



PIPE TOOLS & VISES
SINCE 1896



Shown: DM3MECH
08350

DM3MECH

Mechanical Hot Tapping Machine

Operator's Manual

REED MANUFACTURING COMPANY

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0815-58350

**Warning:**

Applying too much force while cutting the coupon can result in a sudden break through of the hole saw. A sudden break through may result in the coupon retainer striking the back side of the main and damaging the retainer. One can prevent this by cutting a spacer of 3/4" copper tube long enough to stop the retainer from hitting the back of the main. Slip this spacer over the exposed shaft between the gland nut and the drill chuck.

Note: Use standard depth holes only.

Store shafts separate from hole saws. Allowing the hole saw teeth to contact the shaft during transportation and storage can damage the shaft. A damaged shaft can damage the Main Body and cause the shaft to seize during use.

Description:

The Reed 08350 makes branch connections from 3/4" to 4" on any appropriately sized mainline for most piping materials up to 300 psi. Reed 08350 eliminates the need to shutdown, drain, cut, re-fit and refill piping systems. See the Parts Illustration for a list of items included with the purchase of Reed 08350.

Specifications:

Pipe Capacity: 3/4" to 4"
Pipe Materials: Black Iron, Steel, Galvanized, Copper, Cast Iron and PVC

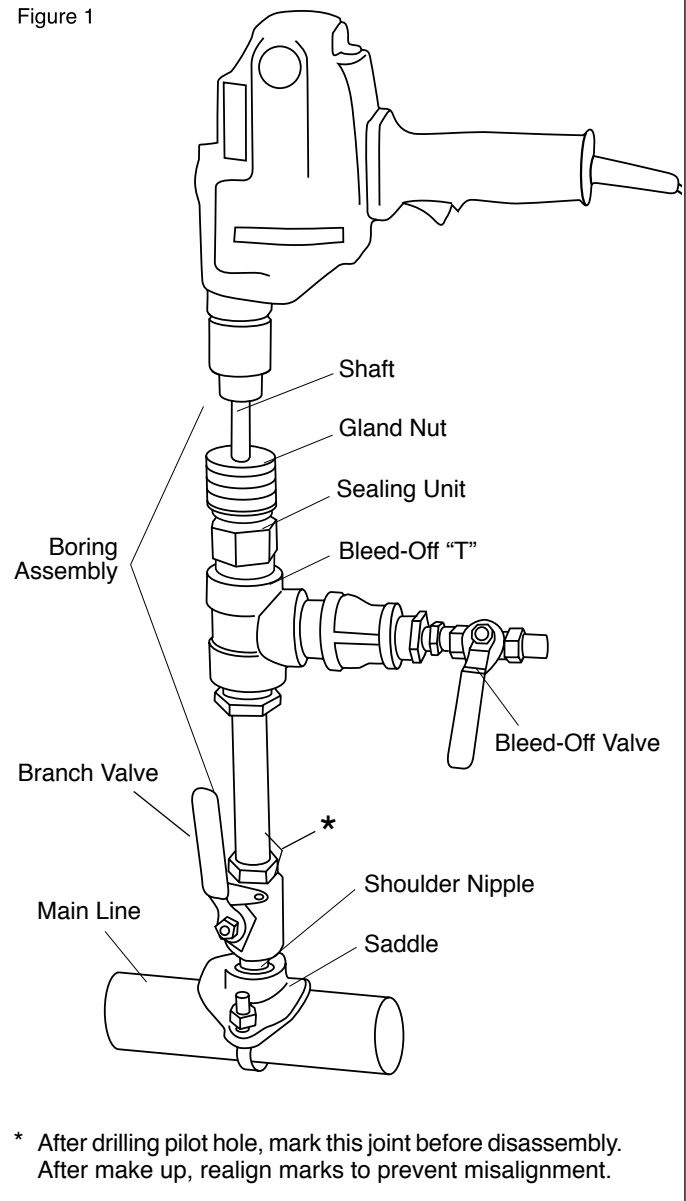
Maximum Pressure:
Chilled water and hot water systems: 300 psi
Steam: 125 psi

Do not use DM3MECH on ammonia or any other caustic systems.

