

MTD



POLYTAPP™ **Operation Manual**

Tapping Machines & Valves

NOTICE

Any operation involving work on pipe containing liquids or gases under pressure is potentially hazardous. To ensure a safe working environment, always follow proper procedures including those available from the equipment manufacturer and your company.

No person is authorized to make plastic pipe joints for natural gas service unless that person has been qualified through training, assembling, fusing and testing specimens in accordance with 49 CFR 192.285.

It is the responsibility of the operator to establish a method to determine that each person making joints in pipelines in their system is qualified to make those joints.

This manual does not serve to replace but should be used as a supplement to hands-on training. This manual is not intended to be used for system design purposes and does not take the place of the advice of a professional engineer.

Should any issue or difficulty arise while operating this equipment, contact MTD.

For Parts & Service

2820 Commerce Blvd.
Irondale, AL 35210-1216 USA
Phone 800-633-7131
www.mtdeason.com

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Safety

Safety Alerts

Various safety alerts appear in this manual. When you see one of the below safety alerts, YOUR SAFETY IS AT STAKE.



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.

Proper Grounding

Polyethylene pipe often creates internal and external electrostatic charges that can be hazardous to personnel and equipment, particularly in dry conditions. When pipe is excavated, take steps to ensure the surface of the pipe and equipment are effectively 'grounded' or 'earthed' to prevent the potential of static arcing which could result in ignition of natural gas when present. Each operator should develop procedures for static charge dissipation. Machine grounding points are shown on page 2-2. The following are effective ways to dissipate static charges on exposed PE pipe:

- Use an earthed wet tape conductor laid in contact with the entire length of exposed pipe surface, interrupted only where work must be performed.
- Periodically re-dampen wet tape conductors with a very dilute water and detergent solution to maintain electrical conductivity.
- If ambient conditions are below freezing, add antifreeze (glycol) to the water solution to prevent freezing.
- Use a purpose-designed electrically conductive tape such as 3M 9707, applied to the entire length of exposed pipe and connected to a metallic grounding pin driven into the ground.



WARNING

Before tapping, properly ground equipment to eliminate any static electricity. Electrostatic charges can be hazardous to personnel and equipment.

Equipment Storage

To ensure your tapping equipment performs as expected, always use the provided protective cases for storage. Never store equipment or accessories loose in work truck bins or tool boxes. MTD provides storage cases for this equipment to prevent damage and to help ensure long service life. If a storage case is damaged or a replacement is necessary, contact your MTD sales representative.

EQUIPMENT SAFETY

Read & Understand

All persons intending to perform hot taps on plastic pipe systems using MTD POLYTAPP equipment should study and become familiar with the contents of this manual prior to conducting field operations, even if they have been previously qualified to perform hot taps.

The steps in this manual related to electrofusion of fittings is intended only as guidance and does not take the place of electrofusion installation operator qualification.

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

General Safety

This manual does not purport to address every possible circumstance that might involve a potential hazard. The warnings in this manual and on the equipment are not all-inclusive.

This manual does not include procedures for excavation, evacuation of water, trench shoring or other work site tasks. Refer to and follow all applicable company procedures, local and industry regulations regarding work site safety.

Be aware of anything unusual during set up or operation:

LISTEN for thumps, bumps, rattles, squeaks, leaks or other unexpected sounds.

SMELL odors like burning plastic, hot metal, or natural gas.

FEEL any unexpected changes in the way the equipment operates.

SEE problems with equipment, loose bolts or fittings, partially open valves, etc.

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

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

Remove jewelry and rings. Do not wear loose-fitting clothing. Tie back long hair that could get caught in tools or obstruct your vision.



Do not position yourself or any other personnel under supported or raised pipe. Pipe is heavy and could fall unexpectedly.

NOTICE

Do not leave equipment with unauthorized personnel. Do not allow any unauthorized personnel to operate this equipment.

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Overview

OVERVIEW

Polyethylene Pipe / Machine Supports

Pipe and tapping machine may require support during tapping. In the event that support is required, utilize wood, sand bags, or pipe stands to support pipe and/or align tapping machine properly.

POLYTAPP Cutter Diameters

2" Nominal - 1.50" Actual

4" Nominal - 3.35" Actual

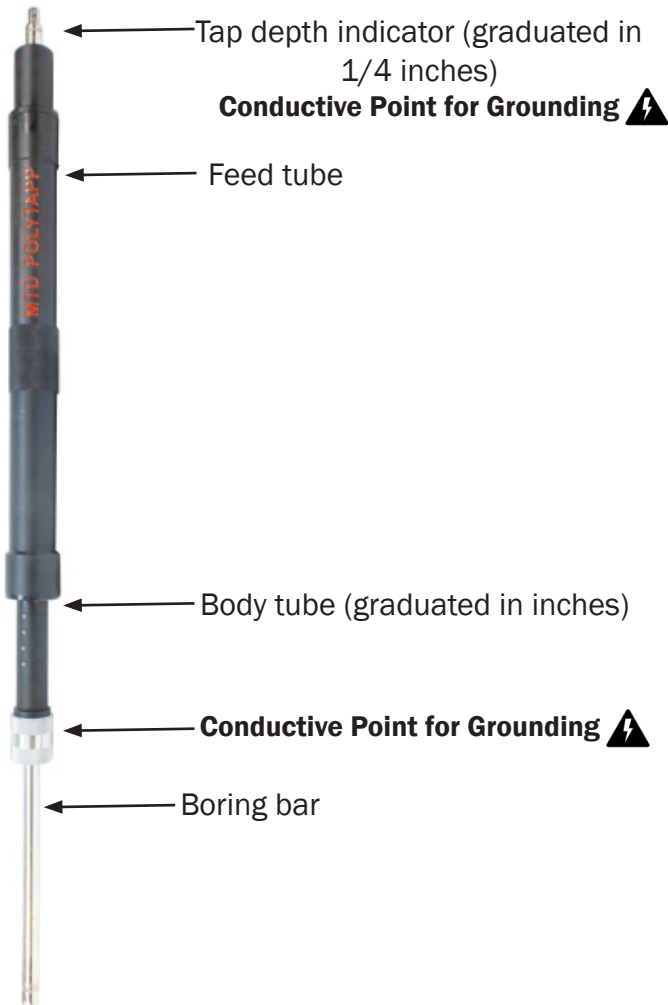
6" Nominal - 4.72" Actual

8" Nominal - 5.88" Actual



WARNING Cutters for lateral tapping and cutters for vertical line stop entry tapping ARE NOT INTERCHANGEABLE! Use of improper cutter will result in equipment, pipeline damage.

