Safe-T-Stopper

Gas-Free Service Renewal or Abandonment for 3/4” to 2” Pipe Type Tees Welded onto Steel Main.

2500BV Tool ¾”-1 ¼” only
3000BV Tool ¾”-2”

Operating Manual

Updated: 01/20/2017

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Introduction

This work procedure has been developed to provide information on the correct use of the Safe-T-Stopper Tool on ¾" to 2" Pipe Type (homemade or manufactured) Tees welded onto steel main. This technology enables gas free renewal or abandonment procedures on live gas services. 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. Additionally, when tees are uncovered their structural integrity varies. 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 a corroded tee 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 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.**

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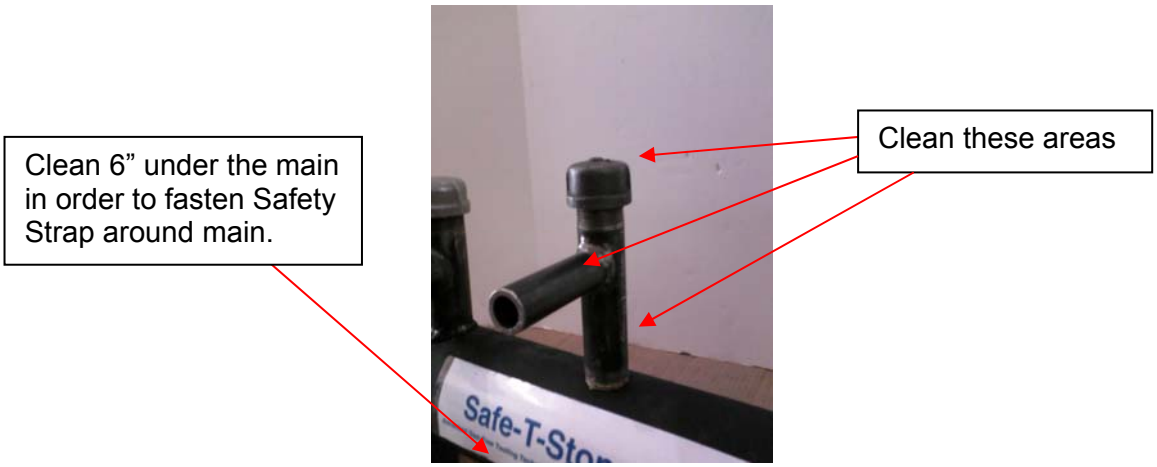
OPERATING PROCEDURE

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.

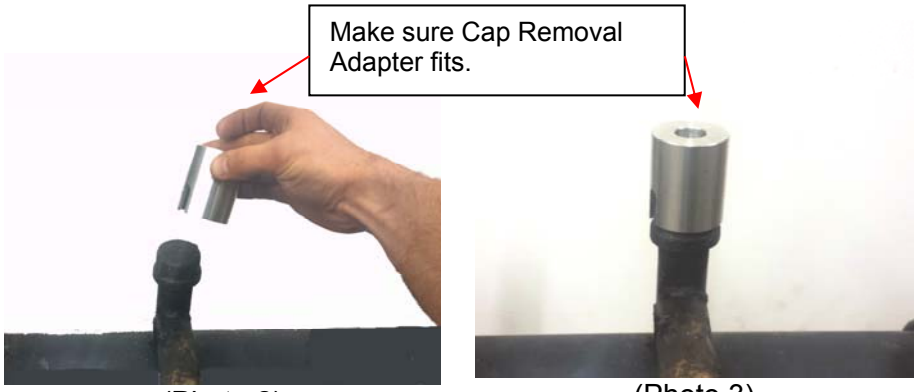
2. Clean the area of the tee down to bare metal where the Packing Seals, Half Collars, Safety Strap and the Cap Housing will be positioned. Removing all corrosion and scale so that the Packing Seals will seal properly. It is vitally important to make sure all the scale is completely removed and the integrity 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.



(Photo 1)

3. Before mounting the Safe-T-Stopper, ensure the Cap Removal Adapter fits properly over the service tee cap. The tool should bottom out on the cap with good magnetic attachment strength. Some hand filing or grinding may be necessary to remove manufacturer's stamping or casting ridges. Grind the lower casting flange on the cap to reduce the chances of cap binding in the housing. Many caps are not completely round and may cause cap binding once inside the cap housing (Photo 2-3).



