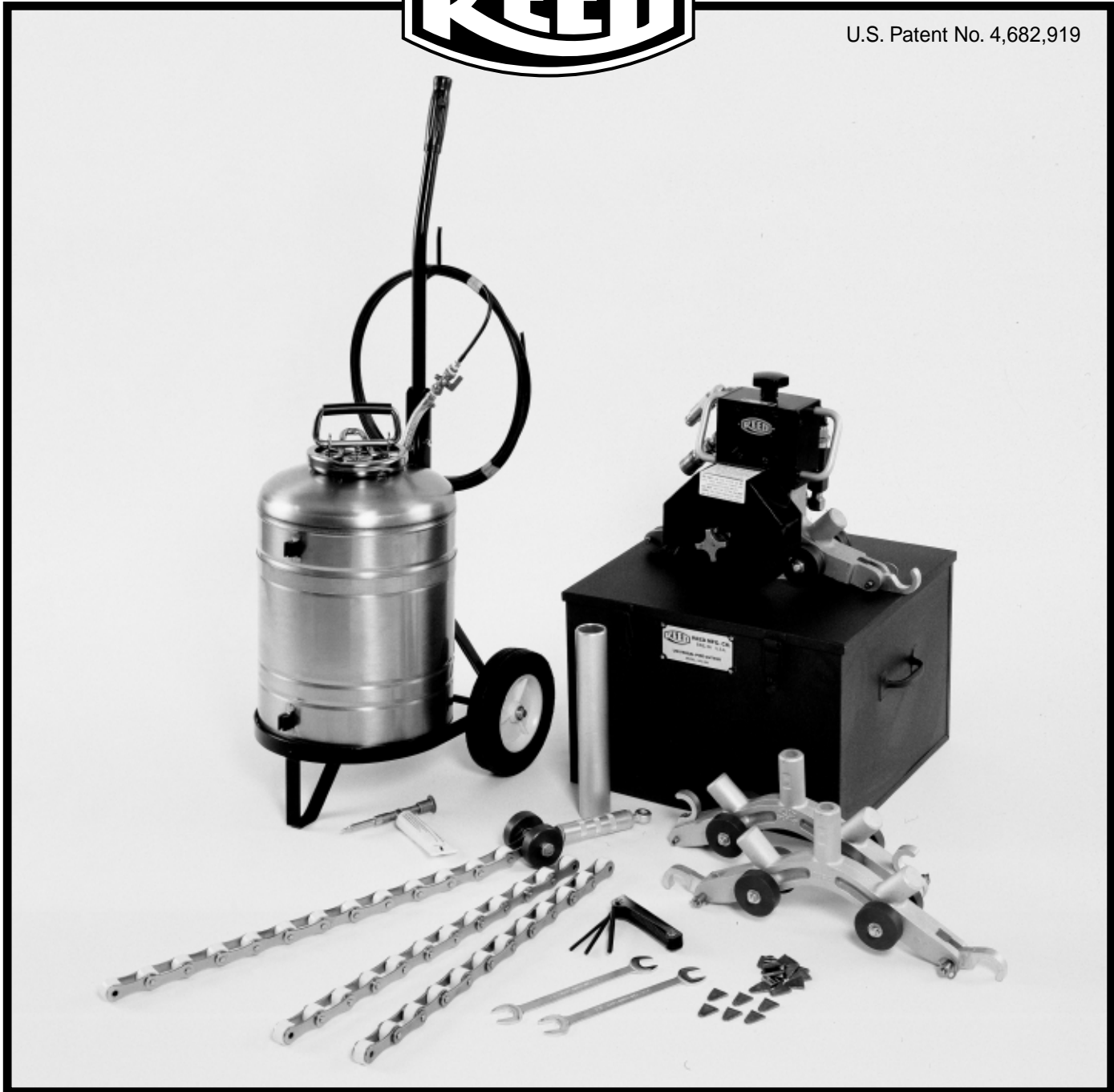


HYDRAULIC



U.S. Patent No. 4,682,919



OPERATOR'S MANUAL

UPC 616H
UPC 636H
UPC 648H

BEST SERVICE
QUALITY
PEOPLE
EQUALS LOWEST TOTAL COST

REED MANUFACTURING COMPANY

1425 WEST EIGHTH ST. ERIE, PA 16502 USA PHONE: 800-666-3691 OR 814-452-3691 FAX: 800-456-1697 OR 814-455-1697

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I. SAFETY INSTRUCTIONS & WARNING

