

# Operator's Manual



# McELROY

[www.mcelroy.com](http://www.mcelroy.com)

2", 3", 4" & 6"

## Hot Tap Tools

Manual: 224901 Revision: J 5/06







# Introduction



## Thank you for purchasing this McElroy product.

McElroy Hot Tap Tools are designed to make hot taps through a branch saddle into live mains. The tools may be made-up to be used with a squeeze-off device or a PE 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.



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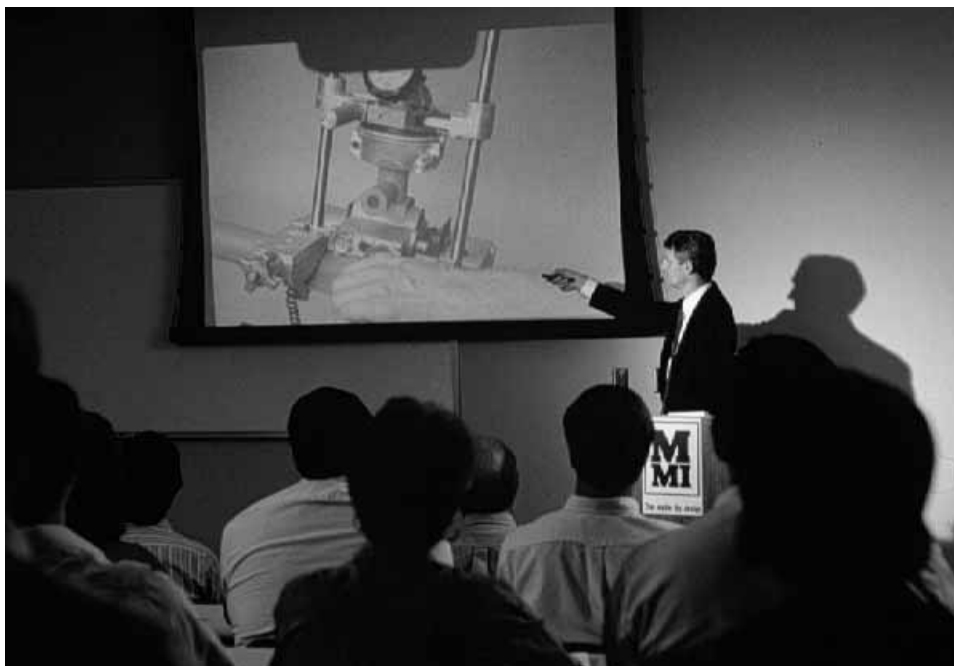
TX01126-9-11-96

## World Class Training

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.

McElroy Manufacturing, Inc., offers advanced training classes to enhance efficiency, productivity, safety and quality. Training is available at our facility or onsite at your location. Call (918) 8368611

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# 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 **3 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](http://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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# 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.



WRC0051-11-30-92



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



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



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.

TX00030-12-1-92

## Read and Understand

Do not operate this equipment until you have carefully read, and understand the "Safety" and "Operation" 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.



WRC0052-12-1-92

TX00031-12-8-92



# 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.

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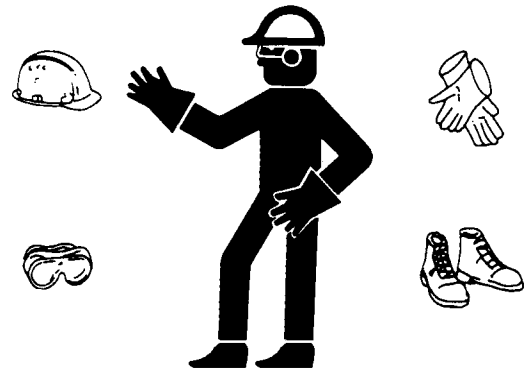
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## Wear Safety Equipment

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

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

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## 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.