(Photo 2) (Photo 3)

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4. **IMPORTANT: Loosen the cap to break the initial seal.** This will make the cap removal operation possible. If necessary, use penetrating oil and a long handle pipe wrench to loosen the plug. Take care not round off the raised castings located on the cap (Photo 4). *Note: If the cap cannot be loosened, then do not attempt the Safe-T-Stopper operation.*

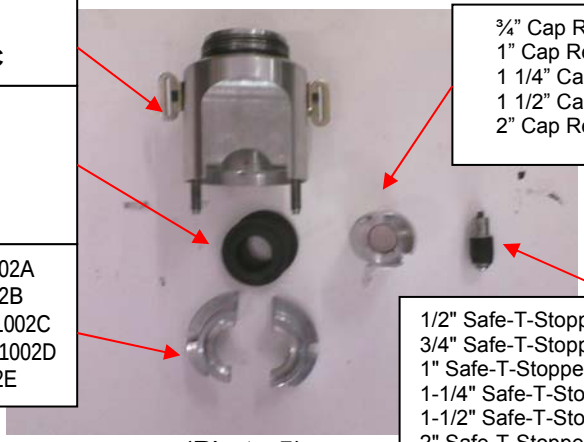
(Photo 4)

5. Select the correct size Packing Seals, Half Collars, Cap Removal Adapter, Cap Housing and Rubber Expansion Stopper (Photo 5).

¾"-1" Cap Housing **54-MSTS 1004A**
1 ¼"" Cap Housing **54-MSTS 1004B**
1 ½"-2" Cap Housing **54-MSTS 1004C**

¾" Packing Seals 54-MSTS 1001A
1" Packing Seals 54-MSTS 1001B
1 1/4" Packing Seals 54-MSTS 1001C
1 1/2" Packing Seals Part #54-MSTS 1001D
2" Packing Seals 54-MSTS 1001E

¾" Packing Retainer Half Collar: 54-MSTS 1002A
1" Packing Retainer Half Collar: 54-MSTS 1002B
1 1/4" Packing Retainer Half Collar 54-MSTS 1002C
1 1/2" Packing Retainer Half Collar: 54-MSTS 1002D
2" Packing Retainer Half Collar 54-MSTS 1002E



¾" Cap Removal Adapter **54-MSTS 1009A**
1" Cap Removal Adapter **54-MSTS 1009B**
1 1/4" Cap Removal Adapter **54-MSTS 1009C**
1 1/2" Cap Removal Adapter **54-MSTS 1009D**
2" Cap Removal Adapter **54-MSTS 1009E**

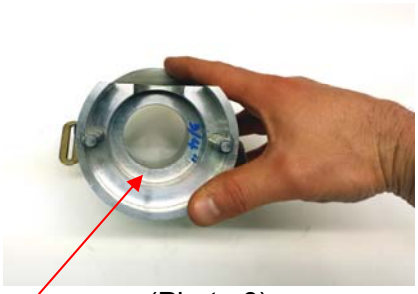
1/2" Safe-T-Stopper Expansion Plug **54-100178-10**
3/4" Safe-T-Stopper Expansion Plug **54-100179-10**
1" Safe-T-Stopper Expansion Plug: **54-100180-10**
1-1/4" Safe-T-Stopper Expansion Plug **54-100181-10**
1-1/2" Safe-T-Stopper Expansion **54-100182-10**
2" Safe-T-Stopper Expansion **54-100183-10**

(Photo 5)

3/4" and 1 ½" 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)

¾"-1" Reducer Ring 54-MSTS 1003
1 ½" Reducer Ring 54-MSTS 1003A

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6. Take a firm two-handed grip on one packing seal and stretch over the service tee cap. The first packing seal must be installed with the bevel facing downward (Photo 10-11). Repeat with the second packing seal and fit with the bevel facing upwards (Photo 12). When both packing seals are over the cap, pull both seals up under the cap (Photo 12).

7. Place the Two Packing Retainer 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 13).

8. Place 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 14).

(Photo 9)

(Photo 10)

(Photo 11)

(Photo 12)

(Photo 13)

(Photo 14)

Note: *In some cases, on homemade tees, the branch outlet location is very close to the bottom edge of the cap making it difficult to fit two Packing Seals and the Half Collars. Hand filing under the cap or on the branch may be necessary. If filing is unsuccessful, one Packing Seal with the beveled edge down may be used. However, caution should be exercised and a successful leak test must be carried out prior to completing the operation. If pressure does not hold or the assembly cannot be adequately secured, then the Safe-T-Stopper operation should not be attempted.*

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9. Secure the Safety Strap and pull tight by hand. 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 15).