A. Always Comply With:

1. General Industry Safety & Health Regulations, Part 1910, OSHA 2206. Available from: Sup't of Documents, Government Printing Office, Washington, DC 20402.
 2. ANSI Specification Nos. B186.1, B7.1 Available From: American National Standards Institute, Inc. 1430 Broadway New York, NY 10018
 3. State and Local Regulations.
- B. Abbreviated Form of Above Regulations:
These regulations are not all inclusive. Study and comply with all above regulations.
1. Check Cutter Speed Before Mounting Cutter
 2. Use Tachometer
 - a. Actual speed must not exceed rated speed.
 3. Perform Speed Checks When:
 - a. A tool is issued for use.
 - b. After all tool repairs.
 4. Use Tools Only For Intended Purpose
 - a. Refer to Reed Product Catalog.
 5. Test & Operate Tools up to 1500 PSIG Max.
 6. Make sure all hydraulic fittings are rated at least 1500 PSIG.
 7. Stop immediately if:
 - a. Unusual sound is heard, or...
 - b. Unusual vibration is experienced (Refer to Section III to check if proper assembly was followed).
 8. Check Speed Rating of Blade
 - a. Must equal or exceed speed rating of hydraulic motor-Max 7000RPM.
 9. Mount Blade According to Regulations
 - a. Refer to manufacturer's instruction regarding spindles, lock nuts, spacers, keys, flanges, etc. (Sec. III, Items 4 and 6)
 10. Mount Proper Blade Guard
 - a. Refer to manufacturer's instructions for proper and secure mounting. (Sec. III, Items 3 and 7)
 11. Inspect Blade
 - a. Refer to above regulations. (Sec. I, Item A)
 - b. Discard if chipped, cracked or otherwise damaged.

WARNING

HIGH SPEED ROTATING BLADES

PERSONAL INJURY CAN OCCUR IF HANDS ARE NOT KEPT CLEAR OF BLADES. ALWAYS WEAR PROPER EYE AND EAR PROTECTION. DO NOT OPERATE THIS UNIT WITHOUT THE BLADE GUARD IN PLACE.

DO NOT USE THIS CUTTER ON **AC** PIPE. FREE ASBESTOS FIBERS ARE HAZARDOUS TO YOUR HEALTH.
DO NOT USE THIS CUTTER ON **FRP(GRP)** PIPE. FREE FIBERGLASS FIBERS MAY BE HAZARDOUS TO YOUR HEALTH.

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ERIE, PA. U. S. A.

12. Always Wear Protective Equipment When Tool Is In Use
 - a. Refer to aforementioned regulations (Sec. I, Item A) concerning goggles, face shields, and other protective clothing.
 - b. Appropriate hearing protection which reduces noise to acceptable levels must be worn.
13. Employ a Safety Program
 - a. Refer to ANSI and OSHA specifications for inspection and maintenance procedures.

WARNING: Failure to Comply with all safety regulations may result in serious injury.

II. DESCRIPTION

A. Pipe Cutter Model: UPC 616H, 636H and 648H

B. Motor Specifications:

Horsepower = 3.8 H.P. (5880 RPM at 1000 PSI)
Max. RPM = 7000
Max. Flow = 7.8 gal per min.
Pressure = 1500 PSI Max.
Shutoff = Directional Control Ball Valve.
Hydraulic Fitting = Quick Disconnect (3/8 in.)

C. Pipe Cutting Range:

UPC616H - 6" thru 16" Nominal Pipe
UPC636H - 6" thru 36" Nominal Pipe
UPC636H - 6" thru 48" Nominal Pipe

D. Beveling:

Bevel determined by Bevel Cutter used.
Available by special order.

E. Maximum Cutting Depth

4" Blade = 1 3/32"
 6" Blade = 2 3/32"

F. Standard Equipment

Power Cutter with Hydraulic Motor
 Chain/Turnbuckle Assembly
 Connecting frames & Chain to cut up to 36" or 48" diameter pipe
 3 gallon water tank (UPC616 only)
 Stainless Steel Water Tank (7 gallon) with Cart (UPC636 & UPC648)
 Carrying Case
 Grease Gun with Grease
 Hex Key Wrench Set
 Wedges
 Extra set of hydraulic fittings to make up Hose Assembly for individual requirements

G. Optional Accessories/Blades*

Diamond for Cast Iron, Ductile Iron, Clay Pipe, Pit Cast & Concrete
 Tungsten Carbide Grit for PVC Pipe
 Bevel Cutter for PVC (Available by special order; minimum order applies.)
 *See blade section chart at right.

