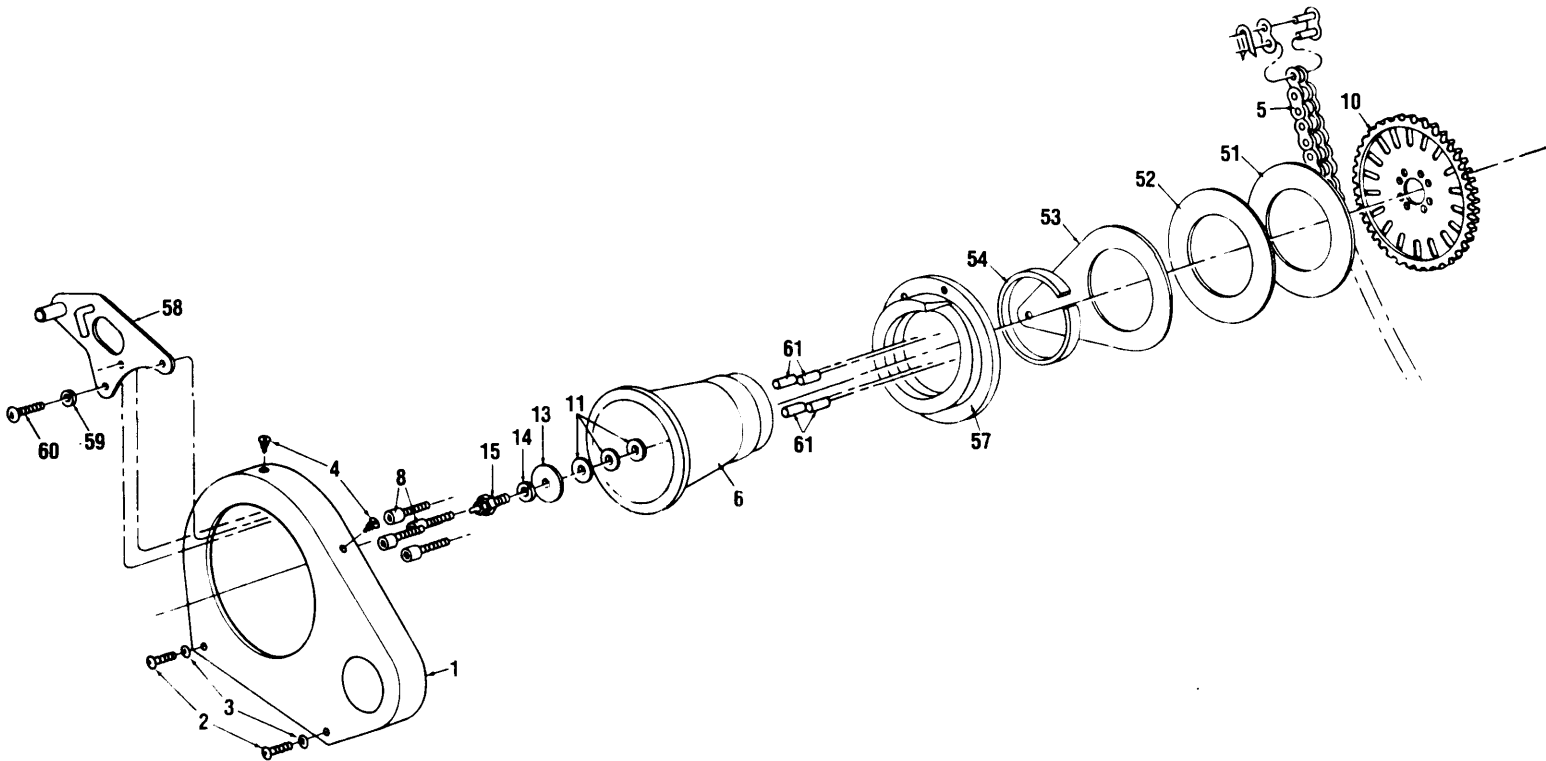




IX. EXPLODED VIEW

640 TUGGER™ CABLE PULLER

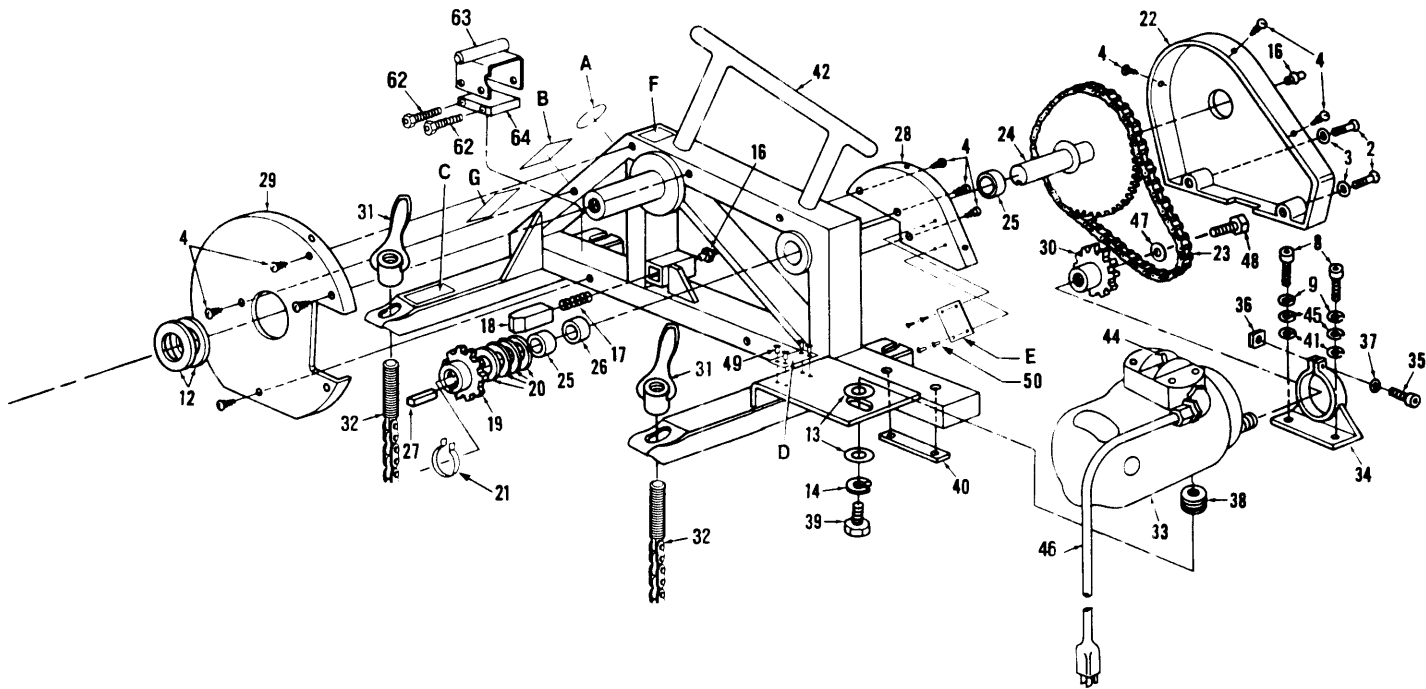


Decals and Warning Plates

| KEY NO. | PART NO. | DESCRIPTION | QTY. |
|---------|------------|-------------------------------|------|
| A | 503 0392.9 | Damp Warning Decal | 1 |
| B | 502 9936.0 | Capstan Rotation Decal | 1 |
| C | 501 2121.9 | Greenlee Decal | 1 |
| D | 502 3481.1 | Nameplate for 115V model | 1 |
| | 502 3830.2 | Nameplate for 220V model | 1 |
| E | 503 1810.1 | Warning Plate | 1 |
| F | 503 4316.5 | Read Instruction Manual Decal | 1 |
| G | 503 5664.0 | Rope Path Decal | 1 |

Authorized Service Stations

Greenlee Tool Company has numerous factory authorized repair parts service stations located throughout the United States and Canada. These service stations are prepared to service and repair your Greenlee tools to keep them in proper and safe operating condition. For the location of your nearest Greenlee Authorized Repair Parts Service Station call Greenlee's toll free service number 800/435-2932.



