

# Safe-T-Stopper

MAZCO Products & Services, Ltd. and PLCS, LLC

**Gas-Free Service Abandonment for 1/2"-1 1/4" Punch Tees. (80psig Maximum Allowable Operating Pressure)**



Clamp-On Saddle Punch Tees with Caps



Clamp-On Saddle Punch Tees with Internal Threaded Hex Plugs

## Operating Manual

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## Introduction

This work procedure has been developed to provide information on the correct use of the Safe-T-Stopper Tool for use on ½" to 1" Clamp-On Saddle Punch Tees on steel main. This technology enables gas free abandonment procedures on live gas services operating at a maximum of 80psig. You are expected to have this procedure with you at all times when carrying out work using this equipment.

### Limitations:

There are many different styles and variations of tees that have been installed in the ground over the years. The Safe-T-Stopper contains assemblies and adapters that are capable of handling specific tee types. When tees and pipes are uncovered their structural integrity varies. In rare occasions the tool may not be able to create an adequate seal. It is the operator's responsibility to use the proper adapters and judge the condition of the tee before attempting the operation. Using the tool outside its capabilities or on corroded fittings and/or main are not recommended and may result in serious injury.

### Safety Statements:

**READ THE OPERATING INSTRUCTION:** Reading the setup and operating instructions prior to beginning the procedure will save valuable time and help prevent injury to operators or damage to equipment.

**INSPECT TOOL & ACCESSORIES:** Prior to setup, physically inspect the tool and its accessories. Look for worn parts, loose bolts or nuts, damaged o-rings, etc. A properly maintained tool will greatly decrease the chance of injury.

**SECURE LOOSE CLOTHING, LONG HAIR & JEWELRY:** These items could get caught in the rotating parts. Removing or securing them will reduce the chance for injury.

**KEEP WORK AREA CLEAR:** Be sure to keep the work area free of clutter and nonessential materials. Only those personnel directly associated with the work being performed should have access to the area.

**ALWAYS WEAR PROTECTIVE EQUIPMENT:** Impact resistant eye protection and any and all company approved personal protective equipment must be worn while operating or working near this tool.

**ALWAYS FOLLOW YOUR COMPANY PROCEDURES:** **Gas company procedures override anything presented in this document.**

## OPERATING PROCEDURE

### **Section 1: Fastening the Tool to a Saddle Punch Tee with Caps (Photo 1). Tees with internal threaded hex plugs skip to Section 2 (page 4).**

1. Clean all components of the Safe-T-Stopper equipment prior to use. Pay particular attention to any o-rings, grooves and matching surfaces. Any dirt in these areas should be wiped off.
2. Clean the tee in order to make cap removal possible. Inspect the tee for corrosion prior to removing the cap. **If the tee is severely corroded do not attempt the Safe-T-Stopper operation.**



(Photo 1)



(Photo 2)

3. Remove cap (Photo 2). Turn the Tee Punch clockwise with an Allen wrench a few turns to make sure it is not seized. Do not use Perforator Adapter. If seized, spray with Pipe Break or penetrating lubricant and wait 15 minutes. Then, exercise the Punch to ensure it can be removed. Loosen the Punch, so it is flush with the top edge of the tee. **Note: If the Punch cannot be loosened, then do not attempt the Safe-T-Stopper operation.**
4. Choose the correct size Perforator Adapter by matching it against the Punch's Socket (Photo 3), then set Perforator Adapter aside
5. Apply pipe dope onto the male threads of the Punch Tee and tighten the Ball Valve Adapter onto the tee using the Bar Wrench (Photo 4).
6. Fit and tighten the Ball Valve, Extension Housing and Viewport onto the Ball Valve (Photo 5). Exercise Ball Valve to ensure proper operation.
7. Push on the Pressure Test Assembly and leak test the entire assembly with the Ball Valve in the open position (Photo 5).
8. Continue to Section 3, "Removing the Punch and Inserting the Self-Tapping Plug."

Make sure adapter fits  
and o rings are not  
damaged.



