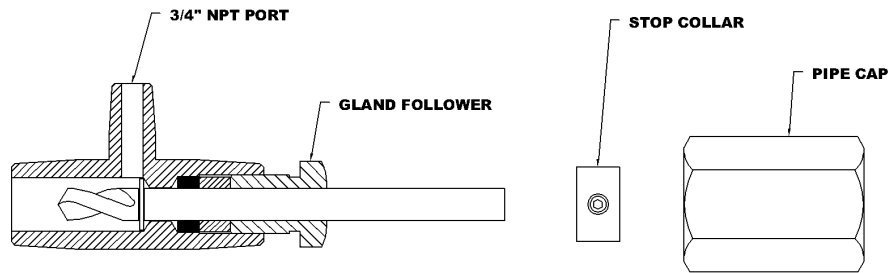


D-SERIES TAPPING TOOL INSTRUCTIONS
1/4" & 3/8" PIPE SIZES

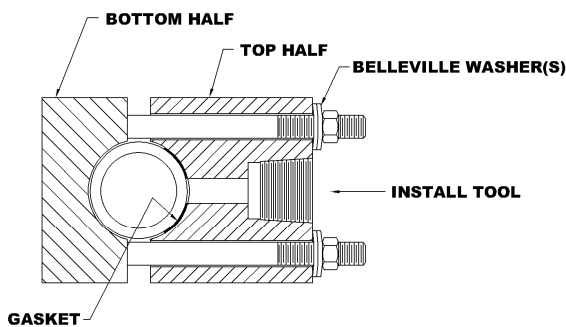
These instructions apply to D-Series Tapping Tools identified by the following Part Numbers.

D-Series Tapping Tool Kits	
Pipe Size	Part Number
DTT Tapping Tool Kits	
1/4" IPS	DTT-0025-GET-1025
3/8" IPS	DTT-0025-GET-1038
D2 Tapping Tool Kits	
1/4" IPS	D2-0025-GET-1025
3/8" IPS	D2-0025-GET-1038
DTT and D2 Replacement Saddle Gasket Recommended for (1) use only Replace for subsequent uses of saddles	
DTT-0025-GRG	
(1) required per DTT Saddle Assembly	
(2) required per D2 Saddle Assembly	

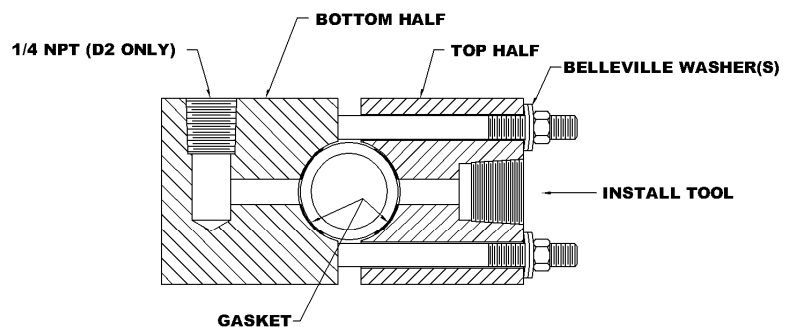
WARNING! READ AND FOLLOW THESE INSTRUCTIONS WHEN USING THE TAPPING TOOLS. FAILURE TO FOLLOW ANY OF THESE INSTRUCTIONS COULD RESULT IN LEAKAGE.



HOT TAP TOOL



FULL SADDLE ASSEMBLY
DTT APPLICATION



FULL SADDLE ASSEMBLY
D2 APPLICATION

Questions? Contact EST Group Customer Service at any of the following locations.



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The recommended procedure for using the D-Series Tapping Tools is as follows:

1. Remove the thread protector caps from the tool and saddle assembly. Remove the stainless steel pipe cap from the Tapping Tool body. This will expose the drill tip. The pipe cap will be installed onto the body later.
2. Disassemble the saddle assembly and remove the dummy pipe.
3. Place the top half of the saddle in a vise, being careful not to damage gasket in the saddle.
4. Put Teflon tape on the Tapping Tool threads at drill point end where cap was removed.
5. Thread the Tapping Tool body into the top half of the saddle, leak tight. Also, consider the desired final location of the 3/4" NPT port when tightening the tool into the saddle.
6. Tighten the gland follower at the back end of the Tapping Tool to a torque of **25 Ft-Lbs.**

AT THIS POINT YOU SHOULD BE READY TO ASSEMBLE THE TOOL AND SADDLE TO THE PIPE.