(Photo 15)

10. 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 16).

When working on ¾", 1" or 1 ¼" Pipe Type Tees sizes, Reducer #54-TR3MX25F is required to connect the 3" Ball Valve to the ¾"-1" Cap Housing #54-MSTS 1004A and the 1 ¼" Cap Housing #54-MSTS 1004A (Photo 17).

Reducer #54-TR3MX25F is not required when working on 1 ½" and 2" Pipe Type Tees.

(Photo 16)

(Photo 17)

3" Ball Valve
Part # 54-MSTS 1005A
(Included with 3000BV Tool Kit)

Reducer #54-TR3MX25F
(3" Male x 2 ½" Female)

Use reducer with:
¾"-1" Cap Housing
#54-MSTS 1004A
(2 ½" Male Threads)

1 ¼" Cap Housing
#54-MSTS 1004B
(2 ½" Male Threads)

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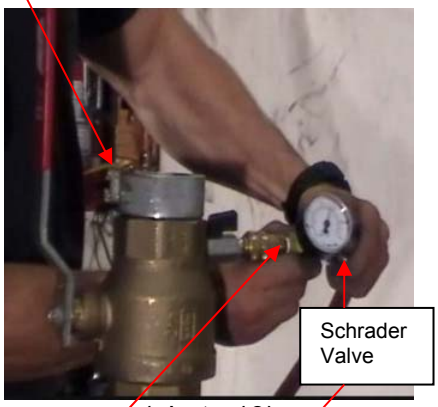
11. Fit and tighten the Viewport onto the Ball Valve and leak test the entire assembly to mains operating pressure (Photo 18-20)

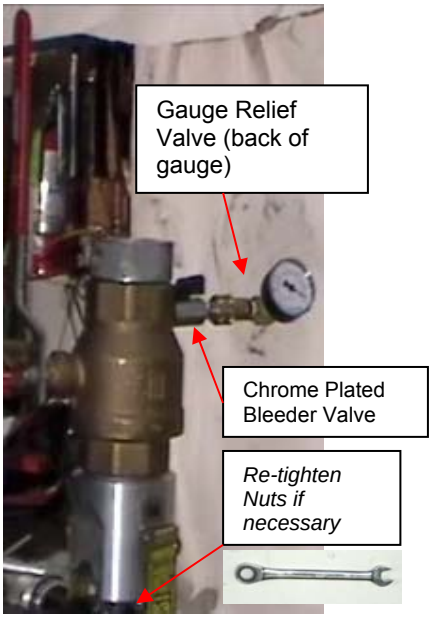
12. To install the Pressure Test Assembly, apply PTFE tape to the male quick-connect fitting and tighten it into the small Chrome Plated Bleeder Valve. Make sure to use two wrenches when tightening the fitting; one to tighten the male quick-connect fitting and the other to hold back on the Chrome Plated Valve to prevent it from turning.

13. Push on the Pressure Test Assembly and open the Chrome Plated Bleeder Valve. Introduce air through the Schrader valve and test to mains operating pressure. *Make sure the Gauge Relief Valve is fully closed*.

(photo 18)



(photo 19)



(Photo 20)

14. If necessary, slowly tighten Cap Housing nuts until a seal is achieved (Photo 20).

15. When leak test is complete, open Gauge Relief Valve to release air and remove Pressure Test Assembly. Close Chrome Plated Bleeder Valve.

16. To remove the cap from the tee use the T-Handle Assembly fitted with the correct sized Cap Removal Adapter (Photo 21-22). Make sure the cap has been loosened to break the initial seal (step #5).

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.

