCEDURE WITH SMALL ARTICULATED LOADERS (CONT'D)

Operation With The Small Articulated Loader

Manual Side Shift

Always park on flat level ground.

Lower the trencher until it is slightly off the ground.

Stop the engine and exit the small articulated loader.
(See Entering And Exiting The Loader on Page 28.)

WARNING

AVOID INJURY OR DEATH

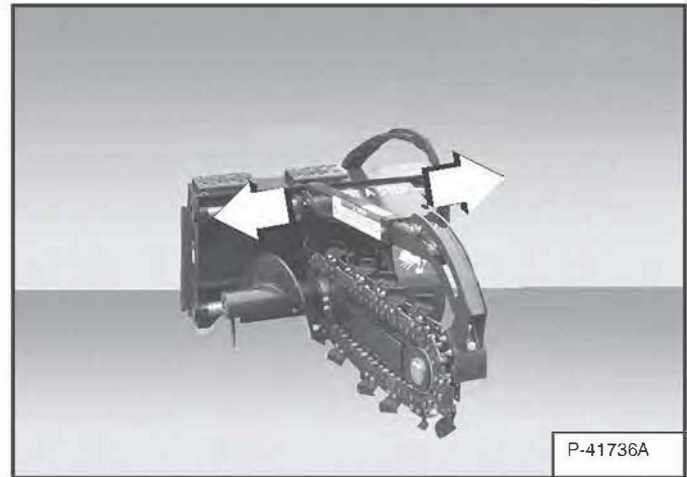
Before you leave the operator's seat:

- Lower the lift arm and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Raise the arm rest.
- Move all controls to the **NEUTRAL / LOCKED** position to make sure the lift, tilt, telescoping, auxiliary hydraulics and traction drive functions are deactivated.
- The Operator Interlock Control System (OICS) must deactivate these functions when the armrest is up. See your Bobcat dealer for service if controls do not activate.

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

W-3095-0220

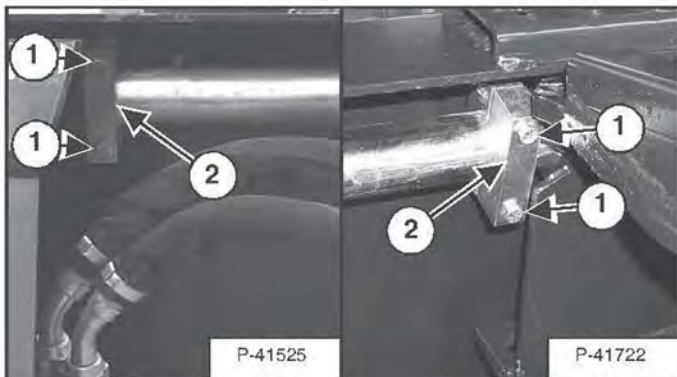
Figure 174



Move the trencher to the desired position [Figure 27].

Slide the blocks (Item 2) [Figure 26] against the trencher frame, then tighten the bolts to 34 - 38 N•m (25 - 28 ft-lb) torque.

Figure 173



Loosen the two bolts (Item 1) from both the left and right blocks (Item 2) [Figure 26] holding the trencher in the desired position.

OPERATING PROCEDURE WITH SMALL ARTICULATED LOADERS (CONT'D)

Operation With The Small Articulated Loader (Cont'd)

Loader Trenching Procedure

! DANGER

AVOID INJURY OR DEATH

Bystanders must stay 6 m (20 ft) away from chain and auger.

D-1019-0910

! WARNING

AVOID INJURY OR DEATH

Check for underground utility lines before digging.

W-2120-0788

Enter the small articulated loader. (See Entering And Exiting The Loader on Page 28.)

Figure 175



Raise the lift arm and tilt the trencher forward until the trencher is at a 20 - 25° angle to the ground [Figure 28].

Start the trencher. (See Control Functions on Page 34.)

Lower the lift arm until the end of the attachment contacts the ground and starts digging the trench. Continue to lower the lift arms while the trencher is digging until the lift arm are fully lowered.

Slowly tilt the Bob-Tach into the ground until the trencher boom is approximately at a 60° angle to the ground.

When the attachment reaches this angle, it is at the best digging position.

Drive backward and continue trenching until the desired length of the trench is reached.

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OPERATING PROCEDURE WITH SMALL ARTICULATED LOADERS (CONT'D)

Removal

Hand Lever Bob-Tach

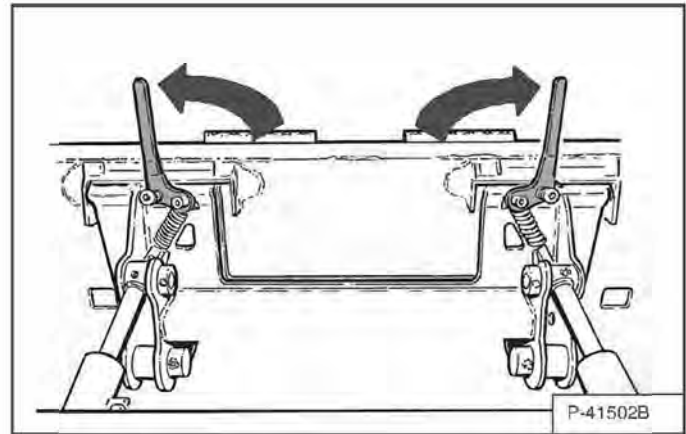
Lower the lift arm and put the attachment flat on the ground. Lower or close the hydraulic equipment (if equipped).

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 small articulated loader.

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

Exit the small articulated loader. (See Entering And Exiting The Small Articulated Loader on Page 88.)

Figure 176



Pull the Bob-Tach levers up [Figure 176] until they are fully raised (wedges fully raised).



WARNING

AVOID INJURY OR DEATH

Before you leave the operator's seat:

- Lower the lift arm and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Raise the arm rest.
- Move all controls to the NEUTRAL / LOCKED position to make sure the lift, tilt, telescoping, auxiliary hydraulics and traction drive functions are deactivated.
- The Operator Interlock Control System (OICS) must deactivate these functions when the armrest is up. See your Bobcat dealer for service if controls do not activate.

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

W-3095-0220

Disconnect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 96.)



WARNING

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

W-2054-1285

OPERATING PROCEDURE WITH SMALL ARTICULATED LOADERS (CONT'D)

Removal (Cont'd)

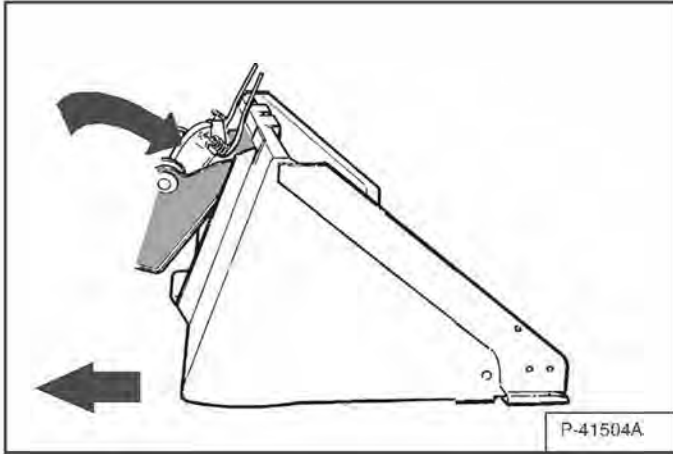
Hand Lever Bob-Tach (Cont'd)

Enter the small articulated loader. (See Entering And Exiting The Small Articulated Loader on Page 88.)

Start the engine, press the operate switch and release the parking brake.

Lower the trencher to the ground.

Figure 177



Tilt the Bob-Tach forward and drive the small articulated loader backward, away from the attachment [Figure 177].

OPERATING PROCEDURE WITH SMALL ARTICULATED LOADERS (CONT'D)

Removal (Cont'd)

Power Bob-Tach

Lower the lift arm 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 small articulated loader.

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

Exit the small articulated loader. (See Entering And Exiting The Small Articulated Loader on Page 88.)

Enter the small articulated loader. (See Entering And Exiting The Small Articulated Loader on Page 88.)

Start the engine, press the operate switch and release the parking brake.

Figure 178

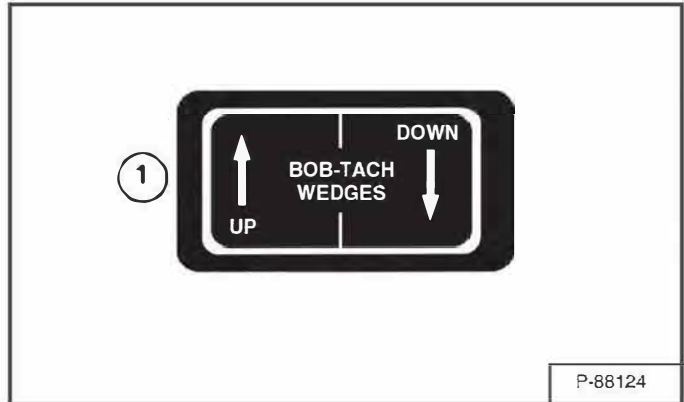
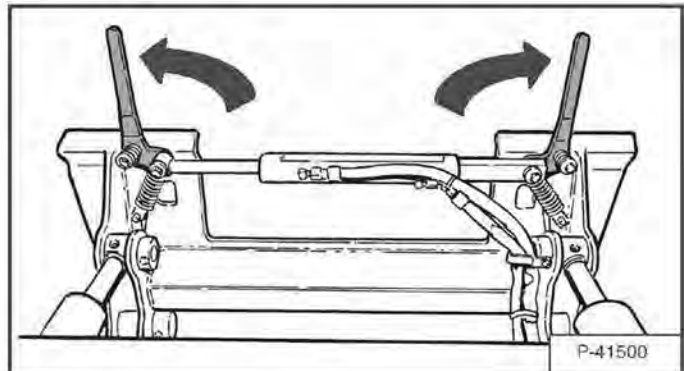


Figure 179



Push and hold the BOB-TACH "WEDGES UP" switch (Item 1) [Figure 178] until the levers are fully raised (wedges fully raised) [Figure 179].

WARNING

AVOID INJURY OR DEATH

Before you leave the operator's seat:

- Lower the lift arm and put the attachment flat on the ground.
- Stop the engine.
- Engage the parking brake.
- Raise the arm rest.
- Move all controls to the NEUTRAL / LOCKED position to make sure the lift, tilt, telescoping, auxiliary hydraulics and traction drive functions are deactivated.
- The Operator Interlock Control System (OICS) must deactivate these functions when the armrest is up. See your Bobcat dealer for service if controls do not activate.

SEE THE MACHINE OPERATION & MAINTENANCE MANUAL FOR MORE INFORMATION.

W-3095-0220

Disconnect auxiliary hydraulic hoses. (See Hydraulic Quick Couplers on Page 96.)

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OPERATING PROCEDURE WITH SMALL ARTICULATED LOADERS (CONT'D)

Removal (Cont'd)

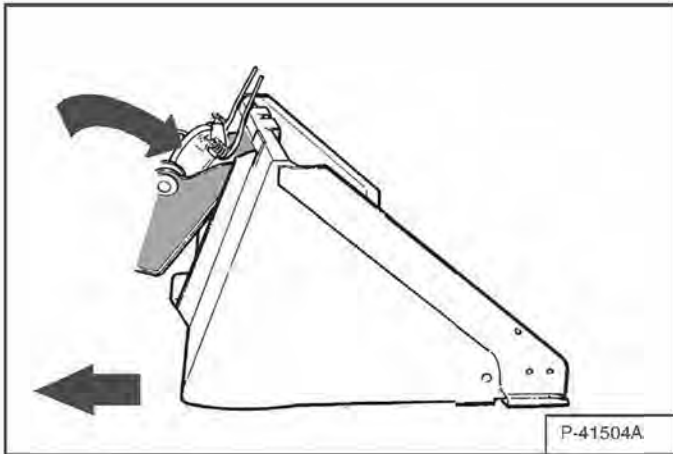
Power Bob-Tach (Cont'd)

Enter the small articulated loader. (See Entering And Exiting The Small Articulated Loader on Page 88.)

Start the engine, press the operate switch and release the parking brake.

Lower the trencher to the ground.

Figure 180



Tilt the Bob-Tach forward and drive the small articulated loader backward, away from the attachment [Figure 180].

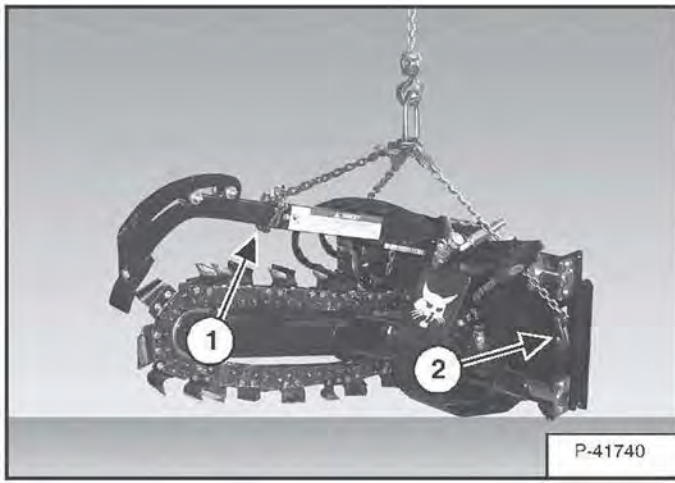
NOTE: The Power Bob-Tach system has continuous pressurized hydraulic oil to keep the wedges in the engaged position and prevent attachment disengagement. Because the wedges can slowly lower, the operator may need to reactivate the switch (BOB-TACH “WEDGES UP”) when removing an attachment to be sure both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

LIFTING THE ATTACHMENT

Procedure

Lifting The LT112 / LT113 Trencher

Figure 181



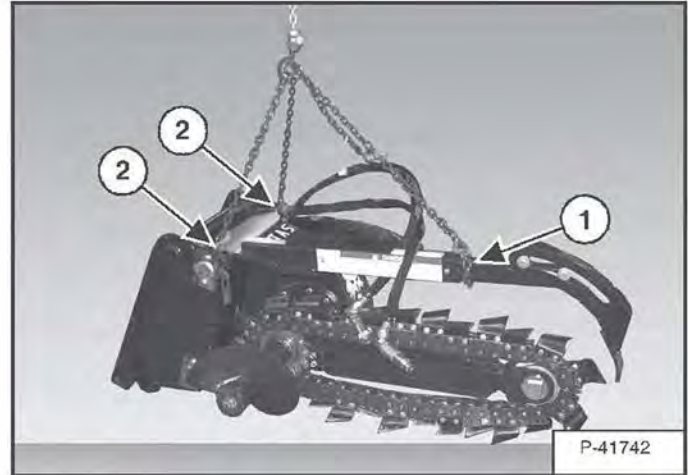
Install a chain (Item 1) [Figure 181] around the boom.

Install a chain in the two holes (Item 2) [Figure 181] (on each side of the loader mount frame).

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

Lifting The MX112 Trencher

Figure 182



Install a chain (Item 1) [Figure 182] around the boom.

Install a chain around the top tube (Item 2) [Figure 182] of the X-change mount frame (on each side of the trencher).

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

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TRANSPORTING THE ATTACHMENT ON A TRAILER

Fastening

When the LT112, MX112 and LT113 is placed on a transport vehicle by lifting (See LIFTING THE ATTACHMENT on Page 104.) use the fastening procedure outlined below.

Figure 183

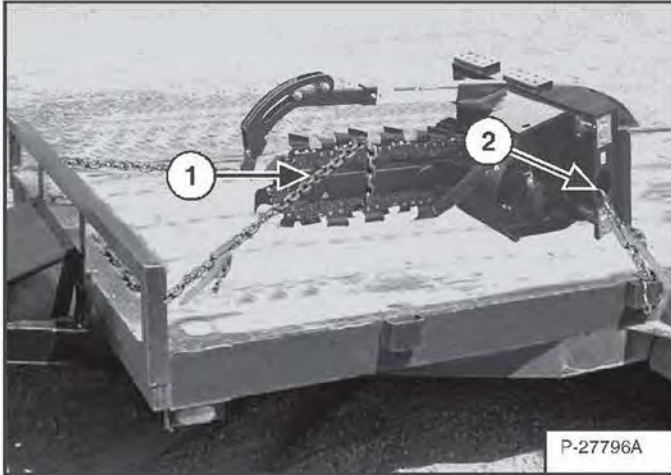


Figure 184

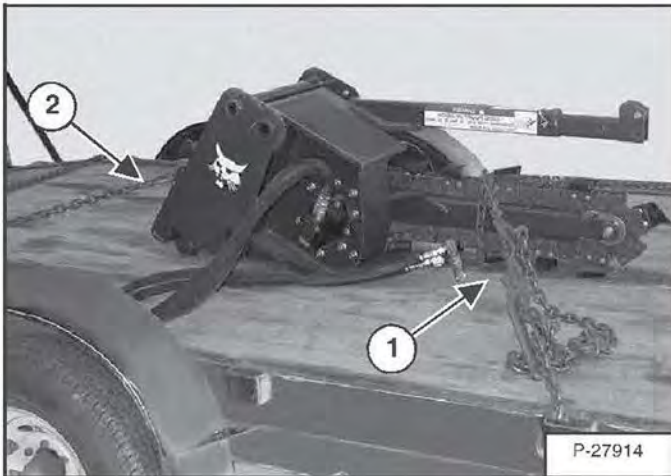
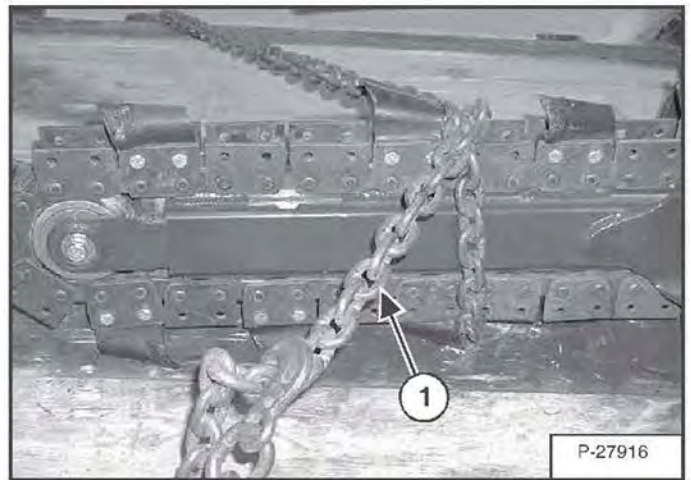


Figure 185



Wrap a chain (Item 1) [Figure 183], [Figure 184] and [Figure 185] around the chain boom. Connect a chain (Item 2) [Figure 183] and [Figure 184] to each side of the mount frame.

