



TECHNICAL PUBLICATIONS

Operator's Manual

HB5058

Overview

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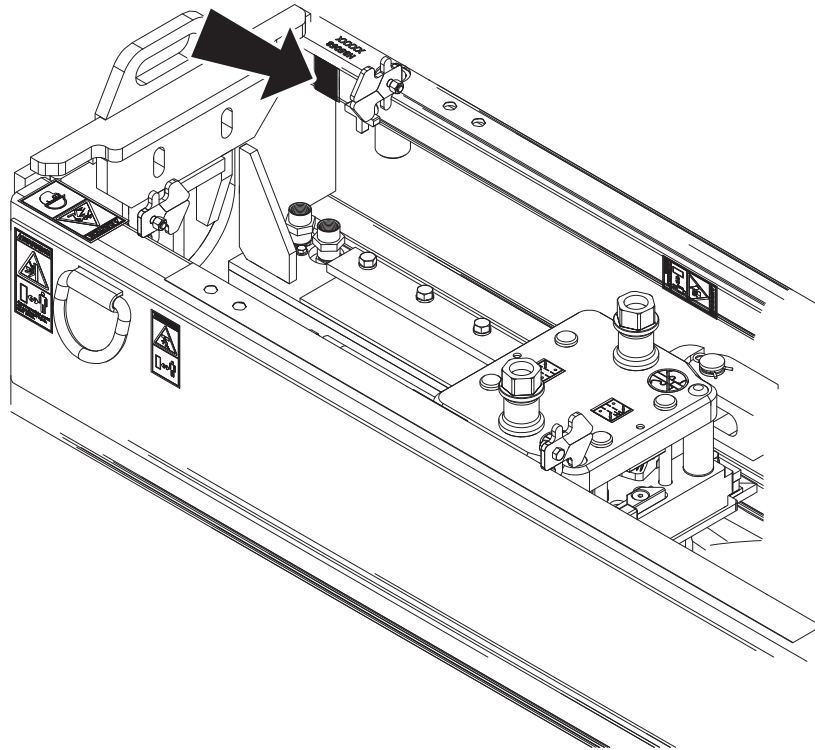
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Serial Number Location

Record serial numbers and date of purchase in spaces provided.



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Date of manufacture	
Date of purchase	

Intended Use

HammerHead® pipe bursters are intended for the replacement of 2" (5.08 cm) to 8" (20.32 cm) diameter buried pipes and conduits. The HB5058 produces 50 tons (45.4 t) of pullback force. A power unit provides hydraulic power to run the pipe bursting unit.

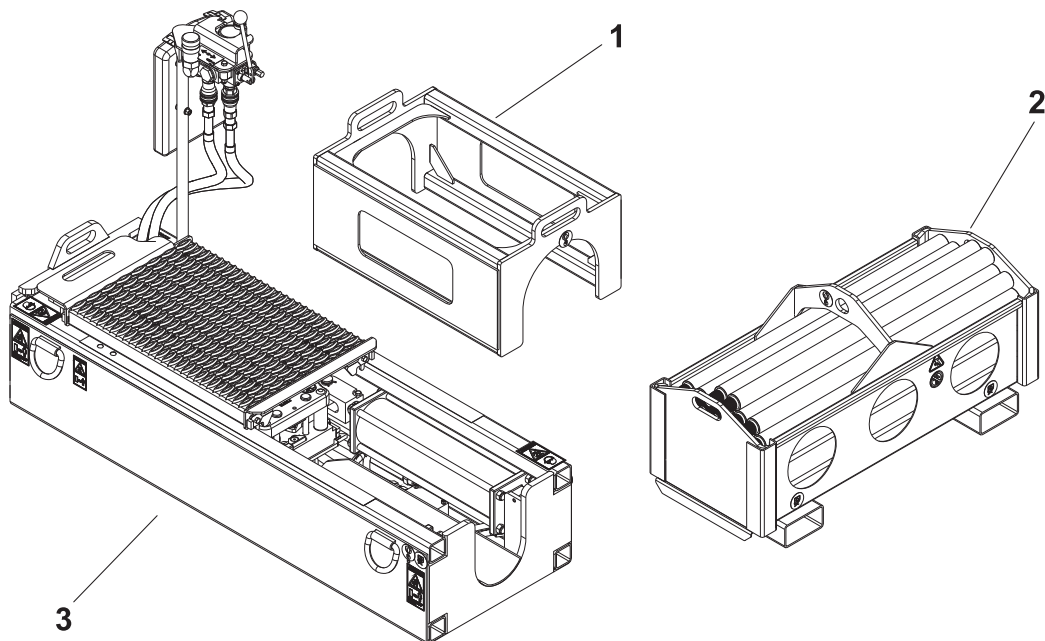
The unit is designed for operation in temperatures typically experienced in earth moving and construction work environments. Provisions may be required to operate in extreme temperatures. Contact your HammerHead dealer. Use in any other way is considered contrary to the intended use.

HammerHead pipe bursters and power 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.

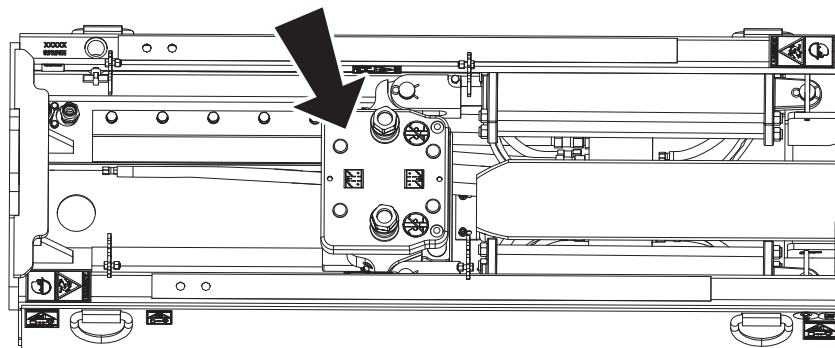
Unit Components



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- 1. Extraction cage
- 2. Rod box
- 3. Bursting unit

Bursting Unit Components



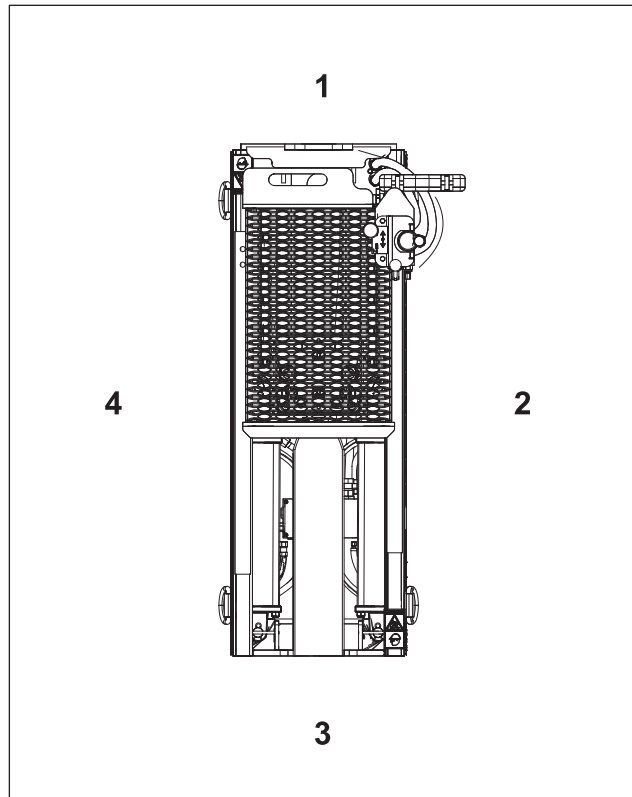
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Carriage

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

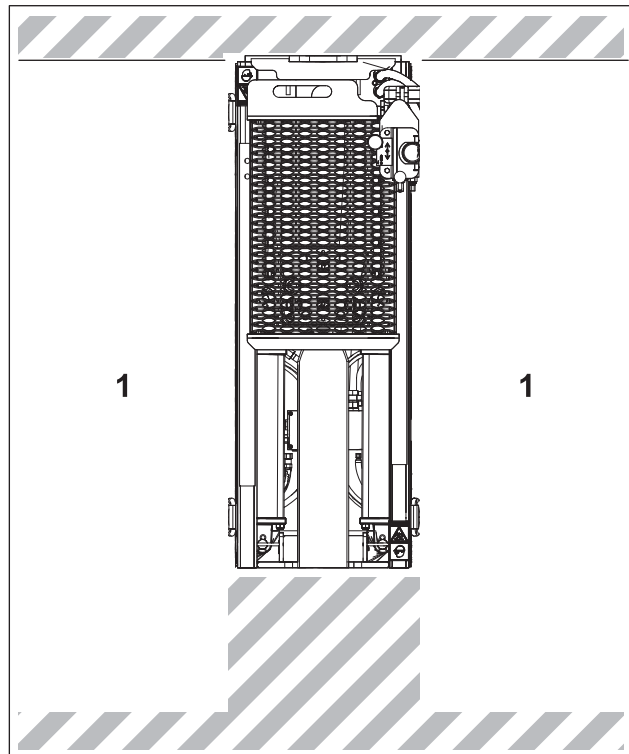


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Operating Area

IMPORTANT: Top view of unit is shown.

Operator and/or pipe loader should stand only 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. See **Operation Overview** for basic operating procedures. 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. Earth Tool Company LLC 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.



A CHARLES MACHINE WORKS COMPANY

**HB5058
Operator's Manual**

Issue number 1.0/OM/07/18

Part number 960-1126









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This product and its use may be covered by one or more patents at <http://patents.charlesmachine.works>.

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Service Record

a record of major service performed on the machine

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Safety

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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.
- Review jobsite hazards, safety and emergency procedures, and individual responsibilities with all personnel before work begins. Safety Data Sheets (SDS) are available at [www.hammerheadtrenchless.com/parts & services](http://www.hammerheadtrenchless.com/parts%20&%20services).
- Fully inspect equipment before operating. Repair or replace any worn or damaged parts. Replace missing or damaged safety shields and safety signs. 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 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.

California Proposition 65 Warning

This product may contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

- battery posts, terminals and related accessories
- engine exhaust
- ethylene glycol

Emergency Procedures



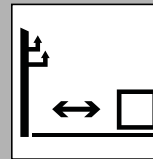
⚠ WARNING

Jobsite hazards could cause death or serious injury. Use correct equipment and work methods. Use and maintain proper 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

Electric shock. Contacting electric lines will cause death or serious injury. Know location of lines and 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 and you are **in pit**, DO NOT MOVE and DO NOT TOUCH ANYTHING. Remain in pit and take the following actions. The order and degree of action will depend upon the situation.

- 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 suspect an electric line has been damaged and you are **out of pit**, DO NOT TOUCH ANYTHING. Take the following actions. The order and degree of action will depend upon the situation.

