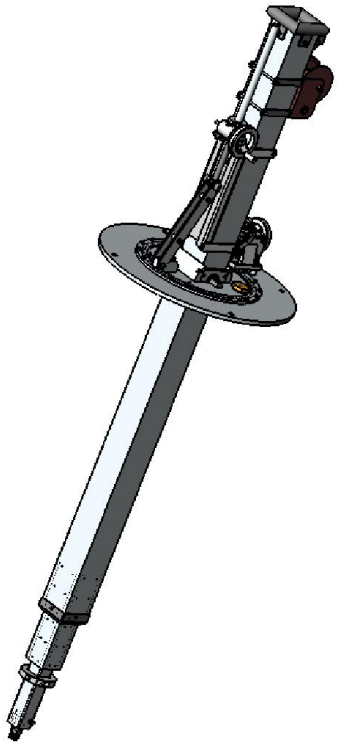
POSITIONING DEVICE FOR WATERBLAST NOZZLES

TELEBOOM

OPERATION AND MAINTENANCE MANUAL



StoneAge®
ENGINEERING THE POWER OF WATER

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06/15

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1.0 INTRODUCTION

This manual was prepared to provide the operator with the basic information needed to operate and service this equipment. The operating recommendations in the manual will ensure that you receive satisfactory performance. All operating personnel responsible for the care of this equipment should be familiar with the information in this manual.

If you have any questions or problems with this equipment, please contact the distributor you obtained the product from, or the manufacturer:

StoneAge, Inc.
466 S. Skylane Dr.
Durango, CO 81303
970-259-2869 Phone 970-259-2868 Fax
www.stoneagetools.com

2.0 SAFETY WARNING

Operations with this equipment can be potentially dangerous if caution is not exercised prior to and during tool use. Please read and follow all of these instructions, in addition to the guidelines in the WJTA Recommended Practices handbook.

2.1 Only competent and trained persons should operate this equipment.
2.2 Do not exceed the maximum operating pressure specified for any component in a system.
2.3 This equipment should always be used with an operator controlled dump mechanism to release the high pressure water.
2.4 The immediate work area should be marked off to keep out untrained persons.
2.5 All personnel in the area should wear eye and hearing protection, as well as other protective clothing in accordance with specific conditions.
2.6 Inspect the equipment for visible signs of deterioration, damage, or improper assembly. Do not operate until repaired. Make sure all threaded connections are tight and leak free.
2.7 Check to see that all control functions work properly before going to high pressure.
2.8 If it is necessary to have a person work near the cleaning jets, then it is this person who should have control of the pressure dump mechanism.
2.9 The tool should be securely supported. Strong back thrust is created by waterjets and these forces can become unbalanced if a nozzle should become plugged.

3.0 DESCRIPTION

The **TELEBOOM** is designed to hold and position most types of waterblast cleaning nozzles. It is particularly useful for placing rotary nozzle heads inside tanks and vessels. It is intended only for vertical or near vertical applications.

The **TELEBOOM** is lightweight and compact for portability. The boom sections, baseplate, and most components are aluminum. It attaches to various size manway openings by means of custom made adapter plates. A pair of viewports are provided so that a light can be directed in one while looking through the other.

There are three positioning functions: **Telescope**, **Angle** and **Rotate**. All of the functions are driven by hand operated wheel cranks.

The **Telescope** function is performed by a hand winch with worm gear reduction and automatic brake action. The winch cable goes over one of the hose rollers and down through the series of boom tubes. It exits along side the fluid coupling and has a large crimp fitting attached to anchor it. Gravity pulls the nozzle head down and the winch pulls it back up.

The **Angle** function is controlled by a manual screw actuator and can tilt the boom plus or minus 45 degrees.

The **Rotate** function is powered through a gearbox which drives the boom sub-assembly to turn inside the baseplate. Depending on the angle position, the unit can rotate plus or minus 150 degrees.

The **TELEBOOM** requires minimal attention to maintain its usefulness. The main task is to regularly grease the five zerks provided. There are four zerks in the inner plate which lubricate the baseplate rotation function. There is also one zerk in the angle actuator screw housing. The rotation gearbox is permanently lubricated.

Check all bolts to see that they are secure and that the cable is not frayed. The telescoping tubes should slide easily. Keep the tubes free from major dents or dings.

The attachments to the outside of the 4 in. tube require about 4 ft. of length for proper mounting. This placement length can be at any position along the 4 in. tube. The amount of tube extending above or below the baseplate can be varied to suit the application. When headroom is limited or maximum reach is required, mount the attachments nearest to the top or hose roller end.