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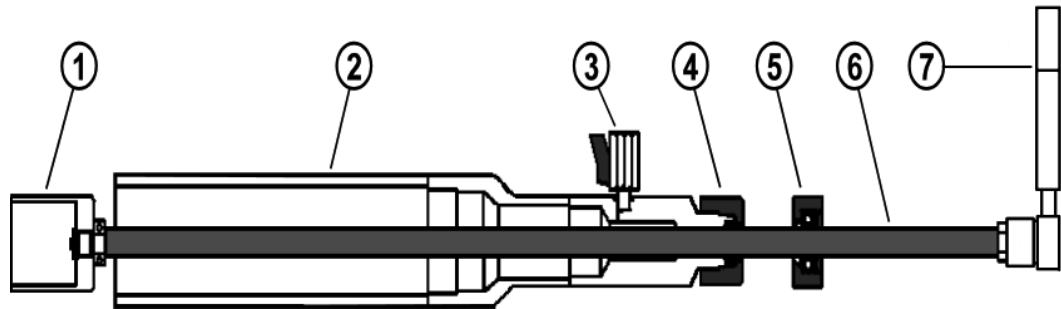
# Overview



## Nomenclature

- ① Cutter
- ② Gland Fitting
- ③ Bleed Valve
- ④ Gland End Cap
- ⑤ Bearing
- ⑥ Cutter Shaft
- ⑦ Socket Wrench

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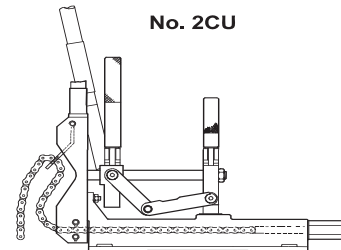


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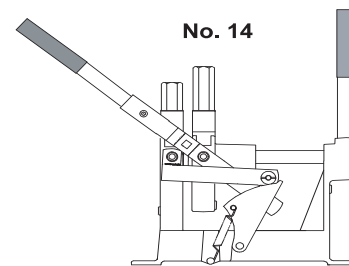
## Fusion Machines To Use

Models No.2CU, Sidewinder and No.28 can be used to fuse a branch saddle onto a main.

Models No.2CU, No.14 and No.28 can be used to make butt fusion joints, depending on what size is required.



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# Tool Make-Up



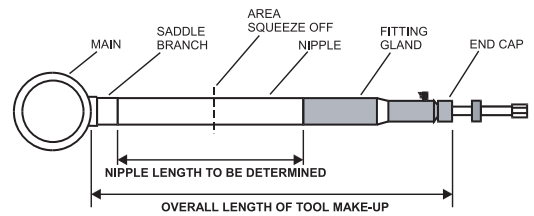
## Tool Make-up Measurements

The overall tool length is measured from the cap on the gland fitting, to the center of the concave side of the fitting which butts against the pipe.

**NOTICE:** Allowance for face off and bead rollback during fusion must be added to the measurement.

The make-up length is different for each size tapping tool.

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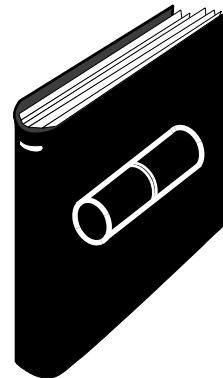
- 6" = 81" ±1/4"
- 4" = 52" ±1/4"
- 3" = 45" ±1/8"
- 2" = 36-1/2" ±1/8"

## Fusion Procedures

Use standard facing and fusion procedures from the fusion machine Operator's Manual, adhering to the pipe manufacturer's specifications.

**IMPORTANT:** Make sure the pressure relief valve on the tapping tool and the ball valve are positioned so that they will be accessible after fusing tool make-up.

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## 2" Hot Tap Tool Using No.2CU Fusion Machine

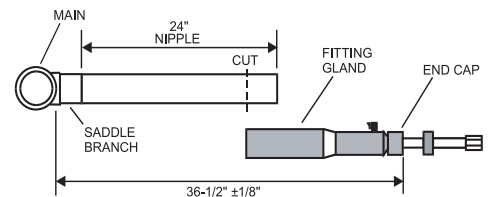
**NO VALVE:** Fuse 24" nipple to branch saddle.