- 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 suspect an electric line has been damaged and you are **on other piece of equipment**, DO NOT MOVE. Remain on truck or trailer and take the following actions. The order and degree of action will depend upon the situation.

- 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



⚠ WARNING Fire or explosion possible. Fumes could ignite and cause burns. No smoking, no flame, no spark.



⚠ WARNING Explosion possible. Serious injury or equipment damage could occur. Follow directions carefully.

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.
- 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.


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.

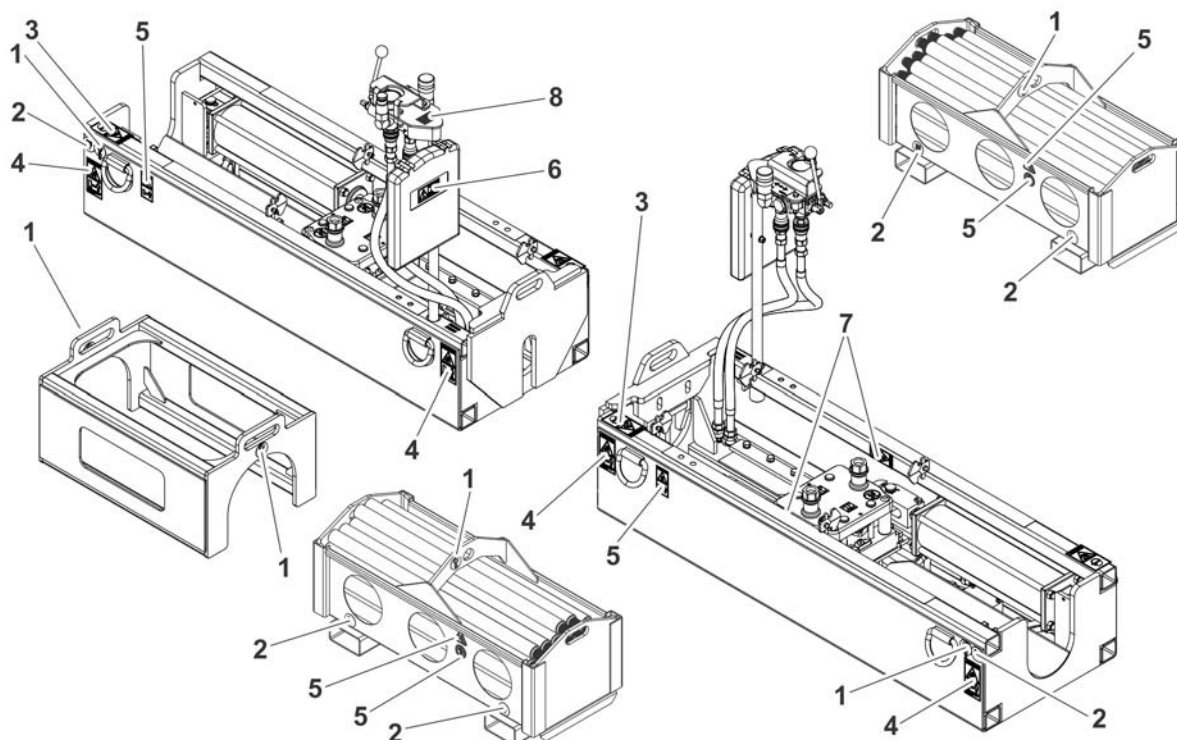
 **CAUTION** indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

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

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

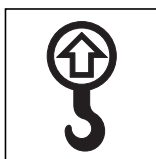
IMPORTANT can help you do a better job or make your job easier in some way.

Machine Safety Alerts



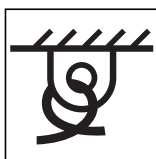
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1



Lift point. See Transport chapter for more information.

2



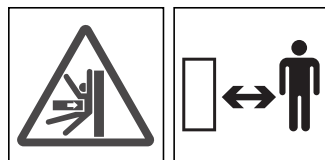
Tiedown location. See Transport chapter for more information.

3



CAUTION Thrown objects. Impact can cause injury. Wear hard hat and safety glasses. 275-193, 270-6903

4

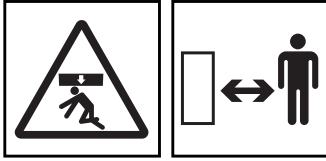


WARNING Thrown objects. Impact can cause death or serious injury. Stay away.

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Machine Safety Alerts

5



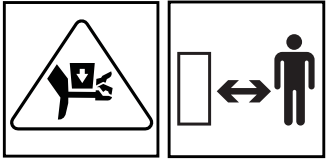
⚠ WARNING Lifted load. Crushing weight can cause death or serious injury. Stay away from lifted load and its range of movement. 275-326, 701-326

6



⚠ 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. 273-475

7



⚠ WARNING Moving parts can crush and cut hand or foot. Stay away.

8



⚠ WARNING Jobsite hazards could cause death or serious injury. Use correct equipment and work methods. Use and maintain proper safety equipment. 274-050; 274-724 (2P)

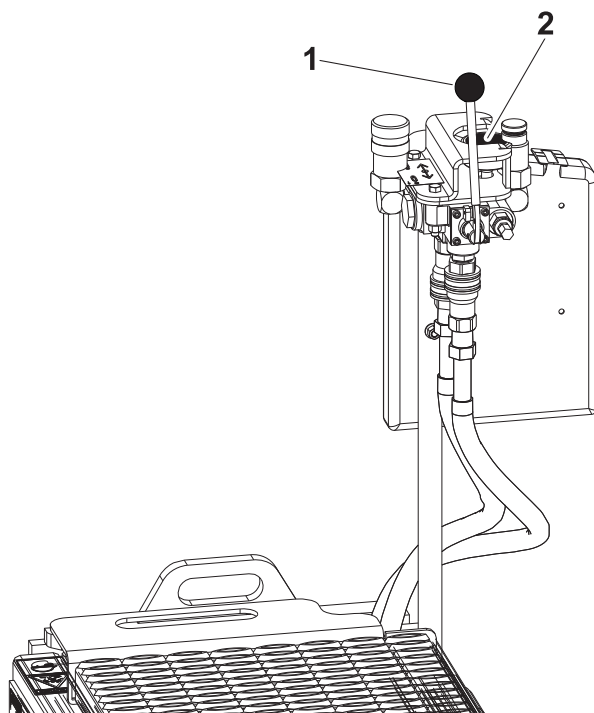
Controls

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Bursting Unit

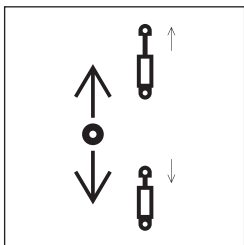
Manual Controls



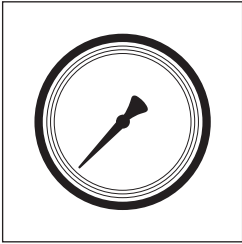
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1. Push/Pullback controls

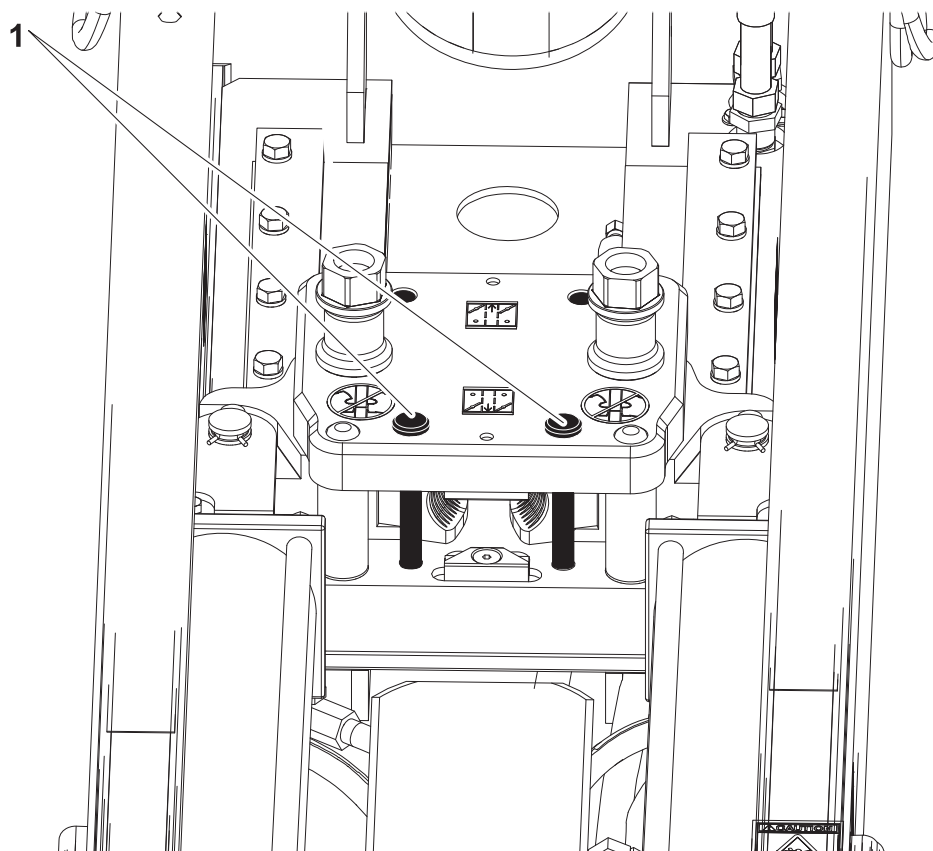
2. Push/Pullback pressure gauge

Item	Description	Notes
1. Push/Pullback controls 	<p>Press up to move carriage forward.</p> <p>Release to return to neutral.</p> <p>Pull down to move carriage back.</p>	

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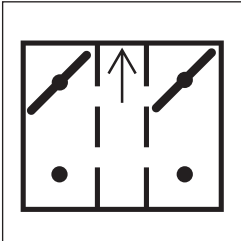
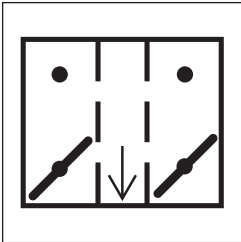
Item	Description	Notes
<p>2. Push/Pullback pressure gauge</p>  <p>Gauge.eps</p>	<p>Displays thrust/pullback pressure.</p>	<p>Normal operating pressure is 0-3000 psi.</p>

Clamp Control Pins



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1. Clamp control pins

Item	Description	Notes
1. Clamp control pins  c00ic777h.eps	Install pins in front holes when pushing rod.	See "Push Rod Position" on page 47.
 c00ic778h.eps	Install pins in back holes when pulling rod.	See "Pull Rod Position" on page 47.

Prepare

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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

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.