Use chain binders to prevent the attachment from moving during transport.

Secure the hydraulic hoses to the trencher.

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TRANSPORTING THE ATTACHMENT ON A TRAILER (CONT'D)

Fastening (Cont'd)

When the MX112 is placed on a transport vehicle directly from the excavator, use the fastening procedure outlined below.

Figure 186

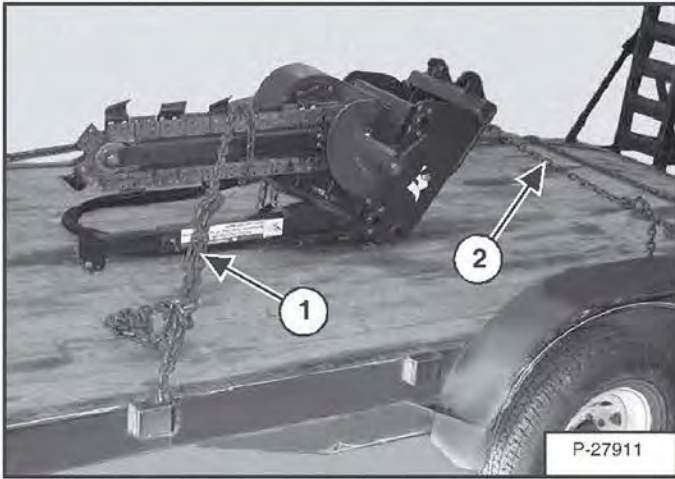


Figure 187

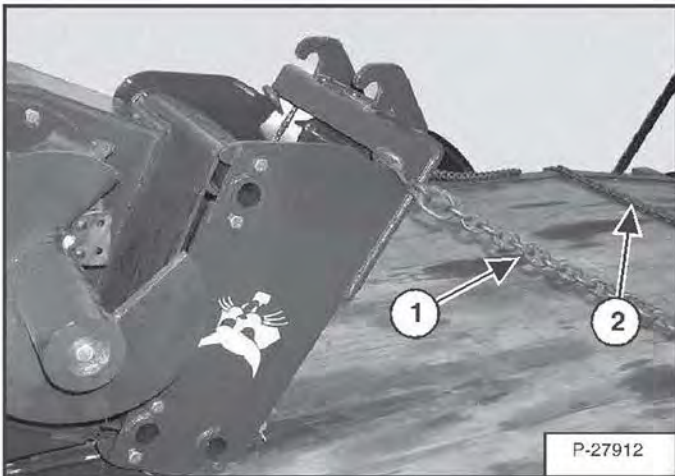
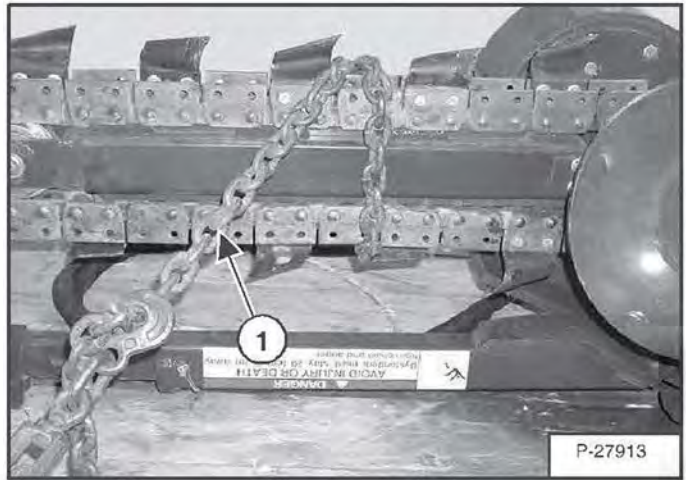


Figure 188



Wrap a chain (Item 1) [Figure 186], [Figure 187] and [Figure 188] around the chain boom. Connect a chain (Item 2) [Figure 186] and [Figure 187] to each side of the mount frame.

Use chain binders to prevent the attachment from moving during transport.

Secure the hydraulic hoses to the trencher.

TRANSPORTING THE ATTACHMENT AND MACHINE ON A TRAILER

Loading And Fastening



AVOID SERIOUS INJURY OR DEATH

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

W-2058-0807

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

Loading

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

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

Fastening

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

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



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0,61 m x 152 mm (2 ft x 6 in) Cup Tooth Pattern Installation	140
0,61 m x 203 mm (2 ft x 8 in) Cup Tooth Pattern Installation	141
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MAINTENANCE SAFETY



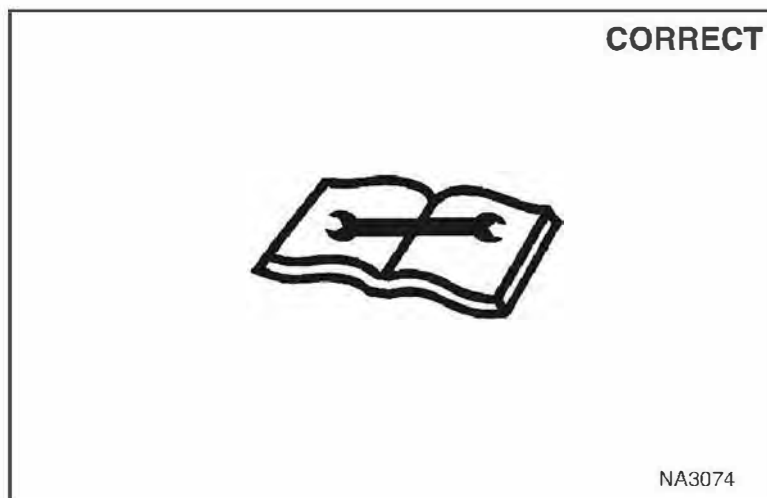
WARNING

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.

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TROUBLESHOOTING

Chart

 <b style="font-size: 1.2em; 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: 0.8em;">W-2003-0807</p>
---	--

If the attachment is not working correctly, check the hydraulic system of the machine thoroughly before making any repairs on the attachment. Attachment problems can be affected by a hydraulic system that is not operating to specifications. Connect a flow meter to the machine to check the hydraulic pump output, relief valve setting and tube lines to check flow and pressure. (See the machine's Service Manual for the correct procedure to connect the flow meter.)

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

PROBLEM	CAUSE	CORRECTION
Trencher does not mount properly on the Bob-Tach.	Bob-Tach wedges are not fully retracted before installing.	Retract Bob-Tach wedges before installing.
	Mud, dirt or stones are lodged between the Bob-Tach and the Trencher mount.	Remove debris between Bob-Tach and trencher mount.
Trencher does not operate.	No hydraulic flow.	Activate machine front auxiliary hydraulics.
		Check quick couplers connection. Check for damaged hose ends and fittings.
Digging chain does not stay adjusted to the correct tension.	Damaged grease cylinder.	Repair or replace grease cylinder.

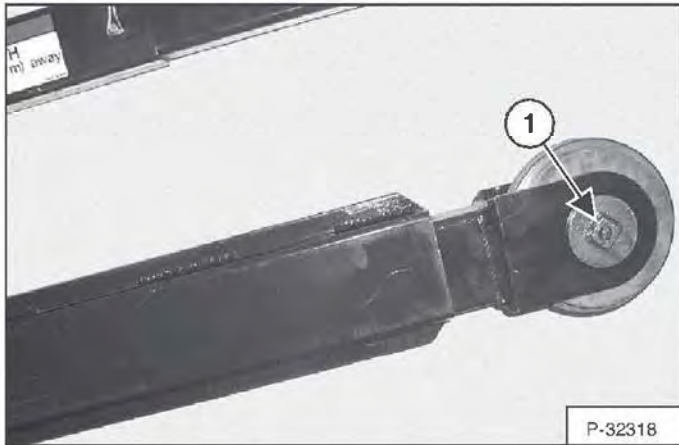
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LUBRICATING THE ATTACHMENT

Lubrication Locations

Always use a good quality lithium base grease when lubricating the trencher.

Figure 189

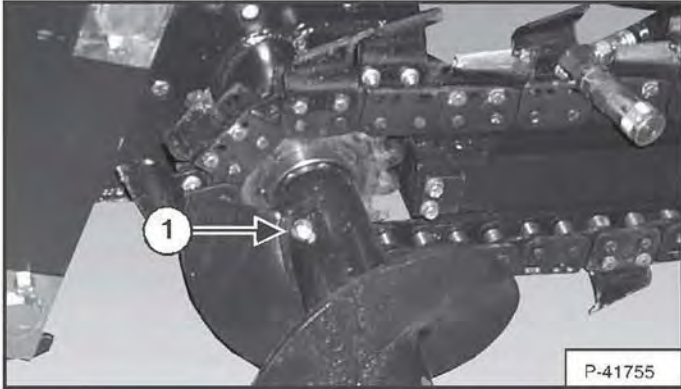


Add grease daily to the idler wheels (Item 1) [Figure 189].

REMOVAL AND INSTALLATION OF AUGER

Procedure(s)

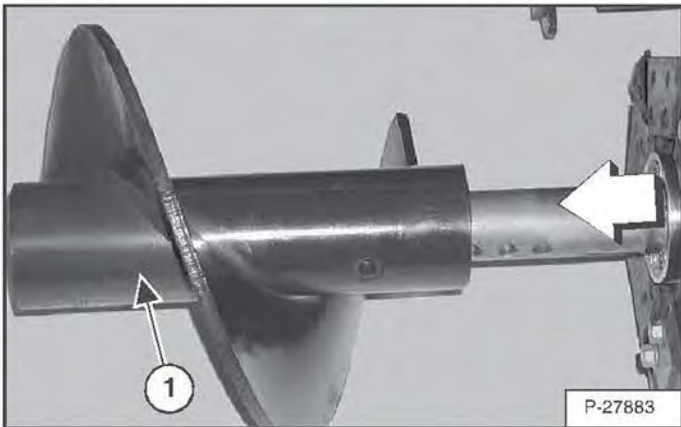
Figure 190



Remove the mounting bolt (Item 1) [Figure 190] and nut from the auger mounting shaft.

Installation: Tighten auger mounting bolt and nut to 88 - 95 N•m (65 - 70 ft-lb) torque.

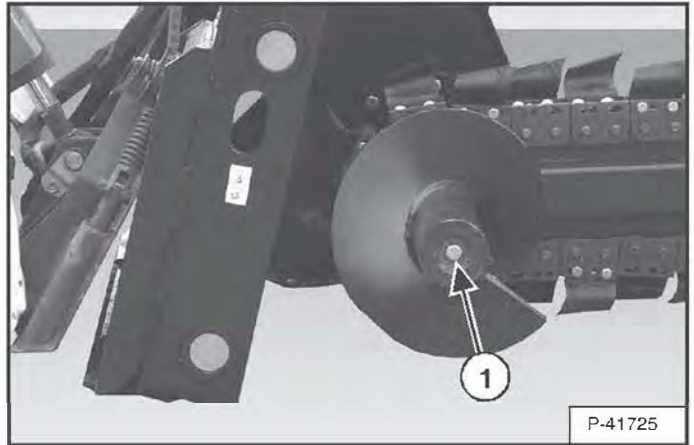
Figure 191



Slide the auger (Item 1) [Figure 191] off the mounting shaft.

Always add anti-seize lubricant to the shaft to help prevent the auger from seizing on the shaft.

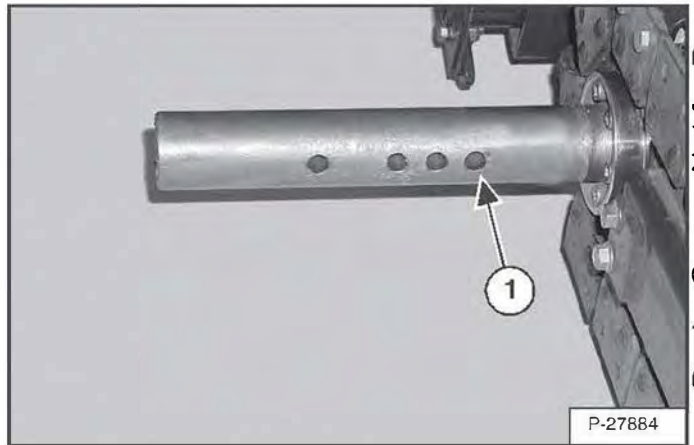
Figure 192



NOTE: It may not be possible to loosen the auger by hand. If so, remove the bolt (Item 1) [Figure 192] from the end of the auger and install a puller to loosen the auger.

Adjustment

Figure 193



NOTE: There are four holes in the auger mounting shaft [Figure 193].

Locate the auger in the hole (Item 1) [Figure 193] closest to the chain sprocket for the 101,6 mm (4 in) digging width.

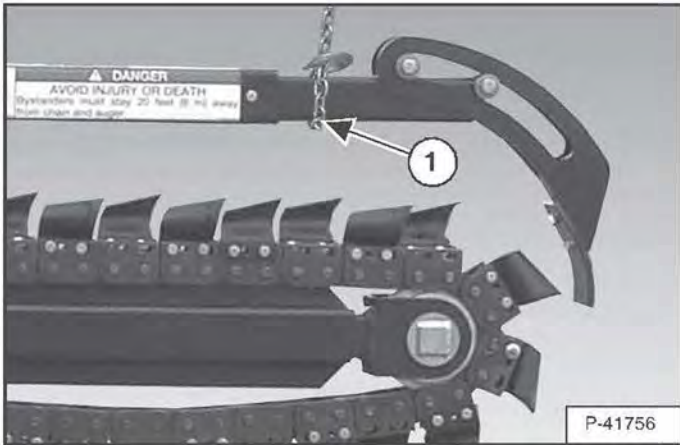
Dealer Copy -- Not for Resale

REMOVAL AND INSTALLATION OF DIGGING CHAIN

Procedure(s)

If the trencher is installed on the loader or excavator, disconnect the auxiliary hydraulic hoses.

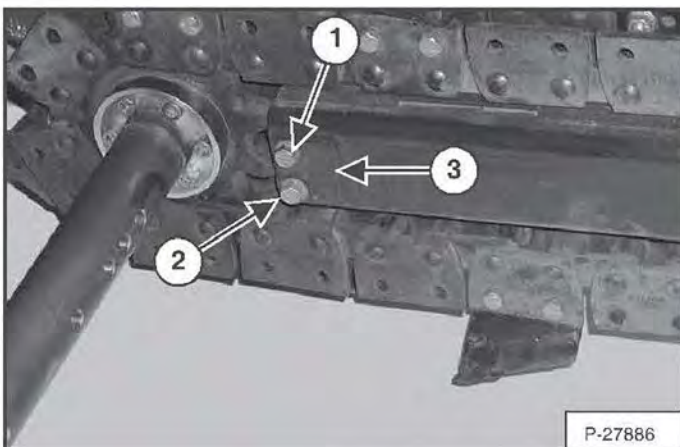
Figure 194



Install a chain (Item 1) [Figure 194] on the end of the boom.

Remove the auger.

Figure 195



Remove the top bolt (Item 1) and loosen the bottom bolt (Item 2) [Figure 195].

Rotate the cover (Item 3) [Figure 195] down.

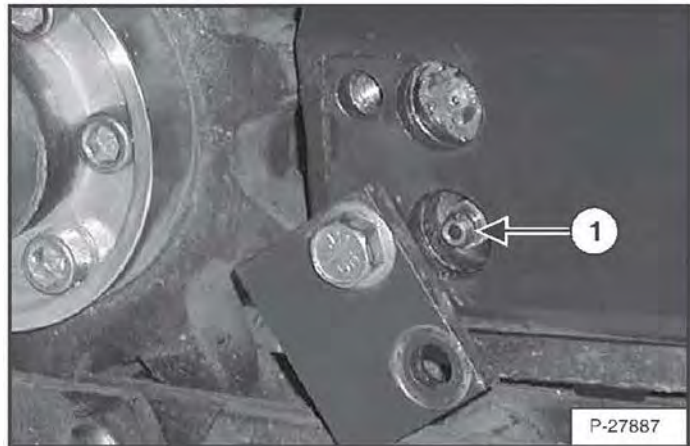
WARNING

AVOID INJURY

Grease and fitting can be under high pressure. Stand on side of boom opposite lube fitting when applying or removing tension from digging chain. Keep bystanders away. Use correct fitting to prevent pressure from blowing it off.