X. PARTS LIST

NO. 640 TUGGER™ CABLE PULLER

| KEY NO. | PART NO. | DESCRIPTION | QTY. |
|---------|-------------|--|------|
| 1 | 503 5342.0 | Capstan Guard | 1 |
| 2 | 905 1264.2 | Screw, 10-32 | 4 |
| 3 | 905 2647.3 | Washer, Lock #10 Cadmium Plated | 4 |
| 4 | 905 1460.2 | Screw, Philips Head 10 x 3/8 Type B, Cad. Pltd. | 14 |
| 5 | 501 5739.6 | No. 40 Chain, 66 pitch | 1 |
| 6 | 503 5541.4 | Capstan, Aluminum | 1 |
| 8 | 905 0597.2 | Screw, Socket Head Cap, 3/8-16NC x 1" | 6 |
| 9 | 905 0506.9 | Washer, Lock 3/8" (Split) | 6 |
| 10 | 905 2355.5 | Sprocket, #40, 60 tooth | 1 |
| 11 | *905 2644.9 | Washer, 5/8" I.D. x 1" O.D. x 1/32" Thick | 1 |
| | *905 2645.7 | Washer, 5/8" I.D. x 1" O.D. x 1/16" Thick | 1 |
| 12 | 502 5896.6 | Fiber Washer, 1-3/4" O.D. x 1-1/4" I.D. x 1/8" Thick | 2 |
| 13 | 905 2675.9 | Washer, Plain 1-5/16" x 21/32" I.D. x 3/32" | 2 |
| 14 | 905 1603.9 | Washer, Lock 5/8" (Split) | 2 |
| 15 | 502 5521.5 | Cap Screw with Zerk Fitting Key #16 | 1 |

*During assembly, clearance between capstan and frame is adjusted to a maximum of .030 inch by using either the .031 (1/32") or the .062 (1/16") shim washer. (Keys 55 and 56)

PARTS LIST (continued)

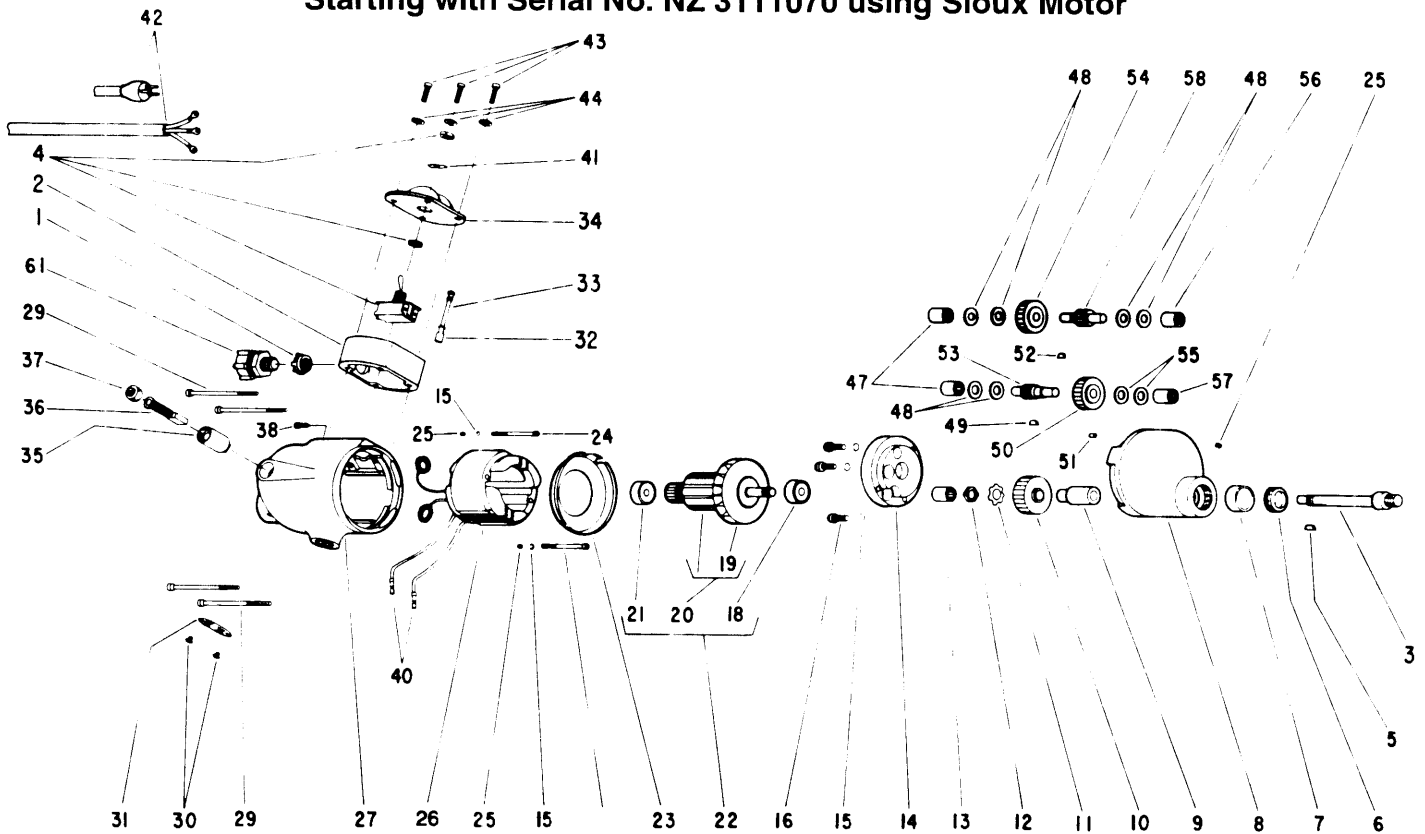
For Serial Numbers beginning at: NZ-19000 EA