(Photo 3)



(Photo 4)

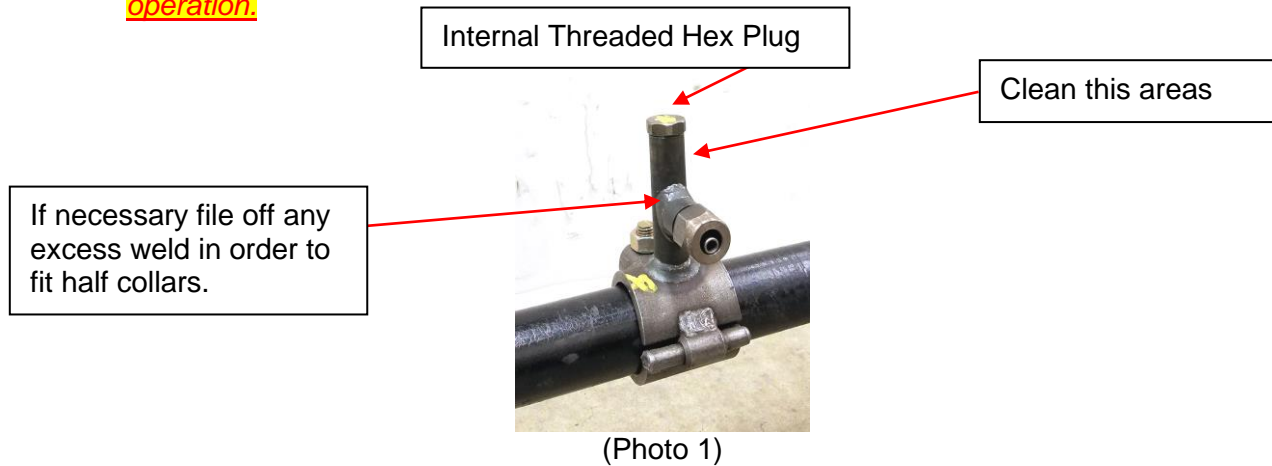


(Photo 5)

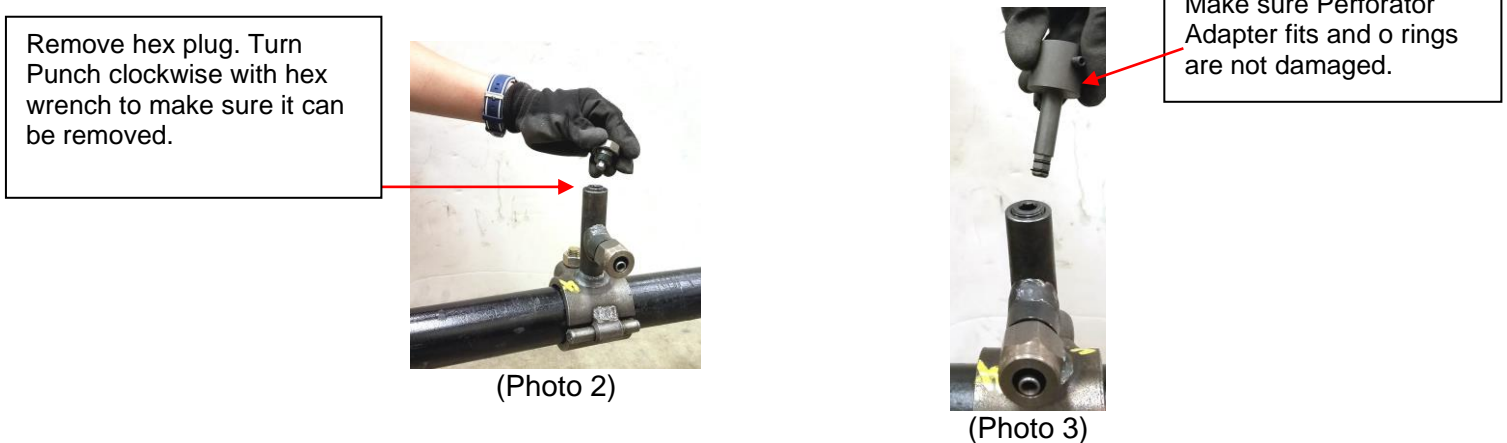
## Section 2: Fastening the Tool to a Saddle Punch Tee with Internal Threaded Hex Plugs

1. Clean all components of the Safe-T-Stopper equipment prior to use. Pay particular attention to any o-rings, grooves and matching surfaces. Any dirt in these areas should be wiped off.
2. Clean the area of the tee down to bare metal where the Packing Seals, Half Collars and the Cap Housing will be positioned. Removing all corrosion and scale so that the Packing Seals will seal properly. It is vitally important to make sure all the scale is completely removed and the integrity of the surface is intact (Photo 1). **Failure to carry out this step may allow the tool assembly to move and gas to escape.**

