

# Mechanical PE Tee Abandonment Tool

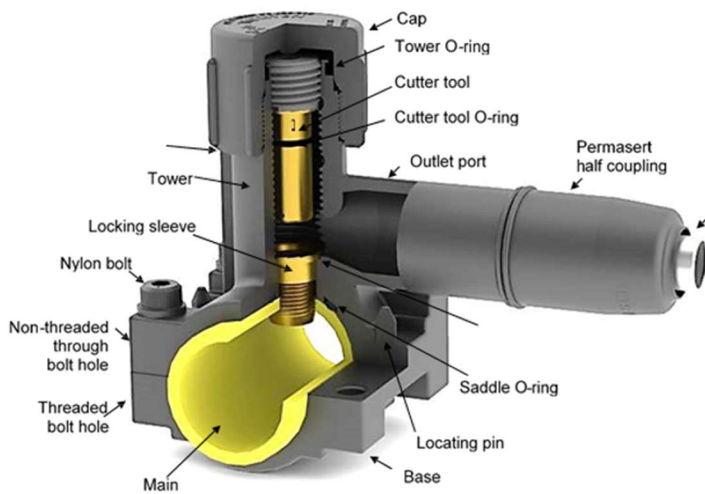
## Operating Manual

Gas-Free service abandonment for PE tees bolted to the main.  
(60psig Maximum Allowable Operating Pressure)



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## Introduction

This work guide provides information on the Mechanical PE Tee Abandonment Tool's correct use on bolted saddle PE Tees for plastic mains. This technology enables gas-free abandonment procedures on live gas services operating at a maximum of 60 psi. It is highly recommended to have this procedure with you when carrying out work using this equipment.

## Limitations:

There are many different styles and variations of tees installed in the ground over the years. The tool contains assemblies and adapters that are capable of handling specific tee types. When uncovering tees and pipes, their structural integrity varies. On 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 tee's condition before attempting the operation. Using the tool outside its capabilities or on corroded or unstable fittings is 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 company approved personal protective equipment must be worn while operating or working near this tool.

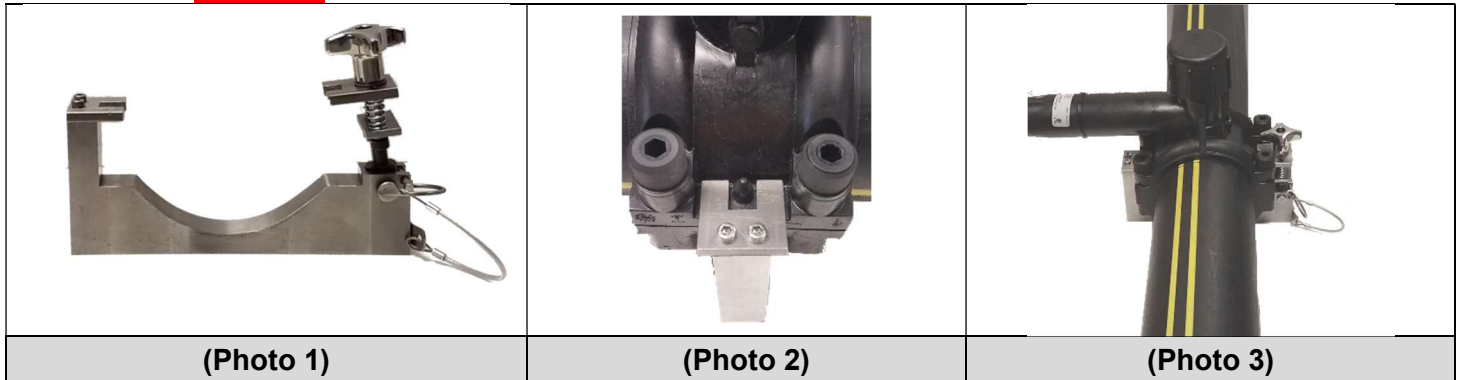
**ALWAYS FOLLOW YOUR COMPANY PROCEDURES:** **Gas company procedures override anything presented in this document.**