| KEY | GREENLEE PART NO. | DESCRIPTION | QTY. |
|-----|-------------------|---|----------|
| 16 | 905 1271.5 | Fitting, Zerk Alemite #1743-B | 1 |
| 17 | 501 6309.4 | Spring, Rec Pin | 1 |
| 18 | 501 6310.8 | Stop Pin Rect. | 1 |
| 19 | 503 1811.0 | Sprocket, with 1/4" Keyway | 1 |
| 20 | 501 7916.0 | Fiber Washer, 1-1/2" O.D. x I.D. x 1/32" Thick | 5 |
| 21 | 905 1301.0 | Ring, Tru-Arc #5160.98 Retaining | 1 |
| 22 | 501 5747.7 | Primary Drive Guard | 1 |
| 23 | 501 5745.0 | No. 35 Chain, 68 pitch | 1 |
| 24 | 502 5609.2 | Sprocket & Shaft | 1 |
| 25 | 905 1459.9 | Bearing | 2 |
| 26 | 501 7904.7 | Spacer, Bearing | 1 |
| 27 | 502 5617.3 | Key | 1 |
| 28 | 501 7914.4 | Guard, Small Internal | 1 |
| 29 | 501 7915.2 | Guard, Large Internal | 1 |
| 30 | 501 5746.9 | Sprocket, (tapped 5/8-16) | 1 |
| | 502 7834.7 | Vise, Chain Unit Complete (includes Keys 31 and 32) | 2 |
| 31 | 502 3178.2 | Handle, chain | 2 |
| 32 | 502 7833.9 | Vise Chain with Screw | 2 |
| 33 | 502 9500.4 | Drive motor-115 Volt (for units with Serial Numbers NZ 3111070 & up) | 1 |
| | 502 9501.2 | Drive Motor-230 Volt | 1 |
| 34 | 503 2793.3 | Motor Bracket Unit | 1 |
| 35 | 905 0176.4 | Screw, 1/4-20 x 3/4" Socket Head Cad. Pltd. | 1 |
| 36 | 905 1669.9 | Nylok Nut, 1/4-20 NC | 1 |
| 37 | 905 2707.0 | Flat Washer 1/4-9/32 I.D. x 1/2" | 2 |
| 38 | 501 7912.8 | Threaded Bushing | 1 |
| 39 | 905 2364.4 | Screw, 5/8"-11" NC x 1" Hex Head Cap | 1 |
| 40 | 501 5750.7 | Motor Clamp Bar | 1 |
| 41 | 905 1515.3 | Flat Washer, 3/8 SAE | 2 |
| 42 | 501 5758.2 | Cable Puller Frame | 1 |
| 44 | 918 5337.0 | Motor Switch | 1 |
| 45 | 905 1364.9 | Flat Washer, 5/16" | 2 |
| 46 | 502 9592.6 | Power Cord (Sioux) | 1 |
| 47 | 905 2339.3 | Flat Washer 1/4"-9/32 x 47/64 3/4" OD x 5/16 ID x 1/16 THK (for Sioux Motor) | 1 |
| 48 | 503 1357.6 | Screw, 1/4-20 UNC x 3/4" L.H. Hex Head (for Sioux Motor) | 1 |
| 49 | 905 2192.7 | Drive Rivet | 4 |
| 50 | 905 3001.2 | Rivet 1/8" x 1/8 Dome Head "Pop" | 4 |
| | 501 9017.2 | Brush Retainer Screw (Not Shown) for units with Serial Numbers up thru 319-17250 with Milwaukee Motors | 1 |
| | 501 9016.4 | Motor Brush (for Milwaukee Motors up thru Serial Numbers 319-17250) | 2 |
| | 918 6038.5 | Motor Brush (for Milwaukee Motors with Serial Numbers 319-17251 and after) | 2 |
| | 502 9496.2 | Adapter, collar (for Sioux Motor 502 9500.4) | 1 |
| | 502 9586.1 | Switch (for Sioux Motor) | 1 |
| | 502 9588.8 | Armature with Fan (for Sioux Motor) | 1 |
| | 502 9589.6 | Field, Motor (for Sioux Motor) | 1 |
| | 502 9591.8 | Brush, Motor (for Sioux Motor) | 2 |
| | 503 0136.5 | Cap, Brush (for Milwaukee Motors with Serial Numbers 319-1725, and after) | 2 |
| | 501 9102.0 | Repair Kit, No. 40 Chain (Not Shown) | Optional |
| | 501 9101.2 | Repair Kit, No. 35 Chain (Not Shown) | Optional |
| | 905 1797.0 | Connecting Link, No. 35 Chain | Optional |
| | 905 2787.9 | Connecting Link, No. 40 Chain | Optional |
| 51 | 503 5320.9 | Backing Washer | 1 |
| 52 | 503 5310.1 | Thrust Washer | 1 |
| 53 | 503 5341.1 | Anti-Rotation Plate | 1 |
| 54 | 503 5322.5 | Ramp Bearing | 1 |
| 57 | 503 5291.1 | Ramp | 1 |
| 58 | 503 5305.0 | Capstan Arm | 1 |
| 59 | 905 1602.8 | Lock Washer 5/16" | 3 |
| 60 | 905 2587.6 | Screw 5/16"-18 x 7/8" Button Head | 3 |
| 61 | 905 0134.9 | Dowel Pin 3/8" x 2" | 4 |
| 62 | 905 1265.0 | Cap Screws 1/4"-20 x 3/4" | 4 |
| 63 | 503 5338.1 | Anti-Rotation Bracket | 1 |
| 64 | 503 5339.0 | Block | 1 |

EXPLODED VIEW

1560GT MOTOR

Starting with Serial No. NZ 311070 using Sioux Motor



PARTS LIST (Motor Only)

1560GT DRILL MOTOR STARTING WITH SERIAL NO. NZ 311070 USING SIOUX MOTOR

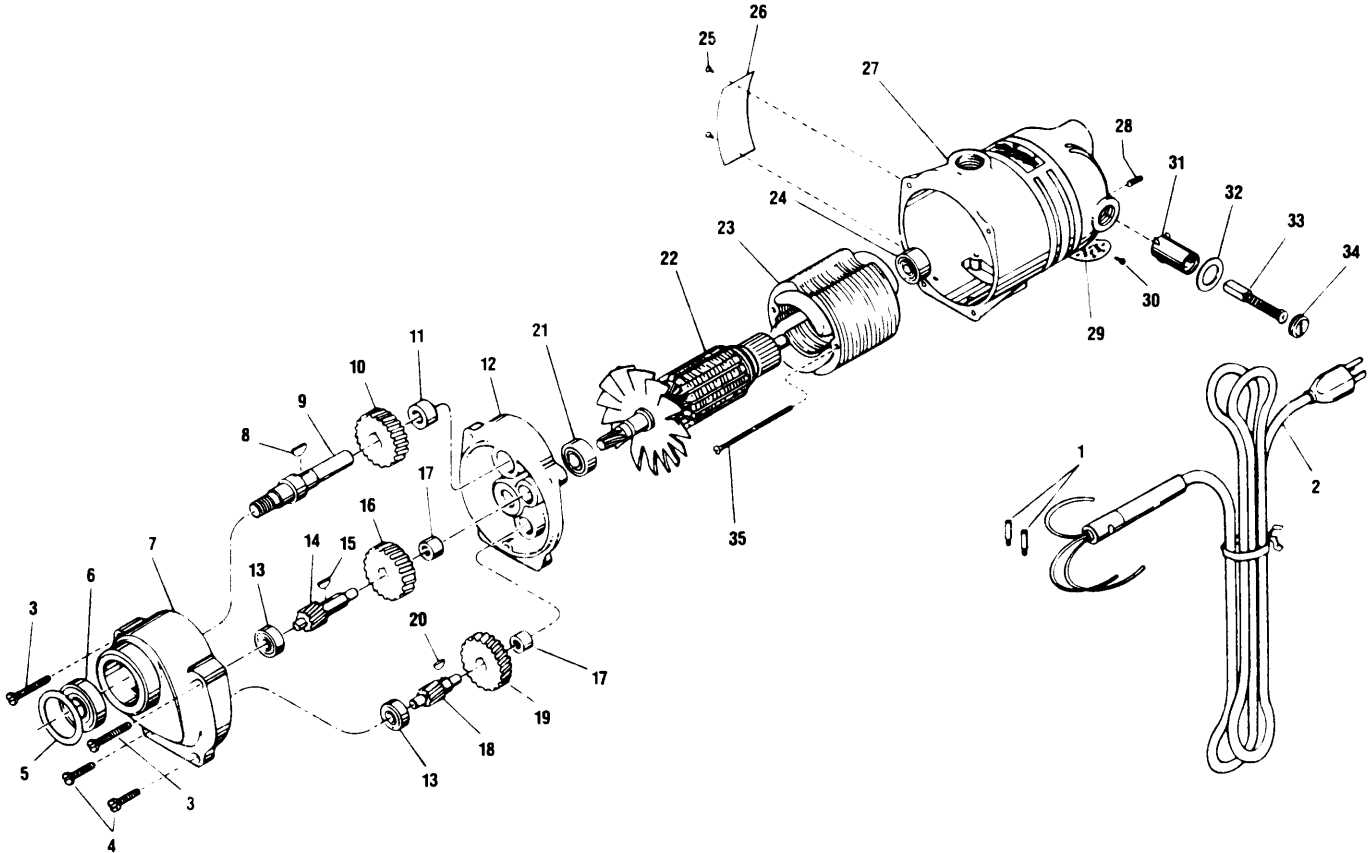
Furnish Catalog, Serial and Model Number When Ordering Parts

