



# **34" Air Reverse Pipe Ramming Hammer**

## **Operator's Manual**



# Overview

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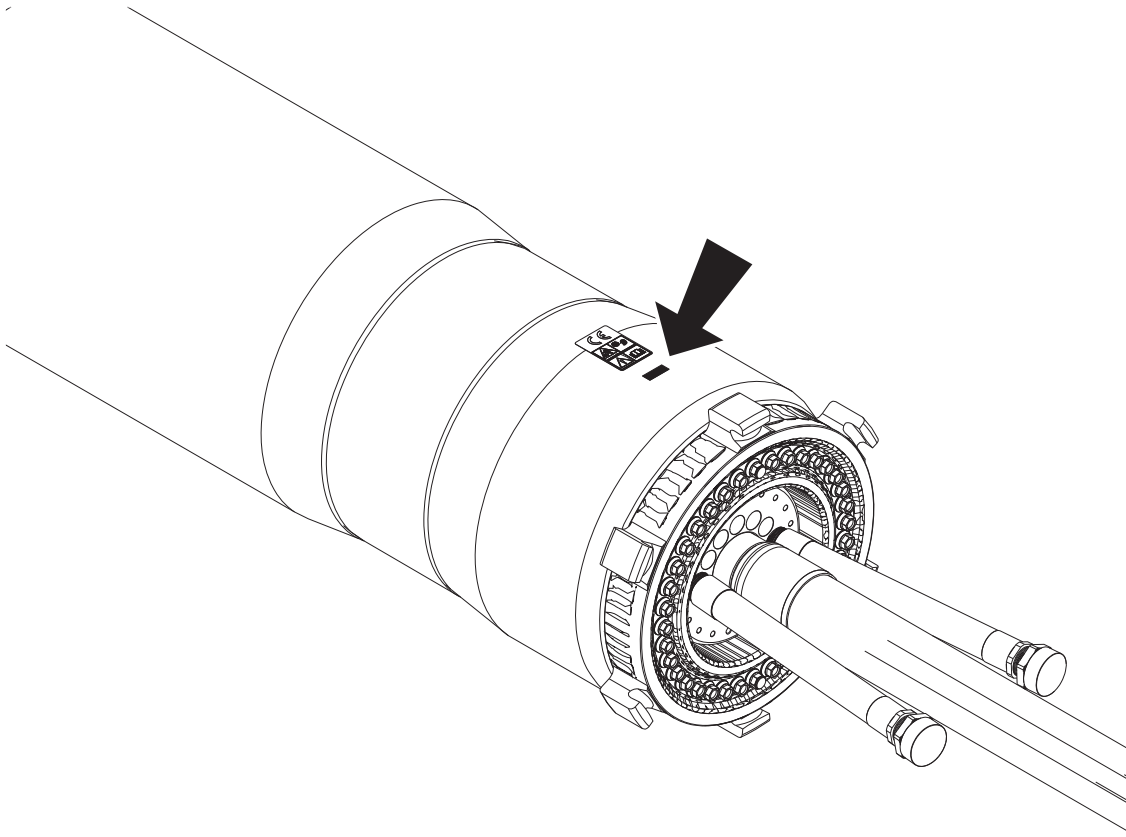
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## Serial Number Location

Record serial numbers and date of purchase in spaces provided.



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Model Number	
Serial Number	
Date of purchase	

## **Intended Use**

HammerHead® 34" AR hammers are intended to push pipe and install utilities under existing landscapes and/or structures.

