RT3422

Tapping Tool

OPERATOR'S MANUAL

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WARNING!

Read this Operator's Manual carefully before using this tool. Failure to understand and follow the contents of this manual may result in extensive property damage and/or serious personal injury.

RIDGID®

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RIDGID

RT3422 Tapping Tool

General Safety Information

WARNING! Read and understand all instructions. Failure to follow all instructions listed below may result in propery damage and/or serious personal injury.

SAVE THESE INSTRUCTIONS!

Work Area Safety

- **Keep your work area clean and well lit.** Cluttered work area invites accidents.
- **Keep bystanders, children, and visitors away while operating a tapping tool.** Distraction can result in improperly using the tool.

Personal Safety

- **Stay alert, watch what you are doing and use common sense when operating a tapping tool. Do not use tool while tired or under the influence of drugs, alcohol, or medications.** A moment of inattention while operating tools may result in serious personal injury.
- **Dress properly. Do not wear loose clothing or jewelry. Contain long hair.** Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts.
- **Do not over-reach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the tool in unexpected situations.
- **Use safety equipment. Always wear eye protection.** Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

Tool Use and Care

- **Do not force tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
- **Store idle tools out of the reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
- **Maintain tools with care. Keep cutting tools sharp and clean.** Properly maintained tools with sharp cutting edges are less likely to bind and are easier to control.
- **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
- **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool may become hazardous when used on another tool.
- **Keep handles dry and clean; free from oil and grease.** Allows for better control of the tool.

Service

- **Tool service must be performed by qualified repair personnel.** Service or maintenance performed by unqualified repair personnel could result in injury.
- **When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance Section of this manual.** Use of unauthorized parts or failure to follow maintenance instructions may create a risk of injury.

Specific Safety Information

⚠ WARNING

Read and follow safety labels on the tool! Know the function of all parts before using this tapping tool.

Operator Training

⚠ WARNING

Cutting into pipe containing liquids or gases under pressure is potentially hazardous. Correct procedures must be followed in the use of this equipment to maintain a safe working environment and prevent serious personal injury.

No person should use this tool who is not fully trained in the proper operating procedure and who is not fully aware of the potential hazards connected with work on pipe containing liquids or gases under pressure.

The purchaser of this equipment is responsible for how this equipment is used and the training and competence of the operators.

Should any difficulty arise at any time in the use of this equipment, please contact Ridge Tool immediately!

⚠ WARNING

- Read operators manual. Operator must be properly trained before using tool.
- Wear eye protection.
- Do not exceed pressure and temperature ratings of the tool and any attachment, valve or fitting. Only tap into lines that contain specified media.

Model RT 3422 Tapping Tool

Water: 500 psig @ 100°F (40°C)

Air, Steam, Natural Gas: 150 psig @ 370° F (172°C)

Tapping Tool Safety

1. **Only trained personnel should use this tapping tool.** Incorrect use of this tool can result in serious personal injury, environmental damage, and/or property damage.
2. **Always wear eye protection.** Cutters and drills are hard and can shatter.
3. **Do not exceed recommended pressure ratings.** Attempting to tap into main with pressures beyond the maximum limits of this tool or a fitting may result in their failure.
4. **Only tap into pressurized mains that carry water, air, steam or natural gas.** Other media may attack the seals of this tool.
5. **When using power tools to drive this tapping tool, understand and follow all the safety instructions associated with that power tool. Air power ratchets are generally a safer choice due to the inherent explosion and shock hazards associated with electrical tools.**

   • **Electrical tools should not be used for natural gas taps. Only use air or manual ratchets.** Electrical tools cause sparks which may ignite the gas.

   • **Grounded electrical tools should be plugged into a properly grounded outlet.** If tool should electrically malfunction or breakdown, grounding provides a low resistance path to send electricity away from the user.

   • **Electrical tools should be plugged into an outlet protected with a Ground Fault Circuit Interrupter (GFCI).** Reduces risk of electrical shock.
6. **Use only right angle electrical drills or air ratchets to rotate the cutter. Tool must be fed at a controlled rate.** Failure to use a right angle drive or to carefully control the tool feed rate may result in the cutter suddenly stopping which will cause the power tool driver to suddenly twist.
7. **Main being tapped must be securely mounted to prevent any movement.** Movement could cause tool breakage during the tapping operation.
8. **Follow all applicable regulations and safety precautions regarding the work area.**

   • **When working below grade, have an adequate escape route before starting the tap.** Such precautions reduce the risk of injury.