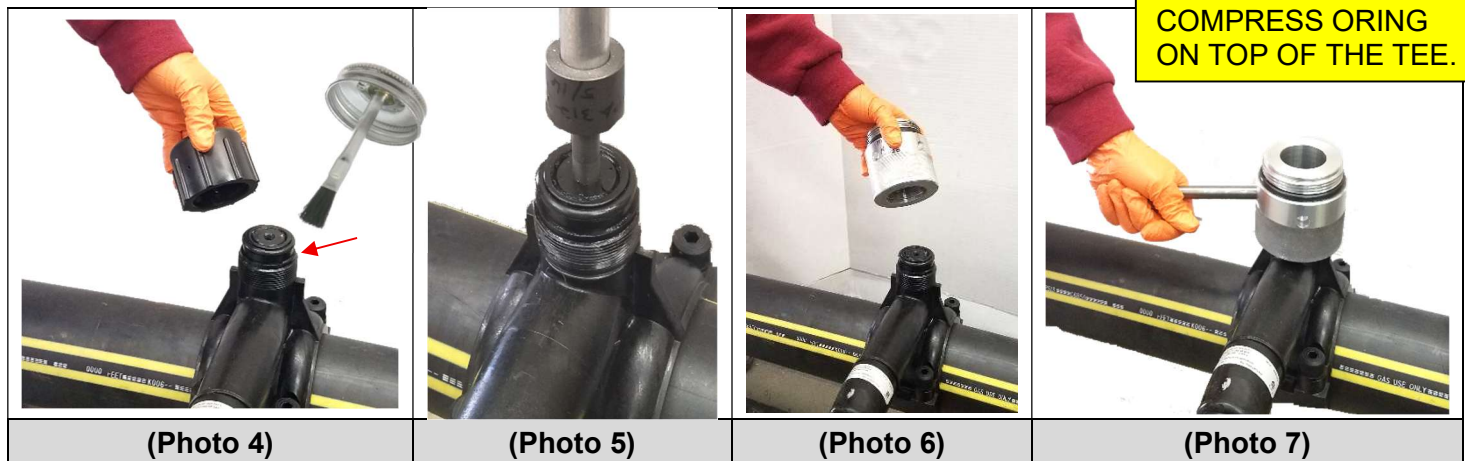
## OPERATING PROCEDURE

### Section 1: Fasten Tool onto the Tee

1. Clean all components of the PE Tee Tool 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 structural integrity prior to removing the cap. **If the tee is damaged do not attempt the PE Tee Tool operation.**