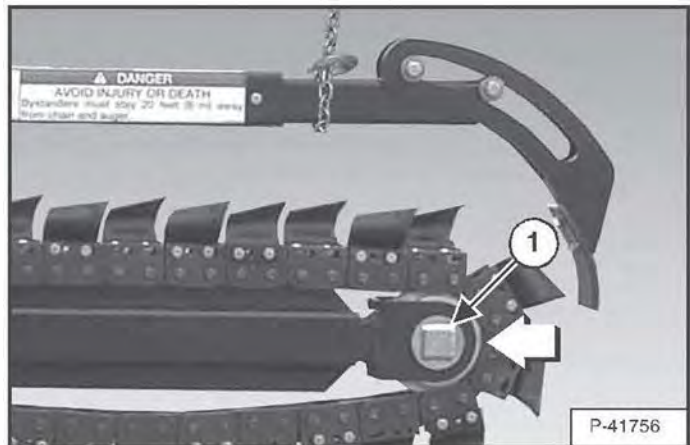
W-2110-0695

Figure 196



Loosen the bleed screw (Item 1) [Figure 196] (located in the lower hole).

Figure 197



Push the cylinder back to put slack in the chain (Item 1) [Figure 197].

REMOVAL AND INSTALLATION OF DIGGING CHAIN (CONT'D)

Procedure(s) (Cont'd)

! WARNING

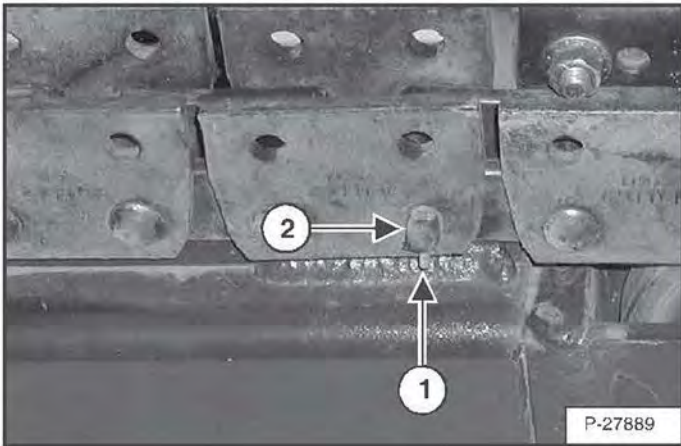
AVOID INJURY OR DEATH

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

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

W-2019-0907

Figure 198



Remove the pin (Item 1) [Figure 198].

The pin (Item 2) is a slight press fit. Back-up the chain using a large hammer while driving the pin (Item 2) [Figure 198] out with a second hammer.

Remove the chain from the trencher.

When installing the chain, make sure the chain teeth are facing the correct direction for cutting.

Adjustment

IMPORTANT

Boom cylinder must be full of grease to work correctly, any air in cylinder can cause damage. Do not put excessive tension on the chain. This will cause faster chain wear and horsepower loss.

I-2046-0695

Figure 199

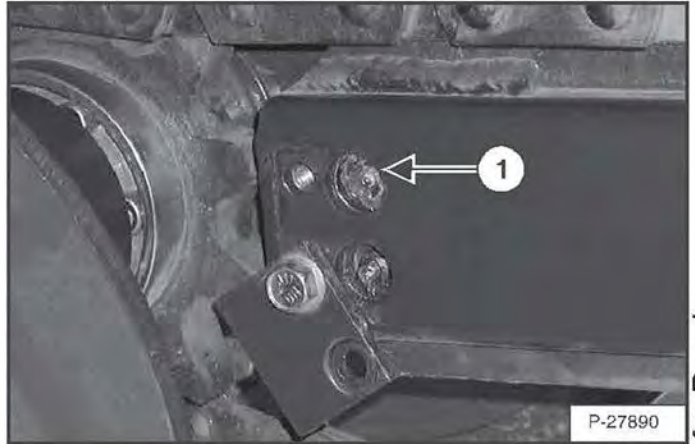
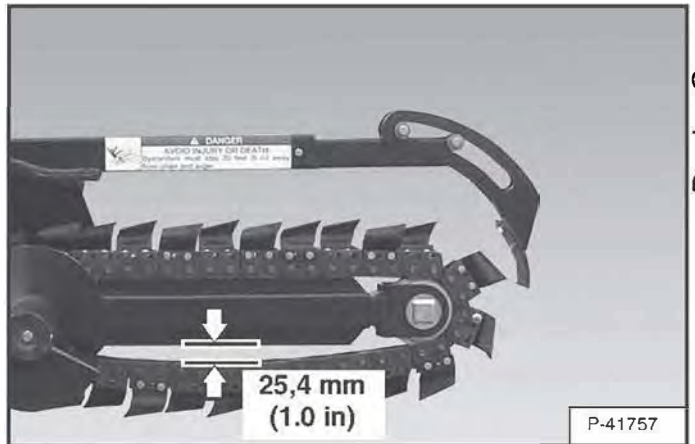


Figure 200



Add grease to the grease fitting (Item 1) [Figure 199] until there is 25,4 mm (1.0 in) clearance between the bottom of the chain guide and the top of the chain [Figure 200]. Measure the chain at the center of the boom.

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REMOVAL AND INSTALLATION OF DIGGING CHAIN TEETH

Procedure(s)



WARNING

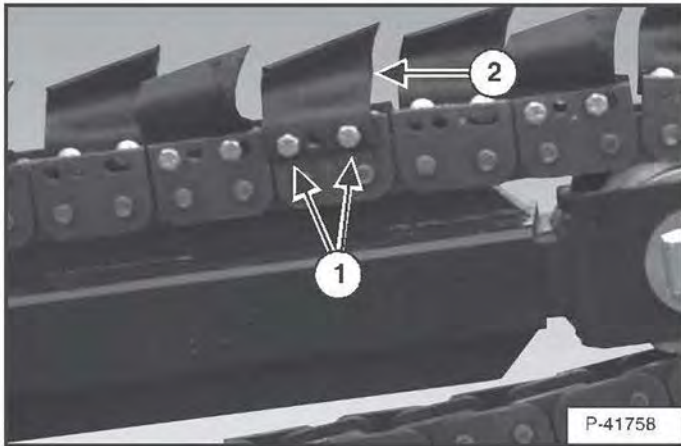
AVOID INJURY OR DEATH

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

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

W-2019-0907

Figure 201



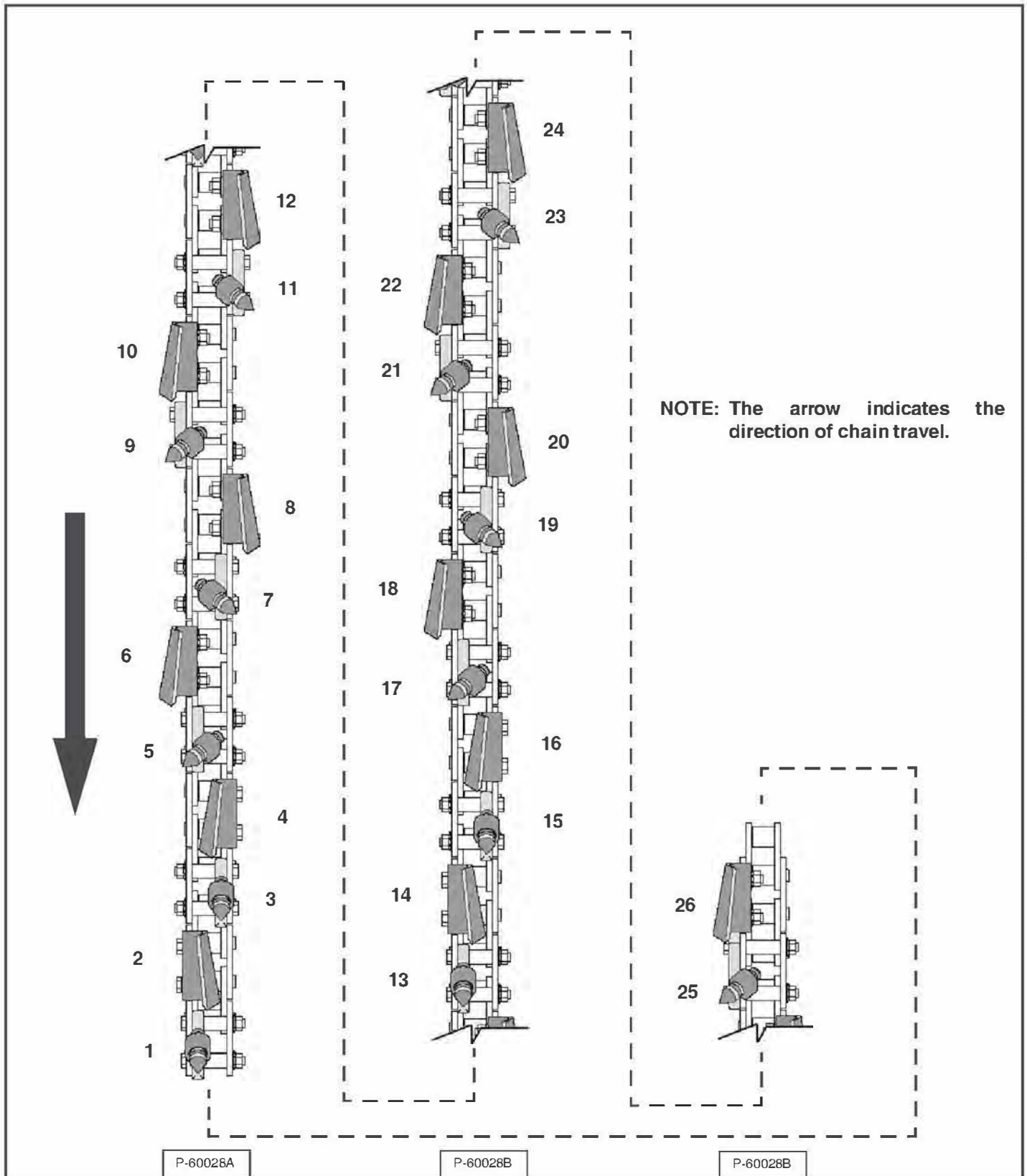
Remove the two bolts (Item 1) and tooth (Item 2) [Figure 201].

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

LT112 AND MX112 DOUBLE STANDARD PATTERNS (CONT'D)

0,61 m x 102 mm (2 ft x 4 in) Cup Tooth / Carbide Tooth Pattern Installation

Instructions: Install teeth 1 thru 26 as indicated below.

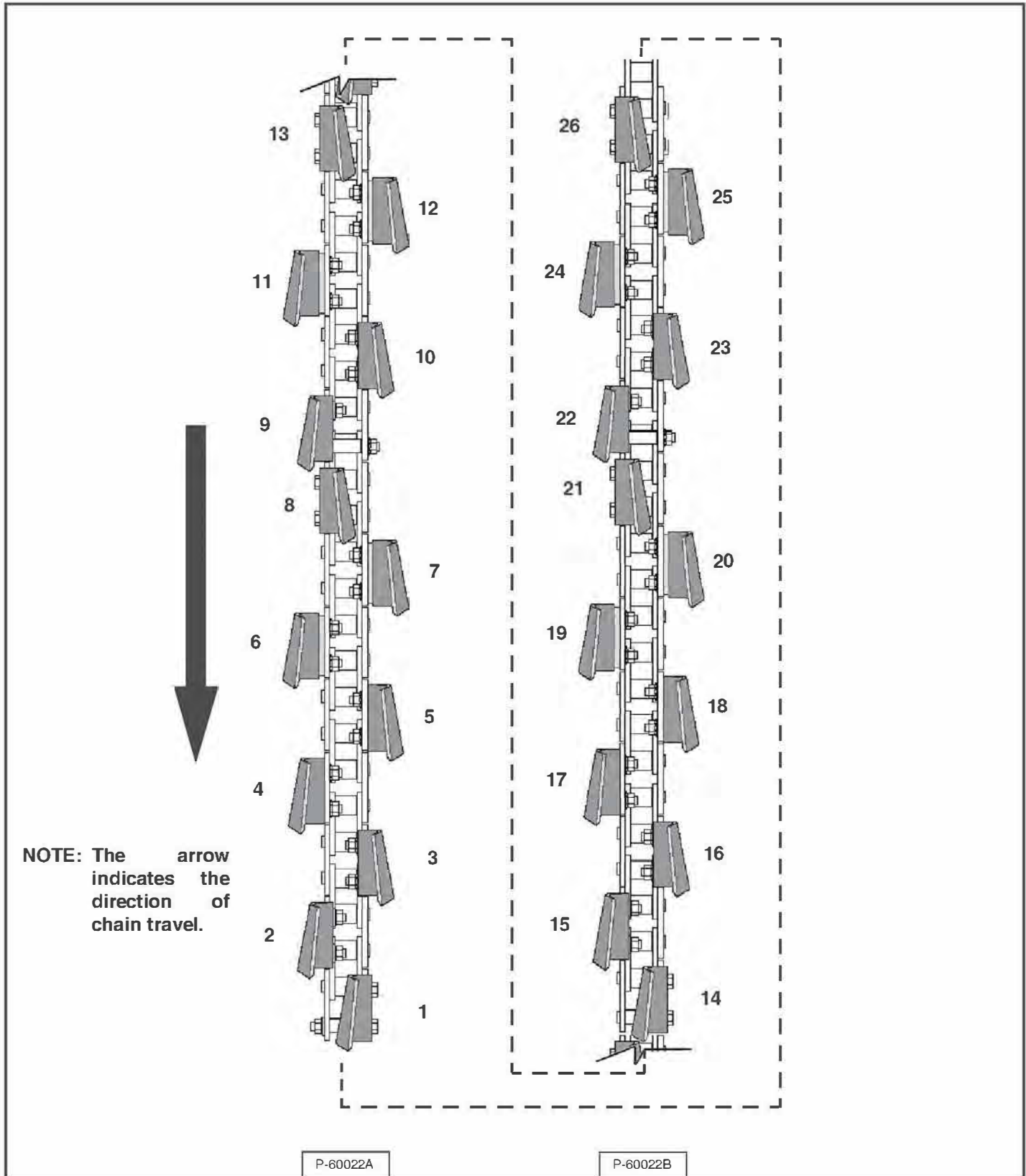


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LT112 AND MX112 DOUBLE STANDARD PATTERNS (CONT'D)

0,61 m x 152 mm (2 ft x 6 in) Cup Tooth Pattern Installation

Instructions: Install teeth 1 thru 26 as indicated below.

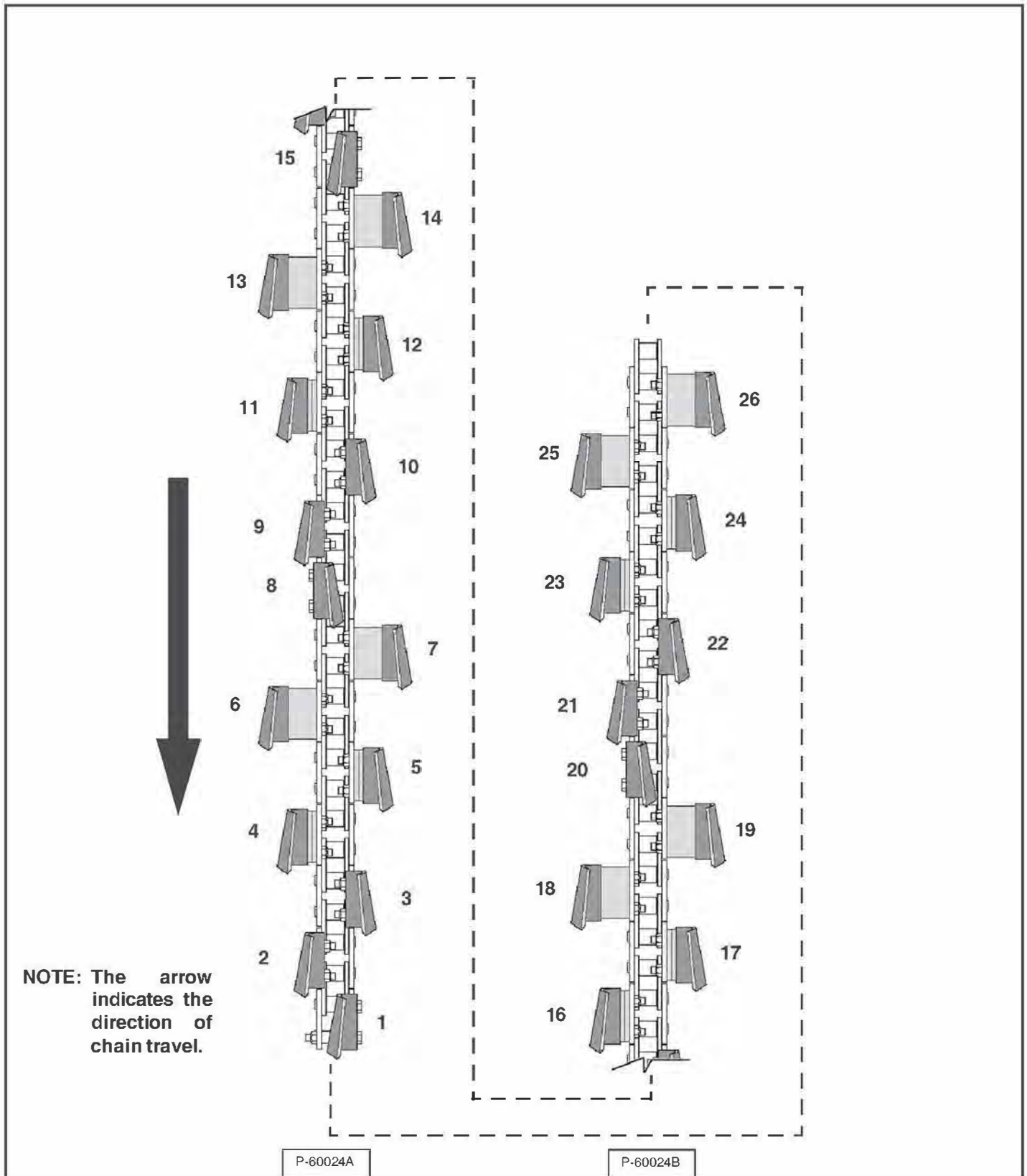


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LT112 AND MX112 DOUBLE STANDARD PATTERNS (CONT'D)

0,61 m x 203 mm (2 ft x 8 in) Cup Tooth Pattern Installation

Instructions: Install teeth 1 thru 26 as indicated below.