   • **When working on a scaffold or lift, the operator, tool, and drive assembly should all be properly secured.** Will prevent injury in the event of a fall or dropping a tool.
9. **Vent pressure bleed valve away from work area and personnel. When working over equipment or personnel, use a hose attachment on the bleeder valve to control fluid discharge.** Discharge directed at personnel could result in serious injury.
10. **Do not use this tool to support the operator.** Could result in tool breakage or malfunction.
11. **Tool is made to tap into pressurized lines. Follow instructions in operator's manual on tool uses.** Other uses may increase the risk of injury

NOTE! Keep this manual in the pocket provided in the toolbox.

Description, Specifications, and Equipment

Description

The Model RT3422 Tapping Tool is designed to perform pressurized taps using a saddle-mounted valve or welded nipple on steel, plastic, ductile iron and cast iron pipe. It is capable of tapping water lines under pressure up to 500 psi and steam, air, and natural gas mains up to 150 psi. Weighing only 18 lbs, the Model RT3422 can produce 3/4″ – 2″ taps fast and easy. The cutter is rotated by an 11/16″ hand ratchet or can be operated by an air ratchet or right angle drill if desired. A self cleaning acme threaded barrel permits easy feeding of the cutter into the pipe and resists the force of the pressurized pipe when the cut is made.

Specifications

Tapping Capacity .....3/4 – 2″

Mounting.....Saddle mount, welded nipple, Weld-O-Let™, Thread-O-Let™

Cutter Travel.....14″ max.

Actuation .....Hand ratchet, air ratchet, or right angle drill

Type of Pipe .....Steel, plastic, ductile iron, cast iron

Cutter Feed .....Rotation of sleeve around threaded acme barrel

Pressures .....Water: 500 psig @ 100 F
Steam, air, natural gas: 150 psi @ 370° F

Weight .....17 lbs. for tool and ratchet only

Standard Equipment

RT3422 Machine only ...Tool body with bleed valve

RT3422 3/4″ – 1″ Set ...Tool body with bleed valve
Tool box
Ratchet wrench
Small shaft extension
Small hole saw arbor
3/4″ and 1″ valve adapters
2 spud wrenches

RT3422 3/4″ – 2″ Set ...Tool body with bleed valve
Tool box
Ratchet wrench
Small shaft extension
Large shaft extension
Small hole saw arbor
Large hole saw arbor
3/4″, 1″, 1 1/4″, 1 1/2″, 2″ valve adapters
2 spud wrenches

Operating Instructions

1. Determine exactly which pipe needs to be tapped into. Follow the pipe as far as possible to ensure that it is indeed the pipe that requires tapping and record the media (what is in the pipe) and the pressure on a copy of the worksheet at the back of this manual.

2. Determine exactly where the pipe needs to be tapped. Consider not only the best route for the new line but also the effect that any chips from the tapping operation could have on downstream equipment. Consider the orientation of the tap, tapping the top of the pipe may drop chips into the tapped pipe whereas tapping the bottom of the pipe will tend to drop the chips back into the tool. Use of the “Bleed Valve Assembly” will tend to wash away most of the chips if open during the entire drilling operation.

3. Determine whether a service saddle or a weld-in-place Thread-O-Let™ or Weld-O-Let™ will be used to mount the valve to the main. Consider the advantages and disadvantages of each type. Record this connection data on the worksheet at the back of this manual.

   The Thread-O-Let™ or Weld-O-Let™ can only be welded to a compatible metal pipe and may have a maximum pressure rating, however the weld integrity to the pipe is virtually impossible to certify without x-rays. The media in the pipe may adversely affect weld penetration due to chilling or worse, the weld may penetrate far enough into the pipe to allow the pressure in the pipe to blow through the hot, molten weld puddle. A service saddle can be used on any type of pipe that has a compatible outside diameter. Service saddles have a known pressure rating, however if for some reason the integrity of the strap hardware should fail this type of joint can fail as well.