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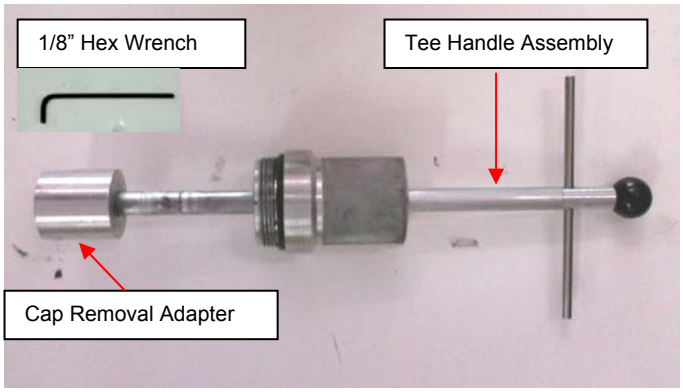

(photo 21)

(photo 22)

17. To remove the cap, fit the Cap Removal Adapter onto the T-Handle Assembly shaft by lining up the shaft dimple with the grub screw (Photo 23). Tighten with the Hex Wrench. Do not over-tighten (Photo 24).

(Photo 23)

(Photo 24)

18. Insert the Cap Removal Adapter so the keyways engage onto the raised castings located on the cap (Photo 25). Tighten the T-Handle Assembly onto the Ball Valve by hand so it compresses the o-ring located at the top of the threads on the T-Handle Assembly Housing (Photo 26). Make sure the Chrome Plated Bleeder Valve is in the closed position.

(photo 25)

(photo 26)

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19. With a firm grip, begin to loosen the cap. Make sure to keep slight downward pressure on the T-Handle, to prevent the gas pressure from pushing the shaft up unexpectedly. When the cap is felt or heard skipping over the threads of the tee, the cap is fully removed from the tee.

20. Retract the T-Handle with the captured cap to above the Ball Valve. Close Ball Valve and bleed off the excess gas using the Chrome Plated Bleeder Valve. Remove the T-Handle Assembly (Photo 27-28).


(Photo 27)


(Photo 28)

21. Install the Viewport. Use a flashlight and look through the Viewport to make sure there are no obstructions within the tee so the rubber Expansion Plug can be inserted below the branch (Photo 29-31).

OPTIONAL - Self Tapping Plug Insertion: If hole in the main is machine drilled, concentric and centralized within the tee, a Self Tapping Plug can be inserted into the main hole to stop the flow of gas skip steps #22-30 and go to step #31a or #31b.


(Photo 29)


(Photo 30)


(Photo 31)

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22. Choose the correct size Expander Plug (Photo 32) and fasten to the bayonet mount Expansion Plug Insertion/Removal Assembly (Photo 33).

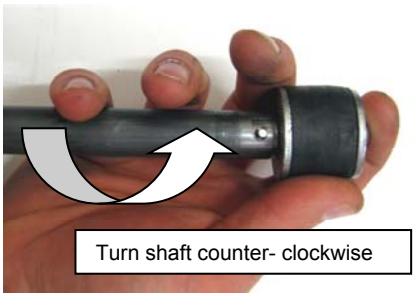
IMPORTANT: Before starting the operation, thoroughly clean the Expansion Plug Insertion/Removal Assembly shaft and apply the recommended lubricant to the entire shaft. Move the housing up and down the shaft multiple times until little friction is felt. Wipe off any excess lubricant. Also, clean and re-lubricate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

(Photo 32)

(Photo 33)

23. To attach the Expansion Plug onto the shaft to EXPAND the plug below the branch of the tee, hold the Expansion Plug with one hand and with the other hand hold the end of the shaft. Push the stem end of the Expansion Plug into the hole inside the shaft (Photo 34) and turn the shaft counter-clockwise (Photo 35-36), so the Expansion Plug pin engages the off-set slot.

(Photo 34)



(Photo 35)

(Photo 36)

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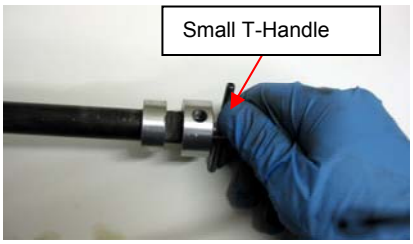
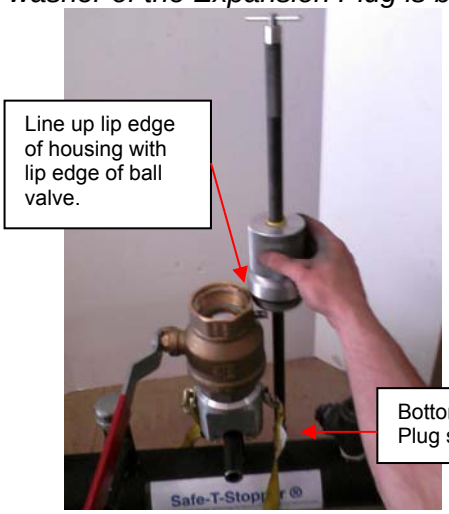
24. Gently turn the Small T-Handle clockwise until you hear it click (Photo 37). This indicates that the small pin inside the shaft fully engages the dimple on the Expansion Plug and will EXPAND the plug when turning the Small T-Handle clockwise.



