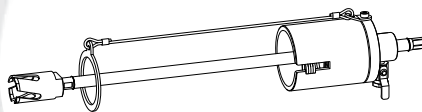


Operator's Manual



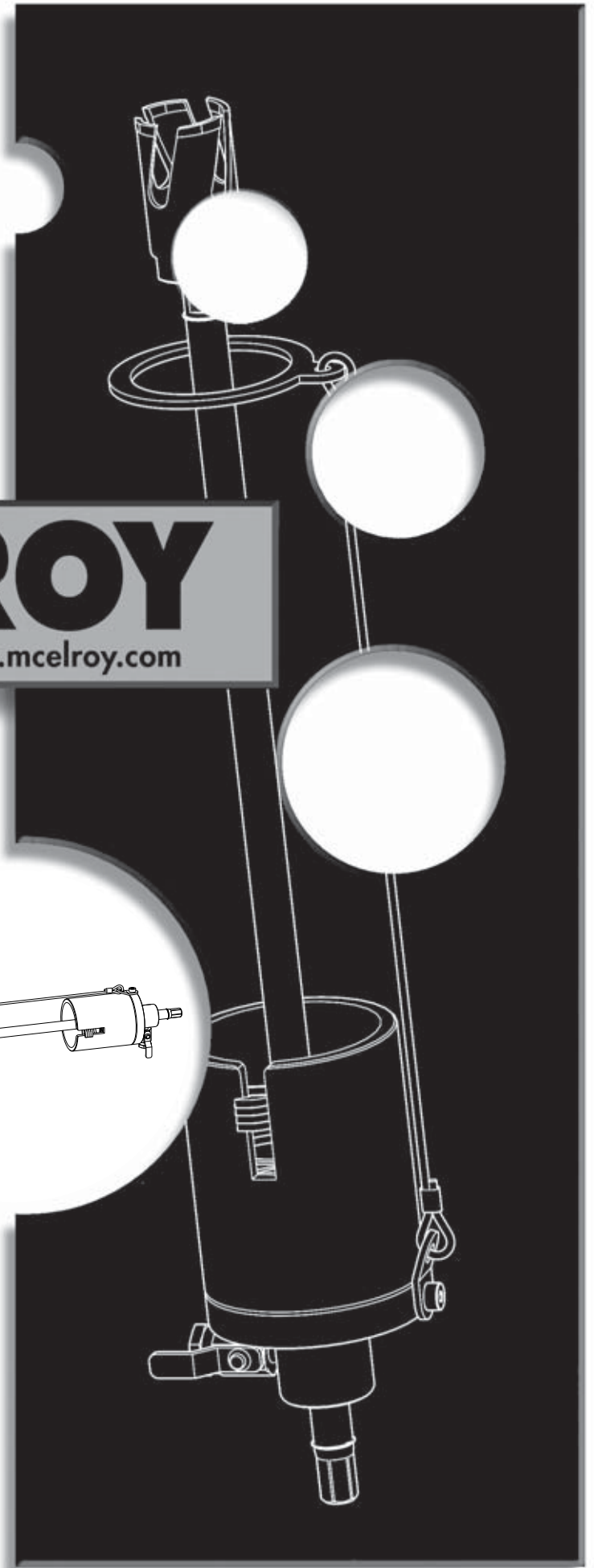
McELROY

www.mcelroy.com



32mm, 40mm, 50mm & 63mm
Polypropylene

Hot Tap Tools



This product and other products
could be protected by patents or
have patents pending. All the latest
patent information is available at
patent.mcelroy.com

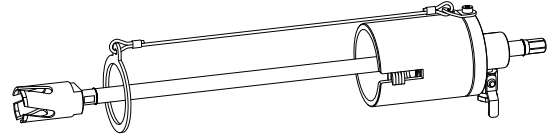
Introduction

Thank you for choosing McElroy.

McElroy Hot Tap Tools are designed to make 32mm, 40mm, 50mm and 63mm Polypropylene hot taps through a branch saddle into live mains. The tools may be made-up to be used with a ball valve.

With reasonable care and maintenance, this tool will give years of satisfactory service.

Before operating this tool, please read this manual thoroughly, and keep a copy with the tool for future reference. This manual is to be considered part of your tool.



CD01985-02-16-17

TX05265-02-28-17

McElroy University

For more than 30 years, McElroy has been the only pipe fusion machine manufacturer to continuously offer advanced training. Course offerings are meant to enhance your efficiency, productivity and safety in the proper use of McElroy machines. McElroy University classes are structured so that the skills learned and the machines used in each class closely match the machines found on pipelining jobsites. We offer training at our facility or yours. Our uniquely qualified McElroy University course instructors offer years of industry experience.

Tuition for each course includes lunches, course materials and a certificate of completion. Online registration, as well as up-to-date course offerings and dates, is available at www.mcelroy.com/university

This manual is intended as a guide only and does not take the place of proper training by qualified instructors. The information in this manual is not all inclusive and can not encompass all possible situations that can be encountered during various operations.