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

Identify Hazards

Inspect jobsite before transporting equipment. Check for the following:

- overall grade or slope
- 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

Have an experienced locating equipment operator sweep area within 20' (6 m) to each side of burst path to verify previously marked line and cable locations. Mark location of all buried utilities and obstructions.

Select Installation and Bursting Pit Locations

Consider the following when selecting pit locations:

Slope

Consider how slope will affect unit setup and operation. Assess the risks on each slope to determine if factors affecting the risks create an unsafe condition for pipe bursting.

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. See "Dig Bursting Pit" on page 33.

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.

Classify Jobsite



WARNING

Jobsite hazards could cause death or serious injury. Use correct equipment and work methods. Use and maintain proper safety equipment. 274-050; 274-724 (2P), 700-133

To help avoid injury:

- Wear personal protective equipment including hard hat, safety eye wear, and hearing protection.
- Do not wear jewelry or loose clothing.
- Mark proposed path with white paint and have underground utilities located before working.
- 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.

Remember, jobsite is classified by hazards in place -- not by line being installed.

Select a Classification

Jobsites are classified according to underground hazards present.

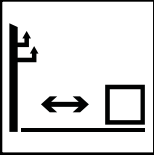

If working . . .	then classify jobsite as . . .
within 10' (3 m) of a buried electric line	electric
within 10' (3 m) of a natural gas line	natural gas
in concrete, sand, or granite which is capable of producing crystalline silica (quartz) dust	crystalline silica (quartz) dust
within 10' (3 m) of any other hazard	other

NOTICE: If you have any doubt about jobsite classification, or if jobsite might contain unmarked hazards, take steps outlined previously to identify hazards and classify jobsite before working.

Apply Precautions

Once classified, precautions appropriate for jobsite must be taken. Follow U.S. Department of Labor regulations on excavating and trenching (Part 1926, Subpart P) and other similar regulations.

Electric Jobsite Precautions





⚠ DANGER Electric shock will cause death or serious injury. Stay away. 274-049

Use one or both of these methods.

- Expose line by careful hand digging or soft excavation.
- Have service shut down while work is in progress. Have electric company test lines before returning them to service.

Natural Gas Jobsite Precautions



⚠ WARNING Fire or explosion possible. Fumes could ignite and cause burns. No smoking, no flame, no spark. 275-419 (2P)

Position equipment upwind from gas lines and use one or both of these methods.

- Expose lines by careful hand digging or soft excavation.
- Have gas shut off while work is in progress. Have gas company test lines before returning them to service.

Crystalline Silica (Quartz) Dust Precautions



CAUTION

Breathing crystalline silica dust may cause lung disease. Cutting, drilling, or working materials such as concrete, sand, or rock containing quartz may result in exposure to silica dust. Use dust control methods or appropriate breathing protection when exposed to silica dust.

To help avoid injury:

- Use water spray or other means to control dust.
- Refer to U.S. Department of Labor Occupational Safety and Health Administration guidelines to learn more about appropriate breathing protection and permissible exposure limits.

Crystalline silica dust is a naturally occurring substance found in soil, sand, concrete, granite, and quartz. Breathing silica dust particles while cutting, drilling, or working materials may cause lung disease or cancer. To reduce exposure:

- Use water spray or other means to control dust.
- Refer to U.S. Department of Labor Occupational Safety and Health Administration guidelines to learn more about appropriate breathing protection and permissible exposure limits.

Other Jobsite Precautions

You may need to use different methods to safely avoid other underground hazards. Talk with those knowledgeable about hazards present at each site to determine which precautions should be taken or if job should be attempted.

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 could cause death or serious injury. Use correct equipment and work methods. Use and maintain proper safety equipment. 274-050; 274-724 (2P), 700-133

To help avoid injury:

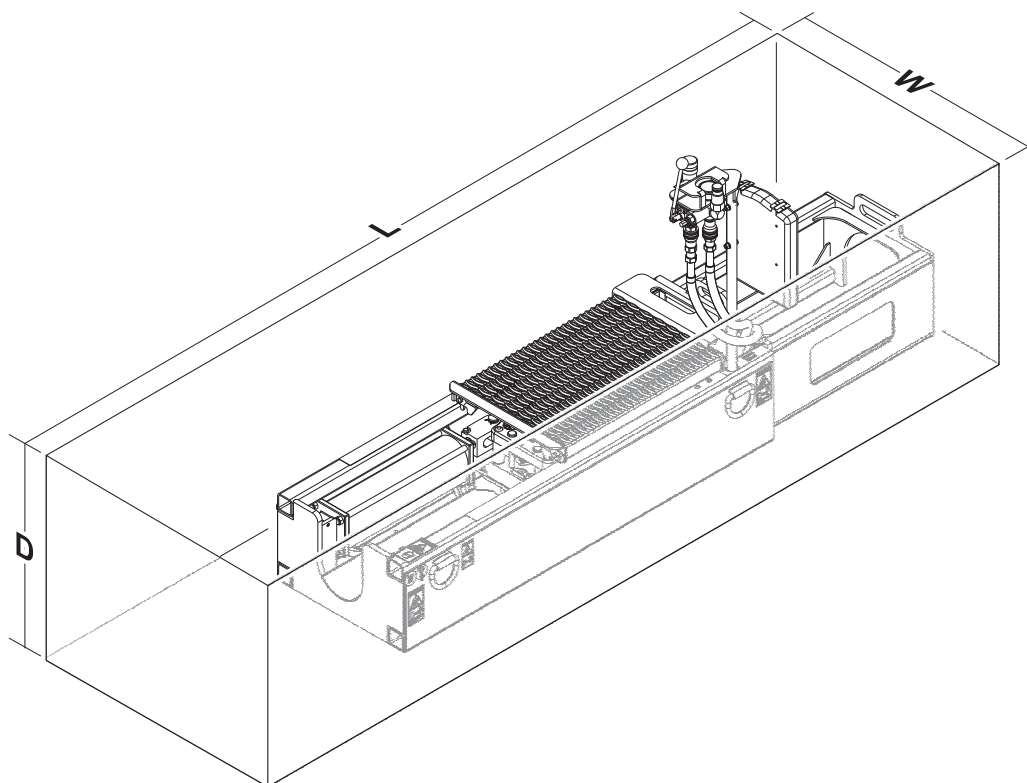
- If jobsite classification is in question or the possibility of unmarked electric utilities exists, classify jobsite as electric.
- Cutting high voltage cable can cause electrocution. Expose lines by hand before digging.
- All vegetation near operator's station must be removed. Contact with trees, shrubs, or weeds during electrical strike could result in electrocution.

Mark Pull Path

Mark your planned pull path with flags or paint.

Dig Bursting Pit

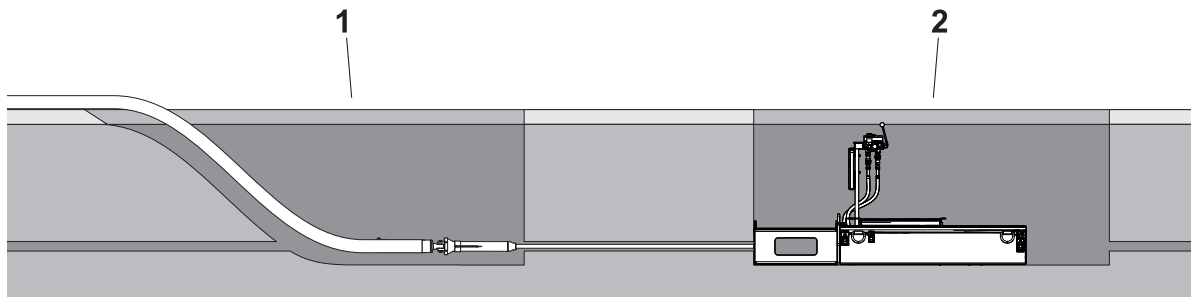
Dimensions



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Minimum Bursting Pit		
Length (A)	Width (B)	Depth (C)
U.S. (metric)	U.S. (metric)	U.S. (metric)
85" (2.16 m)*	22" (0.56 m)	7" (0.18 m)**
*Add 29" (0.74 m) of length of bursting pit if using the extraction cage.		
**Below pipe center line		

Requirements



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Installation Pit (1)

- Pit dimensions depend on pipe depth and product being installed.
- Must be in line with existing pipe.
- Sloped back end aids new product installation. Consider new product bend radius.

Bursting Pit (2)

- Must be level to align bursting unit properly with existing pipe.
- Cover pit floor with gravel for drainage and to allow bursting unit to be level with existing pipe.
- Bottom 24" of pit wall must be square (90°) with pit floor.

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

- Place steel road plate underneath bursting unit.

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

Check Supplies and Prepare Equipment

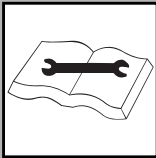
Check Supplies

- marking flags or paint
- fuel
- hydraulic oil
- keys
- cutting heads, clevis
- barrier cones and tape
- rod joint lubricant (see page 65)
- personal protective equipment, such as hard hat and safety glasses
- notepad and pencil

Prepare Equipment

Condition and Function

- all controls



⚠ WARNING

Improper control function could cause death or serious injury. If control does not work as described in instructions, stop machine and have it serviced.

- couplers
- hoses and valves
- 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.

Transport

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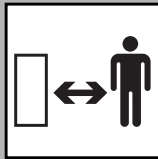
Lift 38

- Points 38
- Procedure 38

Tie Down 40

- Points 40
- Procedure 40

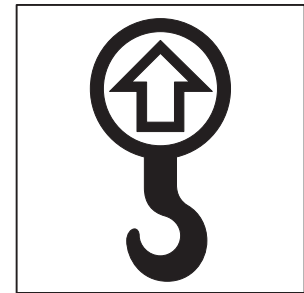
Lift



Crushing weight could cause death or serious injury. Stay away. 275-326, 701-326

Points

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



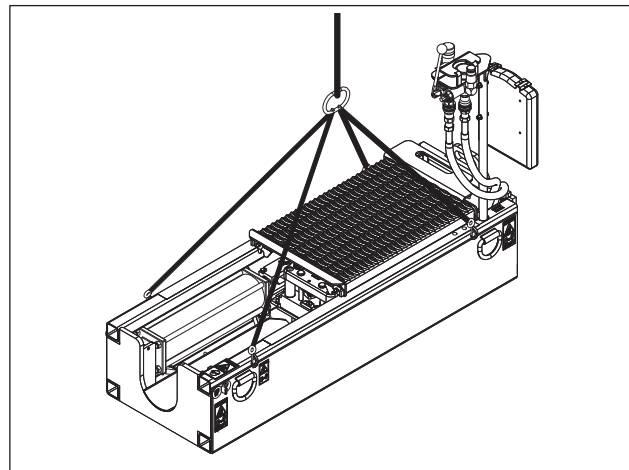
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Procedure

Bursting Unit

Use equipment capable of supporting the unit's size and weight. See "Specifications" on page 71 or measure and weigh equipment before lifting. Use supplied lift harness at lift points as shown.