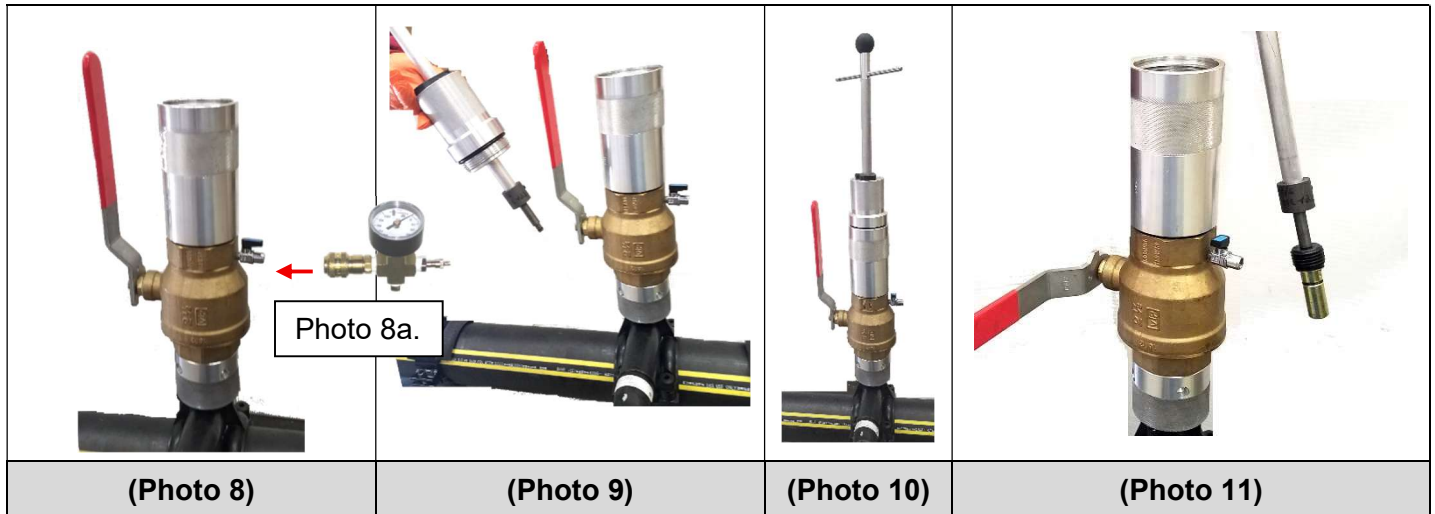
3. Install the correct size Safety Clamp (Photo 1-3) under the tee. Make sure the tee locating pins fit between the jaws (photo 2). Swing the movable jaw onto the saddle flats and insert the tethered pin into the hole to lock the swinging jaw to the upward position. Tighten by hand. Do not overtighten.



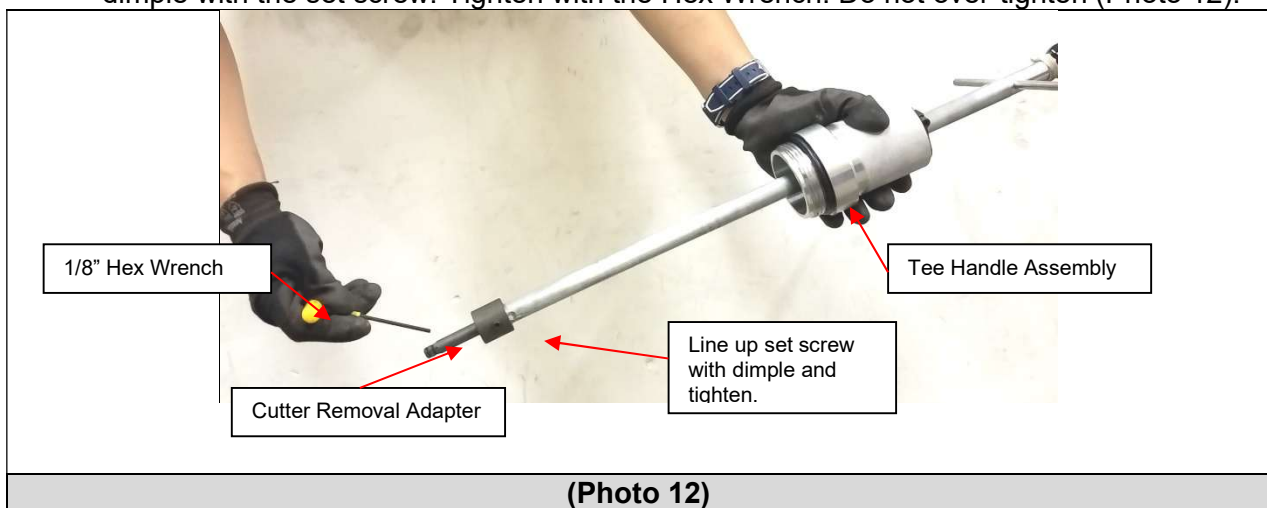
4. **Remove cap, clean threads as necessary, and apply a small amount of lubricant to the plastic threads (Photo 4).**
5. Check to ensure the Cutter Removal Adapter will fit the recessed hex and it will turn. If necessary, loosen the Cutter slightly so the hex is flush with the top (Photo 5)
6. Fasten the Tee-to-Valve Adapter onto the PE tee. Slightly press down to make sure the leading thread fully seats on the plastic threads before tightening. The first complete clockwise turn should be very easy with no resistance. Check to make sure the Adapter is not cross threaded before fully tightening (Photo 6)

