

# HYDRA-STOP®

## HYDRA - TAPPER®

Models:

900 & 1300 Side Tapping Machine

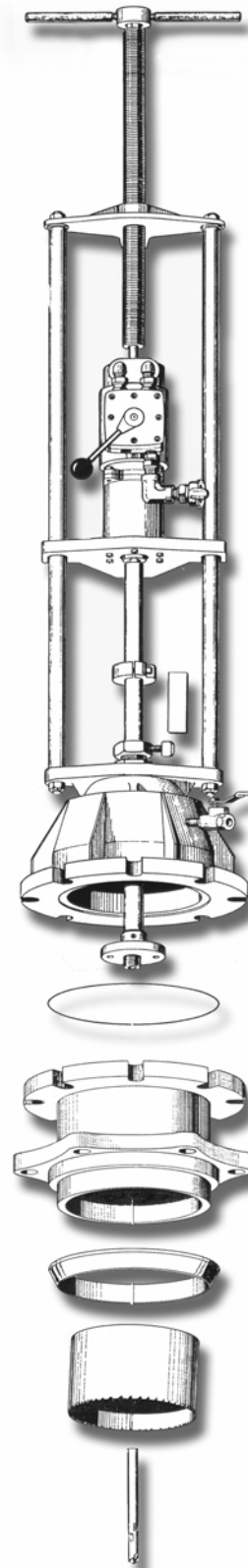
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Operating Instructions

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## **INTRODUCTION**

Hydra-Tapper® is a lightweight hot tapping machine. Superior engineering, rugged construction and fewer moving parts means Hydra-Tapper is designed to operate without costly and annoying malfunctions. Hydra-Tapper's light weight also eliminates the need for expensive blocking and bracing.

**Hydra-Tapper® Operating Instructions**  
**Models 900 and 1300 Side Tapping Machine**  
**4” through 8” and 10” and 12”**  
**(100mm – 200mm) (250mm – 300mm)**

**DESCRIPTION OF HYDRA-TAPPING – GENERAL PRECAUTIONS**

A. HYDRA-TAPPER SET-UP

1. Remove the Hydra-Tapper from the storage case. Locate the appropriate Side Tap Adaptor Housing **(Figure 1 Pg 6)**.
2. Install the O-Ring into the O-Ring groove on the face of the Side Tap Adaptor Housing.
3. Using the 1 1/6” nut, bolt and washer assembly fasten the Hydra-Tapper to the Side Tapping Adaptor Housing. Use the alternate-tightening pattern to ensure a proper seal. (As shown below).
4. Install the Feed Screw into the Hydra-Tapper and advance 3” into the Hydra-Tapper.
5. Check the condition of the MJ gasket at the base of the Side Tap Adaptor Housing.

**HYDRA-TAPPER 4”, 6”, 8” (100, 150, and 200mm)**

A. CUTTER AND PILOT DRILL INSTALLATION **(Figure 2 Pg 7)**

**PILOT DRILL SIZE REFERENCE**

Tap Size	Drill Size
4” and 6” (100mm and 150mm)	5/8” x 6” (25mmØ x 150mm)
8” (200mm)	5/8” x 7 1/4” (25mmØ x 184mm)

1. Thread appropriate cutter (hole saw) into the Saw Mandrel. Once tight, back the Cutter off until the first set of drive holes line up. Thread the drive screws into the drive holes in the cutter. Insert the Saw Mandrel into the Hydra-Tapper and tighten the thumb screw.
2. Tighten Drive Pins.
3. Locate and remove the set screw on the Collar at the base of the Saw Mandrel.
4. Insert appropriate Pilot Drill into center hole of the bottom of the Saw Mandrel.
5. Install the Pilot Drill into the center hole at the base of the Saw Mandrel. Visually align the “flat” on the Pilot Drill through the setscrew hole and install the setscrew.

