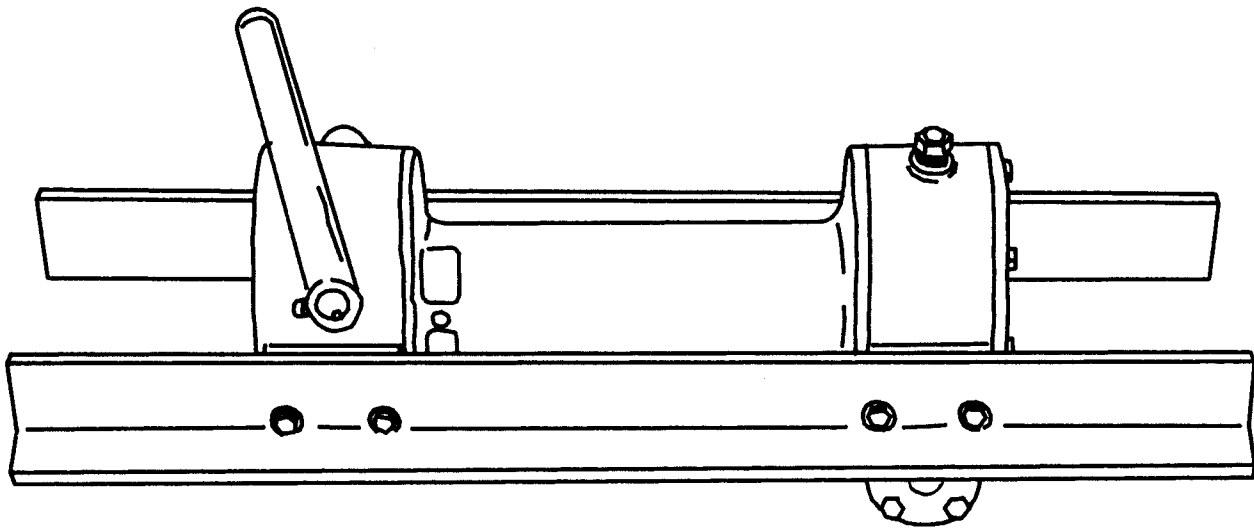




## OPERATING, SERVICE AND MAINTENANCE MANUAL



# MODEL 400 SERIES MODEL H-400 SERIES LEVER EQUIPPED INDUSTRIAL LOW-MOUNT WINCHES

INCLUDES 400/Y-400, H-400/HY-400  
AND MODELS EQUIPPED WITH OPTIONAL  
ADJUSTABLE, AUTOMATIC, OIL COOLED  
SAFETY BRAKE: G-400/GY-400, HG-400/HGY-400



**CAUTION:** READ AND UNDERSTAND THIS MANUAL  
BEFORE INSTALLATION AND OPERATION OF WINCH.  
SEE SAFEGUARDS AND WARNINGS!

TABLE OF CONTENTS

INTRODUCTION.....	1
WARRANTY INFORMATION.....	1
SPECIFICATION.....	1
TECHNIQUES OF OPERATION.....	2
SAFEGUARDS: WARNING.....	2
WINCH MAINTENANCE.....	3
WINCH MOUNTING.....	4
CABLE INSTALLATION.....	4
ADJUSTING THE OIL COOLED SAFETY BRAKE.....	4
SERVICING OF THE OIL COOLED SAFETY BRAKE.....	5
RE-ASSEMBLING AND CHECKING THE BRAKE.....	6
TEST FOR PROPER BRAKE ASSEMBLY.....	6
INSTRUCTIONS FOR CHECKING ASSEMBLY ARRANGEMENT AND SETTING OF WORM BRAKE.....	7
HYDRAULIC SYSTEMS/PERFORMANCE CHARTS.....	8
TYPICAL LAYOUT/HYD. SYSTEM DIAGRAM.....	9
TROUBLE SHOOTING TIPS.....	9
INSTRUCTIONS FOR OVERHAUL OF RAMSEY MODEL 400/H-400 SERIES LEVER STYLE WINCHES	
DISASSEMBLY.....	10-13
RE-ASSEMBLY.....	13-15
DIMENSIONAL DRAWING.....	16-18
PARTS LIST AND PARTS DRAWING.....	19-25
LIMITED WARRANTY.....	26

RAMSEY WINCH MODEL 400/H-400 SERIES

PLEASE READ THIS MANUAL CAREFULLY.

This manual contains useful ideas in obtaining the most efficient operation from your Ramsey Winch, and safety procedures one needs to know before operating a Ramsey Winch.

WARRANTY INFORMATION

Ramsey Winches are designed and built to exacting specifications. Great care and skill go into every winch we make. If the need should arise, warranty procedure is outlined on the back of your self-addressed postage paid warranty card. Please read and fill out the enclosed warranty card and send it to Ramsey Winch Company. If you have any problems with your winch, please follow instructions for prompt service on all warranty claims. Refer to back page for limited warranty.

