

**WARNING: Read all instructions and safety information prior to use of all Thermo-Well Tools**

***WellSetter-150***  
**THERMOWELL-INSERTING  
TOOL**

**OWNER'S MANUAL  
and  
OPERATING INSTRUCTIONS**



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# OPERATIONS MANUAL

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## **2LBin WellSetter-150 Thermo-Well Inserting Tool OWNER'S MANUAL**

### **1.0 SAFETY REQUIREMENTS**

You, the customer, must establish hot tap drilling/well inserting procedures accompanied by this manual to ensure that they will be safe and proper procedures, and post them in a conspicuous place within your facility.

Here are some regulations that should be incorporated into your safety program.

- A. Never allow an untrained operator to use this machine.
- B. If the machine is not working properly, STOP proceeding and advise supervisor IMMEDIATELY.
- C. Never alter machine from original design.
- D. Always use proper fittings, valves and equipment intended for this machine.
- E. Never use this machine unless all fittings, valves and equipment have been fully tested before each tap or well insertion is made.
- F. Always use proper safety clothing and accessories for the environment in which you are to work.
- G. Always use this machine in accordance with OSHA's regulations.
- H. Always use ground fault interrupter between outlet and drill.
- I. Safety goggles are required at all times. Earplugs are suggested. Rubber boots and gloves are required in damp areas.

- J. DO NOT plug in motor until everything checks out, and you are ready to start drilling.
- K. Always disconnect power cord when changing drills, adaptors, and servicing equipment.
- L. Keep alert at all times and stand in an area with sure footing.
- M. Don't let spectators stand too close.

**DANGER** – under pressure gas and/or fluids both flammable and non-flammable could result in death and /or possible serious injury if operating personnel of this machine are not properly trained and thoroughly familiar with the use and maintenance of the WellSetter-150 Tapping & Insertion Tool.

## **2.0 2LBin, Inc WARRANTY**

2LBin products sold to our customers are guaranteed to be of the quality as described by 2LBin.

### **Standard warranty for 2LBin Machinery is provided below:**

2LBin warrants its products to be free of defects in workmanship and material under normal use and service, when used for the purposes and under the conditions for which they are intended. Our liability is limited to replacement of defective parts.

## **3.0 TOOL SPECIFICATIONS**

The WellSetter-150 Tool was designed by tapping technicians with over 30 years of thermo-well service and who have used these tools in the field for hot tapping and inserting 1/2" – 3/4" Thermo-wells in live systems.

The WellSetter-150 Tool is a commercial piece of field equipment that will perform "pressurized" drilling operations and thermo-well installations on pipelines and tanks within the limitations set forth in this manual.

Operating Range – 150 psi. @ 250° F

Total weight of tool - 9 lbs.

**For machinery equipped for higher pressures and temperatures, please contact our office.**

**WARNING** – Work on pressurized piping systems is potentially hazardous. Proper training on this equipment is necessary.

#### **4.0 DESCRIPTION OF PROCEDURE**

Thermo-well inserting is the installation of temperature sensing wells into existing systems without a shutdown. The WellSetter-150 taps and installs your thermo-wells into vessels or pipelines through 150 psi. without interruption of service. In Figure 1 the Thermolet™ is welded or mechanically installed onto the pipeline. A 2" temporary isolation valve is installed to the ¾" Thermolet for installing ¾" thermowells. ½" Thermolets for ½" thermo-wells require a bushing to increase the 1 ½" pipe sized Thermolet™ up to the 2" IP valve.

