HARRY'S HOT TAPPER
INSTRUCTIONS

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UNPACK "HARRY'S HOT TAPPER" FROM THE TOOLBOX

Check to be sure that you have one 24" shaft and sealing unit assembly, one 18" shaft, one 2L arbor (WITH PILOT DRILL), two coupon retainers, two pilot drill bits, one 1/8" allen wrench, one 5/32" allen wrench, one 5/8" hole saw, one 7/8" hole saw, one 1-1/8" hole saw, one 1-3/8" hole saw, one 1-3/4" hole saw, one 2-1/4" hole saw, and one 3-1/4" hole saw.

IMPORTANT- PLEASE NOTE THE FOLLOWING INFORMATION

If too much pressure is applied to the tool while cutting the coupon, the sudden breakthrough of the hole saw may result in the coupon retainer striking the back side of the main and damaging the retainer. This can be avoided by cutting a spacer of ¾" copper tubing long enough to stop the retainer from hitting the back of the main and slipping it over the exposed shaft between the gland nut and the drill chuck. To remove the coupon from the retainer, loosen the setscrew in the arbor and slide the retainer out of the arbor. The coupon can then be slipped off the back end of the retainer. Attempting to pry the coupon off the front end may result in breaking the retainer.

CUSTOMER SUPPLIED COMPONENTS

Correctly sized saddle or threadolet, main line size to branch size. Branch size full port gate or ball valve. Branch size X 6" nipple. Branch size X 1-1/4" X ½" tee (labeled bleed off tee in illustration A). ½" nipple. ½" valve or hose bib (labeled bleed valve in illustration A. ½" slow speed drill motor (i.e., Milwaukee Tri-Speed or Hole Hawg). Hose, if chip flushing is necessary. Chips consist of fine filings.

FOR 3" AND 4" FLANGED VALVES

Fabricated pipe saddle and flange (4-1/2" throat of saddle to face of flange). Branch sized valve. Brach sized threaded flange. Branch size X 2" bushing. 2" X close nilpple. 2" X 1-1/4" X ½" tee (labeled bleedoff tee). ½" valve or hose bib (labeled bleed valve). ½" nipple. Hose, if chip flushing is required.

PRELIMINARY

Verify that all equipment is in good condition and that fittings, nipples and valves are pressure rated for the job. Electrical tools and extension cords must be in compliance with OSHA rules and a ground fault interrupter is required for complete protection of operator in the event of a malfunction of electrical equipment.

B & S PRODUCTS COMPANY

Before using “Harry’s Hot Tapper”, be sure to examine shafts carefully for nicks or scratches. Use very fine sandpaper to smooth surface.

HOW TO USE “HARRY’S HOT TAPPER”

(1) Weld a threadolet or bolt a saddle or sleeve on the mainline. B & S has a full line of saddles and sleeves for branches in all modern piping materials.

(2) Select the proper sized hole saw and check to be sure that it clears the valve bore with enough space to prevent damage to valve parts.

IF USING A FLANGED VALVE PROCEED DIRECTLY TO STEP 14.

(3) Install a shoulder nipple and valve onto the saddle, threadolet or sleeve and tighten.

NOTE

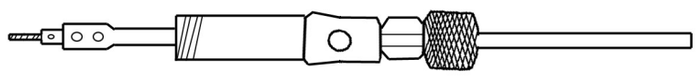
The 5/8”, 7/8” and 1-1/8” hole saws are used with the 18” shaft without arbors. The 1-3/8” up to 3-1/4” hole saws use the 2L arbor with the 24” shaft. Use standard depth hole saws only. For cement or cement-lined pipe, we recommend the use of carbide-tipped hole saws, which are not included with “Harry’s Hot Tapper”.

(4) Assemble correctly sized bleedoff tee to the sealing unit and appropriate shaft as shown in photograph 1 and illustration A. If making a branch from 1-1/2 “ to 4” use the 24” shaft with sealing unit assembled and proceed to step (5). If making a ¾”, 1” or 1-1/4” branch, loosen the gland nut and remove the 24” shaft from the sealing unit with a twisting motion. Install the 18” shaft with gentle pressure and a twisting motion through the sealing unit. Tighten the gland nut just until snug.

(5) (1-1/2” to 4” branches) Insert the arbor and pilot drill into the socket end of the shaft and tighten the set screw firmly (see photograph 1).