SPECIFICATIONS: CONFORMS TO SAE J706						
Rated Line Pull 1st layer (lbs.).....		10,000				
(Kgs.).....		4,530				
Gear Reduction: 400/H-400.....		29:1				
Shipping Weight: 400/Y-400.....		125 lbs. (57 Kgs.)				
G-400/GY-400.....		135 lbs. (61 Kgs.)				
H-400/HY-400.....		150 lbs. (68 Kgs.)				
HG-400/HGY-400.....		160 lbs. (73 Kgs.)				
Layer of Cable		1	2	3	4	
Rated Line Pull per layer for 400/G-400 H-400/HG-400	Lbs.	10,000	8,200	6,900	6,000	
	Kgs.	4,530	3,710	3,120	2,710	
Rated Line Pull per layer for Y-400/GY-400 HY-400/HGY-400	Lbs.	10,000	8,300	7,100	6,200 **	
	Kgs.	4,530	3,760	3,210	2,800	
*Long Drum Cable capacity per layer for 400/G-400 H-400/HG-400	Ft.	25	55	90	130	
	M.	7	16	27	39	
*Short "Y" Drum Cable capacity per layer Y-400/GY-400 HY-400/HGY-400	Ft.	20	45	70	105 **	
	M.	6	13	21	31	
Line Speed		Worm RPM	1	2	3	4
400/G-400 H-400/HG-400	FPM	840	33	40	47	53
	MPM		10	12	14	16
Y-400/GY-400 HY-400/HGY-400	FPM	840	34	40	47	54 **
	MPM		10.5	12.3	14.5	16.6
*These specifications are based on recommended cable of 7/16" (11mm) 6x19 extra improved plow steel cable.						
** Lost layer does not conform to SAE J706						

NOTE: The rated line pulls shown are for the winch only. Consult the wire rope manufacturer for wire rope ratings.

## TECHNIQUES OF OPERATION

The best way to get acquainted with how your winch operates is to make test runs before you actually use it. Plan your test in advance. Remember, you hear your winch, as well as see it operate. Get to recognize the sounds of a light steady pull, a heavy pull, and sounds caused by load jerking or shifting. Gain confidence in operating your winch and its use will become second nature with you.

The uneven spooling of cable, while pulling a load, is not a problem, unless there is a cable pileup on one end of drum. If this happens, reverse the winch to relieve the load and move your anchor point further to the center of the vehicle. After the job is done you can unspool and rewind for a neat lay of the cable.

The winch clutch allows rapid unspooling of the cable, from cable drum, for hooking onto a load. The clutch is operated by the handle located on the clutch housing of winch.

1. TO DISENGAGE CLUTCH, run winch in the reverse (reel out) direction until the load is off the cable. Grasp the clutch handle and move it toward the cable drum to the "OUT" position. The cable may now be pulled from the cable drum by hand.
2. TO ENGAGE CLUTCH, move the clutch handle away from the cable drum to the "IN" position, while slowly running the winch in the forward (reel in) direction, until the clutch jaws move into engagement with the drum jaws. When the cable drum starts rotating, stop and make sure that the clutch is engaged and that the clutch handle is fully at the "IN" position. CLUTCH MUST BE TOTALLY ENGAGED DURING WINCHING OPERATIONS. The winch is now ready for pulling in the load.

## SAFEGUARDS-WARNINGS:

CLUTCH MUST BE TOTALLY ENGAGED BEFORE STARTING THE WINCH.

DO NOT DISENGAGE CLUTCH UNDER LOAD.

DO NOT LEAVE CLUTCH ENGAGED WHEN WINCH IS NOT IN USE.

STAY OUT FROM UNDER AND AWAY FROM RAISED LOADS.

STAND CLEAR OF CABLE WHILE PULLING. DO NOT TRY TO GUIDE CABLE.

DO NOT EXCEED MAXIMUM LINE PULL RATINGS SHOWN IN TABLE.

DO NOT USE WINCH TO LIFT, SUPPORT, OR OTHERWISE TRANSPORT PERSONNEL.

A MINIMUM OF 5 WRAPS OF CABLE AROUND THE DRUM BARREL IS NECESSARY TO HOLD THE LOAD.

CABLE CLAMP IS NOT DESIGNED TO HOLD LOAD.

## WINCH MAINTENANCE

Adhering to the following maintenance schedule will keep your winch in top condition and performing as it should with a minimum of repair.

### A. WEEKLY

1. Check the oil level and maintain it to the oil level plug. If oil is leaking out, determine location and repair.
2. Check the pressure relief plug in top of the gear housing. Be sure that it is in good operating condition so that hot oil gasses may escape.
3. Lubricate cable with light oil.

### B. MONTHLY

1. Lubricate the various grease fittings located in the cable drum, end bearing, clutch housing or clutch operating linkage. Any good grade of moly-disulfide containing grease is acceptable.
2. In the case of jaw clutch winches check the action of the sliding clutch, making sure it is fully engaging and disengaging with the cable drum. Observe the jaws on both the clutch and cable drum, checking for rounding of the driving faces. If rounding has occurred they should be replaced immediately.
3. In the case of Dow-Lok clutches, check the action of the locking ring. Make sure it is spring loaded and free to move fully against the cable drum in the engaged position and that it is pulled fully away from the cable drum and latched when disengaged.
4. Check the winch mounting bolts. If any are missing, replace them and securely tighten any that are loose. Make sure to use only grade 5 bolts or better.
5. Check the torque setting of the oil cooled worm brake. Make any adjustments required, following the procedure described in ADJUSTING THE OIL COOLED WORM BRAKE in the Owner's Manual.
6. Check alignment of chain and sprockets and adjust as required to minimize wear.
7. Inspect the cable. If the cable has become frayed with broken strands, replace immediately.