7. Use the Bar Wrench to fully tighten until the Adapter bottoms out on top of the tee. Do not cross threads and do not overtighten (Photo 7).
8. Fit and tighten the Ball Valve and Extension Housing (Photo 8). Exercise Ball Valve to ensure proper operation.
9. Push to connect the Gauge (Photo 8a.)

## Section 2: Cutter Removal



10. Remove the Cutter from the tee by using the T-Handle Assembly fitted with the correct size Cutter Removal Adapter (Photo 9). Inspect the adapter o-rings for damage. Replace if necessary. **NOTE: If assembly begins to leak during cutter removal, stop and retighten cutter. Check all connection and retighten assembly if necessary.** **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.**
11. Fit the Cutter Removal 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 12).



12. Fully retract the Cutter Adapter into the housing and tighten onto the Extension Housing. Push down on the T-Handle until the Cutter Adapter fully engages the Cutter Hex. Make sure the Bleeder Valve is in the closed position (Photo 13).
13. Turn the T-Handle counter-clockwise applying slight downward pressure. Loosen until you feel it disengage from the tee (Photo 13).
14. Retract the Cutter to above the Ball Valve. Close the Ball Valve and open the Bleeder Valve to bleed off any excess gas (Photo 13).
15. Remove the T-Handle Assembly with the captured Cutter (Photo 14-A). **Inspect the Cutter Assembly to ensure the Locking Sleeve is not attached to the Cutter.**

If yes, then the Sleeve Removal Procedure is not necessary – Attach Viewport and make sure there are no obstructions to install Metallic Stopping Plug.

If no, install the Viewport to ensure the Locking Sleeve is inside the tee, then complete the Sleeve Removal Procedure.

### Section 3: Sleeve Removal



(Photo 13)



(Photo 14-A)



(Photo 14-B)



(Photo 15)



(Photo 16)



(Photo 17)

16. Fit Sleeve Extractor into Housing, Hex end first (Photo 15).
17. Tighten Sleeve Extractor Assembly onto Ball Valve. Open Ball Valve and push firmly down until you feel the Extractor enters into the tee's internal sleeve (Photo 16).
18. Maintain downward pressure and turn the shaft counterclockwise using the socket ratchet until the sleeve is released from the tee (Photo 16).
19. Retract the sleeve above the Ball Valve and close the Valve. Bleed off the excess gas and remove the Extractor Assemble and Extension Housing (Photo 17).

**Generation One Bolt-On Permalock Tee Characteristics and Cutter Removal.**



When the Acorn cap is removed, the 5/32" bolt will be in the up position, indicating the service outlet is energized. Turning the 5/32" bolt clockwise until it stops will de-energize the gas to the outlet.



5/32 Cap Screw opens and closes gas to the service outlet.

5/8" Hex Nut drives the entire cutter mechanism up or down.

Middle body seats along the pipe wall. The o-ring provides a secondary seal.

Tapered top edge seats inside the pipe.

Cutter retains the coupon.

**B. Blue Sleeve – Tap Depth Indicator**

**C. Gen 1 Tapping Mechanism**

- When installed, the operator turned the 5/8" Hex clockwise to tap the service. The tap head stops at the correct depth utilizing the blue sleeve. Then the Cutter is reversed until there is a positive stop to ensure the conical edge is against the internal pipe wall. The Blue Sleeve will prevent the operator from reversing the tap out of the tee.
- Turn the 5/32" Cap Screw counter-clockwise until it stops to energize the service. This retracts the coupon up inside the tap mechanism, letting gas travel through the taper, supplying gas to the service outlet.
- Turn the 5/32" Cap Screw counter-clockwise until it stops to stop the flow to the branch outlet.