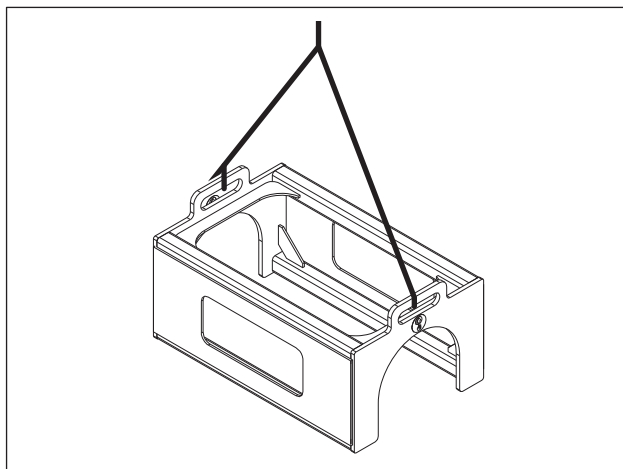
NOTICE: Do not attempt to lift rod box with bursting unit.



J74om009h.eps

Extraction Cage

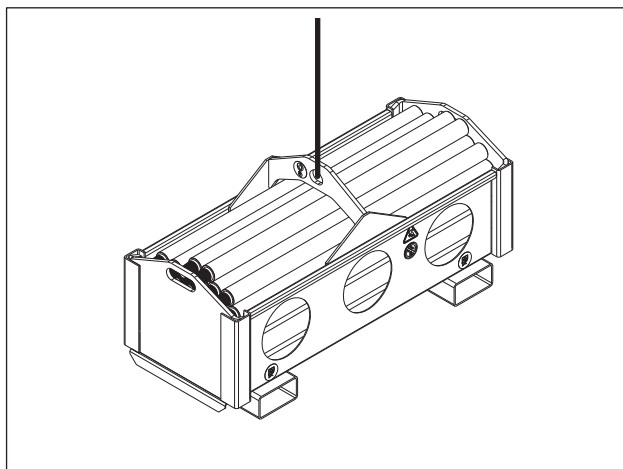
Use equipment capable of supporting the extraction cage's size and weight. See "Specifications" on page 71.



J74om010h.eps

Rod Box

Use equipment capable of supporting the rod box's size and weight. Measure and weigh equipment before lifting.

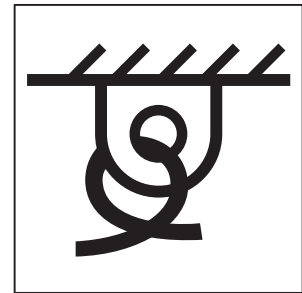


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Tie Down

Points

Tiedown points are identified by tiedown decals. Securing to trailer at other points can damage machinery.

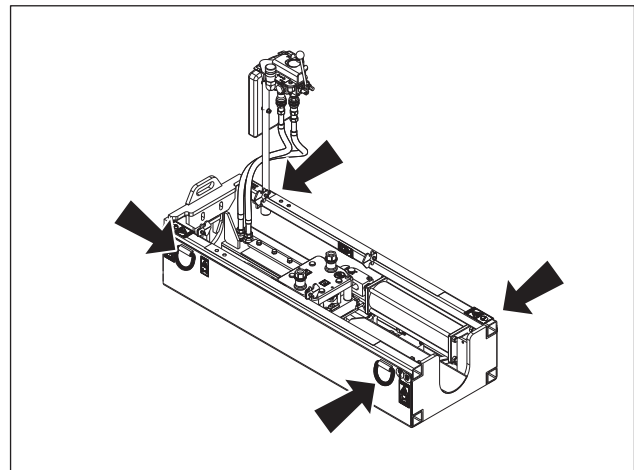


ic1320a.eps

Procedure

Bursting Unit

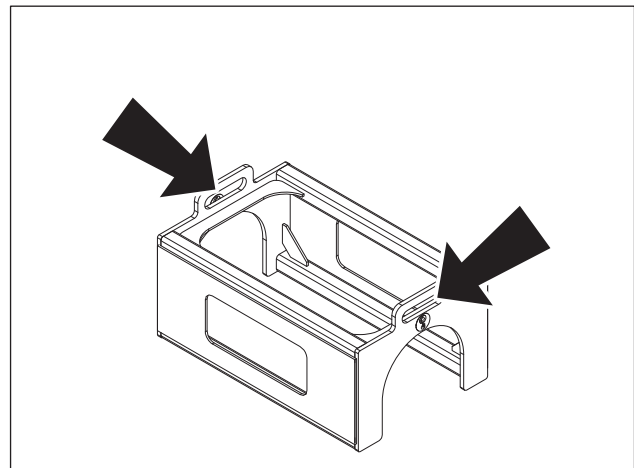
To tie down bursting unit, use D-rings (shown).



J74om011h.eps

Extraction Cage

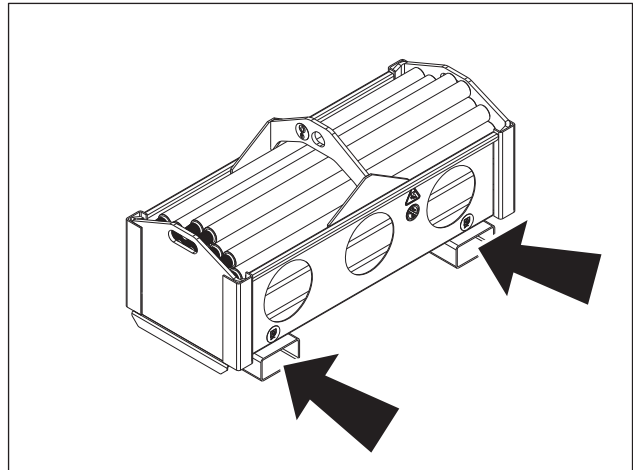
Use chain or strap to tie down and secure extraction cage. Use locations (shown).



J74om012h.eps

Rod Box

To tie down rod box use locations (shown).



J74om038h.eps

Burst Pipe

Chapter Contents

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- Connect Hydraulic Hoses 46

Emergency Stop Procedure 46

Install Clamp Control Pins 47

- Push Rod Position. 47
- Pull Rod Position. 47

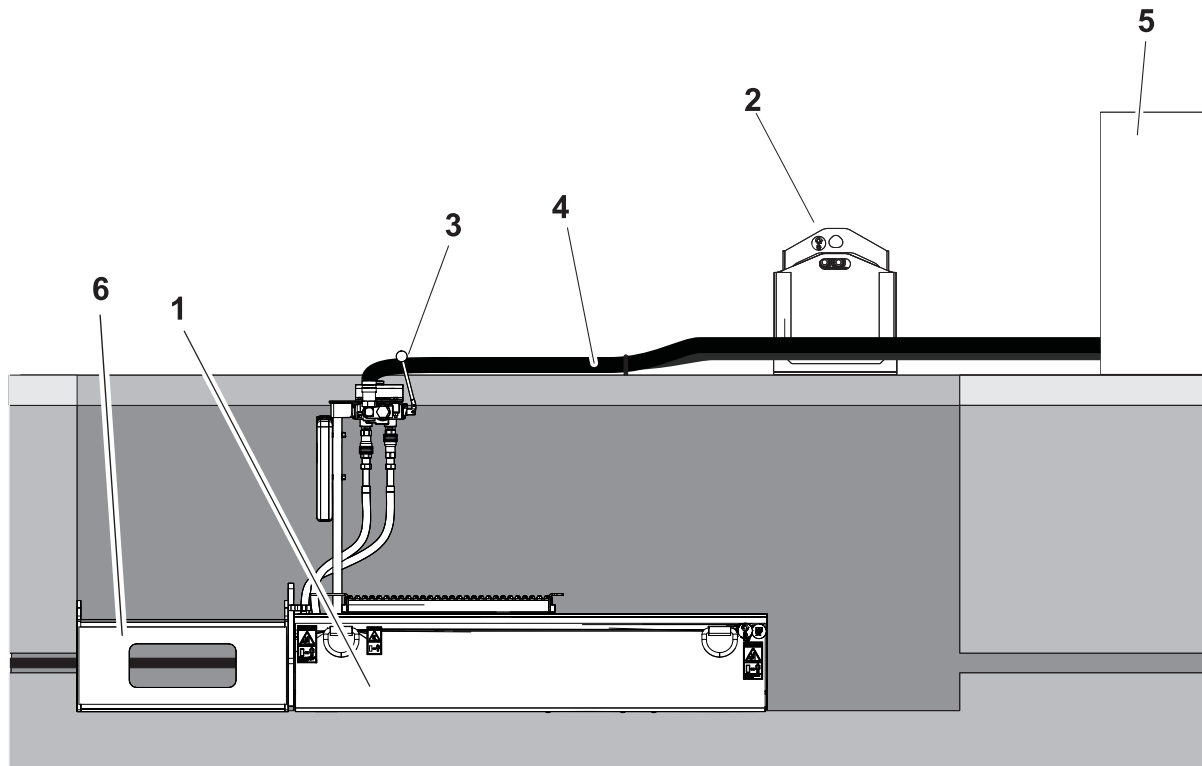
Push Rods 48

Connect Tooling String to Pilot Rod 50

Pull Back Rods 51

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Setup and Configuration



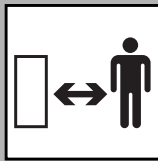
J74om013h.eps

- | | |
|------------------|-------------------------------|
| 1. Bursting unit | 4. Hydraulic connection hoses |
| 2. Rod box | 5. Power unit |
| 3. Controller | 6. Extraction cage |

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

1. Position power unit (5) outside of bursting pit, at least 2 ft (.61m) away from edge.
2. Set power unit switch to OFF.
3. Line pit floor with gravel.
4. Place steel road plate, ensuring bursting unit (1) will be level with existing pipe.

5. Use equipment capable of safely lifting and unloading bursting unit, extraction cage (6), and related equipment. See "Specifications" on page 71.

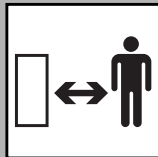


WARNING

Crushing weight could cause death or serious injury. Stay away.

To help avoid injury: Ensure no personnel are in pit as equipment is lowered.

6. If using extraction cage, lower into pit and place against pit wall.
7. Lower bursting unit into pit against extraction cage. If no extraction cage is used, place unit against pit wall. Allow space for pipe/pipe loader behind bursting unit.
8. Place rod box (2) outside of pit, near person loading rods in the safe zone. See "Operating Area" on page 5.
9. Remove end plate from rod box.
10. Keep rod joint lube available for lubricating female rod threads as needed.
11. Secure machine on all sides during pullback using proper cribbing and blocking devices.



WARNING

Crushing weight. Crushing can cause death or serious injury. Read and understand operator's manual and all other safety instructions before use.

