PB30X

Operator's Manual

Issue 2.0
Original Instruction

960-1020

Overview

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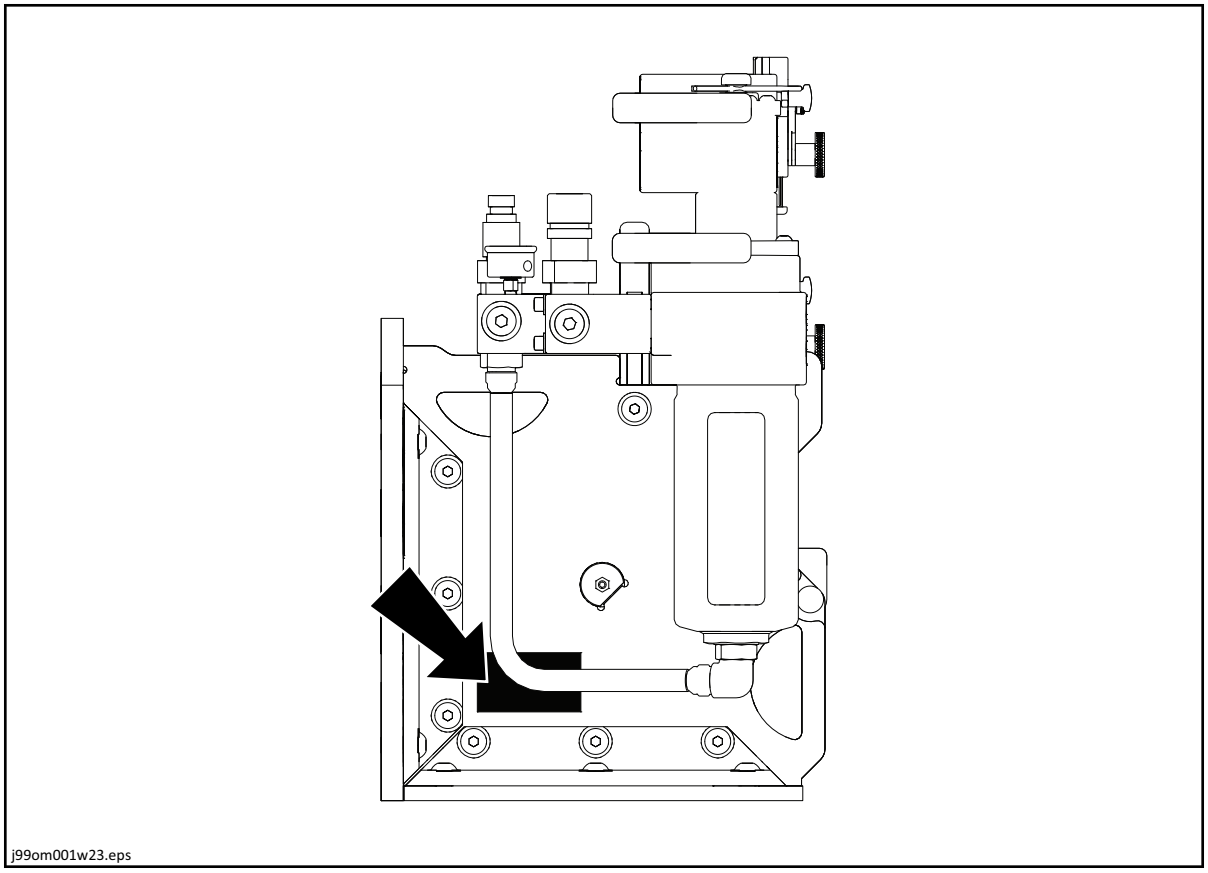
California Proposition 65

⚠ WARNING Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm. www.P65warnings.ca.gov.

Serial Number Location

Record serial numbers and date of purchase in spaces provided.



Date of manufacture	
Date of purchase	

Intended Use

HammerHead® pipe bursters are intended for the replacement of 0.75"-6" (19-152 mm) diameter buried pipes and conduits. The PB30X is a compact, portable, hydraulically-powered machine designed to replace underground utilities using up to 29 tons (26 t) of pullback force. A control unit provides hydraulic power to run the pipe bursting unit.

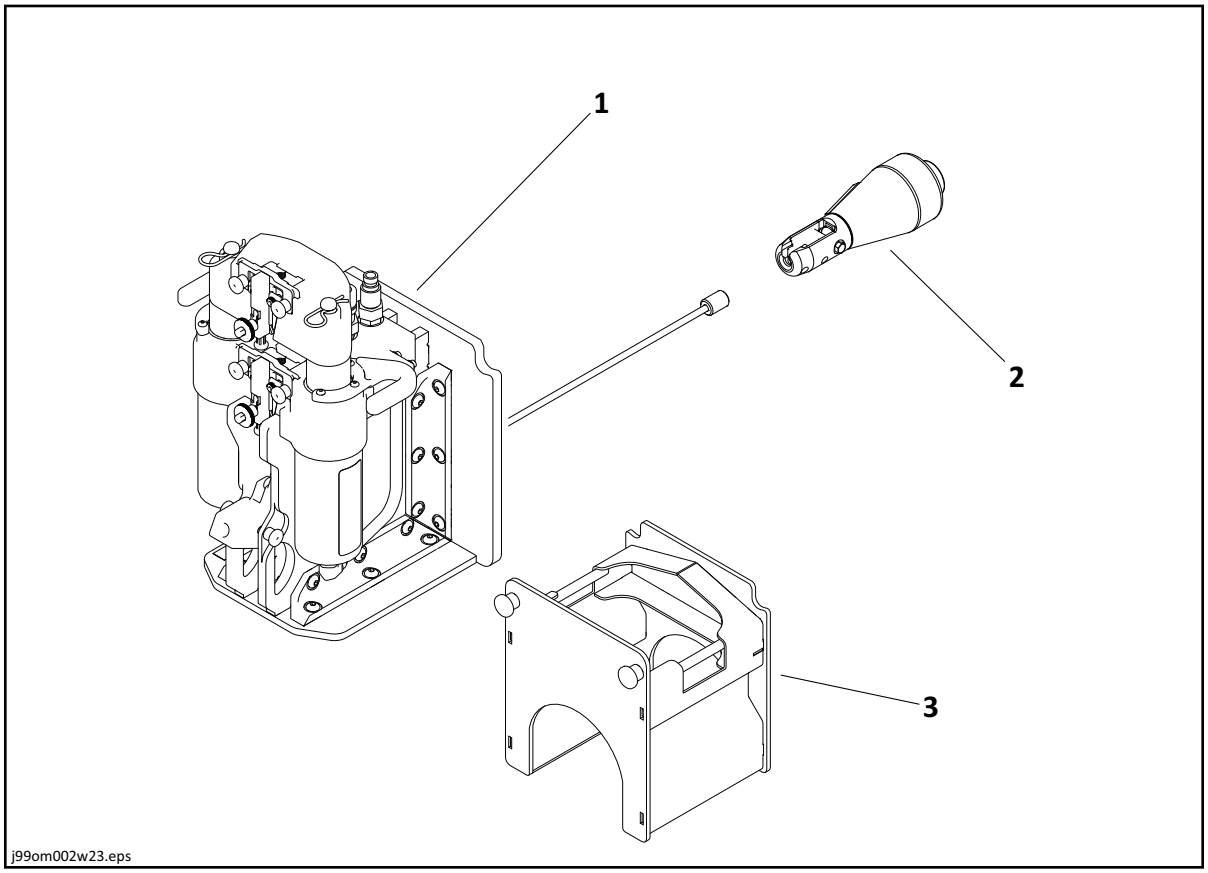
The unit is designed for operation in temperatures typically experienced in earth moving and construction work environments. Provisions may be required to operate in extreme temperatures. Contact your HammerHead dealer. Use in any other way is considered contrary to the intended use.

HammerHead pipe bursters and control units should be operated, serviced, and repaired only by persons familiar with their particular characteristics and acquainted with the relevant safety procedures.

Equipment Modification

This equipment was designed and built in accordance with applicable standards and regulations. Modification of equipment could mean that it will no longer meet regulations and may not function properly or in accordance with the operating instructions. Modification of equipment should only be made by competent personnel possessing knowledge of applicable standards, regulations, equipment design functionality/requirements and any required specialized testing.

Unit Components

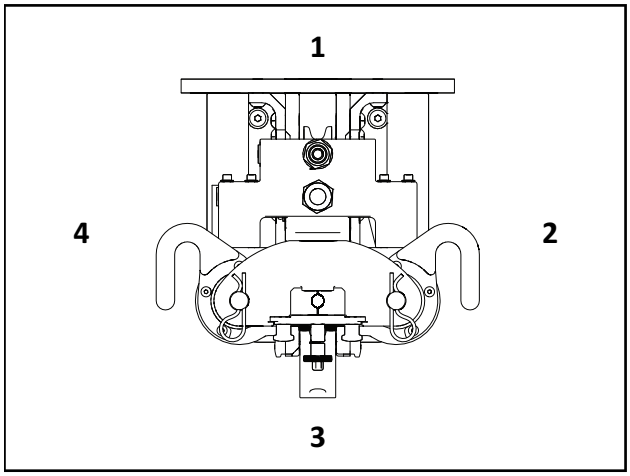


1. Bursting unit
2. Tooling head
3. Extraction cage (optional)

Operator Orientation

IMPORTANT: Top view of unit is shown.

1. Front of unit
2. Right side of unit
3. Rear of unit
4. Left side of unit



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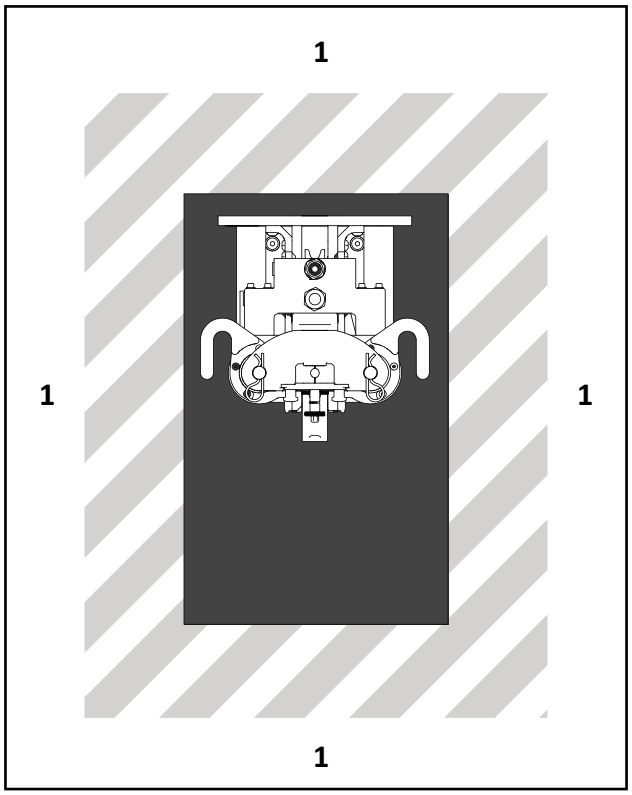
Operating Area

IMPORTANT: Top view of unit is shown.

Operator should stand outside the pit in the locations marked by number 1.



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About This Manual

This manual contains information for the proper use of this machine. Cross references such as "See page 50" will direct you to detailed procedures.

Bulleted Lists

Bulleted lists provide helpful or important information or contain procedures that do not have to be performed in a specific order.

Numbered Lists

Numbered lists contain illustration callouts or list steps that must be performed in order.