This document is for information purposes only, designed to give an operator using the Gas-Free Mechanical PE Tee Abandonment Tool context on how this tee functions. These are not the manufacturer's instructions on how to install the tee. Gas company procedures override anything presented in this document.







- Remove Acorn Cap.
- Wind down the 5/32th Cap Screw until it is flush with the 5/8" hex nut.
- Remove the blue sleeve.
- Install the Thread Adapter and Ball Valve identical to Section 1 on page 3.
- Completely remove the Gen 1 Tapping mechanism using 54-TPA 6252 5/8" Gen-1 Perf. PE Socket Adapter: retract it above the Ball Valve.
- Continue to Section 4.

## Section 4: Install Metallic Stopping Plug

20. Remove the T-Handle from the housing and fit the Hex Adapter in its place. Push the hex end from inside the housing (Photo 18-19).

Make sure all connections are fully tightened!  
Failure to do so, may cause improper plug installation depth.

Tighten plug until Shaft Groove is *slightly* inside the Shaft Brake and the groove can no longer be seen.

			
<p>(Photo 18)</p>	<p>(Photo 19)</p>	<p>(Photo 20)</p>	<p>(Photo 21)</p>
 <p>Thread Tape (PTFE)</p>		 <p>PE Stopping Plug</p>	<p><i>Note: Stopping Plug O-ring below the hex holds plug in the socket.</i></p> <p><i>Replace O-ring if worn. Lightly lubricate O-ring</i></p>

21. Push to fit the Stopping Plug to the Socket. Apply a thin layer of thread tape (PTFE), make sure you can still see the thread's root and crest profile shape. Withdraw the plug inside the Housing and tighten onto Ball Valve (Photo 19-21).

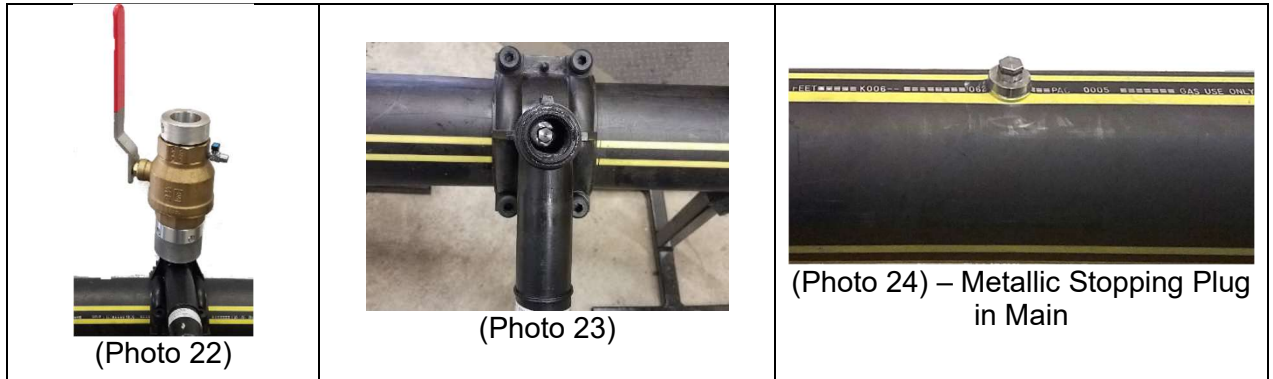
22. Fully retract the Socket Adapter into the housing and fasten the assembly onto the Ball Valve.

23. Fit a Socket Wrench with a 5/8" socket onto the Hex Adapter, then open the Ball Valve. Push the shaft down with two hands until the plug enters the sleeve hole. There will be a positive stop (Photo 21)

24. Maintain downward pressure and turn the Socket Adapter clockwise to tighten the plug into hole until the Shaft Snap Ring touches the top of the Housing (Photo 21).