**HYDRA-TAPPER 10” AND 12” (250 and 300mm)**

A. CUTTER AND PILOT DRILL INSTALLATION

1. Remove the three (3) 1/2” socket head cap screws and nylock nuts from the 10” and 12” Saw Mandrel. Thread the appropriate Cutter (hole saw) onto the Saw Mandrel. Retract the Cutter until the first set of holes in the Cutter and the first set of drive holes in the Saw Mandrel line up. Install the three (3) 1/2” socket head cap screws through the Cutter and into the Saw Mandrel (from the bottom up). Attach the three (3) nylock nuts to the 1/2” socket head cap screws and tighten them against the top of the base of the Saw Mandrel.
2. Remove the set screw from the Collar at the base of the Saw Mandrel. Install the 5/8” x 10” Pilot Drill into the center of the Saw Mandrel. Visually align the “flat” on the Pilot Drill with the set screw hole and install the set screw onto the “flat” of the Pilot Drill **(Figure 3 Pg 8)**.

## B. MOUNTING THE HYDRA-TAPPER®

1. Bolt the Hydra-Tapper to the Tapping Valve and use the alternating pattern to tighten and insure a proper seal. Loosen thumb screw on packing nut assembly and lower Saw Mandrel onto the pipe. (Care should be taken not to drop the saw onto the top of the pipe and break or crack the Pilot Drill.) Lower the Saw Mandrel and lock the thumb screw.
2. Attach the tee handle to the Feed Screw. Thread the Feed Screw onto the brass plate at the top of the Hydra-Tapper and advance until 3" protrude below the brass plate.

## C. SETTING THE STOP COLLAR (ALL MODELS)

1. Slide the Cutter Pilot Drill assembly into the Side Tap Machine.  
**\*NOTE: Mount the Hydra-Tapper to Tapping Valve at the middle bar is facing down. Also tighten the MJ Tapping Adaptor so that the gasket is evenly sealed.**
2. Advance the Saw Mandrel until the Pilot Drill reaches the pipe. Using either the 4" – 8" gauge or the 10" – 12" gauge, place the gauge against the Saw Mandrel with one end on the top of the Hydra-Tapper Packing Nut and slide the Stop Collar up to the other end of the gauge and tighten.

## D. DRIVE UNIT

1. Loosen the thumb screw, if necessary, to turn the Saw Mandrel and align the male hex end of the Saw Mandrel to the female hex end of the Drive Unit.  
**\*NOTE: VALVE MUST BE OPEN.**
2. Tighten the thumb screw, if necessary, and advance the Feed Screw onto the pin at the top of the Drive Unit.
3. Loosen the thumb screw and advance the Feed Screw until tight. Then retract 1/2 turn, connect power supply, and start Drive Unit clockwise.  
Note: NEVER OPERATE THE DRIVE UNIT IN REVERSE (counter-clockwise).

## E. TAPPING THE PIPE (4", 6", 8", 10" and 12")

1. Advance the Feed Screw by placing two (2) fingers on each end of the tee handle and applying steady equal clockwise pressure.  
**\*NOTE: Saw Mandrel should rotate at 90 to 120 R.P.M. If Cutter jams, move the Drive Unit to neutral and back the Feed Screw up 1/2 turn and restart Drive Unit.**
2. Continue tapping until the Stop Collar is 1/2" to 1" from the top of the Packing Nut.

## F. CHECKING THE COUPON

1. With the Stop Collar 1/2" – 1" from the top of the packing unit, stop the Drive Unit, tighten the thumb screw and remove the Drive Unit.
2. With one hand firmly placed over the Saw Mandrel, loosen the thumb screw and allow the water pressure to push the Saw Mandrel up until the Pilot Drills coupon retention clip is caught.
3. The Saw Mandrel will raise approximately 1/2" and stop when the Pilot Drills coupon retention clip is caught.
4. After checking the coupon, move the Stop Collar up 1" and complete the tap.
5. After completing the tap, tighten the thumb screw, remove the Feed Screw and Drive Unit. Loosen the thumb screw with one hand firmly placed over the Saw Mandrel. Let the water pressure slowly push the Saw Mandrel up.  
**\*NOTE: If the Saw Mandrel does not fully retract, push down and turn 180°.**
6. Close the Tapping Valve and remove the Hydra-Tapper.