Foreword

This manual is an important part of your equipment. It provides safety information and operation instructions to help you use and maintain your HammerHead equipment.

Read this manual before using your equipment. Keep it with the equipment at all times for future reference. If you sell your equipment, be sure to give this manual to the new owner.

If you need a replacement copy, contact your HammerHead dealer. If you need assistance in locating a dealer, visit our website at **www.hammerheadtrenchless.com** or write to the following address:

HammerHead Trenchless Equipment
500 South C.P. Avenue
Lake Mills, WI 53551
USA

The descriptions and specifications in this manual are subject to change without notice.

The Charles Machine Works®, Inc. dba HammerHead reserves the right to improve equipment. Some product improvements may have taken place after this manual was published. For the latest information on HammerHead equipment, see your HammerHead dealer.

Thank you for buying and using HammerHead equipment.

PB30X
Operator's Manual

Issue number 2.0/OM-05/25

Part number 960-1020

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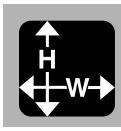

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Safety

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Safety Alert Classifications

These classifications and the icons defined on the following pages work together to alert you to situations which could be harmful to you, jobsite bystanders or your equipment. When you see these words and icons in the book or on the machine, carefully read and follow all instructions. YOUR SAFETY IS AT STAKE.

Watch for the three safety alert levels: **DANGER**, **WARNING** and **CAUTION**. Learn what each level means.

⚠ DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

⚠ WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠ CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

Watch for two other words: ***NOTICE*** and **IMPORTANT**.

NOTICE indicates information considered important, but not hazard-related (e.g., messages relating to property damage).

IMPORTANT can help you do a better job or make your job easier in some way.

Guidelines

When you see this safety alert sign, carefully read and follow all instructions.
YOUR SAFETY IS AT STAKE. Read this entire section before using your equipment.

Follow these guidelines before operating any jobsite equipment.

- Complete proper training and read operator's manual before using equipment.
- Mark proposed path with white paint and have underground utilities located before working. In the US or Canada, call 811 (US) or 888-258-0808 (US and Canada). Also contact any local utilities that do not participate in the One-Call service. In countries that do not have a One-Call service, contact all local utility companies to have underground utilities located.
- Classify jobsite based on its hazards and use correct tools and machinery, safety equipment, and work methods for jobsite.
- Mark jobsite clearly and keep spectators away.
- Wear personal protective equipment.
- Do not wear jewelry or loose clothing.
- Review jobsite hazards, safety and emergency procedures, and individual responsibilities with all personnel before work begins. Safety Data Sheets (SDS) are available at www.hammerheadshop.com/resources/technical-sheets/.
- Fully inspect equipment before operating. Repair or replace any worn or damaged parts. Replace missing or damaged safety shields, safety signs, and decals. Contact your HammerHead dealer for assistance.
- Use equipment carefully. Stop operation and investigate anything that does not look or feel right.
- Do not operate unit where flammable gas, liquid, or dust may be present.
- Only operate equipment in well-ventilated areas.
- Contact your HammerHead dealer if you have any question about operation, maintenance, or equipment use.

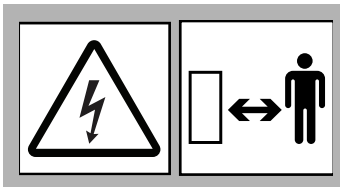
Emergency Procedures

⚠ WARNING Jobsite hazards. Exposure can cause death or serious injury. Use correct equipment and work methods. Use and maintain appropriate safety equipment.

Before operating any equipment, review emergency procedures and check that all safety precautions have been taken.

EMERGENCY SHUTDOWN - Turn ignition switch to stop position or push remote engine stop button (if equipped).

Electric Strike Description



⚠ DANGER Buried electrical lines. Contact will cause death or serious injury. Know location of lines. Stay away.

When working near electric cables, remember the following:

- Electricity follows all paths to ground, not just path of least resistance.
- Pipes, hoses, and cables will conduct electricity back to all equipment.
- Low voltage current can injure or kill. Many work-related electrocutions result from contact with less than 440 volts.

Most electric strikes are not noticeable, but indications of a strike include:

- power outage
- smoke
- explosion
- popping noises
- arcing electricity

If any of these occur, assume an electric strike has occurred.

If an Electric Line is Damaged

If you suspect an electric line has been damaged, DO NOT MOVE. Take the following actions. The order and degree of action will depend on the situation.

- If you are in pit:
  - DO NOT TOUCH ANYTHING.
  - Remain in pit.
  - Warn people nearby that an electric strike has occurred. Instruct them to leave the area and contact utility.
  - Contact utility company to shut off power.
  - Do not leave pit until given permission by utility company.
- If you are out of pit:
  - DO NOT TOUCH ANY EQUIPMENT.
  - LEAVE AREA. The ground surface may be electrified, so take small steps with feet close together to reduce the hazard of being shocked from one foot to the other.
  - Contact utility company to shut off power.
  - Do not return to jobsite or allow anyone into area until given permission by utility company.
- If you are on another piece of equipment:
  - Warn people nearby that an electric strike has occurred. Instruct them to leave the area and contact utility.
  - Contact utility company to shut off power.
  - Do not return to area or allow anyone into area until given permission by utility company.

If a Gas Line is Damaged

If you suspect a gas line has been damaged, take the following actions. The order and degree of action will depend on the situation.

- Immediately shut off engine(s), if this can be done safely and quickly.
- Remove any ignition source(s), if this can be done safely and quickly.
- Warn others that a gas line has been cut and that they should leave the area.
- After warning others to leave the area, leave jobsite as quickly as possible.
- Immediately call your local emergency phone number and utility company.
- If jobsite is along street, stop traffic from driving near jobsite.
- Do not return to jobsite until given permission by emergency personnel and utility company.

If a Fiber Optic Cable is Damaged

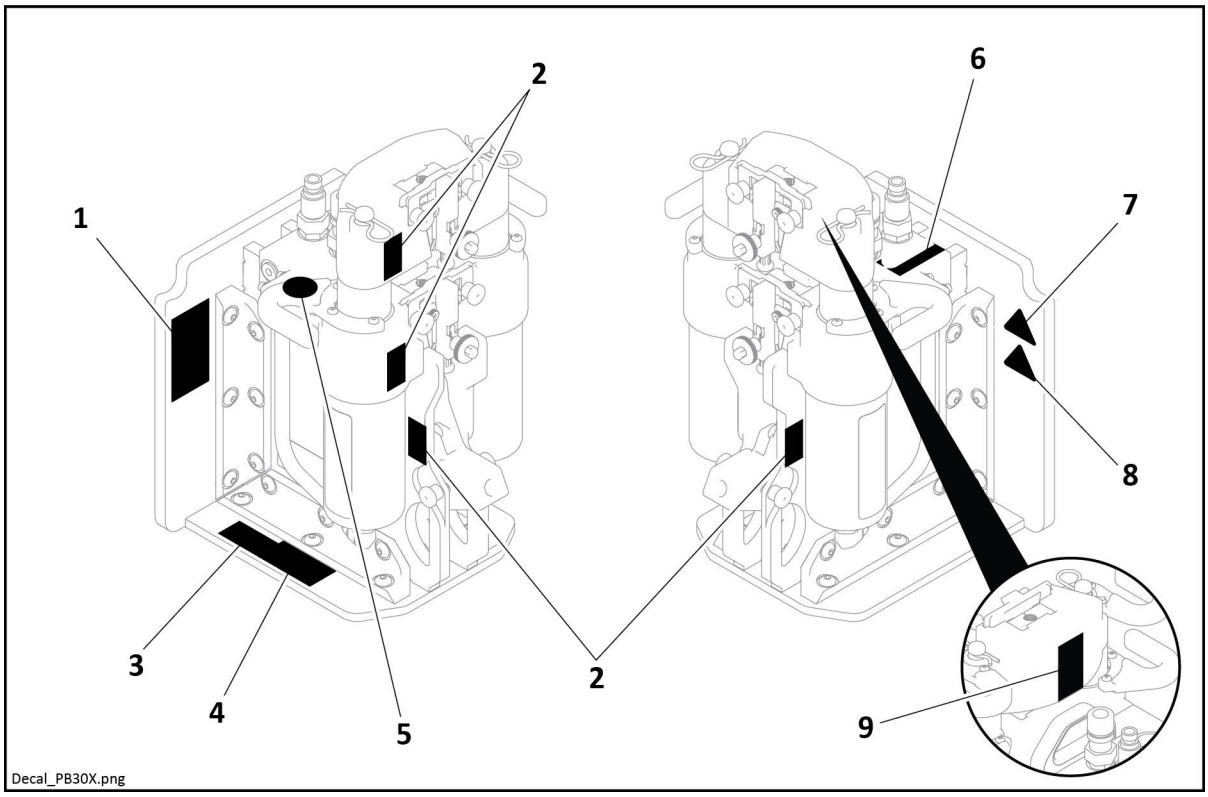
Do not look into cut ends of fiber optic or unidentified cable. Vision damage can occur. Contact utility company.

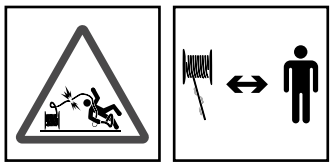
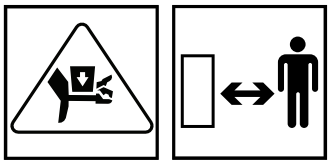
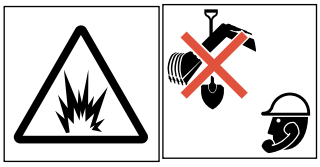
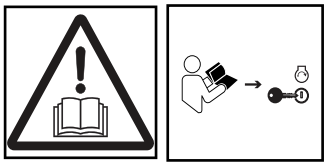
If Machine Catches on Fire

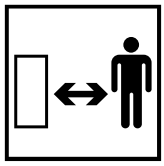
Perform emergency shutdown procedure and then take the following actions. The order and degree of action will depend on the situation.

- Immediately move battery disconnect switch (if equipped and accessible) to disconnect position.
- If fire is small and fire extinguisher is available, attempt to extinguish fire.
- If fire cannot be extinguished, leave area as quickly as possible and contact emergency personnel.

Machine Safety Alerts



1		**DANGER** Cable may break while pulling and strike you. Serious injury or death may occur. Stay away.
2		**WARNING** Moving parts. Contact can cause serious injury. Stay away.
3		**WARNING** Underground utilities. Contact can cause death or serious injury. Locate and verify underground utilities before digging or drilling.
4		**WARNING** Misuse of machine can cause death or serious injury. Read and understand operator's manual and all other safety instructions before use. Know how to use all controls.

5		Lift point. See Transport chapter for more information.
6	 	**⚠ CAUTION** Hot parts. Contact can cause burns. Only touch when cool or wear gloves.
7		**⚠ DANGER** Sudden cable movement can cause serious injury or death. Stay away.
8		**⚠ DANGER** Sudden cable movement can cause serious injury or death. Stay away.
9	 	**⚠ WARNING** Crushing weight could cause death or serious injury. Stay away.