MU203-13-14

TX04659-03-24-14

Warranty

LIMITED WARRANTY

McElroy Manufacturing, Inc. (McElroy) warrants all products manufactured, sold and repaired by it to be free from defects in materials and workmanship, its obligation under this warranty being limited to repairing or replacing at its factory and new products, within **5 years** after shipment, with the exception of purchased items (such as electronic devices, pumps, switches, etc.), in which case that manufacturer's warranty applies. Warranty applies when returned freight is prepaid and which, upon examination, shall disclose to have been defective. This warranty does not apply to any product or component which has been repaired or altered by anyone other than McElroy or has become damaged due to misuse, negligence or casualty, or has not been operated or maintained according to McElroy's printed instructions and warnings. This warranty is expressly in lieu of all other warranties expressed or implied. The remedies of the Buyer are the exclusive and sole remedies available and Buyer shall not be entitled to receive any incidental or consequential damages. Buyer waives the benefit of any rule that disclaimer of warranty shall be construed against McElroy and agrees that such disclaimers herein shall be construed liberally in favor of McElroy.

RETURN OF GOODS

Buyer agrees not to return goods for any reason except upon the written consent of McElroy obtained in advance of such return, which consent, if given, shall specify the terms and conditions and charges upon which any such return may be made. Materials returned to McElroy, for warranty work, repair, etc., **must have a Return Material Authorization (RMA) number**, and be so noted on the package at time of shipment. For assistance, inquiry shall be directed to:

McElroy Manufacturing, Inc.
P.O. Box 580550
833 North Fulton Street Tulsa, Oklahoma 74158-0550
PHONE: (918) 836-8611, FAX: (918) 831-9285.
EMAIL: fusion@McElroy.com

Note: Certain repairs, warranty work, and inquiries may be directed, at McElroy's discretion, to an authorized service center or distributor.

DISCLAIMER OF LIABILITY

McElroy accepts no responsibility of liability for fusion joints. Operation and maintenance of the product is the responsibility of others. We recommend qualified joining procedures be followed when using McElroy fusion equipment.

McElroy makes no other warranty of any kind whatever, express or implied; and all implied warranties of merchantability and fitness for a particular purpose which exceed the aforesaid obligation are hereby disclaimed by McElroy.

PRODUCT IMPROVEMENT

McElroy reserves the right to make any changes in or improvements on its products without incurring any liability or obligation to update or change previously sold machines and/or the accessories thereto.

INFORMATION DISCLOSED

No information of knowledge heretofore or hereafter disclosed to McElroy in the performance of or in connection with the terms hereof, shall be deemed to be confidential or proprietary, unless otherwise expressly agreed to in writing by McElroy and any such information or knowledge shall be free from restrictions, other than a claim for patent infringement, is part of the consideration hereof.

PROPRIETARY RIGHTS

All proprietary rights pertaining to the equipment or the components of the equipment to be delivered by McElroy hereunder, and all patent rights therein, arising prior to, or in the course of, or as a result of the design or fabrication of the said product, are exclusively the property of McElroy.

LAW APPLICABLE

All sales shall be governed by the Uniform Commercial Code of Oklahoma, U.S.A.

Register your product online to activate your warranty: www.McElroy.com/fusion

(Copy information listed on the machine nameplate here for your records).

Model No. _____

Serial No. _____

Date Received _____

Distributor _____

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Tulsa, Oklahoma, USA
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Equipment Safety


Safety Alerts

This hazard alert sign  appears in this manual. When you see this sign, carefully read what it says. YOUR SAFETY IS AT STAKE.

You will see the hazard alert sign with these words: DANGER, WARNING, and CAUTION.

 **DANGER** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

 **WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

 **CAUTION** Indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

In this manual you should look for two other words: **NOTICE** and **IMPORTANT**.

NOTICE: can keep you from doing something that might damage the machine or someone's property. It may also be used to alert against unsafe practices.

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



WR00051:11-30-92

TX00030-12-1-92

Read and Understand

Do not operate this equipment until you have carefully read, and understand all the sections of this manual, and all other equipment manuals that will be used with it.

Your safety and the safety of others depends upon care and judgment in the operation of this equipment.

Follow all applicable federal, state, local, and industry specific regulations.

McElroy Manufacturing, Inc. cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this manual and on the machine are therefore not all inclusive. You must satisfy yourself that a procedure, tool, work method, or operating technique is safe for you and others. You should also ensure that the machine will not be damaged or made unsafe by the method of operation or maintenance you choose.



WR00052:12-1-92

TX02946-4-15-09

Equipment Safety

General Safety

Safety is important. Report anything unusual that you notice during set up or operation.

LISTEN for thumps, bumps, rattles, squeals, air leaks, or unusual sounds.

SMELL odors like burning insulation, hot metal, burning rubber, hot oil, or natural gas.

FEEL any changes in the way the equipment operates.

SEE problems with wiring and cables, hydraulic connections, or other equipment.

REPORT anything you see, feel, smell, or hear that is different from what you expect, or that you think may be unsafe.