3.1 SPECIFICATIONS

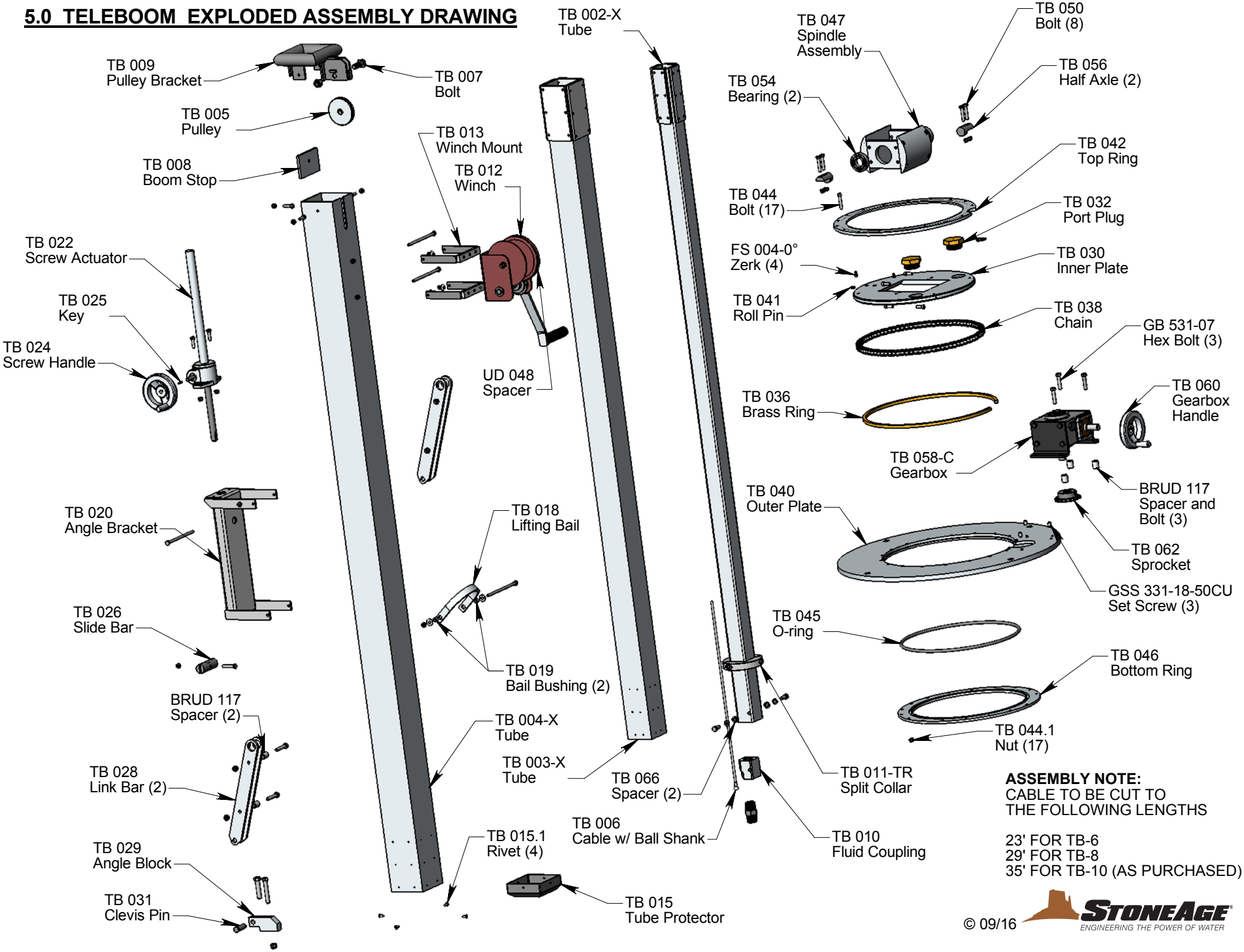
	TB-6	TB-8	TB-10
Weight	113 lb.	130 lb.	147 lb.
Length, Collapsed	6.5 ft.	8.5 ft.	10.5 ft.
Length, Extended	16 ft.	22 ft.	28 ft.

4.0 PARTS LIST

Part #	Description	Qty
BRUD 117	Spacer	5
FS 004-0°	Grease Zerk	4
TB 002-X	Sq. Tube 2" x 8' or 6'	1
TB 003-X	Sq. Tube 3" x 8' or 6'	1
TB 004-X	Sq. Tube 4" x 8' or 6'	1
TB 005	Pulley	1
TB 006	Cable w/ Ball Shank	1
TB 007	Bolt	1
TB 008	Boom Stop	1
TB 009	Pulley Bracket	1
TB 010	Fluid Coupling	1
TB 012	Winch	1
TB 013	Winch Mount	1
TB 015	Tube Protector	1
TB 016	Cable	1
TB 018	Lifting Bail	1
TB 019	Bail Bushing	2
TB 020	Angle Bracket	1
TB 022	Screw Actuator	1
TB 024	Screw Handle	1
TB 026	Slide Bar	1
TB 028	Link Bar Assembly	1
TB 029	Angle Block	1
TB 030	Inner Plate	1
TB 031	Clevis Pin	1
TB 032	Port Plug	2
TB 036	Brass Ring	1
TB 038	Chain	1
TB 040	Outer Plate	1
TB 041	Roll Pin	1
TB 042	Top Ring	1
TB 044	Bolt and Nut	17
TB 045	O-Ring	1
TB 046	Bottom Ring	1
TB 047	Spindle Assembly	1
TB 050	Bolt	8
TB 054	Bearing	2
TB 056	Half Axle	2
TB 058-C	Gearbox	1
TB 060	Gearbox Handle	1
TB 062	Sprocket	1
TB 066	Spacer	2
UD 048	Spacer	1