4. Select which “corporation stop” or valve is to be used. (A corporation stop is a valve with a square lug for a wrench instead of a hand wheel to open and close the valve. This is to ensure that the valve is not operated inadvertently or by unauthorized personnel.) Just about any valve that has an adequate pressure rating, made of a material compatible with the media, is short enough and opens in a manner that will allow the cutter to completely pass through it unhindered may be used. **Only a full port ball, plug or gate valve will work. Check to be sure the cutter will pass through the valve before mounting the valve and tool.** If it does not fit another brand or type of valve may be required.

5. Assemble the tool for use and determine the feasibility of the tapping operation. This is to confirm whether the planned configuration will allow enough stroke to complete the tap or if the configuration could allow the over-penetration of the far side of the pipe. Select the correct valve adapter, pilot drill, extension, and saw adapter from the following Valve Adapter Selection chart. The Flow Chart will assist the operator in determining the required equipment to perform the tap.

Valve Adapter Selection

Valve Size	Bore Size	CTS Adapter	NPT Female Adapter	NPT Male Adapter	BSPT Female Adapter	BSPT Male Adapter	Pilot Size	Extension	Saw Adapter	Remarks
3/4″	0.625	76057	76087	76132	76177	76222	0.250	76047	76037	Preferred Configuration
	0.688									
1″	0.750	76067	76092	76137	76182	76227	0.250	76047	76037	
	0.813									
	0.875									Preferred Configuration
	0.938									
1-1/4″	1.000	76072	76097	76142	76187	76232	0.250	76047	76037	
	1.063									
	1.125									Preferred Configuration
	1.188									
1-1/2″	1.250	76077	76102	76147	76192	76237	0.375	76052	—	Special Saw Adapter
	1.313									Special Saw Adapter
	1.375								76042	Preferred Configuration
	1.438									
2″	1.500	76082	76107	76152	76197	76242	0.375	76052	76042	
	1.563									
	1.625									
	1.688									
	1.750									Preferred Configuration
	1.813									
	1.875									