TX00114-4-22-93



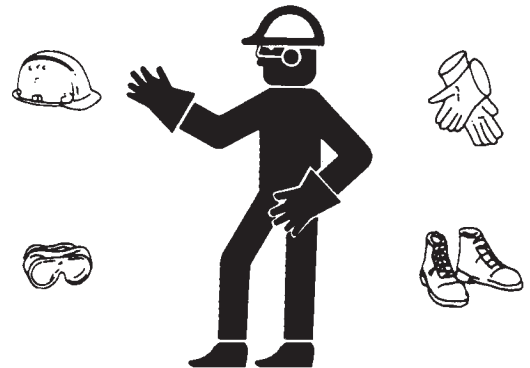
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Wear Safety Equipment

Wear a hard hat, safety shoes, safety glasses, and other applicable personal protective equipment.

Remove jewelry and rings, and do not wear loose fitting clothing or long hair that could catch on controls or moving machinery.

TX000324793



WR00053-122-92

Gas and Hot Tap Safety



Explosion hazard. Gas can ignite, causing explosion, death or serious injury. Tapping into pipe under pressure can cause severe injury if safety procedures are not followed.

Follow all applicable federal, state, local and industry specific regulations and procedures. No person should make a hot tap unless that person has been properly trained and qualified in the use of this equipment.



WR00034-11-30-92

TX01290-3-18-97

Equipment Safety

Power Tool Is Not Explosion Proof



This power tool is not explosion proof. Operation of power tool in an explosive atmosphere without necessary safety precautions will result in serious injury or death.

The explosive atmosphere must be cleared from the tapping area before tapping begins.



WR00034-11-30-92

TX05245-02-28-17

Power Tool Safety



Read and understand the all instructions provided with your power tool. Failure to follow all the power tool instructions, may result in electric shock, fire and/or serious personal injury.



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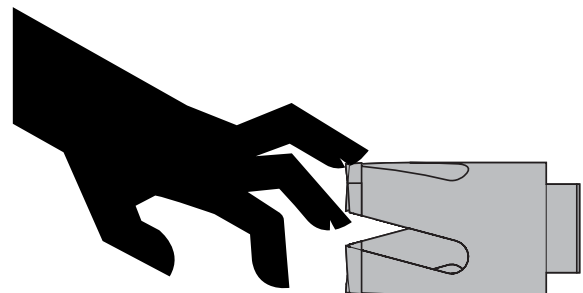
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Cutters Are Sharp



Cutter edges are very sharp. Avoid injury by avoiding direct contact with the cutter.



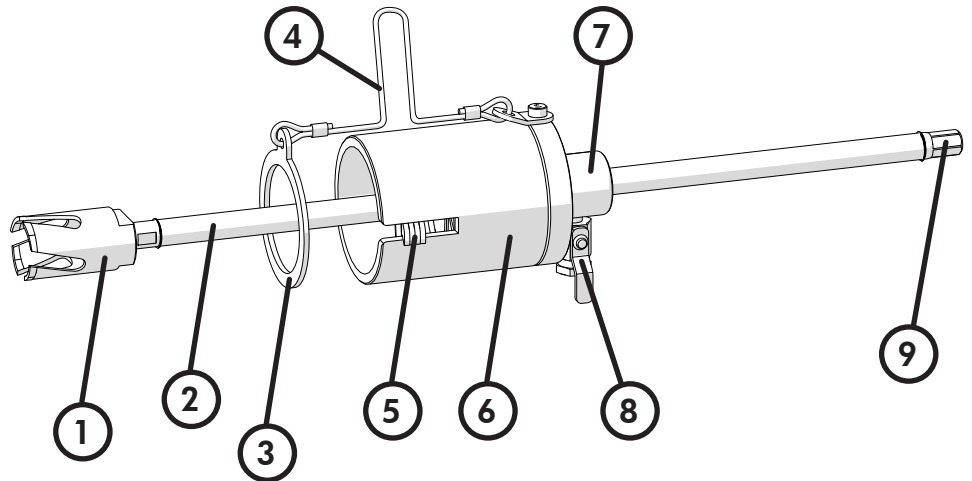
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TX05246-02-28-17

Overview

Nomenclature

- ① Cutter
- ② Cutter Shaft
- ③ Lanyard Ring
- ④ Lanyard
- ⑤ Grip Plates
- ⑥ Housing Assembly
- ⑦ Gland
- ⑧ Pressure Relief Valve
- ⑨ Cutter Shaft Hex



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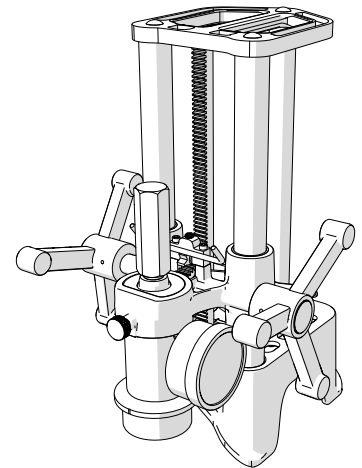
TX05247-02-28-17

Fusion Machines To Use

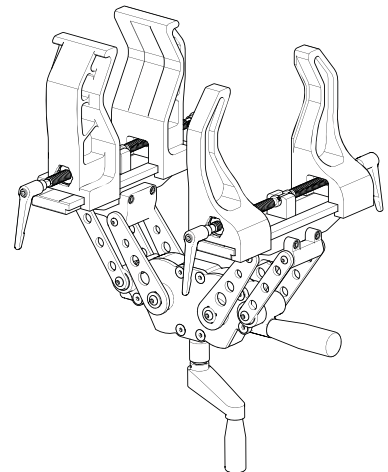
The Hornet™ can be used to fuse a saddle outlet onto a main. The saddle outlet requires the use of the Hornet and pressure adapter.