To help avoid injury:

- Secure machine using proper cribbing and blocking devices in all directions during pullback.
- Operate only from designated area. See "Operating Area" on page 5.
- Inspect and rotate rods.
- Replace damaged rods.
- Use proper clamping procedures.



WARNING

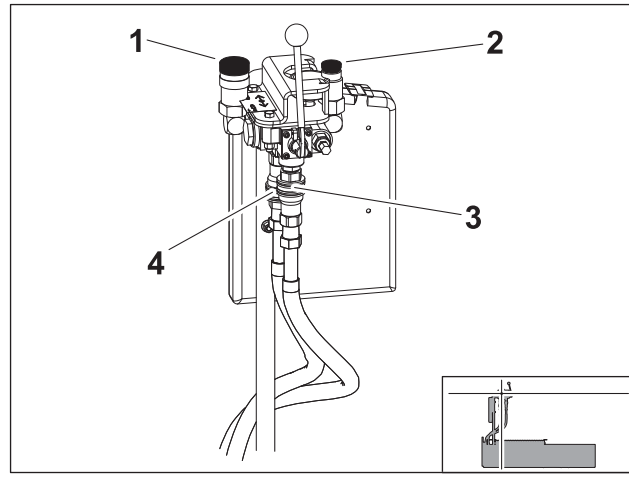
Pressurized fluid or air could pierce skin and cause severe injury. Refer to operator's manual for proper use. 270-6035

To help avoid injury:

- Always connect return line first and remove last.
- 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.

Connect Hydraulic Hoses

1. Ensure power unit is off.
2. Connect hoses to work ports (3) by pushing together with locking collar. Line is fully connected when collar settles into lock position.
3. Connect return line (1) from power unit to bursting unit by pushing together with locking collar. Line is fully connected when collar settles into lock position.
4. Connect pressure line (2) from power unit to bursting unit by pushing together with locking collar. Line is fully connected when collar settles into lock position.



J74om014h.eps

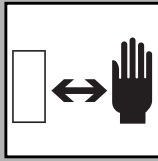
NOTICE:

- Ensure all hose is removed from all hooks on the power unit while operating machine.
- Ensure hoses are properly supported and secured outside of pit to keep them from moving while machine is in use.

Emergency Stop Procedure

To shut down power unit engine under normal conditions, use key switch or emergency stop on power unit.

Install Clamp Control Pins



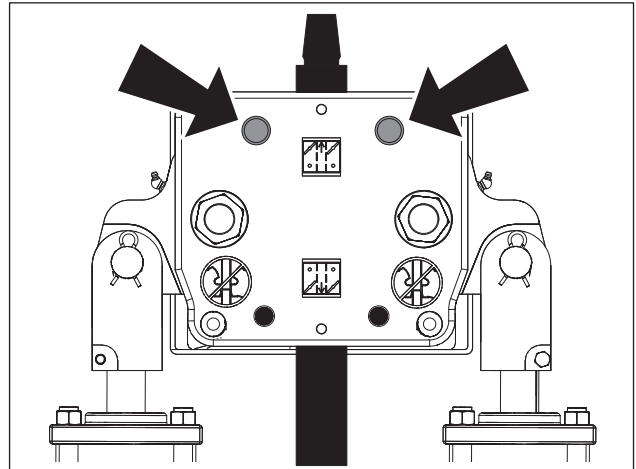
⚠ WARNING

Pinch point. Crushing will cause serious injury. Only install pins with engine off.

Push Rod Position

To push rod:

1. With no rod or pins installed, move carriage forward slightly. See "Manual Controls" on page 22.
2. Insert pins in front holes, as shown.

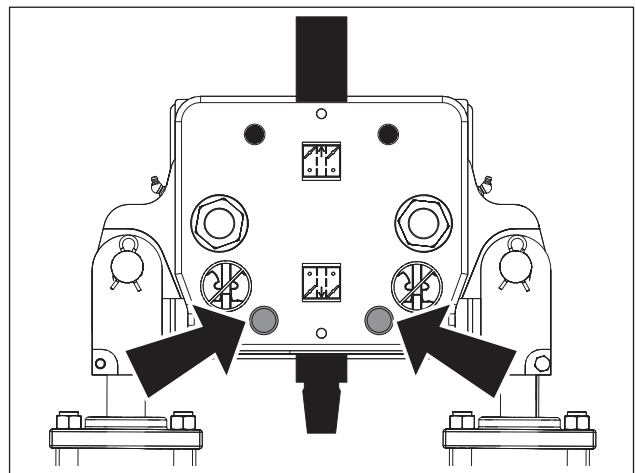


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Pull Rod Position

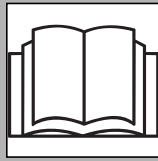
To pull rod:

1. With no rod or pins installed, move carriage backward slightly. See "Manual Controls" on page 22.
2. Install pins in back holes, as shown.



J74om031h.eps

Push Rods



⚠ WARNING

Misuse of machine can cause death or serious injury.
Read and understand operator's manual and all other safety instructions
before use. 273-475

To help avoid injury:

- Maintain 2-way communication between bursting pit and all other personnel.
- Ensure operator has good visibility of rods entering/exiting bursting unit.
- Make sure all personnel are clear of moving parts.
- Keep personnel at the proper operating area. See "Operating Area" on page 5.
- Bursting unit may raise off pit floor under load. Keep hands and feet away.
- Ensure that hoses are secured outside of pit.
- Do not attempt to use any part of body to assist rods or product entering/exiting pipe or bursting unit.

IMPORTANT: For unit components, see "Bursting Unit Components" on page 4. For controls, see "Manual Controls" on page 22.

1. Place at least one operator/pipe loader in the bursting pit. Keep this person at rear of unit in operating area (page 5).
2. Start power unit engine. Set engine to high throttle.
3. Ensure clamp control pins are in the push position. See "Push Rod Position" on page 47.
4. Move carriage to back of unit.
5. Select pilot rod and apply lube to rod threads.
6. Install push point on end of rod.

7. Insert rod into bursting unit through open clamp until joint is visible on front side of carriage.

IMPORTANT: Jaws will open and close automatically.

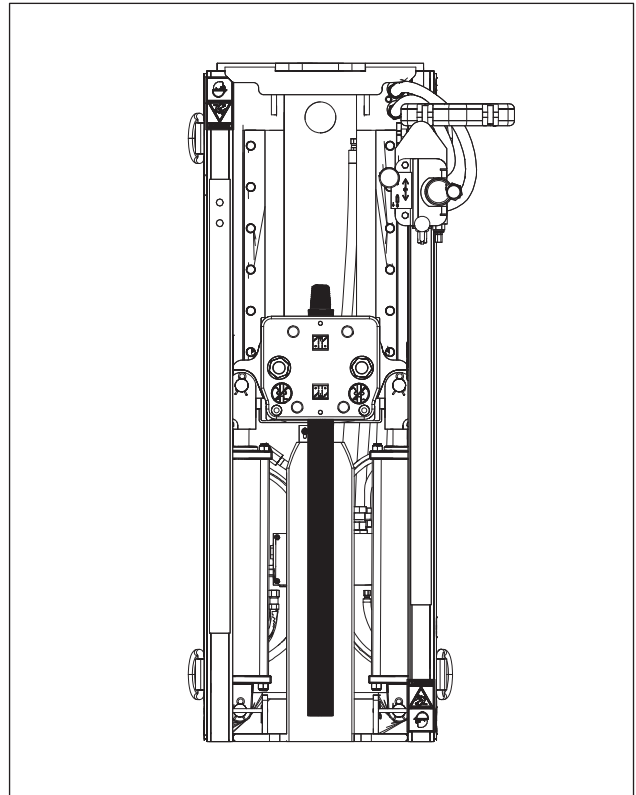
8. Move carriage forward. See "Manual Controls" on page 22.

NOTICE: Do not close jaws on joint.

9. Connect next rod by hand.

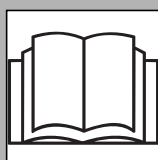
IMPORTANT: Tighten all threaded joints completely so shoulders touch.

10. Move carriage backward.
11. Install rod.
12. Move carriage to back of unit until joint is visible in window.
13. Repeat steps 10-13 as needed to complete job.



J74om016h.eps

Connect Tooling String to Pilot Rod



WARNING

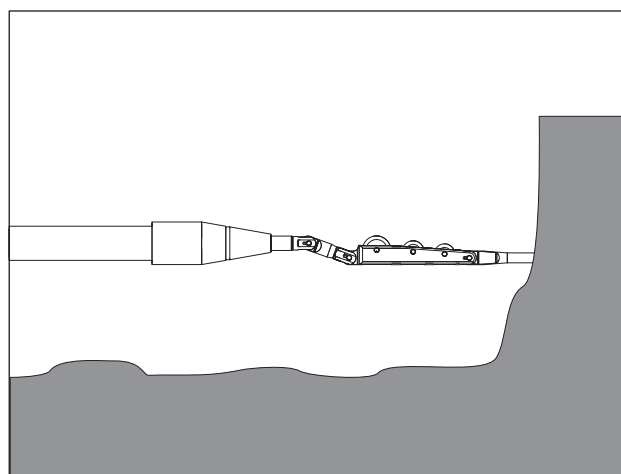
Misuse of machine can cause death or serious injury.
Read and understand operator's manual and all other safety instructions
before use. 273-475

To help avoid injury:

- Maintain 2-way communication between bursting pit and all other personnel.
- Make sure all personnel are clear of moving parts.
- Turn off power unit before connecting tooling string.
- Do not attempt to use any part of body to assist rods or product entering/exiting pipe or bursting unit.

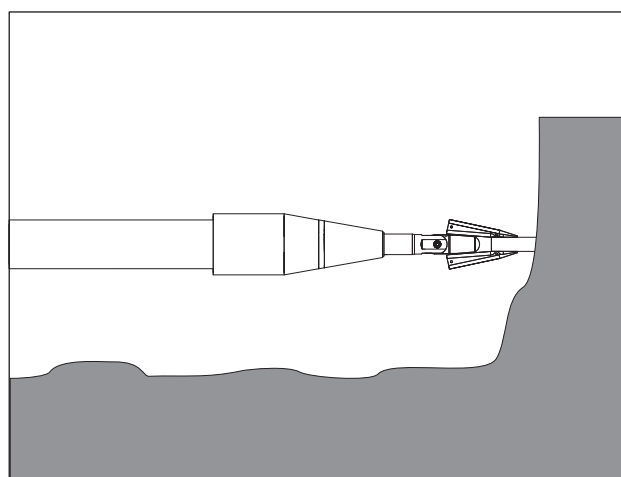
IMPORTANT: See "Tooling String" on page 56 for more information.

1. Push rod into installation pit.
2. Turn power unit off.
3. Remove push point from rod.
4. Connect non-bladed starter rod/blade to rod.