(Photo 37)

25. Measure the travel needed to expand the Expansion Plug below the service branch, by lining up the lip edge of the Expansion Plug Insertion/Removal Assembly with the lip edge of the Ball Valve (Photo 38). Push to extend the shaft so the bottom of the plug touches the main. Make sure to keep shaft straight.

    Note: The location of the branch outlet varies among homemade tees. Verify that the top washer of the Expansion Plug is below the service branch (Photo 39).



(Photo 38)

(Photo 39)

26. Tighten the Collar on the shaft to reference the necessary travel (Photo 40).


(Photo 40)

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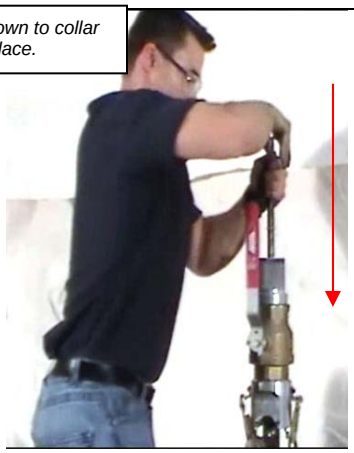
27. Fully retract the shaft and fasten the Assembly onto the Ball Valve. Make sure the Chrome Plated Bleeder Valve is in the closed position. Hold the shaft in the fully retracted position with one hand and slowly open the Ball Valve taking care to prevent the shaft from moving upwards unexpectedly (Photo 41). Push the shaft down to the Collar (Photo 42). Simultaneously hold the shaft into position and turn the Small T-Handle clockwise with two fingers to expand the plug. Tighten until noticeable resistance is felt. Do not over-tighten (Photo 43).

Hold shaft in the fully retracted position and open ball valve.

(Photo 41)

Push shaft down to collar and hold in place.



(Photo 42)

Turn small T-Handle Clockwise to expand Expansion plug.

(Photo 43)

<u>NOTE</u>: In the unlikely event that the Expansion Plug falls in the tee. Use the Magnet Attachment to remove the plug. Fit Magnet (Photo 44) onto Expansion Plug Insertion/Removal Tool (Photo 45) and fasten to Ball Valve (Photo 46). Open Ball Valve and push down shaft until it captures the plug. Retract shaft, close Ball Valve and bleed off excess gas.

(Photo 44)

Magnet attaches to shaft.

(Photo 45)

(Photo 46)

28. Open the Chrome Plated Valve. If necessary, continue turning clockwise to expand the Expansion Plug until gas has stopped. Once the sound of blowing gas stops, the service has been successfully stopped.

29. Detach the Expansion Plug from the shaft by following these steps:

    1. Loosen Shaft Reference Collar with Hex Wrench (Photo 40).
    2. Simultaneously push down slightly on the shaft, pull up on Small T-Handle and turn shaft clockwise until plug disengages. *(If unable to push down, check to make sure Collar has been loosened.)*
    3. Retract shaft above Ball Valve, close Ball Valve and bleed off excess gas.

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30. Remove Expansion Plug Insertion/Removal Tool and close the Ball Valve. Fit Viewport and open Ball Valve. Look to check Expansion Plug has been properly inserted into the throat of the tee before progressing to the next step (Photo 47).

(Photo 47)

***NOTE**: If Expansion Plug needs to be removed after it has been expanded while it is in the throat of the tee follow these steps:*

1. *Fasten the Plug Removal/Insertion Tool Assembly onto the Ball Valve*
2. *Gently push down on until the shaft is felt over the threaded stem of the Expansion Plug.*
3. *Simultaneously push down on the shaft and turn the shaft clockwise so the side pin on the Expansion Plug is captured within the shaft's off-set keyway. Gently pull up on shaft to verify pin is engaged.*
4. *Hold shaft position and turn small T-Handle counter-clockwise until a click is felt.* ***Do not turn small T-Handle until Expansion Plug pin is fully engaged within the off-set slot.***
5. *Continue to turn small T-Handle counter-clockwise while gently pulling up on the shaft until plug releases from the throat of the tee.*
6. *Retract shaft to above the Ball Valve, close Ball Valve and bleed off excess gas.*
7. *If plug needs to be reinserted, use a new Expansion Plug and follow steps 25-34.*

If the Self Tapping Plug is properly inserted, the operation is complete. Renewal or abandonment operations can be completed according to company procedures and Safe-T-Stopper assembly removed (Photo 48).