The Spider™ can be used to fuse the ball valve and branch pipes to the outlet for 63mm only.

The ball valve and branch pipe fusions can be completed using socket fusion equipment and all fusions must be done according to pipe manufacturer's procedure or appropriate joining standard.



CD02010.03-03-17



TX05248-02-28-17

Hot Tap Operation

Read Before Operating

Before operating this machine, please read this manual thoroughly, and keep a copy with the machine for future reference.

The fusion procedures in this manual are for use with polypropylene pipe. If fusing other thermoplastic pipe materials, refer to the pipe manufacturer's suggested procedures or appropriate joining standard.

TX02953-4-15-09



Step-5-6-96

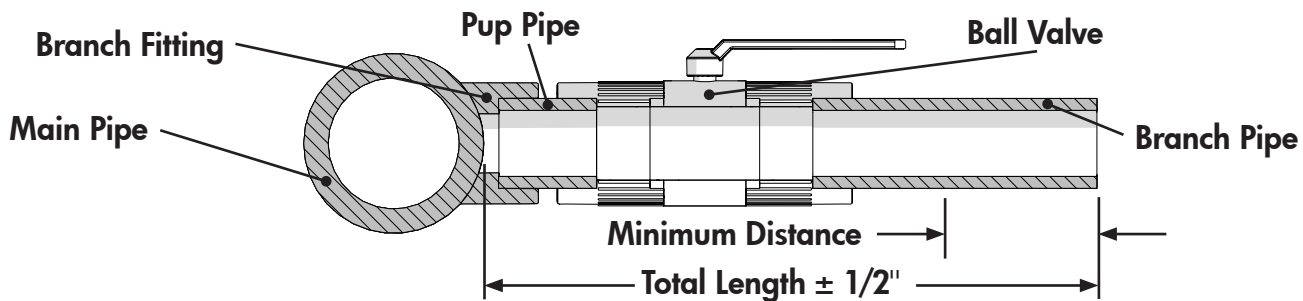
Tool Make-up Measurements

Tool make-up consists of a branch fitting, branch pipes and a ball valve and must be fused according to pipe manufacturer's procedure or appropriate joining standard.

A tool make-up is required to prevent the hot tap tool cutter from cutting through the back of the main pipe during tapping.

The total length is measured from the tangent of the OD of the main pipe to the end of the branch pipe. The minimum distance is measured from the end of the branch pipe and is the minimum distance required to attach the housing assembly to the branch pipe.

Refer to the table below for the minimum distance and total length for each branch size to a sized main pipe.



CD02007-03-02-17

| | | BRANCH SIZE | | | | | | | |
|-----------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|
| | | 1" (32mm) | | 1.25" (40mm) | | 1.5" (50mm) | | 2" (63mm) | |
| | | Minimum Distance | Total Length | Minimum Distance | Total Length | Minimum Distance | Total Length | Minimum Distance | Total Length |
| MAIN SIZE | 2" (63mm) | 3.875" | 18.72" | | | | | | |
| | 2.5" (75mm) | 3.875" | 18.62" | 4.125" | 18.90" | | | | |
| | 3" (90mm) | 3.875" | 18.58" | 4.125" | 18.78" | | | | |
| | 3.5" (110mm) | 3.875" | 18.26" | 4.125" | 18.63" | 4.125" | 18.69" | | |
| | 4" (125mm) | 3.875" | 18.06" | 4.125" | 18.43" | 4.125" | 18.49" | 4.625" | 18.89" |
| | 6" (160mm) | 3.875" | 18.02" | 4.125" | 18.07" | 4.125" | 18.13" | 4.625" | 18.80" |
| | 8" (200mm) | 3.875" | 17.73" | 4.125" | 17.97" | 4.125" | 17.89" | 4.625" | 18.06" |
| | 10" (250mm) | 3.875" | 17.39" | 4.125" | 17.43" | 4.125" | 17.49" | 4.625" | 17.89" |
| | 12" (315mm) | | | | | | | 4.625" | 17.37" |
| | 14" (355mm) | | | | | | | 4.625" | 17.18" |
| | 16" (400mm) | | | | | | | 4.625" | 17.86" |
| | 18" (450mm) | | | | | | | 4.625" | 17.70" |
| | 20" (500mm) | | | | | | | 4.625" | 17.36" |
| | 22" (560mm) | | | | | | | 4.625" | 17.74" |
| | 24" (630mm) | | | | | | | 4.625" | 17.90" |

TX05266-03-02-17

CD02006-03-02-17

Hot Tap Operation

Inspect Tooling

Inspect the grip plates in housing assembly. The plates must be clean to prevent slippage and ensure proper fit. Clean the plates of any dirt or residual material.