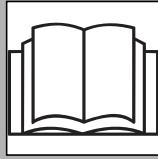
J74om032h.eps

5. Turn power unit on.



J74om033h.eps

Pull Back Rods



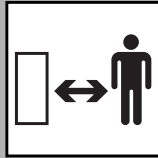
WARNING

Misuse of machine can cause death or serious injury. Read and understand operator's manual and all other safety instructions before use. 273-475

To help avoid injury:

- Maintain 2-way communication between bursting pit and all other personnel.
- Ensure operator has good visibility of rods entering/exiting bursting unit.
- Make sure all personnel are clear of moving parts.
- Keep personnel at the proper operating area. See "Operating Area" on page 5.
- 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 rods or product entering/exiting pipe or bursting unit.

IMPORTANT: For unit components, see "Unit Components" on page 4. For controls, see "Manual Controls" on page 22.



WARNING

Crushing weight. Crushing can cause death or serious injury. Read and understand operator's manual and all other safety instructions before use.

To help avoid injury:

- Secure machine using proper cribbing and blocking devices in all directions during pullback.
- Operate only from designated area.
- Inspect and rotate rods.
- Replace damaged rods.
- Use proper clamping procedures.

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Pull Back Rods

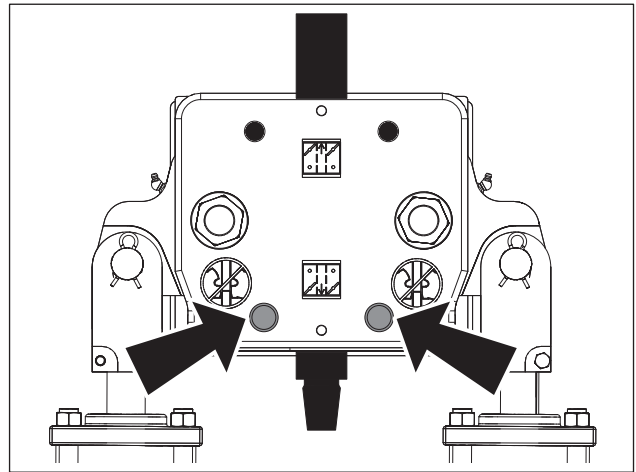
1. Place at least one operator/pipe loader in the bursting pit. Keep this person at rear of unit in operating area (page 5).
2. Start power unit engine. Set engine to high throttle.
3. Install pins in pull position (shown). See "Pull Rod Position" on page 47.

IMPORTANT: Jaws will open and close automatically.

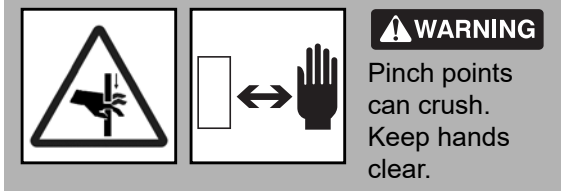
4. Move carriage forward.

NOTICE: Do not close jaws on joint.

5. Pull rod into bursting unit until first joint is visible on back side of carriage.
6. Disconnect rod.

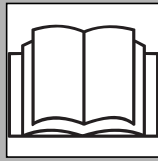


J74om031h.eps



7. Move carriage to front of machine.
8. Repeat steps 5-7 as needed to complete job.

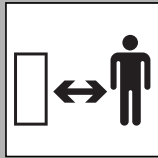
Pull New Product



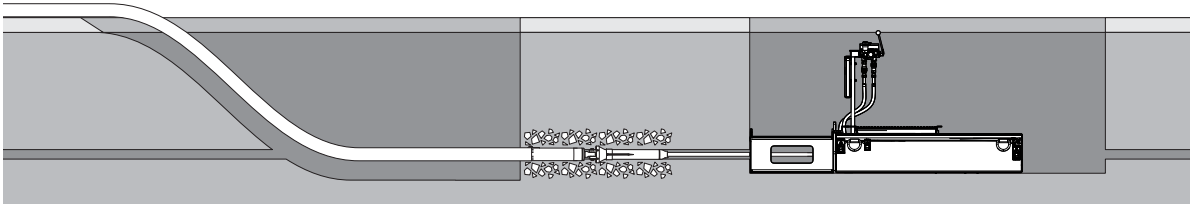
⚠ WARNING Misuse of machine can cause death or serious injury. Read and understand operator's manual and all other safety instructions before use. 273-475

To help avoid injury:

- Maintain 2-way communication between bursting pit and all other personnel.
- Ensure operator has good visibility of rods entering/exiting bursting unit.
- Make sure all personnel are clear of moving parts.
- Keep personnel at the proper operating area during operation. See "Operating Area" on page 5.
- 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 rods or product entering/exiting pipe or bursting unit.

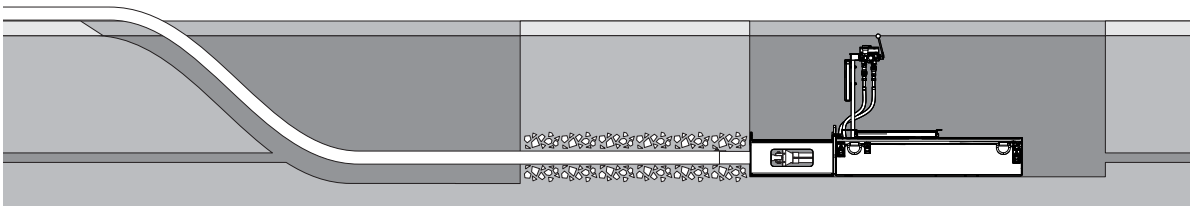


⚠ WARNING Crushing weight. Crushing can cause death or serious injury. Read and understand operator's manual and all other safety instructions before use.



J74om017h.eps

1. Disconnect rod and place in rod box.
2. Continue pulling back rod string until bursting/splitting assembly reaches pit.



J74om018h.eps

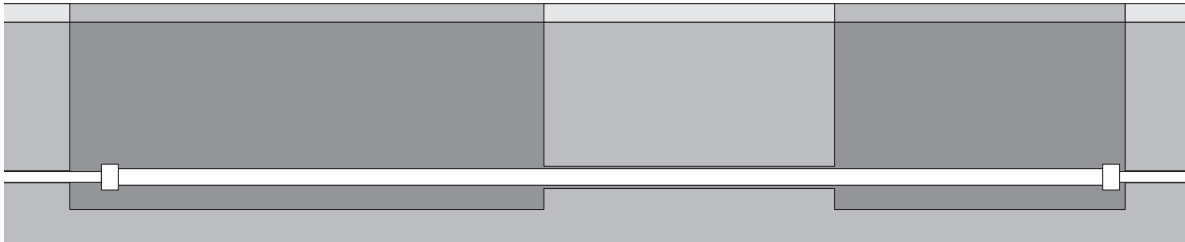
HB5058 Operator's Manual

Pull New Product

3. Connect one rod to rod in bursting unit.
4. If not already in place, move bursting unit away from pit wall and position extraction cage between bursting unit and existing pipe and pit wall.

IMPORTANT: Ensure extraction cage is level and centered. Move bursting unit forward until it is firmly against extraction cage.

5. Ensure control pins are in pull position ("Pull Rod Position" on page 47) and pull bursting/splitting system into extraction cage.
6. Remove extraction cage.
7. Disconnect and remove bursting/splitting system.
8. Remove bursting unit from pit.
9. Connect both ends of new product to existing pipe to complete job.



j19om012h.eps

Systems and Equipment

Chapter Contents

Tooling String 56

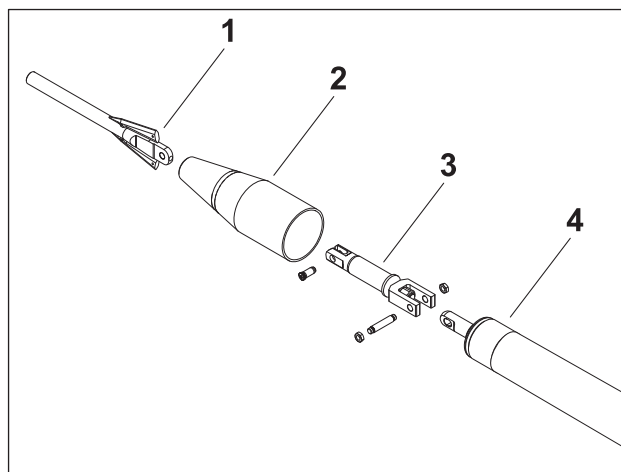
- Bursting String 56
- Slitter String. 56
- Bursting/Splitting Heads 57

Extraction Cage 57

Tooling String

Bursting String

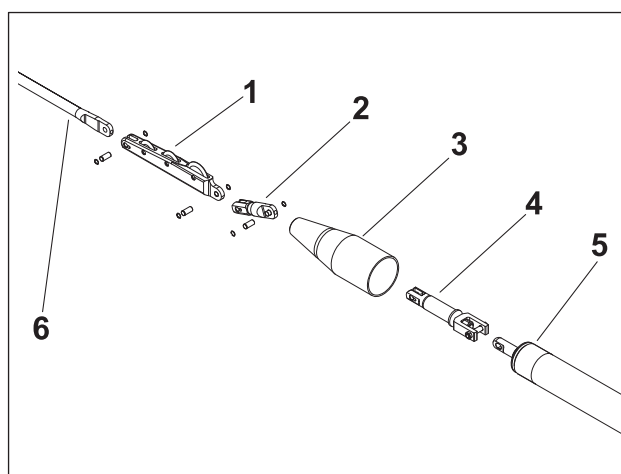
Ref.	Description
1	blade
2	expander
3	expander rod assembly
4	pipe puller



J74om035h.eps

Slitter String

Ref.	Description
1	slitter assembly
2	trailing pivot rod assembly
3	expander
4	expander rod assembly
5	pipe puller
6	non-bladed starter rod

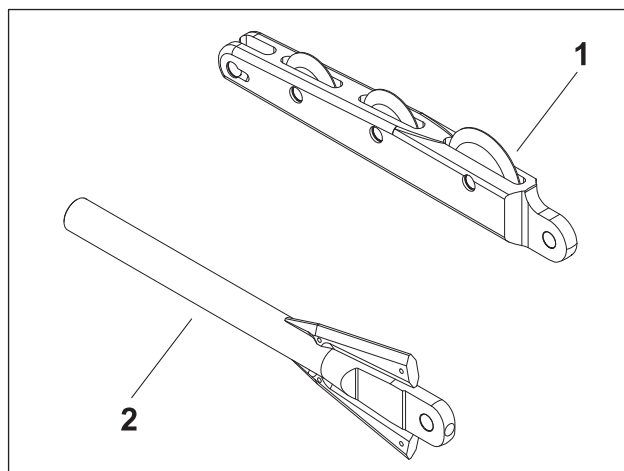


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Bursting/Splitting Heads

Identification and Uses

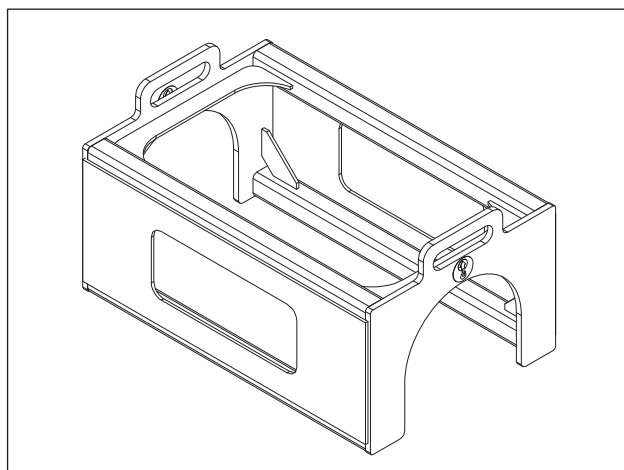
Ref.	Type	Uses
1	slitter	ductile iron, steel, cast iron with repairs
2	blade	clay, asbestos cement, PVC, PE, cast iron



J74om036h.eps

Extraction Cage

The extraction cage allows room to remove the bursting/splitting assembly from the new product after it enters the bursting pit.