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LT113 DOUBLE STANDARD PATTERNS

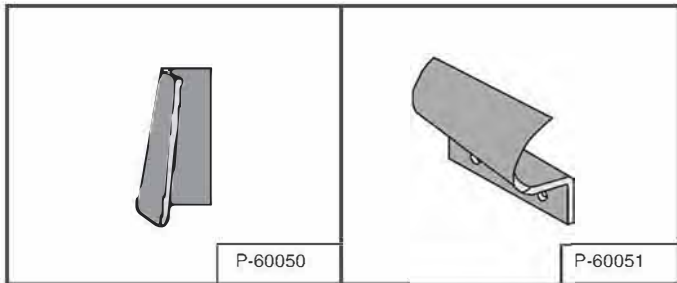
Component Description



Do not strike the cutter bit with a hammer. The hard bit can shatter and cause serious injury. Use the correct bit installation tool.

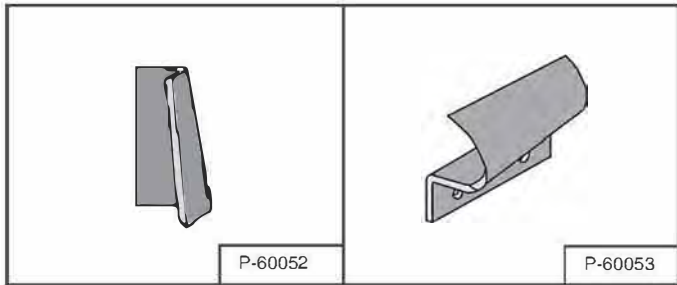
W-2114-1191

Figure 217



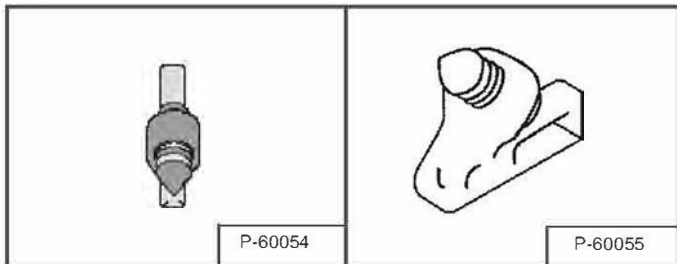
Right hand digging tooth [Figure 217].

Figure 218



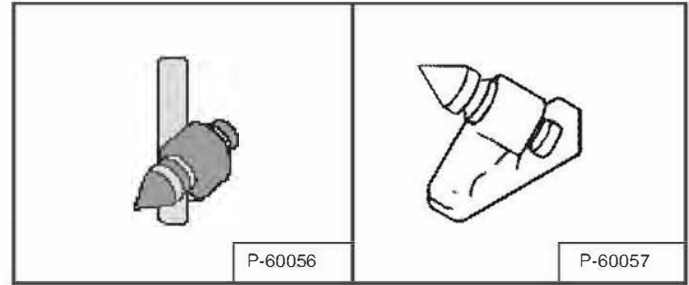
Left hand digging tooth [Figure 218].

Figure 219



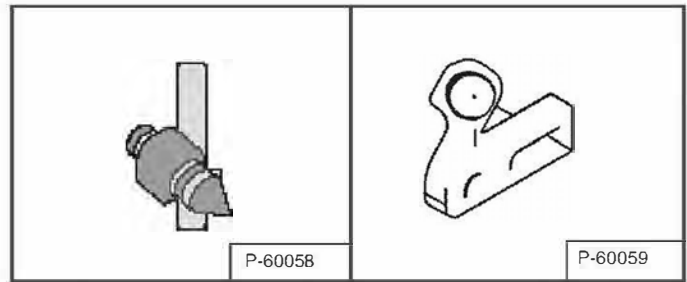
In-line holder assembly [Figure 219].

Figure 220



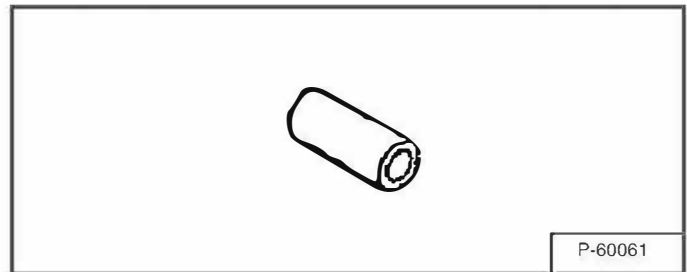
Right hand bit holder assembly [Figure 220].

Figure 221



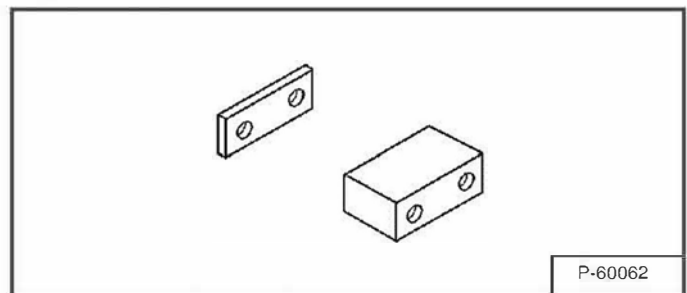
Left hand bit holder assembly [Figure 221].

Figure 222



Bushing [Figure 222].

Figure 223



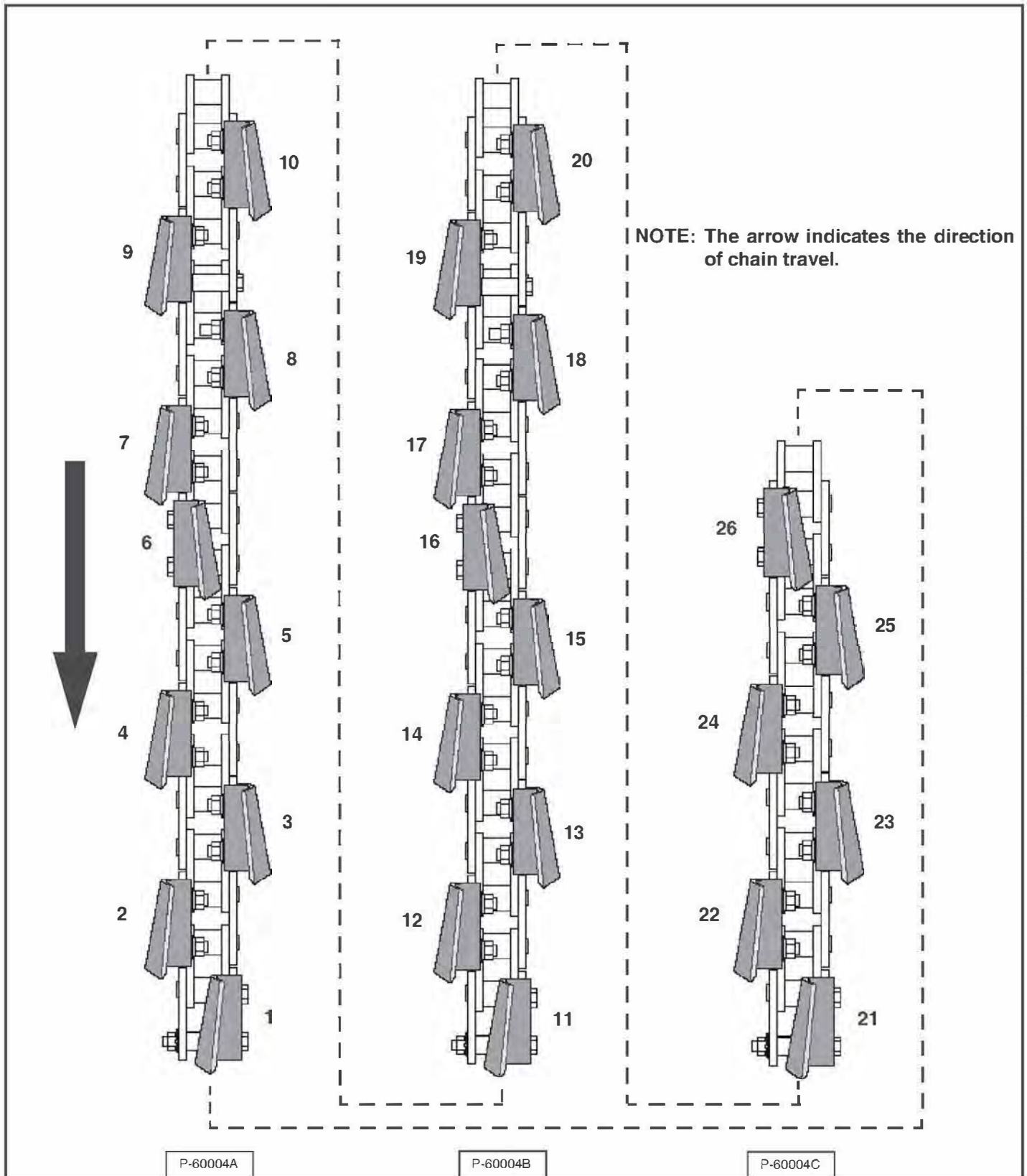
Spacers [Figure 223].

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LT113 DOUBLE STANDARD PATTERNS (CONT'D)

0,61 m x 102 mm (2 ft x 4 in) Cup Tooth Pattern Installation

Instructions: Install teeth 1 thru 26 as indicated below.

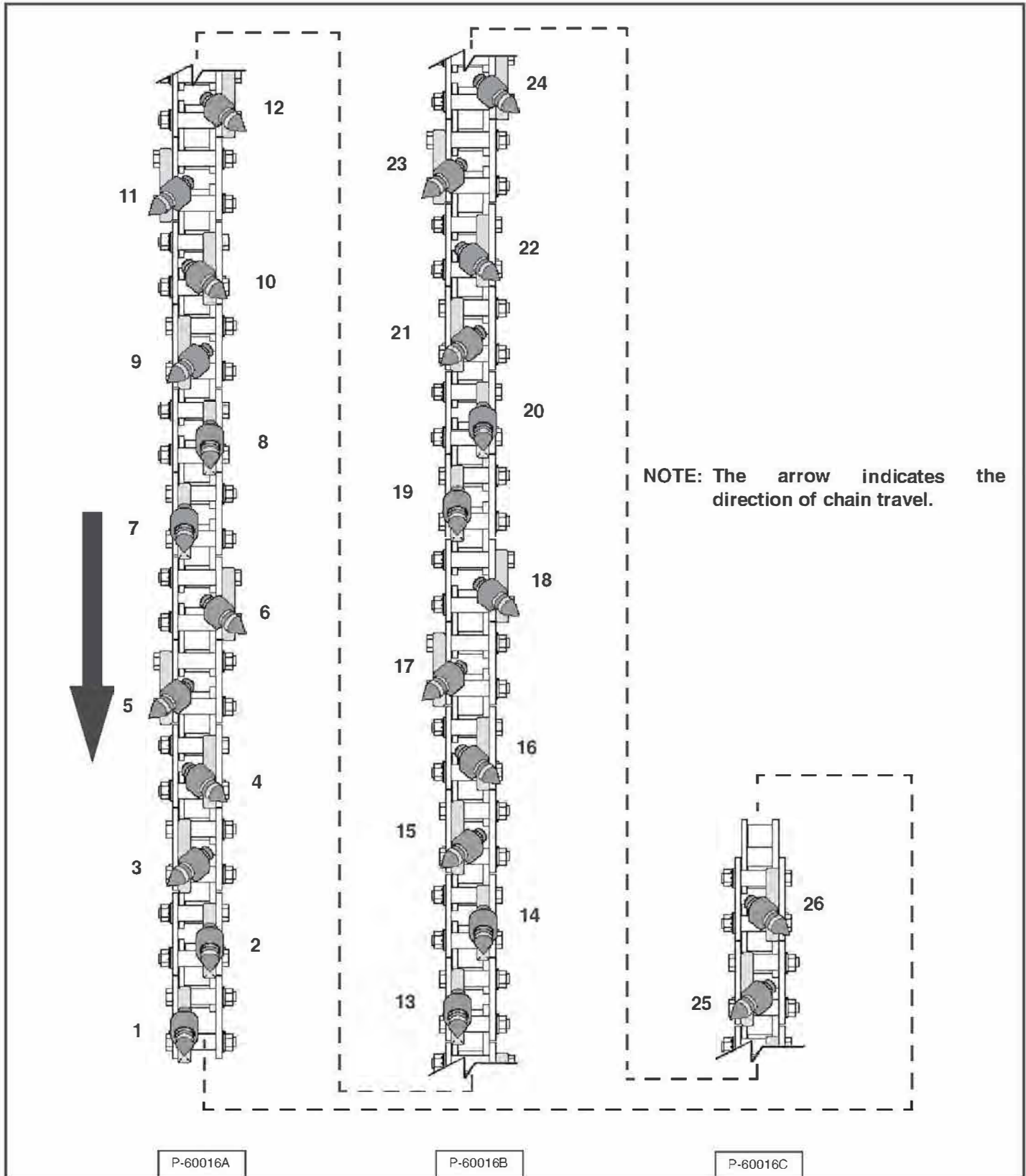


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LT113 DOUBLE STANDARD PATTERNS (CONT'D)

0,61 m x 102 mm (2 ft x 4 in) Carbide Tooth Pattern Installation

Instructions: Install teeth 1 thru 26 as indicated below.

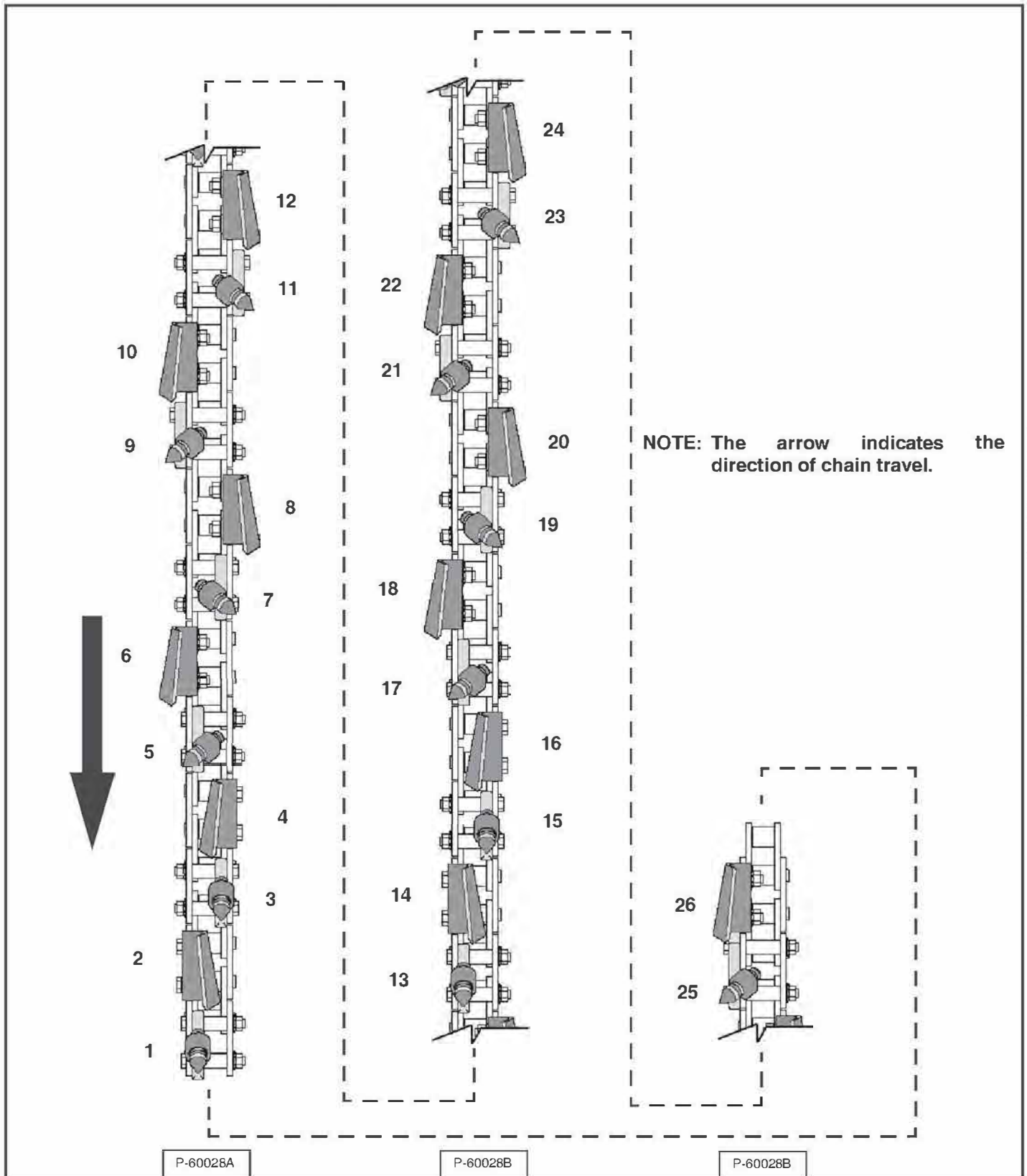


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LT113 DOUBLE STANDARD PATTERNS (CONT'D)

0,61 m x 102 mm (2 ft x 4 in) Cup Tooth / Carbide Tooth Pattern Installation

Instructions: Install teeth 1 thru 26 as indicated below.