Controls

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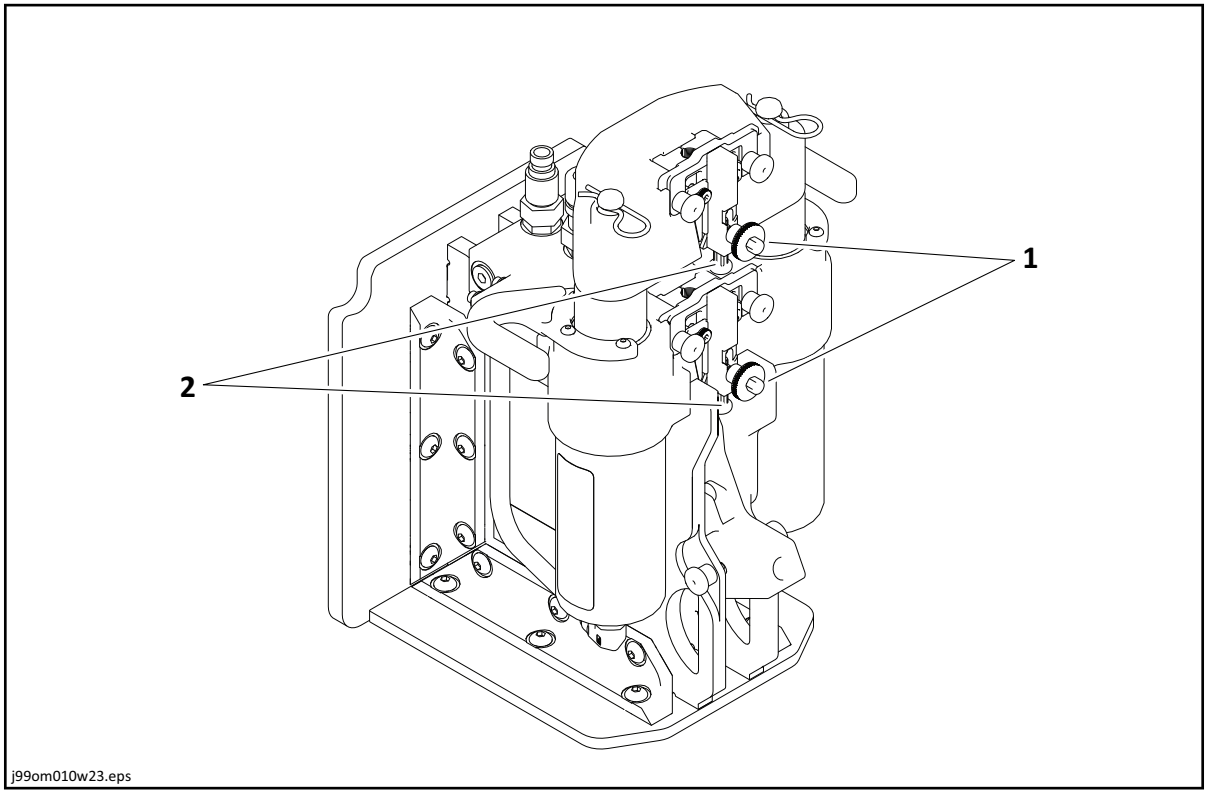
Control Unit 20

Bursting Unit



Item	Description	Notes
1. Jaw lockout knob	To let jaws float, loosen knob. To secure jaws, tighten.	
2. Spring piston	To secure jaws, push in.	

Control Unit

For control unit controls, see hydraulic control unit operator's manual.

NOTICE: Do not use control unit that exceeds the capabilities of the bursting unit. See "Control Unit Requirements" on page 50.

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- Check Supplies 29
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Gather Information

A successful job begins before the pull. The first step in planning is reviewing information already available about the job and jobsite.

Review Job Plan

Review blueprints or other plans and make sure you have taken enlargement during pullback into account. Check for information about existing or planned structures, elevations, or proposed work that may be taking place at the same time.

Notify One-Call Services

Contact your local One-Call (811 in USA) or the One-Call referral number (888-258-0808 in USA and Canada) to have underground utilities located before digging. Also contact any utilities that do not participate in the One-Call service.

Examine Pullback Material

Ask for a sample of the new product material you will be pulling back. Check its weight and stiffness. Contact the manufacturer for bend radius information. Check that you have appropriate pullback devices.

Arrange for Traffic Control

If working near a road or other traffic area, contact local authorities about safety procedures and regulations.

Plan for Emergency Services

Have the telephone numbers for local emergency and medical facilities on hand. Check that you will have access to a telephone.

Inspect Site

Inspect jobsite before transporting equipment. Check for the following:

- changes in elevation such as hills or open trenches
- obstacles such as buildings, railroad crossings, or streams
- signs of utilities
  - "buried utility" notices
  - utility facilities without overhead lines
  - gas or water meters
  - junction boxes
  - drop boxes
  - light poles
  - manhole covers
  - sunken ground
- traffic
- access
- soil type and condition
- depths of existing pipes

Identify Hazards

- Identify safety hazards. Follow U.S. Department of Labor regulations on excavating and trenching (Part 1926, Subpart P) and other similar regulations.
- Have an experienced locating equipment operator sweep area within 20' (6 m) to each side of burst path. Verify previously marked line and cable locations.
- Mark location of all buried utilities and obstructions.

⚠ WARNING Jobsite hazards. Exposure can cause death or serious injury. Use correct equipment and work methods. Use and maintain appropriate safety equipment.

To help avoid injury:

- Wear personal protective equipment including hard hat, safety eye wear, and hearing protection.
- Do not wear jewelry or loose clothing.
- Notify One-Call and companies which do not subscribe to One-Call.
- Comply with all utility notification regulations before digging or bursting.
- Verify location of previously marked underground hazards.
- Mark jobsite clearly and keep spectators away.

Select Installation and Bursting Pit Locations

Consider the following when selecting pit locations:

Traffic

Vehicle and pedestrian traffic must be a safe distance from pulling equipment. Allow at least 10' (3 m) buffer zone around equipment.

Space

Check that starting and ending points allow enough space for installation and bursting pits.

Check that installation area has enough space for product to be installed.

Check that there is enough space to work.

Access

Consider shade, wind, fumes, and other site features.

NOTICE: Follow U.S. Department of Labor regulations on excavating and trenching (Part 1926, Subpart P) and other similar regulations.

Plan Pull Path

Plan the pull path, from entry to end, before job begins. Locate the entire route of the pipe to be replaced to ensure a straight path. Expose all crossing or parallel utilities in accordance with local regulations.

Prepare Jobsite

⚠WARNING Jobsite hazards. Exposure can cause death or serious injury. Use correct equipment and work methods. Use and maintain appropriate safety equipment.

To help avoid injury:

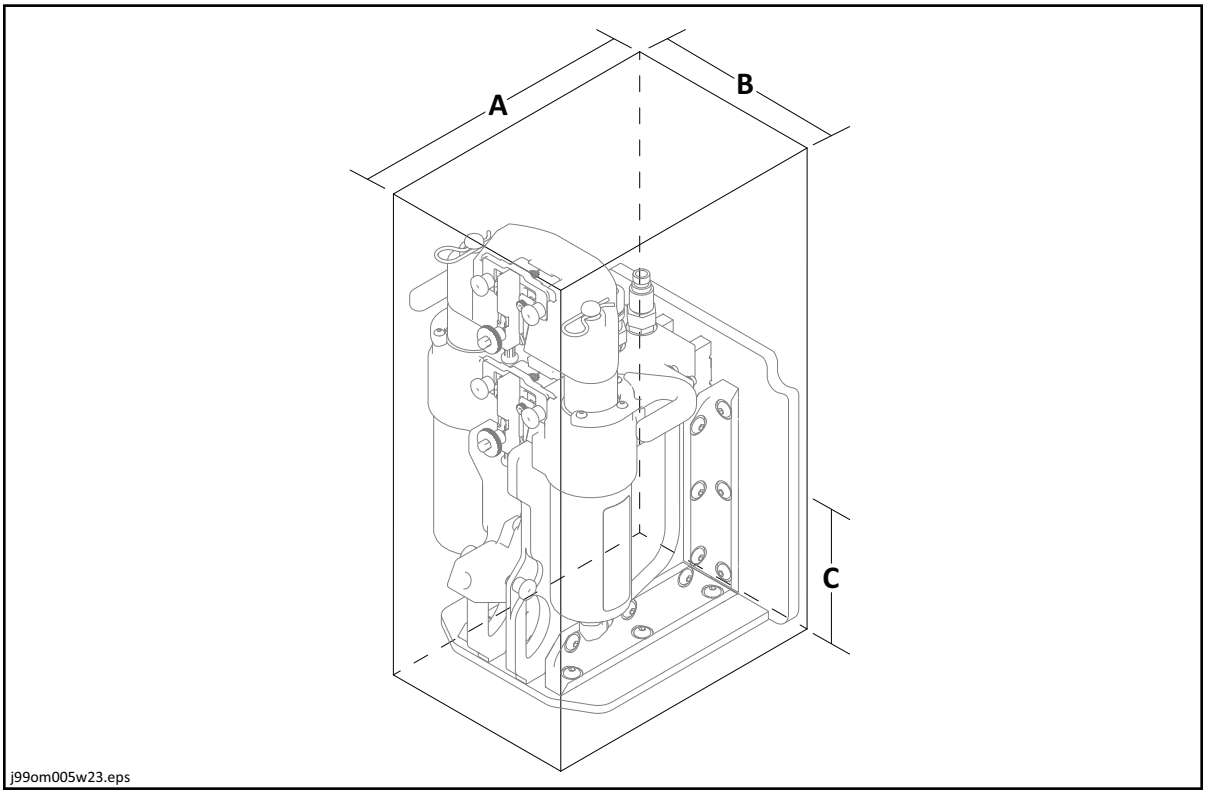
- Cutting high voltage cable can cause electrocution. Expose lines by hand before digging.
- All vegetation near operator's station must be removed. Contact with trees, shrubs, or weeds during electrical strike could result in electrocution.

Mark Pull Path

Mark your planned pull path with flags or paint.

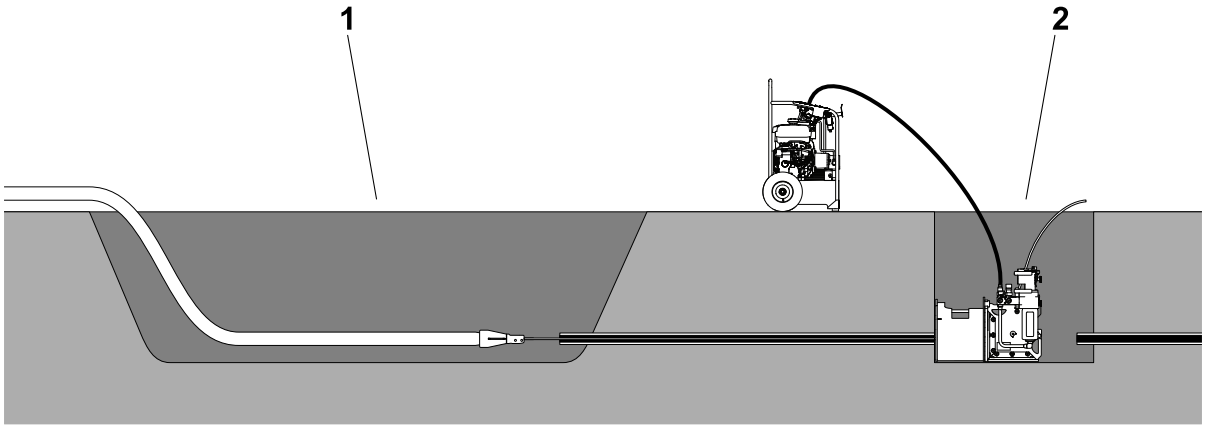
Dig Bursting Pit

Dimensions



Minimum Bursting Pit	
Length (A) **U.S. (metric)**	**Width (B)** **U.S. (metric)**
3' (0.9 m)	4' (1.2 m)
Centerline of cable is 2.25" (5.7 cm) above the bottom plate (**C**).	