**If the tee is severely corroded and surface is uneven, do not attempt the Safe-T-Stopper operation.**

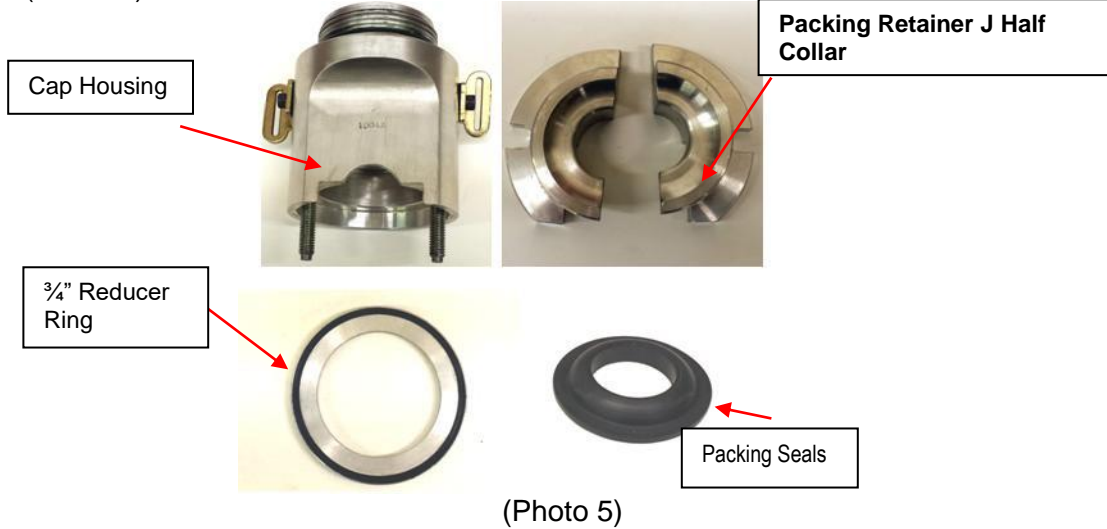


3. Remove hex plug. Turn the Tee Punch clockwise with an Allen wrench a few turns to make sure it is not seized. Do not use Perforator Adapter. If seized, spray with Pipe Break or penetrating lubricant and wait 15 minutes. Then, exercise the Punch to ensure it can be removed. Loosen the Punch, so it is flush with the top edge of the tee. Choose the correct size Perforator Adapter by matching it against the Punch's Allen Key Socket. Set Perforator Adapter aside. (Photo 2-3).



*Note: If the Punch cannot be loosened, then do not attempt the Safe-T-Stopper operation.*

4. Select the correct size Packing Seals, Reducer Ring, J Style Half Collars, Cap Housing (Photo 5).



**3/4" Tees require a Reducer Ring to be fitted inside the Cap Housing prior to fitting the Cap Housing (photos 6-8).**



(Photo 6)

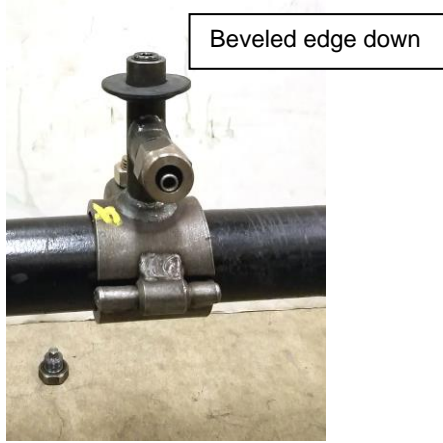


(Photo 7)



(Photo 8)

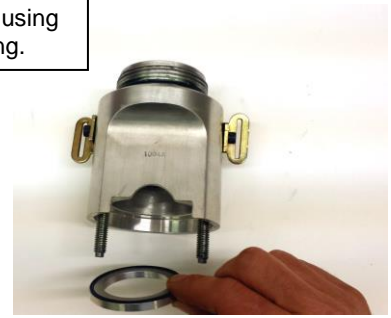
5. Take a firm two-handed grip and stretch 1 Packing Seal over the service tee cap. The Packing Seal must be installed with the bevel facing downward (Photo 9).
6. Place the 2 Packing Retainer J Half-Collars under the Packing Seals with the beveled edges upward and the collar cutaway over the service tee branch. Make sure the two Half Collar edges come together or they will not fit up inside the Cap Housing (Photo 10). Note: Only 1 Packing Seal is needed when using the reducer ring. 2 can be used if seal cannot be achieved.
7. Place the Reducer Ring inside the housing with the quad o ring against the step. Fit the Cap Housing over the tee and Half-Collars. Make sure the threaded studs are fitted through the slots in the Half Collars. Push the Half Collars up inside the Cap Housing until they touch the Packing Seals. Hand-tighten the assembly with the supplied nuts (Photo 11-12).