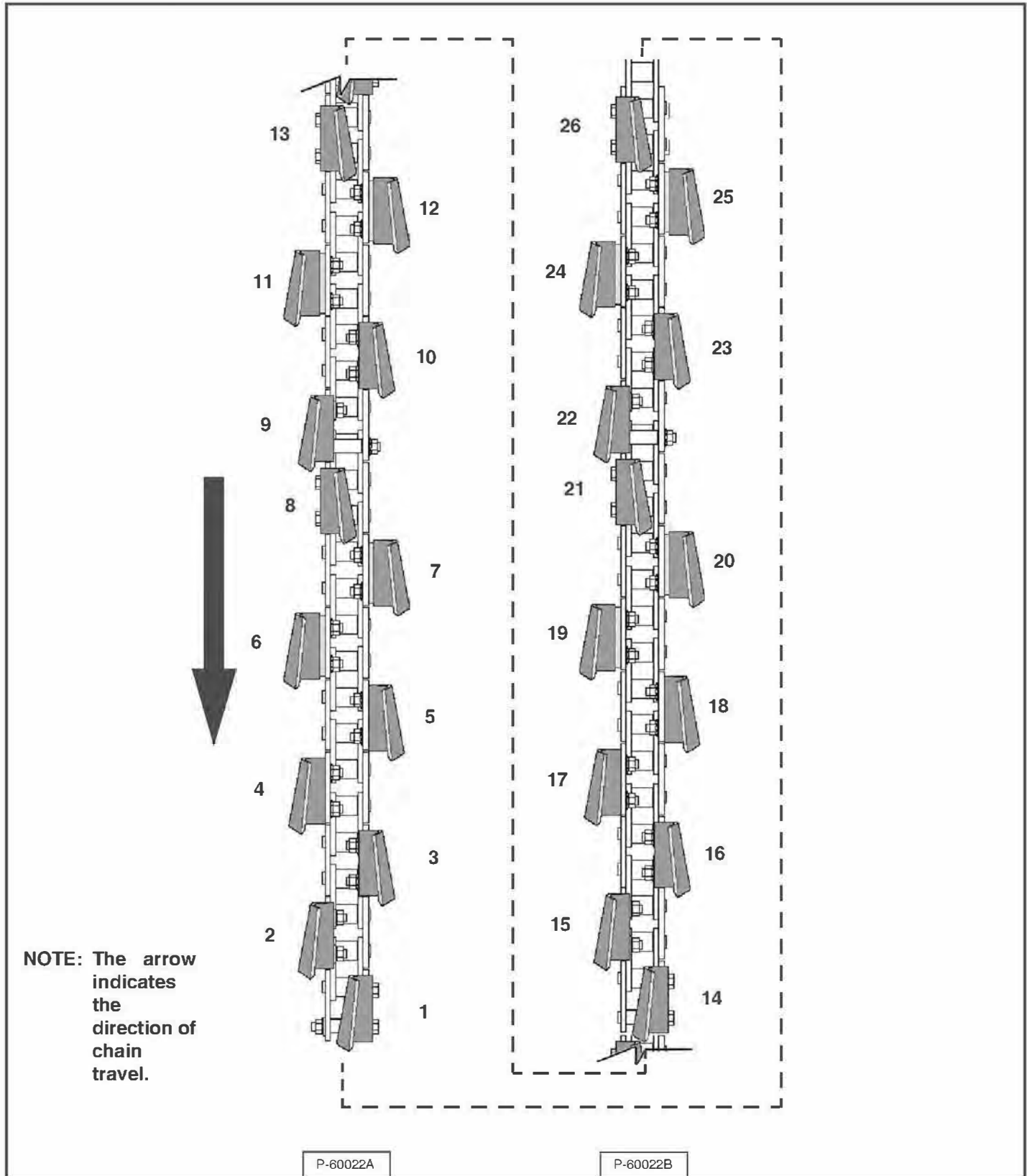


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LT113 DOUBLE STANDARD PATTERNS (CONT'D)

0,61 m x 152 mm (2 ft x 6 in) Cup Tooth Pattern Installation

Instructions: Install teeth 1 thru 26 as indicated below.

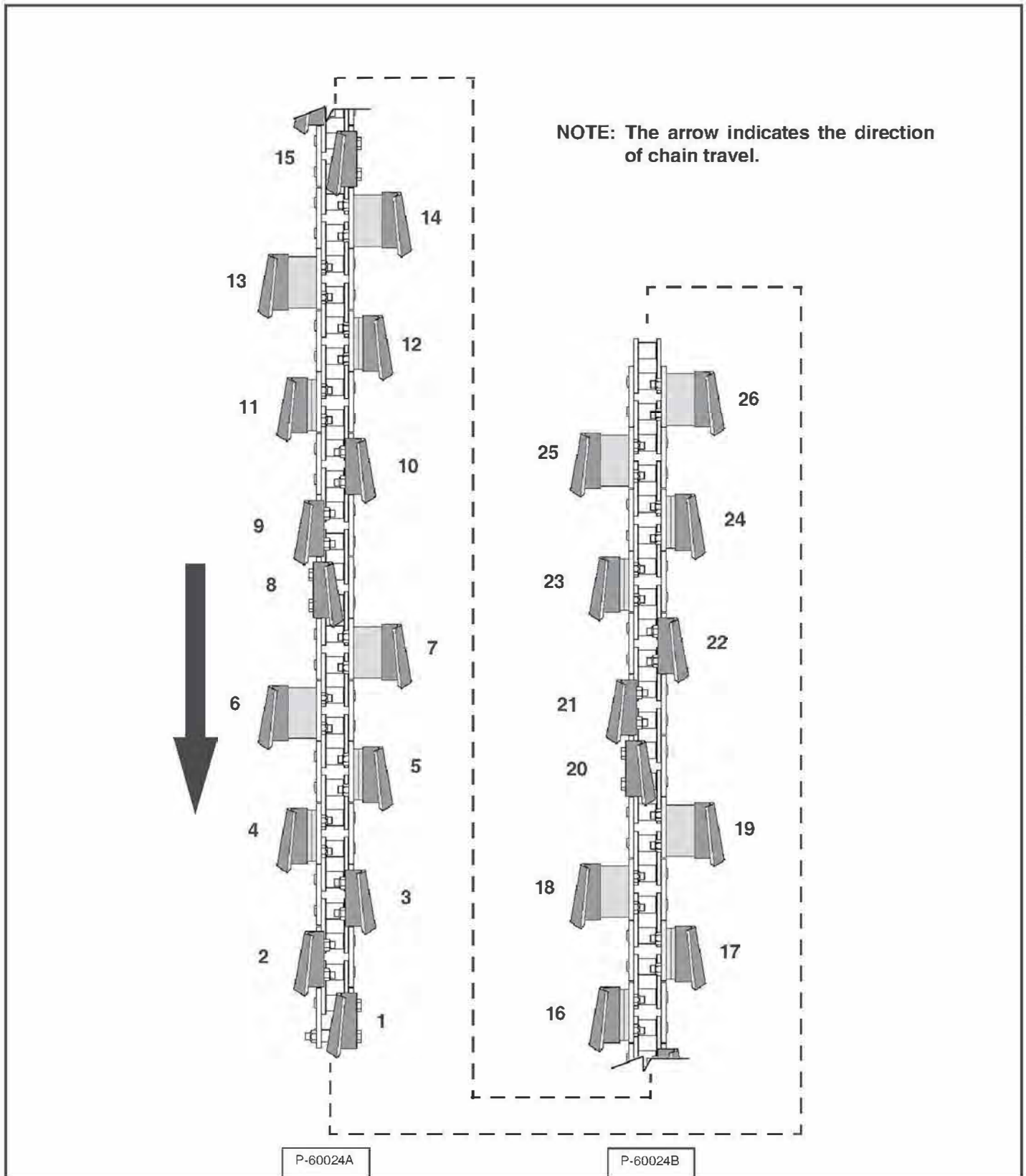


Dealer Copy -- Not for Resale

LT113 DOUBLE STANDARD PATTERNS (CONT'D)

0,61 m x 203 mm (2 ft x 8 in) Cup Tooth Pattern Installation

Instructions: Install teeth 1 thru 26 as indicated below.



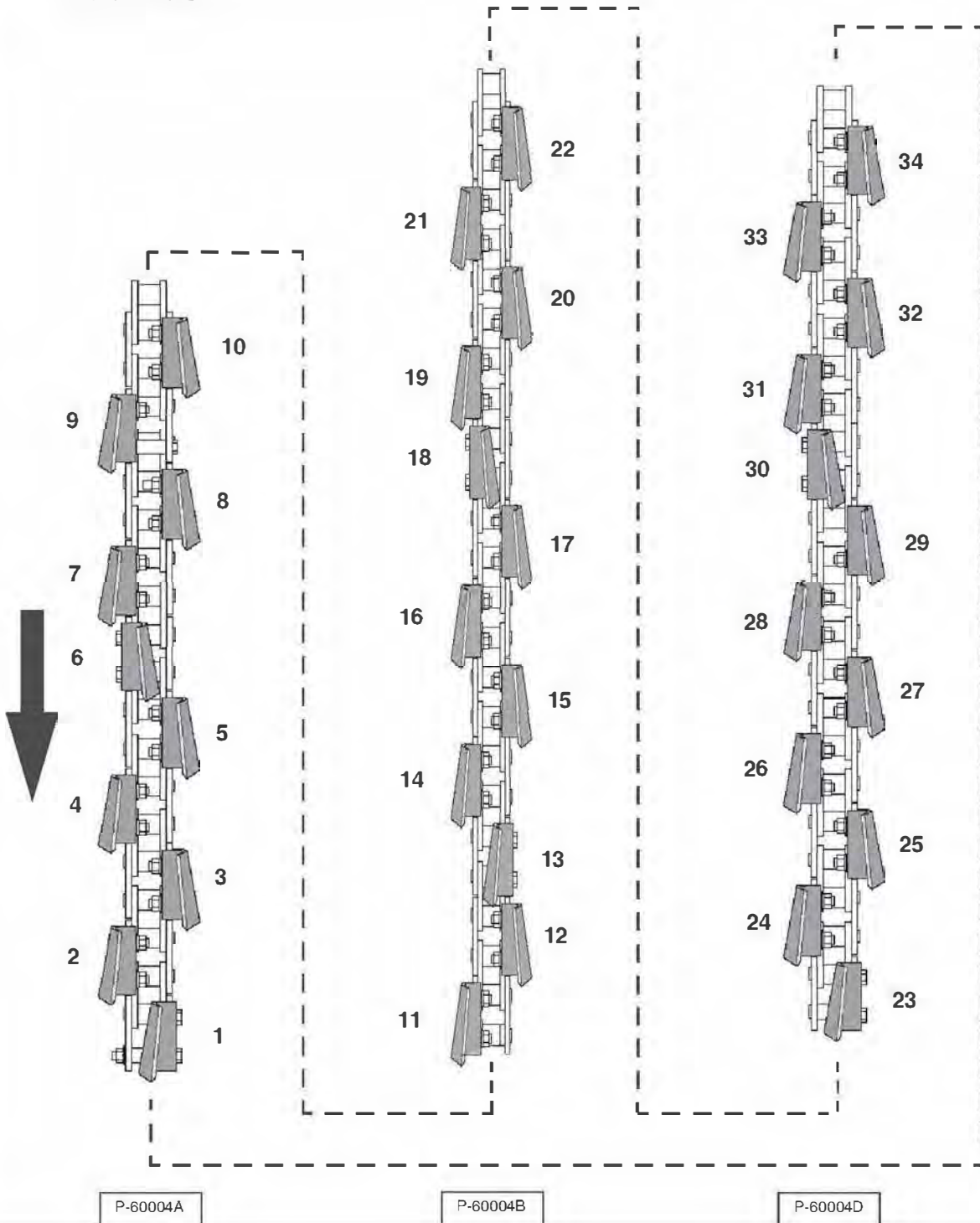
Dealer Copy -- Not for Resale

LT113 DOUBLE STANDARD PATTERNS (CONT'D)

0,91 m x 102 mm (3 ft x 4 in) Cup Tooth Pattern Installation

Instructions: Install teeth 1 thru 34 as indicated below.

NOTE: The arrow indicates the direction of chain travel.

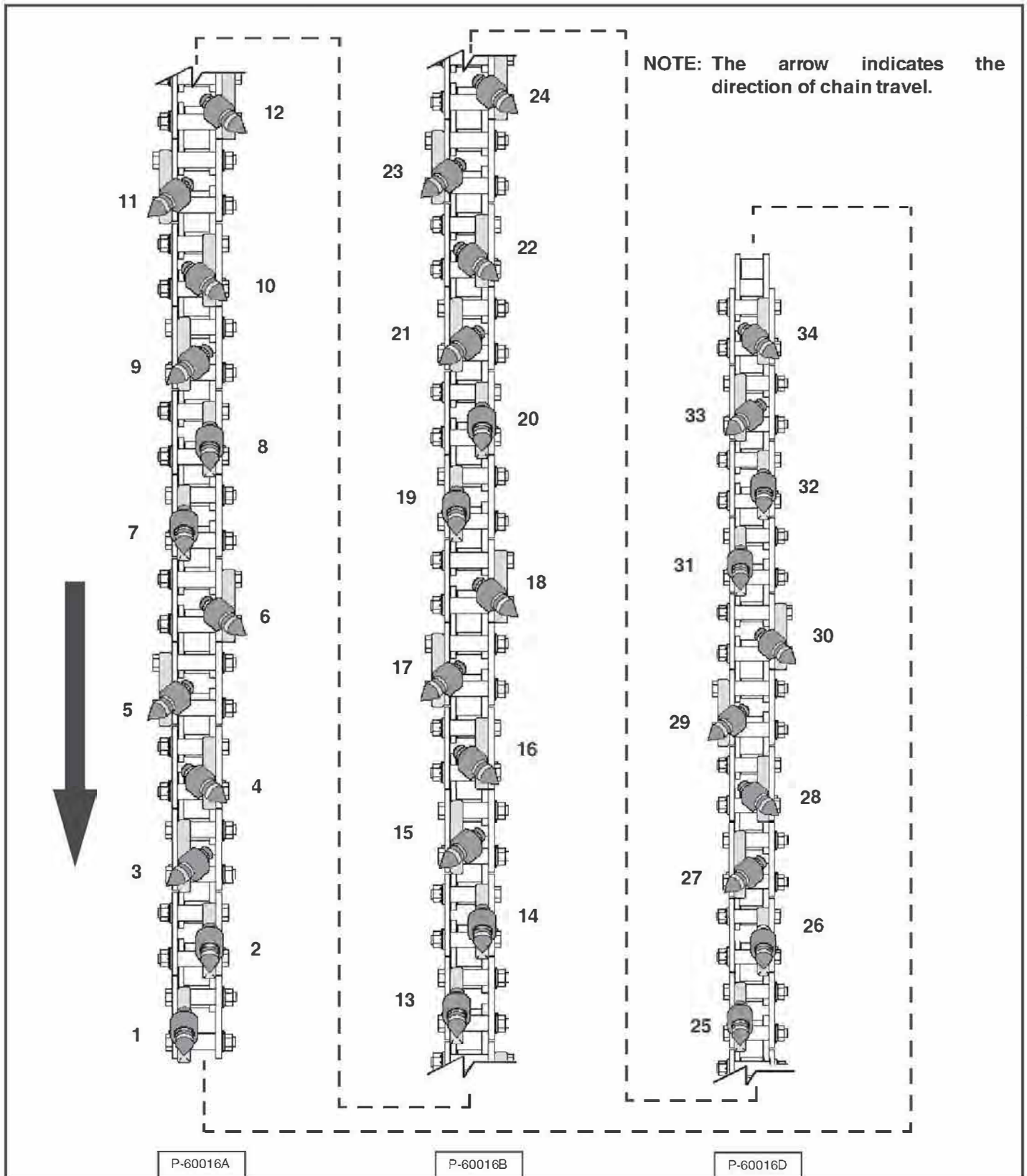


Dealer Copy -- Not for Resale

LT113 DOUBLE STANDARD PATTERNS (CONT'D)

0,91 m x 102 mm (3 ft x 4 in) Carbide Tooth Pattern Installation

Instructions: Install teeth 1 thru 34 as indicated below.