NOTICE: All four Grip Plates and spring must be in place before using Hot Tap Tool.

Verify that the size marked on the housing assembly matches the size of the pipe being attached to.

The O-ring is lubricated with silicone lubricant for ease of pipe installation. It may be necessary to lubricate the O-ring periodically. Use only Parker Super-O-Lube®. The lubricant is not intended to provide extra sealing capability.

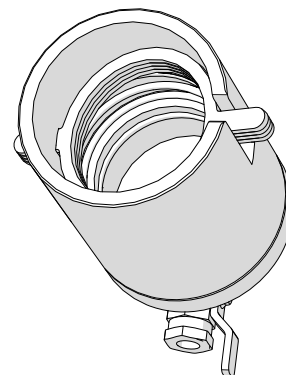
Lubricating the O-ring:

1. First, remove the plates, one at a time, and then remove the spring.
2. Inspect the O-ring in the housing assembly for signs of damage. If an O-ring is scored or cut, it must be replaced. Apply the lubrication sparingly (1 or 2 drops) to the inside circumference of the O-ring, with your finger or swab (O-ring does not need to be removed).
3. Lastly, re-assemble housing assembly, spring first, then the grip plates one at a time.

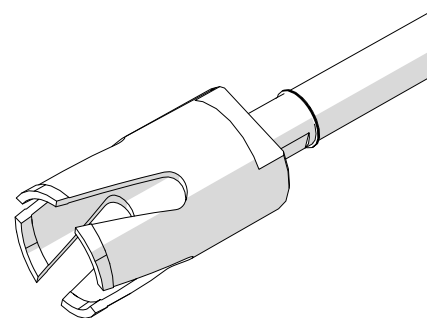
NOTICE: Remove any grease, oil or any other foreign material from grip plates before use.

Inspect the cutters for damage or dullness. Dull or chipped cutters must be replaced.

CAUTION Cutter edges are very sharp. Avoid injury by avoiding direct contact with the cutter.



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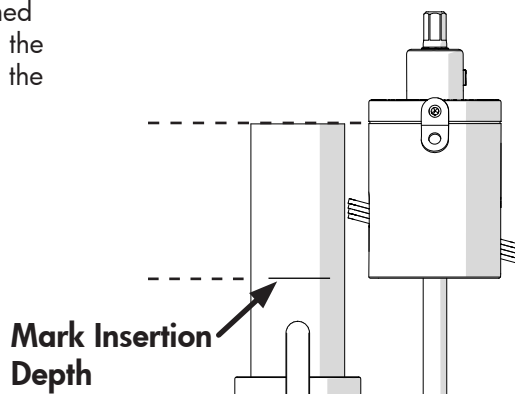


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TX05249-02-28-17

Mark Insertion Depth

Holding the housing assembly next to the pipe being attached to, align the line near the end of the housing assembly with the end of the pipe. Make a mark that is in-line with the end of the housing assembly.



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TX05250-02-28-17

Hot Tap Operation

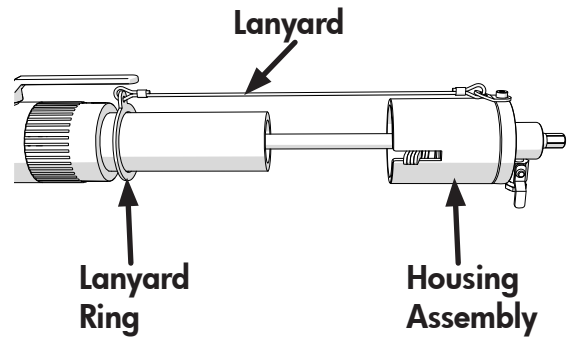
Hot Tap Tool Lanyard

This device consists of a cable with a ring on one end and the other end is attached to the housing assembly. In the event that the hot tap tool is accidentally dislodged, the lanyard is designed to minimize the travel of the tool by wedging itself on the pipe. The lanyard may be required by your local regulations.

Install the lanyard ring over the pipe before installing the housing assembly on the pipe.

Inspect the lanyard for fraying or wear prior to each use. Replace if damaged or worn.

TX05251-02-28-17



Install Tool on Pipe

Check the end of the pipe. Make sure the outside of the pipe is free of dirt and scratches that would prevent an airtight seal.