Tapping Machine & Components



Ratchet Handle



Feed Tube Travel Stop



Pilot Retention Clip



Spanner Wrench

OVERVIEW



POLYTAPP® Accessory Kit



Adapter Wrench
Included



Tapping Adapter included



Test Cap Included



Cutter & Pilot Included

Optional Equipment



Air Motor



Torque-Reduction Gearbox



POLYTAPP® CLAMP

All hot tap diameters are designed to be performed by hand using the ratchet handle. The air motor and gearbox allow for hot taps to be performed with virtually no operator fatigue. The POLYTAPP Clamp is the best way to hold the valve in place during fusion to the saddle, and is recommended but not required.

OVERVIEW

POLYTAPP System

This manual is designed to provide operating instructions for the POLYTAPP hot tapping system for polyethylene pipe.

When used in conjunction with the POLYTAPP Operator Training Program, this manual outlines steps required to satisfy requirements of ASME B31Q-2018 Task 1091 “Tap a Pipeline (Tap Diameter Greater than 2 in.)”.

POLYTAPP equipment should always be stored in the cases provided. The cases for both the tapping machine and the accessories are intended to prevent damage to components and enhance longevity of your equipment.

O-rings in this system should be properly lubricated. MTD recommends DOW MolyKote™ 112 for this purpose.

Metallic fitting components of EF fittings are exempt from PHMSA Part 192 corrosion control requirements due to the pipeline being non-metallic. See PHMSA Part 192 Corrosion Enforcement Guidance Document, Pg. 5 “Scope”.

All POLYTAPP valves are 1/4-turn operation. Calculation is required if equipped with gear operator.

Tapping Machine Specifications

	PE-25	PE-32 (Discontinued)	PE-37
Part Number	TRI1080	TRI1082	TRI1082-37
Max Operating Pressure	250psi	250psi	250psi
Max Operating Temperature	115°F	115°F	115°F
Tap Sizes*	2", 4"	2", 4", 6"	2", 4", 6", 8"
Main Sizes	2" and above	2" and above	2" and above
Feed Rates			
Fast (Feed Tube)	1.00" per 360° Turn	1.00" per 360° Turn	1.00" per 360° Turn
Slow (Tap Depth Indicator)	0.04" per 360° Turn	0.04" per 360° Turn	0.04" per 360° Turn
Maximum Travel	25"	32"	37"
Machine Weight	38lbs	43lbs	48lbs
Length (Extended)	63"	79"	86"

*Tap sizes listed are for taps made through Polytapp® Valves

POLYTAPP Valve Coupling Cooling Times

SIZE	MINIMUM COOLING TIME	TOTAL COOLING TIME
2"	10 MINUTES	20 MINUTES
4"	10 MINUTES	20 MINUTES
6"	10 MINUTES	20 MINUTES
8"	10 MINUTES	35 MINUTES

Pipe & Saddle Preparation & Fusion

PIPE & SADDLE PREPARATION & FUSION

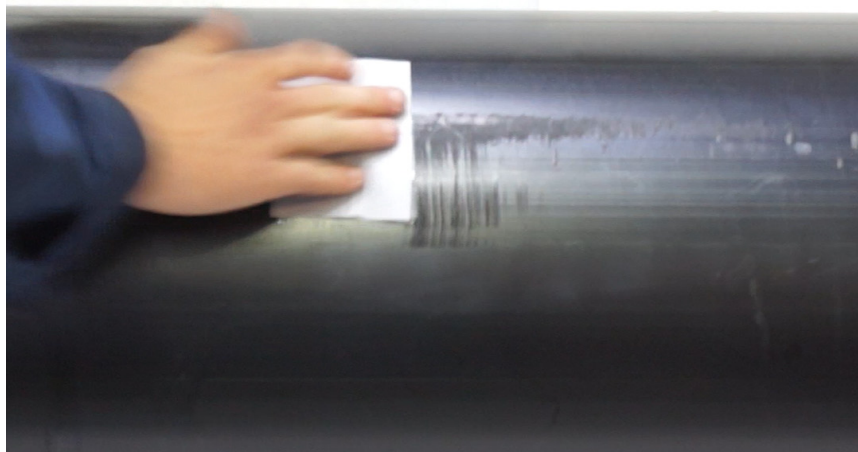
STEP 1: Wash Pipe

Wash pipe with water and a cloth to remove mud, dirt, etc. Do not use soap or detergent. Ensure an adequate length of pipe beyond the area to be joined has been washed to ensure contaminants will not be introduced in future steps. For saddle joints, 3x the width of the saddle is generally sufficient.



STEP 2: Clean Pipe (1st Pass)

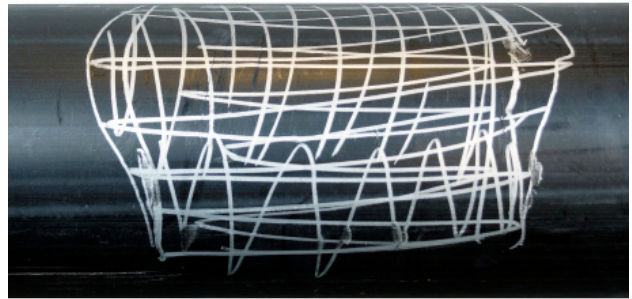
Use alcohol to clean an area of pipe at least double (2x) the width required by the saddle. This step helps avoid introduction of contaminants to the pipe surface revealed during peeling, and also allows for clear, contrasting marks to be made in the following steps.



PIPE & SADDLE PREPARATION & FUSION

STEP 3: Set and Mark Fusion Zone

Make width marks on the pipe equal to the width of the saddle plus one inch. Do not remove the fitting from its bag. Fill inside these width marks with cross-hatched witness marks. These marks help give visual indication that your peeling tool is removing adequate material.

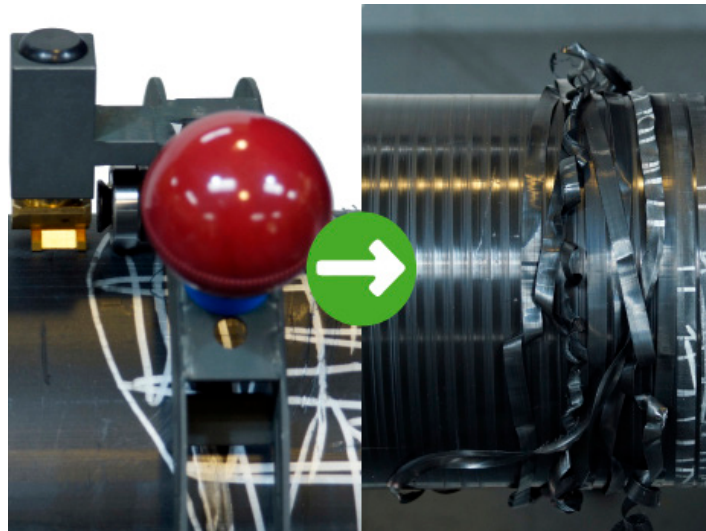


STEP 4: Peel Pipe

Using your pipe preparation tool, remove the top layer of pipe surface up to the width marks made in the previous step. Make sure all witness marks are removed, and the ribbon from your tool is continuous and about as thick as two sheets of ordinary copy paper.