**\* NOTE: If the valve fails to close after 10 to 20 turns, check to see if the Saw Mandrel is fully retracted and the Drive Unit is removed.**

7. OPEN HYDRA-TAPPER PETCOCK AND BLEED OFF PRESSURE.

### **\*\*\*TROUBLESHOOTING\*\*\***

#### **IF THE PILOT DRILL DOESN'T CATCH**

- a. Push down on the Saw Mandrel and turn.
- b. Reattach the Drive Unit and tap 1/2" farther and recheck the coupon.
- c. Retract the Saw Mandrel, close the Temporary Valve, remove the Hydra-Tapper, and inspect the Pilot Drill and coupon retention wire.

#### **COMPLETION OF THE TAP**

- a. If the Saw Mandrel does not fully retract, push down on the saw Mandrel and turn 180°.
- b. If the Tapping Valve fails to close after 10 to 20 turns, make sure the Drive unit and Feed Screw have been removed.

### **SIDE TAPPING MACHINE REMOVAL**

1. Close Tapping Valve.
2. Bleed off pressure through petcock.
3. Unbolt Side Tap Machine – make sure that the MJ Gasket stays on the housing.
4. Remove Stop Collar and Saw Mandrel Cutter assembly.
5. Remove the Side Tap Housing from the Hydra-Tapper.
6. Remove the Setscrew from the Saw Mandrel and remove the Pilot Drill and Coupon.

### **STORAGE OF HYDRA-TAPPER**

1. Remove Saw Tapping Machine housing.
2. Remove saw and Pilot Drill from Saw Mandrel, remove pins from Saw Mandrel, and clean out threads and lubricate.
3. Remove Feed Screw and lubricate.
4. Check condition of Cutters.
- \*NOTE Cutters are available for re-tipping.**
5. Check condition of the Pilot Drill. Replace coupon retention wire after every five (5) taps.

### **CUTTER CARE**

Hydra-Stop® carbide-tipped cutters can be used on a wide range of pipe materials, including: Iron (Cast & Ductile, Carbon Steel, and Asbestos Cement & PVC. Hydra-Stop cutters can easily be re-sharpened. The high-quality carbide inserts are replaceable, allowing for complete rebuilding of the cutter. Contact the Hydra-Stop factory in Alsip, Illinois, for more information on the re-sharpening or rebuilding of your cutter.

Please observe the following care and use instructions to achieve the longest life out of your Hydra-Stop cutter:

- Be sure to thread the cutter onto the Saw Mandrel and tightly, back off until the first set of drive holes line up. Thread the drive screws into the drive holes in the cutter and tighten. If the cutter is not tightly in place, vibration may damage the cutter.
- Apply adequate, steady & equal pressure when advancing the drive unit through the tap. Allowing the cutter points to contact the work without applying adequate pressure or by applying too much pressure may cause the cutter points to dull earlier than normal.

- Always wear safety glasses and use ear protection while making a tap. Keep fingers and hands away from the Saw Mandrel and drive unit chuck while it is in operation. Don't wear loose clothing while operating the tap machine.
- Always clean and dry cutters after use. Store cutters in a humidity-free environment to ensure against premature rusting. Never lay cutter down on the carbide tips as this can damage the teeth. When transporting, make sure cutter is secure and stable.