Tapping Tool Assembly Flow Chart

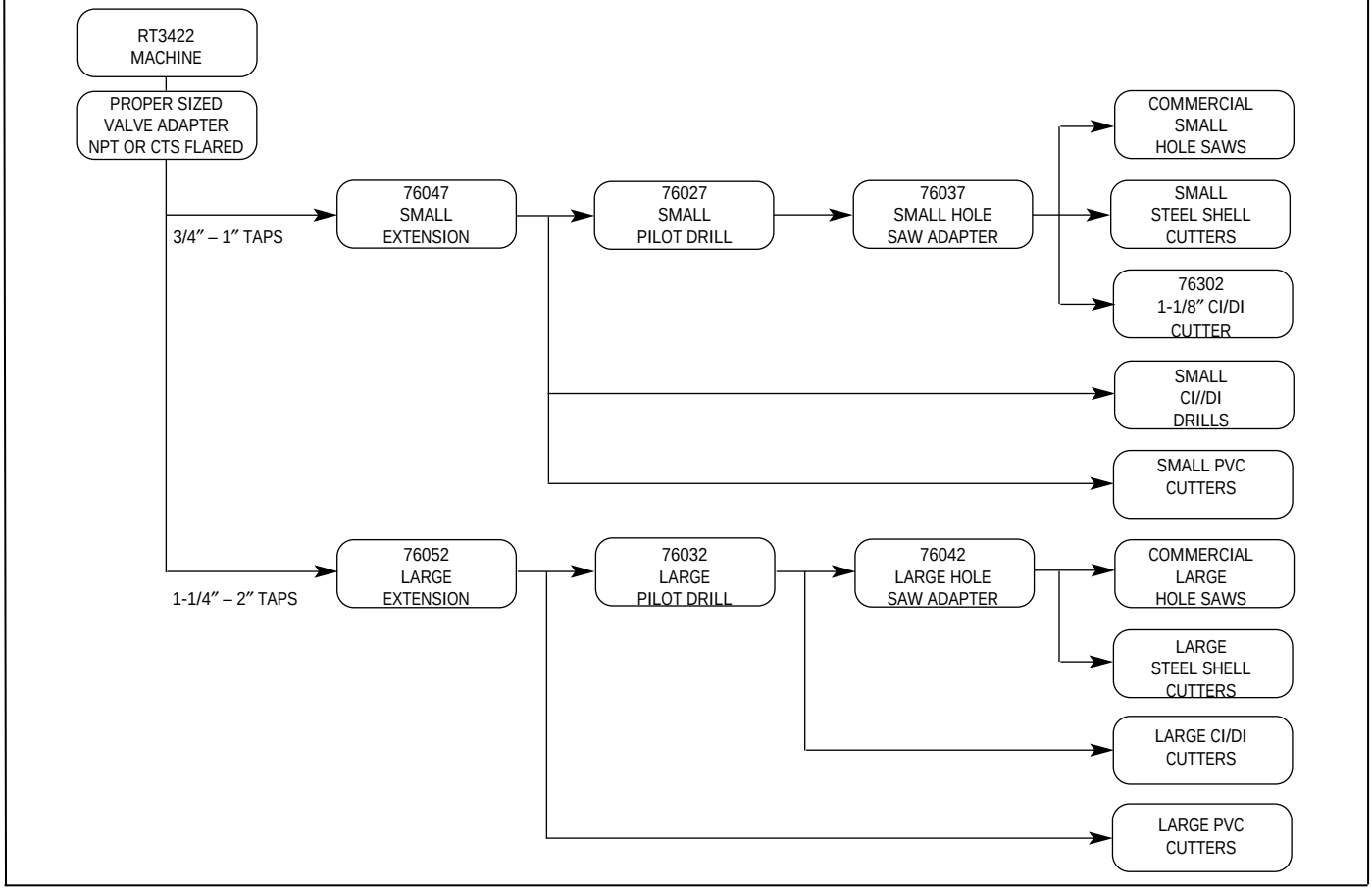

Figure 1 – Installation of extension

Figure 2 – Installation of valve adapter

a) Having ensured that the tool is in the shortest, collapsed, position and having selected the proper size extension, hold the spindle by the flats at the end and screw the extension into the end of the spindle. This only has to be hand tight as the threads will be tightened by the operation of the tool *(Figure 1).*

b) Inspect the "o-ring" seal in the valve adapter (replace if damaged) and holding the bronze feed screw by the flats, assemble the valve adapter onto the bronze feed screw. This should be done by hand as the operator will feel first the seal engaging and then feel the adapter reach an abrupt stop as the bronze feed screw "bottoms out" in the valve adapter *(Figure 2).*

c) Select the cutter to be used for this particular operation from the chart on the next page. Note that the pilot drill and hole saw adapter may not be required depending on the actual cutter selected. If the selected cutter requires a hole saw adapter, screw it into the end of the extension. CI/DI and PVC cutters do not require use of hole saw arbor. As before, this only has to be hand tight *(Figures 3 and 3a).*

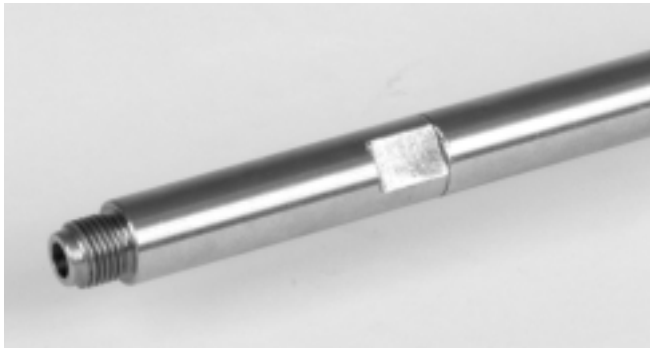

Figure 3 – Installation of small hole saw adapter

Figure 3a – Installation of large hole saw adapter

d) Inspect the selected cutter to be used for this particular operation to ensure that it is in good working order and screw it into the hole saw arbor if present or directly into the extension as required. As before, this only has to be hand tight *(Figures 4 and 4a).*