WARNING Ensure all witness marks/shavings have been removed. If witness marks/shavings still remain, peel was unsuccessful and unprepared material still remains in the fusion zone of the pipe. Improper/insufficient peeling will likely result in a fusion failure.



PIPE & SADDLE PREPARATION & FUSION

STEP 5: Clean Pipe (2nd Pass)

Use alcohol to clean the area that was peeled in the previous step. Make sure to wipe only inside the peeled area, not beyond. This helps avoid dragging contaminants from the unpeeled area to the peeled area. This step removes sweat, oils or other contaminants from the pipe that may have been introduced during peeling.



WARNING Do not use less than 90% concentrated isopropyl alcohol. Ensure all alcohol and moisture has evaporated and pipe surface is dry before continuing.

STEP 6: Clean Fitting

Remove fitting from packaging and use alcohol to clean the heating mat on the underside of the saddle. Although the fitting has been in its original package up to this point, cleaning the heating mat is a simple step to help ensure successful fusion and joint integrity. Take care not to touch the bottom of the saddle with anything other than the cleaning cloth or wipe.



WARNING Ensure all alcohol and moisture has evaporated and fitting surfaces are dry before continuing.

PIPE & SADDLE PREPARATION & FUSION

STEP 7: Fit Joint

Place saddle on peeled area of pipe surface, rotate to desired position and tighten. Proper tightness has been achieved when the fitting yields no movement when reasonable force is applied attempting to rotate it around the pipe. This is not a challenge.

For nylon strap under-clamps, loosen U-bolt nuts on both sides. Fully remove U-bolt along with the backing plate from one side. Place saddle on pipe and pass strap and removed U-bolt under pipe, up through holes in saddle base, then reinstall backing plate and nuts. Turn nuts clockwise until saddles comes into tight contact with pipe. When tightening nuts, ensure all four nuts are tightened evenly.



Do not use pneumatic or electric tools to tighten hex screws or nuts on MTD saddle fittings. Use of these types of tools can quickly result in overtightening which may cause fusion failure or damage to the fitting.

STEP 8: Re-Mark Width

Make a mark against the base of the saddle on both sides. This mark helps give visual evidence that the saddle position has not changed during or after fusion.



STEP 9: Energize Fitting

Follow the manufacturer's instructions for your electrofusion control box to energize and fuse the fitting to the pipe.



NOTICE

MTD fittings are designed with 4.7mm fusion terminals which include an ID resistor. If fusing in dedicated or resistor ID mode, ensure control box leads are properly connected in accordance with control box manufacturer's instructions. Not all fusion control boxes support resistor ID fusion.

CAUTION

Never scan a fusion barcode of any fitting other than the fitting to which the control box is connected, whether similar or identical. This could result in improper fusion parameters being calculated by the control box and applied to the fitting.

STEP 10: Verify and Mark Pipe

On the pipe surface, write the operator's initials, time of day heating cycle was completed, clamping time and rough handling time on the pipe. See the following steps for identifying clamping and rough handling times.

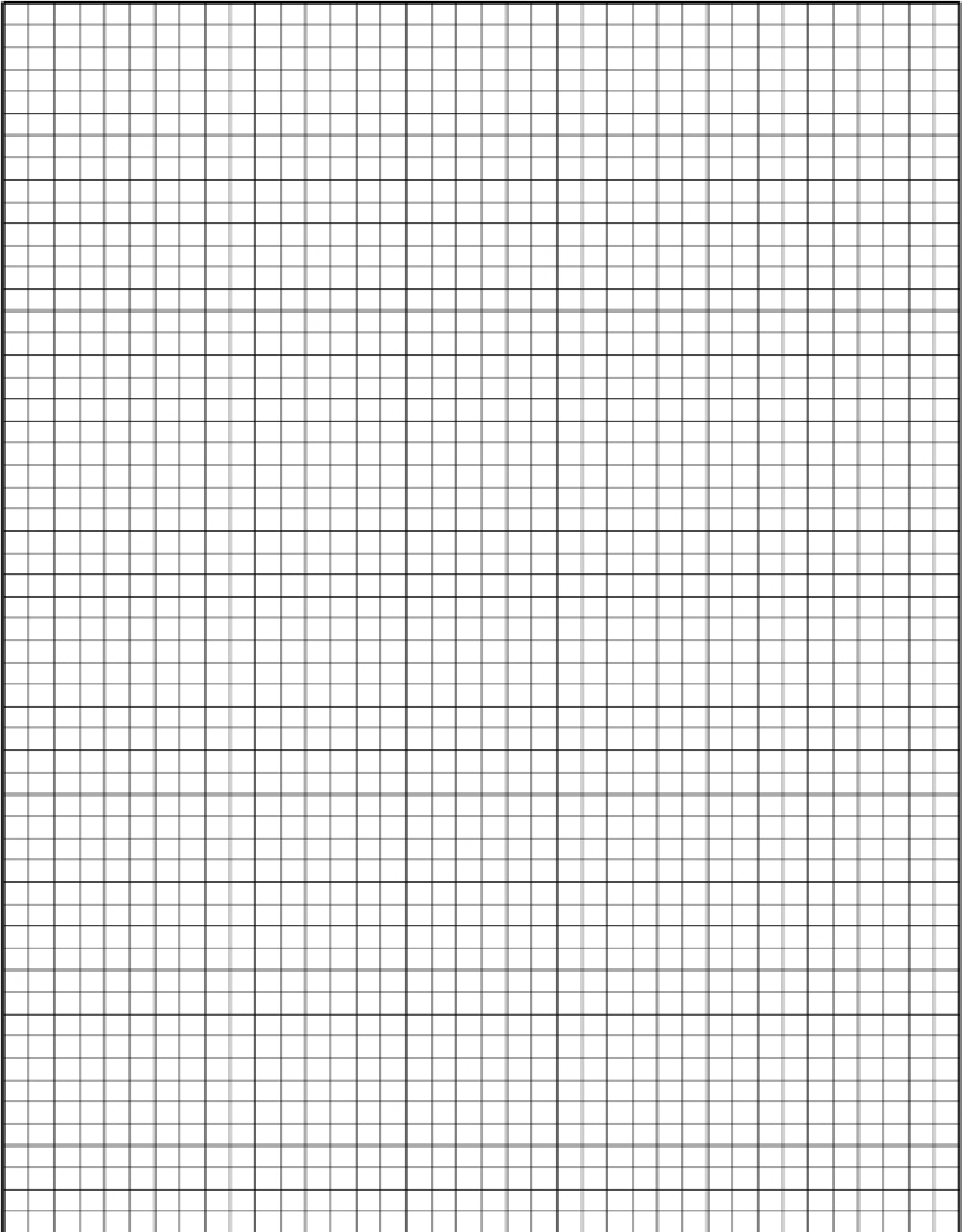
STEP 11: Cooling Phase I - Clamping Time

MTD saddle-type fittings are designed to be buried with the clamp in-place, however if you prefer to remove the clamp, allow joint to cool for the time specified on the fitting label and molded into the fitting body before removal of the clamp.