# NOTES

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# FIGURES

Figure 1

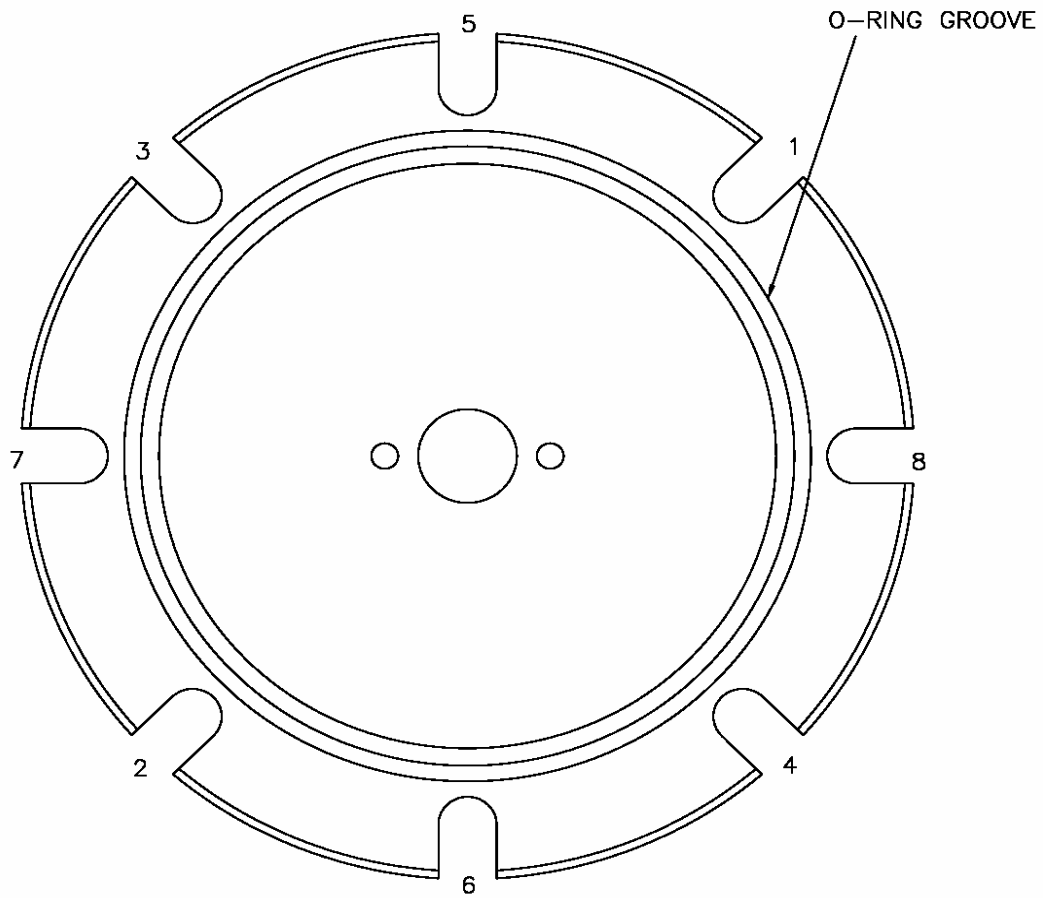
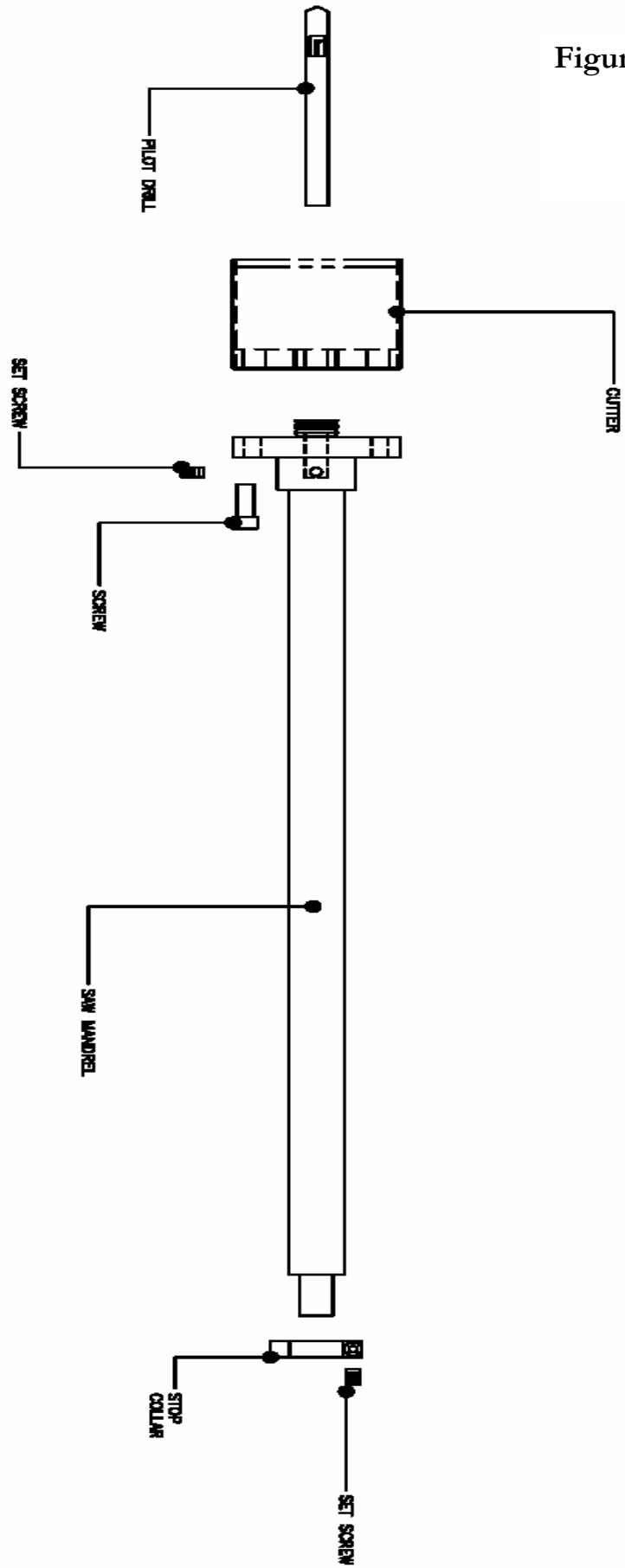