### C. ANNUALLY

1. Drain the oil from the winch annually or more often if winch is used frequently.
2. Fill the winch to the oil level plug with clean kerosene. Run the winch a few minutes with no load in the reel in direction. Drain the kerosene from the winch.
3. Refill the winch to the oil level plug with all purpose E.P. 140 gear oil.
4. Inspect frame and surrounding structure for cracks or deformation.
5. Gear wear can be estimated by rocking the drum back and forth and if necessary drain oil and remove cover for closer inspection.

## WINCH MOUNTING

It is most important that this winch be mounted securely so that the three major sections (the clutch housing end, the cable drum and the gear housing end) are properly aligned.

All standard model 400/H-400 Series Winches are furnished with recommended mounting angles. Angle size is 3/8 x 2-1/2 x 3 x 36" Lg. high strength (36,000 PSI min. yield) steel angle.

## CABLE INSTALLATION

1. Unwind cable by rolling it out along the ground to prevent kinking. Securely wrap end of cable, opposite hook, with plastic or similar tape to prevent fraying.
2. Insert the end of cable, opposite hook end, into the 1/2" dia. hole in drum barrel. Secure cable to drum barrel, using setscrew furnished with winch. **TIGHTEN SETSCREW SECURELY.**
3. Carefully run winch in the "reel-in" direction. Keeping tension on end of cable, spool all the cable onto the cable drum, taking care to form neatly wrapped layers.

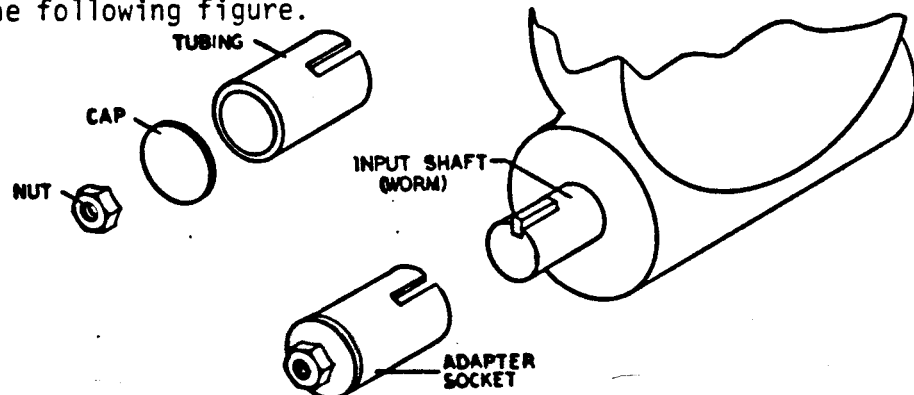
## ADJUSTING THE OIL COOLED WORM BRAKE

The oil-cooled, fully adjustable, automatic safety brake operates in the worm housing lubricant, all parts being submerged in oil. When the brake wears to the point that the load begins to drift, the brake can be adjusted as follows:

1. Loosen the lock nut on the adjusting screw.
2. Tighten the brake by turning the adjusting screw clockwise. **CAUTION:** Only 1/4 turn is usually required to adjust the brake. Over-tightening can cause overheating, and damage to the brake parts. Tighten the lock nut after adjustment is completed.

If the brake does not respond to adjustment then a new leaf spring and brake disc is needed.