Accessories (Required but not supplied)

1. Correctly sized saddle (or threadolet).
2. Branch size shoulder nipple.
3. Branch sized full bore gate valve (or full bore ball valve).
4. Branch sized nipple 6" long.
5. Branch size by 1 1/4" by 1/2" "T". (Labeled as Bleed-off "T" in Figure 1.)
6. 1/2" pipe nipple.
7. 1/2" valve (or hose bib). (Labeled as Bleed-off Valve in Figure 1.)
8. 1/2" Drill Motor.
9. Hose (if flushing chips or filings away).

Figure 1

**Additional Accessories for 3" and 4" Flanged Valves.**

- A. Fabricated pipe saddle and flange (4 1/2" throat of saddle to face of flange).
- B. Branch size threaded flange.
- C. Branch size by 1 1/4" bushing.
- D. 1 1/4" by close nipple.
- E. 1 1/4" by 1 1/4" by 1 1/4" "T".
- F. 1 1/4" to 1/2" bushing.

**Operation (NOT using a flanged valve):**

Verify all equipment is in good condition. Use only fittings, nipples and valves pressure rated for the job. Electrical tools and extension cords must comply with OSHA rules. Using a ground fault interrupter increases operator safety when using electric power tools around water and other fluids.



Figure 2

1. Bolt saddle fitting on mainline. Or, weld a threadolet onto the mainline.
2. Select the proper size hole saw. Verify the hole saw clears the gate valve bore adequately. Inadequate clearance can result in damage should the hole saw contact the valve while sawing.
3. Install shoulder nipple and Branch Valve onto the fitting (or threadolet).
4. Select the appropriate shaft.
 - A. For 5/8" to 1 1/8" hole saws, use the 18" shaft (no arbor).
 - B. For 1 3/8" to 3 1/4" hole saws, use the 43514 Arbor on the 24" shaft.
5. Change shafts (if required).
 - A. Loosen the Gland Nut and remove the one shaft with a twisting motion.
 - B. Install the other shaft gently. Use a twisting motion while pushing the shaft past the seal in the Main Body.
 - C. Tighten the gland nut until snug.
6. Assemble appropriate bleed-off "T" and 6" nipple to the Main Body. See Figures 1 and 2 for details.
7. Install Hole Saw.
 - A. 5/8" to 1 1/8" Hole Saws screw directly to the 18" shaft.
 - B. 1 3/8" to 3 1/4" Hole Saw - insert arbor into the 24" shaft, tighten set screws. Screw the hole saw on to the end of the arbor, align barrel pins with holes on hole saw and turn the upper diameter of the arbor to engage barrel pins.
8. Install coupon retaining drill bit. The end of the wire must extend past the end of the hole saw to retain the coupon. Align the flats on the bit with the set screw and tighten. See Figure 5 to set coupon retaining drill bit.
9. Pull the shaft as far back as possible into the bleed-off "T".
10. Assemble to the mainline the saddle, shoulder nipple, Branch Valve and any reducers needed.
11. Attach the boring assembly to the gate valve. See Figure 1 for details.
12. Install the Bleed-off Valve onto the "T".
13. Pressure test setup through the Bleed-off Valve.
14. Attach hose to Bleed-off Valve for flushing chips to drain (if desired).
15. Chuck shaft into drill motor.
16. Drill until pilot drill penetrates the main line. Verify seals OK. One can hand tighten the Gland Nut should fluid leak past the Main Body at the shaft. Do not over tighten the Gland Nut.
17. Resume drilling. Use moderate pressure until the hole saw penetrates the main completely. Reduce the pressure on the drill prior to break through. Reducing the pressure before break through reduces the likelihood of the drill bit and hole saw hitting the back side of the main.
18. Pull the drill and shaft back to the limit, shut the Branch Valve, open the Bleed Valve and then disconnect the Boring Assembly from the Branch Valve.
19. Oil the shaft to prevent rusting.