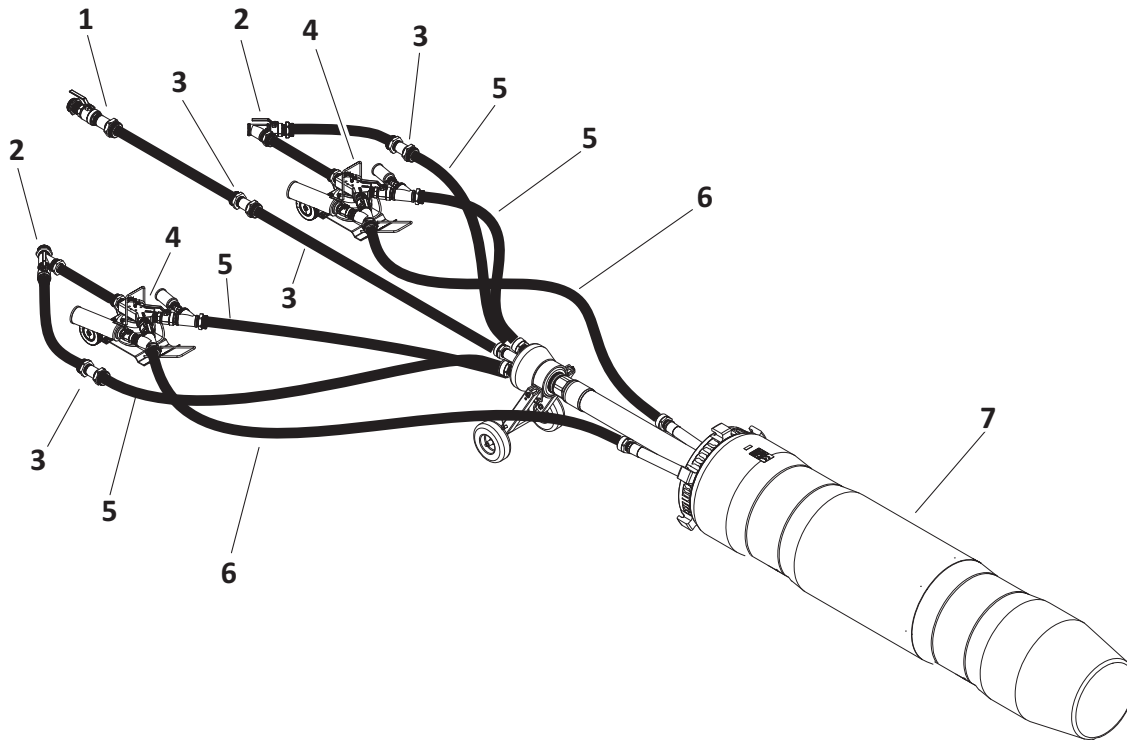
The unit is designed for operation in temperatures typically experienced in earth moving and construction work environments. Provisions may be required to operate in extreme temperatures. Contact your HammerHead dealer. Use in any other way is considered contrary to the intended use.

HammerHead pneumatic tools 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



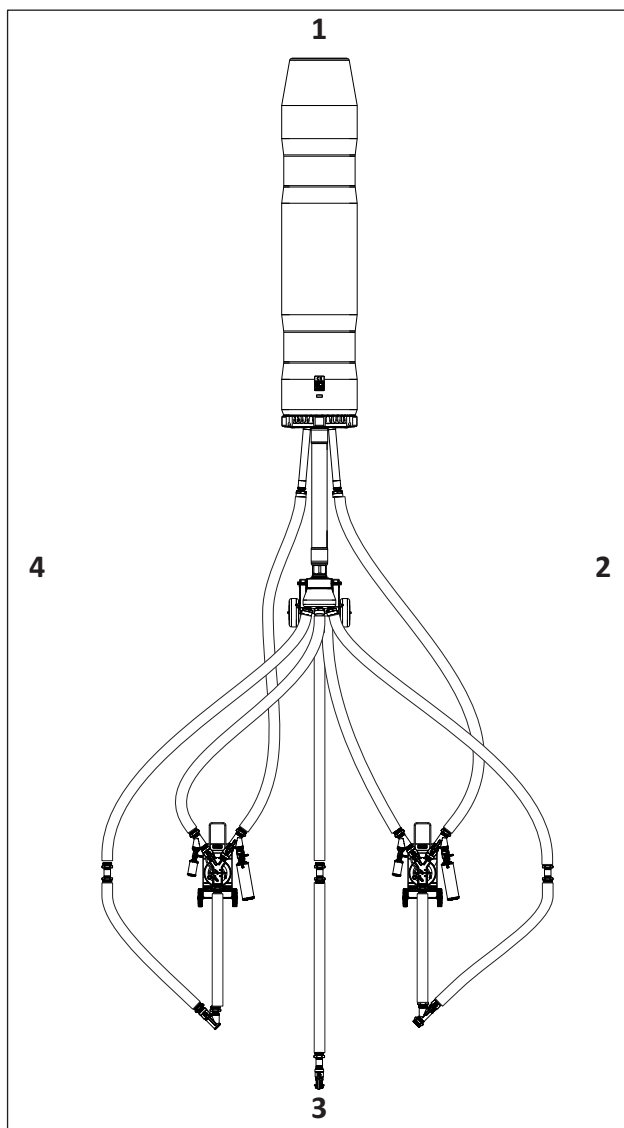
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- |                                 |                               |
|---------------------------------|-------------------------------|
| 1. Ball valve adapter           | 5. 2.5" forward hose          |
| 2. Wye adapter                  | 6. 2.5" reverse hose          |
| 3. 2.5" Hammerlock hose coupler | 7. 34" AR pipe ramming hammer |
| 4. Oiler                        |                               |