J74om019h.eps

Complete the Job

Chapter Contents

Disconnect Hoses	60
Stow Components	61
Restore Jobsite	61
Stow Tools	61

Disconnect Hoses

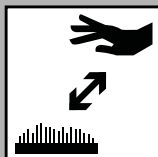


⚠ WARNING

Pressurized fluid or air could pierce skin and cause severe injury. Refer to operator's manual for proper use. 270-6035

To help avoid injury:

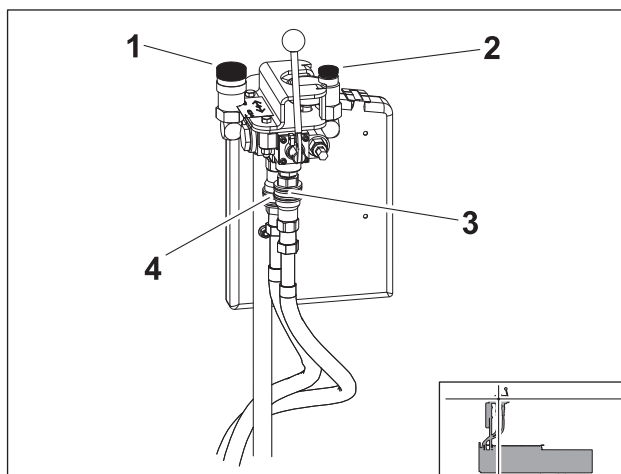
- Always connect return line first and remove last.
- Before using system, check that all connections are tight and all lines are undamaged.
- If you are injured, seek immediate medical attention from a doctor familiar with this type of injury.



⚠ CAUTION

Hot parts may cause burns. Do not touch until cool or wear gloves. 275-355 (2-P), 273-423 (2-P)

1. Move push/pullback controls back and forth to relieve pressure in unit.
2. Disconnect the pressure line (2) from the bursting unit.
3. Disconnect the return line (1) from the bursting unit.
4. Wrap hoses around the hooks on the power unit.



J74om014h.eps

Stow Components

1. Install all covers.
2. Load components onto trailer.
3. Secure all components on trailer.

Restore Jobsite

Fill in installation, bursting, and service connection pits.

Stow Tools

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

Service

Chapter Contents

Service Precautions 64

- Remove/Install Front Panel 64

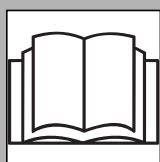
Recommended Lubricants/Service Key 65

Each Use 66

50 Hour 68

As Needed 69

Service Precautions



⚠ WARNING Misuse of machine can cause death or serious injury. Read and understand operator's manual and all other safety instructions before use. 273-475

To help avoid injury:

- Unless otherwise instructed, all service should be performed with engine off.
- Refer to engine manufacturer's manual for engine maintenance instructions.

Remove/Install Front Panel



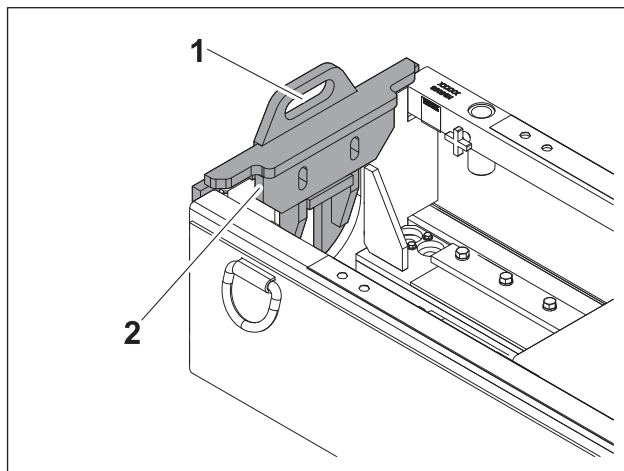
⚠ WARNING Crushing weight could cause death or serious injury. Stay away. 275-326, 701-326

Remove

1. Attach lifting chain to front panel (1).
2. Use equipment capable of supporting the front panel size and weight to lift panel off front of unit.







Install

1. Lower front panel near front of bursting unit.
2. Guide front panel over side tabs (2) to set in place.
3. Remove lifting chain.



J74om020h.eps

Recommended Lubricants/Service Key

Item	Description
 HF	Hydraulic fluid, Grade: meeting or exceeding ISO 46
 EPG	Extreme pressure grease. Use polyurea based NLGI GC-LB Grade 1.5 or lithium based NLGI GC-LB Grade 2, with extreme pressure additives.
RJL	Rod Joint Grease - Antiseize MIL-A-907E
	Check level of fluid or lubricant
	Check condition
	Filter
	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 77 to record all required service to your machine.

Each Use

Tasks	Notes
Inspect rods/pipes	
Clean rod/pipe threads	RJL
Clean jaw threads	
Grease jaws	EPG

Inspect Rods/Pipes

Inspect rods/pipes after each use. Ensure rods/pipes are not:

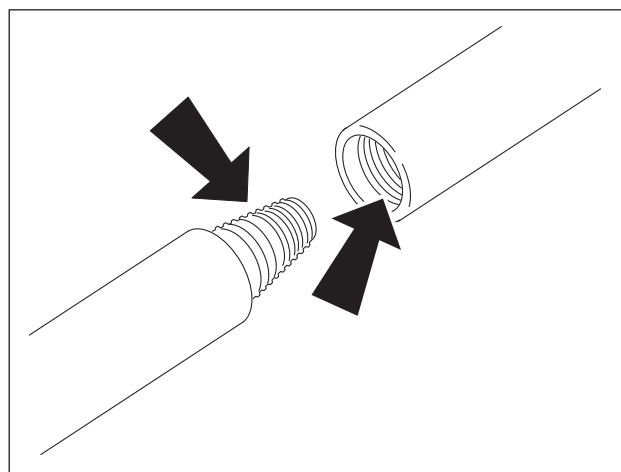
- severely bent
- gouged more than 1/8" (3.2 mm) on hollow sections
- cracked

NOTICE: If rods/pipes are damaged, replace immediately.

Clean Rod/Pipe Threads

Clean rod threads before each use. Brush threads with wire brush to remove debris and lube with RJL antiseize lubricant. See "Recommended Lubricants/Service Key" on page 65.

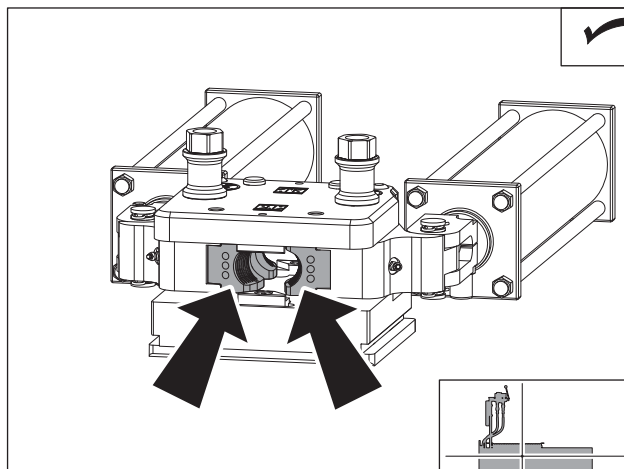
NOTICE: If rod/pipe threads are damaged, replace immediately.



DrillPipe_Clean.eps

Clean Jaw Threads

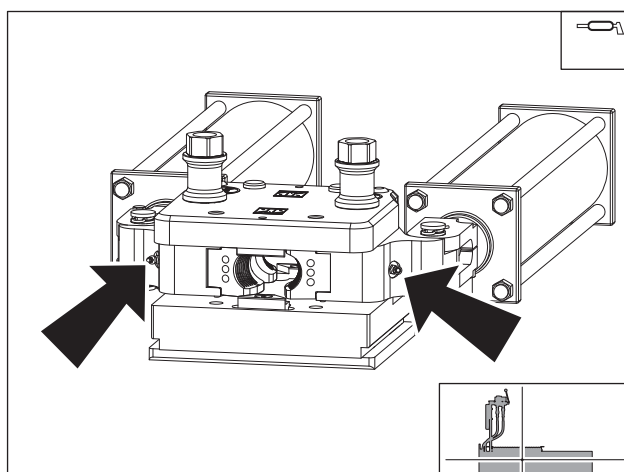
Clean carriage and jaw threads with high-pressure water before and after each job. Brush jaws with wire brush to remove debris.



J74om021h.eps

Grease Jaws

Grease two zerks before each use with EPG. See "Recommended Lubricants/Service Key" on page 65.



J74om022h.eps

50 Hour

Task	Notes
Check hydraulic hoses	

Check Hydraulic Hoses

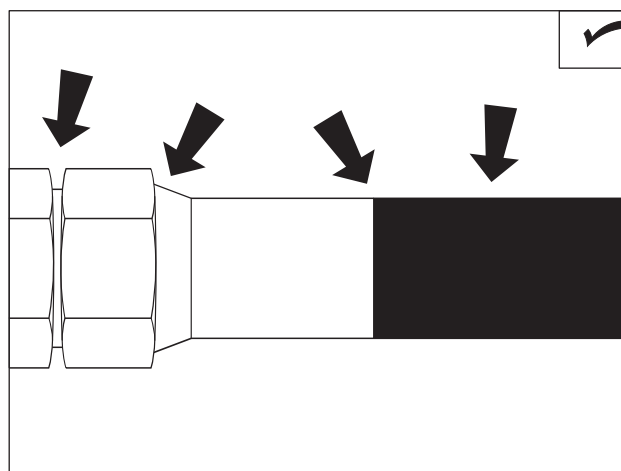


⚠ WARNING Pressurized fluid or air could pierce skin and cause severe injury. Refer to operator's manual for proper use. 270-6035

To help avoid injury:

- Use a piece of cardboard or wood, rather than hands, to search for leaks.
- Wear protective clothing, including gloves and eye protection.
- Before disconnecting a hydraulic line, turn engine off and operate all controls to relieve pressure.
- Lower, block, or support any raised component with a hoist.
- Cover connection with heavy cloth and loosen connector nut slightly to relieve residual pressure. Catch all fluid in a container.
- 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.