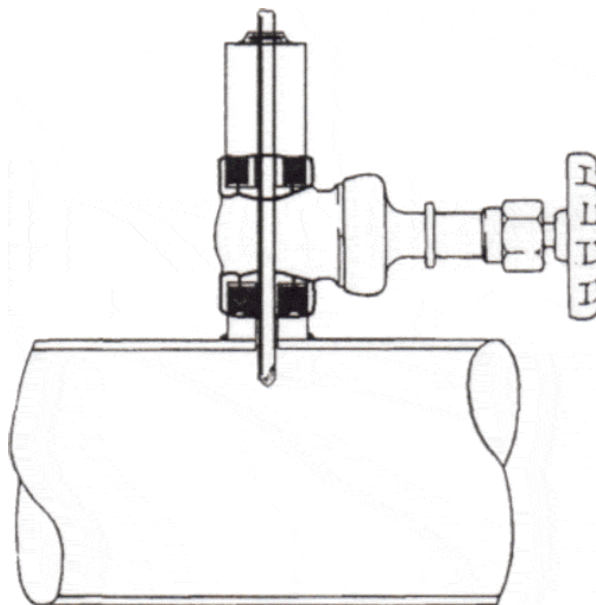


FIGURE 1

The WellSetter-150 accepts an 11/16" solid drill for ½" thermowell drilling and 7/8" solid drill for ¾" inserting. Once the solid drill is inserted into the packing housing & mounted to the temporary 2" valve, the bleed-off valve can be filled with air or water pressure. **Note:** Pull the solid drill all the way up and stand clear of the drill shaft at all times. Once energized with pressure from testing or tapping, the shaft can suddenly rise causing injury. Introduce pressure to test the weld and assembly before tapping.

Most tapping machines can be used with the WellSetter-150 but the hole sizes indicated are important to allow the Thermowell to be inserted without causing damage. If many wells are to be installed, it is suggested that a more advanced machine be purchased. At a minimum, the LouieJR found at **LouieJR.com** or the commercial T1-2 found at **TappingMachines.com** are recommended.

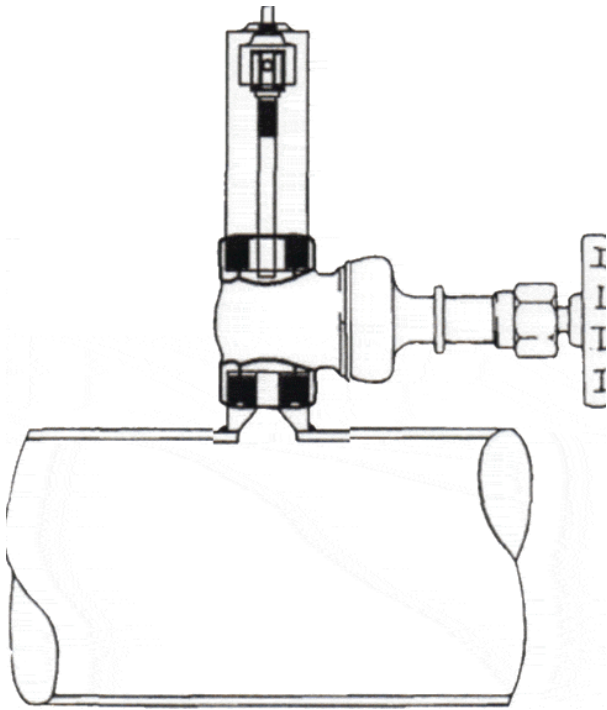
If the solid drill is used to tap the pipe, drill until the hole is complete and the solid drill passes completely through the wall of the pipe.

If you are tapping copper pipe, keep track of the distance you are traveling and be sure to use provided *Drill-Stop-Collar* on the solid drill because copper cuts fast and cutting through the opposite wall of the pipe can happen quickly! Fluid pressure pushing back on boring bar can be dangerous so stand clear at all times. Leave the drill motor attached at all times and during all operations to keep shaft from becoming a weapon. Once hole is complete, hold drill motor and slowly allow drill and solid drill to back out using the pipe pressure and close the valve.

Remove the solid drill from the packing and replace it with the Well-Setter Rod. Install the required socket that fits your thermo-well head. Install the Crosstop and tighten Allen screws to secure it. Using a small Allan or screwdriver, push the socket Lock-pin located in the retainer hole and pull the socket off and remove. Reversing this order can perform installation of different sized sockets.