(Photo 48)

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31a. OPTIONAL Self Tapping Plug Insertion using T-Handle Adapters:
NOTE: Go to step 31b if using the one-piece x 24" hex adapter.

1. **When looking through the Viewport determine the size of the hole. The Hole MUST be centralized, machined drilled and concentric in order to create a seal (photo 49-51).**

(Photo 49)

(Photo 50)

(Photo 51)

2. **Choose the correct size Self Tapping Plug (Photo 52)**

3. **Roll a small length of ThreadSeal into a worm and push it uniformly into the threads of the Self Tapping Plug (Photo 53). Then tightly wrap 1-2 revolutions of thread sealant tape around the plug (Photo 53).**

4. **Choose the correct size Hex Adapter (5/16" or ½") (Photo 54) depending on Self Tapping Plug size and fit onto the T-Handle Shaft by lining up the shaft dimple with the grub screw. Tighten with the Hex Wrench. Do not over-tighten (Photo 55).**

(Photo 52)

ThreadSeal
Mastic

(Photo 53)

Self Tapping Plug
O-ring below hex holds plug into socket. Replace O-ring if worn. Lightly lubricate O-ring

(Photo 54)

Line up shaft dimple with grub screw and tighten.

(Photo 55)

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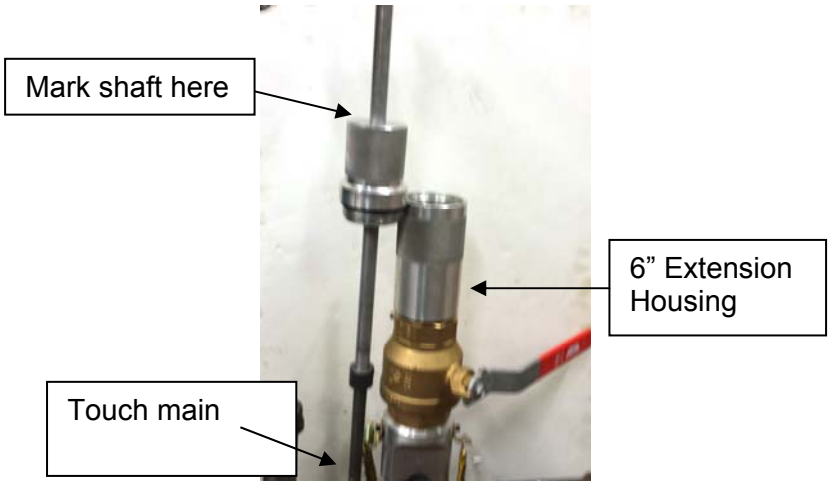
5. **Clean and lubricate T-Handle shaft. Move housing up and down until little friction is felt.**
6. **Fit the 6” Extension Housing onto the Ball Valve (Photo 56)**

7. **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 (Photo 56).**



(Photo 56)

8. **Fully retract the Hex Adapter into the housing and fasten the T-Handle Assembly onto the 6” Extension Housing (Photo 53).**

9. **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 54).**

10. **Maintain downward pressure and turn the T-Handle clockwise to tighten the plug into main hole. The plug will cut its own threads.**

(Photo 57)

(Photo 58)

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11. **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.**

12. **Retract the Hex Adapter to above the Ball Valve and close.**

13. **Fit the Viewport to visually check the Self Tapping Plug has been properly inserted.**

14. **Return the cap to the tee. Continue to step #32.**

31b. Self Tapping Plug Insertion using 24" One-Piece Shaft Hex Adapter

1. **When looking through the Viewport determine the size of the hole. The Hole MUST be centralized, machined drilled and concentric in order to create a seal (photo 49-51).**

(Photo 49)

(Photo 50)

(Photo 51)

2. **Remove the T-Handle from the housing and fit the Hex Adapter in its place. Push the hex end from inside the housing (Photo 59-60).**

(Photo 59)

(Photo 60)