Check hydraulic hoses for leaks every 50 hours.



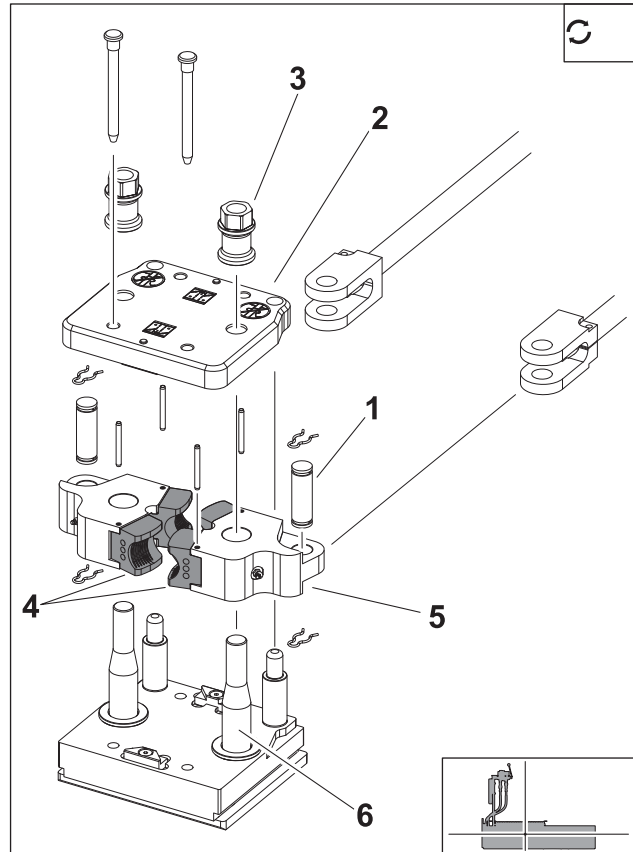
CheckHoses.eps

As Needed

Task	Notes
Replace jaws	

Replace Jaws

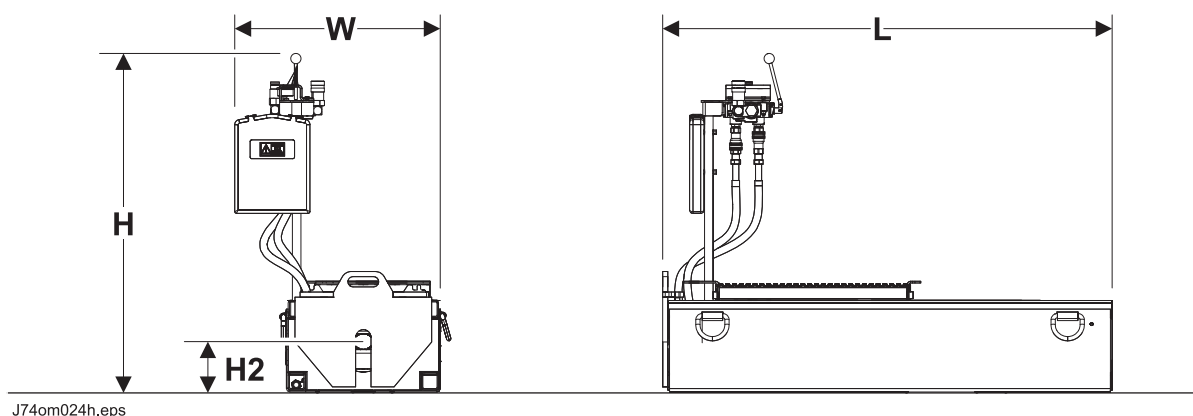
1. Lift off front of machine. See "Remove/Install Front Panel" on page 64.
2. Remove safety grate.
3. Remove top nuts and jaw bushings (3) from support pins (6).
4. Remove clevis pins (1).
5. Remove upper jaw plate (2).
6. Remove jaw carriers.
7. Remove pins from jaw carrier (5).
8. Replace jaws (4).
9. Reinstall pins, jaw carriers, upper jaw plate, jaw bushings, top nuts, and clevis pins.
10. Reinstall safety grate.
11. Reinstall front of machine. See "Remove/Install Front Panel" on page 64.



J74om023h.eps

Specifications

Bursting Unit

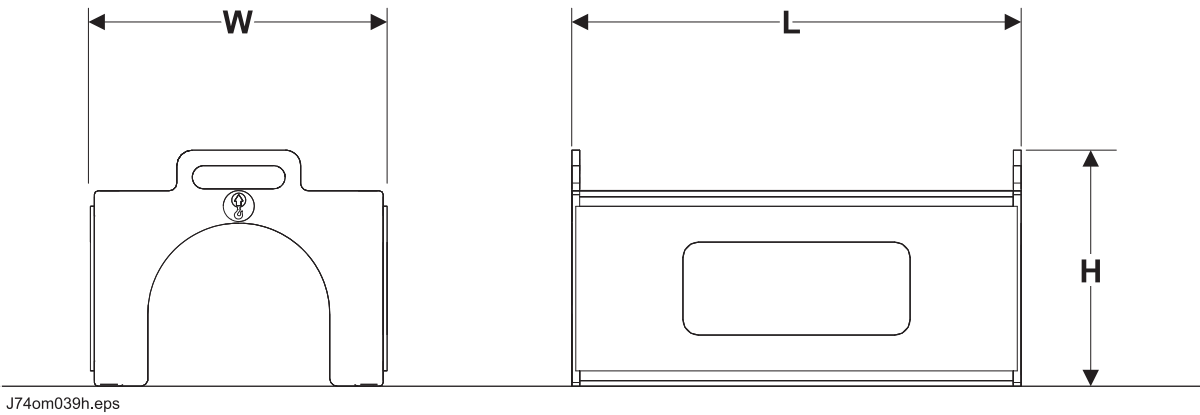


Dimensions	U.S.	Metric
L, length	65 in	1.65 m
W, width	22 in	.56 m
H, height	43 in	1.09 m
H2, rod height	17.99 in	457 mm
Weight, mass	928 lb	421 kg

Operational	U.S.	Metric
Push force	50 ton	45.4 tonne
Pullback force	50 ton	45.4 tonne
Working pressure	3000 psi	207 bar
Working flow rate	26 gpm	98.4 L/min

Rod	U.S.	Metric
Length	39.4 in	1 m
Diameter	2.01 in	51 mm
Weight, mass	30.5 lb	13.9 kg

Extraction Cage



Dimensions	U.S.	Metric
L, length	29 in	737 mm
W, width	19.2 in	488 mm
H, height	15.25 in	388 mm
Weight, mass	103 lb	46.7 kg

Declaration of Conformity Information

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

Earth Tool Company, LLC.
500 South C.P. Avenue
Lake Mills, Wisconsin, 53545
Phone: 920 648 4848
FAX: 920 648 1780

Declares that the product:

Model: **HammerHead® XXXX**
Type: **(machine type)**
Engine Power: **xxx kW**
Serial Number: **(model) XXXXX**

Conforms to the requirements of:

2006/42/EC Machinery Directive
2004/108/EC Electromagnetic Compatibility Directive
2000/14/EC Noise Emission Directive

Measured sound power level (Annex V): **xxx dBA**
Guaranteed sound power level (Annex V): **xxx dBA**

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

The manufacturer's European representative is:

Ditch Witch Barcelona
International Underground Systems, S.L.
C/EL PLA, 130 * Poligon Industrial El Pla
08980 Sant Feliu De Llobregat * Spain
Phone: +34 93 632 7344
FAX: +34 93 632 7343

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

Limited Warranty Policy

Earth Tool Company LLC, hereinafter sometimes referred to as ETC warrants each new industrial product of its own manufacture to be free from defects in material and workmanship, under normal use and service for one full year after delivery to the owner or 1000 operating hours, whichever occurs first. During the warranty period, the authorized selling HammerHead® Dealer shall furnish parts without charge for any HammerHead product that fails because of defects in material and workmanship. Warranty is void unless warranty registration card is returned within ten days from the date of purchase. This warranty and any possible liability of Earth Tool Company LLC here under is in lieu of all other warranties, express, implied, or statutory, including, but not limited to any warranties of merchantability or fitness for a particular purpose.

The parties agree that the Buyer's SOLE AND EXCLUSIVE REMEDY against ETC, whether in contract or arising out of warranties, representations, or defects shall be for the replacement or repair of defective parts as provided herein. In no event shall ETC's liability exceed the purchase price of the product. The Buyer agrees that no other remedy (including, but not limited to, incidental or consequential loss) shall be available to him. If, during the warranty period, any product becomes defective by reason of material or workmanship and Buyer immediately notifies ETC of such defect, ETC shall, at its option, supply a replacement part or request the return of the product to its plant in Lake Mills, Wisconsin. No part shall be returned without prior written authorization from ETC, and this warranty does not obligate ETC to bear any transportation charges in connection with the repair or replacement of defective parts. Earth Tool Company LLC will not accept any charges for labor and/or parts incidental to the removal or remounting of parts repaired or replaced under this Warranty.

This Warranty shall not apply to any part or product which shall have been installed or operated in a manner not recommended by ETC nor to any part or product which shall have been neglected, or used in any way which, in ETC's opinion, adversely affects its performance; nor negligence of proper maintenance or other negligence, fire or other accident; nor with respect to wear items; nor if the unit has been repaired or altered outside of an ETC authorized dealership in a manner of which, in the sole judgment of ETC affects its performance, stability or reliability; nor with respect to batteries which are covered under a separate adjustment warranty; nor to any product in which parts not manufactured or approved by ETC have been used, nor to normal maintenance services or replacement of normal service items. Equipment and accessories not of our manufacture are warranted only to the extent of the original Manufacturer's Warranty and subject to their allowance to us, if found defective by them. ETC reserves the right to modify, alter, and improve any product or parts without incurring any obligation to replace any product or parts previously sold with such modified, altered, or improved product or part. No person is authorized to give any other Warranty, or to assume any additional obligation on ETC's behalf unless made in writing, and signed by an officer of ETC.

EARTH TOOL COMPANY LLC

Lake Mills, Wisconsin

Service Record

[illegible]

HB5058 Operator's Manual

[illegible]



A CHARLES MACHINE WORKS COMPANY