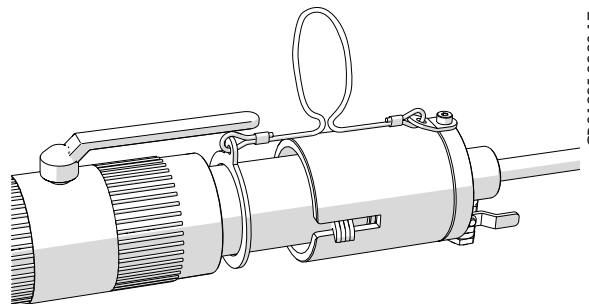
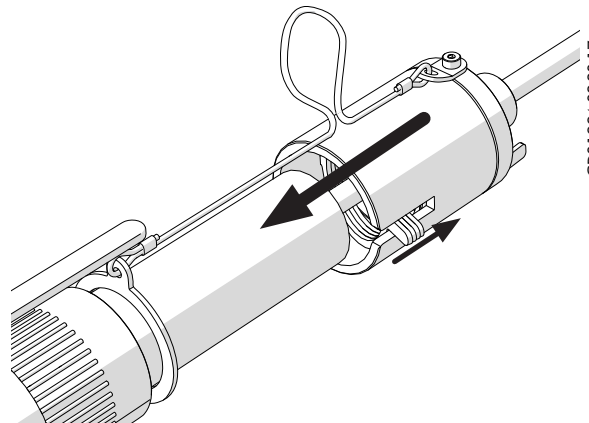
Pull back the tabs on the grip plates and fully insert the tool (as straight as possible) onto the pipe until the marked insertion depth is in-line with the edge of the housing assembly. It may be necessary to rotate the housing assembly as you install it. It is important that the housing assembly be inserted completely to minimize the possibility of leakage.

IMPORTANT: When insertion of the pipe is difficult: Chamfer the outside edge of the pipe. Never use grease or oil on end of pipe.

If pipe is out-of-round, use a cold ring clamp to re-round the pipe.

Ensure the pressure relief valve on the housing assembly is closed.

Open the ball valve.



TX05252-02-28-17

Hot Tap Operation

Begin Tapping

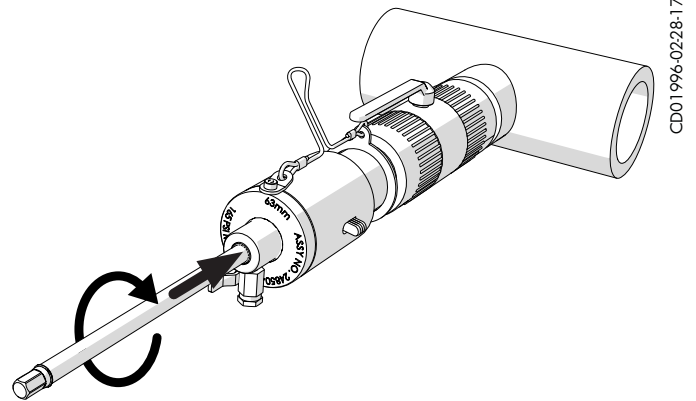
Attach the drill or ratchet wrench to the hex at the end of the cutter shaft.

IMPORTANT: If using a cordless drill, ensure the battery is charged and has enough power to tap into the pipe.

Slowly drive the cutter while turning until the snap ring on the cutter shaft stops against the back of the housing assembly.



WARNING The cutter shaft can move back with force when retracting the cutter. Stand clear of shaft travel to avoid the possibility of injury.



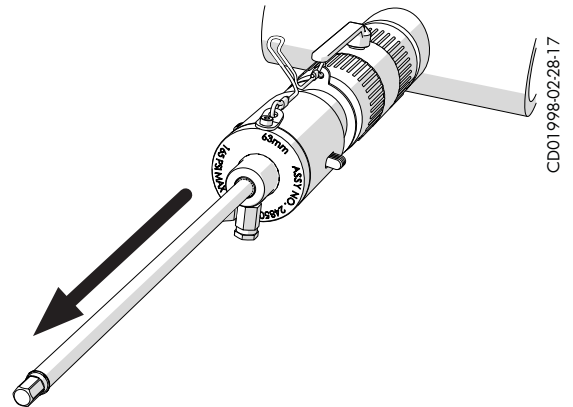
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Retract Cutter

Pull the cutter away from the main and back to the housing assembly.

Stand clear of cutter shaft when retracting the cutter.

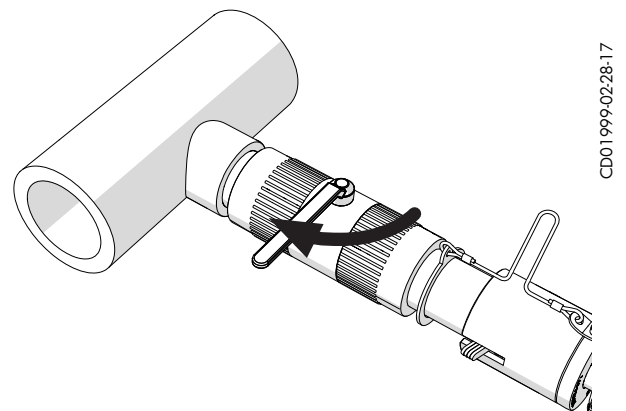
Make sure cutter is as far back to the housing assembly as possible.



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Close Ball Valve

Close the ball valve.