## 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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# 34" Air Reverse Pipe Ramming Hammer Operator's Manual

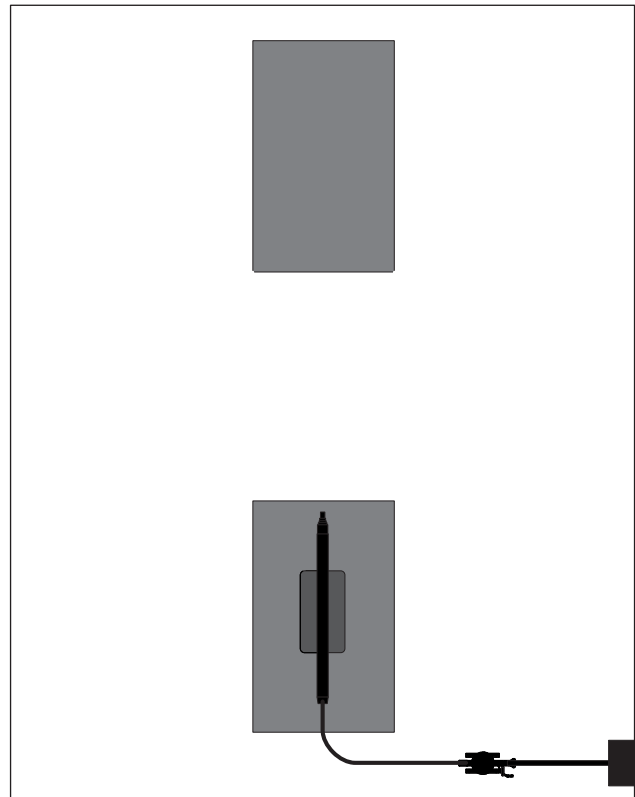
## Operating Area

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**IMPORTANT:** Top view of unit is shown.

There is no designated operating position for the tool. Keep a safe distance from the tool.

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



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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.



## ***34" Air Reverse Pipe Ramming Hammer Operator's Manual***

### ***About This Manual***

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# **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](http://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. 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.

## **34" Air Reverse Pipe Ramming Hammer Operator's Manual**

**Issue Number OM-07/23**

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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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# Safety

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**Machine Safety Alerts . . . . . 19**


## 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.



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/](http://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.

## 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



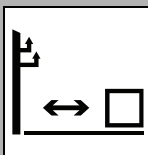
**⚠ WARNING**

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). Open the vent ball valves on the oilers to release air pressure as quickly as possible.