STEP 12: Cooling Phase II - Rough Handling Time

Allow the joint to continue to cool for its rough handling time prior to pressure testing, backfilling, tapping, etc. Rough handling times are listed on the printed insert packaged with each fitting. If this is not available, allow the fitting to continue to cool for double the clamping time for a total of three times (3x) clamping time.

Notes



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Fitting Preparation and Fusion of POLYTAPP Valve

INSTALLING POLYTAPP VALVE

STEP 1: Clean Outlet (1st Pass)

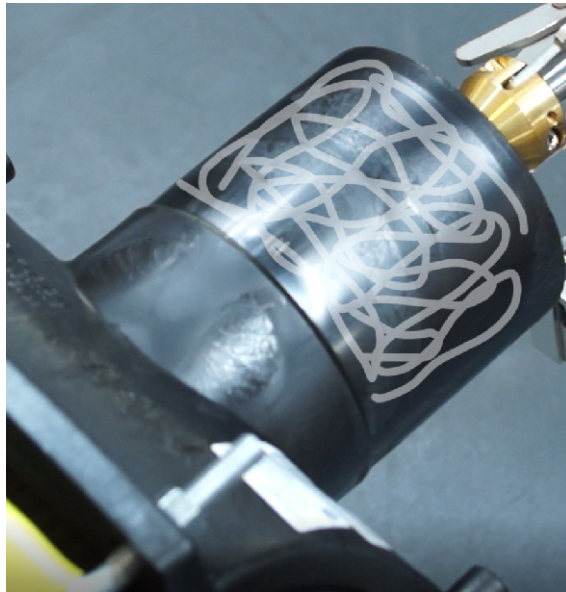
Use alcohol to clean the outlet of the branch saddle. This step helps avoid introduction of contaminants to the outlet surface revealed during peeling, and also allows for clear, contrasting marks to be made in the following steps.



WARNING Do not use less than 90% concentrated isopropyl alcohol. Ensure all alcohol and moisture has evaporated and pipe surface is dry before continuing.

STEP 2: Make Witness Marks

With a contrasting marker, make cross-hatched witness marks on the outlet of the branch saddle. These marks help give visual indication that your peeling tool is removing adequate material.



NOTICE

Unlike a normal coupling joint, it is not necessary to make stab depth markings on the branch saddle outlet. Instead, the entire length of the outlet should be peeled to prepare for fusion of the valve coupling.

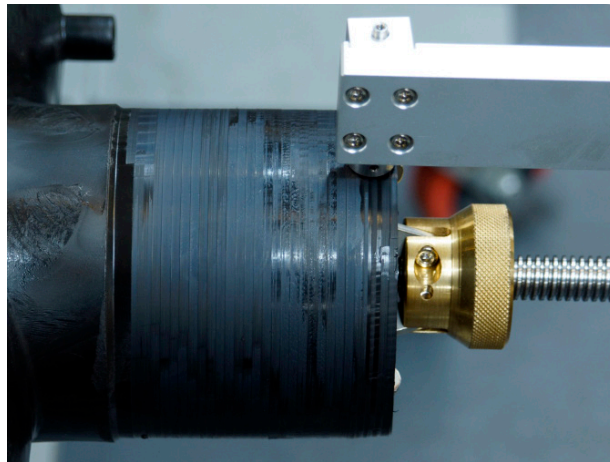
INSTALLING POLYTAPP VALVE

STEP 3: Peel Saddle Outlet

Using your pipe preparation tool, remove the top layer of outlet surface across the entire length of the outlet. Make sure all witness marks are removed, and the ribbon from your tool is continuous and about as thick as two sheets of ordinary copy paper.



WARNING Ensure all witness marks/shavings have been removed. If witness marks/shavings still remain, peel was unsuccessful and unprepared material still remains in the fusion zone of the pipe. Improper/insufficient peeling will likely result in a fusion failure.



STEP 4: Clean Outlet (2nd Pass)

Use alcohol to clean the area that was peeled in the previous step. Make sure to wipe only inside the peeled area, not beyond. This helps avoid dragging contaminants from the unpeeled area to the peeled area. This step removes sweat, oils or other contaminants from the pipe that may have been introduced during peeling.



WARNING Do not use less than 90% concentrated isopropyl alcohol. Ensure all alcohol and moisture has evaporated and pipe surface is dry before continuing.

STEP 5: Clean Inside Coupling

Use alcohol to clean the fusion area inside the coupling socket. Cleaning the inside of the fitting is a simple step to help ensure successful fusion and joint integrity. Take care not to touch the inside of the fitting socket with anything other than the cleaning cloth or wipe.

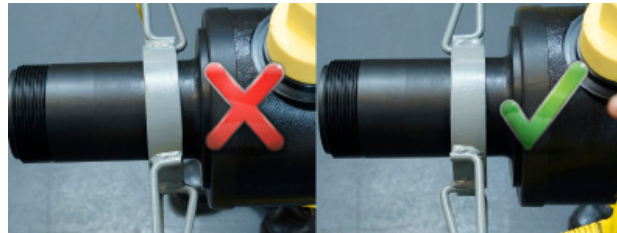


WARNING Do not use less than 90% concentrated isopropyl alcohol. Ensure all alcohol and moisture has evaporated and pipe surface is dry before continuing.

STEP 6: Fit & Clamp Joint

Slip valve coupling ends over saddle outlet until fully stabbed. Secure valve to branch saddle with a POLYTAPP Clamp.

Ensure clamp ring is positioned with flat side against valve body as shown.



Wrap strap around pipe with ratchet facing upward. Pass strap end through ratchet and tighten to hold valve against saddle outlet.



STEP 7: Energize Fitting

Follow the manufacturer's instructions for your electrofusion control box to energize and fuse the valve to the saddle outlet.



NOTICE

MTD fittings are designed with 4.7mm fusion terminals which include an ID resistor. If fusing in dedicated or resistor ID mode, ensure control box leads are properly connected in accordance with control box manufacturer's instructions. Not all fusion control boxes support resistor ID fusion.

CAUTION

Never scan a fusion barcode of any fitting other than the fitting to which the control box is connected, whether similar or identical. This could result in improper fusion parameters being calculated by the control box and applied to the fitting.

STEP 8: Verify and Mark Valve

On the valve surface, write the operator's initials, time of day heating cycle was completed, clamping time and rough handling time on the pipe. See the following steps for identifying clamping and rough handling times.