7. Check that the hole in the saddle gasket is properly aligned with the hole in the saddle.
8. Clean the pipe OD at the intended location of the saddle. Choose a saddle location, which does not have any tool marks or defects in the pipe surface. Also, make sure there are no projections from the pipe OD that would prevent the saddle from fully compressing the gasket. When the gasket is properly compressed, it will be approximately one-third of its original thickness.
9. Align the bottom half of saddle on pipe OD.
10. Install the top half of saddle onto the mounting bolts.
11. Install Belleville washers and nuts onto the saddle assembly. The each shaft must have (2) Belleville washers.
12. Tighten the nuts by hand in a cross pattern taking care that the gap between both halves of the saddle is equal on both sides of the pipe. Also, make sure that the saddle is not cocked on the pipe.
13. Tighten the nuts in a cross pattern 1/4 turn at a time. **DO NOT USE AN IMPACT WRENCH.** You must use a torque wrench. You must realize that after you have tightened the first two diagonal nuts that the other 2 will be loose. When tightening each succeeding nut it should be turned lightly until no longer loose before counting the 1/4 turn. This procedure as well as that in Step 14 must be followed in order to compress the gasket evenly. If this is not done, the gasket may leak.
14. Continue this 1/4 turn procedure using a torque wrench until the torque wrench shows a minimal reading above zero. Then tighten each nut in a cross pattern at increments of **5 in-lbs.** until the final torque of **20 in-lbs.** is reached.
15. Recheck each nut until the torque of 20 in-lbs. is reached without the nut turning. This step may need to be repeated several times until each nut does not turn. Do not exceed this final torque value as damage to the gasket might result. ***WARNING! DO NOT ROTATE THE TAPPING SADDLE ON THE PIPE AFTER INSTALLATION OR LEAKAGE MAY OCCUR DURING TAPPING OPERATIONS. IF NEEDED, REMOVE SADDLE AND BACKING SADDLE IF USED, REPLACE SADDLE GASKETS AND REINSTALL SADDLE(S) AT DESIRED LOCATION.***
16. Install the fittings to the 3/4" NPT connection on the Tapping Tool using Teflon tape.
17. Make all final pressure connections to saddle assembly and Tapping Tool.

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18. At this point, you should conduct a leak test of the Tapping Tool and back saddle to insure that everything has been properly assembled. This must be done before attempting to tap into the pipe.
19. Prior to tapping the pipe, retorque the gland follower to 25 Ft-Lbs. and check the torque on the saddle nuts. Retighten saddle nuts to the values in step 14.
20. Install drill onto drill shank. Do not run drill for longer than 20 to 30 seconds and be careful not to exert side force on the drill shaft because the PTFE packing does not provide support against cocking of the drill.
21. At the end of 20 to 30 seconds of the operation of the drill, retighten the gland follower to 25 Ft-Lbs. In horizontal applications be careful to support the drill while retorquing.
22. Continue the 20 to 30 seconds drill periods, followed by tightening the gland follower until you have drilled through the pipe. You should be able to drill through the pipe in approximately 1 – 2 minutes of total drilling time. If for some reason this should take a longer time, the Tapping Tool may heat up from friction. If you find it hot to the touch, you should cool the tool with a wet rag before resuming the drilling.
WARNING! NEVER IMPACT THE DRILL IN EITHER THE FORWARD OR THE REVERSE MODE, AS DAMAGE TO THE INTERNAL RETAINING RING MAY OCCUR. WHEN DRILLING THROUGH THE PIPE WALL THE MATERIAL TENDS TO GRAB THE DRILL BIT. TAKE ADDITIONAL CARE WHEN THE DRILL BREAKS THROUGH.
WARNING! DO NOT PERMIT THE DRILL TO SLAM FORWARD AGAINST THE DRILL ROD RETAINING RING AFTER THE DRILL PIERCES THE VESSEL.
23. After drilling through the pipe, retighten gland follower to 25 Ft-Lbs.
24. Retract the drill until resistance is encountered.
WARNING! NEVER FORCE OR IMPACT THE DRILL AGAINST RESISTANCE ENCOUNTERED IN THE RETRACTING DIRECTION.
25. Using a radial cutoff tool, cut off the exposed end of the drill about 1/4" beyond the gland follower. If the tool will be left in place for long periods of time without the pipe cap installed, it should be mandatory to set up periodic checks of the Torque on the gland follower. Most of the creep of the packing will occur in the first 24 hours after installation. Therefore, after 24 hours retorque the gland follower.
26. Retighten the gland follower to 25 Ft-Lbs.
27. Wrap the threaded portion at the back end of the Tapping Tool with Teflon tape and install stainless steel pipe cap (Removed in Step 1) leak tight. When doing this, use a second wrench around the rectangular cross section of the Tapping Tool so that the saddle gasket and tool/saddle connection is not subjected to any twisting motion.
28. Recheck the torque on the saddle nuts and, if necessary, retighten to the torque in Step 14.
29. Most of the creep in the saddle gaskets will occur in the first 24 hours after installation. Therefore, after 24 hours, retorque the saddle nuts.

If saddle is to be left on the pipe for long periods of time it should be mandatory to set-up a periodic check of the torque on the saddle nuts. If the torque does not diminish by the end of a period, the next period may be lengthened.

QUESTIONS? Contact EST Group Customer Service at any of the following locations with questions.

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- In Asia: tel: +65-6745-8560, e-mail: est-asia@curtisswright.com
- On the Internet: <http://estgroup.cwfc.com>

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