| KEY NO. | PART NO. | DESCRIPTION | QTY | KEY NO. | PART NO. | DESCRIPTION | QTY |
|---------|----------|---|-----|---------|----------|-------------------------------------|-----|
| 1 | 18658 | Locknut | 1 | 30 | 06090 | Screw-#4 x 1/2 | 6 |
| 2 | 12395A | Switch, Adaptor for | 1 | 31 | 23000 | Assembly-Cap inspection Hole | 1 |
| 3 | 22512 | Spindle-Chuck (1560) | 1 | 32 | 28084 | Terminal-Female | 1 |
| 4 | 18161 | Switch | 1 | 33 | 28129 | Assembly-Lead Wire | 1 |
| 5 | 30014 | Key-#404 Woodruff | 1 | 34 | 63105 | Assembly-Switch Guard & Plate | 1 |
| 6 | 23042 | Seal-Oil | 1 | 35 | 18087 | Holder-Brush | 1 |
| 7 | 10131 | Bearing-Ball | 1 | 36 | 18031 | Brushes-Motor | 2 |
| 8 | 12049 | Case-Gear | 1 | 37 | 18120 | Cap-Holder Brush | 1 |
| 9 | 24057 | Spacer-Gear | 1 | 38 | 07204 | Screw-Ground #10-24 x 5/16 | 1 |
| 10 | 19036 | Gear-Chuck Spindle | 1 | 40 | 28083 | Plug-Bullet (Male) | 2 |
| 11 | 25073 | Washer-Lock | 1 | 41 | 28130 | Plate (On/Off) | 1 |
| 12 | 24062 | Nut-Tool Spindle | 1 | 42 | 18430 | Assembly-Cord & Terminals | 1 |
| 13 | 10008 | Bearing-Needle | 1 | 43 | 07240 | Screw-#10-24 | 4 |
| 14 | 12040 | Cover-Gear Case (includes Key 47) | 1 | 44 | 09723 | Washer-Shakeproof #10 | 4 |
| 15 | 09724 | Washer-Lock #10 | 5 | 47 | 10003 | Bearing-Needle | 2 |
| 16 | 07119 | Screw-Phil. #10-24 x 1 | 3 | 48 | 25075 | Spacer | 6 |
| 18 | 10251 | Bearing-Ball | 1 | 49 | 30010 | Key-#304 Woodruff | 1 |
| 19 | 21569A | Fan | 1 | 50 | 19038 | Gear-2nd Compound | 1 |
| 20 | 65293 | Armature | 1 | 51 | 24009 | Pin-Dowel | 1 |
| 21 | 10210 | Bearing-Ball | 1 | 52 | 30001 | Key-Woodruff | 1 |
| 22 | 65330 | Assembly-Armature, Fan & Bearing | 1 | 53 | 19408 | Pinion-2nd Compound | 1 |
| 23 | 25079 | Plate-Baffle | 1 | 54 | 19035 | Gear-1st Compound | 1 |
| 24 | 07136 | Screw-#10-24 x 2-1/8 | 2 | 55 | 25074 | Washer-Thrust | 2 |
| 25 | 07000 | Screw-#10-24 x 3/16 | 3 | 56 | 10005 | Bearing-Needle | 1 |
| 26 | 28938 | Field-Motor | 1 | 57 | 10007 | Bearing-Needle | 1 |
| 27 | 12773 | Housing | 1 | 58 | 19410 | Pinion-1st Compound | 1 |
| 29 | 07130 | Screw-#10-24 x 5-11/16 | 4 | 61 | 28164 | Relief Strain | 1 |

**MOTOR FOR NO. 640
POWER CABLE PULLER**

For Motor Serial Nos. 319-1001 thru 319-17249

In the event that service parts or repair is necessary on the motor of this unit, please contact the nearest Milwaukee electric service station. Greenlee Textron Inc. does not stock parts or repair these motors.



| KEY NO. | PART NO. | DESCRIPTION | QTY. |
|---------|------------|----------------------------------|------|
| 1 | 45-04-0100 | Cord Retaining Screw | 2 |
| 2 | 22-64-0080 | Cord Set | 1 |
| 3 | 06-81-7950 | 1/4-20 x 1-3/4 Fil. Hd. Sem | 2 |
| 4 | 06-81-7850 | 1/4-20 x 1 Fil. Hd. Sem | 2 |
| 5 | 34-80-3450 | Retaining Ring | 1 |
| 6 | 02-04-1780 | Ball Bearing | 1 |
| 7 | 28-14-0401 | Gear Case | 1 |
| 8 | 06-42-2400 | Woodruff Key | 1 |
| 9 | 38-50-1201 | Spindle | 1 |
| 10 | 32-75-1001 | Spindle Gear | 1 |
| 11 | 02-50-4040 | Needle Bearing | 1 |
| 12 | 28-28-0102 | Diaphragm (Incl. 06-65-1205 Pin) | 1 |
| 13 | 02-04-0910 | Ball Bearing | 2 |
| 14 | 36-66-0501 | Intermediate Pinion Shaft | 1 |
| 15 | 06-42-1600 | Woodruff Key | 1 |
| 16 | 32-44-1181 | Intermediate Gear | 1 |
| 17 | 02-50-2450 | Needle Bearing | 2 |
| 18 | 36-66-2601 | Intermediate Pinion Shaft | 1 |
| 19 | 32-40-1001 | Intermediate Gear | 1 |
| 20 | 06-42-1200 | Woodruff Key | 1 |
| 21 | 02-04-1260 | Ball Bearing | 1 |
| 22 | 16-82-1430 | 115 Volt Armature | 1 |
| 23 | 18-82-1110 | 115 Volt Field | 1 |

| KEY NO. | PART NO. | DESCRIPTION | QTY. |
|---------|------------|------------------------------|------|
| 24 | 02-04-1070 | Ball Bearing | 1 |
| 25 | 06-85-0200 | Nameplate Screw | 2 |
| 26 | 12-99-0040 | Nameplate Blank | 1 |
| 27 | 28-50-4761 | Motor Housing | 1 |
| 28 | 06-83-2670 | 1/4-20 x 1/2 Knrl. Set Screw | 2 |
| 29 | 44-66-0180 | Cover Plate | 1 |
| 30 | 06-81-8650 | 6-32 x 1/4 Rd. Hd. Sem | 4 |
| 31 | 22-22-0100 | Brush Holder Assembly | 2 |
| 32 | 23-86-0130 | Insulating Washer | 2 |
| 33 | 22-18-0115 | Carbon Brush Assembly | 2 |
| 34 | 23-44-0081 | Brush Retaining Screw | 2 |
| 35 | 06-81-8950 | 8-32 x 2-1/4 Rd. Hd. Sem | 2 |

PARTS NOT SHOWN

| | | |
|------------|---|---|
| 28-50-8621 | Switch Housing | |
| 23-66-0100 | Switch | |
| 06-81-1925 | 1/4-20 x 2 Fil. Hd. Screw (For Switch Housing) | 2 |
| 06-81-1800 | 1/4-20 x 1/2 Fil. Hd. Screw (For Switch Housing) | 2 |

115V. MOTOR CONVERSION KIT

INSTRUCTIONS FOR INSTALLATION OF 502 9500.4
 DRIVE MOTOR, AS A REPLACEMENT FOR 501 5748.5 OR
 502 1972.3 DRIVE MOTOR, EFFECTIVE S/N 210001 to NZ 23101