H. Auxiliary Equipment Required

Hydraulic Pump capable of sustaining 3 gal. minimum—7.8 gal. maximum flow per min., up to 1500 PSIG Max. A reservoir capacity of at least 15 gal. is ideal. Dextron II® is recommended. Pump is to use petroleum based fluid with a viscosity of 156 to 300 SUS at 100° F, and not exceeding 160° F. Fluid filtration to be equal to or better than 10 micron.
 Hoses (3/8") with compatible fittings

2. Install Blades

- a. **Ductile, Cast Iron, Clay, PE**-Install arbor spacer (over the key on the arbor), blade, flange (relieved edge to blade) and locknut, holding a wrench (supplied) on the 7/8" arbor flats, while tightening the locknut. The blade must seat on the arbor shoulder flush against the arbor spacer.
- b. **PVC**-When a bevel is required, install the bevel cutter (over the key), blade, flange (relieved edge to blade) and locknut, holding a wrench (supplied) on the 7/8" arbor flats while tightening the locknut. The blade must seat on the arbor shoulder flush against the bevel cutter.

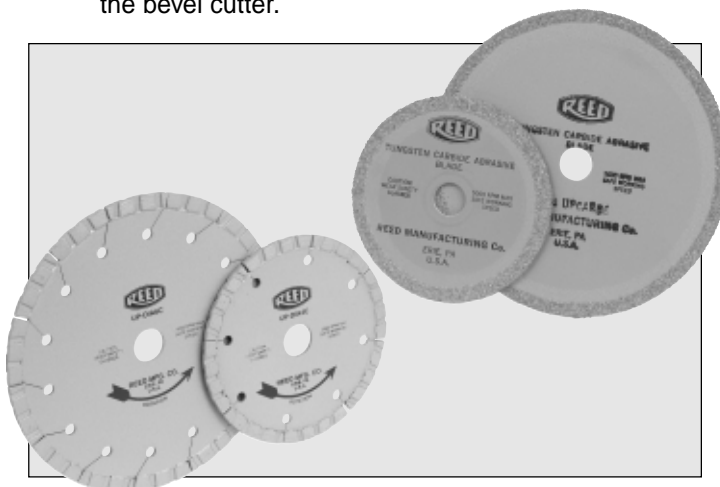


PHOTO #1

WARNING: Improper blade assembly will result in blade damage and possible personal injury. Follow the instructions carefully.

3. Re-install blade guard and tighten mounting screws.

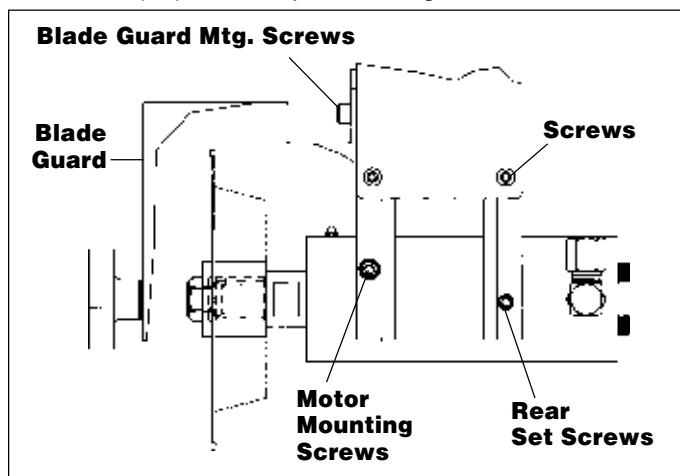


FIG.1

III. ASSEMBLY

A. Blade Installation (Fig. 1)

1. Select a Blade from the Chart at right

CAUTION: Hydraulic motor rotates counter clockwise as viewed from the arbor end. Blades stamped with rotation arrows must be installed so they rotate counter clockwise.

BLADE SELECTION CHART*				
Pipe Material	UPC 616H, 636H and 648H (HYDRAULIC)			
	4" BLADES cut up to 1 3/32" (27.8 mm) wall thickness		6" BLADES cut up to 2 3/32" (53.2 mm) wall thickness	
	6" - 8" (150 -200mm) Pipe		10" - 48" (200 -1300 mm) Pipe	
	Catalog No.	Item Code	Catalog No.	Item Code
Cast Iron, Pit Cast, Ductile Iron, Clay, Concrete	UPDIA4C	97528	UPDIA6C	97524
PVC	UPCARB4	97510	UPCARB6	97514
PE	Call Reed for blade recommendation.			

*For better performance, Reed recommends 6" blade for pipe diameter 10" and over.

B. Installing Bevel Cutters (Fig. 1)

1. Check motor tightness by tightening the motor mounting screws (2) on the front plate of the motor bracket.
2. Position rear set screws (2) to lightly touch the motor. (Tightening the rear set screws will damage the motor and warp the motor bracket.)

3. Remove blade guard by loosening 2 screws at top of guard.
4. Remove the locknut, flange and arbor spacer.

NOTE: A key is installed in the arbor keyway. It is an essential part on all cutting and beveling assemblies. Be sure not to misplace the key. Key keeps the spacer locked to the arbor.