## 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 the 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.

## ***34" Air Reverse Pipe Ramming Hammer Operator's Manual***

### ***Emergency Procedures***

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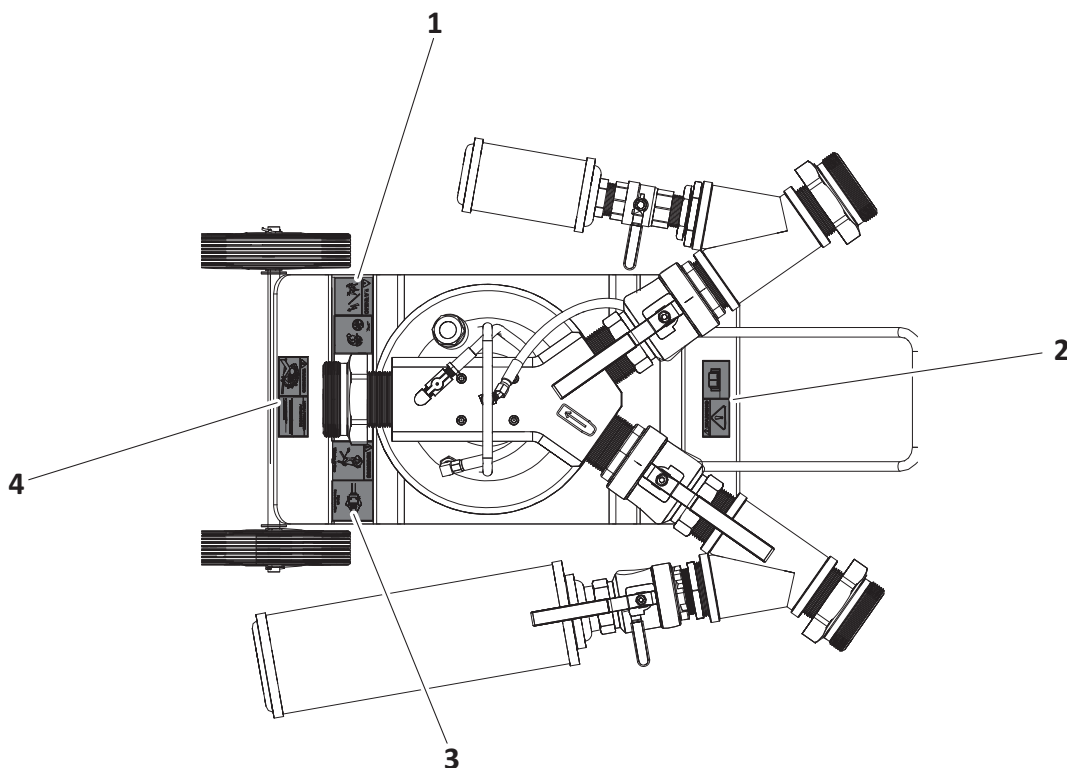
#### **If Machine Catches on Fire**

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

### Oiler Safety Alerts



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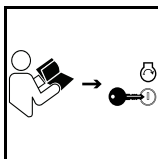
1



**⚠ WARNING** Underground utilities. Contact can cause death or serious injury.

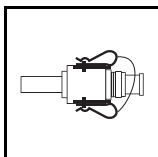
**To help avoid injury:** Locate and verify underground utilities before digging or drilling.

2



**⚠ WARNING** Read operator's manual. Follow safety rules and know how to use all controls. Your safety is at stake.

3



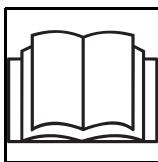
**⚠ WARNING** Whipping air hose could cause serious injury or death. Ensure all connections are correctly tightened and secured.

## **34" Air Reverse Pipe Ramming Hammer Operator's Manual**

### **Machine Safety Alerts**

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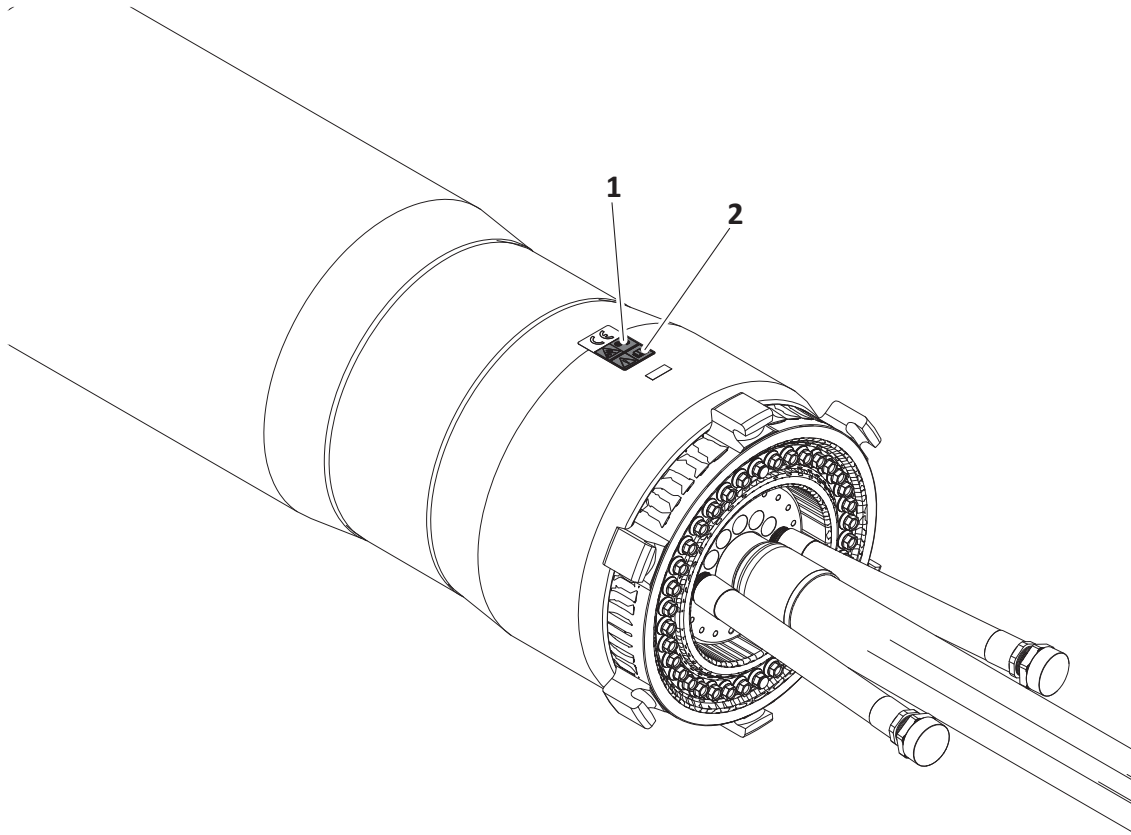
4