(6) Assemble the saddle, threadolet or sleeve, short nipple, valve, nipple, and 1-1/4” reducer to the appropriate size and hot tapper assembly (see photograph 1) with the pilot drill installed. Support the assembly to avoid breaking small nipples.

(7) Pull the shaft as far back as possible into the bleedoff tee and screw a 6” nipple into the bleedoff tee (see photograph 1).



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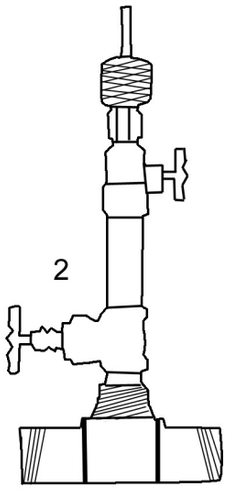
HOLE SAW RPM TABLE

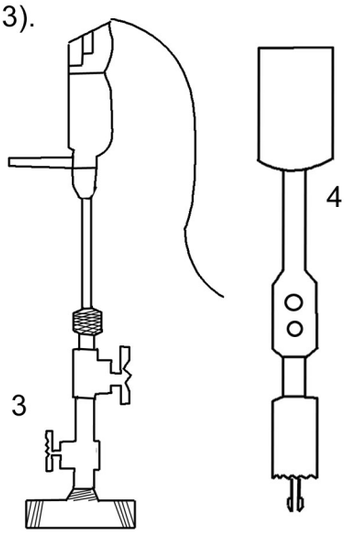
Size	Black Iron	Galvanized	Copper	Cast Iron	PVC
5/8”	550	550	730	365	730
7/8”	390	390	520	260	520
1 1/8”	300	300	400	200	400
1 3/8”	285	285	380	190	380
1 3/4”	195	195	250	130	250
2 1/4”	150	150	200	100	200
3 1/4”	105	105	140	70	140



(8) Attach the complete boring assembly onto the valve. Install a ½" bleed valve onto the opening of the bleed tee. With the system completely set up, open both valves and pressure test through the bleed valveopening. Bleed valve can be used for flushing chips, if necessary, by connecting a hose and discharging to drain while boring (see photograph 2).

(9) Chuck the end of the shaft into the drill motor and operate until the pilot drill penetrates the main. If leakage occurs at the sealing unit gland, hand tighten the gland nut just enough to stop the drip. Do not overtighten. After penetration, pull the drill and shaft back to the limit, shut off the branch valve and open the bleed valve to relieve the pressure (see photograph 3).

(10) After drilling the pilot hole, make a mark across the joint of the 6" nipple and the branch valve before disassembly (see joint 3 in illustration A). Unscrew joint 3. Install the appropriate size hole saw on the appropriate shaft and or shaft and arbor and replace the pilot drill with a coupon retainer. The shoulder of the retainer must extend past the saw teeth an amount equal to the mainline wall thickness plus 1/8" minimum (see photograph 4).



(11) Make up the assembly onto the branch valve until the marks realign, close the bleed valve and open the branch valve. Without starting the drill, push the shaft forward until the retainer snaps through the pilot hole.

(12) Resume the drilling operation using moderate pressure until the hole saw penetrates the main completely. Ease pressure on the drill before breakthough to avoid sudden penetration with the possibility of striking the back side of the main and damaging the retainer and the drilling unit.

(13) Pull the drill and shaft back to the limit, shut off the branch valve, open the bleed valve and disconnect the unit from the branch valve at joint 3.

(14) The tap is now complete. Before storage, loosen the gland nut and remove the shaft. Clean and grease the shaft and bearing surface of the gland with wd-40. Store the gland assembly separate from the shaft, assemble before next use.

NOTE

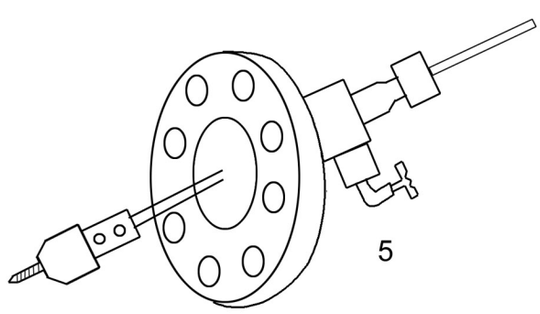
Please do not allow the hole saws to rattle around loose in the toolbox in contact with the shafts. The teeth of the hole saws may damage the shafts and cause scoring of the bearing surface of the gland body which may jam the tool. Please wrap the hole saws so the teeth cannot scratch the shafts. Another way to protect the shafts is to cut a length of ½" PVC and slide it over each shaft to shield them from the saw teeth.