STEP 9: Cooling Phase I - Clamping Time

Allow joint to cool for the time specified on the coupling fusion label and molded into the coupling body before removal of the POLYTAPP clamp.

STEP 10: Cooling Phase II - Rough Handling Time

Allow the joint to continue to cool for its rough handling time prior to pressure testing, backfilling, tapping, etc. Rough handling times are listed on the printed insert packaged with each fitting. If this is not available, allow the coupling to continue to cool for double the clamping time for a total of three times (3x) clamping time.

STEP 11: Perform leak test

Before hot tapping, the joints between the valve and saddle and between the saddle and main should be leak tested. To use the POLYTAPP test cap, first open the valve then screw the test cap onto the threaded end of the valve. The test cap includes a 150psi gauge, valve and connection point for an air line. Once connected, perform leak testing per company procedures. All POLYTAPP valves are 1/4-turn operation.

WARNING ALWAYS perform a leak test before performing the hot tap, introducing pressurized natural gas and creating a hole in the existing main.



Tapping Machine Assembly & Operation

TAPPING MACHINE OPERATIONS

STEP 1: Inspect machine and accessories

Prior to operation of tapping equipment, it is important to visually inspect the machine and its accessories for damage and wear. In addition to the general fitness of the machine, make sure to check for the following:

- Threads on tapping adapter are clean and are not broken, cracked or ground down.
- O-ring inside test cap and tapping adapter are in place, free of tears or frays and are lubricated. If dry, apply MolyKote 112 or similar O-ring lubricant.
- Air fittings on test cap and tapping adapter are tight and in good condition.
- Gauges on test cap and tapping adapter are not frozen, broken or cracked.
- Tapping machine is not visibly damaged or bent.
- All required accessories for performing hot tap are present and in good working order, including ratchet handle, travel lock and retainer clip.
- Tapping machine feeds in and out smoothly without noticeable grinding or hanging.
- Cutter and pilot are securely joined together with all screws tight.
- Cutting edges of pilot and cutter are not noticeably dulled, chipped or bent.

STEP 2: Retract tapping machine

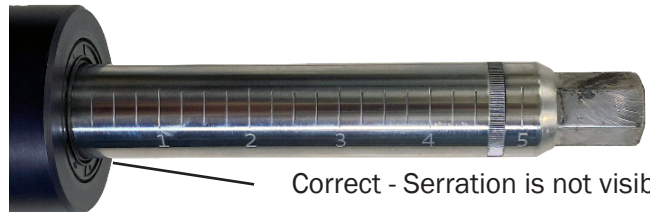
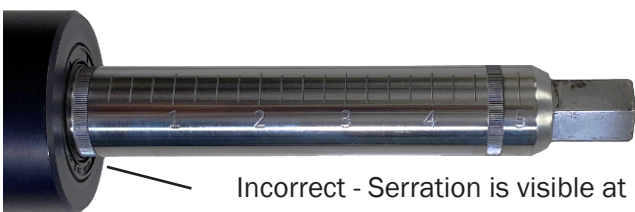
Retract feed tube until zero ('0') marking is visible on body tube. This gives a zeroed baseline for future steps/measurements. To retract the feed tube, rotate it counter-clockwise while holding the body tube still.



Ensure tap depth indicator is fully retracted. Do not retract past top of serrated groove. Indicator is at zero when bottom of graduated scale is flush with top of feed tube, and serration is not revealed. If serration is visible, machine has been retracted too far and is past zero. The tap depth indicator is simply the opposite end of the boring bar.



WARNING To avoid damage to tapping machine, never use the reduction gear to retract the tap depth indicator. Reduction gear is only intended for advancing the Boring Bar.



TAPPING MACHINE OPERATIONS

STEP 3: Install tapping adapter

The tapping adapter mates the tapping machine to the valve, and allows for pressure testing, monitoring and purging. Thread tapping adapter onto end of tapping machine and tighten with provided spanner wrench and adapter wrench.



STEP 4: Advance feed tube

Advance feed tube to six ('6') marking, providing room to attach pilot to boring bar. Attach pilot and cutter by sliding pilot into end of boring bar and tapping pilot retention clip through hole in boring bar. After attaching pilot and cutter, retract feed tube to pull cutter back inside tapping adapter until shoulder of cutter comes into contact with inside of tapping adapter. Take note of the measurement indicated on the body tube. This will be used later to ensure body tube is fully retracted.



NOTICE

Wrap a strip of tape around the retainer clip to prevent the pilot from dropping off the tapping machine in the unlikely event that the clip breaks.

TAPPING MACHINE OPERATIONS

STEP 5: Attach assembly to valve

Lock feed tube to body tube then insert pilot and cutter into outlet of valve. Turn entire tapping machine assembly and thread adapter onto valve. Tighten adapter to valve with provided adapter wrench. Adapter / Valve threads are not tapered, and sealing is achieved through the compression of the O-ring inside the adapter at the end of the valve outlet, when no valve end threads are visible.



WARNING Adapter must be threaded onto valve end until no valve threads are visible. If threads are visible, adapter is not sufficiently tightened and could be ejected from end of valve under pressure.



Ensure tapping adapter does not loosen at the joint indicated above when tightening to valve. Once adapter is tight, re-check tapping machine tightness with spanner wrench.

NOTICE

If desired, assembly may be pressure tested by replacing purge valve on adapter with a ball valve and quick disconnect, similar to test cap.

STEP 6: Ensure valve is open

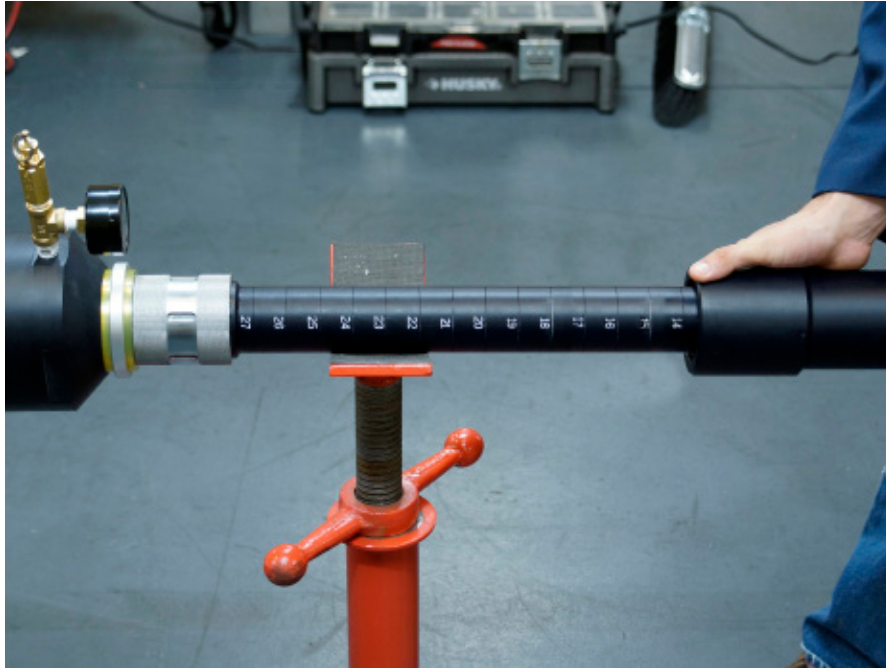
Ensure that valve is in open position before continuing.