Fuse nipple and branch saddle to main.

Measure for tool make-up and cut excess from nipple, leaving 1/4" to 1/2" for face off and bead rollback.

Fuse tool to nipple.

Tool make-up with no valve  
2CU MACHINE / 2" HOT TAP / 2" CUTTER



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**WITH BALL VALVE:** Fuse 6" nipple to branch saddle.

Fuse Polyvalve to nipple and branch saddle.

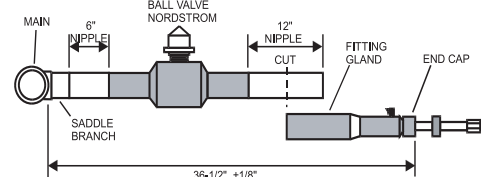
Fuse 12" nipple to other end of ball valve.

Fuse branch saddle and ball valve assembly to main.

Measure for tool make-up and cut excess from nipple, leaving 1/4" to 1/2" for face off and bead rollback.

Fuse tool to nipple.

Tool make-up with valve  
2CU MACHINE / 2" HOT TAP / 2" CUTTER



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## 2" Hot Tap Tool Using No.14 and Sidewinder™ Fusion Machines

**NO VALVE:** Fuse branch saddle to main.

Fuse 24" nipple to gland fitting on tool.

Measure for tool make-up and cut excess from nipple, leaving 1/4" to 1/2" for face off and bead rollback.

Fuse tool make-up to branch saddle.

**WITH BALL VALVE:** Fuse branch saddle to main.

Fuse 14" nipple to ball valve.

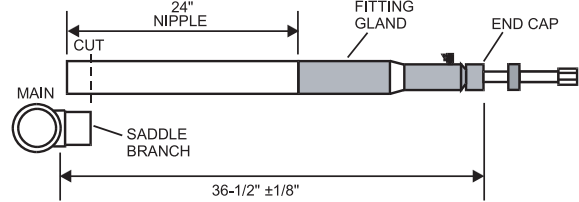
Fuse other end of ball valve to gland fitting on tool.

Measure for tool make-up and cut excess from nipple, leaving 1/4" to 1/2" for face off and bead rollback.

Fuse tool make-up to branch saddle.

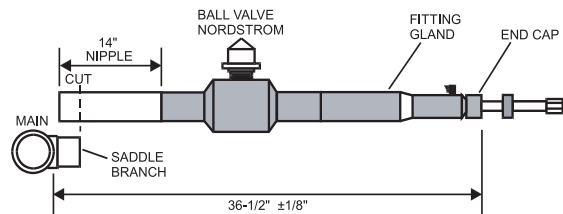
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Tool make-up with no valve  
2" HOT TAP / 2" CUTTER  
No. 14 and SIDEWINDER™ MACHINES



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Tool make-up with valve  
2" HOT TAP / 2" CUTTER  
No. 14 and SIDEWINDER™ MACHINES



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## 3" Hot Tap Tool Using No.14 and Sidewinder™ Fusion Machines

**NO VALVE:** Fuse branch saddle to main.

Fuse 25" nipple to gland fitting on tool.

Measure for tool make-up and cut excess from nipple, leaving 1/4" to 1/2" for face off and bead rollback.

Fuse tool make-up to branch saddle.

**WITH BALL VALVE:** (Use 2" cutter)

Fuse branch saddle to main.

Fuse 12" nipple to ball valve.

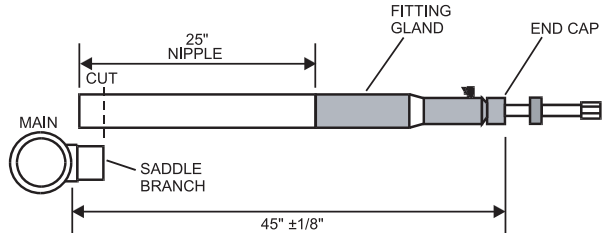
Fuse other end of ball valve to gland fitting on tool.