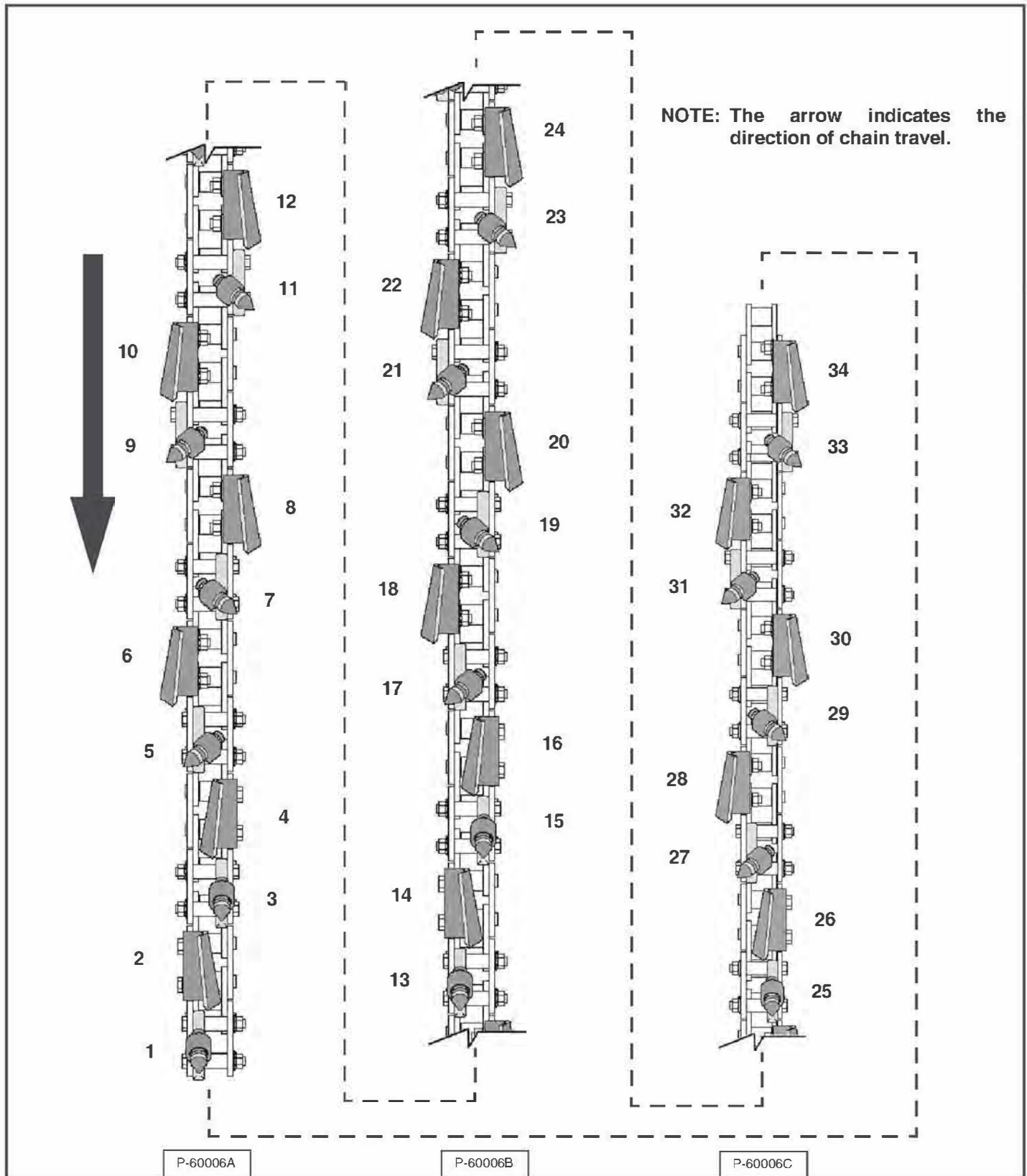


Dealer Copy -- Not for Resale

LT113 DOUBLE STANDARD PATTERNS (CONT'D)

0,91 m x 102 mm (3 ft x 4 in) Cup Tooth / Carbide Tooth Pattern Installation

Instructions: Install teeth 1 thru 34 as indicated below.



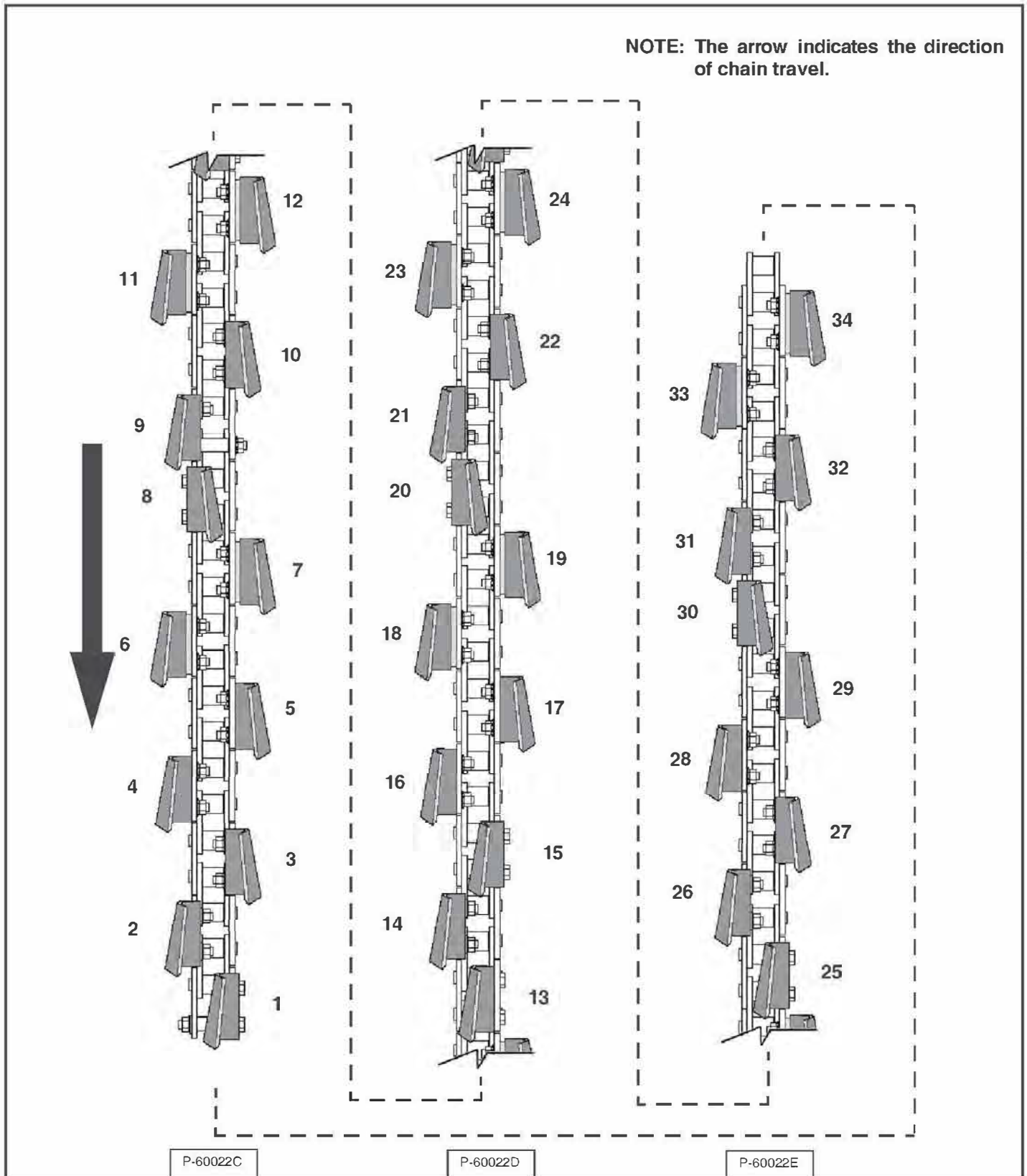
Dealer Copy -- Not for Resale

LT113 DOUBLE STANDARD PATTERNS (CONT'D)

0,91 m x 152 mm (3 ft x 6 in) Cup Tooth Pattern Installation

Instructions: Install teeth 1 thru 34 as indicated below.

NOTE: The arrow indicates the direction of chain travel.

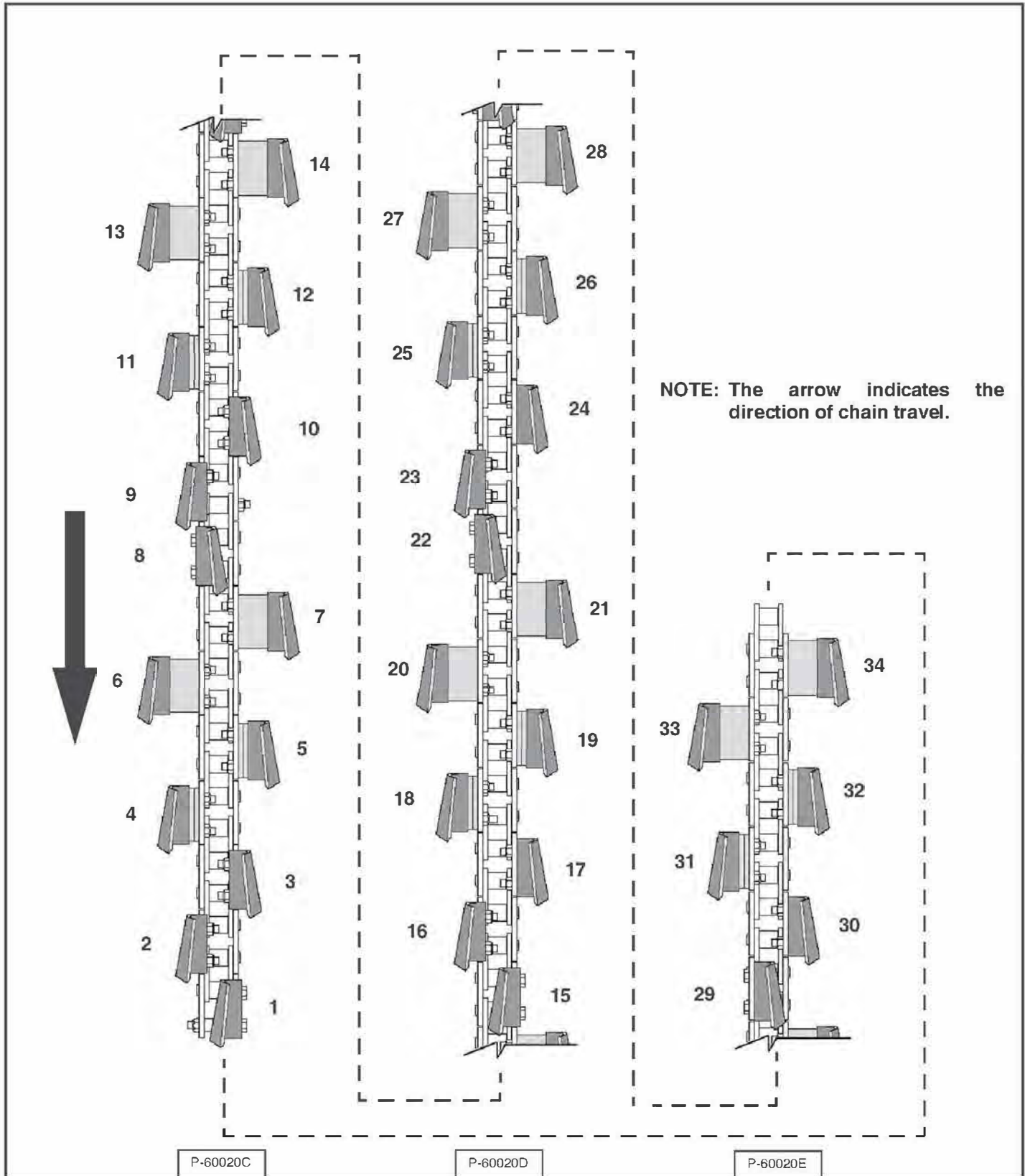


Dealer Copy -- Not for Resale

LT113 DOUBLE STANDARD PATTERNS (CONT'D)

0,91 m x 203 mm (3 ft x 8 in) Cup Tooth Pattern Installation

Instructions: Install teeth 1 thru 34 as indicated below.

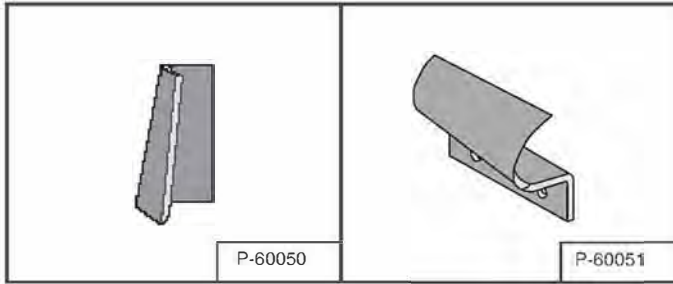


Dealer Copy -- Not for Resale

LT112 SHARK PATTERNS

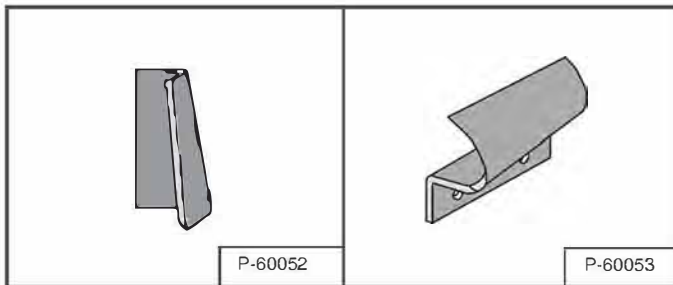
Component Description

Figure 224



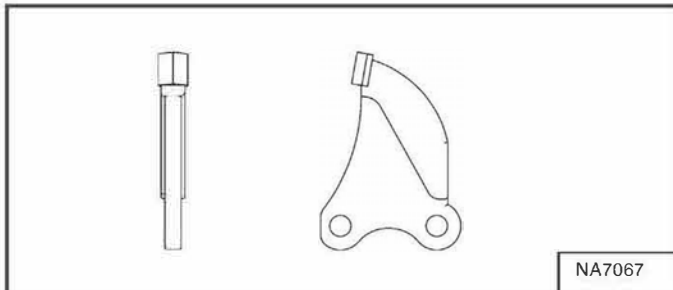
Right hand digging tooth [Figure 224].

Figure 225



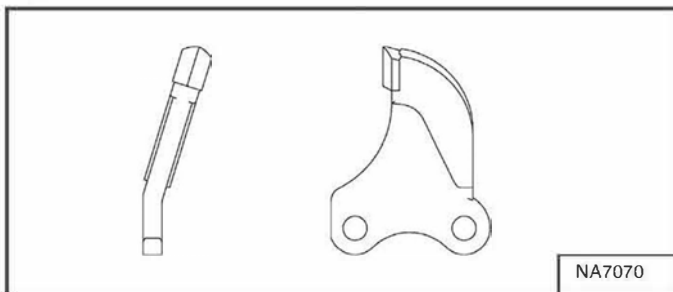
Left hand digging tooth [Figure 225].

Figure 226



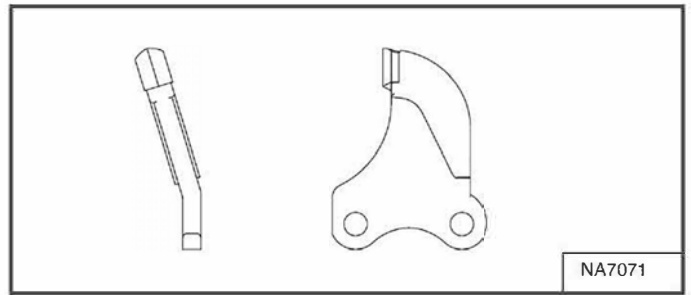
Tooth center shark [Figure 226].

Figure 227



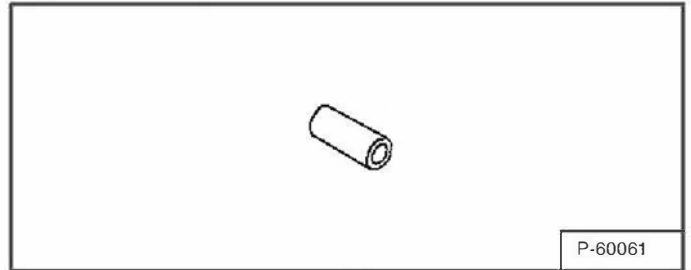
Tooth left shark [Figure 227].

Figure 228



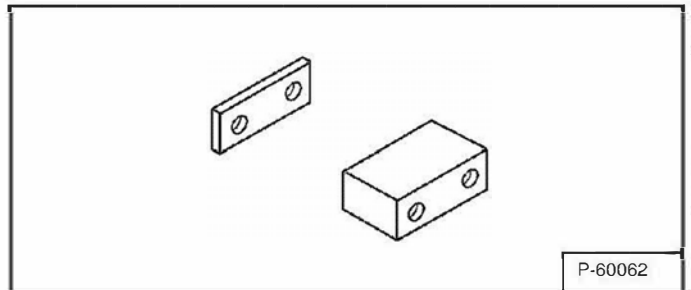
Tooth right shark [Figure 228].

Figure 229



Bushing [Figure 229].