Requirements



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Installation Pit (1)

- Pit dimensions depend on pipe depth and product being installed. Installation pit length typically needs to be three times the installation pit depth.

> ***NOTICE:*** Shortening the installation pit may cause increased friction as well as raise the grade of the new line for the first several feet.

- Must be in line with existing pipe.
- Sloped back end aids new product installation. Consider new product bend radius.

Bursting Pit (2)

- Bottom of pit must be level to align bursting unit properly with existing pipe.
- Bottom 34" of pit wall must be square (90°) with pit floor.

> ***NOTICE:*** Loose soil may need to be shored to support force of burst.

- Centerline of the cable is 2.25" (5.7 cm) above the bottom plate.

Check Supplies and Prepare Equipment

Check Supplies

- marking flags or paint
- barrier cones and tape
- wire cable (See "Wire Cable" on page 49.)
- personal protective equipment, such as hard hat and safety glasses
- notepad and pencil

Prepare Equipment

Condition and Function

- clean couplers
- hoses and valves
- inspect/clean jaws

Assemble Accessories

Fire Extinguisher

If required, mount a fire extinguisher near the power unit but away from possible points of ignition. The fire extinguisher should always be classified for both oil and electric fires. It should meet legal and regulatory requirements.

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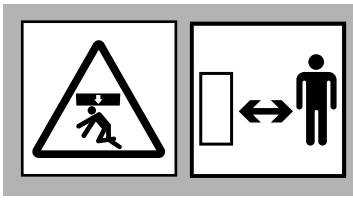
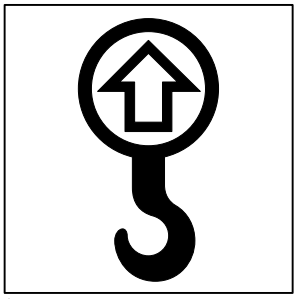
Lift



WARNING Lifted load. Crushing can cause death or serious injury. Stay away from lifted load and its range of movement.

Points

Lifting points are identified by lifting decals. Lifting at other points is unsafe and can damage machinery.



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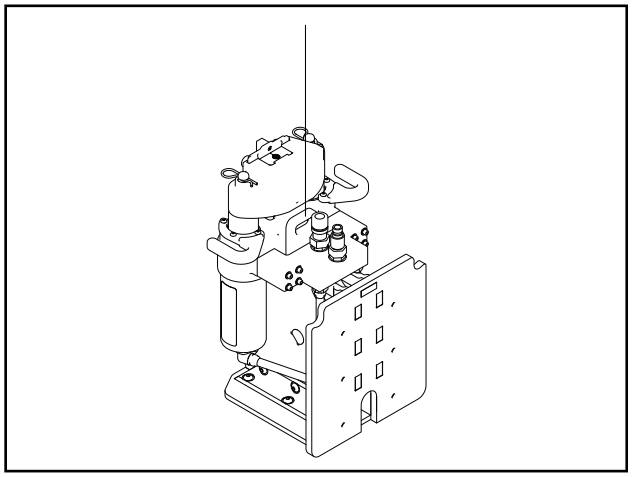
Procedure

Use equipment capable of supporting the unit's size and weight. See “Specifications” on page 59 or measure and weigh equipment before lifting.



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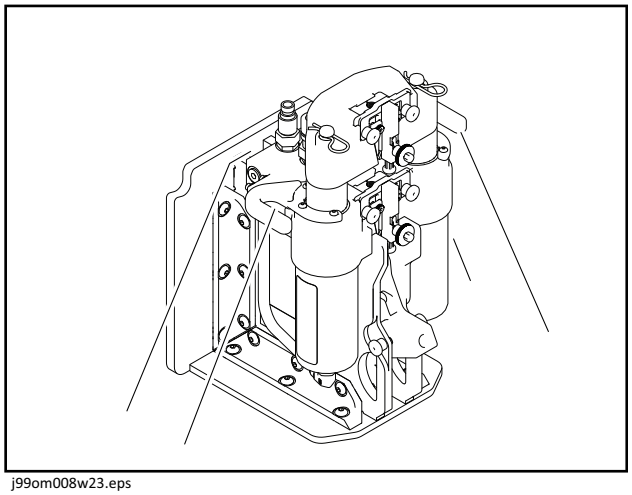
Tie Down

Procedure

Tie down machine at locations shown.

NOTICE: Ensure tie-down strap is behind the manifold (below), not over it.



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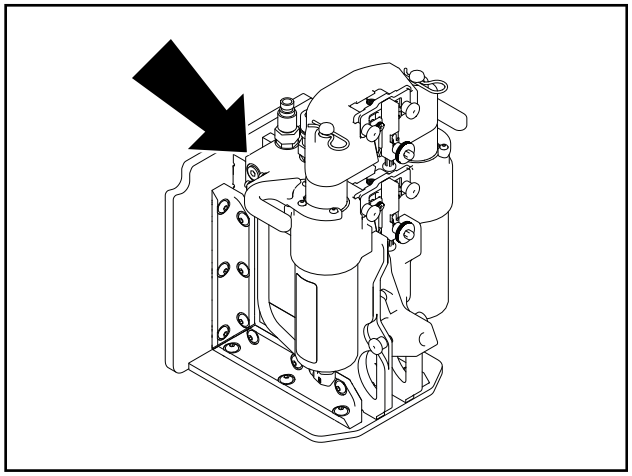

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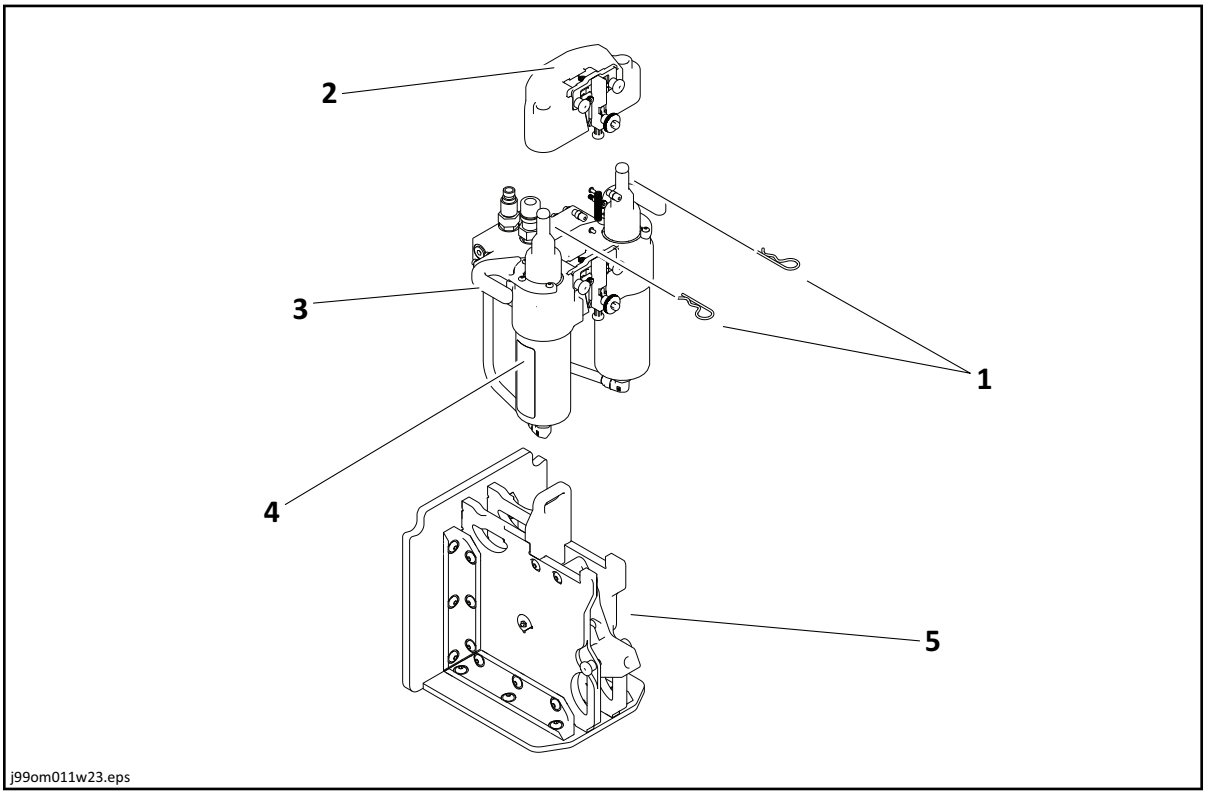
Disassembling the Unit



Unit can be disassembled for easy transport.

1. Turn unit off.

> ***NOTICE:*** After turning unit off, cycle controls on control unit to relieve pressure in the hoses. See hydraulic control unit operator's manual for more information.

2. Disconnect hydraulic hoses. Connect hoses together to prevent any contaminants from entering hose connections.
3. Remove latch pins (1).
4. Lift jaw assembly (2) from cylinder assembly (4).
5. Use handles (3) to lift cylinder assembly from sheave assembly (5).

Burst Pipe

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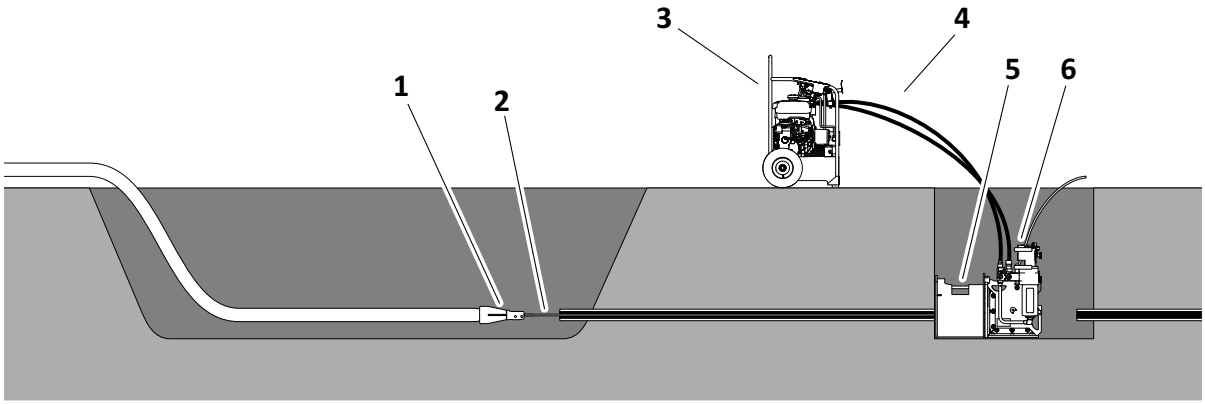
Set Up and Configure



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1. Tooling head
2. Wire cable
3. Control unit
4. Hydraulic connection hoses
5. Extraction cage (optional)
6. Bursting unit

NOTICE: Follow U.S. Department of Labor regulations on excavating and trenching (Part 1926, Subpart P) and other similar regulations.

1. Position control unit outside of bursting pit, at least two feet away from the edge.

   NOTICE: Ensure exhaust from control unit will not vent into pit.

2. Lower sheave assembly unit into pit against pit wall.

   NOTICE: Ensure no personnel are in pit as equipment is lowered.