X = Length

5.0 TELEBOOM EXPLODED ASSEMBLY DRAWING



ASSEMBLY NOTE:
CABLE TO BE CUT TO
THE FOLLOWING LENGTHS

23' FOR TB-6
29' FOR TB-8
35' FOR TB-10 (AS PURCHASED)

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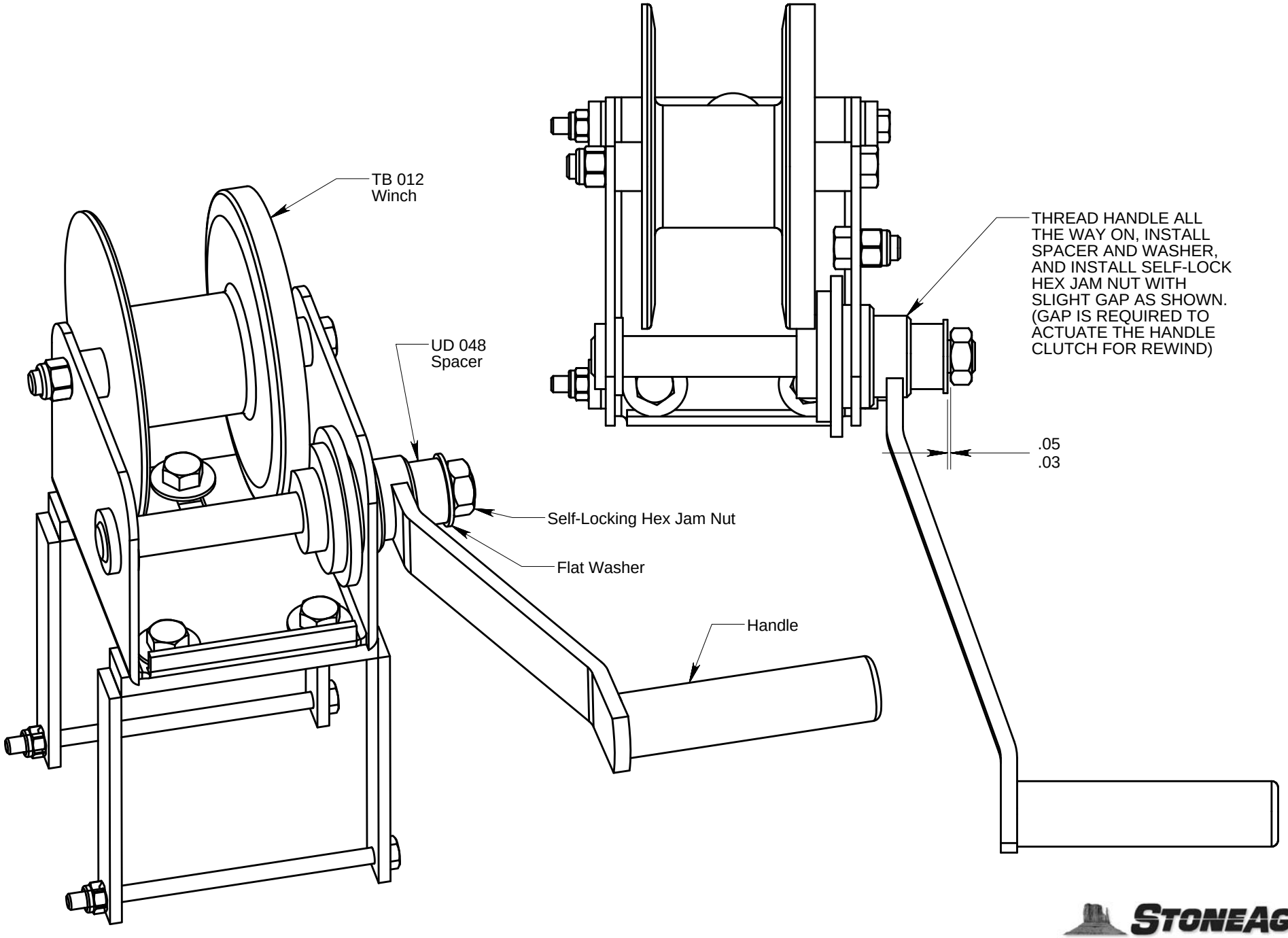
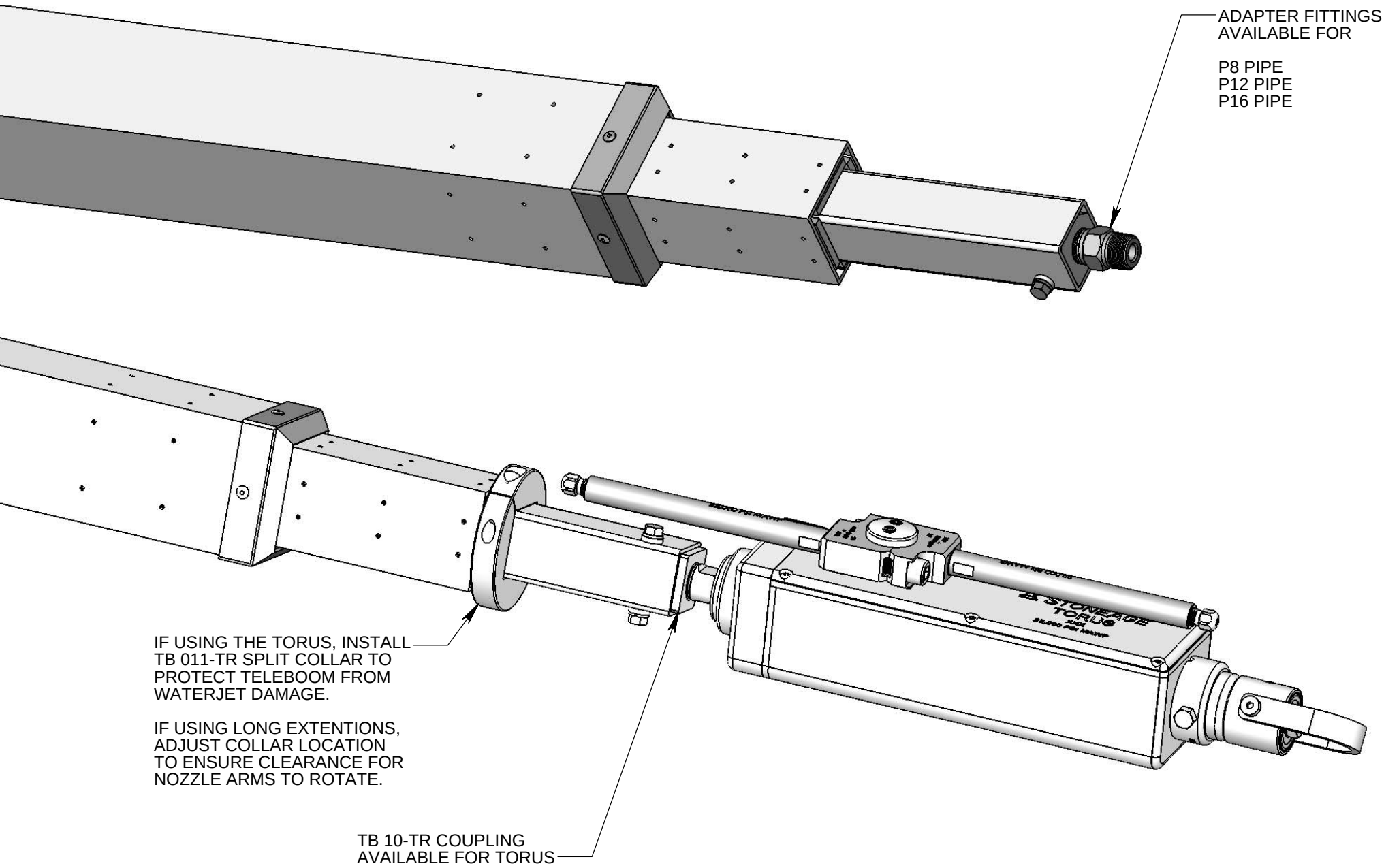
5.1 TB WINCH HANDLE INSTALLATION