Measure for tool make-up and cut excess from nipple, leaving 1/4" to 1/2" for face off and bead rollback.

Fuse tool make-up to branch saddle.

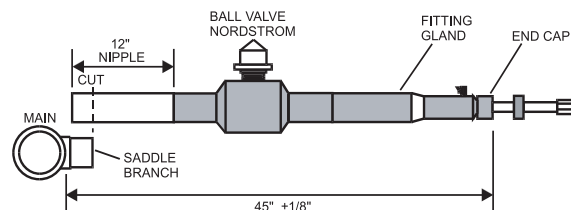
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Tool make-up with no valve  
3" HOT TAP / 3" CUTTER  
No. 14 and SIDEWINDER™ MACHINES



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Tool make-up with valve  
3" HOT TAP / 2" CUTTER  
No. 14 and SIDEWINDER™ MACHINES



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# Tool Make-Up



## 4" Hot Tap Tool Using No.14 and Sidewinder™ Fusion Machines

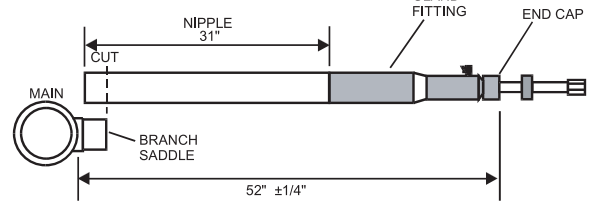
**NO VALVE:** Fuse branch saddle to main.

Fuse 31" nipple to gland fitting on tool.

Measure for tool make-up and cut excess from nipple, leaving 1/4" to 1/2" for face off and bead rollback.

Fuse tool make-up to branch saddle.

No. 14 and SIDEWINDER™ MACHINES  
4" HOT TAP / 4" CUTTER  
Tool make-up with no valve



**WITH BALL VALVE:** (Use 3" cutter)

Fuse branch saddle to main.

Fuse 6" nipples to each end of the ball valve.

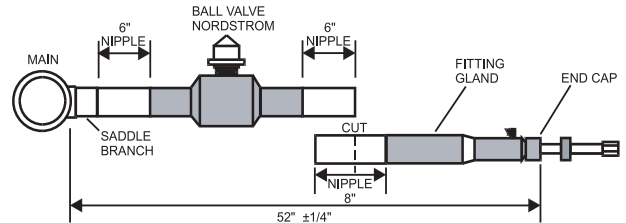
Fuse the ball valve with nipples to branch saddle.

Fuse 8" nipple to gland fitting on tool.

Measure for tool make-up and cut excess from nipple on tool, leaving 1/4" to 1/2" for face off and bead rollback.

Fuse tool make-up to ball valve nipple.

Tool make-up with valve  
4" HOT TAP / 3" CUTTER  
No. 14 and SIDEWINDER™ MACHINES



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## 6" Hot Tap Tool Using No.28 Fusion Machine

**WITH BALL VALVE:** (Use 4" cutter)

Fuse 45" nipple to gland fitting on tool.

(For round based saddles, fuse a 3" pup to the branch saddle)

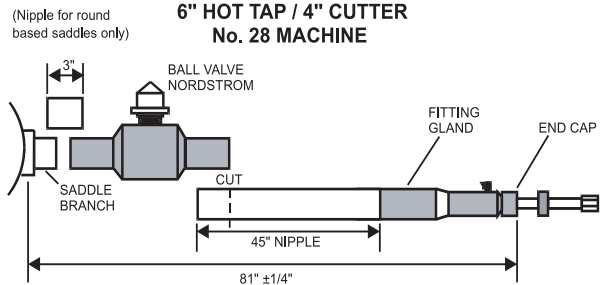
Place the tapping tool assembly, valve and branch saddle in line and measure the total length of all components, adding 1/2" to 3/4" for face off and bead rollback. After the assembly is fused together, the total make-up length should be 81" plus allowance for facing and bead rollback.