#### **⚠ WARNING**

High pressure air in hose. Serious injury could occur if struck by hose if uncoupled under pressure. Vent air pressure before disconnecting hose.

## Air Hammer Safety Alerts



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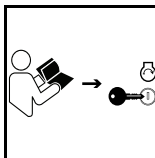
1



**⚠ WARNING** Underground utilities. Contact can cause death or serious injury.

**To help avoid injury:** Locate and verify underground utilities before digging or drilling.

2



**⚠ WARNING** Read operator's manual. Follow safety rules and know how to use all controls. Your safety is at stake.



# Controls

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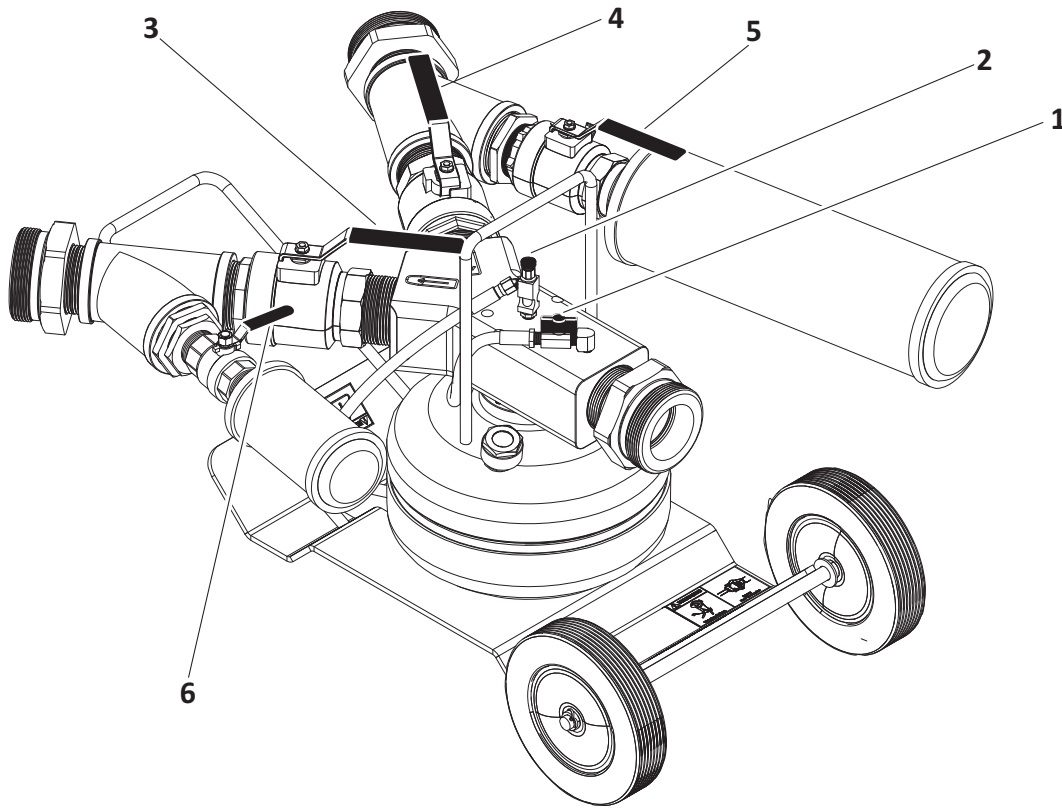
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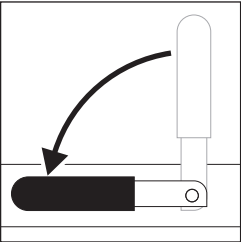
## Oiler