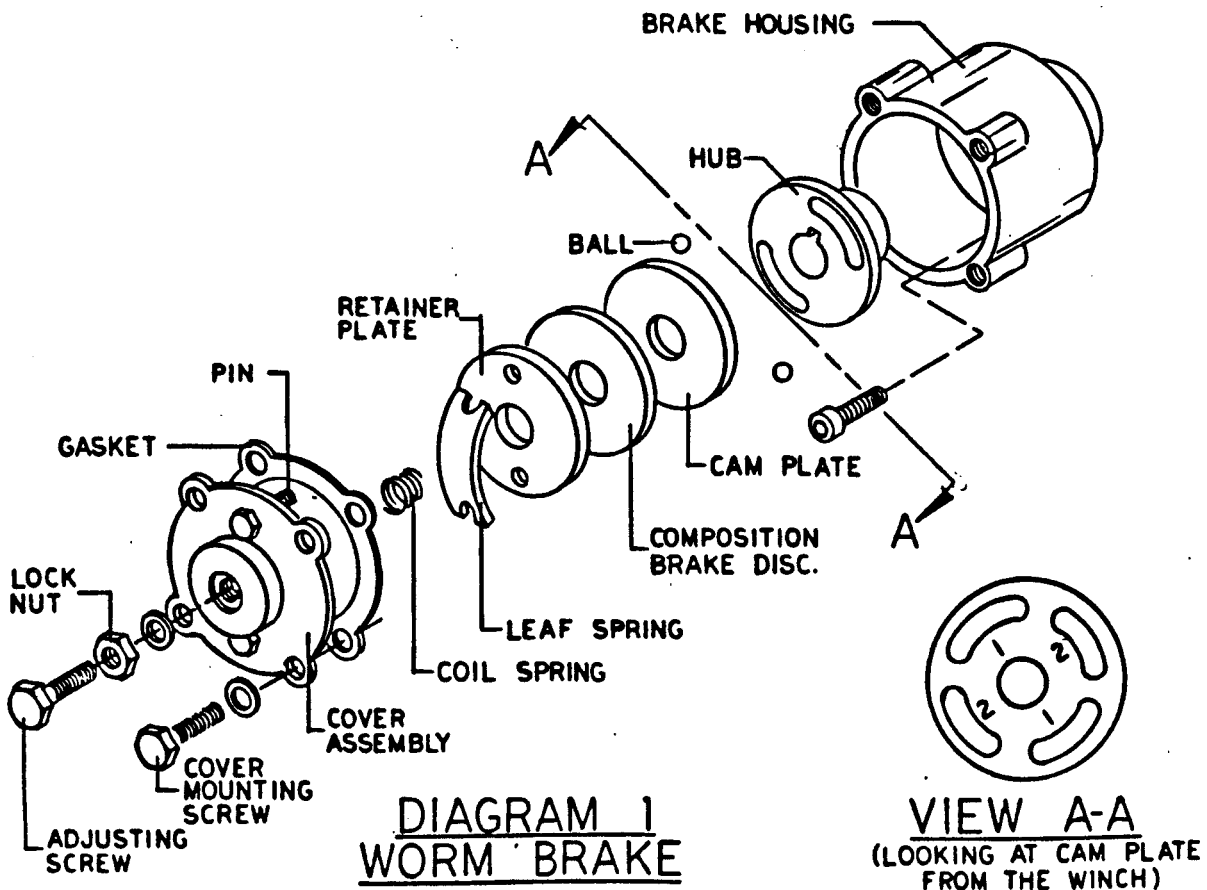
A torque wrench can be equipped with a special adapter to fit the input shaft (worm) of the winch. The adapter can be made by welding a nut to the end of a piece of tubing as shown in the following figure.



After welding the cap and nut to the tubing, slot the tubing as shown. This will allow the special adapter to slide over the keyway and will then act as a large socket. A torque wrench can then be used to apply the proper torque. Turn the torque wrench so that the drum turns in the spool out direction, or lowering direction. The torque rating for the brake on the Model G-400/HG-400 should be 20 to 25 ft. lbs. If the torque wrench does not show the proper value as it turns, then the worm brake adjusting bolt should be turned clockwise 1/4 turn. Each time the adjusting bolt is turned, check the torque reading. Continue this procedure until the proper torque reading is achieved. Then tighten the lock nut.

## SERVICING OF THE OIL COOLED SAFETY BRAKE

1. Remove the drain plug and drain the worm gear oil from the worm housing.
2. Back off the lock nut, then the adjusting screw, both two turns or more by turning them counter-clockwise.
3. Remove the cover mounting screws.
4. Remove the cover along with coil spring and leaf spring.
5. Remove the retainer plate, composition brake disc, cam plate and balls.  
Note slots balls are in.
6. Inspect parts as follows:
  - a). Composition brake discs are 1/4" thick when new. Replace if thinner than 3/16 or if surfaces are glazed or burnt.
  - b). Inspect the flat, ground surface of the cam plate and retainer plate for glazing, warpage, or other damage. Glazing can be removed by scraping carefully.
  - c). Inspect the leaf spring. It should be bowed 1/8".



## RE-ASSEMBLING AND CHECKING THE BRAKE

1. Press brake hub into place over worm shaft and key.
2. Assemble ball into appropriate slots of cam. (Refer to diagram 1, page 5). Use stiff grease to hold balls into place and slide cam over end of worm. Be sure that balls are secure, between cam slots and hub slots. Refer to Page 7 to determine proper ball slot setting.
3. Install brake disc.
4. Install retainer plate, smooth side toward brake disc.
5. Install the gasket on the cover with a small amount of grease or sealer.
6. The coil spring goes over the adjusting screw on the inside of the cover.
7. Install the notches of the leaf spring on the pins protruding through the cover. The hollow side of the leaf spring goes toward the brake.
8. Install brake housing cover, making sure the protruding pins go through the leaf spring and into the holes in the retainer plate.
9. Bolt cover into place with the mounting screws. Install drain plug and add 1-3/4 pint all purpose E.P. 140 oil.
10. Turn winch in the hoisting direction at least one turn of the input shaft.
11. Turn the adjusting screw in until it is finger tight.

## TEST FOR PROPER BRAKE ASSEMBLY

After the brake has been adjusted to the proper torque setting disengage clutch. Start vehicle engine and run winch in the reel in (hoisting direction). Allow winch to run in this direction for one minute.

Place your hand on the safety brake housing. If housing is not hot to the touch then run winch in the reverse direction (cable out) for one minute. Brake housing should begin to heat.

When these conditions exist, proper installation has been made. If heating becomes noticeable when running the winch in forward rotation (hoisting direction), the brake should be again disassembled. When disassembled, place the brake balls in the alternate set of slots in the cam plate, then carefully follow the instructions for re-assembling and checking the brake.



## INSTRUCTIONS FOR CHECKING ASSEMBLY ARRANGEMENT AND SETTING OF WORM BRAKE

When the worm brake is assembled the brake must be set with the balls in the #1 or the #2 set of cam slots. (View A-A, page 5). It is indicated on the name plate whether the balls were installed in the #1 or the #2 slots at the factory.