TAPPING MACHINE OPERATIONS

STEP 7: Advance feed tube

Unlock and advance feed tube until pilot touches pipe.



NOTICE

For a measurement-based method of advancing the feed tube, see appendix on page 6-4.

STEP 8: Lock feed tube to body

Lock feed tube to body tube by tightening travel stop as shown to restrict unwanted fast-feed movement of feed tube during tap. This lock ensures that the only part of the machine that turns during the tap is the boring bar.



TAPPING MACHINE OPERATIONS

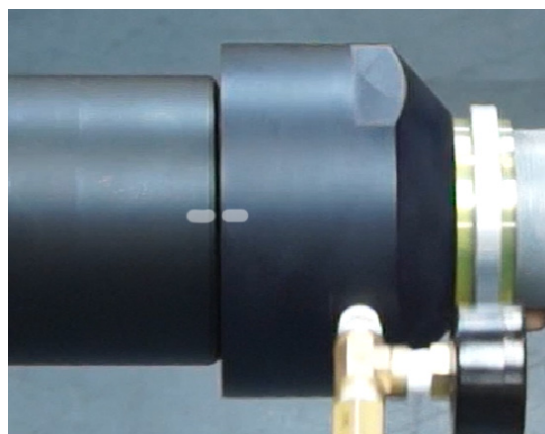
STEP 9: Mark Tap Depth

Make note of required tap depth for the pipe SDR and size being tapped. It is helpful to place a strip of tape on the required depth mark for reference. Tap depths are listed on page 6-2 of this manual's appendix.



STEP 10: Make Rotation Reference Marks

Place a strip of tape or make a mark across the connection between the tapping machine and the adapter, and the connection between the adapter and the valve end. Use these marks in future steps as visual reference that adapter is not moving / loosening as machine is operated.



NOTICE

If using a contrasting marker for these reference marks, make only one mark on your tapping adapter, and use it for future taps by marking next to it on future valves. Avoid making multiple marks on the tapping adapter to prevent confusion.

TAPPING MACHINE OPERATIONS

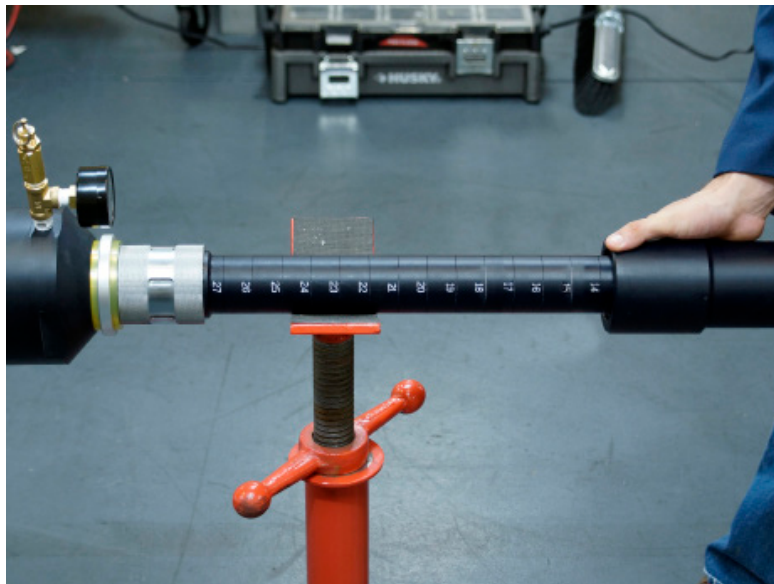
STEP 11: Advance tap depth indicator

Advance tap depth indicator (boring bar) to appropriate depth by attaching ratchet handle, and rotating in a clockwise motion until required depth is reached.



STEP 12: Check that tap is completed

Once expected tap depth has been reached, remove travel stop and rotate feed tube clockwise. If feed tube is able to advance, pipe has been successfully tapped. If feed tube cannot move, tap is not complete. Replace travel stop and advance tap depth indicator in 1/4" increments, then re-check.



TAPPING MACHINE OPERATIONS

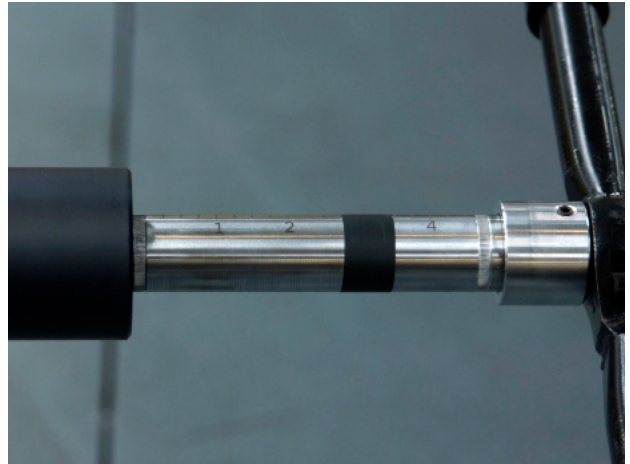
STEP 13: Retract Tap Depth Indicator

Once tap is complete, retract the boring bar by attaching ratchet handle and rotating counter-clockwise until edge of serrated groove at bottom of tap depth indicator is visible. Always retract boring bar before retracting feed tube to ensure measurement on body tube noted in previous steps is met, and cutter/pilot is completely retracted.



DANGER

Monitor and ensure tapping adapter **DOES NOT** loosen when retracting boring bar. System is under pressure. If tapping adapter is loosened while valve is open, machine could be ejected from valve resulting in serious injury or death.



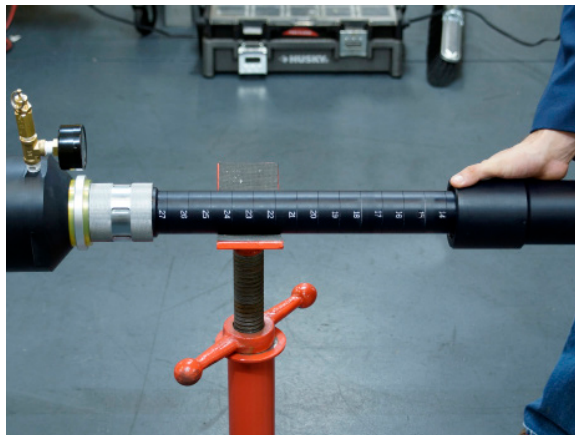
STEP 14: Retract feed tube

Ensure travel stop has been removed from tapping machine. Retract feed tube until measurement noted in step 4 (page 5-3) is visible. This will ensure cutter and pilot are clear of valve ball.