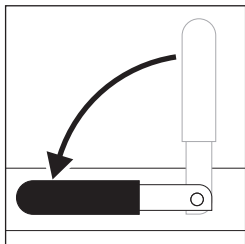
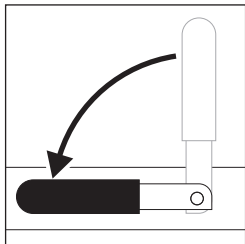
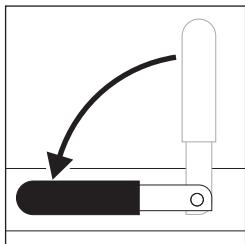
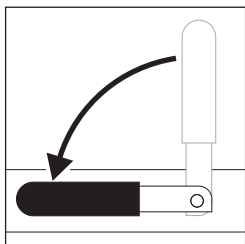
## Oiler



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- |                              |                             |
|------------------------------|-----------------------------|
| 1. Oil flow valve            | 4. Reverse air supply valve |
| 2. Oil flow adjustment screw | 5. Reverse line vent valve  |
| 3. Forward air supply valve  | 6. Forward line vent valve  |

Item	Description	Notes
<b>1. Oil valve</b>  c00lc747h.eps	<p>To fully open oil flow to tool, move valve inline with air hose (shown).</p> <p>To shut off oil flow to tool, move valve perpendicular to air hose.</p>	
<b>2. Oil flow adjustment screw</b>	The oil flow adjustment screw controls the amount of oil supplied to the tool.	

Item	Description	Notes
<b>3. Forward air supply valve</b>  <p>c00ic747h.eps</p>	<p>To fully open air flow to tool, move valve inline with air hose (shown).</p> <p>To shut off air flow to tool, move valve perpendicular to air hose.</p>	
<b>4. Reverse air supply valve</b>  <p>c00ic747h.eps</p>	<p>To fully open air flow to tool, move valve inline with air hose (shown).</p> <p>To shut off air flow to tool, move valve perpendicular to air hose.</p>	
<b>5. Reverse line vent valve</b>  <p>c00ic747h.eps</p>	<p>To release air pressure from reverse line, move valve inline with air hose (shown).</p> <p>To close vent valve, move valve perpendicular to air hose.</p>	
<b>6. Forward line vent valve</b>  <p>c00ic747h.eps</p>	<p>To release air pressure from forward line, move valve inline with air hose (shown).</p> <p>To close vent valve, move valve perpendicular to air hose.</p>	



# Prepare

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- Examine Pullback Material . . . . .28
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- Prepare Air Compressor . . . . .32
- Assemble Equipment . . . . .32
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## **Gather Information**

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

### **Review Job Plan**

Review blueprints or other plans. 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 Product Material**

Ask for a sample of the new product material you will be installing. Check its weight and stiffness. Contact the manufacturer for bend radius information.

### **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.

If required, mount a fire extinguisher near the compressor 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.

## **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

## **34" Air Reverse Pipe Ramming Hammer Operator's Manual**

### **Identify Hazards**

---

## **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 bore path. Verify previously marked line and cable locations.
- Mark location of all buried utilities and obstructions.



Underground utilities. Contact can cause death or serious injury.

#### **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 launching.
- Locate and verify underground utilities before digging or drilling.
- Mark jobsite clearly and keep spectators away.

## **Prepare Jobsite**

### **Mark Jobsite**

Mark jobsite with flags or paint:

- planned bore path
- entry and exit points

### **Clear Work Area**

- Clear work area of all objects that could interfere with proper operation of the tool or hoses.
- Do not leave tools and other objects near the entry and exit points.