Figure 230



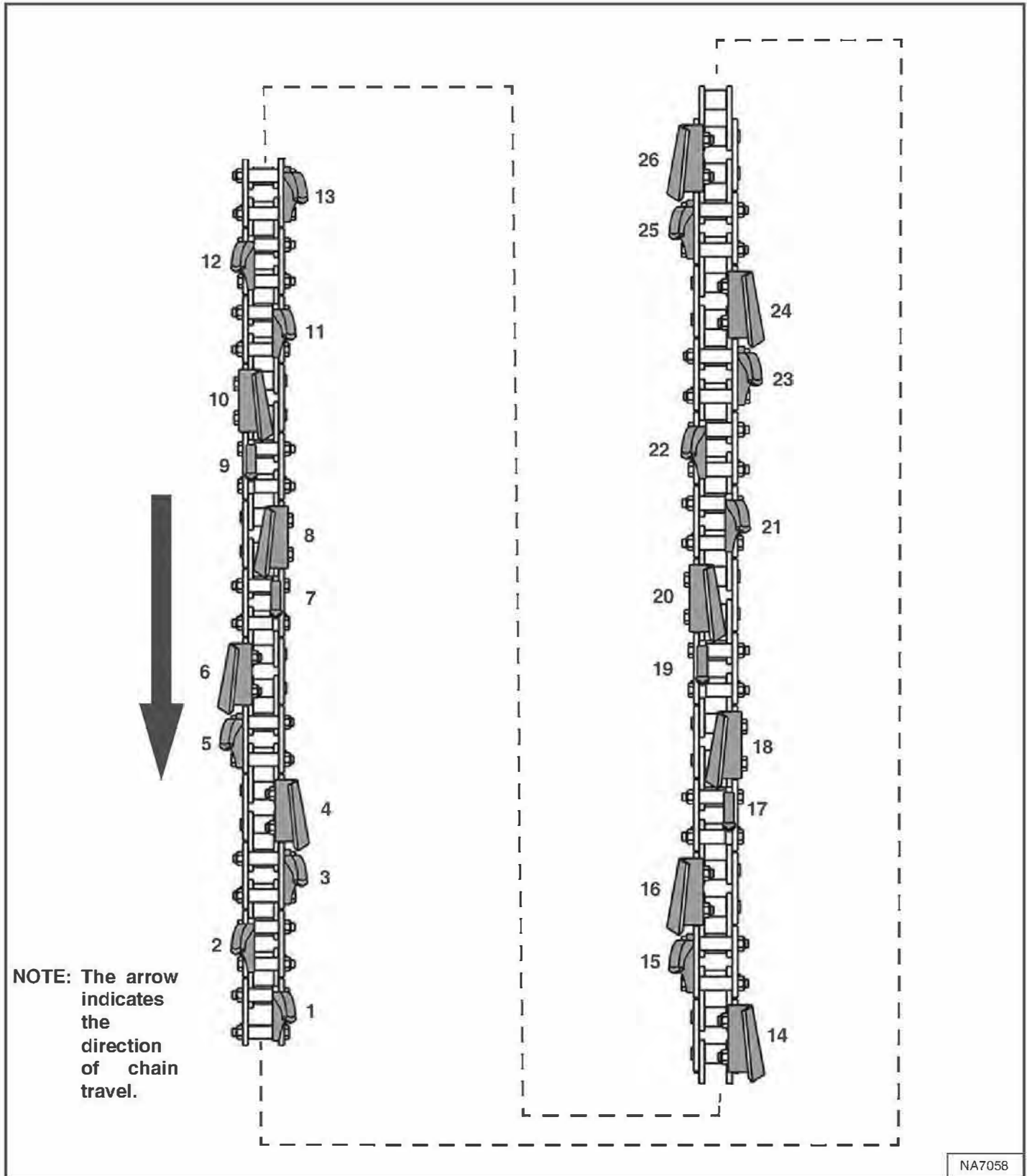
Spacers [Figure 230].

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LT112 SHARK PATTERNS (CONT'D)

0,61 m x 102 mm (2 ft x 4 in) Shark Tooth Pattern Installation

Instructions: Install teeth 1 thru 26 as indicated below.

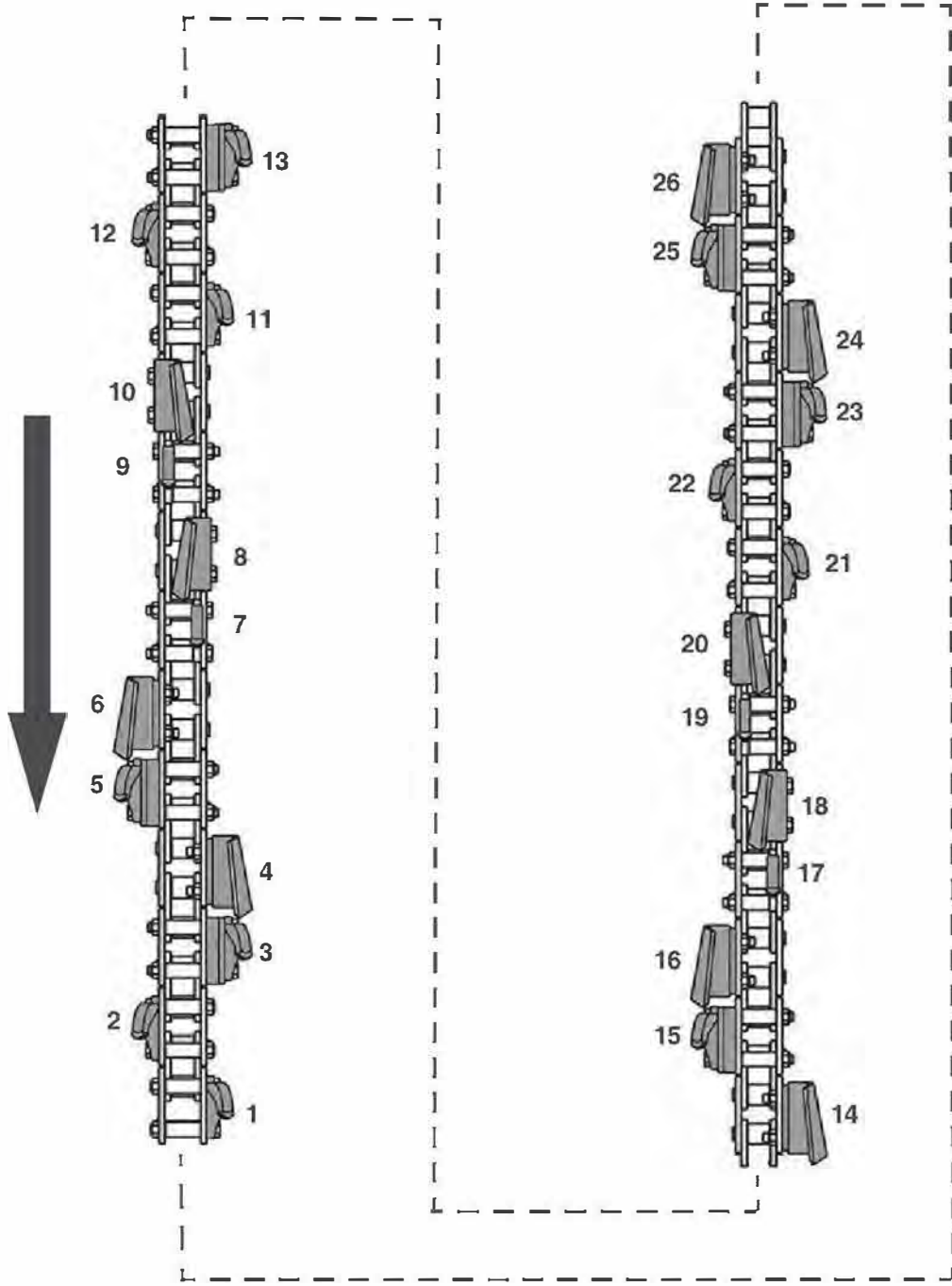


Dealer Copy -- Not for Resale

LT112 SHARK PATTERNS (CONT'D)

0,61 m x 152 mm (2 ft x 6 in) Shark Tooth Pattern Installation

Instructions: Install teeth 1 thru 26 as indicated below.



NOTE: The arrow indicates the direction of chain travel.

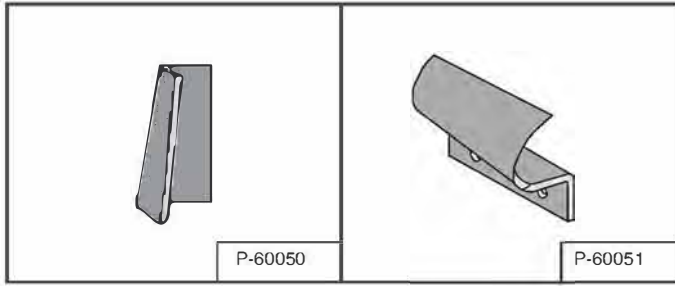
NA7059

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LT113 SHARK PATTERNS

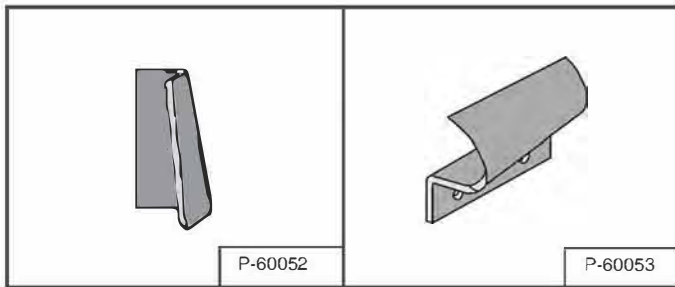
Component Description

Figure 231



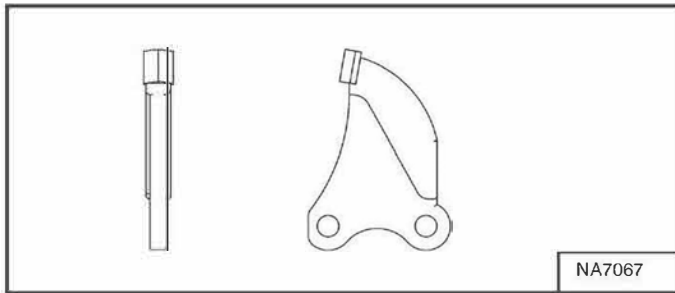
Right hand digging tooth [Figure 231].

Figure 232



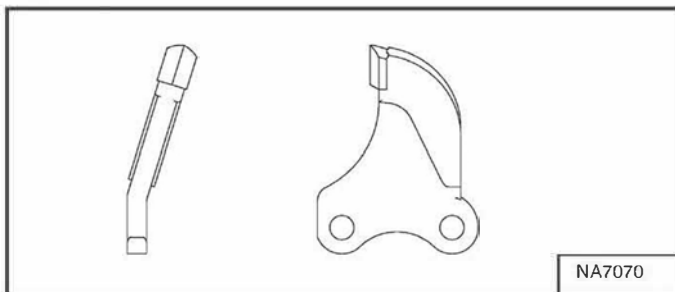
Left hand digging tooth [Figure 232].

Figure 233



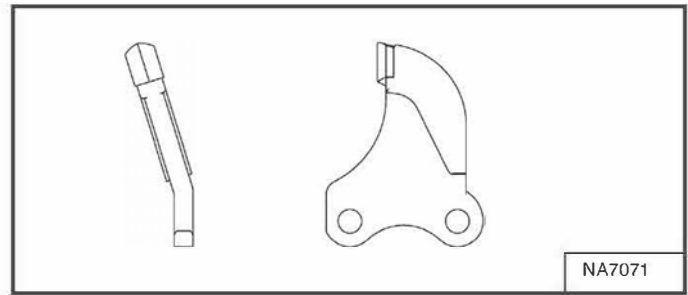
Tooth center shark [Figure 233].

Figure 234



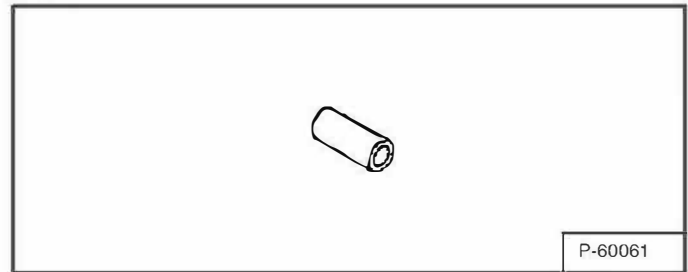
Tooth left shark [Figure 234].

Figure 235



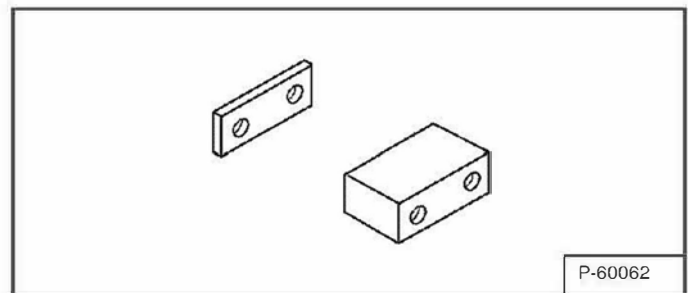
Tooth right shark [Figure 235].

Figure 236



Bushing [Figure 236].

Figure 237



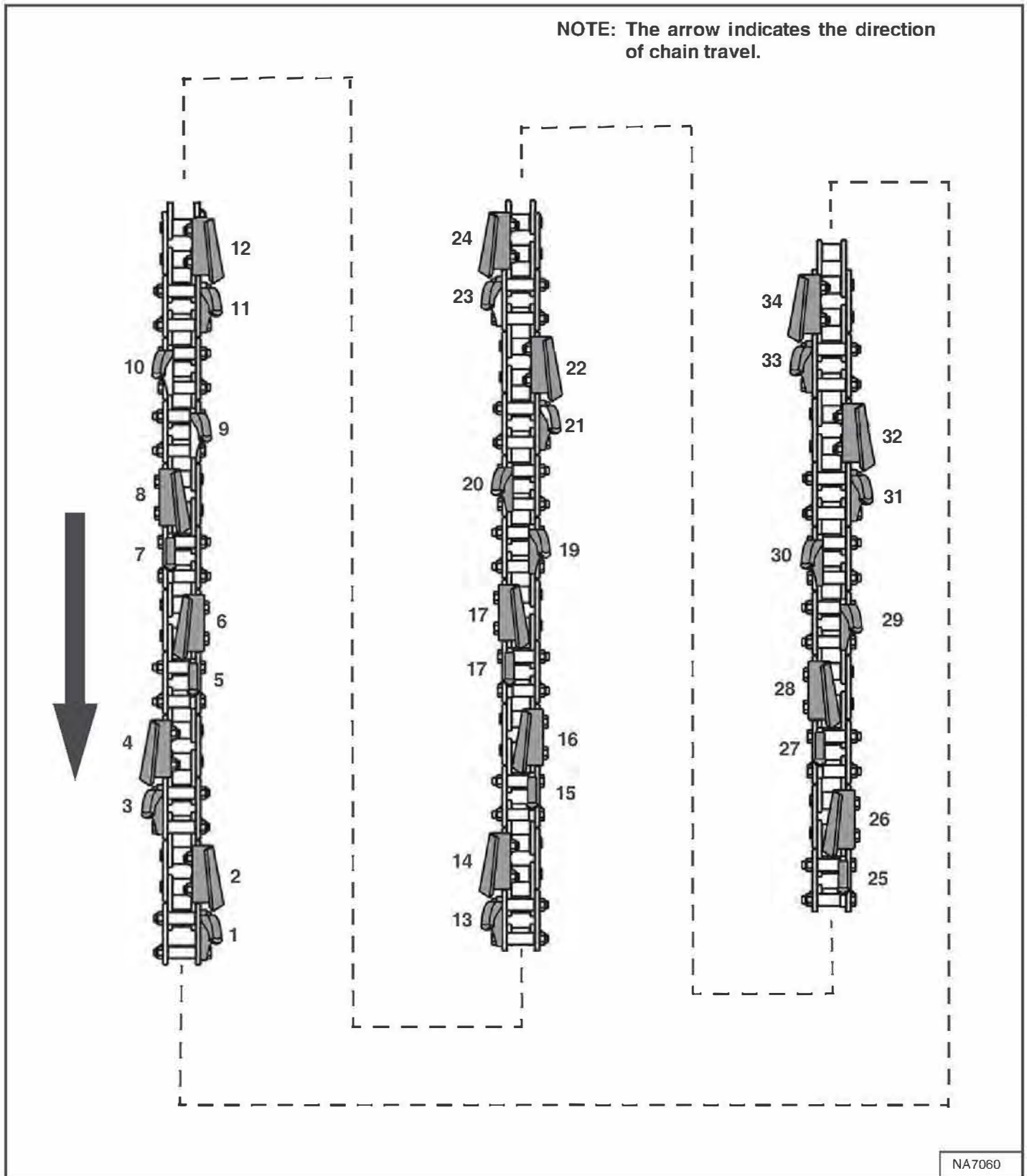
Spacers [Figure 237].

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LT113 SHARK PATTERNS (CONT'D)

0,91 m x 102 mm (3 ft x 4 in) Shark Tooth Pattern Installation

Instructions: Install teeth 1 thru 34 as indicated below.