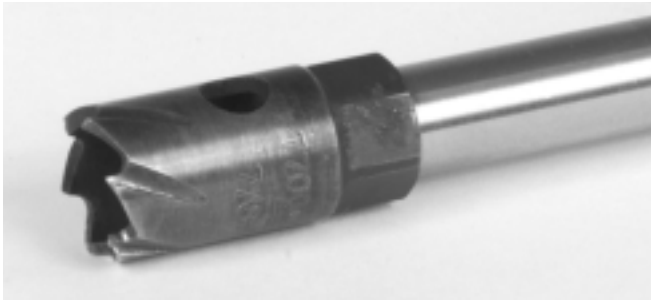

Figure 4 – Installation of cutter on small hole saw arbor

Figure 4a – Installation of cutter on large hole saw arbor

RIDGID Tapping Tool Cutter Selection Chart					
Bore Size	**Fractional Size**	**Ridgid Bi-Metal** *(Power Operation Only)*	**RIDGID Steel** *(Manual Operation Only)*	**RIDGID CI/DI Cutters** *(Power or Man-Operation Only)*	**RIDGID PVC Cutters** *(Manual Operation Only)*
0.625	5/8	R10	76267	76292	76317
0.688	11/16	R11			
0.750	3/4	R12			
0.813	13/16	R13			
0.875	7/8	R14	76272	76297	76322
0.938	15/16	R15			
1.000	1	R16			
1.063	1-1/16	R17			
1.125	1-1/8	R18	76277	76302	76327
1.188	1-3/16	R19			
1.250	1-1/4	R20			
1.313	1-5/16	R21			
1.375	1-3/8	R22	76282	76307	76332
1.438	1-7/16	R23			
1.500	1-1/2	R24			
1.563	1-9/16	R25			
1.625	1-5/8	R26			
1.688	1-11/16	R27			
1.750	1-3/4	R28	76287	76312	76337
1.813	1-13/16	R29			
1.875	1-7/8	R30			

e) Inspect the selected pilot drill for this particular operation to ensure that it is in good working order. Pay particular attention to the coupon retaining device as coupon may not be retrieved if this device is damaged. Insert this pilot drill into the hole saw adapter if present or directly into the cutter as required. Secure the pilot drill in place with the set screw positioned on the flat of the pilot and firmly tighten *(Figure 5).*

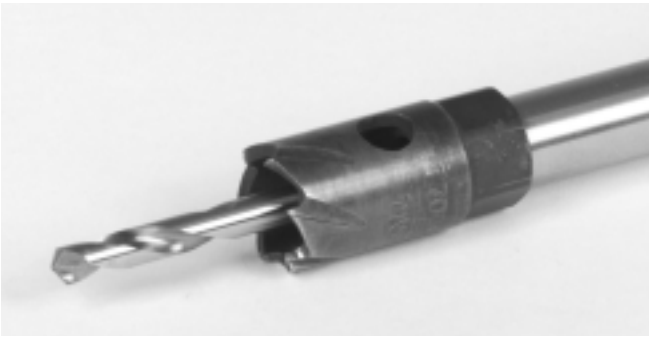

Figure 5 – Installation of pilot drill

f) Measure the distance from a point such as the wrench flats on the feed screw to the end of the sleeve. In *Figure 6* below it is 1″.

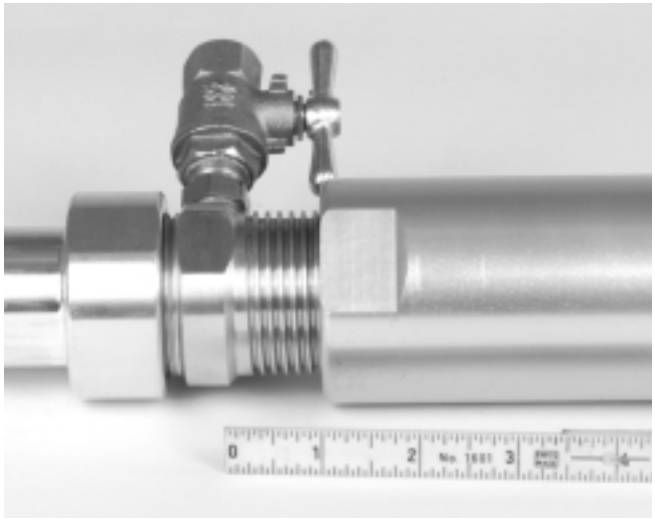

Figure 6 – Measuring 1″ offset

g) Unscrew the sleeve back up the bronze feed screw. (i.e. Looking along the length of the tool from cap end towards the drill end, the sleeve turns counter-clockwise to extend the tool). Turn the sleeve all the way until it stops. Again measure the distance from a point such as the wrench flats on the feed screw to the end of the sleeve. In *Figure 7* it is 15″. Subtract the distance from the previous step (h) from this distance. The result is 14″ full stroke. Note that the stroke distance may be affected by various valve adapter / cutter combinations. Record the stroke in the worksheet provided on *page 13*.