(Photo 9)



(Photo 10)



(Photo 11)



(Photo 12)



(Photo 13)



(Photo 14)

8. Fully tighten the nuts equally and alternately using the 9/16" wrench until noticeable resistance is felt. Do not completely tighten one nut before tightening the other (Photo 12).
9. Fit the Ball Valve on top of the Cap Housing. Tighten the Ball Valve until it compresses the o-ring located at the bottom of the threads on the Cap Housing. Open and close the ball valve to ensure proper operation (Photo 13). Retightening of the Cap Housing nuts if necessary. Do not overtighten.
10. Fit and tighten the Ball Valve, Extension Housing and Viewport. Exercise Ball Valve to ensure proper operation (Photo 14). Push on the Pressure Test Assembly and leak test the entire assembly with the Ball Valve in the open position (Photo 15).
11. Continue to Section 3, "Remove the Punch and Insert the Self-Tapping Plug to Complete the Operation."



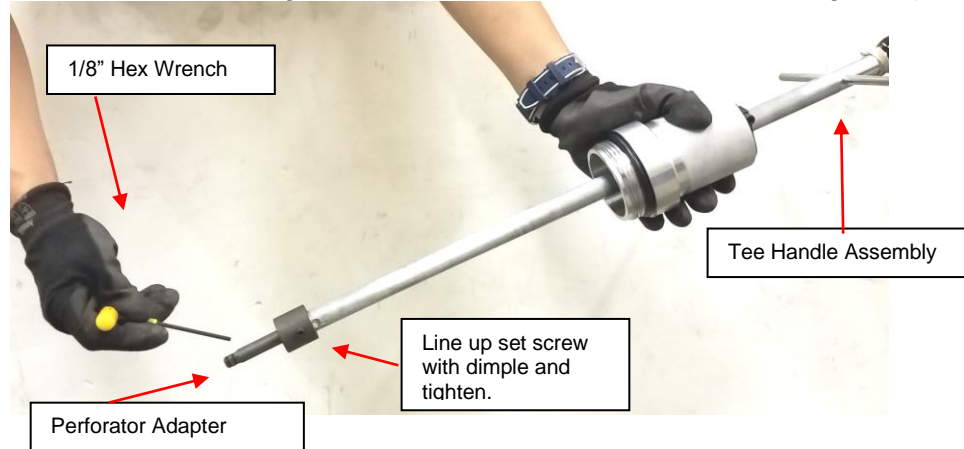
(Photo 15)

## Section 3: Remove the Punch and Insert the Self-Tapping Plug to Complete the Operation

1. Remove the punch from the tee by using the T-Handle Assembly fitted with the correct size Perforator Adapter. Make sure the Punch has been loosened to break the initial seal and the top of the Punch is even with the top of the tee. Also, inspect the adapter o rings. If damaged, they must be replaced.

**IMPORTANT: Before starting the operation, thoroughly clean the T-Handle shaft and apply the recommended lubricant to the entire shaft. Move the housing up and down the shaft multiple times until little friction is felt. Wipe off any excess lubricant. Also, clean and re-lubricate the shaft prior to returning the part to toolbox storage.**

2. To fit the Perforator Adapter onto the T-Handle Assembly shaft by lining up the shaft dimple with the set screw. Tighten with the Hex Wrench. Do not over-tighten (Photo 1).



(Photo 1)

3. Fully retract the Perforator Adapter into the housing and tighten onto the Extension Housing. Push down on the T-Handle until the Perforator Adapter fully engages the Punch Socket. Make sure the Bleeder Valve is in the closed position (Photo 2).
4. Turn the T-Handle counter-clockwise applying slight downward pressure. Loosen until you feel it skip (Photo 2).
5. Retract the Punch to above the Ball Valve. Close the Ball Valve and open the Bleeder Valve to bleed off any excess gas (Photo 3).
6. Remove the T-Handle Assembly with the captured Punch (Photo 3).



(photo 2)



(photo 3)

7. Install the Viewport. Use a flashlight and look through the Viewport to make sure there are no obstructions within the tee so the Self-Tapping Plug can be tightened into the main (Photo 4-6).



(Photo 4)



(Photo 5)



(Photo 6)

8. When looking through the Viewport determine the size of the hole. The Hole MUST be concentric in order to create a seal (Photo 6).