WARNING:
Do not use the unit without the blade guard.

C. Select Chain and Connecting Frames to Match Outside Diameter of Pipe

NOMINAL PIPE DIAMETER	MOTOR FRAME	13 LINK CHAIN ASSEMBLY WITH TURNBUCKLE	11 LINK CHAIN ASSEMBLY	CONNECTING FRAME
6 – 12 IN.	1	1	1	1
14 – 26 IN.	1	1	2	1
28 – 36 IN.	1	1	2	2
40 – 48 IN.	1	1	3	3

D. Assembly of Unit on Pipe

1. Loosen motor bracket locking knob. (Fig.2)
2. Retract motor bracket to upper most position, by turning feed knob counter clockwise. (Fig. 2.)
3. Connect chain and turnbuckle assembly to motor unit with release pin. Extend turnbuckle to outermost position. (Fig. 3.)
4. Connect chain hook with release pin to other side of motor unit. Assemble hook in upward position. (Fig.3.)

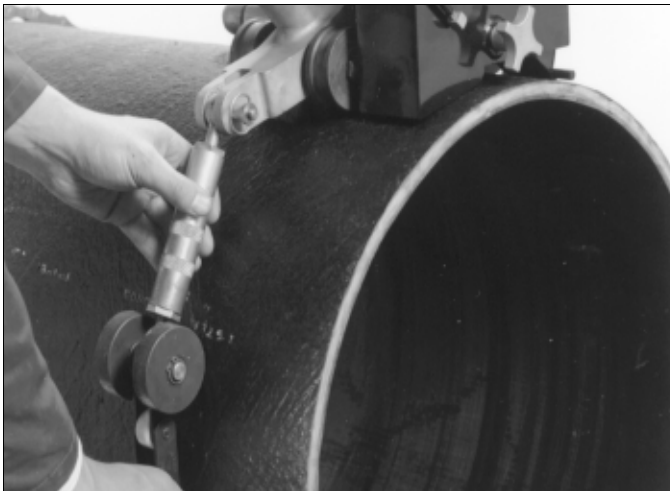


PHOTO #2

5. Place the unit on the pipe being sure to firmly hold the motor unit while wrapping the chain around to connect to the hook on the motor frame (Photo #2). Tighten turnbuckle so unit is snug but can be rotated (Photo #2). Unit should always be mounted on the section of pipe not being removed.
6. If cutting pipe where connecting frames and 11 link chain are needed, (UPC636 & UPC648 only) pre-assemble chain hooks to the aluminum connecting frames, with the chain hooks in the downward position. (Fig. 3.) Return to Step 5 being sure to space the connecting frames equi-distant to the motor unit. (Fig. 3.)

E. Align Cutter

To check tracking accuracy mark the pipe at one of the motor unit rollers, rotate the unit around the pipe one full revolution and note off/on track condition. By tapping the chain and/or connecting frames the unit can be aligned.

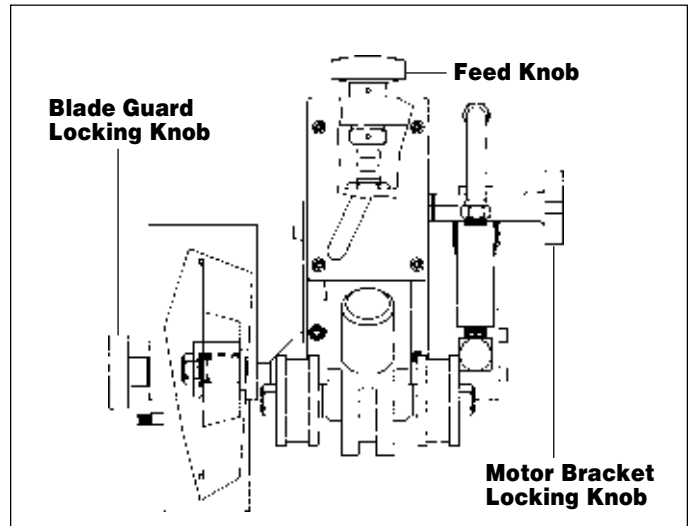


FIG. 2 (Motor Unit)