5.2 TB OUTLET OPTIONS



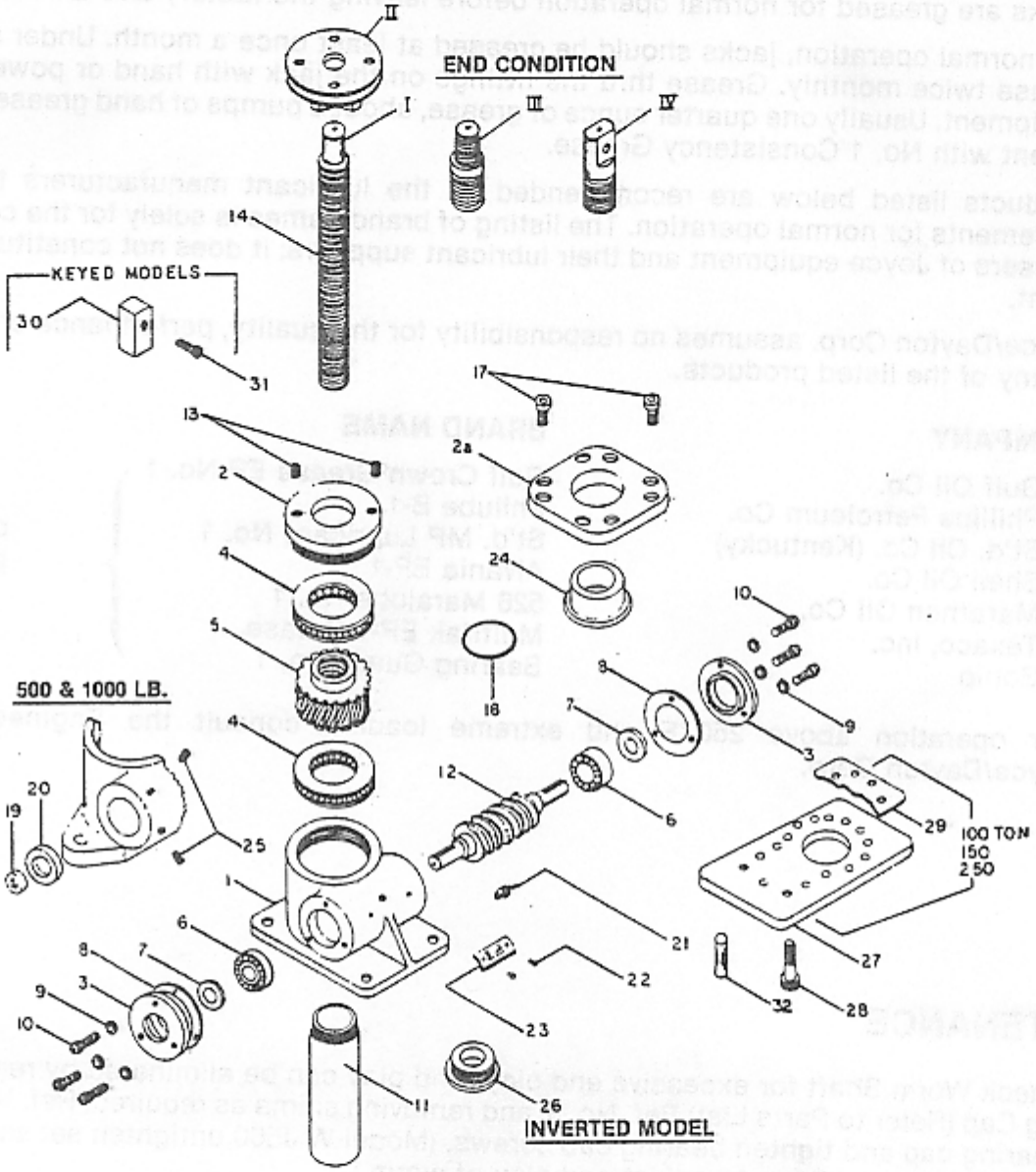
6.0 LIMITED WARRANTY

StoneAge, Inc. warrants to the extent herein provided the products of its own manufacture against defects in material and workmanship under normal use and service for which the products were designed for a period of six months after shipment from the factory. If such products should fail through defect in workmanship or material and specific written notice of failure is made within six months after date of shipment from factory, StoneAge, Inc. will either repair or replace any such items, F.O.B. its factory without charge. StoneAge, Inc. shall not be liable for expense incurred in repairs or alterations made outside the factory without the proper and prior authorization. StoneAge, Inc. shall have the option of requiring the return of the defective products to its factory, with transportation charges prepaid, to establish the claim. StoneAge, Inc. shall in no event be held liable for damages or delay resulting from or arising out of defective products nor for consequential damages or otherwise except for repair or replacement of items of defective material or workmanship aforesaid.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE AND NEITHER ASSUMES, NOR AUTHORIZES ANY PERSON TO ASSUME FOR STONEAGE, INC. ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF ITS PRODUCTS. THIS WARRANTY SHALL NOT APPLY TO PRODUCTS OR ANY PARTS THEREOF WHICH HAVE BEEN SUBJECT TO ACCIDENT, NEGLIGENCE, ALTERATION, ABUSE, OR MISUSE. STONEAGE, INC. MAKES NO WARRANTY WHATSOEVER IN RESPECT TO ACCESSORIES, PARTS OR PRODUCTS NOT MANUFACTURED BY STONEAGE, INC.

PARTS LIST FOR ALL JOYCE STANDARD WORM GEAR SCREW JACKS

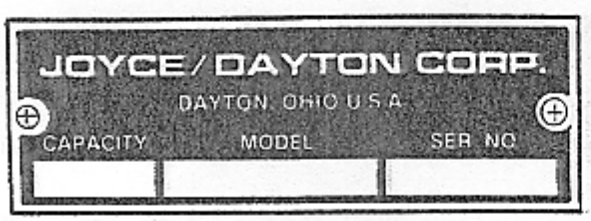
***Upright Style shown for purpose of illustration**

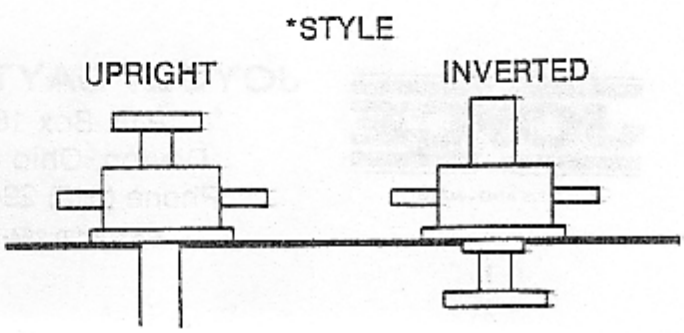


For parts not listed and for custom built jacks, contact the Joyce/Dayton Corp.