25. Open the Bleed Valve to verify gas has stopped. Do not over tighten. *If gas has not entirely stopped, slowly turn the plug in quarter-turn increments until the sound of blowing gas is no longer heard.*

26. If gas is stopped, retract the Socket Adapter to above the Ball Valve and close.
27. **Fit the Viewport** to visually check the Stopping Plug is properly inserted (Photo 22).
28. The operation is complete. The Equipment and tee can be removed (Photo 23).
29. Complete company-approved procedures to permanently abandon the plug in the main (Photo 24).



**OPTIONAL OPERATION:** If using a George Fisher EF Purge Saddle Fitting with a 2" Brass Outlet to abandon the inserted plug (Photo 24), an alignment tool is available to centralize the EF fitting over the plug before fusing.

1. Scrape and prepare the EF work area per company procedures.
2. Loosely hand-tighten the Alignment Adapter onto the outlet internal threads (Photo 25).
3. Insert the Alignment Hex Shaft through the hole to seat over the hex plug (Photo 26)
4. Remove the Alignment and Adapter before fusing (Photo 28).
5. Complete fusion, pressure/gas test, and abandonment procedures per company procedures.



(Photo 25)



(Photo 26)



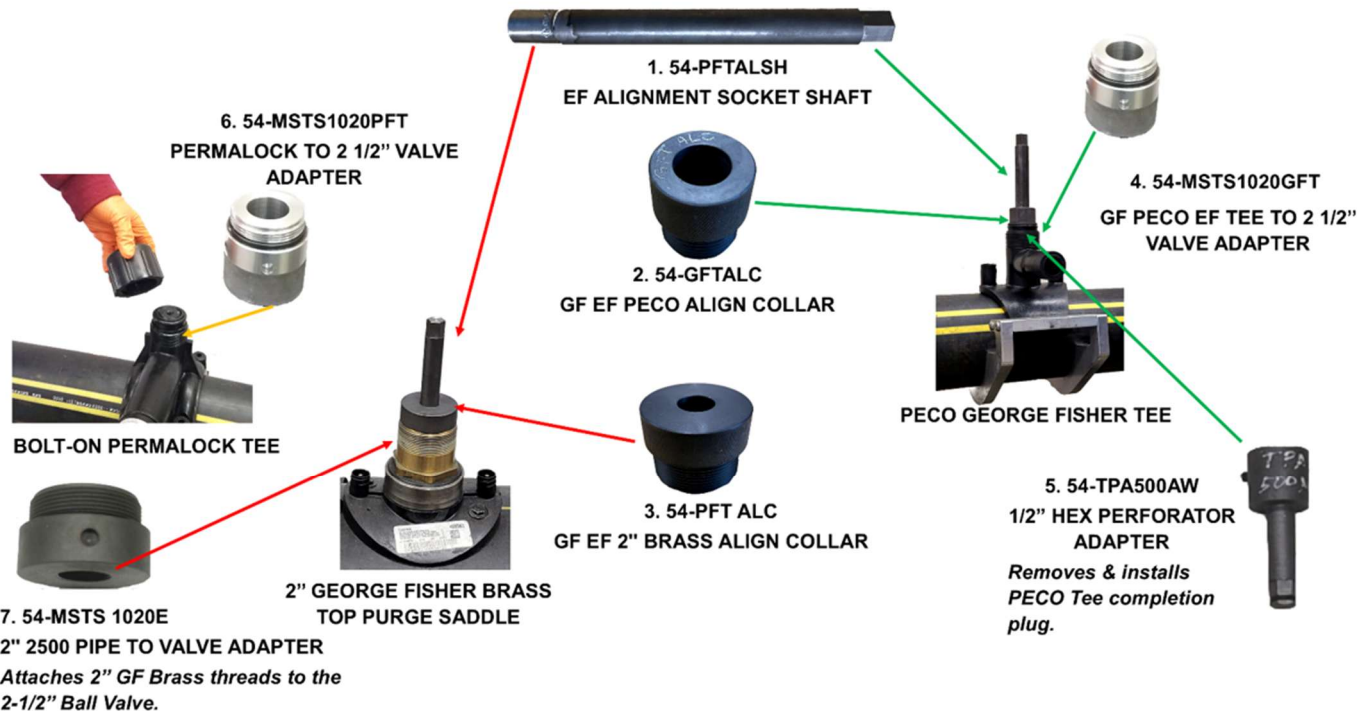
(Photo 27)