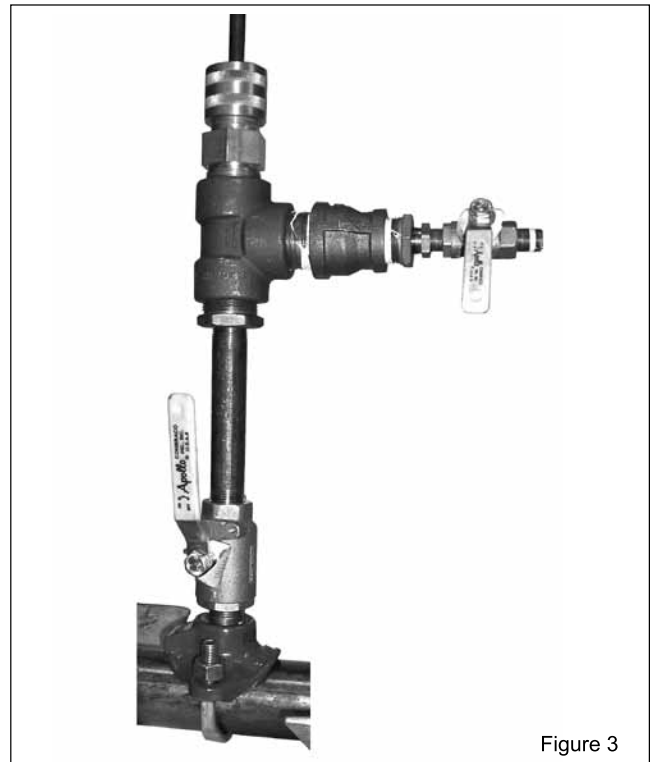


Figure 3



Operation (Using a flanged valve):

Verify all equipment is in good condition. Use only fittings, nipples and valves pressure rated for the job. Electrical tools and extension cords must comply with OSHA rules. Using a ground fault interrupter increases operator safety when using electric power tools around water and other fluids.

1. 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.
2. Select the proper size hole saw. Verify the hole saw clears the gate valve bore adequately. Inadequate clearance can result in damage should the hole saw contact the valve while sawing.
3. Bolt the valve to the flange.
4. Select the appropriate shaft.
 - A. For 5/8" and 1 1/8" hole saws, use the 18" shaft (no arbor).
 - B. For 1 3/8" to 3 1/4" hole saws, use the 43514 arbor on the 24" shaft.

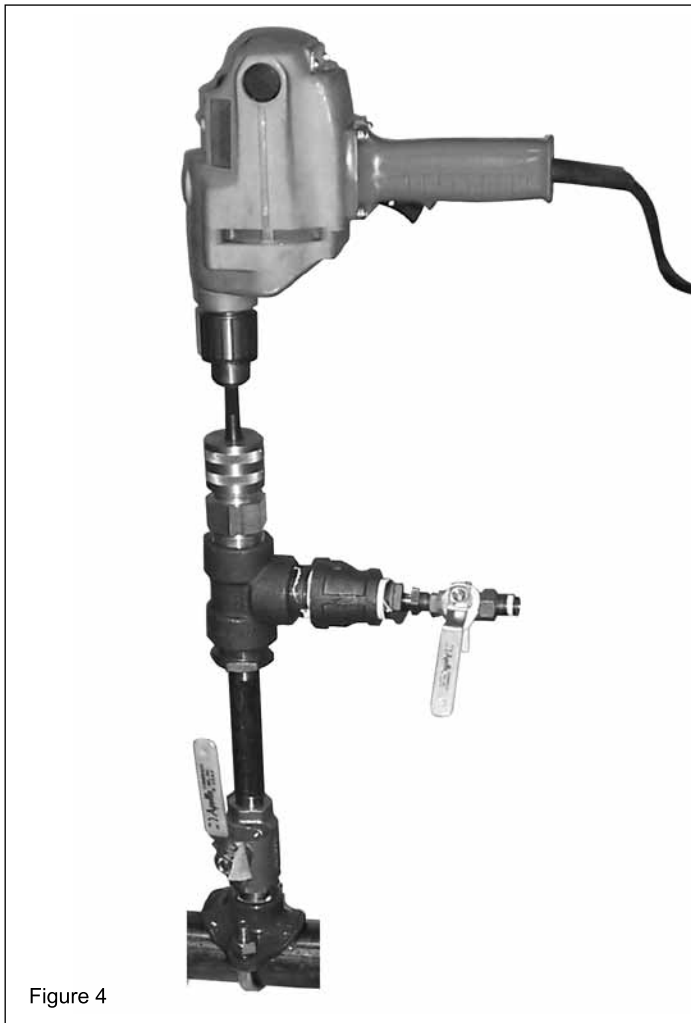
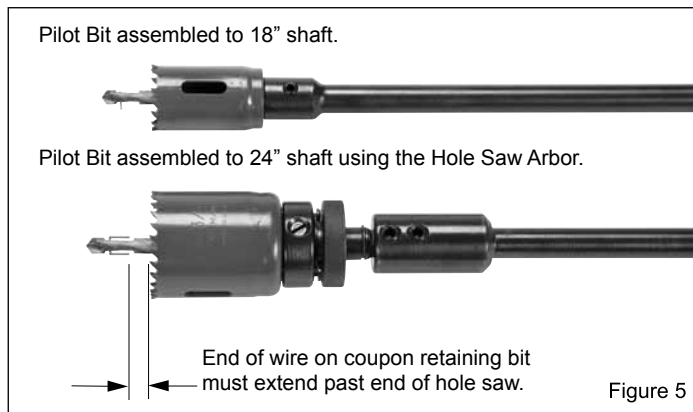