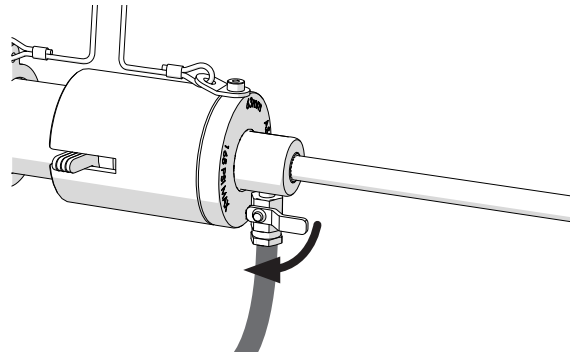


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Hot Tap Operation

Bleed Off All Pressure

Open pressure relief valve and bleed off all pressure. A short hose can be attached to direct pressure away from personnel. The hose is not included.



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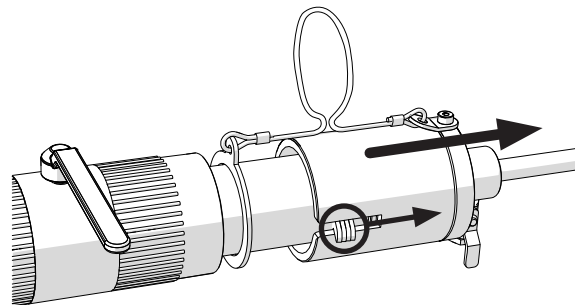
TX05256-02-28-17

Remove Tool

Pull back on the tabs of the grip plates.

Remove the housing assembly from the end of the pipe. It may be necessary to rotate the housing assembly to remove. Slide the lanyard ring off the pipe.

If housing assembly does not remove easily, there may be pressure in the line. Make sure all pressure has been bled from line before removing housing assembly.



CD02008-03-03-17

TX05257-02-28-17

Fuse Service Line to Branch Saddle Connection

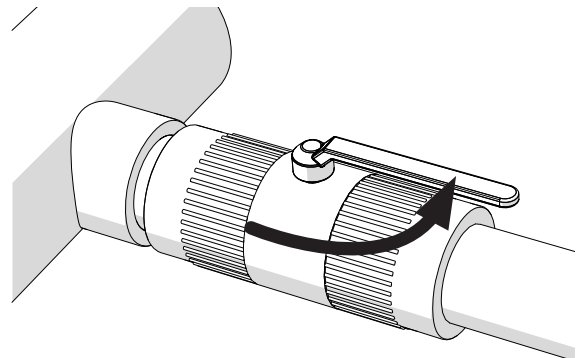
Using appropriate fusion equipment, fuse the service line to the branch saddle assembly. Perform the fusion according to pipe manufacturer's procedure or appropriate joining standard.

Allow the fused service line to cool according to manufacturer's procedure or appropriate joining standard.

TX05258-02-28-17

Open Ball Valve

Open the ball valve when ready to put line into service.



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TX05259-02-28-17

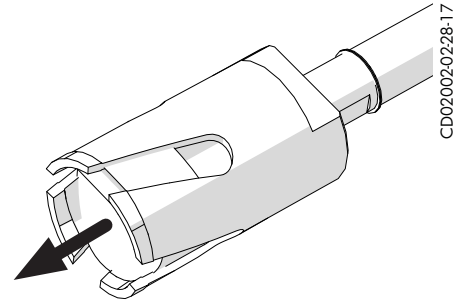
Hot Tap Operation

Prepare Tool For Next Tap

Carefully remove coupon from cutter using a long handled screwdriver.

CAUTION Cutter edges are very sharp. Avoid injury by avoiding direct contact with the cutter.

NOTICE: Use care not to damage cutting edges when removing coupon.



TX05260-02-28-17

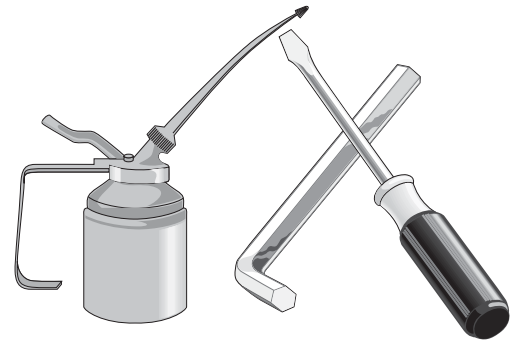
Maintenance

Preventative Maintenance

To insure optimum performance, the machine must be kept clean and well maintained.

With reasonable care, this machine will give years of service. Therefore, it is important that a regular schedule of preventive maintenance be kept.

Store machine inside, out of the weather, whenever possible.



CD00142-112-94

TX00428-8-10-95

Washing the Machine

The machine should be cleaned, as needed with a soap and water wash.



CD00178-5-3-96

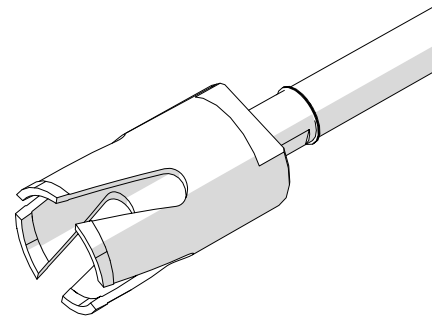
TX05238-02-22-17

Pipe Cutters

Inspect the cutters for damage and dullness. Dull or chipped cutters must be replaced.