**Must remove Adapter before fusing.**

















(Photo 28)

**OPTIONAL: EF Alignment Collars and Threaded Tee to Ball Valve Adapters**



**Section 5: Parts List**

#	Photo	Part#	Description
1		54-PELK125246	1 1/4"-12" PLCS MECH. PE TEE ABANDONMENT TOOL KIT
2		54-MSTS 1005	2 1/2" 2500 BALL VALVE
3		54-MSTS 1006	2500 EXTENSION HOUSING
4		54-MSTS 1007	2500 T-HANDLE HOUSING
5		54-MSTS 1060	VIEWPORT 2500BV
6		54-MSTS1020PFT	PERMALOCK TO VALVE ADAPTER
7		54-PFTEO	EZ OUT SLEEVE ADAPTER SHAFT 24
8		54-MTP950PFT	PERM PE SELF TAP PLUG
9		54-10620	HAND SCRAPPER-HYDE TOOL 2-1/2
10		54-44945K11	THREAD TAPE
11		54-5570A62	EXTENDED-REACH HEX BIT SOCKET
12		54-PERM2975	FOAM/ CASE PE TEE TOOL
13		71-2PERLOCLP	1 1/4" - 2" BOLT-ON PE SADDL

14		71-4PERLOCLP	4" BOLT-ON PE SADDLE TEE SAFE
15		54-MSTS 1019	T-HANDLE BALL
16		54-MSTS100824	2530 24" T-HANDLE SHAFT
17		54-PTSS	PRESSURE TEST ASSEMBLY
18		54-TPA312AW	3/16" HEX PERFORATOR ADAPTER
19		54-TPA50024	1/2" HEX ADAPTER (1 PIECE 24"L SHAFT)
20		54-9452K14	1/4" HEX PERFORATOR ADAPTER O-RING #6 (100 PK)
21		54-MSTS 1015C	MAGNET (6" LONG)
22		54-PLCSLUBE	PLCS LUBRICANT
23		54-MSTS 1221	1/8" T HANDLE HEX WRENCH
24		46-A0017	3/16" T HANDLE HEX WRENCH
25		54-91929	SOCKET DRIVE RATCHET
26		54-MSTS 1004W	BAR WRENCH
27		52-WF05E	INTRINSIC PEN FLASHLIGHT

28		54-52430448	0-100PSI GAUGE (1/4" THREAD, BOTTOM MOUNT)
29		46-863100202	1/8" M/F BALL VALVE
30		54-M125	1/4" X 1/8" M THREAD QUICK CONN
31		54-M125F	QUICK CONNECT 1/4" SOCKET X 1/4" MALE NPT
32		54-TPA 6252	5/8 GEN-1 PERF. PE SOCKET ADAP
33		54-TPA500AW	1/2" HEX PERFORATOR ADAPTER
34		54-MSTS1020GFT	GF PECO PE to 2.5 Valve Adapter
35		54-PFTALSH	ELECTROFUSE 1/2" ALIGNMENT SOCKET
36		54-PFT ALC	GF EF 2" BRASS ALIGN COLLAR
37		54-GFTALC	GF EF PECO ALIGN COLLAR
38		54-MSTS 1020E	2" 2500 PIPE TO VALVE ADAPTER

Tool Kit