Three factors determine which slots the balls should be in:

1. Direction cable winds on the drum. It normally **WINDS OVER THE TOP** of the drum barrel.
2. The cut of the gear set, right or left gear. The last letter in the model number of the winch, either R or L, designates right or left gear set. Example: R-20AR, R-30L, 700R, 800L.
3. The side of the winch that the input shaft is on. The **INPUT SHAFT IS NORMALLY TOWARD THE CAB**. Whether the winch has the gear box on the right or on the left side of the winch does not affect the brake setting.

**EXAMPLE:** When cable winds over the top of the drum, winch has a right cut gear and input shaft is toward the cab (diagram 2), then the balls need to be in the #2 cam slots.

If any one of these three factors differ from those stated above, the balls need to be in the #1 slots in the cam. A second change in these factors requires the original arrangement, and if all three factors are different, the balls need to be in the #1 slots. (See page 5 and 6 for disassembly and assembly instructions).

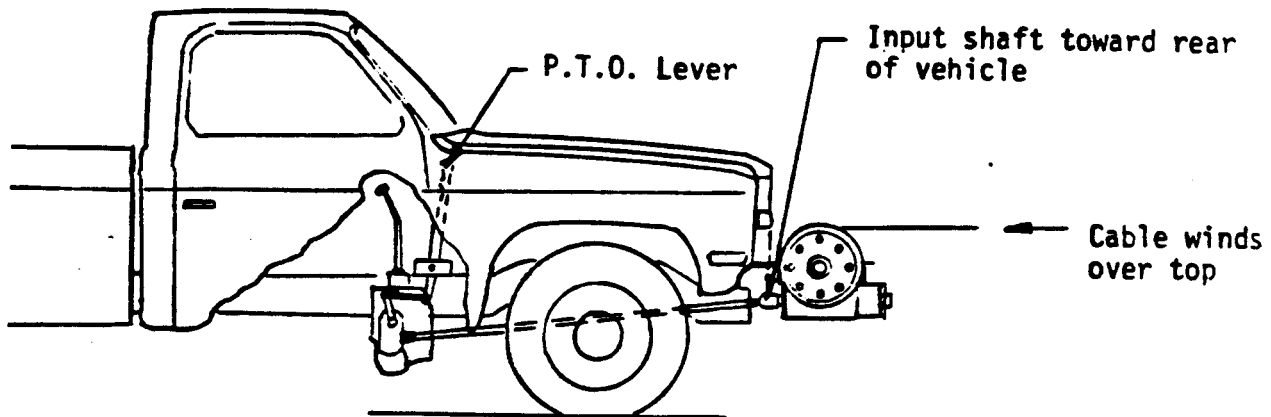


DIAGRAM 2

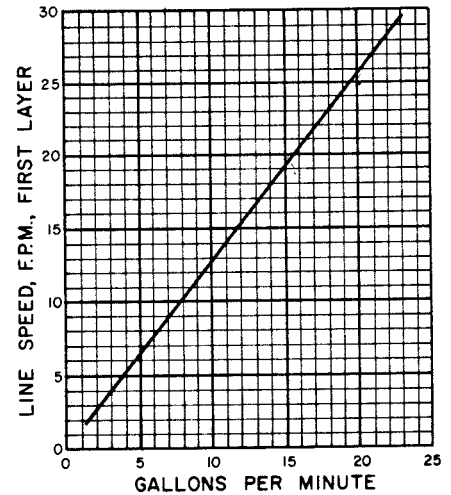
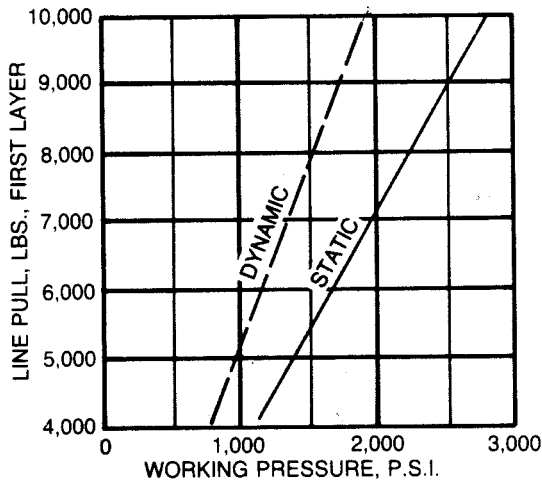
Three factors determine brake assembly arrangement.