Figure 7 – Measuring full stoke distance

h) Attach the selected service saddle to the main in accordance with the manufacturer's specifications, or weld the selected threadolet or weldolet to the main in accordance with all applicable welding standards.

i) Apply pipe sealant to the threads on the "corporation stop" or valve and tightly thread it into the saddle or Thread-O-Let™ to assure a leak proof assembly. Ensure that the valve is in the **CLOSED** position.

j) Measure the distance from the surface of the pipe to the outlet end of the valve as shown in *Figure 8 & 9*. This is the minimum amount of stroke required before the cutter makes contact with the pipe to be drilled into. (In the illustrated example this is 4½″.) Record this dimension in the worksheet provided. If this distance is within 1 inch of the stroke distance from step (g) then the machine may not have enough travel to safely complete the tap and this operation must be aborted and reconfigured for a different valve and/or saddle.

k) Measure the distance from the far surface of the pipe to the outlet end of the valve as shown in *Figure 10.* This is the maximum amount of stroke required before breaking through the far side of the pipe to be drilled into. (In the illustrated example this is 10½″.) Record this dimension in the worksheet provided. If this distance is less than the stroke distance from step (g) then the machine has enough travel to penetrate the far side of the pipe. This is true in the illustrated case. Therefore, this operation must be carefully executed to avoid problems.

Figure 8 – Measuring valve standoff distance

Figure 9 – Measuring valve standoff distance

l) Calculate the ideal distance to penetrate in order to stop at the centerline of the pipe. Add the valve standoff distance from step (j) to the maximum stroke from step (k) and divide the result by 2. (In the example illustrated this is 10½″ plus 4½″ which gives 15″, then divided by 2 yields 7½″ ideal penetration.

m) Subtract the ideal penetration distance from the full stroke in step (g). (In the example illustrated this is 14″ total stroke minus 7½″ required stroke which equals 6½″ remaining unusable stroke.)

WARNING

Improper measurements may result in tapping through bottom of pipe.

Figure 10 – Measuring maximum stroke

Tapping into the Main

1. If the bleed valve assembly is not going to be used, ensure that the bleed-off valve is closed or a 3/8″ plug is installed. Use pipe sealant to seal the threads on the bleed valve and plug.

2. Attach the fully assembled and fully extended tapping tool to the outlet thread of the valve by screwing on the valve adapter*(Figure 11).* Pipe sealant is required for NPT and BSPT valve adapters in the temporary assembly between the valve and the valve adapter and it should be firmly tightened so as not to leak. The connection of the valve adapter to the valve when using CTS (Copper Tube Size – flared or compression) adapters does not require pipe sealant but must have the appropriate gasket in place and be in good working condition.

3. Open, close and re-open the valve or the “corporation stop”, this is to ensure that the pilot drill does not interfere with the operation of the valve. In the event of interference in closing the valve, another valve must be substituted and this whole procedure must be re-started.

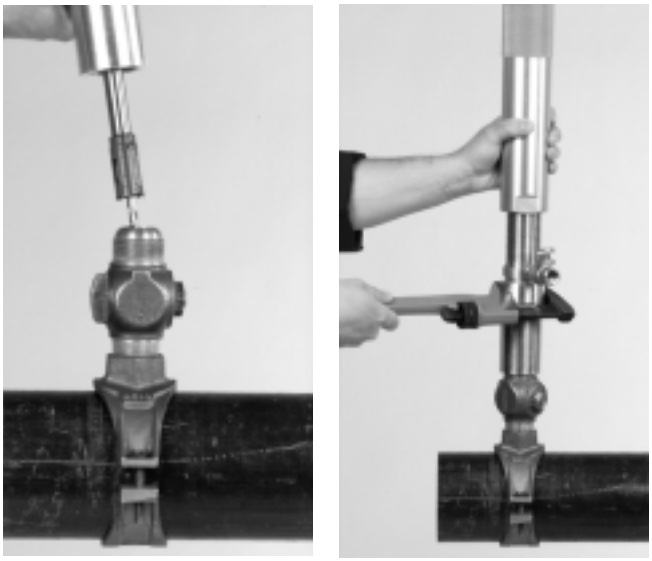

Figure 11 – Attaching tool to valve

4. If the bleed off valve is to be used, a hose may be connected to it to help direct the discharge. Remember to restrain the free end of the hose to control the direction of the discharge. Note that this discharge is the same as the media in the pipe.