Cut excess from nipple on tool.

Fuse components together.

Fuse tool assembly to main.

Tool make-up with valve  
6" HOT TAP / 4" CUTTER  
No. 28 MACHINE



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# Hot Tap Operation

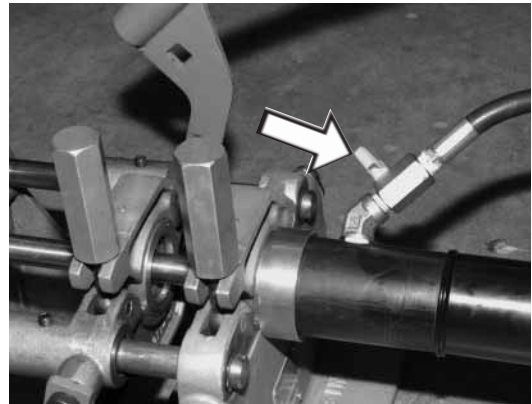


## Pressure Test Tool Make-up

Attach hose to the pressure relief valve on the tapping tool. Open valve and pressure test the tool make-up as required by applicable regulations.

Relieve all pressure after test is complete and close pressure relief valve. Remove air hose.

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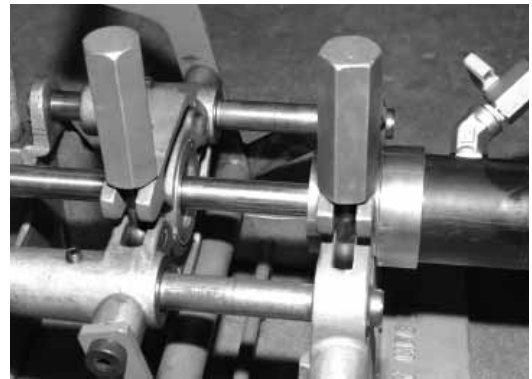


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## Clamp Tool in Fusion Machine

Install proper size jaw inserts, as required. Clamp the bearing housing on the tool in the movable jaw and the tapping tool in the fixed jaw.

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## Begin Tapping

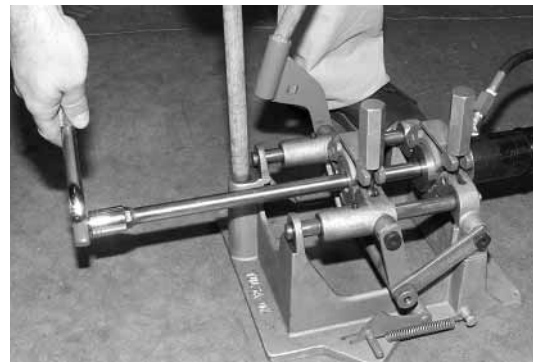
Attach the ratchet wrench to the hex bar at the end of the cutter drive shaft.

Using a No.2CU or No.14 machine, apply moderate pressure on the movable handle and rotate the cutter drive shaft in a clockwise direction to begin tap.

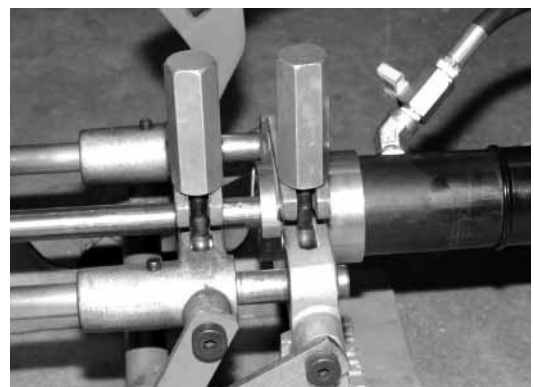
When using a No.28 machine, shift the selector valve to the facing mode and reduce the pressure to the lowest setting. Ratchet the cutter shaft clockwise while activating the carriage control valve to move in. It may be necessary to shift in and out of neutral when too much resistance is encountered.