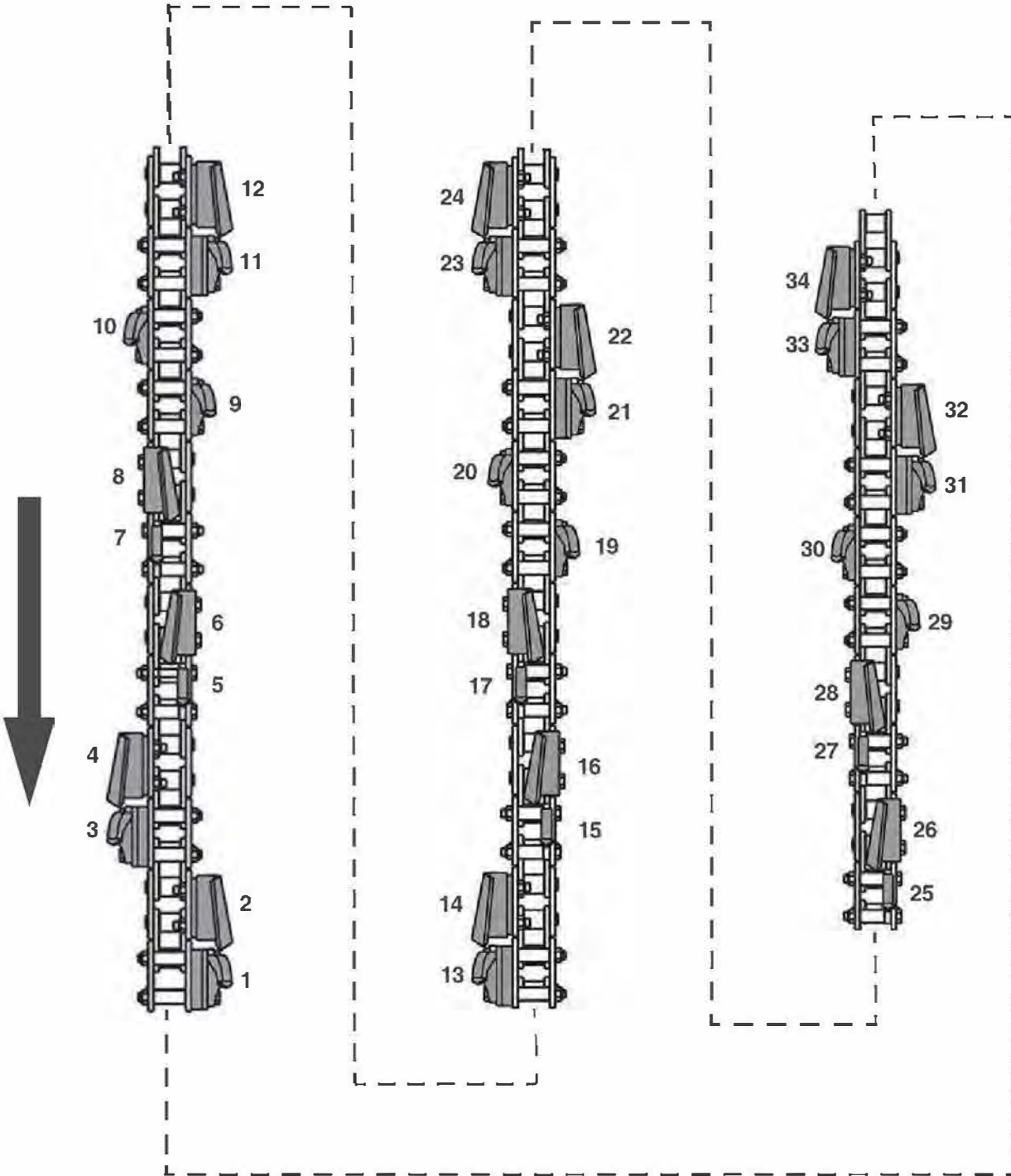
Dealer Copy -- Not for Resale

LT113 SHARK PATTERNS (CONT'D)

0,91 m x 152 mm (3 ft x 6 in) Shark Tooth Pattern Installation

Instructions: Install teeth 1 thru 34 as indicated below.

NOTE: The arrow indicates the direction of chain travel.



NA7061

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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 and wash the attachment.
- Lubricate the attachment.
- Inspect the mounting frame 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:

- Check for damaged or missing decals. Replace if necessary.
- Be sure all shields and guards are in place.
- Lubricate the attachment.
- Check for loose hardware, missing or damaged parts.
- Check for leaks. Repair as needed.
- Install and operate attachment, check for correct function.



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MACHINE SIGN TRANSLATIONS

MACHINE SIGN TRANSLATIONS	157
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Warning (6575965)

 WARNING	
	AVOID INJURY NEVER PUT FINGERS BETWEEN ROLLERS OR ROLLER SLOTS WHEN REPOSITIONING TRENCH CLEANER SHOE.
<small>67172 SW</small>	<small>6575965C enUS</small>

 ADVERTENCIA	
	EVITE LESIONES NO INTRODUZCA LOS DEDOS ENTRE LOS RODILLOS O LAS RANURAS DE LOS RODILLOS MIENTRAS SE ESTÁ REPOSICIONANDO LA ZAPATA DEL LIMPIADOR DE ZANJAS.
<small>67172 SW</small>	<small>6575965C esAR</small>

 AVERTISSEMENT	
	RISQUE DE BLESSURE NE METTEZ JAMAIS LES DOIGTS ENTRE LES GALETS ET LES RAINURES À GALET LORS DE LA REMISE EN PLACE DU SABOT NETTOYEUR DE TRANCHÉE.
<small>67172 SW</small>	<small>6575965C frCA</small>

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Danger (6579914)

	⚠ DANGER
	AVOID INJURY OR DEATH Bystanders must stay 20 feet (6 m) away from chain and auger.

67172 SW 6579914C enUS

	⚠ PELIGRO
	EVITE LESIONES O LA MUERTE Los transeúntes deben permanecer alejados a una distancia de 20 pies (6 m) de la cadena y el taladro.

67172 SW 6579914C esAR

	⚠ DANGER
	RISQUE DE BLESSURE OU DE MORT Tous les spectateurs doivent être tenus à 20 pieds (6 m) de la chaîne et de la vis sans fin.

67172 SW 6579914C frCA

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SPECIFICATIONS

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(MX112) TRENCHER SPECIFICATIONS	163
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Certain specification(s) are based on engineering calculations and are not actual measurements. Specification(s) are provided for comparison purposes only and are subject to change without notice. Specification(s) for your individual Bobcat equipment will vary based on normal variations in design, manufacturing, operating conditions and other factors.



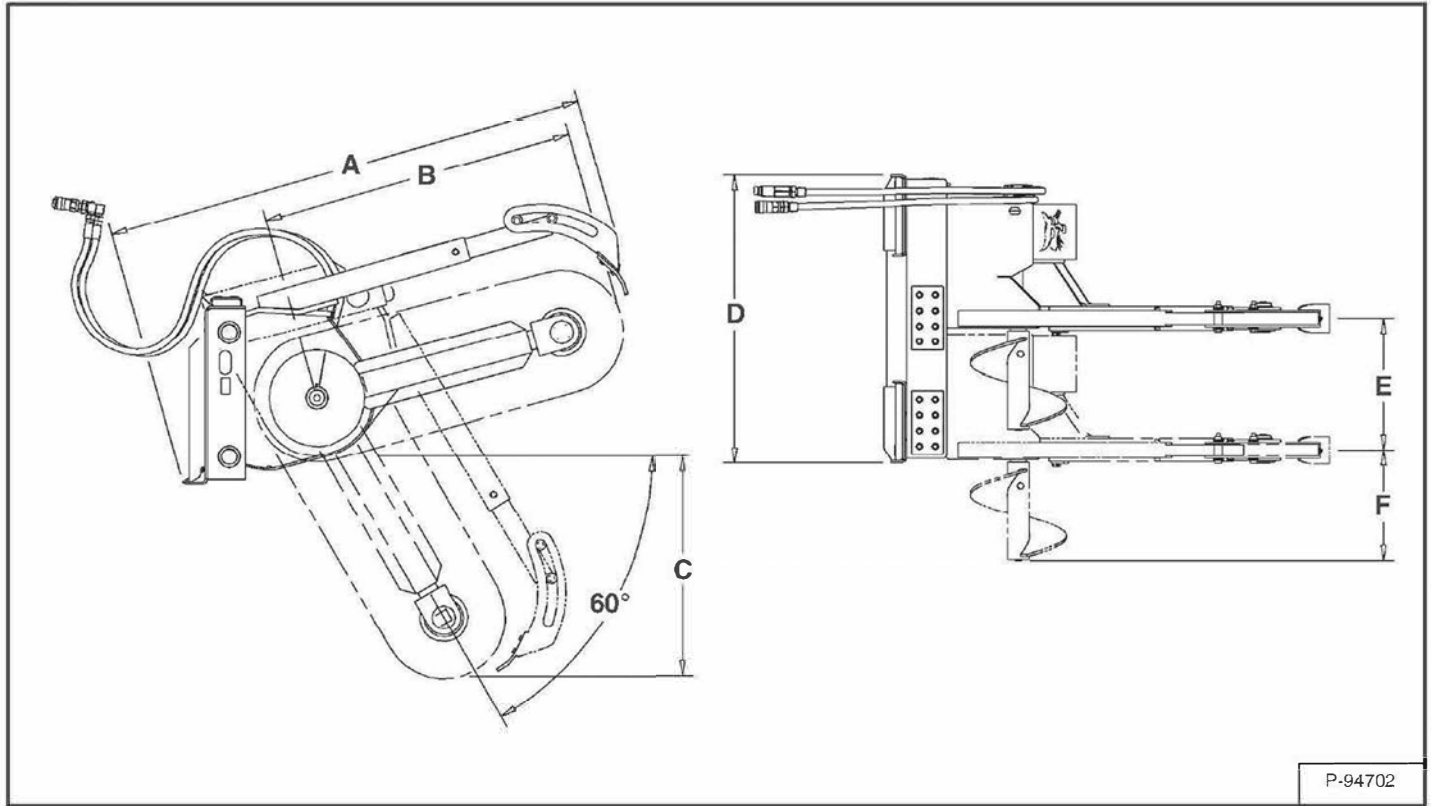
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(LT112 AND LT113) TRENCHER SPECIFICATIONS

Dimensions

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



DESCRIPTION	LT112 (2 FT)	LT113 (3 FT)
Overall Length (A)	1542 mm (60.7 in)	1880 mm (74.0 in)
Standard Boom Length (B)	1000 mm (39.4 in)	1334 mm (52.5 in)
Digging Depth @ 60° (C)	.6 m (2 ft)	.9 m (3 ft)
Frame Width (D)	914 mm (36.0 in)	914 mm (36.0 in)
Side Shift Travel (E)	409 mm (16.1 in)	409 mm (16.1 in)
Auger Clearance (F)	351 - 401 mm (13.8 - 15.8 in)	351 - 401 mm (13.8 - 15.8 in)

Performance

DESCRIPTION	LT112 (2 FT)	LT113 (3 FT)
Operating Weight (Without Teeth)	278 kg (613 lb)	289 kg (638 lb)
Chain Size	42 mm (1.654 in)	42 mm (1.654 in)
Chain Width	101 - 203 mm (4 - 8 in)	101 - 203 mm (4 - 8 in)
Chain Speed @ 15 gpm (57 L/min)	105.2 m/min (345 ft/min)	105.2 m/min (345 ft/min)
Chain Tightener	Grease Cylinder	Grease Cylinder
Auger Diameter	305 mm (12.0 in)	305 mm (12.0 in)

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(LT112 AND LT113) TRENCHER SPECIFICATIONS (CONT'D)

Hydraulic System

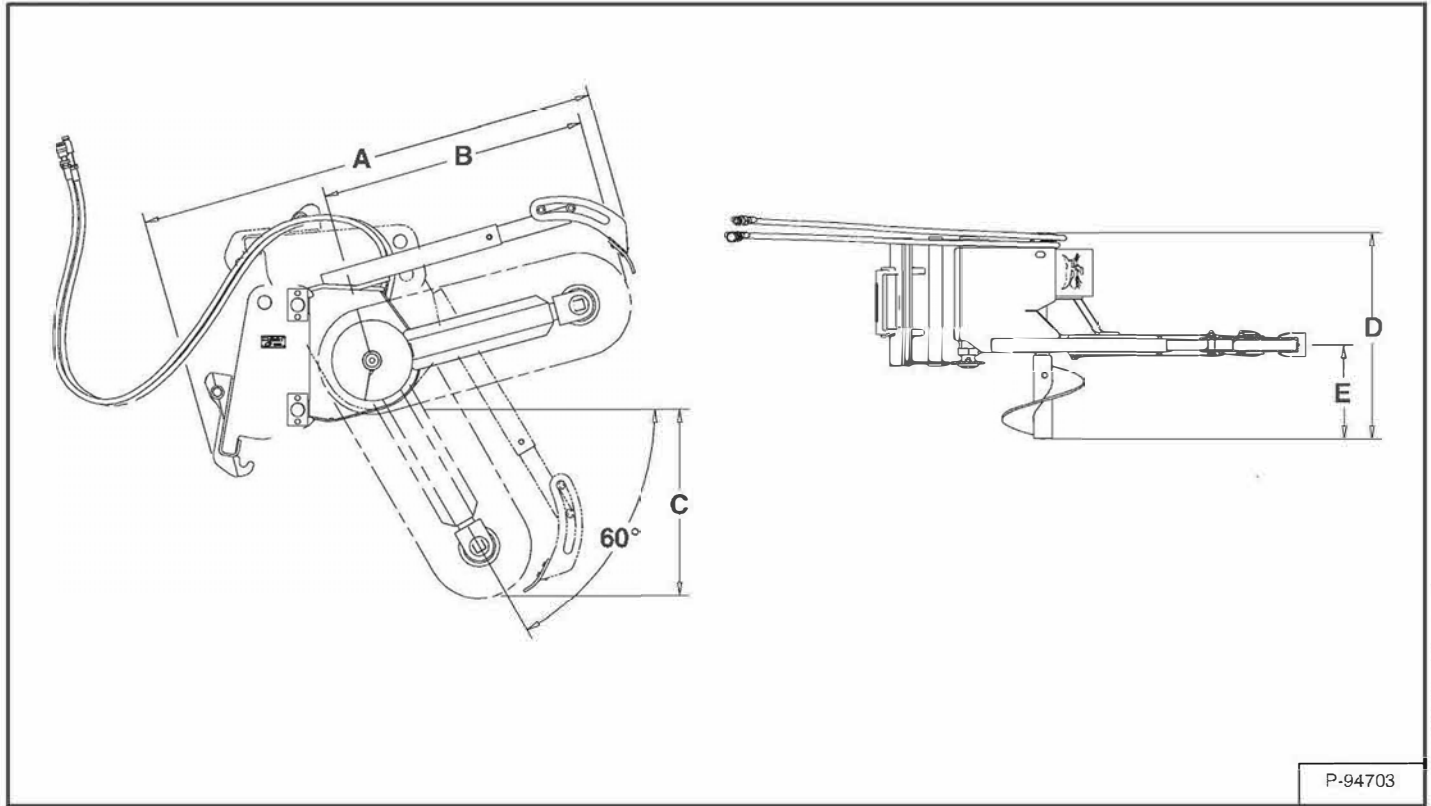
DESCRIPTION	LT112 (2 FT)	LT113 (3 FT)
Flow Range	34 - 57 L/min (9 - 15 U.S. gpm)	34 - 57 L/min (9 - 15 U.S. gpm)
Maximum Operating Pressure	20684 KPa (207 bar) (3000 psi)	20684 KPa (207 bar) (3000 psi)

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(MX112) TRENCHER SPECIFICATIONS

Dimensions

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



DESCRIPTION	MX112 (2 FT)
Overall Length (A)	1732 mm (68.2 in)
Standard Boom Length (B)	1000 mm (39.4 in)
Digging Depth @ 60° (C)	.6 m (2 ft)
Frame Width (D)	777 mm (30.6 in)
Auger Clearance (E)	351 - 401 mm (13.8 - 15.8 in)

Performance

DESCRIPTION	MX112 (2 FT)
Operating Weight (Without Teeth)	256 kg (570 lb)
Chain Size	42 mm (1.654 in)
Chain Width	101 - 203 mm (4 - 8 in)
Chain Speed @ 15 U.S. gpm (57 L/min)	105.2 m/min (345 ft/min)
Chain Tightener	Grease Cylinder
Auger Diameter	305 mm (12.0 in)

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(MX112) TRENCHER SPECIFICATIONS (CONT'D)

Hydraulic System

DESCRIPTION	MX112 (2 FT)
Flow Range	49 - 76 L/min (13 - 20 U.S. gpm)
Maximum Operating Pressure	20684 KPa (207 bar) (3000 psi)

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WARRANTY

WARRANTY167

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WARRANTY

Bobcat Attachments

Bobcat Company warrants to its authorized dealers and authorized dealers of Bobcat Equipment Ltd., who in turn warrant to the owner, that each new Bobcat attachment will be free from proven defects in material and workmanship with respect to (i) all components of the product except as otherwise specified herein for twelve (12) months, (ii) auxiliary hydraulic quick couplers for six (6) months or 200 hours, whichever occurs first and (iii) non-serialized attachments for six (6) months. The foregoing time periods shall commence after delivery by the authorized Bobcat dealer to the original buyer.

During the warranty period, the authorized Bobcat dealer shall repair or replace, at Bobcat Company's option, without charge for parts and labor, any part of the Bobcat product which fails because of defects in material or workmanship. The owner shall provide the authorized Bobcat dealer with prompt written notice of the defect and allow reasonable time for replacement or repair. Bobcat Company may, at its option, require failed parts to be returned to the factory. Travel time of mechanics and transportation of the Bobcat product to the authorized Bobcat dealer for warranty work are the responsibility of the owner. The remedies provided in this warranty are exclusive.

This warranty does not cover replacement of scheduled service items and high wear items. The owner shall rely solely on the warranty, if any, of the respective manufacturers thereof. This 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 Company, air flow obstructions, or failure to maintain or use the Bobcat product according to the instructions applicable to it.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES AND CONDITIONS, EXCEPT THE WARRANTY OF TITLE. BOBCAT COMPANY DISCLAIMS ALL OTHER WARRANTIES AND CONDITIONS, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL BOBCAT COMPANY OR THE AUTHORIZED BOBCAT DEALER BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, LOSS OR INTERRUPTION OF BUSINESS, LOST PROFITS, OR LOSS OF MACHINE USE, WHETHER BASED ON CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY, STATUTE OR OTHERWISE, EVEN IF BOBCAT COMPANY OR THE AUTHORIZED BOBCAT DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE TOTAL LIABILITY OF BOBCAT COMPANY AND THE AUTHORIZED BOBCAT DEALERS WITH RESPECT TO THE PRODUCT AND SERVICES FURNISHED HEREUNDER SHALL NOT EXCEED THE PURCHASE PRICE OF THE PRODUCT UPON WHICH SUCH LIABILITY IS BASED.



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WARNING: Cancer and Reproductive Harm. This product can expose you to chemicals including lead and lead compounds, mineral oils, and phthalates which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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