To order parts give the capacity, model and serial number found on the name plate attached to the jack. Also specify whether upright or inverted jack, and end condition of screw.

Below is the name plate as it appears on your jack, mark in the information in the proper spaces exactly as it appears on the jack for your reference.





LUBRICATION

1. Jacks are greased for normal operation before leaving the factory and are ready for use.
2. For normal operation, jacks should be greased at least once a month. Under severe use, grease twice monthly. Grease thru the fittings on the jack with hand or power operated equipment. Usually one quarter ounce of grease, about 8 pumps of hand grease gun is sufficient with No. 1 Consistency Grease.
3. Products listed below are recommended by the lubricant manufacturers to meet requirements for normal operation. The listing of brand names is solely for the convenience of users of Joyce equipment and their lubricant suppliers; it does not constitute endorsement.

   Joyce/Dayton Corp. assumes no responsibility for the quality, performance or availability of any of the listed products.

COMPANY	BRAND NAME	
1. Gulf Oil Co.	Gulf Crown Grease EP No. 1	or equal product.
2. Phillips Petroleum Co.	Philube B-1	
3. St'd. Oil Co. (Kentucky)	St'd. MP Lubricant No. 1	
4. Shell Oil Co.	Alvania EP-1	
5. Marathon Oil Co.	526 Maralube No. 1	
6. Texaco, Inc.	Multifak EP-1 Grease	
7. Sohio	Bearing Guard No. 1	

4. For operation above 250°F and extreme loading consult the Engineering Dept., Joyce/Dayton Corp.

MAINTENANCE

1. Check Worm Shaft for excessive end play. End play can be eliminated by removing Bearing Cap (Refer to Parts List) Ref. No. 3, and removing shims as required, Ref. No. 8, replace bearing cap and tighten bearing cap screws. (Model W J500 untighten set screws. Adjust bushing and retighten to adjust end play of worm.)
2. Periodically check lifting screw for end and side play. If end or side movement appears excessive, jack should be disassembled and inspected for worn parts (Bearings, Bushing, Screw Nut, etc.).

JOYCE
LIFTS AND JACKS

JOYCE / DAYTON CORP.
P.O. Box 1630
Dayton, Ohio 45401
Phone (513) 294-6261
FAX (513) 294-7631

In Canada: Joyce Lifting Division
Handling Specialties Ltd.
P.O. Box 98
Grimsby, Ontario L3M 4G1

2M - 2/90 FB-0080

1 GENERAL INFORMATION

The following instructions will help you achieve a satisfactory installation of your Textron Power Transmission Series B unit, ensuring the best possible conditions for a long and trouble free operation.

All units are tested and checked prior to shipment, a great deal of care is taken in packing and shipping arrangements to ensure that the unit arrives at the customer in the approved condition.

Optimum performance is best achieved by a process of gradual load increments, up to the full value, over the first 50 hours or so of their working life. During these early stages of running, sensible precautions should be taken to avoid overloads.

The gear unit operating temperature may be higher during this period of run-in. A progressive reduction in temperature may occur over many hours until the unit has reached its highest efficiency.

2 MOUNTING OF COMPONENTS TO EITHER THE UNIT INPUT OR OUTPUT SHAFT

Shaft dimensions and tolerences are on page 9.

- Items (such as gears, sprockets, couplings etc) should not be hammered onto these shafts since this would damage the shaft support bearings.
- The item should be pushed onto the shaft using a screw jack device fitted into the threaded hole.
- Items being fitted may be heated to 80/100°C (176/212°F) to aid assembly further.

3 WEATHER PROTECTION OF UNIT

All Series B units are provided with protection against normal weather conditions. Where units are to operate in extreme conditions, or where they are to stand for long periods without running, e.g. during plant construction, we should be notified when ordering so that arrangements for adequate protection can be made.

4 INSTALLATION

4.1 MOTORIZED AND REDUCERS

All sizes are factory filled with a high quality synthetic lubricant. They are 'Lubricated for Life' and require no routine maintenance in service

4.2 MOUNTING TO CUSTOMER EQUIPMENT

Mounting the gearhead flange facing or feet to the customer equipment use screws to ISO grade 8.8 minimum.

Torque tighten to:

Screw Size	Tightening Torque	Tightening Torque
M6	88 lb-ins	7.3 lb-ft
M8	220 lb-ins	18.3 lb-ft
M10	450 lb-ins	37.5 lb-ft
M12	750 lb-ins	62.5 lb-ft
M16	1770 lb-ins	147.5 lb-ft
M20	3100 lb-ins	258.3 lb-ft
M24	5400 lb-ins	450.0 lb-ft

4.3 MOTOR CONNECTIONS TO MAINS

Connection of the electric motor to the mains supply should be made by a qualified person. The current rating of the motor will be identified on the motor plate, and correct sizing of the cables to electrical regulations is essential.