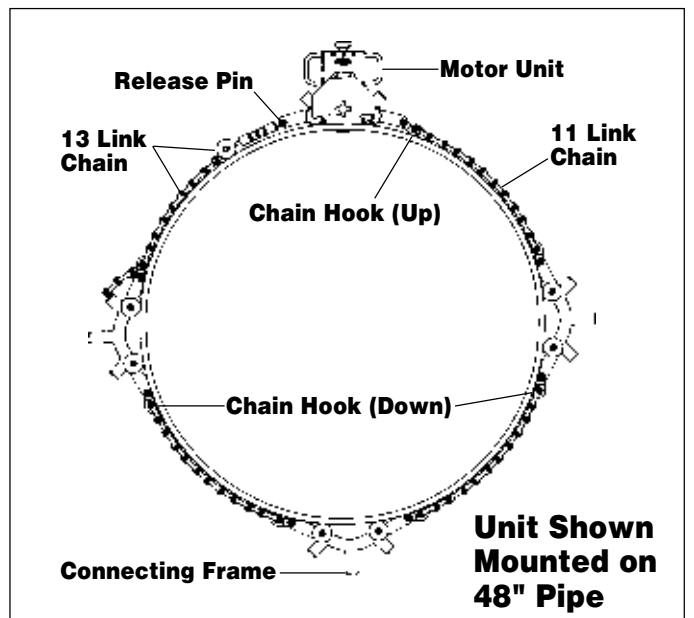


FIG. 3

F. Connect Hydraulic Power Supply

The unit is supplied with a directional control valve and quick-disconnect fittings. Use mating fittings supplied, along with $\frac{3}{8}$ " hose to run to and from the power supply.

NOTE: It is important to determine the pressure and return lines of your hydraulic power supply. An in-line check valve will ensure the fluid flow to the UPC hydraulic motor cannot be reversed. If flow direction is reversed, the system will "dead-end" causing a buildup of pressure and possible motor seal failure. Refer to the manufacturer's operation instructions for determining flow direction for your hydraulic power supply.

G. Fill and Attach Water Tank (not required for cutting plastic pipe) to Blade Guard

Water is used to help cool the diamond blades. Use for cutting cast iron, ductile iron, and clay pipe. In cold temperatures, anti-freeze may be added to the water tank.

IV. OPERATION

A. Position the Cutting Blade

1. Loosen blade guard locking knob until swing guard rests on pipe. Re-tighten knob.
2. Turn cutter feed knob clockwise (Fig. 2), to lower motor and cutter close to, but not touching the pipe. Motor bracket locking knob should be tight, yet allow bracket to slide.

B. Pressurize Water Tank by Following Instructions Provided with Tank – Open Valve on Tank

C. Turn Motor On

After ensuring ends are clean, connect hoses to the main frame and move hoses away from cutting unit. (The pressure line is the female coupling leading into the directional control valve. The return line is the male nipple coming from the tee above the valve). To determine valve position, use black handle of the directional control valve. The arrow on the handle points to the direction of fluid flow. The arrow pointing up indicates the fluid flow is by-passing the motor and

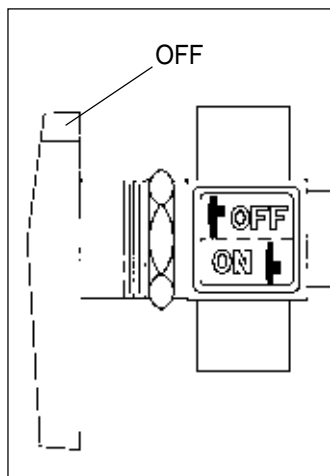


FIG. 4

Handle pointing up Unit is "Off"

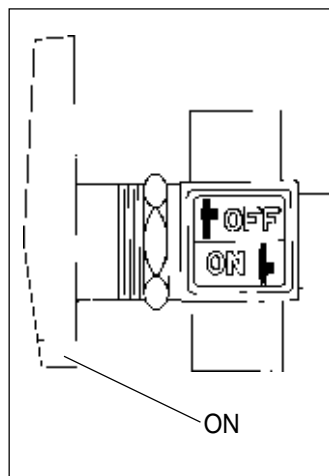


FIG. 5

Handle pointing down Unit is "ON"

the motor is OFF (Fig. 4). The arrow pointing down indicates the flow of fluid is to the motor and the motor is ON (Fig. 5). Open the valve by pointing the arrow down.

WARNING: The blade is now rotating. Keep hands clear.

D. Feed Blade into the Pipe

1. Tighten motor bracket locking knob. (Fig. 2) (Photo #3)
2. *Note position of depth gage pointer (divided in tenths of inches with MM references).
3. Knowing the thickness of pipe to be cut, turn the feed knob clockwise, (Fig. 2) until the pointer indicates the desired depth of cutter. Allow at least $\frac{1}{4}$ " of blade beyond full wall penetration.