(Photo 7)

9. Choose the correct size Self Tapping Plug by placing the removed Punch next to the Self-Tapping Plug (Photo 7).
10. Roll a small length of ThreadSeal into a worm and push it uniformly into the threads of the Self Tapping Plug (Photo 8). Then tightly wrap 1-2 revolutions of thread sealant tape around the plug (Photo 9).
11. Choose the correct size Hex Adapter 1/4", 5/16" or 1/2" (Photo 10).



(Photo 8)

ThreadSeal

(Photo 9)

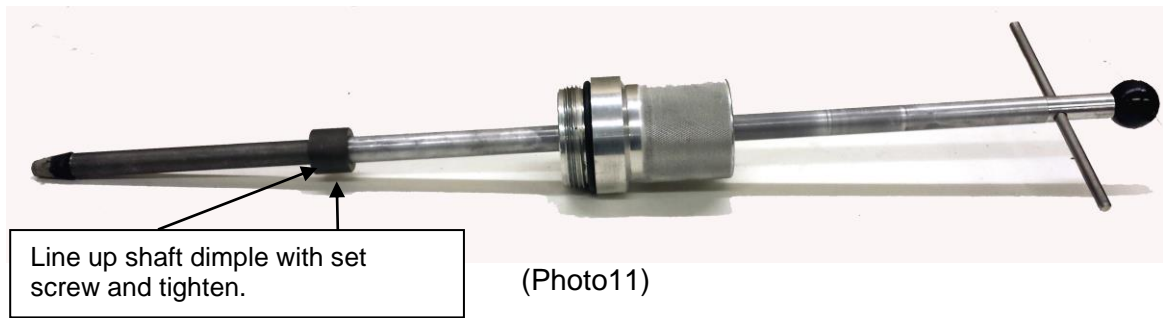


Hex Adapter

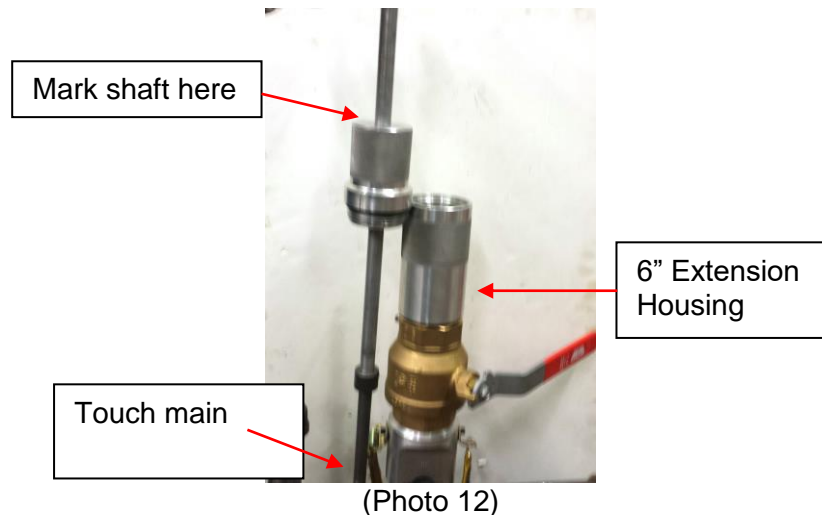
(Photo 10)



12. Fit it onto the T-Handle Shaft by lining up the shaft dimple with the set screw. Tighten with the Hex Wrench. Do not over-tighten (Photo 11).



13. Clean and lubricate T-Handle shaft. Move housing up and down until little friction is felt.
14. Make sure the Extension Housing is fitted onto the Ball Valve (Photo 12)
15. Measure the travel needed to insert the Self Tapping Plug into the main by lining up the lip edge of the T-Handle Assembly with the lip edge of the Extension Housing. Push to extend the shaft so the bottom of the Self Tapping Plug touches the main. Make sure to keep shaft straight. Mark the shaft with a marker (Photo 12).



16. Fully retract the Hex Adapter into the housing and fasten the T-Handle Assembly onto the Extension Housing (Photo 13).
17. Open the Ball Valve and push down the T-Handle with two hands to the reference mark. When the Self Tapping Plug enters the hole, there will be a positive stop (Photo 14).
18. Maintain downward pressure and turn the T-Handle clockwise to tighten the Self Tapping Plug into the main hole. The plug will cut its own threads.