SERIES B APPROVED LUBRICANTS

0108

Series B units are factory filled with a high quality synthetic lubricant. They are "Lubricated for Life" and require no routine maintenance in service.

In the event of a major overhaul involving strip-down and re-assembly of the gear unit refer to Table 1 for a list of approved lubricants. Lubricant quantities are given in Table 2.

Table 1 Approved Lubricants

Type H Polyalphaolefin based synthetic lubricants

These lubricants are suitable for ambient temperatures of 32°F to 104°F (0°C to 40°C); outside of this, please contact Textron Power Transmission Application Engineers

SUPPLIER	LUBRICANT RANGE	GRADE 7H OIL SUPPLIERS' CORRESPONDING DESIGNATIONS
BP Oil International Limited	Enersyn HTX	460 (-25)
Esso	Teresso SHP	460 (-25)
Exxon	Teresstic SHP	460 (-22)
Fina	Cirkan P	460 (-40)
Mobil Oil Company Limited	SHC 600 Series	634 (-34)
Shell Oils	Omala RL	460 (-37)

DANGER
Numbers in brackets indicate recommended minimum operating temperature in °F.

The unit must not run below this temperature

Table 2 Lubricant Quantities (liters)

Applicable for all mounting positions:

CONVERSION TABLE

Liters to US gallons	=	liters	x	0.26
Liters to Imperial gallons	=	liters	x	0.22

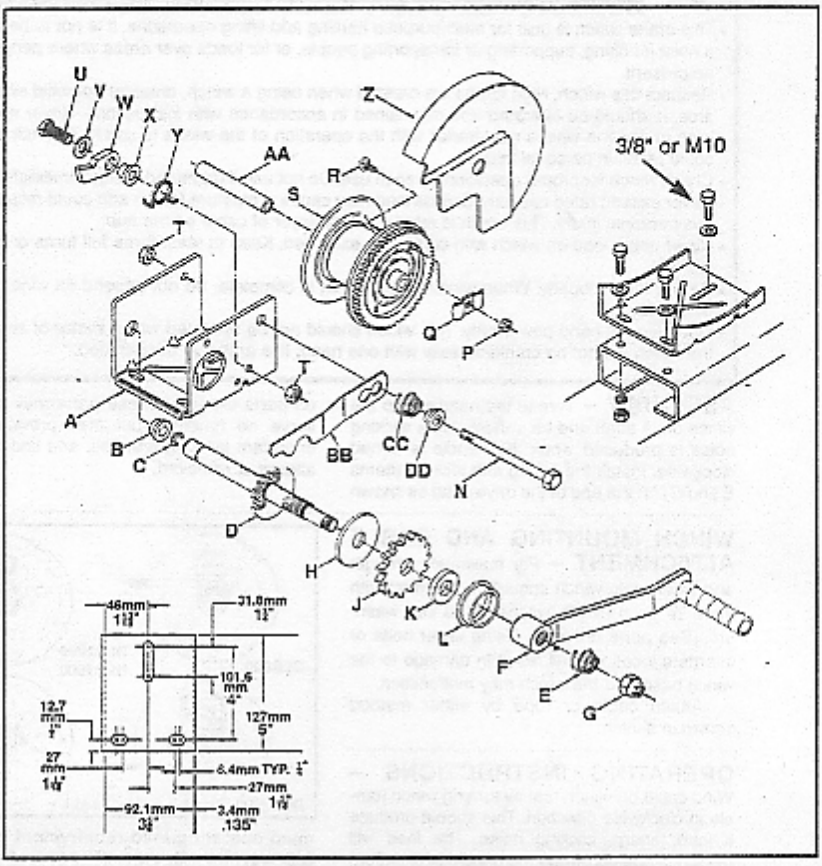
MOTORIZED or REDUCER	UNIT SIZE								
	B02	B03	B04	B05	B06	B08	B09	B10	B11
Oil Capacity (liter)	0.110	0.250	0.325	0.350	0.550	0.850	1.400	1.850	1.500

240 E. 12th Street, P. O. Box 272, Traverse City MI 49685-0272 USA
231-946-8410, 231-933-8600 -Fax

975 Dillingham Road, Pickering ON L1W 3B2 Canada
905-420-4141, 905-420-9513 -Fax

www.ConeDrive.com

DLB800, DLB800G & DLB805 Winch



DLB800, DLB800G & DLB805 Winch Parts List

Ref.	Description	Part No.	Ref.	Description	Part No.
A	Base (DLB800)	304342	S	Reel	304339
A	Base (DLB800G)	304372	T	Locknut (2)	204803
B	Bushing	204012	U	Bolt	205167
C	"E" Ring	205116	V	Flat Washer	205055
D	Drive Shaft	304228	W	Pawl (DLB800)	404409
E	Spring	204364	W	Pawl (DLB800G)	404190
F	Handle	304231	X	Spacer (DLB800)	404166
G	Nut	205015	X	Spacer (DLB800G)	404191
H	Pressure Plate	204362	Y	Spring (DLB800)	204353
J	Ratchet Wheel	404164	Y	Spring (DLB800G) (2)	204460
K	Pressure Washer	404163	Z	Gear Cover (Optional)	404271
L	Bushing	204359	AA	Spacer (Reel)	204807
N	Bolt	203161	BB	Lockout Lever (DLB805)	404579
P	Nut	205016	CC	Spring (DLB805)	204364
Q	Rope Clamp	404043	DD	Spacer (DLB805)	404166
R	Carriage Bolt	205017			