WARNING!

Be sure no one is standing in line of the discharge from the bleed valve in the event of accidental opening of the valve. Pressures may be very high and can result in serious injury.

5. Turn the sleeve clockwise until the cutter comes into light contact with the main, and back the sleeve up one turn. Using the ratchet wrench, or a power tool, rotate the drive shaft at the 11/16″ hex while continually applying pressure by turning the sleeve. Do not apply too much pressure on the cutter and pipe with the feed screw. Gentle light pressure applied with the feed will produce superior cutting characteristics *(Figure 12).*

WARNING!

Excessive feeding of the cutter may result in high torque feedback to the operator and could wrench or injure arm.

Continue to drill through the main until no resistance is felt when advancing the feed. Stop immediately if only the "remaining unusable stroke" remains to be used. Continuing past this point could cause penetration through the far side of the pipe.

WARNING!

DO NOT tap through the bottom of the pipe.

6. The drilling into the pipe is now complete. The valve and saddle as well as the tool are now filled with the media in the pipe. Turn the sleeve counter-clockwise until all the threads of the bronze feed screw are exposed and the sleeve comes to a halt. This action has fully retracted the cutter and the coupon. Close the corporation stop or valve. Should it be difficult to close the valve (due to chips from the drilling operation), attach a hose to the bleed valve assembly if it is not already there and open the bleed valve to "wash" away as many chips as possible. Then rock the valve open and closed until it can be completely shut-off. It is vital that the valve is closed before proceeding. If the bleed valve assembly is in use it may be closed as well and the hose removed. Note that this hose will contain residue of the same media that is in the pipe.
7. Remove the ratchet or power tool from the hex on the drive shaft. Place a wrench on the valve to prevent it from disconnecting as the valve adapter is unscrewed from the valve with another wrench. Be prepared for the tool to suddenly come free and for it to spill out any media it contains. If the drilled pipe was dry, be aware that the cutter may be hot.
8. The new plumbing may now be attached to the outlet end of the valve. After that, all that is required is to open the valve to activate the newly installed system.
9. To remove the coupon from the cutter, turn the sleeve clock-wise until the cutter is exposed. Shell cutters have a hole or slot to allow the coupon to be pushed out. Remove the cutter if required, in order to make coupon removal easier. If using a coupon retaining pilot bit, squeeze the spring retainer to allow the coupon to slide off. After completing all taps of this configuration, continue to step 10. If more taps are needed, reinstall the cutter and start again from step 1.
10. Remove the valve adapter, drill or cutter, pilot drill (if used), saw adapter (if used) and extension from the tool. Turn the sleeve clockwise until all the threads of the bronze feed screw are hidden and the tool is fully collapsed. Simply wipe all the components until clean and dry and store them in the toolbox.

Figure 12 – Pivot of hand on ratchet and other hand on tool

Maintenance

Cleaning and Maintaining the RT3422

This procedure should only be conducted by a qualified service technician.

Tool Disassembly Procedure

1. Turn the sleeve clockwise until all the threads of the bronze feed screw are hidden and the tool is fully collapsed. Place the tool horizontally on a table so parts do not fall out.
2. Locate and remove the setscrew from the side of the red cap.

3. Locate and remove the retaining ring and washer from the end of the red cap.
4. Unscrew and remove the red end cap. Note that any media that has escaped the seal will collect under this cap and may be spilled at this time. Do not remove the “maintenance free” sealed bearing from the end cap unless bearing replacement is intended. If the bearing must be removed use two 7/64″ diameter pins of equal length to slowly press the bearing out. Using a hammer to do this will damage the precision recess in the end cap for the bearing.
5. Locate the seal cap and remove the two locking set-screws and then unscrew and remove the seal cap itself. Remove the seal ring from inside the end of the bronze feed screw just exposed. Remove the two graphite seals from the same place. If the graphite seals are damaged or worn discard them and replace two new seals. Typically, seals should be replaced after every 20 taps or every 6 months, whichever comes first.
6. Push the spindle from the hex end and remove it from the opposite end of the tool. Turn the sleeve counter-clockwise until all the threads of the bronze feed screw are exposed and the sleeve separates from the bronze feed screw. This completes the disassembly of the tool.