DANGER

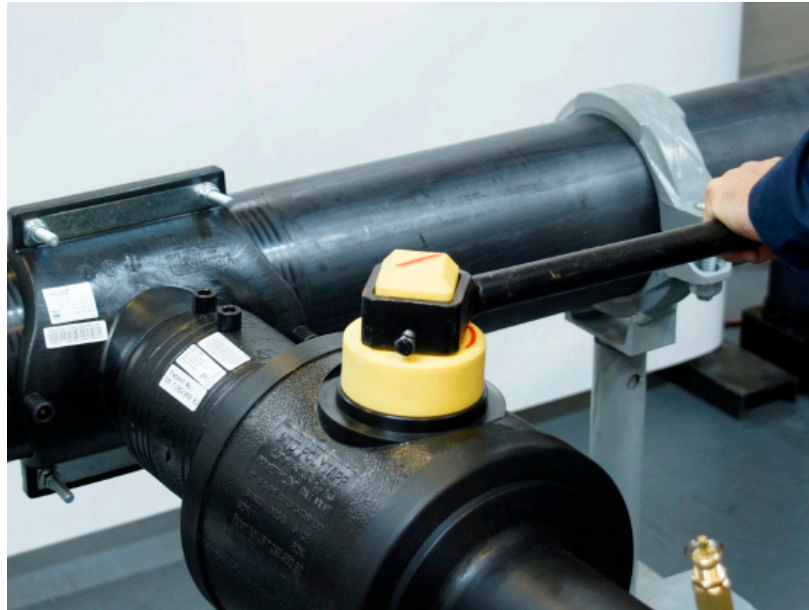
Monitor and ensure tapping adapter **DOES NOT** loosen when retracting feed tube. System is under pressure. If tapping adapter is loosened while valve is open, machine could be ejected from valve resulting in serious injury or death.



TAPPING MACHINE OPERATIONS

STEP 15: Close Valve

Close valve following rotation direction labeled on top of valve operator.



STEP 16: Purge Trapped Pressure

Purge line pressure remaining in valve end by pulling up on purge valve included on tapping adapter.

⚠ WARNING Vent pressure away from equipment and personnel. Stand clear of vent when pressure is being released.

⚠ DANGER Do not remove tapping adapter until no (0, Zero) pressure is read on gauge.

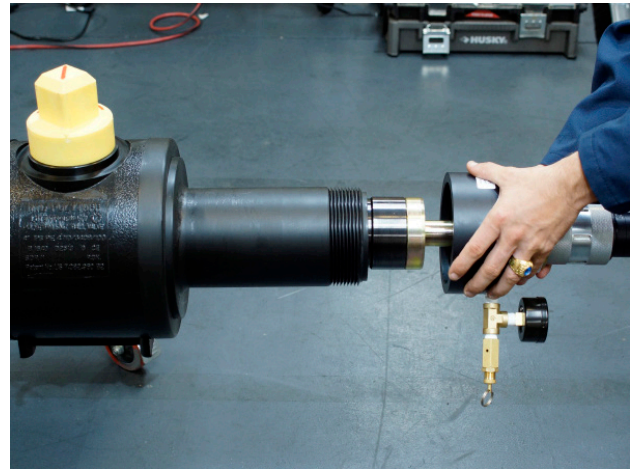


TAPPING MACHINE OPERATIONS

STEP 17: Remove Tapping Equipment

Lock feed tube to body tube with travel stop to prevent unwanted machine movement. Remove tapping equipment from valve by rotating entire assembly counter-clockwise. Use the included adapter wrench to loosen equipment from valve.

⚠ DANGER Do not remove tapping adapter until no (0, Zero) pressure is read on gauge.



TAPPING MACHINE OPERATIONS

STEP 18: Remove cutter and coupon

Remove cutter from tapping machine by tapping retention pin back through boring bar with a punch, and sliding pilot out of end of boring bar.

Remove set screw from side of cutter. This frees the pilot from the cutter assembly.

Tap pilot against a firm surface to dislodge the coupon from the inside of the cutter.

Remove coupon by rotating it counter-clockwise and unscrewing it from the pilot.

All shavings will be housed inside the cutter behind the coupon.



CAUTION Cutter and pilot are **EXTREMELY** sharp!