1. **Choose the correct size Self Tapping Plug (Photo 61).**

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2. **Roll a small length of ThreadSeal into a worm and push it uniformly into the threads of the Self Tapping Plug (Photo 62). Then tightly wrap 1-2 revolutions of thread sealant tape around the plug (Photo 63).**

Note: The Self Tapping Plug O-ring below the hex holds plug into socket. Replace O-ring if worn. Lightly lubricate O-ring

(Photo 61)

ThreadSeal Mastic

(Photo 62)

(Photo 63)

(Photo 64)

4. **Push to fit the Self Tapping Plug onto the Hex Adapter (Photo 64)**

5. **Fully retract the Hex Adapter into the housing and fasten the assembly onto the Ball Valve.**

6. **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 hole. There will be a positive stop (Photo 65)**

7. **Maintain downward pressure and turn the Hex Adapter clockwise to tighten the plug into main hole. The plug will cut its own threads (Photo 56).**

8. **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 (Photo 65).**

Push down and turn clockwise the sound of blowing gas stops.

(Photo 65)

9. **Retract the Hex Adapter to above the Ball Valve and close.**

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10. **Fit the Viewport to visually check the Self Tapping Plug has been properly inserted (Photo 66).**

11. **If the Self Tapping Plug is properly inserted, the operation is complete. Renewal or abandonment operations can be completed according to company procedures and Safe-T-Stopper assembly removed.**

(Photo 67)

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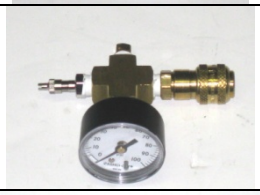
Parts List
Safe-T-Stopper ¾" to 2" Pipe Type Tee Welded on Steel Main

	2 ½" Ball Valve: **Part # 54-MSTS 1005 (included in 2500BV Tool)** 3" Ball Valve: **Part # 54-MSTS 1005A (included in 3000BV Tool)** Note: *Safe-T-Stopper 3000 BV Base Tool* (includes: Ball Valve **#54-MSTS 1005A**, Expansion Plug Tool **#54-MSTS1010-1007A**, T-Handle Insertion/Removal Tool **#54-MSTS1008-1007A**, Magnet **#54-MSTS 1015B**, Wrench **#54-916**, Viewport **#54-MSTS 1060** (2500BV)**1070 (3000BV)**, Lock-Out Cap **#54-MSTS 1014A**, Bleed Valve **#54-PTSSQ**, Flashlight **#54-MFL**, Silicone Lubricant: **#54-MSTS1225**and Hex Wrench **#54-MSTS1221**) *Omit the letter "A" to part # for 2500BV Base Tool.*
	1/8" Bleed Valve (Chrome Plated Ball Valve) with ¼" x 1/8" NPT Quick-Connect Fitting: **Part # 54-PTSSQ**
	Safe-T-Stopper Pressure Test Assembly: **Part # 54-PTSS**
	Expandable Plug Setting Tool with Threaded Housing: **Part # 54-MSTS1010-1007 (2500BV)** **Part # 54-MSTS1010-1007A (3000BV)** O-Ring: **Part # 54-MSTS1024**
	1/2" Safe-T-Stopper Expansion Plug : **Part # 54-100178-10** 3/4" Safe-T-Stopper Expansion Plug: **Part # 54-100179-10** 1" Safe-T-Stopper Expansion Plug: **Part # 54-100180-10** 1-1/4" Safe-T-Stopper Expansion Plug : **Part # 54-100181-10** 1-1/2" Safe-T-Stopper Expansion Plug : **Part # 54-100182-10** 2" Safe-T-Stopper Expansion Plug : **Part # 54-100183-10** ***other sizes available – Please call PLCS***
	¾" Cap Removal Adapter: **Part # 54-MSTS 1009A** 1" Cap Removal Adapter: **Part# 54-MSTS 1009B** 1 1/4" Cap Removal Adapter: **Part # 54-MSTS 1009C** 1 1/2" Cap Removal Adapter: **Part # 54-MSTS 1009D** 2" Cap Removal Adapter: **Part # 54-MSTS 1009E**
	T-Handle Assembly with T-Handle and Threaded Housing *(included in base tool)*: **Part # 54-MSTS1008-1007 (2500BV)** **Part # 54-MSTS1008-1007A (3000BV)**
	¾"-1" Cap Housing: **Part # 54-MSTS 1004A** 1 1/4" Cap Housing: **Part # 54-MSTS 1004B** 2" Cap Housing: **Part # 54-MSTS 1004C (for 1 ½" and 2" Pipe Type Tees)**