3. Ensure shore face is square (90°) with pit floor.

Connect Bursting Head

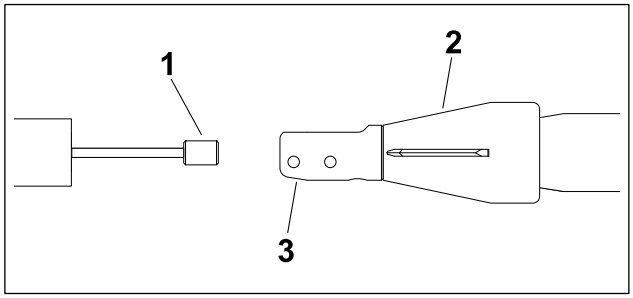
WARNING Misuse of machine can cause death or serious injury. Read and understand operator's manual and all other safety instructions before use. Know how to use all controls.

To help avoid injury:

- Maintain 2-way communication between bursting pit and all other personnel.
- Make sure all personnel are clear of moving parts.
- Do not attempt to use any part of body to assist wire cable entering/exiting bursting unit.

Quick Grip® Bursting Head

1. Pull wire cable through existing utility leaving the swaged button-end of the cable (1) at the installation pit.
2. Slide the Quick Grip® Bursting Head (2) into the length of new pipe.



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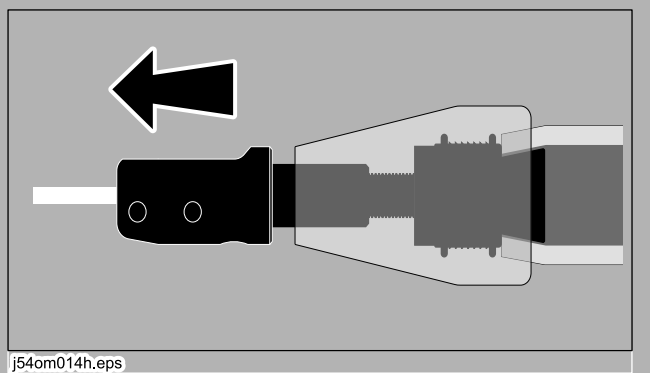
NOTICE: Ensure the length of the new pipe is long enough to replace the length of pipe being replaced.

3. Tighten the front of the bursting head (3) assembly until it grips the inside of the pipe.
4. Once it has gripped the pipe, tighten the bursting head until it no longer rotates.

NOTICE:

- A pipe wrench may be used to tighten the bursting head if needed.
- To prevent the jaws from rotating inside the pipe, it may be necessary to hold the bursting head and pull the stem assembly forward to initially engage the jaws as shown.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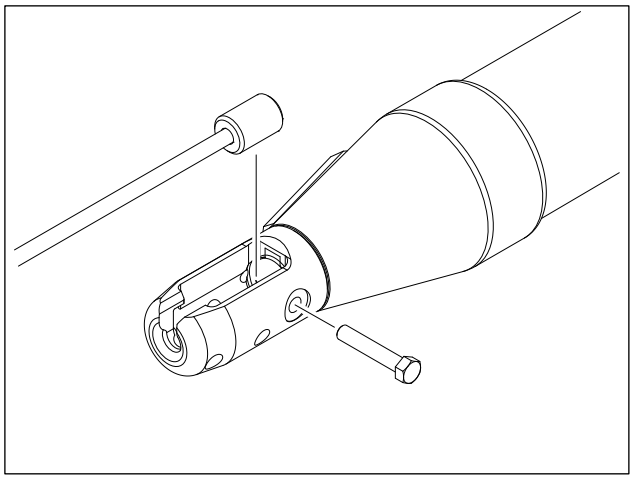
5. Remove the retaining screw and place the button-end of the cable in the slot in the end of the bursting head as shown.
6. Pull the cable back and reinsert retaining screw to secure cable in place.



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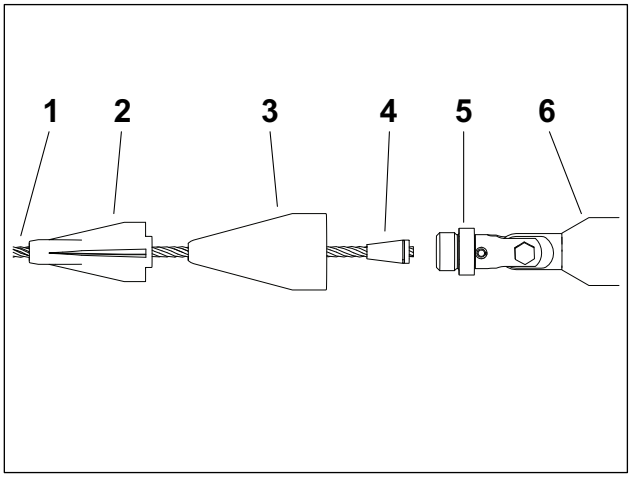
Same Path™ Pipe Slitting Technology/HydraSlitter™ System

1. Shut down unit.
2. Thread wire cable (1) through blade set (2) and expander (3).
3. Slide jaws (4) onto wire cable and allow 1/4" (6.35 mm) of wire cable to extend past the jaws.
4. Pull jaws into the expander.
5. Attach swivel (5) to the wire cable.
6. Tighten swivel in the expander.
7. Attach swivel to pipe puller (6).



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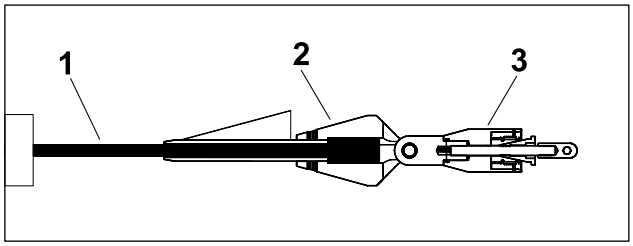
Slitter Head



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1. Thread the wire cable (1) through the slitter head (2) until the swaged button end of the cable stops at the internal shoulder of the slitter.
2. Pull the wire cable through existing utility leaving the slitter head at the installation pit.
3. Slide pipe puller (3) into length of new pipe.

NOTICE: Ensure the length of the new pipe is long enough to replace the length of pipe being replaced.

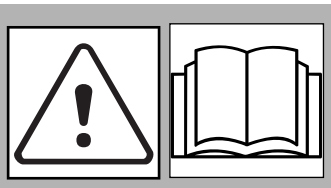
4. Tighten the front of the pipe puller assembly until it grips the inside of the pipe.
5. Once it has gripped the pipe, tighten the assembly until it no longer rotates.

NOTICE: A pipe wrench may be used to tighten the bursting head if needed.

6. Remove the shoulder screw from the slitter head and place the eye of the pipe puller assembly into the clevis of the slitter head.
7. Connect the pipe puller to the slitter head using the shoulder screw.

Pull New Product

Install Cable In Burster



WARNING Read operator's manual. Know how to use all controls. Your safety is at stake.

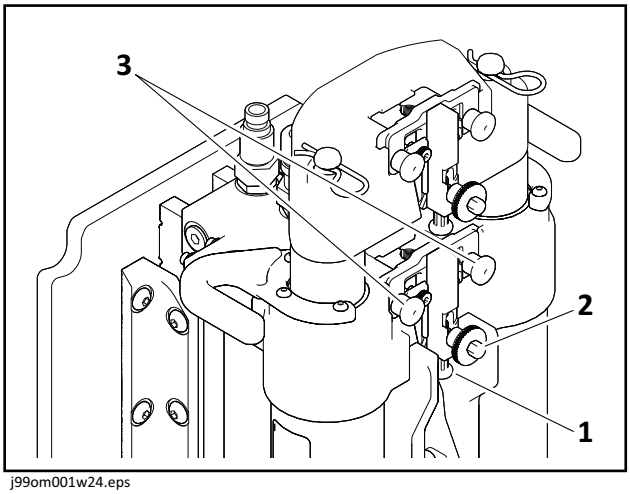
To help avoid injury:

- Maintain 2-way communication between bursting pit and all other personnel.
- Make sure all personnel are clear of moving parts.
- Keep personnel at the proper operating area. See "Operating Area" on page 6.
- Bursting unit may raise off pit floor under load. Keep hands and feet away.
- Do not attempt to use any part of body to assist wire cable entering/exiting bursting unit.

IMPORTANT: Installing cable into the burster while the unit is above ground will make the installation easier.

Remove Jaw Assemblies

1. Press and hold spring piston (1) into spring tower to lock jaws in open position.
2. Turn lock out knob (2) clockwise until it is tight in counterbore.
3. Release spring piston.
4. Pull out and rotate indexing plungers (3) to disengage plungers from jaw block.
5. Lift and remove jaw assembly from machine.
6. Repeat steps 1-5 for lower jaw assembly.



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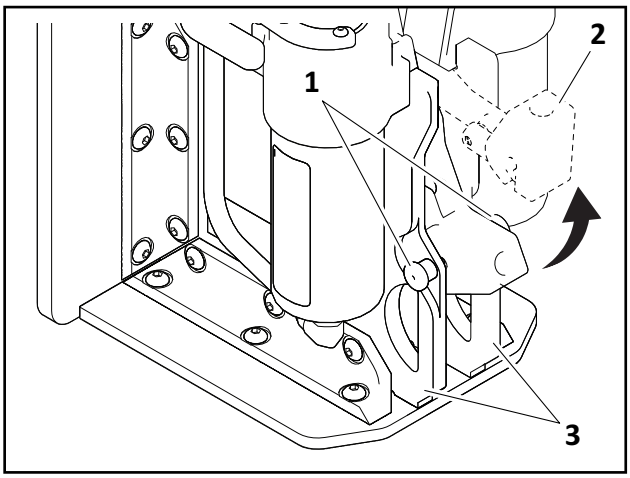
Install Cable Keeper Arm and Cable

1. Pull out and rotate indexing plungers (1) to retract plunger pins from cable keeper arm (2).
2. Lift and hold cable keeper arm up (as shown) and rotate indexing plungers to extend the plunger pins.
3. While holding cable keeper arm up, thread cable between sheave side plates (3) and cable keeper arm.
4. While keeping cable in the center of jaw blocks, release and push down on cable keeper arm until spring plungers audibly click and lock arm in place (as shown).