502 3371.8 MOTOR CONVERSION KIT

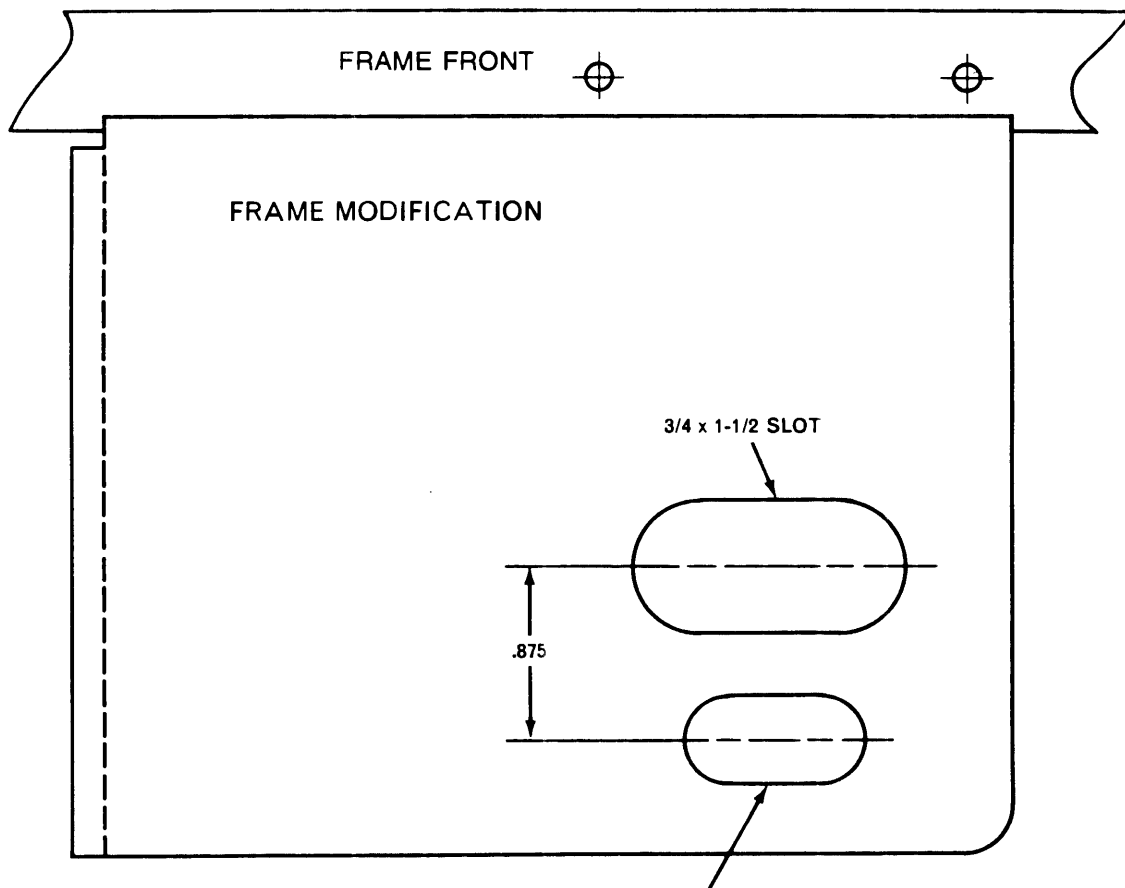
(Consists of Following Items)

HARDWARE REQUIRED

| CONTROL NO. | DESCRIPTION | QTY. |
|--------------------|--------------------------------------|-------------|
| 905 0067.9 | Screw, Hex Hd 5/8 x 11 x 1 | 1 |
| 905 0176.4 | Screw, Skt Hd, 1/4-20 x 3/4 | 1 |
| 905 0905.6 | Washer, Lock 5/8 x .109 | 1 |
| 905 1669.9 | Nut Hex, 1/4-20 Nylon Insert | 1 |
| 905 2675.9 | Washer, Type B 2-1/32 x 1-3/4 x 3/32 | 2 |
| 905 2707.0 | Washer, Type B 9/32 x 1/2 x 1/16 | 1 |
| 502 5892.3 | Washer, Fibre | 2 |

PARTS REQUIRED

| | | |
|------------|---------------------|---|
| 503 2793.3 | Bracket Unit, Motor | 1 |
| 501 7912.8 | Bushing, Threaded | 1 |
| 502 9500.4 | Motor, Drive | 1 |



TEMPLATE FOR LOCATING 3/4 x 1-1/2 SLOT ON MOTOR BASE

XI. 640 TUGGER™ CABLE PULLER MAINTENANCE

⚠ DANGER:

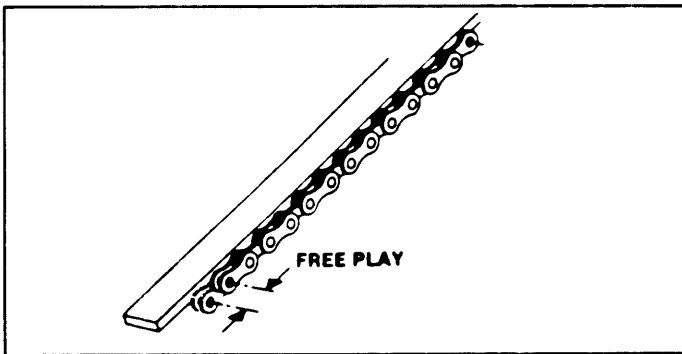
**SHUT OFF MOTOR AND
UNPLUG UNIT BEFORE
DISMANTLING OR SERVICING.**

A. Lubricating Drive Chains

Lubricate puller drive chains after every 20 hours of operation. Remove the primary drive guard by removing the small screws. Lubricate the inside of the chains with 80W - 90W gear oil, then replace the primary drive guard and screws.

B. Check the condition of the chain drive after every 40 hours of Puller operation.

1. Disassemble the chain guards by removing the screws. Remove the retaining rings securing the small and intermediate drive sprockets. Pull drive and intermediate driven sprockets (with #35 chain) off motor shaft and out of frame unit. Remove the capstan retaining screw and the capstan complete with both sprockets and #40 chain.
2. Clean the chains thoroughly with solvent. Lay the chains against a straight edge. Slide one end of the chain back and forth to check free play (Figure below). If free play is greater than 3/8", replace the chain. Replace the chain if any links bind.



3. Lubricate the chains with 80W-90W gear oil.
4. Assemble in reverse order of B1 above.

C. Greasing Drive Train Shafts

Apply a multipurpose NLGI Grade 2 grease, (Mobil HP; Amoco Permalub), to the grease fittings after every 20 hours of puller operation. The grease fittings are located on the capstan and intermediate sprocket shafts.

D. Greasing Ratchet Pawl (Anti-Reversing Mechanism)

Apply a multipurpose NLGI Grade 2 grease (Mobile HP; Amoco Permalub) to the grease fitting after every 40 hours of puller operation. The grease fitting is located on the lower portion of the frame on the opposite side of the capstan.