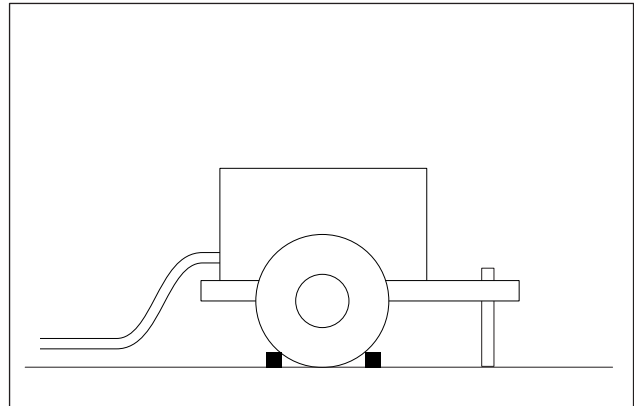
## Prepare Equipment

### Prepare Air Compressor

**NOTICE:** Incorrect air pressure setting will damage tool and void the warranty. Do not set air pressure at tool above 110 psi (7.6 bar).

Hammer requires air volume of 3200-4800 CFM (90.6-135.9 m<sup>3</sup>/min)

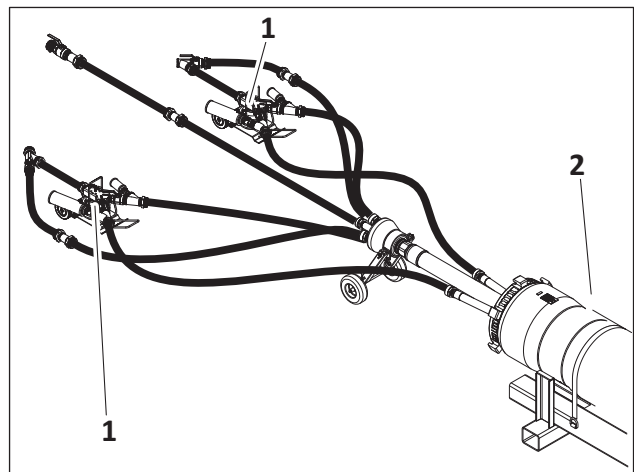
1. Park air compressor a sufficient distance from entry point to prevent cave-in.
2. Chock wheels.
3. Set air pressure to the appropriate level.



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### Assemble Equipment

1. Connect oiler supply hose:
  - to compressor
  - to oiler (1)
2. Assemble supply hoses of sufficient length and connect:
  - to oiler (1)
  - to ramming tool (2)



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### Check Oiler Oil Level

See "Check Oiler Oil Level" on page 39.

**Operate**

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**Reverse Tool Direction . . . . . 35**

**Shut Down and Disassemble Equipment . . . . . 35**

## Push



**WARNING** Pressurized fluid or air. Injection can cause death or serious injury.

#### To help avoid injury:

- Ensure couplings are tight and secured with the applicable retaining devices.
- Check air supply hose and fittings for wear and tear.
- Shut down unit immediately at the first sign of malfunction or hazardous situation.



**WARNING** Thrown objects. Impact can cause injury.

#### To help avoid injury:

- Wear hard hat and safety glasses.
- Stay away from high-pressure exhaust.
- Stay away from the bore hole during operation.

1. Open oil supply valve.
2. Open oil flow adjustment screw.
3. Turn on air supply at compressor to oiler only.
4. Open forward valve quickly until striker begins to move, then close to halfway.
5. Run tool just fast enough to lock the tool into the collets.
6. Turn off air supply to machine after tool is locked into collets.
7. Tighten cinch kit to remove slack in straps.
8. Turn on air supply to machine.
9. Change air supply to adjust tool speed as necessary.

**Note:** When starting the push, it may be necessary to place weight on pipe to keep it from oscillating instead of advancing.

10. Push pipe slowly for the first 6-8ft (1.8 - 2.4m) to help maintain grade. Apply weight on pipe as necessary and use a level on front of pipe to monitor grade.

## Reverse Tool Direction

**NOTICE:** Incorrect use will damage tool valve assembly. Turn air valve to OFF position and release pressure through vent valves before changing tool travel direction.

1. Turn forward air supply valves to closed position.
2. Turn forward supply vent to open position to release pressure. Return to closed position.
3. Attach lifting slings to support tool.
4. Loosen or remove cinch kit.
5. Turn reverse air supply valves to open position.
6. Let tool cycle a few times to unlock itself from collets. Repeat if necessary.

## Shut Down and Disassemble Equipment



**⚠ WARNING** Pressurized fluid or air. Injection can cause death or serious injury.

**To help avoid injury:**

- Turn air valve to OFF position to release pressure after each use.
- Wait for pressure to be released before disconnecting hoses.