Figure 4

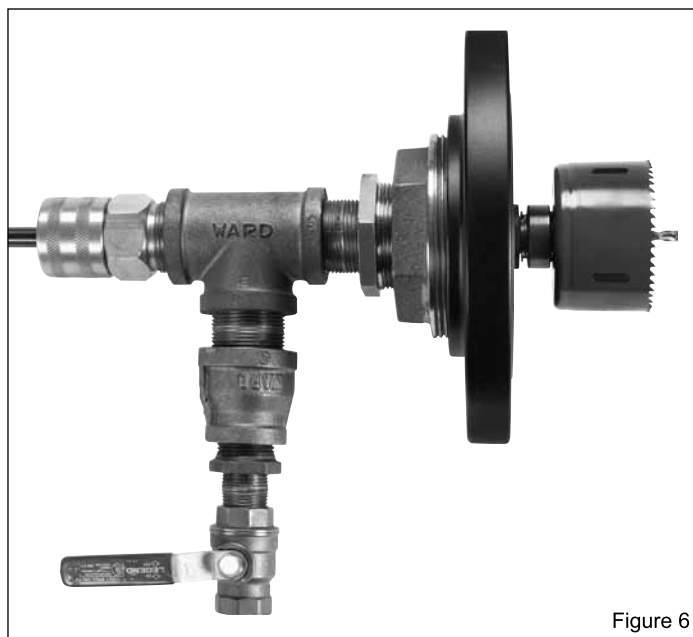
5. Change shafts (if required).
 - A. Loosen the Gland Nut and remove the one shaft with a twisting motion.
 - B. Install the other shaft gently. Use a twisting motion while pushing the shaft past the seal in the Main Body.
 - C. Tighten the gland nut until snug.
6. Assemble appropriate bleed-off "T" to the Main Body.
7. Install Hole Saw.
 - A. 5/8" to 1 1/8" Hole Saws screw directly to the 18" shaft
 - B. 1 3/8" to 3 1/4" Hole Saw - insert arbor into the 24" shaft, tighten set screws. Screw the hole saw on to the end of the arbor, align barrel pins with holes on hole saw and turn the upper diameter of the arbor to engage barrel pins.
8. Install coupon retaining drill bit. The end of the wire must extend past the end of the hole saw to retain the coupon. Align the flats on the bit with the set screw and tighten. See Figure 5 to set coupon retaining drill bit.
9. Assemble the Branch size threaded flange, Branch size by 1 1/4" bushing, 1 1/4" by close nipple, 1 1/4" by 1 1/4" by 1 1/4" "T", Sealing Unit. See Figure 6.
10. Bolt the Boring Assembly onto the valve.
11. Install the Bleed-off Valve onto the "T".
12. Pressure test setup through the Bleed-off Valve.
13. Attach hose to Bleed-off Valve for flushing chips to drain (if desired).
14. Chuck shaft into drill motor.
15. Drill until pilot drill penetrates the main line. Verify seals OK. One can hand tighten the Gland Nut should fluid leak past the Main Body at the shaft. Do not over tighten the Gland Nut.
16. Resume drilling. Use moderate pressure until the hole saw penetrates the main completely. Reduce the pressure on the drill prior to break through. Reducing the pressure before break through reduces the likelihood of the retainer, coupon and hole saw hitting the back side of the main.
17. Pull the drill and shaft back to the limit, shut the Branch Valve, open the Bleed Valve and then disconnect the Boring Assembly from the Branch valve.
18. Oil the shaft to prevent rusting.