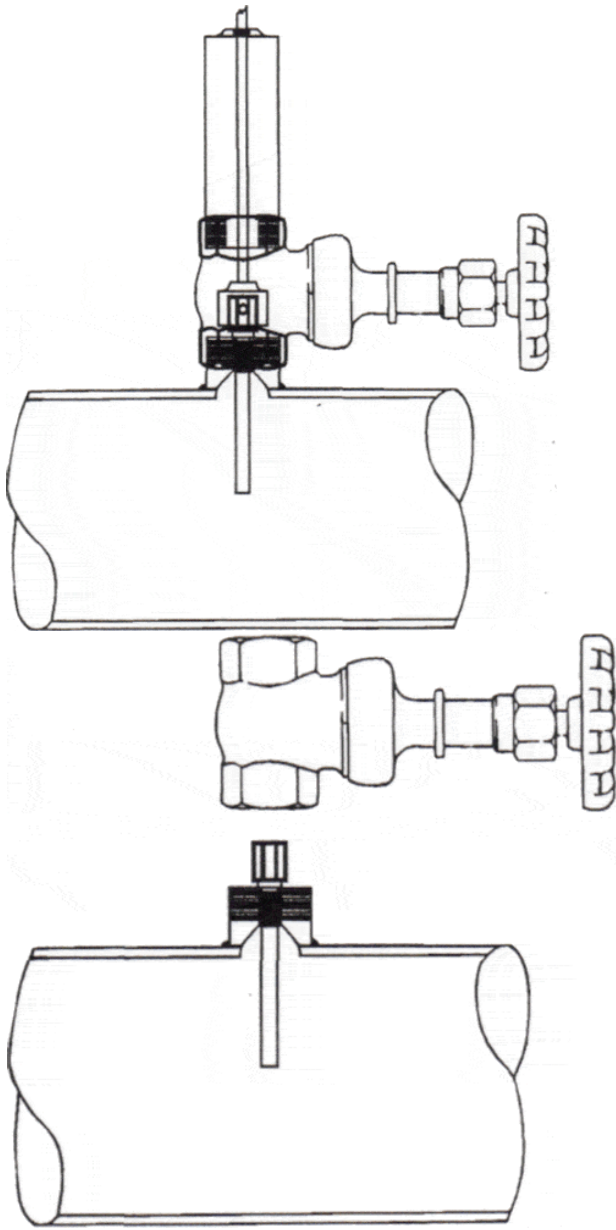
Set the thermo-well into the socket and tighten the Allen screw that retains the thermo-well. Wrap thermo-well threads with teflon tape and lightly cover the threads with pipe dope. Pull the rod and well into the WellSetter-150. If the well sticks out beyond the tool, add a coupling and a pipe nipple and install onto the temporary gate valve. Close the bleed off valve.





Open gate valve and using the cross top of the tool, push the thermo-well into the mating Thermolet™ threaded hole and rotate clockwise until seated and well is installed in fluid tight fashion with the Thermolet™. Open bleed off port to confirm the well is sealed and no pressure exists.

Once seal is confirmed, remove the cross top, unthread and pull the tool housing over the setting rod leaving it attached to the thermo-well. Once fluid has drained, visually inspect the well and Thermolet™ connection to be secure and slowly remove the temporary valve.



### **5.0 Thermolet™ FITTINGS**

Carbon Steel Thermolet™ with 3/4" IP well thread

Carbon Steel Thermolet™ with 1/2" IP well thread

304 Stainless Thermolet™ with 3/4" IP well thread

304 Stainless Thermolet™ with 1/2" IP well thread

**Many Bolt-on versions available**

**-2LB-Therm-3/4**

**-2LB-Therm-1/2**

**-2LB-Therm-3/4-304- SS**

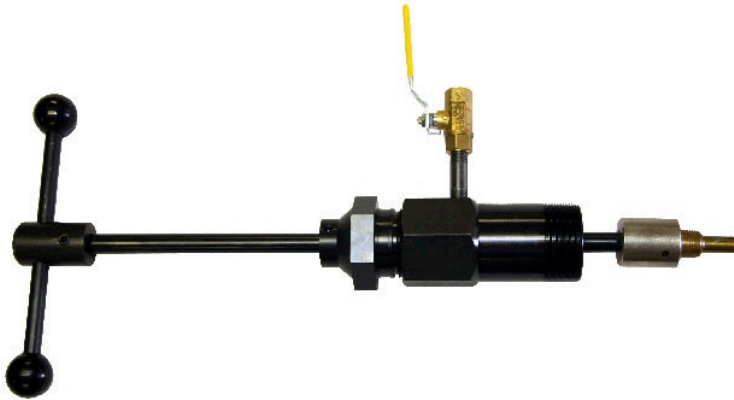
**-2LB-Therm-1/2-304-SS**



## **6.0 PRODUCT CODES & ACCESSORIES**

WellSetter-150

2LB-0150-WI



11/16" solid drill

T1-BBT-1800

7/8" solid drill

T1-BBT-1801



## **7.0 ADDITIONAL TAPPING PROCEDURE & SAFETY**

### **GENERAL DESCRIPTION**

The WellSetter-150 consists of a packing in which a solid drill bit rotates and slides, and is powered by your battery operated drill or by use of a grounded 115 VAC electrical outlet through a ground fault interrupt plug (not supplied).