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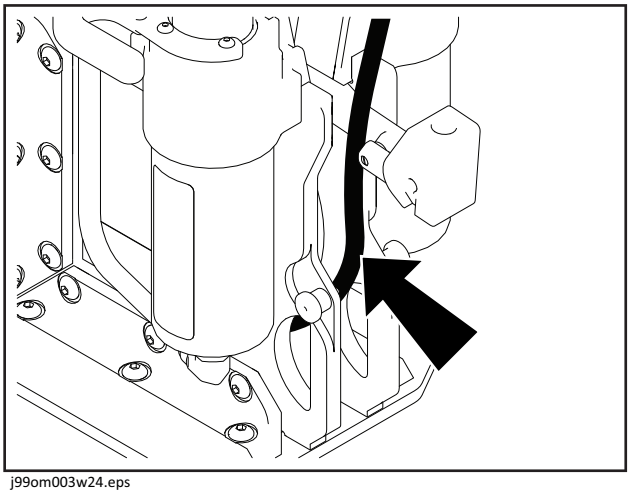
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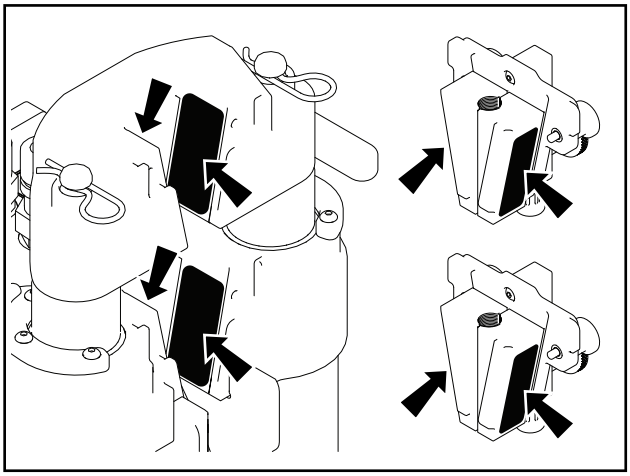
Install Cable and Jaw Assembly

1. Apply thin layer of synthetic gear oil to both jaw block surfaces and all 4 jaw sliding surfaces (shown).



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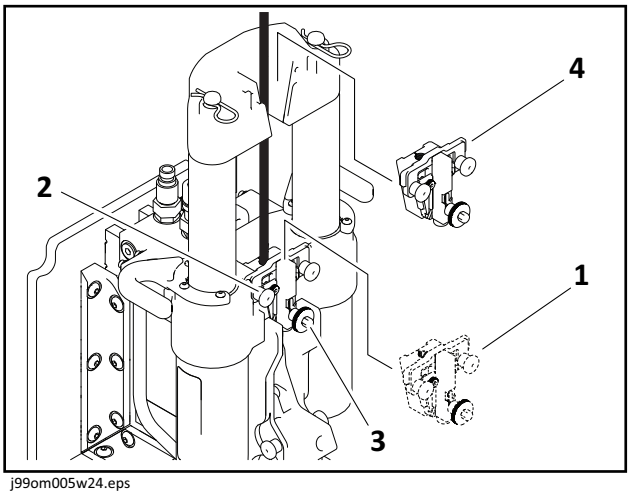
2. Hold one jaw assembly above lower jaw block with jaws on either side of cable.
3. Lower assembly onto lower jaw block.
4. Rotate indexing plungers (2) to engage plunger pins into lower jaw block.
5. Move jaw assembly (1) up and down to ensure it is locked in place.
6. Loosen jaw lock-out knob (3) until it is out of counterbore.
7. Repeat steps 1-6 to install upper jaw assembly (4).



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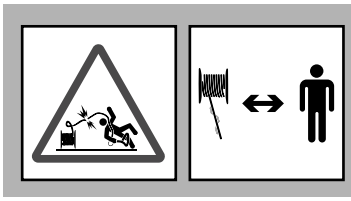
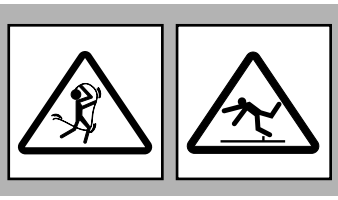
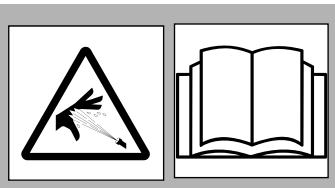
Burst Pipe and Pull New Product



DANGER Cable may break while pulling and strike you. Serious injury or death may occur. Stay away.



DANGER Sudden cable movement can cause serious injury or death. Stay clear.



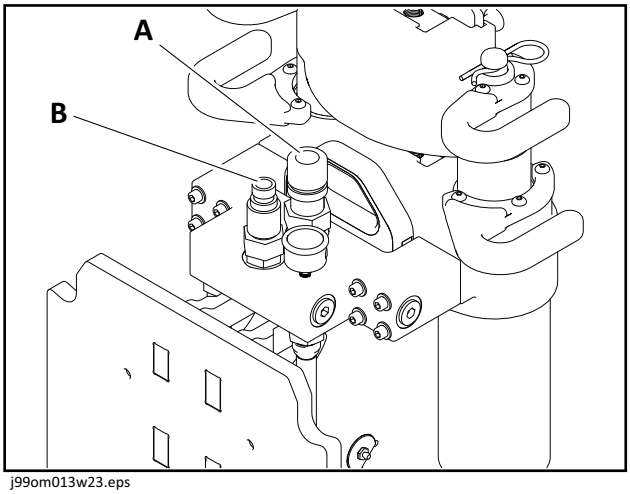
WARNING Pressurized fluid or air could pierce skin and cause severe injury. Refer to operator's manual for proper use.

To help avoid injury: Before using system, check that all connections are tight and all lines are undamaged.

If you are injured, seek immediate medical attention from a doctor familiar with this type of injury.

1. Connect hydraulic hoses from control unit to bursting unit (A,B).

NOTICE: Ensure hoses are properly supported and secured outside of pit to keep them from moving while machine is in use.



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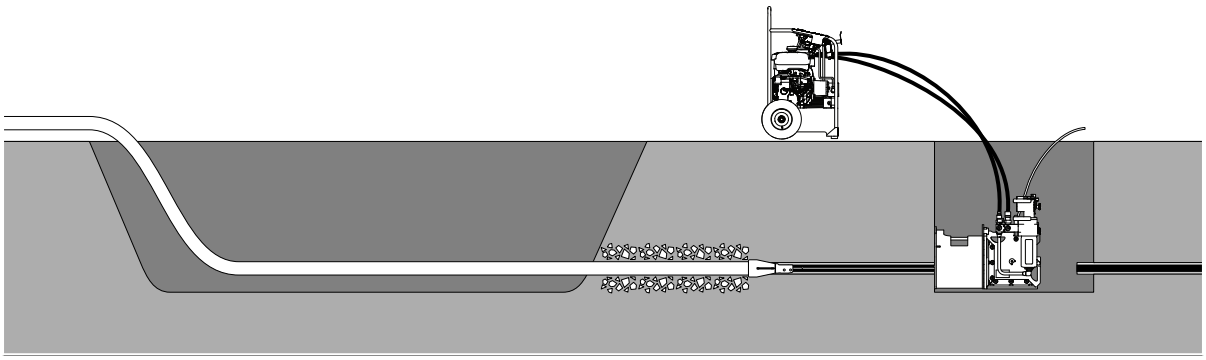
2. Start control unit. Use control unit controls to pull wire cable in and install new pipe. See hydraulic control unit operator's manual.



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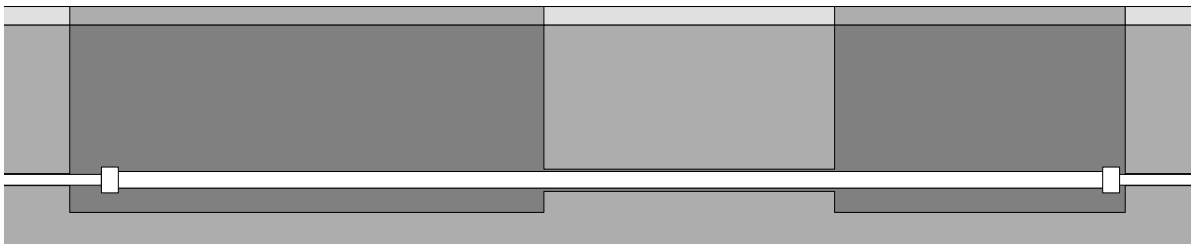
NOTICE: Closely monitor position of the backing plate to ensure it remains square (90°) with pit floor.

3. Continue to pull wire cable into bursting pit until all new product is installed, ensuring wire cable is guided away from operator. Stop pull immediately when burst head is visible at install point.

NOTICE: Be careful not to pull bursting head into the bursting unit. The optional extraction cage allows the bursting head to be pulled into the pit without damaging the bursting unit.

4. Connect both ends of new product to existing pipe to complete job.



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Shut Down

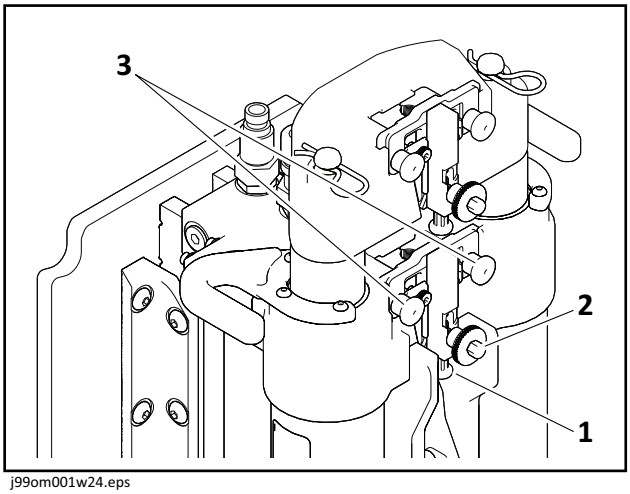
WARNING Read operator's manual. Know how to use all controls. Your safety is at stake.

To help avoid injury:

- Maintain 2-way communication between bursting pit and all other personnel.
- Make sure all personnel are clear of moving parts.
- Wire cable may have stored energy from the burst which may cause the cable to twist when released from the bursting head.

Remove Cable

Remove Jaw Assemblies



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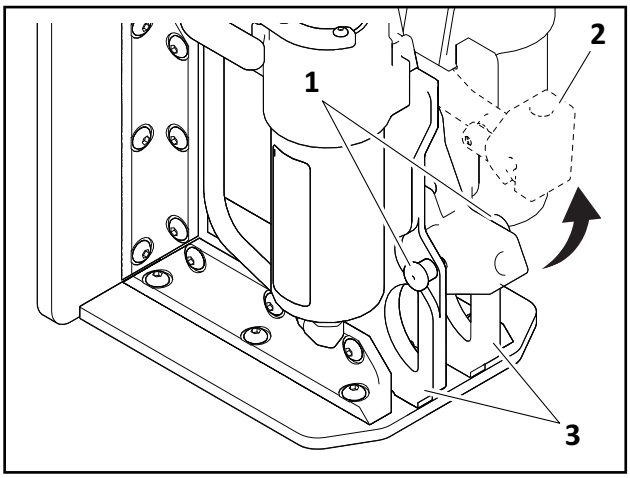
1. Start machine.
2. Extend cylinders while pushing up on spring piston (1).

   NOTICE: Remove lower jaw assembly first. To remove upper jaw assembly, retract cylinders.

3. Shut down machine.
4. Cycle controls to relieve pressure.
5. While holding spring piston up, rotate jaw lock-out knob (2) clockwise until it is tight in counterbore.
6. Pull and rotate spring plungers (3) to disengage pins from jaw block.
7. Lift and remove lower jaw assembly from machine.

Disengage Cable Keeper Arm

1. Push and hold cable keeper arm (2).
2. While keeping cable keeper arm down, pull and rotate indexing plungers (1) to disengage pins from cable keeper arm.
3. Once cable keeper arm is disengaged, release and raise arm.
4. Thread cable between sheave side (3) plates and cable keeper arm, then remove cable.



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Remove Quick Grip® Bursting Head

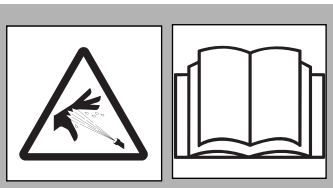
1. Remove Quick Grip bursting head.
   - Remove the retaining screw and slide the wire cable forward to remove it from the bursting head.
   - Unscrew the front of the bursting head until loose and slide it out of the pipe.

   IMPORTANT: It may be necessary to tap the front of the bursting head lightly to release its grip on the pipe.

2. Remove wire cable.

   NOTICE: Fully retract cylinders for transport to avoid damaging cylinder rod.

3. Disconnect hydraulic hoses from the bursting unit.



WARNING Pressurized fluid or air could pierce skin and cause severe injury. Refer to operator's manual for proper use.