THE FOLLOWING INSTRUCTIONS APPLY TO 3" OR 4" FLANGED VALVES

(15) Fabricate and weld a pipe saddle and flange assembly no longer than 4-1/2" from the high part of the mainline to the face of the flange onto the main.

(16) Bolt the valve to the flange.

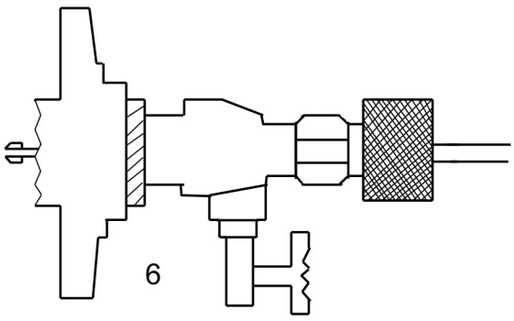
(17) Assemble the threaded flange, branch size X 2" bușing, 2" close close nipple, 2" X 1-1/4" X ½" tee, sealing unit, appropriate shaft with arbor and pilot drill as shown in photograph 5.

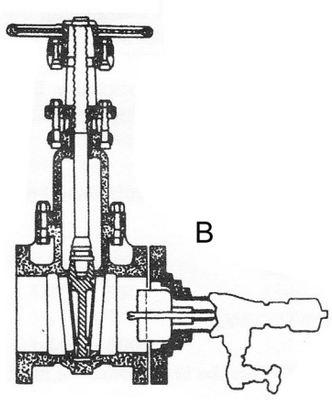


(18) Bolt the assembly onto the valve, open the valves and pressure test the complete assembly through the bleed valve. Chip flushing can be accomplished by using the bleed valve to drain during drilling.

(19) Chuck the end of the shaft into the drill motor and operate until the pilot drill penetrates the main. If leakage occurs at the sealing unit gland, hand tighten the gland nut just enough to stop the drip. Do not overtighten. After penetration, pull the drill and shaft back to the limit, shut off the branch valve and open the bleed valve to relieve the pressure.

(20) After drilling the pilot hole, mark and unscrew the bushing from the flange. Install the appropriate size hole saw on the shaft and arbor and replace the pilot drill with a coupon retainer. The shoulder of the retainer must extend past the saw teeth an amount equal to the mainline wall thickness plus 1/8" minimum (see photograph 6).





(21) Make up the assembly onto the branch valve until the marks realign, close the bleed valve and open the branch valve. Without starting the drill, push the shaft forward until the retainer snaps through the pilot hole (see illustration B).

(22) Resume the drilling operation using moderate pressure until the hole saw penetrates the main completely. Ease pressure on the drill before breakthough to avoid sudden penetration with the possibility of striking the back side of the main and damaging the retainer and the drilling unit.

(23) Pull the drill and shaft back to the limit, shut off the branch valve, open the bleed valve and disconnect the unit from the branch valve.

(24) The tap is now complete. Before storage, loosen the gland nut and remove the shaft. Clean and grease the shaft and bearing surface of the gland with grease or heavy oil. Replace the sealing unit on the shaft. Automotive type grease is OK. Replace the gland assembly onto the shaft. Leave the gland nut loose until the next use.

NOTE

Please do not allow the hole saws to rattle around loose in the toolbox in contact with the shafts. The teeth of the hole saws may damage the shafts and cause scoring of the bearing surface of the gland body which may jam the tool. Please wrap the hole saws so the teeth cannot scratch the shafts. Another way to protect the shafts is to cut a length of ½" PVC and slide it over each shaft to shield them from the saw teeth.

LIMITATIONS IN THE USE OF "HARRY'S HOT TAPPER"

"Harry's Hot Tapper" can be used in nearly all modern piping materials to make branch connections from ¾" to 4" on any appropriately sized mainlines in chilled water and hot water systems in pressures up to 300 psi. In addition, the tool can be used in natural gas lines in low pressure under well ventilated conditions and we recommend the use of an air drill. In steam, do not use the tool in pressures over **125** psi. **Do not use the tool in ammonia or any other caustic systems**.

Please call B & S Products Co. at **800/424-6882** regarding specific applicationms or for other recommendations. Follow the instructions carefully. Thank you for purchasing "Harry's Hot Tapper".