Part Cleaning Procedure

1. Wash the parts in a degreaser tank and wipe each individual part until clean and dry.
2. Seals cannot be washed and reused.
3. Be careful not to wash parts with materials that will corrode or degrade the parts in any way.

Tool Assembly Procedure

1. Inspect the bronze feed screw and sleeve for any damage, replace if required. Lubricate the acme threads on the bronze feed screw with grease. Turn the sleeve clockwise onto the bronze feed screw until all the threads are hidden and the tool is fully collapsed. Place the tool horizontally on a table so parts do not fall out.
2. Inspect the spindle for any damage and replace if required. Insert the spindle into the adapter end of the bronze feed screw hex end first. Slide it in as far as it will go.
3. Use the original seals if they are undamaged, not worn, and uncontaminated otherwise replace them. Insert two graphite seals into the pocket at the cap end of the bronze feed screw so that the seals surround the spindle shaft. Place them in the pocket with the butt joints staggered 180° (to avoid a weak spot in the seal).
4. Inspect the seal ring for any damage and replace if required. Place the seal ring on top of the seals with the angled face in contact with the seals and the reduced diameter on the ring facing the hex end of the spindle.
5. Inspect the seal cap for any damage and replace if required. Screw the seal cap partially onto the bronze feed screw. Loosely screw the two locking set-screws into the seal cap.
6. Adjust the seal pressure by progressively tightening the seal cap with a wrench as the effort to turn the spindle with a second wrench is tested. When resistance to turning the spindle is felt, loosen the seal nut just enough to remove most resistance. Lock the seal nut in place with the two locking set-screws.
7. Inspect the end cap / bearing assembly for any damage and replace if required. Place the end cap/bearing assembly on the protruding spindle shaft, followed by the washer and secure in place with the retaining ring. Push the spindle / end cap assembly onto the sleeve and screw into position. To prevent the end cap from being accidentally unscrewed secure it in place with the set-screw into the side of the end cap.
8. Wipe the tool down to remove excess lubricant and return the tool to the box ready for the next use.

Service and Repair

The above section “Cleaning and Maintaining this Tool” will take care of most of the service needs of this tool with the exception of main bearing replacement. Any problems not addressed by the “Cleaning and Maintaining this Tool” section or replacement of this bearing should only be handled by an authorized RIDGID service technician.

If any maintenance is required other than that outlined, the tool should be sent to a RIDGID Independent Authorized Center or returned to the factory. All repairs made by Ridge service facilities are warranted against defects in material and workmanship.

If you have any questions regarding the operation or function of this tool, call or write to:

Ridge Tool Company
Technical Service Department
400 Clark Street
Elyria, Ohio 44035-6001
Tel: (800) 519-3456
E-mail: TechServices@ridgid.com

For name and address of your nearest Independent Authorized Service Center, contact the Ridge Tool Company at (800) 519-3456 or http://www.ridgid.com

Worksheet

Pipe Identification Code Marking	
Media	
Pressure	
Actual Pipe Type and Size	
Identified By	
Saddle or Thread-O-Let™ Manufacturer	
Part Number	
Designed Saddle Pipe Type & Size (Must match pipe data above)	
Designed Saddle or Threadolet Pressure Rating (Must exceed main pressure)	
Outlet Size	
Installed / Welded Date	
Installed / Welded By	
Inspected Date	
Saddle or Thread-O-Let™ Installation Approved By	
Valve Manufacturer	
Part Number	
Valve Type & Size	
Valve Pressure Rating (Must exceed main pressure)	
Valve Approved By	
Datum Offset *(see Figure 6)*	
Datum to Full Stroke *(see Figure 7)*	
Subtract “Datum Offset” from “Datum to Full Stroke” for “Full Stroke Distance”	
Valve Standoff Distance *(see Figures 8 & 9)* (Note if Full Stroke Distance – 1″ = Valve Standoff Distance then ABORT THIS TAP!)	
Maximum Stroke *(photo 10)* (Note if Maximum Stroke is less than Full Stroke Distance be warned that penetration of the back of the pipe is possible! Observe Unusable Stroke Remainder *(see Figure 12)* to execute this tap safely!)	
Add Valve Standoff Distance to Maximum Stroke then divide result by 2 for Ideal Penetration Distance	
Subtract Ideal Penetration Distance from Full Stroke Distance for Unusable Stroke Remainder. *(Figure 12)*	