Cutter edges are very sharp. Avoid injury by avoiding direct contact with the cutter.



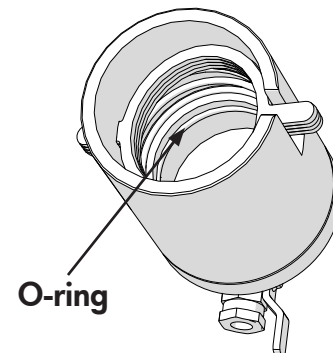
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TX05262-02-28-17

Housing Assembly O-ring

Lubricating the O-ring:

1. First, remove the plates, one at a time, and then remove the spring.
2. Inspect the O-ring in the housing assembly for signs of damage. If an O-ring is scored or cut, it must be replaced. Apply the lubrication sparingly (1 or 2 drops) to the inside circumference of the O-ring, with your finger or swab (O-ring does not need to be removed).
3. Lastly, re-assemble housing assembly, spring first, then the grip plates one at a time.



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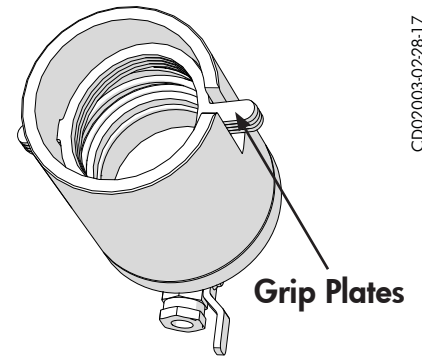
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Maintenance

Housing Assembly Grip Plates

Inspect the grip plates in housing assembly. The plates should be straight and free of damage, replace any damaged grip plates. The plates must be clean to prevent slippage and ensure proper fit. Clean the plates of any dirt or residual material.

NOTICE: All four Grip Plates and spring must be in place before using Hot Tap Tool.



CD0203-0228-17

TX05264-0228-17

Maintenance Checklist

Fusion Machine Checklist

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Specifications

Hot Tap Tools

Length:

21" (533mm)

Weight: (includes housing assembly, cutter shaft, gland with relief valve and lanyard)

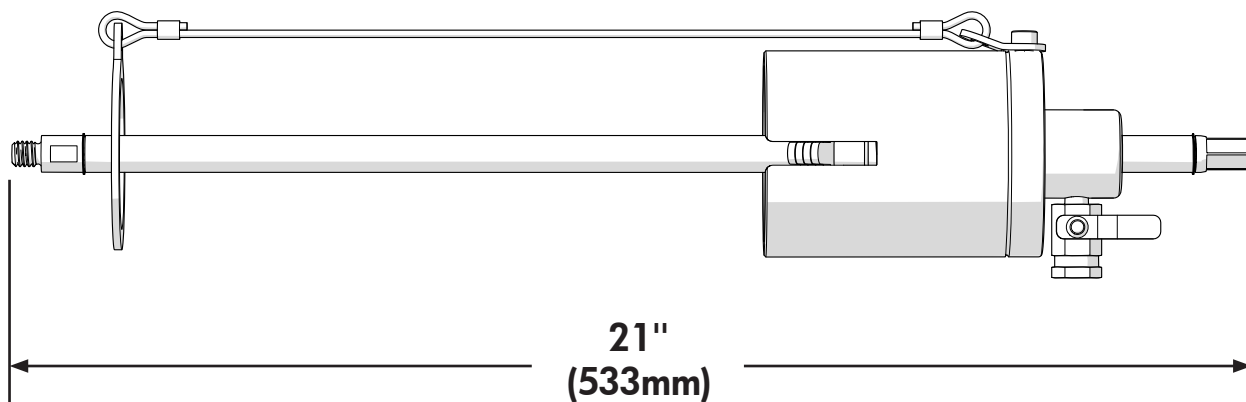
32mm Hot Tap Tool 3.9 lbs. (1.8 Kg)

40mm Hot Tap Tool 4.6 lbs. (2.0 Kg)

50mm Hot Tap Tool 4.8 lbs. (2.1 Kg)

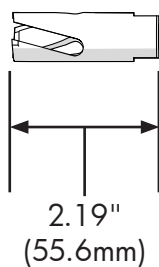
63mm Hot Tap Tool 4.9 lbs. (2.2 Kg)

Maximum working pressure: 165 psi (11.3 bar)

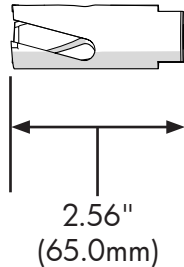


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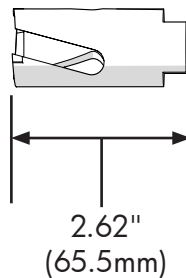
32mm Cutter



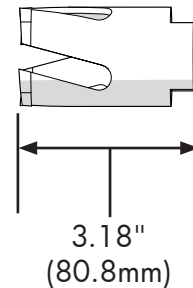
40mm Cutter



50mm Cutter



63mm Cutter



CD02009-03-03-17

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