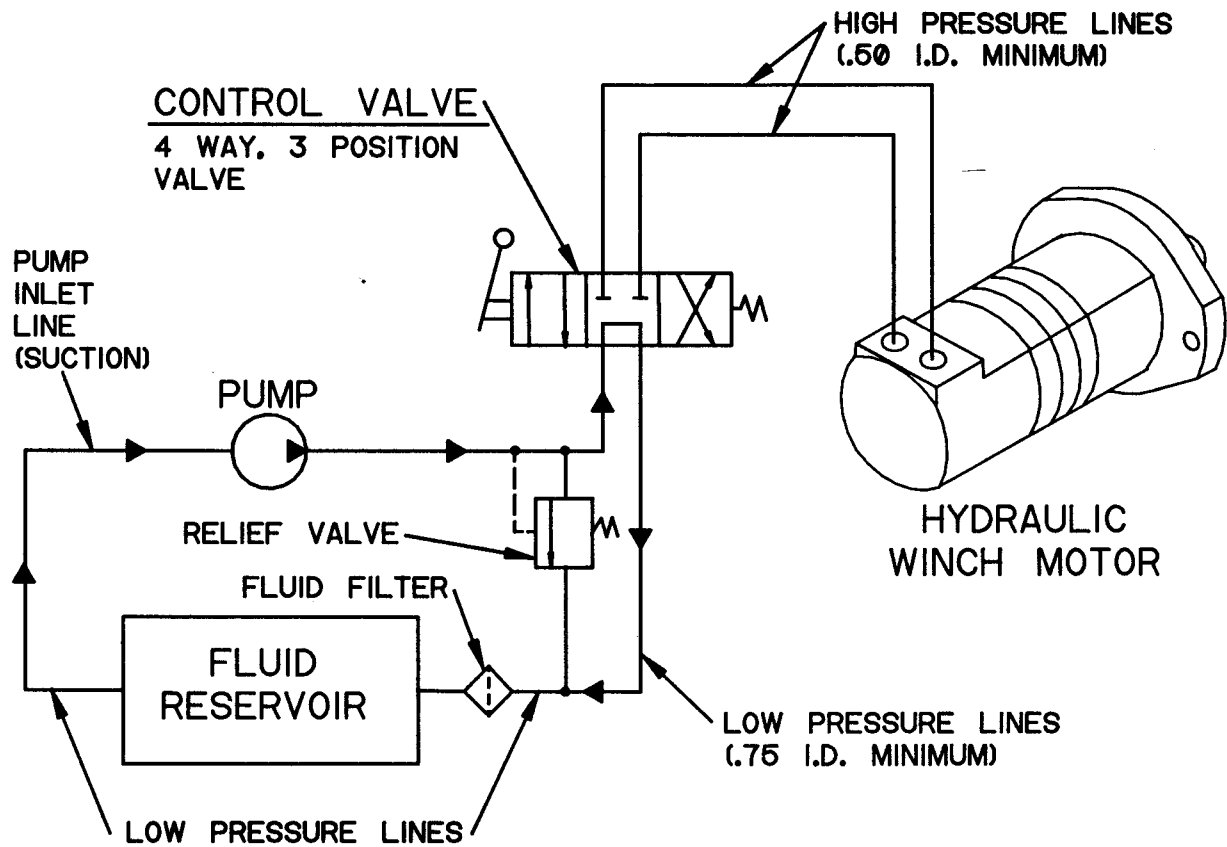
# HYDRAULIC SYSTEMS

Refer to the performance charts, below, to properly match your hydraulic system to the H-400 Series winch performance. The charts consist of:  
(1) Line speed, first layer (F.P.M.) vs. gallons per minute (G.P.M.) and  
(2) Line pull (lbs.) first layer vs. working pressure (P.S.I.). STATIC (solid line) refers to hoisting a suspended load from rest; DYNAMIC (dotted line) refers to maintaining the motion of a moving load.

Performance based on a motor displacement of 6.2 cubic inches with 23 GPM maximum flow rate. See page 16 for motor port size.