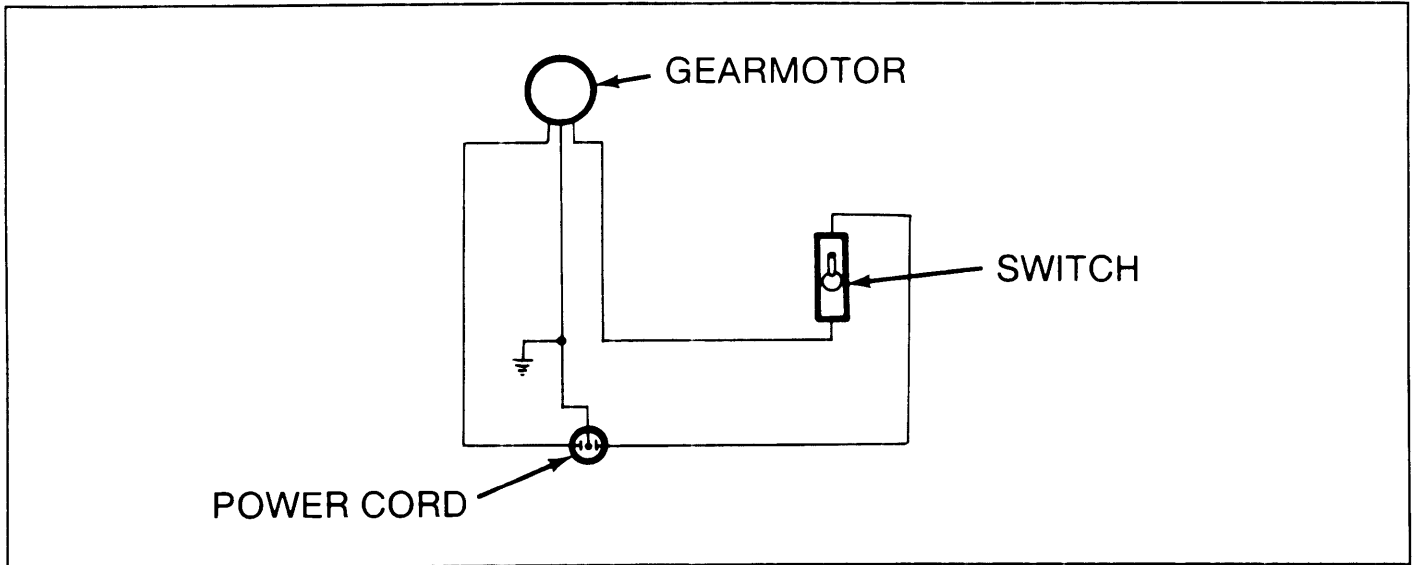
NOTE: If the clicking noise is not evident follow steps 1 through 4 below.

1. Remove drive sprocket and chain as described in B1 to the left.
2. Remove ratchet pawl.
3. Apply axle grease to all working surfaces. Then reassemble by reversing steps A and B.
4. Be sure that the ratchet pawl is functional upon reassembly. A clicking noise indicates the pawl is engaging. **Do not** operate the puller if this clicking noise is not evident.

E. Commutator Brushes

Check the brushes after every 40 hours of operation. Remove motor brush caps and brushes. Measure the brush lengths. If length of brush is less than 3/8", replace both brushes, or return to Greenlee service center for replacement.

ELECTRICAL SCHEMATIC OF 640 TUGGER™ CABLE PULLER



640/640-22 TUGGER™ CABLE PULLER

TROUBLESHOOTING/REPAIR GUIDE

| PROBLEM | CAUSE | SOLUTION |
|--|--|--|
| Motor Will Not Run | <ul style="list-style-type: none"> A. Not plugged into proper receptacle B. Non-functional switch C. Non-functional motor D. Main Power Supply interrupted | <ul style="list-style-type: none"> A. Check plug connection B. Replace switch C. Replace non-functional part D. Check main power supply circuit. |
| Capstan will not rotate while motor is running | <ul style="list-style-type: none"> A. Broken #35 chain B. Broken #40 chain C. Non-functional gear in motor or gear box | <ul style="list-style-type: none"> A. Replace #35 chain B. Replace #40 chain C. Replace non-functional part |

Motor will not run. To replace motor:

DO NOT WORK ON UNIT WHILE PLUGGED INTO POWER SUPPLY

1. Remove Primary Drive Guard (22, 2, 3, 4).
2. Remove screw and washer at end of motor shaft. (Caution: This screw has left hand threads, these parts are not shown.)
3. Remove screw and washers from under the motor (33, 39, 14, 13).
4. Remove screws and washers on the motor bracket unit (34, 35, 36, 37, 8, 9, 41, 45, 40).
5. Slip chain off motor sprocket and pull motor out of bracket (33, 34, 23).
6. Remove small sprocket from motor and reinstall it on the new motor (30, 33). (This sprocket has right hand threads in it.)
7. Install new threaded bushing in the new motor (33, 38). (Note: Make sure it is screwed in flush with bottom of motor.)
8. Slide motor into motor bracket unit and set it in position on the frame. (Also, slip chain back into the sprocket.) (33, 34, 30, 23)
9. Install and tighten screw, washers, and lock-nut at the top of the motor bracket unit (34, 35, 36, 37).
10. Install but do not tighten the three screws and washers (8, 39, 13, 14, 9, 45, 41).
11. Adjust chain tension by pulling motor unit away from frame as far as it will go. Also, make sure the sprockets are in line with each other. While holding motor unit in position, retighten the three screws (8, 39) to secure the motor in place.
12. Reinstall the primary drive guard and tighten the 5 screws (22, 2, 3, 4).

If the switch is non-functional:

Motor does not require removal to replace defective switch.

1. Remove defective switch by removing mounting screws, locknuts, switch cover and disconnect wiring joints from motor.
2. Hook wiring connections to new switch and mount switch onto motor with switch cover, locknuts and mounting screws.
3. Plug in unit and test run.

Capstan will not rotate while motor is running:

This is usually caused by one of three things: a broken gear in the gear box of the motor, which requires motor unit replacement; a broken #35 chain; or a broken #40 chain.

To replace the #35 chain:

1. Follow steps 1 through 5 on motor replacement.
2. Then install new #35 chain (23). Note: When installing new #35 chain make sure the open end of the master link retaining clip is facing the opposite direction of the rotation of its mating sprocket and on the outside face of the sprocket.
3. Follow steps 9 through 13 on motor replacement to reinstall motor.

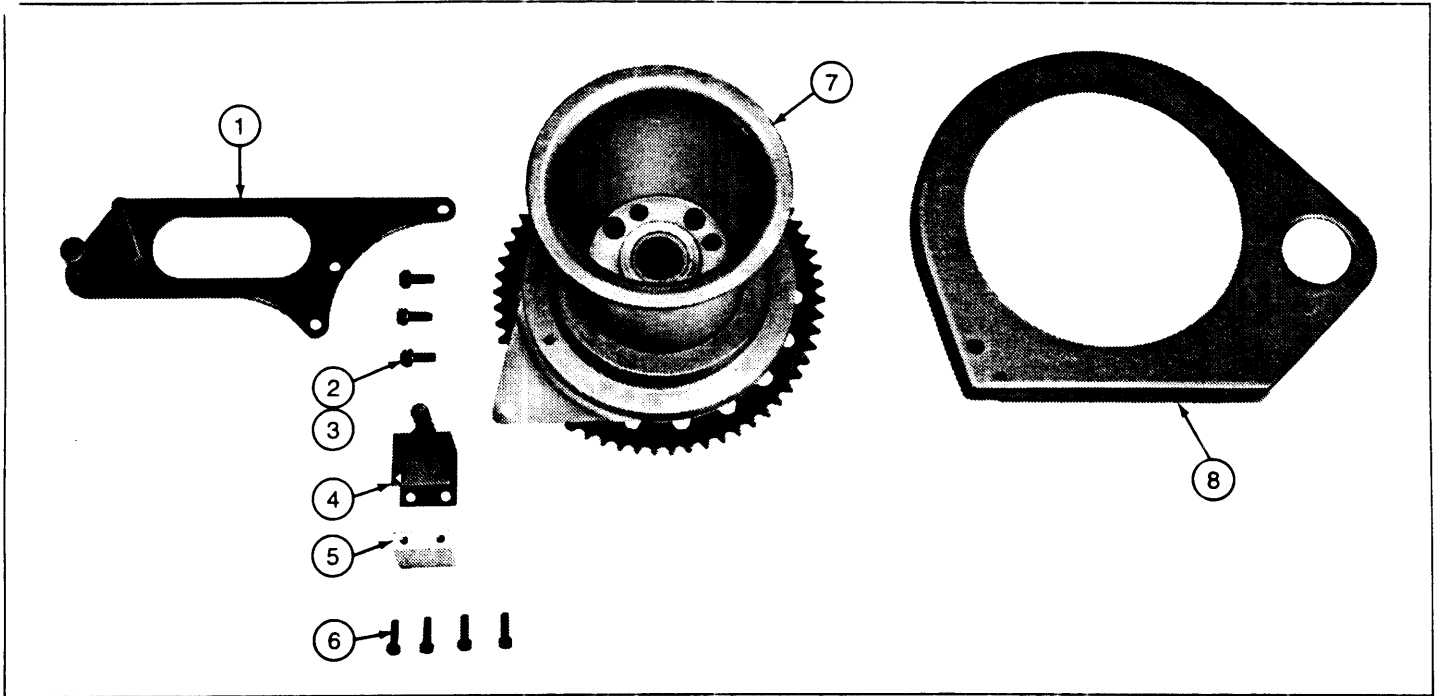
To replace a damaged #40 chain:

1. Remove capstan arm.
2. Remove capstan guard. (1, 2, 3, 4)
3. Remove screw and washers from capstan shaft. (11, 13, 14, 15)
4. Remove retaining ring from end of sprocket shaft unit. (24)
5. Slide capstan, capstan sprocket, chain, and keyway sprocket off at the same time. This must be done evenly as they will bind onto the shaft. (5, 6, 10, 19) Note: Assemble the master link retaining clip on the inside face of its mating sprocket with the open end of it facing the opposite direction of the sprocket rotation.
6. Now replace bad chain and reassemble by reversing steps 1 through 5.
7. Plug in unit and test run.

To replace damaged frame:

1. Follow steps 1-3 on #35 chain replacement.
2. Follow steps 1-5 on #40 chain replacement.
3. Remove key, sprocket shaft unit, fiber washers, stop pin, sprocket and spring.
4. Install 2 new bearings, spacer, and zerk fitting into new frame. These bearings and zerk fitting are pressed into frame.
5. Reinstall 2 fiber washers, capstan and sprocket screw, and washers. Now shim if needed, to allow not more than .030 free end play. Then remove screw and washers. Then, slide capstan and sprocket about half-way off shaft.
6. Reinstall stop pin and spring. (Note: Be sure tapered side of stop pin faces motor unit.)
7. Reinstall sprocket shaft unit, 5 fiber washers, and key.
8. Now, reverse steps 1 through 3 on #35 and 1 through 4 on #40 chain replacement.
9. Reinstall motor by following steps 3 and 4 on motor replacement.
10. Plug in unit and test run.

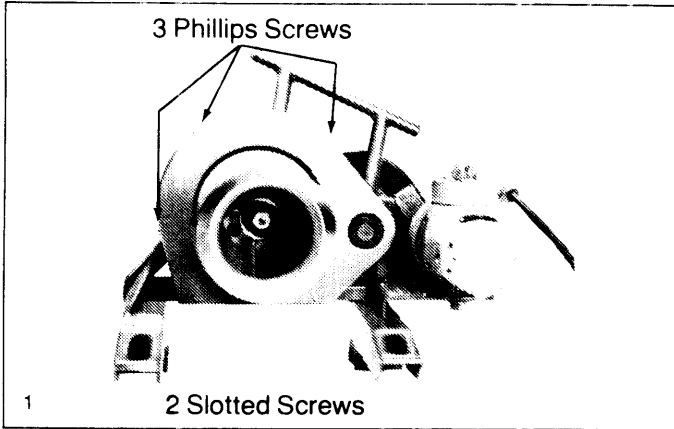
**Installation Instructions for
35336 Capstan Retrofit Kit**



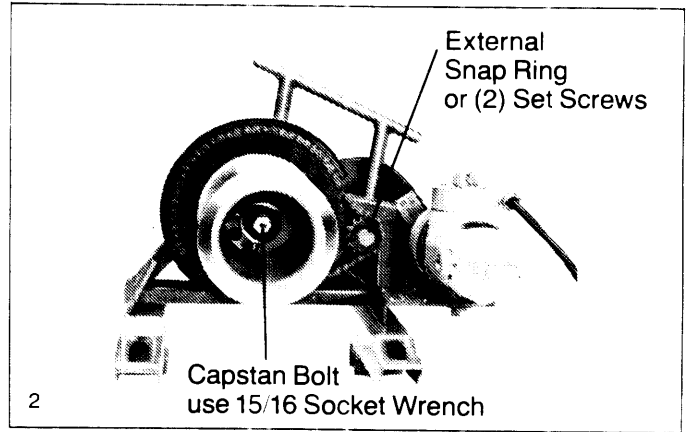
CONSIST OF:

| KEY NO. | PART NO. | DESCRIPTION | QTY. |
|---------|------------|-----------------------------------|------|
| 1 | 503 5305.5 | Rope Guide Arm | 1 |
| 2 | 905 2587.6 | 5/16"-18 x 7/8" Button Head Screw | 3 |
| 3 | 905 5320.9 | 5/16" Lock Washer | 3 |
| 4 | 503 5338.1 | Anti-Rotation Bracket | 1 |
| 5 | 503 5339.0 | Block | 1 |
| 6 | 905 1265.0 | 1/4"-20 x 3/4" Cap Screw | 4 |
| 7 | | Capstan Assembly consists of | |
| | 503 5541.4 | Capstan | 1 |
| | 503 5291.1 | Ramp | 1 |
| | 503 5322.5 | Ramp Bearing | 1 |
| | 503 5341.1 | Anti-Rotation Plate | 1 |
| | 503 5310.1 | Thrust Washer | 1 |
| | 503 5320.9 | Backing Washer | 1 |
| | 905 0134.9 | Dowel Pins 3/8" x 2" | 4 |
| | 503 5362.4 | Sprocket #40, 60 tooth | 1 |
| | 905 3922.2 | 3/8"-16 x 2 3/4" Cap Screw | 4 |
| 8 | 503 5342.0 | Capstan Guard | 1 |

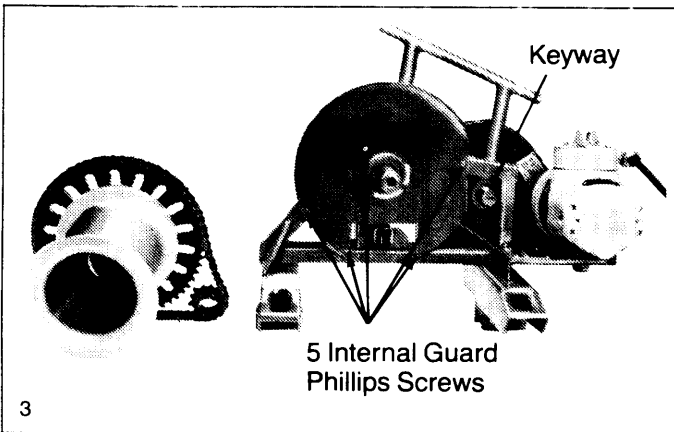
Installation Instructions for 35362 Capstan Retrofit Kit



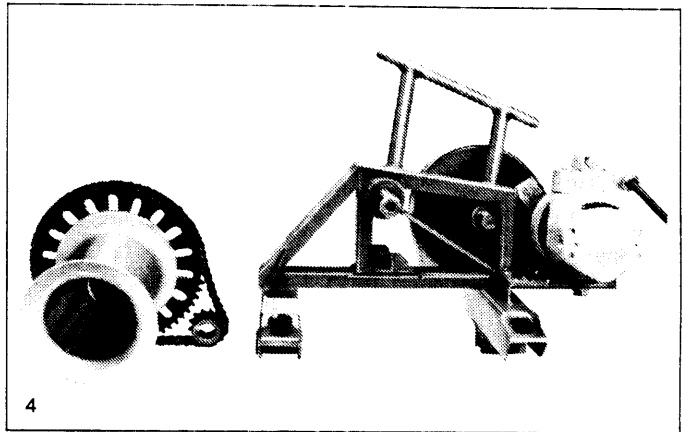
Remove capstan guard screws. Remove capstan guard.