Keep tapping until the bearing housing bottoms out against the end cap of the tool.

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PH02417-2-19-03



# Hot Tap Operation



## Retract Cutter

Pull the cutter away from the main and as far into the tool as possible. Stand clear of cutter shaft and loosen the movable jaw enough to allow the bearing housing to come out of the jaw.



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

Make sure cutter is as far into the tool as possible.

TX01152-11-18-96



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## Close Valve or Squeeze Off Nipple

If the tool was made up with a ball valve in line, close the ball valve.

If there is no valve, use a squeeze off tool to shut off all line flow.

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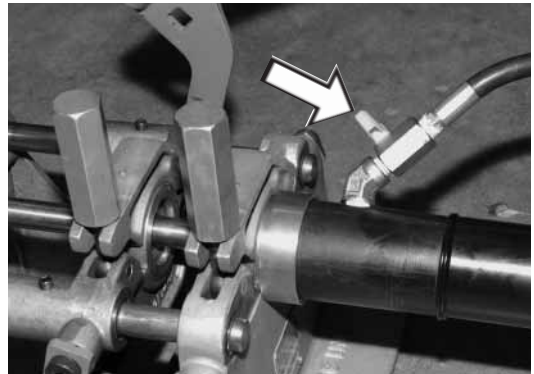
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## Bleed Off All Pressure

Open pressure relief valve and bleed off all pressure. A short hose can be attached to direct pressure away from personnel.

Remove fusion machine from tapping tool.

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## Cut the Tool Off

Use standard static charge precautions.

Cut the tool at the bead between the gland fitting and the nipple, or the gland fitting and the ball valve, whichever was fused to the gland fitting.

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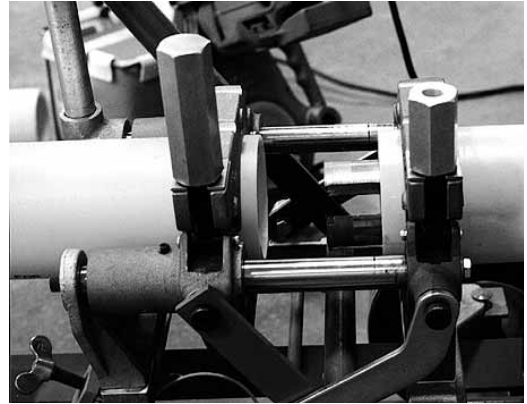


# Hot Tap Operation



## Fuse Service Line to Branch Saddle Connection

Fuse the service line to the branch saddle assembly.



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## Open Ball Valve or Remove Squeeze Tool

Allow the fused service line connection to cool.  
Open the ball valve or remove the squeeze tool to allow the service line to pressurize.



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## Prepare Tool For Next Tap

Remove coupon from cutter using a long handled screwdriver.



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



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# Specifications



## Hot Tap Tools

### Shipping Lengths:

2" tool:	50" (127 cm)
3" tool:	60" (152 cm)
4" tool:	67" (170 cm)
6" tool:	94" (193 cm)

### Shipping Weights:

2" tool:	8lbs (3.6 Kg)
3" tool:	12 lbs. (5.4 Kg)
4" tool:	18 lbs. (8.2 Kg)
6" tool:	26 lbs. (11.8 Kg)

**Maximum working pressure:** Same pressure rating as pipe being tapped

TX01273-2-27-97

## **About this manual . . .**

McElroy Manufacturing continually strives to give customers the best quality products available. This manual is printed with materials made for durable applications and harsh environments.

This manual is waterproof, tear resistant, grease resistant, abrasion resistant and the bonding quality of the printing ensures a readable, durable product.

The material does not contain any cellulose based materials and does not contribute to the harvesting of our forests, or ozone-depleting constituents. This manual can be safely disposed of in a landfill and will not leach into ground water.

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**The leader by design.**

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