OPTIONAL operation for hot tapping black iron, steel, cast iron, galvanized steel pipe using Magnetic Coupon Retainer:

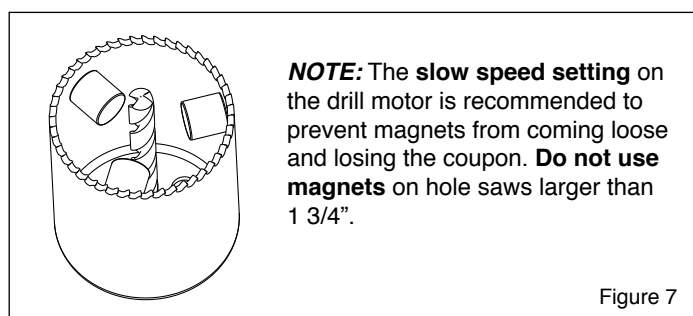
Follow instructions as given in either option above, replacing step 8 with the following:

8. Install standard drill bit #43507, align the flats on the bit with the set screws and tighten. Arrange three or more magnets near the top edge as shown in Figure 7. Use 1/4" diameter magnets for 5/8"-7/8" diameter hole saws and 3/8" diameter magnets for 1 1/8" to 1 3/4" diameter hole saws. Do not use magnets on hole saws larger than 1 3/4" diameter. Return to step 9.



Maintenance Instructions:

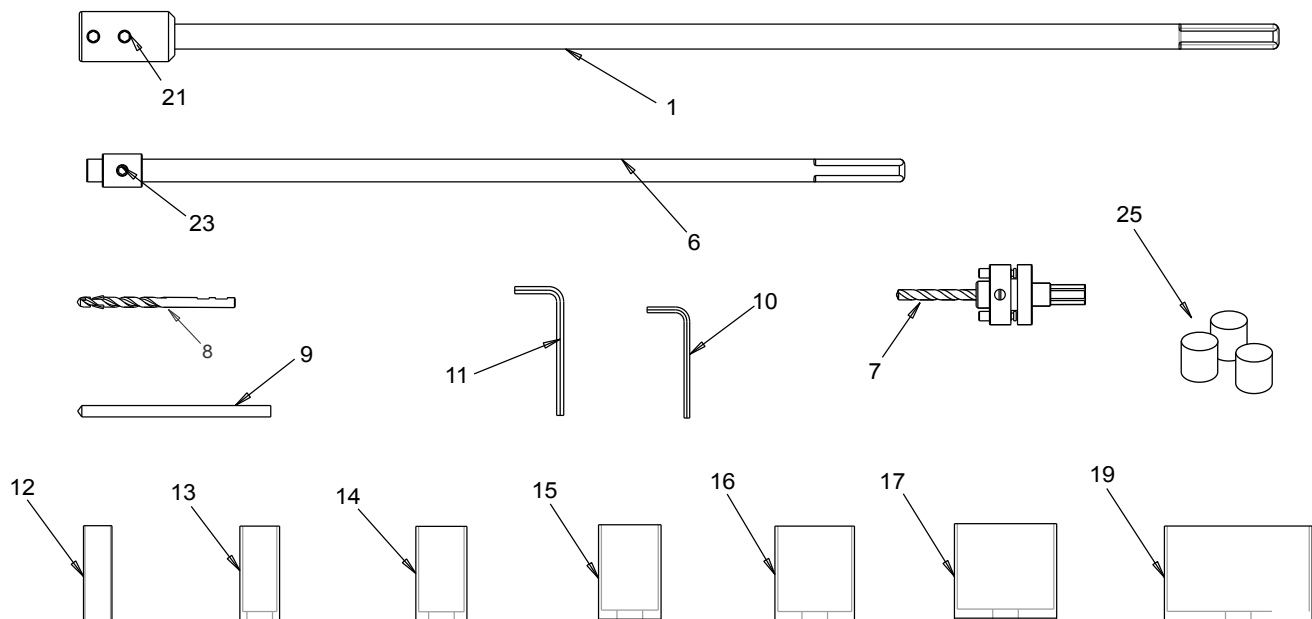
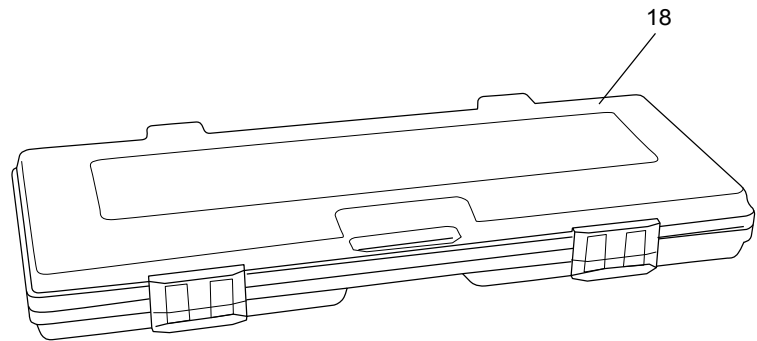
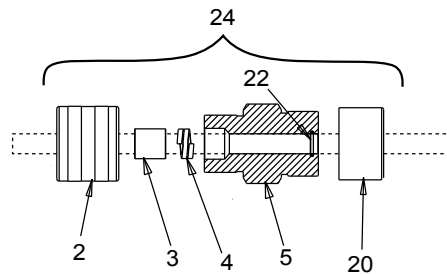
1. After each use:
 - A. Loosen the Gland Nut and remove the shaft.
 - B. Grease the shaft and bearing surface of the Main Body.
 - C. Replace the shaft but leave the Gland Nut loose.
2. Gland Repacking Instructions:
 - A. Disassemble the packing gland and slide the shaft out of the Main Body.
 - B. Remove the old packing.
 - C. Replace the shaft in the Main Body with a gentle twisting motion.
 - D. Insert the new packing in a clockwise direction using a small screwdriver to compress it into the recess. Replace with Reed part 43511.
 - E. Replace the Brass Ring (93502).
 - F. Clean threads on Gland Nut and Main Body. Dirt on threads can damage the Gland Nut.
 - G. Reinstall the Gland Nut. Hand tighten the Nut to compress the packing.