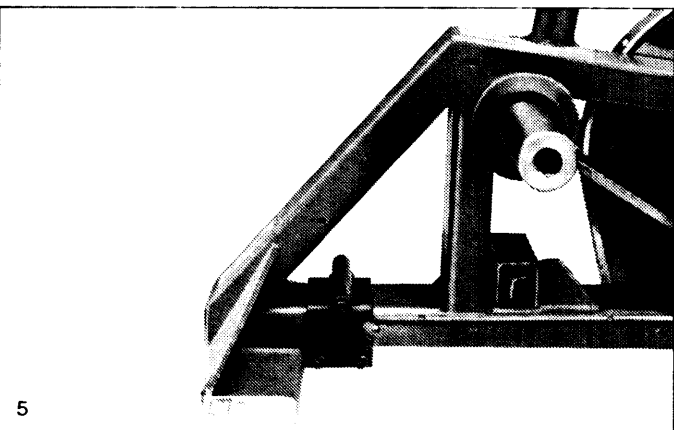
Remove Capstan bolt and external snap ring or loosen 2 set screws on small sprocket shaft.



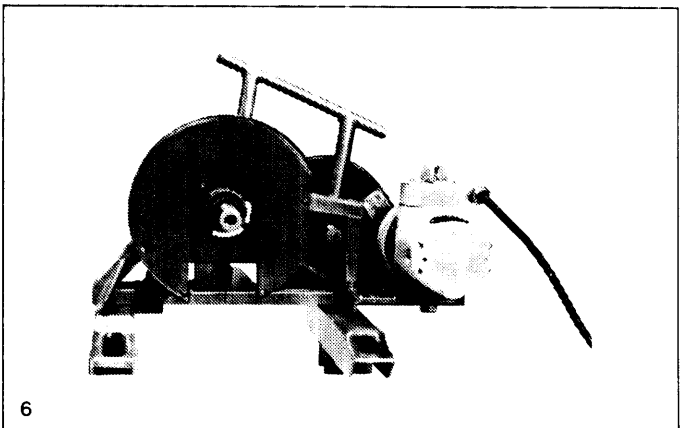
Remove Capstan, capstan sprocket, chain and small sprocket together. Replace all spacers on capstan shaft. Make sure the small sprocket shaft keyway is up, if not plug in unit and run and stop to locate keyway at top, unplug unit. Remove internal guard screws.



Remove internal guard.

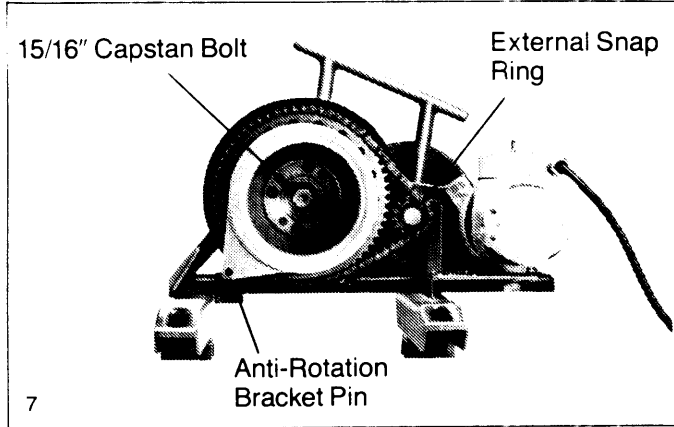


Attach the anti-rotation bracket to frame as shown with pin extending on capstan side of frame. Place block under frame between sides of bracket. Line up holes then fasten with 1/4" socket head Allen screws.

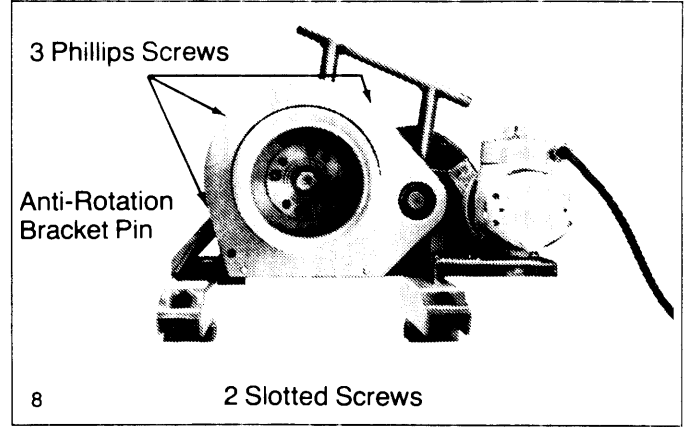


Replace internal chain guard with 5 Phillips screws. Start all 5 screws then tighten. Before reassembling unit see maintenance section for information on chain and ratchet pawl lubrication.

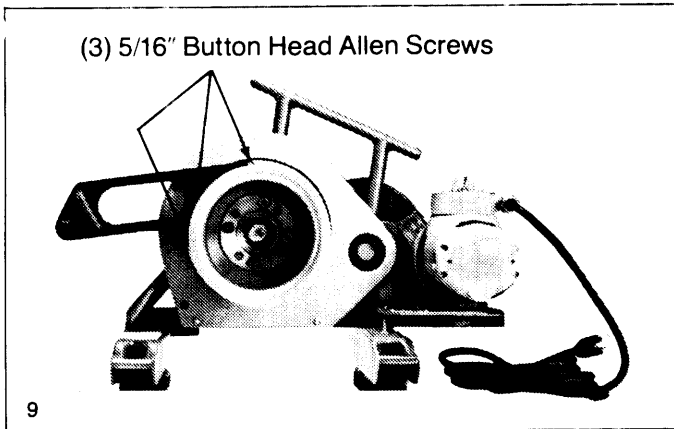
Installation Instructions for 35362 Capstan Retrofit Kit



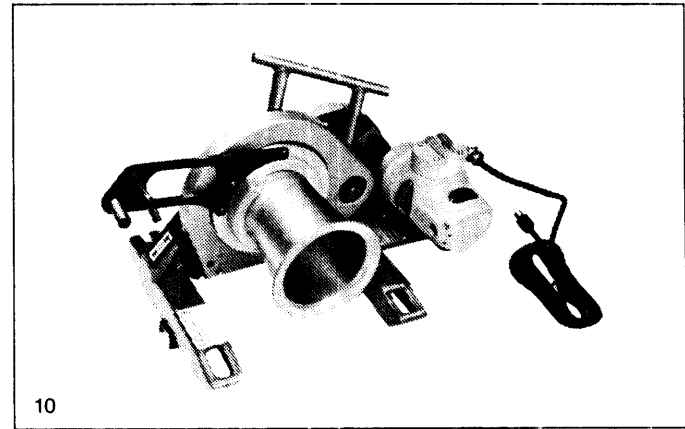
Assemble new capstan unit with chain and small sprocket. Slide capstan and small sprocket as a unit onto their shafts as shown. Turn capstan unit to align small sprocket keyway. Make sure anti-rotation plate hole is trapped by anti-rotation bracket pin. If necessary place a short wooden block over end of capstan and tap with a hammer to seat capstan. Place washers on capstan bolt and install and tighten to 70 ft lbs. with a torque wrench. Install external snap-ring or tighten set screws on small sprocket shaft, if the snap ring groove is not visible push the shaft from the other side of the puller.



Install new capstan guard start all 5 screws first then tighten. Make sure anti-rotation bracket pin lines-up with the hole in the guard.



Attach tape guide with (3) 5/16" Button head Allen screws and lock washers.



Completed conversion.

NOTES

NOTES

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