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	Pipe Type Tee Reducer: **Part # 54-TR3MX25F** *(2 ½" female x 3" Male, for 3000BV Tool)*
	Extension Housing (optional): **Part # 54-MSTS 1032 (3000BV)** **Part # 54-MSTS 1006 (2500BV)**
	¾" - 1" Reducer Ring: **Part # 54-MSTS 1003** (*for ¾" Pipe Type Tees used with ¾"-1" Cap Housing: Part # 54-MSTS 1004A*) 1 1/2" Reducer Ring: **Part # 54-MSTS 1003A** (*for 1 ½" Pipe Type Tees used with 2" Cap Housing: Part # 54-MSTS 1004C*)
	*Sold as sets of 2* ¾" Packing Retainer Half Collar: **Part # 54-MSTS 1002A** 1" Packing Retainer Half Collar: **Part # 54-MSTS 1002B** 1 1/4" Packing Retainer Half Collar: **Part # 54-MSTS 1002C** 1 1/2" Packing Retainer Half Collar: **Part # 54-MSTS 1002D** 2" Packing Retainer Half Collar: **Part # 54-MSTS 1002E**
	*Sold as sets of 2* ¾" Packing Seals: **Part # 54-MSTS 1001A** 1" Packing Seals: **Part # 54-MSTS 1001B** 1 1/4" Packing Seals: **Part # 54-MSTS 1001C** 1 1/2" Packing Seals: **Part # 54-MSTS 1001D** 2" Packing Seals: **Part # 54-MSTS 1001E**
	Safety Strap: Part **# 54-MSTS 1018**
	Viewport: **Part # 54-MSTS 1060 (2500BV)** **Part # 54-MSTS 1070 (3000BV)**
	Lock-Out Plug: **Part # 54-MSTS 1014 (2500BV)** **Part # 54-MSTS 1014A (3000BV)**
	Magnet (small) **Part # 54-MSTS 1015A** Magnet (large) **Part # 54-MSTS 1015B**

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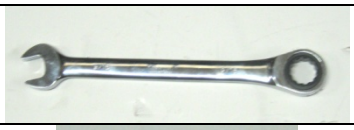
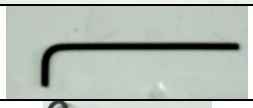
	9/16” Wrench: **Part # 54-916**
	1/8” Hex Wrench: **Part # 54-MSTS1221**
	Mini Flashlight: **Part # 54-MFL**
	5/16 Hex Adapter: **Part #54-TPA312** 1/2 Hex Adapter: **Part #54-TPA500**
	ThreadSeal Mastic, 0.5 Kg Stick: **Part# 10-A1910-1**
	Lubricant: **Part # 54-MSTS1225**
	Cantilever Tool Box (3000BV tool kit): **Part # 54-770298**
	Safe-T-Stopper Tool Box (3000BV): **Part # CPBOX1** Note: Part #: **54-CPBOX** includes both CPBOX1 (CP Tool Box) and **54-770298 (Cantilever Tool Box)**
	One Piece 1/2 Hex Adapter: **Part #54-TPA50024**
	0.250"-0.350" Hex 5/16" (plug length 0.540") **54-MTP 375** 0.375"-0.450" Hex 5/16" (plug length 0.540") **54-MTP 500** 0.500"-0.580" Hex 1/2" (plug length 0.540") **54-MTP 625** 0.625"-0.710" Hex 1/2" (plug length 0.540") **54-MTP 750** 0.750"-0.830" Hex 1/2" (plug length 0.540") **54-MTP 875** 0.875"-0.950" Hex 1/2" (plug length 0.540") **54-MTP 1000** 1.150" Hex 1/2" (plug length 0.540") **54-MTP 1125** 1.220" Hex 1/2" (plug length 0.540") **54-MTP 1250** 1.320" Hex 1/2" (plug length 0.540") **54-MTP 1375** 1.450" Hex 1/2" (plug length 0.540") **54-MTP 1500** 0.500"-0.710" Double Length Hex 1/2" (length 1.00") **54-MTP 625750** 0.625"-0.830" Double Length Hex 1/2" (length 1.00) **54-MTP 750875**

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