TAPPING MACHINE OPERATIONS

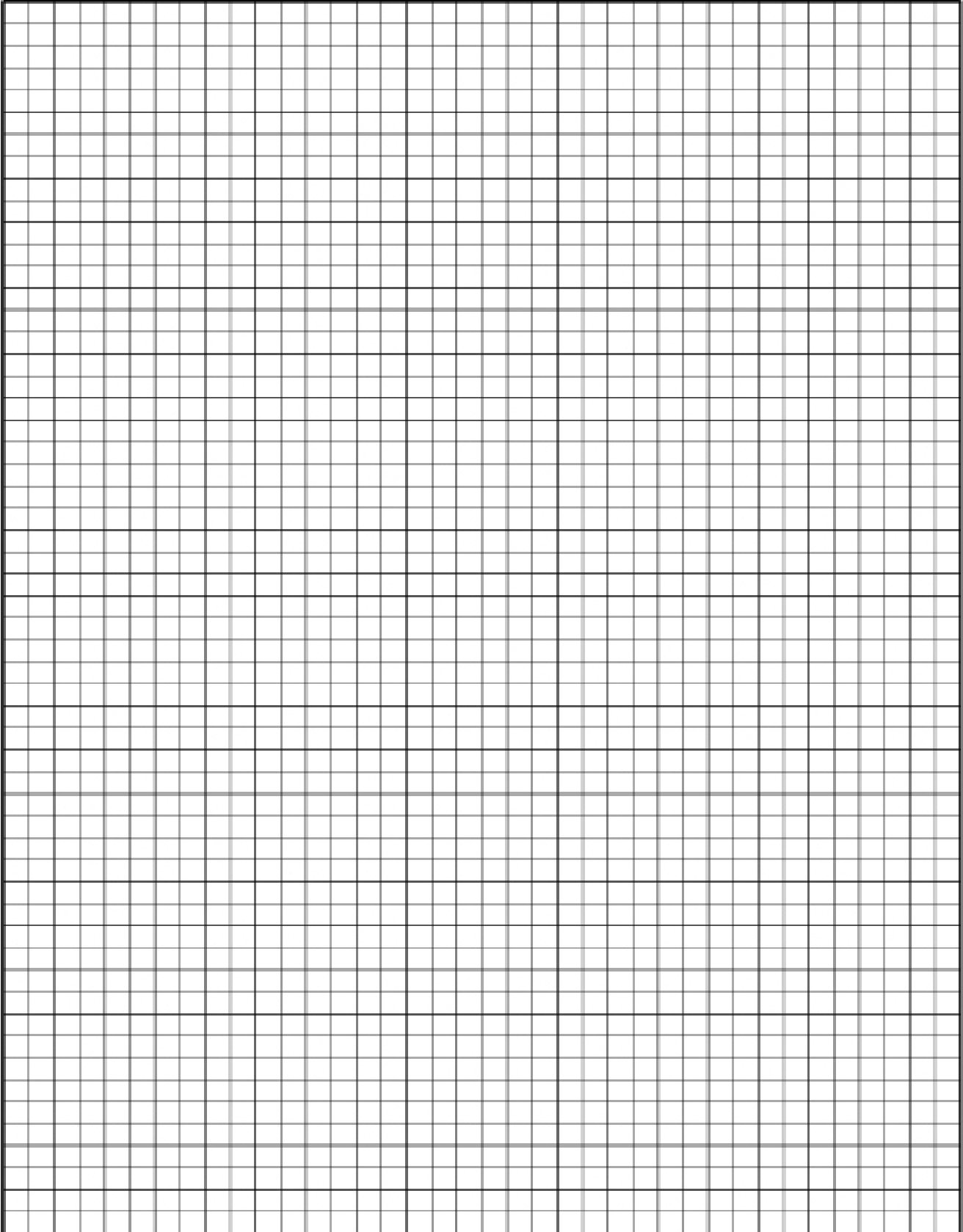
STEP 19: Tie In Lateral

At this point, with valve in off position, remove threads from outlet of valve with polyethylene pipe cutter or facer. After threads are removed follow manufacturer's instructions for butt fusion or electrofusion to valve outlet. After testing for leaks turn valve to the open position.

Hot tap is now complete, placing new lateral line in service.



Notes



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Appendix

Tap Depths Table

Nominal Pipe Size	Wall Thickness	4" Tap Depth	6" Tap Depth	8" Tap Depth
4"	DR 17	2.00"	N/A	N/A
	DR 11	2.25"	N/A	N/A
	DR 9	2.50"	N/A	N/A
6"	DR 17	1.75"	2.75	N/A
	DR 11	2.00"	3.00	N/A
	DR 9	2.50"	3.50	N/A
8"	DR 17	1.75"	2.25	3.00
	DR 11	2.00"	2.75	3.50
	DR 9	2.50"	3.00	4.00
10"	DR 17	1.75"	2.25	N/A
	DR 11	2.25"	2.75	N/A
	DR 9	2.50"	3.00	N/A
12"	DR 17	2.00"	2.25	2.50
	DR 11	2.25"	2.75	3.00
	DR 9	2.75"	3.00	3.50

All MTD Tapping Machines have a maximum tap depth range of 5.00".

All tap diameters are calculated at each pipe / DR maximum allowable wall thickness tolerance per ASTM D2513.

If tapping a wall thickness not listed, use the tap depth of the next thicker DR listed in this table. For example, if tapping DR 13.5, use the tap depth for DR 11.

⚠ WARNING To avoid tapping through the bottom of the main, **DO NOT EXCEED** the following tap depths:

4" tap on 4" pipe: DO NOT EXCEED 3.25"

6" tap on 6" pipe: DO NOT EXCEED 4.50"

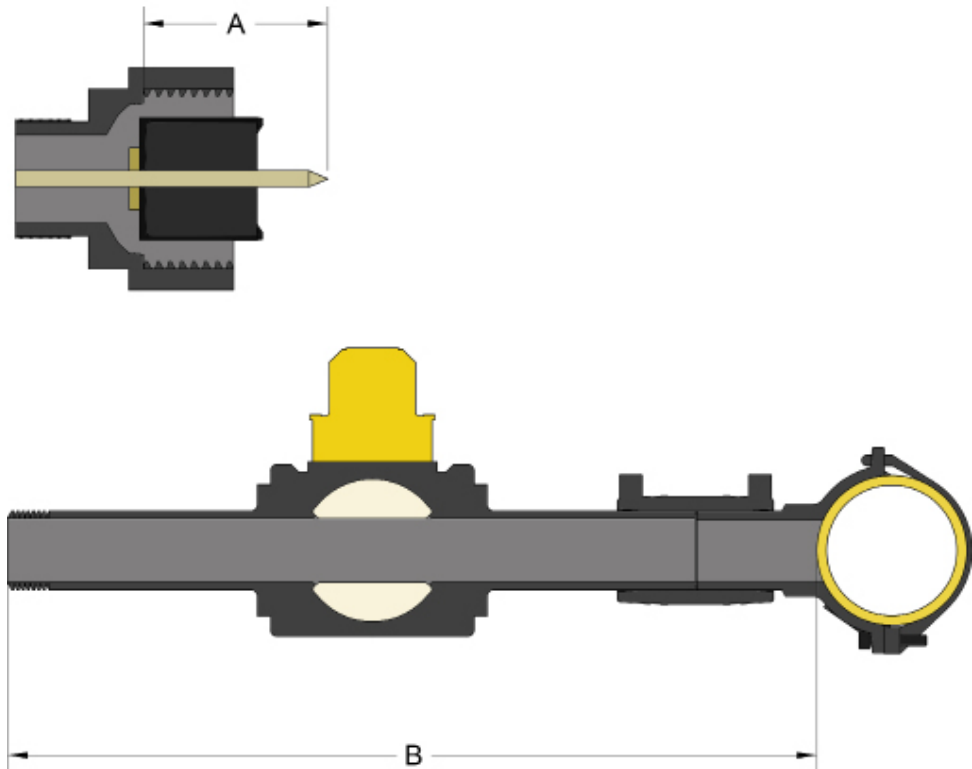
If listed tap depth is met, but pipe is not completely tapped, replace travel stop and advance tap depth indicator 0.25" then re-check. Repeat until pipe is tapped.

Advancing Feed Tube by Measurement

In some cases, operators may prefer to advance the feed tube based on measurement rather than by feel as described in Step 7 on page 5-5. In this situation, the operator should measure both length from tip of pilot to top of innermost thread inside adapter (measurement A in the below image) and the length from the surface of the pipe to the end of the POLYTAPP valve (measurement B). Measurement B is best taken through the inside of the valve in the open position. When measuring, make sure your measuring tool is in contact with the highest point of the pipe surface.

Once both measurements have been taken, subtract measurement A from measurement B. This total (L) is the appropriate distance the pilot must travel to reach the pipe surface.

In short: $B-A=L$





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www.mtdeason.com | 2820 Commerce Blvd, Birmingham, AL 35210 | 1 (800) 633-7131

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