**IMPORTANT** – Prior to any attempt to perform “live “ tapping operations, the operator must be completely familiar with all aspects of the use of the WellSetter-150 and all personnel must go through a “hands on” training program using this manual, under controlled conditions.

Read and understand entire Operator’s Manual prior to attempting your first tap. Each operator should practice on a dry line first, because once you start a live tap, you are committed to finishing it! Your pipeline may not be easily shut down to repair the damage.

Inspect all pieces of equipment before each use. DO NOT assume that anything is still tight and in operational condition after the last tap. Ensure that you are plugged into the ground fault interrupt protector, which is grounded to a properly wired outlet to protect from electrical shock!

Determine the type of material you are tapping into, what type of vessel or pipe, and what pressure and/or temperature. Be sure you are trained in each special aspect prior to proceeding. If you need special assistance determining safety questions, please call 2LBin, Inc at the phone number listed on the front of this manual.

Some drill motors are not explosion proof and do emit sparks. Avoid combustible areas and DO NOT operate in gaseous or dusty atmospheres.

Determine the size and type of solid bit to be used. Make sure your drill is sharp! Make sure it passes through the valve and Thermolet™ without dragging at any point.

Attach your WellSetter-150 to the 2" valve, and pull up on the solid bit. Measure the amount of solid drill exposed when all the way retracted and write it down. Open the 2" valve, push boring bar forward making sure the solid drill completely passed through and touches the outside of the pipe. Spin boring bar by hand. Make sure it has no drag. Pull boring bar back to fully retracted position.

Pressure check assembly, packing, and valve through the bleed-off/test outlet provided. Use a pressure gauge if needed, and/or spray solution of soapy water on assembly to ensure there will be no leaks. After the pressure test is successful, release pressure.

Push boring bar forward again, making sure solid drill contacts outside surface of pipe. Install *drill-stop-collar* and tighten set screw. This allows you to drill through the pipeline but not too far. Install drill motor and secure chuck onto drill flats. Don't remove drill motor until drilling is complete, solid drill is fully retracted and unit is fully depressurized!

Spray boring-bar with a light oil such as WD-40 at packing area to lubricate it.

Now that you are wearing the proper safety equipment, you have sure footing, enough light to see what you are doing, everything has been tested and double checked, and you are plugged into a properly wired outlet with the ground fault interrupter in place, AND have studied and familiarized yourself with procedures and performed them in a trial location..... YOU ARE READY TO BEGIN!!

Remember, you are not in a race to make this hot tap! You are here to make a successful tap, which takes time and experience. Take it from an experienced tapper, "There is No Rush! - EVER!! or this job is not for you.

With the pressure check/bleed off valve closed, pull the trigger and gently push the solid drill into the pipe. Make sure the motor is rotating clockwise until fluid purges into assembly. Continue drilling to complete tap. You will feel backpressure after fluid is reached, so more pressure on the drill motor will be required to complete tap. As you reach the end of the tap, the cut may seem a little rougher, so expect the solid drill to grab a bit. Don't let it throw you off balance. Remember - SAFETY FIRST. When the tap is completed, the drag will noticeably cease.

Once the solid bit has passed through the pipe, STOP and slowly allow the boring bar to come back. If it hangs up, gently bump the trigger if needed and allow the drill motor and the solid drill to come all the way back.

Make sure the solid drill retracts to the same measured length prior to starting the work.

Close the 2" temporary valve and bleed off the pressure through the bleed-off valve. Be sure you know where the bleed-off liquid is going to go. Use a bucket or whatever is necessary to safely bleed off the product.

Remove the drill motor from the solid bit and remove the tool from the 2" valve.

When tapping is completed, clean machine and spray lightly with WD-40 or equal to protect it. Replace any damaged parts now- BEFORE your next job.

## **8.0 PARTS LIST**

We at 2LBin, Inc want to Thank You for acquiring your  
Thermo-Well Tools

**Please call us.**

We can help advise you with special applications.

We are here to help!



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Find Us On The Web At:  
**ThermoWellTools.com**