*Exception to this would be if the bevel cutter was being used for plastic, then the cutter would be engaged until the bevel cutter began cutting. Turn the feed knob $2\frac{3}{4}$ turns for a full width bevel. Full engagement produces a $\frac{15}{16}$ " bevel. (Fig. 6)

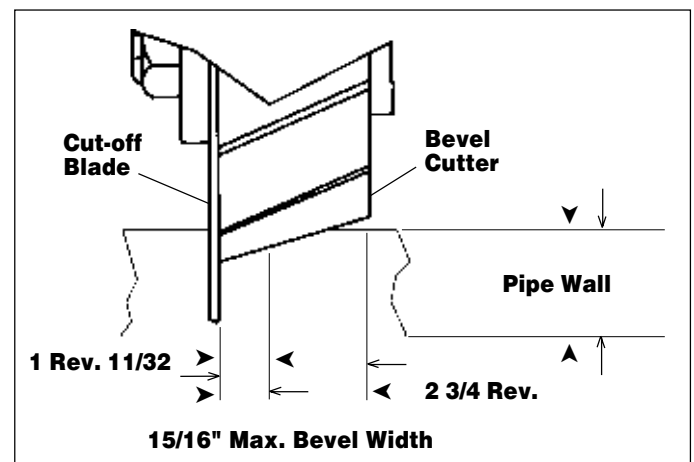


FIG. 6 Beveling Adjustment

4. Tighten blade guard locking knob approximately $\frac{1}{8}$ " from pipe. (Fig. 2)
5. Rotate unit in direction of arrow on top of motor bracket.
6. Space wedges every 9-12 inches.
7. The unit will cut underwater.
8. When beveling plastic pipe, overlap the start/finish point of cut to ensure a complete bevel.
9. If the blade is pinched in the cut:
 - a. Turn off motor (valve arrow pointing up.)
 - b. Turn off power supply and disconnect hoses to motor frame.
 - c. Remove blade guard.
 - d. Remove locknut, flange from arbor.
 - e. Disconnect chain.
 - f. Pull motor unit out of blade.
 - g. Remove blade from pipe by lifting the pipe. Inspect the blade for damage.

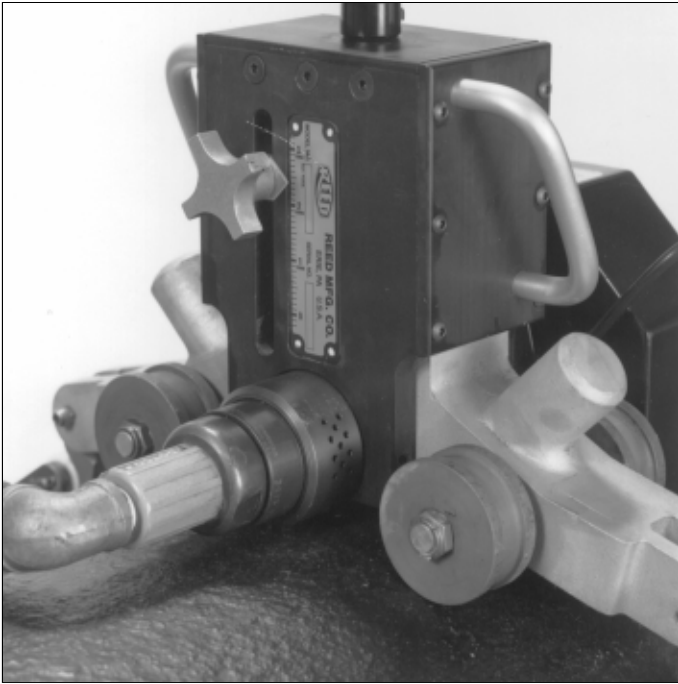


PHOTO #3

***Note: In the event of experiencing motor problems (i.e. - leakage, loss of power, etc.) Do not disassemble the motor. This will void the motor warranty. Send motor back to Reed Manufacturing for service.**

V. MAINTENANCE

A. Motor*

1. Lubrication: Lightly grease the bearings after each days use with the grease and grease gun provided (Dotco Grease No. 45-09833 is recommended). The grease fitting is located on top of the motor underneath the blade guard. (Fig.1)
2. Service: Refer to the Manufacturers Motor Installation and Service Instruction packed in carrying case.