**H-400, HY-400 Series  
Performance**  
**10,000 Lb. Duty Rating**  
**29:1 Gear Ratio**





TRUBLE SHOOTING TIPS

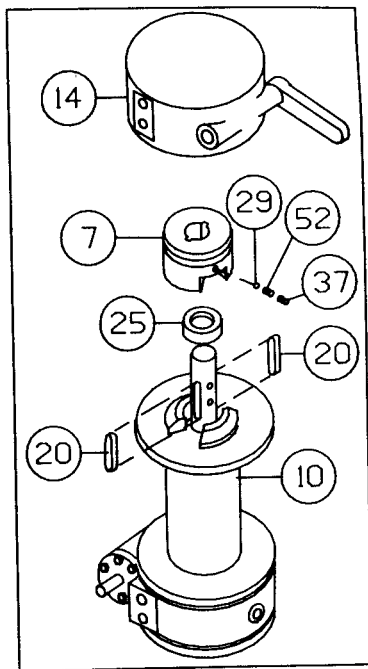
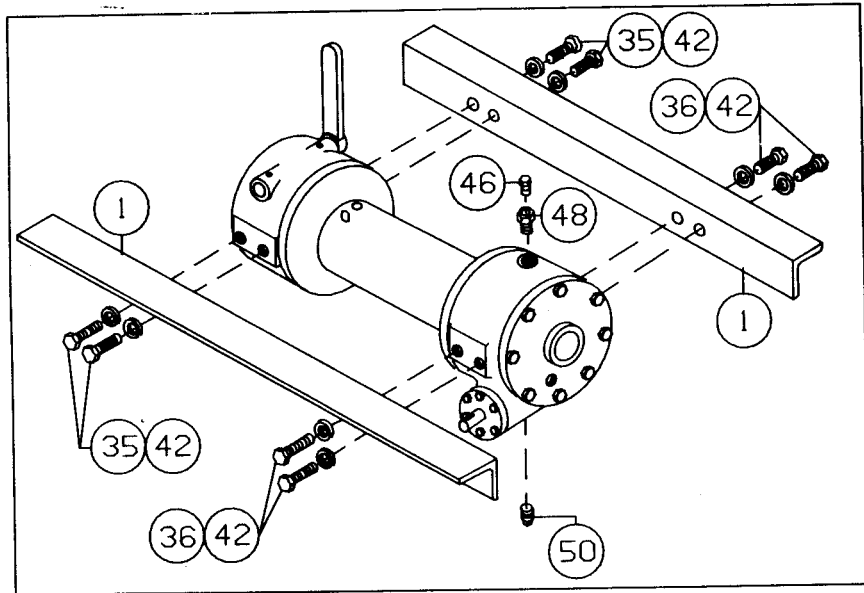
CONDITION	POSSIBLE CAUSE	CORRECTION
CLUTCH INOPERATIVE OR BINDS UP.	<ol style="list-style-type: none"> <li>1. Dry or rusted shaft.</li> <li>2. Bent yoke or linkage.</li> <li>3. Clutch jaws are in contact.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean and lubricate.</li> <li>2. Replace yoke or shaft assembly.</li> <li>3. See TECHNIQUES OF OPERATION.</li> </ol>
OIL LEAKS FROM HOUSING.	<ol style="list-style-type: none"> <li>1. Seal damaged or worn.</li> <li>2. Too much oil.</li> <li>3. Damaged gasket.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace seal.</li> <li>2. Drain excess oil. Refer to TECHNIQUES OF OPERATION.</li> <li>3. Replace gasket.</li> </ol>
LOAD DRIFTS DOWN.	<ol style="list-style-type: none"> <li>1. Safety brake has become worn.</li> <li>2. Safety brake out of adjustment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace brake disc. (See Page 5, Diagram 1).</li> <li>2. Turn adjusting bolt clockwise 1/4 turn or until load does not drift.</li> </ol>
WINCH RUNS TOO SLOW.	<ol style="list-style-type: none"> <li>1. Hydraulic motor worn out.</li> <li>2. Low flow rate.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace motor.</li> <li>2. Check flow rate. Refer to HYDRAULIC SYSTEMS flow chart Page 8.</li> </ol>
CABLE DRUM WILL NOT FREE SPOOL.	<ol style="list-style-type: none"> <li>1. Winch not mounted squarely, causing end bearings to bind drum.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check mounting. Refer to WINCH MOUNTING Page 4.</li> </ol>
CABLE BIRDNESTS WHEN CLUTCH IS DISENGAGED.	<ol style="list-style-type: none"> <li>1. Drag brake disc worn.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace discs.</li> </ol>

INSTRUCTIONS FOR OVERHAUL OF RAMSEY  
MODEL 400/H-400 SERIES LEVER STYLE WINCHES

DIS-ASSEMBLY

Refer to parts list and parts drawing pages for actual item numbers and corresponding part numbers.

1. Drain oil from gear housing by removing (item #50) plug from bottom of gear housing. Remove relief fitting and reducer (items #46 & #48) from top of gear housing. Remove mounting angles from winch by removing hardware shown.



2. Slide clutch housing (item #14) from end of drum shaft. Remove setscrew, spring and poppet ball (items #37, #52, and #29) from jaw clutch (item #7). Slide jaw clutch from end of drum shaft.

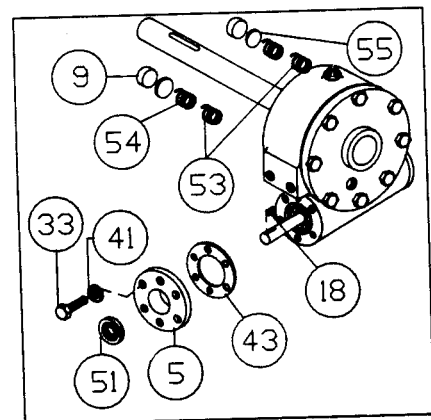
Remove two keys (item #20) from keyways. Once keys have been removed, drum (item #10) and drum spacer (item #25) can be removed from drum shaft.

3. Remove key (item #18) from worm shaft.

Remove bearing cap (item #5) and gasket (item #43) by unscrewing six capscrews (item #33).