1. Turn air valve to OFF position.
2. Shut down air compressor.
3. Depressurize all hoses.
4. Disconnect hoses.
5. Install caps and plugs on all hoses and connections to prevent dirt from entering tool.



# Maintenance

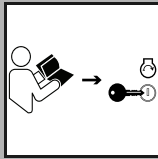
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## Maintenance Precautions



**⚠ WARNING**

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

**To help avoid injury:** Turn air valve to OFF position and disconnect the air line before servicing the tool.

**NOTICE:** Heat can damage tool. Do not use a torch or a welder on the tool.

## Recommended Lubricants/Service Key

Item	Description
RDO	Rock Drill 100® oil
HMBO	Bio/Winter Oil
▶	Check level of fluid or lubricant
✓	Check condition
↻	Replace

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 fluids.
- Use only genuine HammerHead parts and approved fluids to maintain warranty.
- Obey applicable laws and regulations to dispose of used fluids.

**IMPORTANT:** Use the "Service Record" on page 45 to record all required service to your machine.

## Each Use

Tasks	Notes
Check hose fittings and connections	
Check oiler oil level	RDO, HMBO

## Check Hose Fittings and Connections

Check hose fittings and connections before each use.

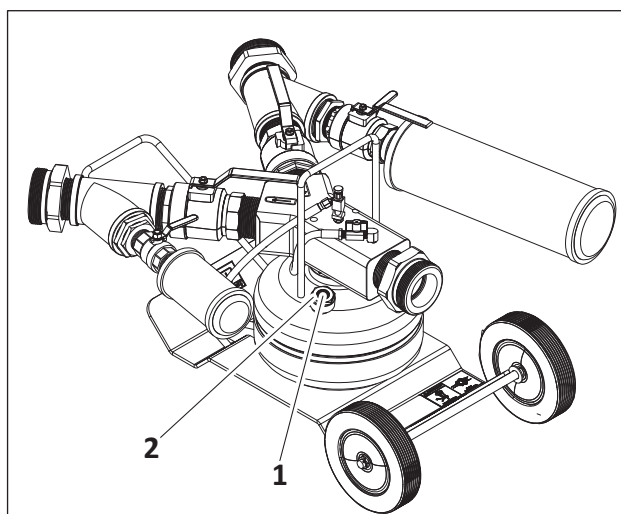
1. Turn air valve to OFF position.
2. Check hose fittings and connections.

## Check Oiler Oil Level

Check oiler oil level before each use.

1. Turn air supply off.
2. Press relief button on fill plug (1) to relieve pressure in tank.
3. Remove fill plug and check oil level.
4. If low, add applicable oil at fill (2):
  - Do not overfill.
  - Leave small air space to allow reservoir to pressurize.

**IMPORTANT:** Only use approved oil. See "Recommended Lubricants/Service Key" on page 38.



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# Specifications

Please go to [www.hammerheadtrenchless.com](http://www.hammerheadtrenchless.com) and click on Products. From there, select Pipe Ramming and then the type of tool you have. Open the brochure to see the specifications for your tool.

## 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.

The Charles Machine Works, Inc.  
DBA Hammerhead Trenchless Equipment  
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  
2014/30/EU 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

The Charles Machine Works, Inc. dba Hammerhead Trenchless, 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 (air hammer and ground engaging components will have a 90 day warranty), 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 Hammerhead Trenchless 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 Hammerhead Trenchless, 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 the liability of Hammerhead Trenchless 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 Hammerhead Trenchless of such defect, Hammerhead Trenchless 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 Hammerhead Trenchless, and this warranty does not obligate Hammerhead Trenchless to bear any transportation charges in connection with the repair or replacement of defective parts. Hammerhead Trenchless 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 Hammerhead Trenchless nor to any part or product which shall have been neglected, or used in any way which, in Hammerhead Trenchless 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 Hammerhead Trenchless authorized dealership in a manner of which, in the sole judgment of Hammerhead Trenchless 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 Hammerhead Trenchless 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. Hammerhead Trenchless 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 behalf of Hammerhead Trenchless unless made in writing, and signed by an officer of Hammerhead Trenchless.

**HAMMERHEAD TRENCHLESS**

**Lake Mills, Wisconsin**

## Service Record

[illegible]

## 34" Air Reverse Pipe Ramming Hammer Operator's Manual

[illegible]