Figure 2



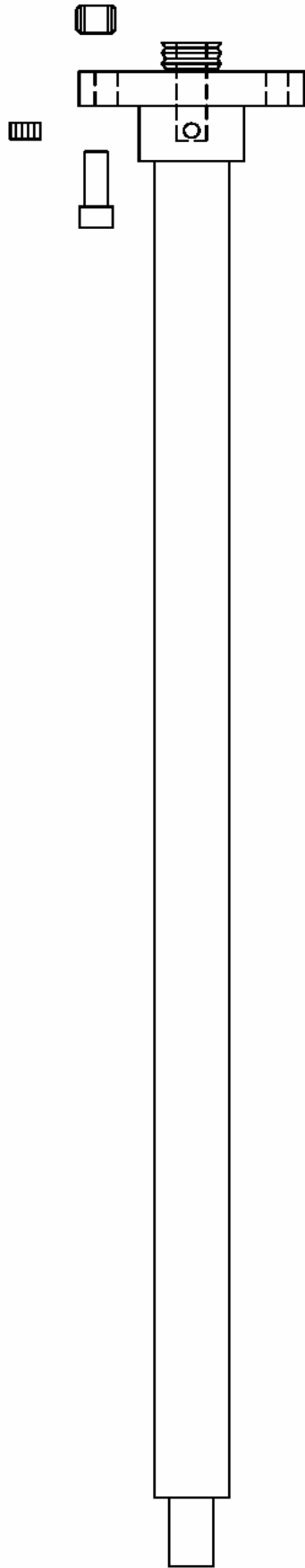


Figure 3