B. Be Sure Hose and Main Frame Connections are Kept Clean and Free of Dirt.

C Dress (sharpen) Diamond Blades

1. See Service Bulletin #UPC 636-5

D. Clean Carbide Grit Blade if it becomes Loaded

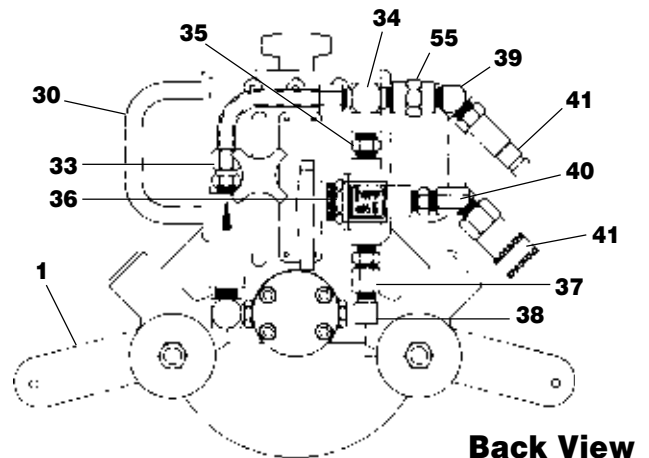
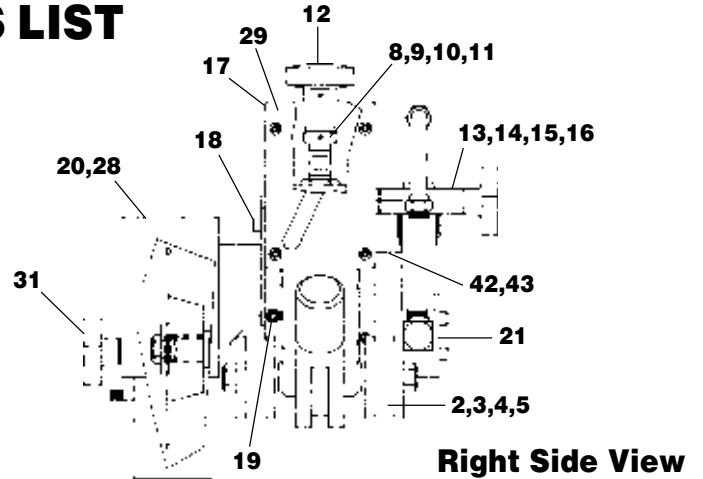
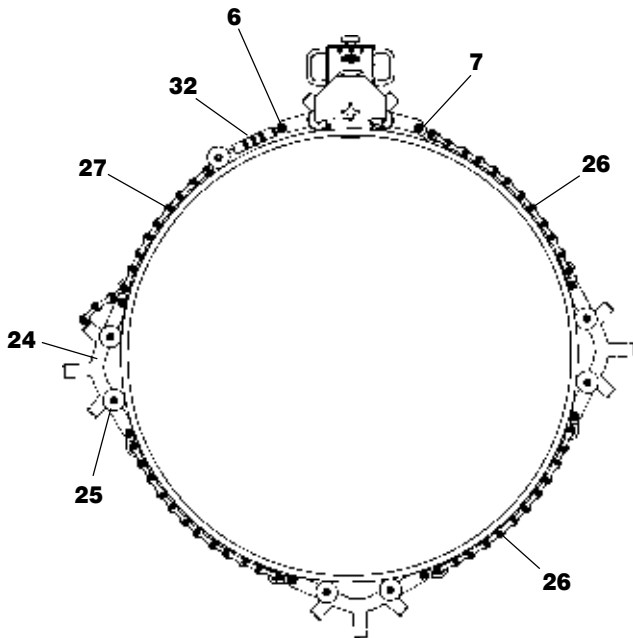
1. Use wire brush or appropriate solvent.
2. Direction of blade may be reversed for longer life.

E. Sharpen PE Blades/Bevel Cutter

Should be performed by a professional tool grinding service.

F. Occasionally Lubricate the Release Pins, Chain Links, Main Frame Screw, Roller Pins, Turnbuckle Assembly with a Water Displacing Lubricant—(WD-40® or equivalent).