Parts List

Ref.	No.	Description	Item Code	DM3MECH	DM3MECHB
				08350	08351
				Qty. Used	Qty. Used
	1	24" Shaft Complete	93514	1	1
	2	Gland Nut	93501	1	1
	3	Brass Ring	93502	1	1
	4	1/8" Sq. x 4-12" Packing	43511	1	1
	5	Main Body	93500	1	1
	6	18" Shaft	93515	1	1
	7	Arbor	43514	1	—
	8	Coupon Retaining Drill Bit	99129	1	1
	9	Drill Bit	43507	1	1
	10	1/8" Allen Wrench	40296	1	1
	11	5/32" Allen Wrench	40149	1	1
	12	5/8" Hole Saw	43500	1	—
	13	7/8" Hole Saw	43501	1	—
	14	1-1/8" Hole Saw	43502	1	—
	15	1-3/8" Hole Saw	43503	1	—
	16	1-3/4" Hole Saw	43504	1	—
	17	2-1/4" Hole Saw	43505	1	—
	18	Tool Box	93526	1	1
	19	3-1/4" Hole Saw	43506	1	—
	20	Body Protector	43510	1	1
	21	3/16 Set Screw	33524	2	2
	22	O - Ring	43513	1	1
	23	1/4 Set Screw	30018	1	1
	24	Main Assembly	93527	—	—
	25	Magnetic Coupon Retainers		3	3
	a. - above 1" hole cutter, 3/8" magnets 08358				
	b. - 1" and smaller hole cutter, 1/4" magnets 08359				





Recommended Hole Sawing Speeds (RPM) for Bi-Metal Saws

Size Inches	Size mm	Mild Steel	Tool & Stainless Steels	Cast Iron	Brass	Aluminum
5/8	16	530	275	365	730	825
7/8	22	390	195	260	520	585
1 1/8	29	300	150	200	400	450
1 3/8	35	250	125	165	330	375
1 3/4	44	195	95	130	260	295
2 1/4	57	150	75	100	200	230

TRAINING VIDEOS

*Videos de instrucciones
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Reed Lifetime Warranty

Reed Hand Tools are for the professional trade and are warranted against all failure due to defects in workmanship and materials for the normal life of the tool.

FAILURES DUE TO MISUSE, ABUSE, OR NORMAL WEAR AND TEAR ARE NOT COVERED BY THIS WARRANTY.

Power units for Universal Pipe Cutters, Saw It®, Rapid Cut & Bevel™ machines, electric test pumps, and threading power drives are warranted for a period of one year from date of purchase.

NO PARTY IS AUTHORIZED TO EXTEND ANY OTHER WARRANTY. NO WARRANTY FOR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY.

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