To help avoid injury: Before using system, check that all connections are tight and all lines are undamaged.

If you are injured, seek immediate medical attention from a doctor familiar with this type of injury.

4. Remove bursting unit from pit.

Remove Same Path™ Pipe Slitting Technology/HydraSlitter™ System

1. Shut down machine.
2. Remove pipe puller from swivel.
3. Remove wire cable from jaws and pull out of blade set and expander.

Remove Slitter Head

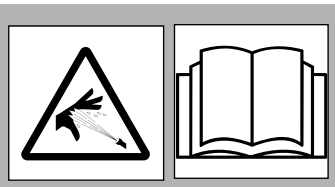
1. Remove pipe puller.
   - Remove the shoulder screw and disconnect the pipe puller from the slitter head.
   - Unscrew the pipe puller until loose and slide it out of the pipe.

   IMPORTANT: It may be necessary to tap the eye of the pipe puller lightly to release it from the pipe.

2. Remove wire cable from bursting unit.

   NOTICE: Fully retract cylinders for transport to avoid damaging cylinder rod.

3. Remove slitter head.
4. Slide wire cable out of slitter head.
5. Disconnect hydraulic hoses from the bursting unit.



⚠WARNING Pressurized fluid or air could pierce skin and cause severe injury. Refer to operator's manual for proper use.

To help avoid injury: Before using system, check that all connections are tight and all lines are undamaged.

If you are injured, seek immediate medical attention from a doctor familiar with this type of injury.

6. Remove bursting unit from pit.

Systems and Equipment

Chapter Contents

Control Unit Requirements 50

Extraction Cage 50

Shore Plate 50

Tooling 51

Wire Cable 51

- Cable Pressure Settings 52
- Maintaining Wire Cable 52

Control Unit Requirements

DANGER Using incompatible control unit will result in death or serious injury. The PB30X does not have a pressure relief valve. Follow guidelines below when choosing a control unit.

To help avoid injury:

- It must have adjustable pressure relief. See "Power Unit Requirements" on page 60 for maximum pressure settings related to cable diameters.
- It must have the ability to control hydraulic flow. See "Power Unit Requirements" on page 60 for minimum and maximum allowable flows.
- It must not exceed PB30X capabilities.

Hydraulic Fluid

Type: ISO 32 anti-wear hydraulic fluid

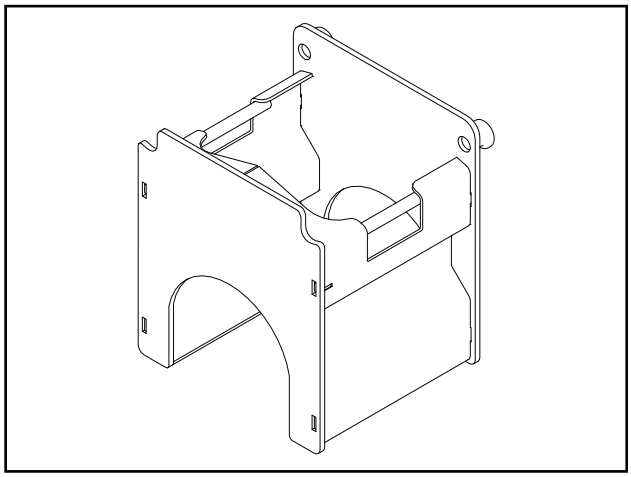
Fluid Cleanliness Level: ISO 18/15/13

Connection Tips

- Pressurizing the retract port (female quick disconnect) will retract bursting unit cylinders.
- Pressurizing the extend port (male quick disconnect) will extend the bursting unit cylinders.

Extraction Cage

The extraction cage can be attached directly to the backing plate before assembling the rest of the bursting unit.



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Shore Plate

The shore plate can be installed in the bursting pit to assist in the pull.

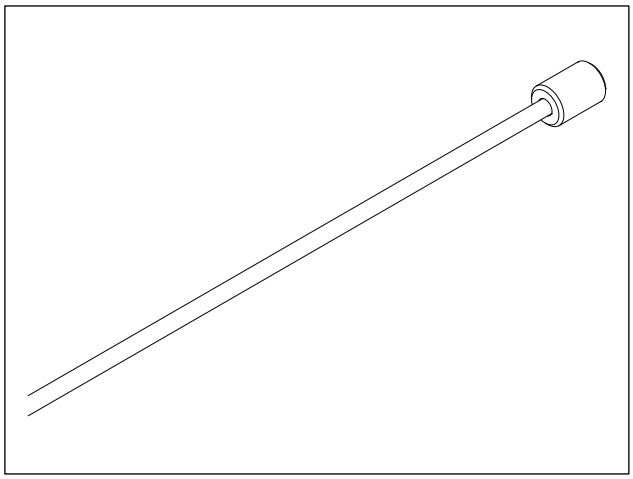
Tooling

The following tooling options are available for use with the PB30X.

Tooling	Use
Quick Grip®	Polyethylene and high-density polyethylene pipe
Slitter Blade	PVC, Aldyl A, HDPE, MDPE pipe
Same Path™ Pipe Slitting Technology	Plastic pipe 0.5-4 in (1.3-10 cm)
HydraSlitter™ System	Lead pipe 0.5-1 in (1.3-2.5 cm)

Wire Cable

Part Number	Description
912-7172	cable, swaged 3/8" x 50', LS
912-7202	cable, swaged 3/8" x 75', LS
912-7116	cable, swaged 3/8" x 120', LS
912-7174	cable, swaged 1/4" (50') x 3/8" (50'), LS
912-7200	cable, swaged 1/4" (75') x 3/8" (75'), LS
912-7117	cable, swaged 1/4" (120') x 3/8" (120'), LS
912-3161	cable, swaged 3/4" x 75'
912-3163	cable, swaged 3/4" x 100'
912-3162	cable, swaged 3/4" x 150'



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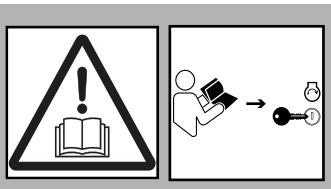
Cable Pressure Settings

Cable	Nominal Minimum Break Strength	Maximum Pressure Setting
3/8" swaged	10.5ton (10.7tonne)	818psi (56bar)
3/4" swaged	38.5ton (39tonne)	3000psi (207bar)

Maintaining Wire Cable



⚠ WARNING Misuse of machine can cause death or serious injury. Read and understand operator's manual and all other safety instructions before use. Know how to use all controls.

To help avoid injury:

- Replace damaged wire cable immediately. Obvious damage includes permanent bends, flat spots, worn spots, broken wires, frays, rust, and corrosion.
- Inspect button end of the cable before each use.

For maximum wire cable life:

- Install wire cable properly.
- Do not use over-sized wire cable.
- Keep wire cable protected from the elements.
- Keep wire cable from kinking.
- Do not over-stress wire cable.
- Only use wire cable for the specified job.

Complete the Job

Chapter Contents

Stow Components 54

- Roll Wire Cable 54

Restore Jobsite 54

Stow Tools 54

Decommission Machine 54

Stow Components

Load unit as specified, or disassemble to transport. See "Transport" on page 33 for more information.

Roll Wire Cable

After cable is removed from burster, roll wire cable to store.

Restore Jobsite

Fill in installation, bursting and service connection pits.

Stow Tools

Make sure all accessories and tools are loaded and properly secured.

Decommission Machine

Before decommissioning machine, follow local regulations for disposing of hazardous substances. For more information on draining fluids, see Maintenance chapter or contact your HammerHead dealer.

Maintenance

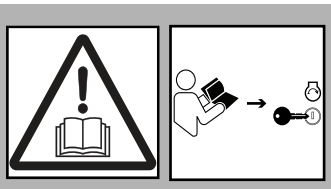
Chapter Contents

Maintenance Precautions 56

Recommended Lubricants/Service Key 56

Each Use 57

Maintenance Precautions



WARNING Misuse of machine can cause death or serious injury. Read and understand operator's manual and all other safety instructions before use. Know how to use all controls.

To help avoid injury: Ensure bursting unit is not connected to power unit while performing maintenance.

Recommended Lubricants/Service Key

Item	Description
HF	Hydraulic fluid, meeting or exceeding ISO 32
SGO	75W90 Synthetic Gear Oil
EPG	Extreme-Pressure Grease
	Check level of fluid or lubricant
	Check condition
	Change, replace, adjust, service or test

Proper lubrication and maintenance protects HammerHead equipment from damage and failure. Service intervals listed are minimum requirements. In extreme conditions, service machine more frequently. Use only recommended lubricants.

NOTICE:

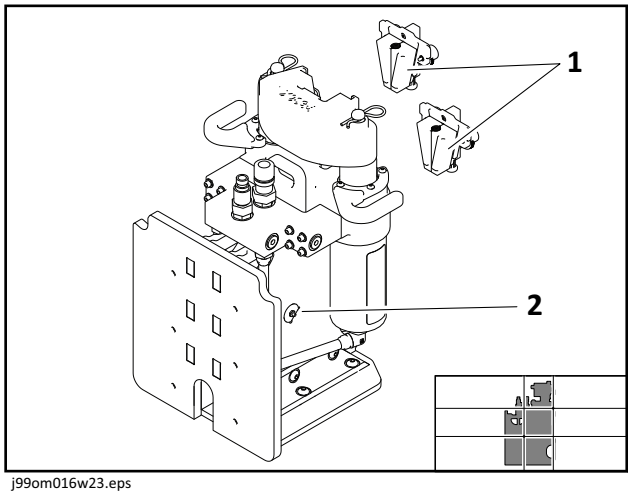
- Use only genuine HammerHead parts and approved lubricants to maintain warranty.
- Use the "Service Record" on page 67 to record all required service to your machine.

Each Use

Tasks	Notes
Lube jaw pins	SGO, before each use
Inspect wire cable	before each use
Clean jaw threads	after each use

Lube Jaws

NOTICE: Failure to apply SGO to jaw before each use may result in jaw slippage, shortening jaw life and possibly causing job failure.



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Top Jaws

Apply SGO to top jaws (1) by hand or using a brush before each use.

Lowers

Apply GO to jaws (1) by hand or using a brush before each use.

Sheave Axle

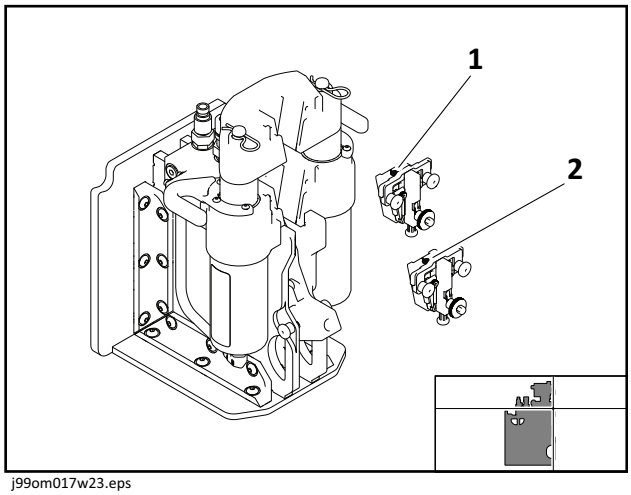
Using a grease gun, apply grease to fitting (2) at sheave axle.

Inspect Wire Cable

Inspect wire cable before each use. Replace damaged wire cable immediately. Obvious damage includes permanent bends, flat spots, worn spots, broken wires, frays, rust, and corrosion. For more information, see "Wire Cable" on page 49.