(Photo 13)

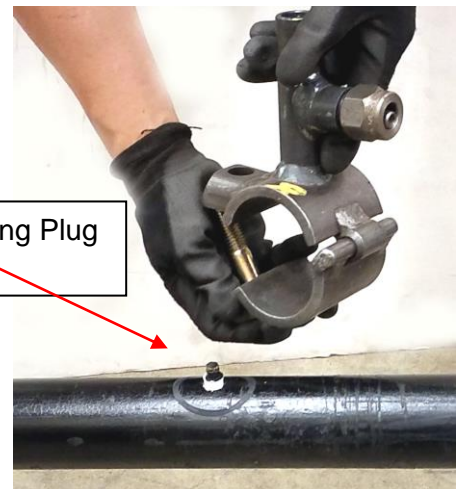


(Photo 14)

19. When moderate resistance is felt open the Bleed Valve. Continue to tighten until the sound of blowing gas is no longer heard. This means the gas has fully stopped. Do not over-tighten plug.
20. Retract the Hex Adapter to above the Ball Valve and close.
21. Fit the Viewport to visually check the Self Tapping Plug has been properly inserted.
22. If the Self Tapping Plug is properly inserted, the operation is complete. Remove Safe T Stopper Assembly and Tee (Photo 16). Permanent abandonment operations can be completed according to company procedures.



(Photo 15)



(Photo 16)

**Parts List 1/2"-1 1/4" Punch Tees**

	<p>2 1/2" Ball Valve: <b>Part # 54-MSTS 1005</b></p>
	<p>1/8" Bleed Valve: <b>Part # 54-PTSSQ</b></p>
	<p>Safe-T-Stopper Pressure Test Assembly: <b>Part # 54-PTSS</b></p>
	<p>T-Handle Assembly with T-Handle and Threaded Housing <b>Part # 54-MSTS1008-1007 (2500BV)</b></p>
	<p>3/4" - 1" Cap Housing: <b>Part # 54-MSTS 1004A</b></p>
	<p>Extension Housing <b>Part # 54-MSTS 1006</b></p>
	<p>3/4" - 1" Reducer Ring: <b>Part # 54-MSTS 1003</b></p>
	<p><i>Sold as sets of 2</i>            3/4" J Loop Packing Retainer Half Collar: <b>Part # 54-MSTS 1002AJ</b>            1" J Loop Packing Retainer Half Collar: <b>Part # 54-MSTS 1002BJ</b></p>
	<p><i>Sold as sets of 2</i>            3/4" Packing Seals: <b>Part # 54-MSTS 1001A</b>            1" Packing Seals: <b>Part # 54-MSTS 1001A</b></p>

	Viewport: <b>Part # 54-MSTS 1070 (3000BV)</b>
	Magnet Attachment Adapter <b>Part # 54-MSTS 009</b>
	9/16" Wrench: <b>Part # 54-916</b>
	1/8" Hex Wrench: <b>Part # 54-MSTS1221</b>
	Mini Flashlight: <b>Part # 54-MFL</b>
	1/4 Hex Adapter: <b>Part #54-TPA312</b> 5/16 Hex Adapter: <b>Part #54-TPA312</b> 1/2 Hex Adapter: <b>Part #54-TPA500</b>
	ThreadSeal Mastic, 0.5 Kg Stick: <b>Part# 10-A1910-1</b>
	Silicone Lubricant: <b>Part # 54-MSTS1225</b>
	0.125"-0.450" Hex 5/16" (plug length 1.00", pointed): <b>Part# 54-MTP 500375</b> 0.125"-0.375" Hex 1/4" (plug length 1.00", pointed): <b>Part# 54-MTP 250375</b> 0.250"-0.350" Hex 5/16" (plug length 0.540"): <b>Part# 54-MTP 375</b>
	1/2" Pipe to Valve Adapter 1/2" F x 2 1/2" M: <b>Part# 54-MSTS 1020</b> 3/4" Pipe to Valve Adapter 3/4" F x 2 1/2" M: <b>Part# 54-MSTS 1020F</b> 1" Pipe to Valve Adapter 3/4" F x 2 1/2" M: <b>Part# 54-MSTS 1020G</b>
	3/8" Hex Perforator Adapter : <b>Part# 54-TPA375AW</b> 5/16" Hex Perforator Adapter: <b>Part# 54-TPA312AW</b> 1/4" Hex Perforator Adapter: <b>Part# 54-TPA250AW</b> 1/2" Square Perforator Adapter: <b>Part# 54-TPA500SQW</b>
	Pipe Break <b>Part# 54-PPBRK</b>