PARTS LIST



P/N	DESCRIPTION	UPC616H		UPC636H		UPC648H	
		QTY	CAT NO	QTY	CAT NO	QTY	CAT NO
1	MOTOR FRAME ASSEMBLY*	1	97067	1	97067	1	97067
2	ROLLERS, MOTOR FRAME, SET	4	97541	4	97541	4	97541
3	ROLLER PIN	2	97542	2	97542	2	97542
4	LOCKNUTS, ROLLER PIN	4	97543	4	97543	4	97543
5	SET SCREWS, ROLLER PIN	4	97544	4	97544	4	97544
6	RELEASE PIN	2	94477	6	97545	8	97545
7	CHAIN HOOK	1	97546	5	97546	7	97546
8	FEED SCREW	1	97547	1	97547	1	97547
9	BUSHING, FEED SCREW	1	97548	1	97548	1	97548
10	SET SCREW, COLLAR	2	40083	2	40083	2	40083
11	COLLAR	1	93140	1	93140	1	93140
12	KNOB, FEED	1	97551	1	97551	1	97551
13	KNOB, MOTOR LOCK	1	97613	1	97613	1	97613
14	WASHER, NYLON	1	97553	1	97553	1	97553
15	INDICATOR	1	97554	1	97554	1	97554
16	MOTOR BRKT. ASSEMBLY	1	97615	1	97615	1	97615
17	SCREWS, BLADE GUARD/MOTOR MNT	4	30004	4	30004	4	30004
18	BLADE GUARD ASSEMBLY	1	97559	1	97559	1	97559
19	MOTOR, HYDRAULIC.	1	40389	1	40389	1	40389
20	FLANGE	1	97066	1	97066	1	97066
21	LOCKNUT, ARBOR	1	97543	1	97543	1	97543
22	CONNECTING FRAME ASSEMBLY	N/A		2	04481	3	04481
23	ROLLERS, CONNECTING FRAME W/LOCKNUTS SET	N/A		4	97570	4	97570
24	CHAIN, 11 LINK ASSEMBLY	N/A		2	97572	3	97572
25	CHAIN, 13 LINK ASSEMBLY	N/A		1	97573	1	97573
26	CHAIN, 19 LINK ASSEMBLY	1	97576	N/A		N/A	
27	LABEL, WARNING	1	97574	1	97574	1	97574
28	LABEL, ARROW	1	97575	1	97575	1	97575
29	KNOB & SCREW ASSEMBLY	1	97578	1	97578	1	97578
30	CHAIN/TURNBuckle ASSEMBLY	1	97580	1	97579	1	97579
31	WATER TANK	1	40177	1	40159	1	40159
32	WATER SYSTEM HOSE W/FITTINGS	1	97581	1	97581	1	97581
33	HANDLE, ALUM. 12"	1	97582	1	97582	1	97582
34	ARBOR KEY	1	97070	1	97070	1	97070
35	ARBOR SPACER	1	97550	1	97550	1	97550
36	ELBOW, RETURN LINE	1	40355	1	40355	1	40355
37	CHECK-VALVE	1	40354	1	40354	1	40354
38	MALE CONNECTOR	1	40353	1	40353	1	40353
39	RETURN LINE TUBE	1	40178	1	40178	1	40178
40	TEE, RETURN LINE	1	40182	1	40182	1	40182
41	NIPPLE 3/8"	2	40185	1	40185	1	40185
42	VALVE, DIRECTIONAL CONTROL	1	40312	1	40312	1	40312
43	SWIVEL ADAPTER	1	40176	1	40176	1	40176
44	ELBOW, PRESSURE LINE	1	40179	1	40179	1	40179
45	ELBOW, 45 DEG. MALE	1	40175	1	40175	1	40175
46	ELBOW, 45 DEG. STREET	1	40180	1	40180	1	40180
47	HYDRAULIC COUPLINGS, SET	1	97608	1	97608	1	97608
48	BRACKET, VALVE SUPPORT	1	40313	1	40313	1	40313
49	SCREWS, VALVE SUPPORT BRKT.	2	30156	2	30156	2	30156
50	LABEL, ON/OFF	1	50316	1	50316	1	50316
51	COUPLING	1	40181	1	40181	1	40181
52	HEX KEY SET	1	40156	1	40156	1	40156
53	CARRYING CASE	1	40384	1	97586	1	97586
54	GREASE GUN	1	97587	1	97587	1	97587
55	GREASE TUBE	1	97588	1	97588	1	97588
56	WEDGES, BOX #8010	1	97589	1	97589	1	97589
57	WRENCH, 3/4 X 7/8	1	97590	1	97590	1	97590
58	DRESSING STICK (DIAMOND BLADE)	1	97595	1	97595	1	97595

SHADED AREA - NOT SHOWN

* NOT STANDARD



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 and threading power drives are warranted for a period of one year from date purchased.

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

No warranty claims will be allowed unless the product in question is received freight prepaid at the Reed factory. All warranty claims are limited to repair or replacement, at the option of the company, at no charge to the customer. REED IS NOT LIABLE FOR ANY DAMAGE OF ANY SORT, INCLUDING INCIDENTAL AND CONSEQUENTIAL DAMAGES. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

CAUTION: Safety reminders for a professional approach to tool selection and use.

- Proper maintenance of tools is critical to personal safety; worn tools should be repaired or replaced as required.
- Select the correct tool and tool size for the job. Never modify a tool to exceed its intended capacity.
- We recommend the Hand Tools Institute booklets for additional safety tips. Booklets are available from Reed or the Hand Tools Institute.



PIPE TOOLS & VISES
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1425 WEST EIGHTH ST. ERIE, PA 16502 USA PHONE: 800-666-3691 OR 814-452-3691 FAX: 800-456-1697 OR 814-455-1697

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