Clean Jaw Teeth

Clean the lower jaw teeth and the top jaw teeth with high-pressure water before and after each job. Brush jaws with wire brush to remove debris.



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Specifications

Specifications are called out according to SAE recommended practices. Specifications are general and subject to change without notice. If exact measurements are required, equipment should be weighed and measured. Due to selected options, delivered equipment may not match that shown.

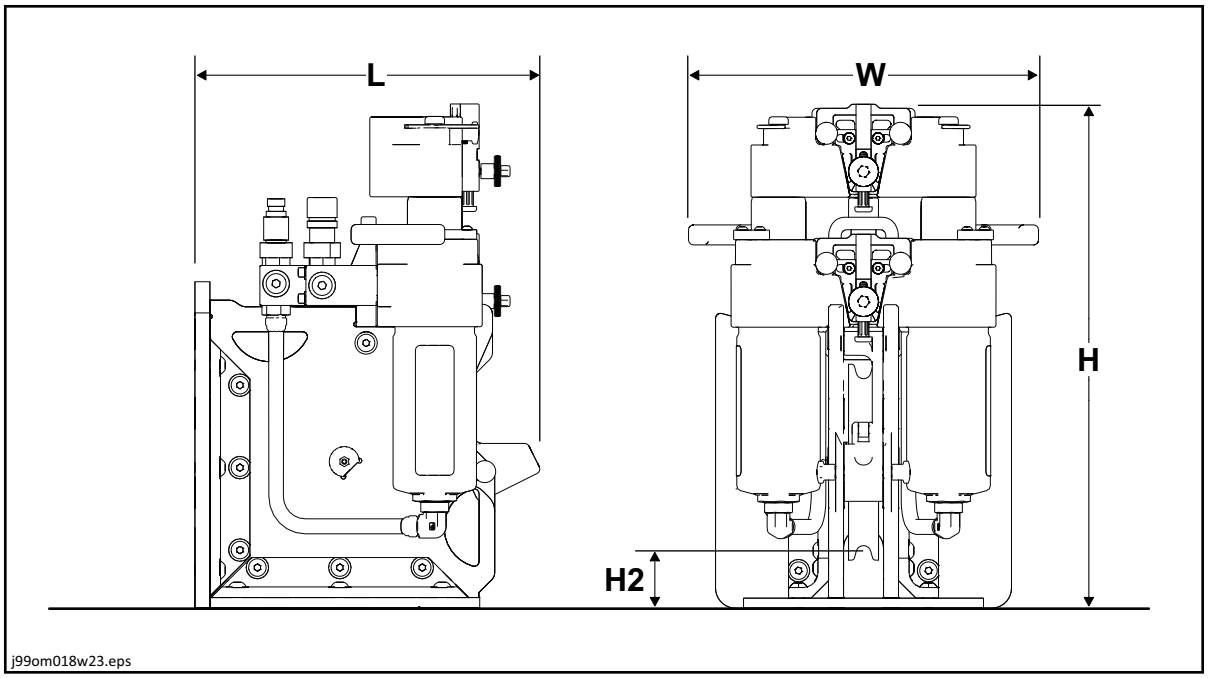
Chapter Contents

PB30X 60

EU Declaration of Conformity 61

UK Declaration of Conformity 62

PB30X



Dimensions	U.S.	Metric
L, length	17.3 in	43.9 cm
W, width	17.5 in	44.5 cm
H, height	24.6 in	62.4 cm
H2, centerline of cable from bottom plate	2.25 in	5.7 cm
Total system weight, mass	213 lb	96.6 kg
Extraction cage weight, mass (optional)	52 lb	23.6 kg

Operational	U.S.	Metric
Pullback force @ 3000 psi	28.8 ton	26.2 tonne

Power Unit Requirements	U.S.	Metric
Maximum pressure allowed	3000 psi	207 bar
Minimum hydraulic flow requirement	6 gpm	23 L/min
Maximum hydraulic flow allowed	12 gpm	45 L/min

EU Declaration of Conformity Information

Countries in the European Union should have received a Declaration of Conformity (DOC) with the machine similar to the example below:

Earth Tool Company, A Division of The Charles Machine Works Inc., 500 South C.P. Avenue, Lake Mills, Wisconsin, USA, declares that the following unit(s):

Model	Serial Number	Description
XXXXX	XXXXXXXXXXXXXXXX	Control Unit

Conform(s) to the following directives:

2000/14/EC (Noise) and 2006/42/EC (Machine Directive)
The Technical Construction File is maintained at the manufacturer's location.

Each model listed has been evaluated with the following standards and/or other normative documents:

EN ISO 12100, EN ISO 4413, ISO 6393, and ISO 6394

Data for 2000/14/EC Noise Emission Directive:

Model	Classification	Measured Sound Power (dBA)	Guaranteed Sound Power (dBA)	Engine Speed (rpm)	Engine Power (kW)
XXXXX	Control Unit	XXX	XXX	XXXX	XXX

Determined in accordance with ISO 6395:2008.
Conformity Assessment: Annex II A

The Technical Construction File is maintained at the manufacturer's location.

This declaration has been issued under the sole responsibility of the manufacturer.
The object of the declaration is in conformity with relevant Union harmonization legislation.

Certified:

Authorized Representative:

Marcel Dutrieux
Manager European Product Integrity
Toro Europe NV
Nijverheidsstraat 5
2260 Oevel
Belgium

Mark Randa
Sr. Manager, Research, Development, and Engineering
500 South C.P. Avenue
Lake Mills, Wisconsin, 53551,USA

Date _____

UK Declaration of Conformity Information

Countries in the United Kingdom should have received a Declaration of Conformity (DOC) with the machine similar to the example below:

Earth Tool Company, A Division of The Charles Machine Works Inc., 500 South C.P. Avenue, Lake Mills, Wisconsin, USA, declares that the following unit(s):

Model	Serial Number	Description
XXXXX	XXXXXXXXXXXXXXXX	Control Unit

Conform(s) to the following UK national laws:

2000/14/EC (Noise) and 2006/42/EC (Machine Directive)
The Technical Construction File is maintained at the manufacturer's location.

Each model listed has been evaluated with the following standards and/or other normative documents:

EN ISO 12100, EN ISO 4413, ISO 6393, and ISO 6394

Data for 2000/14/EC Noise Emission Directive:

Model	Classification	Measured Sound Power (dBA)	Guaranteed Sound Power (dBA)	Engine Speed (rpm)	Engine Power (kW)
XXXXX	Control Unit	XXX	XXX	XXXX	XXX

Determined in accordance with ISO 6395:2008.
Conformity Assessment: Annex II A

The Technical Construction File is maintained at the manufacturer's location.

This declaration has been issued under the sole responsibility of the manufacturer.
The object of the declaration is in conformity with relevant UK legislation.

Certified:

Mark Randa
Sr. Manager, Research, Development, and Engineering
500 South C.P. Avenue
Lake Mills, Wisconsin, 53551,USA

Date _____

Authorized Representative:

Marcel Dutrieux
Manager European Product Integrity
Toro U.K. Limited
Spellbrook Lane West
Bishop's Stortford
CM23 4BU
United Kingdom

Support

Procedure

Notify your dealer immediately of any malfunction or failure of HammerHead equipment.

Always give model, serial number, and approximate date of your equipment purchase. This information should be recorded and placed on file by the owner at the time of purchase.

Return damaged parts to dealer for inspection and warranty consideration if in warranty time frame.

Order genuine HammerHead replacement or repair parts from your authorized HammerHead dealer. Use of another manufacturer's parts may void warranty consideration.

Resources

Publications

Contact your HammerHead dealer for publications and videos covering safety, operation, service, and repair of your equipment.

HammerHead Training

For information about on-site, individualized training, contact your HammerHead dealer.

Warranty

The Charles Machine Works, Inc. dba HammerHead Trenchless ("HammerHead") warrants that all new products it manufactures (with the exception of cured in place pipe consumable materials, which are covered by a separate warranty) will be free from defects in materials, under normal use and service, for one year after delivery to the purchaser (or such other party as the purchaser may direct) or 1000 operating hours, whichever occurs first. The warranty period for any item repaired or replaced pursuant to this warranty shall be the remainder, if any, of the original, defective Product's warranty period.

For any covered issue during the warranty period, Buyer must timely notify HammerHead in writing of such defect, and HammerHead shall, at its option, supply a functionally equivalent replacement product or request the return of the product to its plant in Lake Mills, Wisconsin so that HammerHead may repair it, each without charge. Such repair or replacement is the purchaser's sole and exclusive remedy against Hammerhead, whether in contract or arising out of warranties, representations, or defects. Hammerhead reserves the right to use remanufactured replacement parts under this warranty as it deems appropriate.

No item may be returned without prior written authorization from HammerHead.

This warranty does not cover:

- CIPP Consumables
- Defects other than those in materials (including but not limited to workmanship and design defects)
- Transportation expenses in connection with the repair or replacement of covered products
- Failures caused due to a product that has been installed or used in a manner inconsistent with written warnings, instructions, or recommendations by HammerHead, including but not limited to in product decals or in the owner's guide/user manual; or installed in a manner inconsistent with applicable law or standard industry practices
- Any product that has been neglected, altered, misused, abused, or used in any way which, in HammerHead's opinion, adversely affects its performance
- Failures caused by improper storage; handling installation or maintenance; use of non-HammerHead approved parts or materials; unapproved modifications or alterations; or use of unapproved accessories
- Failures caused by outside influence, including but not limited to Acts of God, fire, or other accident
- Wear items or components failing due to normal wear
- Items that are not manufactured by us (which are warranted only to the extent of the original manufacturer's warranty and subject to their allowance to us, if found defective by them)
- Any additional training or consulting services which may be provided by HammerHead or its representatives or agents (nor shall such training or services extend any product warranty period)
- Damages that arose in whole or in part due to HammerHead's reliance upon drawings, specifications, samples, descriptions, documentation, requirements, requests, or instructions received from the customer, the installer, or either of their agents
- Charges for labor and/or parts beyond those needed to complete the warrantied repair or replacement

HammerHead reserves the right to modify, alter, and improve any product without incurring any obligation to replace any product previously sold without such modification, alteration, or improvement. No person is

authorized to give any other warranty, or to assume any additional obligation on HammerHead's behalf unless made in writing, and signed by an officer of HammerHead.

THIS WARRANTY AND ANY POSSIBLE LIABILITY OF HAMMERHEAD HEREUNDER IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, OR STATUTORY, INCLUDING, BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, OR FITNESS FOR A PARTICULAR PURPOSE. HAMMERHEAD IS NOT LIABLE FOR LOST REVENUE, LOST PROFITS, LOSS OF BUSINESS OPPORTUNITY, OR ANY INDIRECT, INCIDENTAL, PUNITIVE, SPECIAL, OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF A PRODUCT COVERED BY THIS WARRANTY, INCLUDING ANY EXPENSE OF OBTAINING SUBSTITUTE EQUIPMENT OR SERVICE DURING PERIODS OF NONUSE. IN NO EVENT SHALL HAMMERHEAD'S LIABILITY EXCEED THE PURCHASE PRICE OF THE PRODUCT.

NO ACTION AGAINST HAMMERHEAD ARISING OUT OF OR RELATED TO THIS WARRANTY MAY BE FILED NO MORE THAN ONE (1) YEAR AFTER THE CLAIM ARISES.

Service Record

Service Performed	Date	Hours

Service Performed	Date	Hours