To order replacement parts:

In The USA and Canada
Parts Company of America
Tel: 1-800-323-0620
Fax: 1-800-PCA-FAX

In Europe Contact
Aqua Marine • 216 Fair Oak Road •
Bishopstoke • Eastleigh • Hants • S05 6NJ
Tel: Southampton (703) 694949
Fax: (703) 601381

DLB800, DLB800G, DLB805, DLB1200, DLB1200G, DLB1205, DLB1500, DLB1500G, DLB1505, DLB2000, DLB2000G Winch

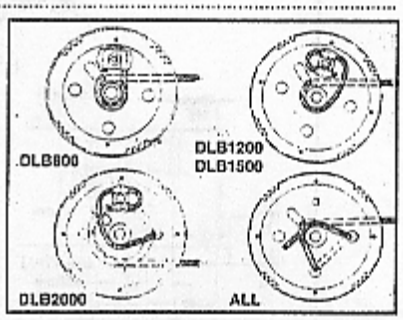
IMPORTANT SAFETY INFORMATION

- This brake winch is built for multi-purpose hauling and lifting operations. It is not to be used as a hoist for lifting, supporting or transporting people, or for loads over areas where people could be present.
- Respect this winch. High forces are created when using a winch, creating potential safety hazards. It should be operated and maintained in accordance with instructions. Never allow children or anyone who is not familiar with the operation of the winch to use it. A winch accident could result in personal injury.
- Check winch for proper operation on each use. Do not use if damaged. Seek immediate repairs.
- Never exceed rated capacity. Excess load may cause premature failure and could result in serious personal injury. This winch is rated with one layer of cable on the hub.
- Never apply load on winch with cable fully extended. Keep at least three full turns of cable on the reel.
- Secure load properly. When winching operation is complete, do not depend on winch to support load.
- Operate with hand power only. This winch should not be operated with a motor of any kind. If the winch cannot be cranked easily with one hand, it is probably over-loaded.

ASSEMBLY – Thread the handle onto the winch drive shaft and be certain that a clicking noise is produced when the handle is turned clockwise. Install the spring and locknut (items E and G) on the end of the drive shaft as shown on parts drawing. These parts may appear to serve no function, but they provide several important fail-safe features, and should not be altered or removed.

WINCH MOUNTING AND CABLE ATTACHMENT – For maximum strength and safety, this winch should be mounted with three ⅜" bolts (M10), washers and lock washers. (See parts drawing). Using fewer bolts or alternate locations will result in damage to the winch base and the winch may malfunction.

Attach cable or rope by either method shown in sketch.



OPERATING INSTRUCTIONS – Wind cable on winch reel by turning winch handle in clockwise direction. This should produce a loud, sharp, clicking noise. The load will remain in position when the handle is released. Wind cable off the winch reel by turning winch handle counterclockwise (no noise will be produced). The load will remain in position when the handle is released, but for extra security it is recommended that the handle be turned clockwise until at least two clicks are heard. This will add extra tightness to the brake mechanism. Always satisfy yourself that the winch is holding the load before releasing the winch handle.

IMPORTANT: Sufficient load must be applied to the cable to overcome internal resistance and operate the brake properly, otherwise turning the crank handle counterclockwise will only remove the handle from the shaft – the reel will not turn. The minimum operating load requirement is 50 lbs. (23 kg) for Models DLB800, DLB800G, DLB1200 and DLB1200G, 75 lbs. (34 kg) for DLB1500 and DLB1500G, 175 lbs. (80 kg) for DLB2000 and DLB2000G.

Models DLB805, DLB1205, & DLB1505, are equipped with a lockout lever for the purpose of 'freewheeling' cable out when there is no load on the winch. To 'freewheel' cable out, simply turn the handle counterclockwise until lockout lever can be engaged behind handle hub. In this condition cable can be easily pulled from the winch drum.

WARNING: Never put winch in freewheel mode if any potential for a load on the cable exists. Engaging the lockout lever keeps the winch from stopping in the event that a load is accidentally applied.

WINCH MAINTENANCE – In order to insure maximum performance, a periodic inspection for any necessary preventive maintenance should be made. Check at least once annually and more frequently when the winch is exposed to an environment which is particularly dirty or wet. For continued smooth performance and increased life, occasionally grease gears, reel shaft and handle threads. An occasional drop of oil on the drive shaft bearings is also recommended. **NOTE: Do not oil or grease brake mechanism.**

The winch finish can be protected and will provide longer service if it is periodically washed with water and then wiped with light oil or wax.

Keep winch in good working order. Damaged or severely-worn parts create unnecessary dangers and could result in personal injury or property damage.