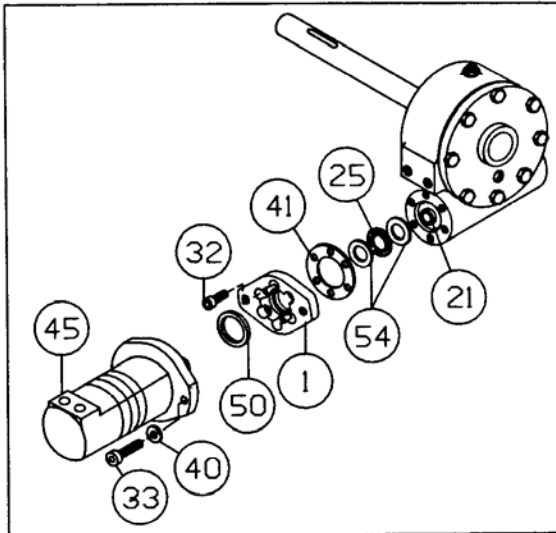
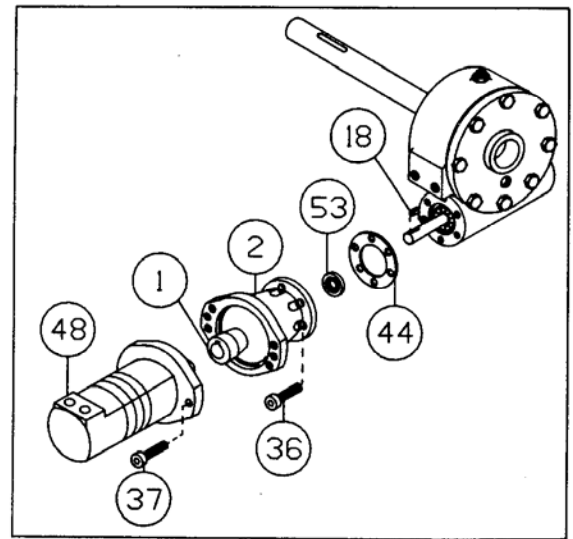
Remove seal (item #51) from bearing cap and press new seal into place.

Drag brake disc (item #9), spacer (item #55) and springs (items #53 & #54) should be examined and replaced if necessary.



4. Remove motor (item #48) and coupling assembly (item #1) from (item #2) adapter by unscrewing two (item #37) capscrews.

Remove key (item #18) from worm shaft. Unscrew six capscrews (item #36) and remove adapter from gear housing. Replace adapter seal (item #53) and gasket (item #44).

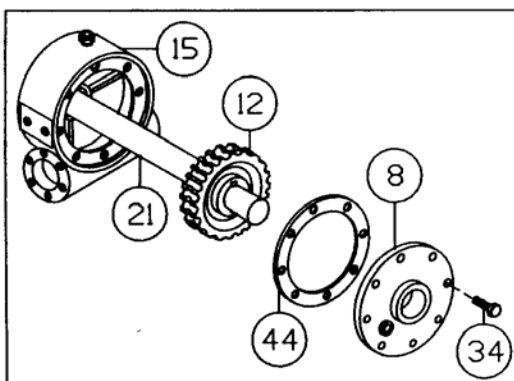
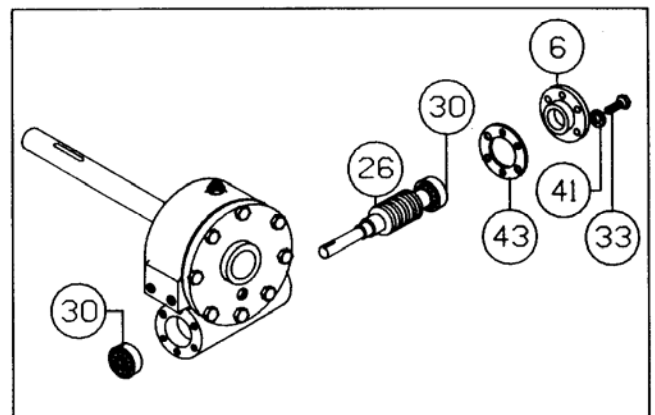


- 4a. Remove motor (item #45) from adapter (item #1) by removing two capscrews and lockwashers (items #33 & #40). Remove adapter (item #1) from gear housing by removing six (item #32) capscrews. Replace seal (item #50) and gasket (item #41). Remove thrust bearing (item #25) and thrust washers (item #54).

5. Remove bearing cap (item #6) from gear housing by unscrewing six capscrews (item #33). Remove worm (item #26) and bearings (item #30) from gear housing. Use a soft hammer to gently tap input end of worm and drive worm and bearing from gear housing. Once worm has been removed from housing, bearing can be pressed from end of worm.

Check for signs of wear or damage to worm (item #26) and bearing (item #30). Replace if necessary.

For models with optional worm brake refer to page 5, SERVICING OF THE WORM BRAKE, for disassembly instructions.

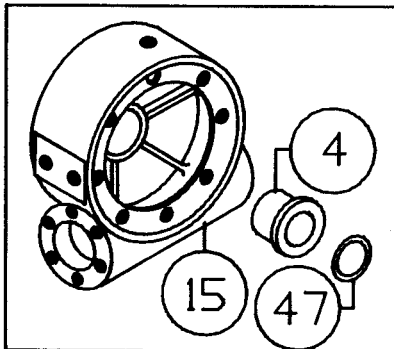
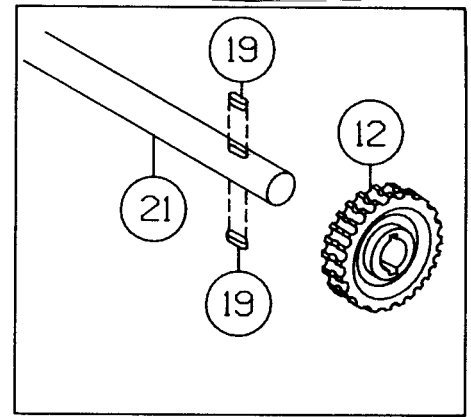


6. Remove gear housing cover (item #8) from gear housing (item #15) by unscrewing eight capscrews (item #34). Thread two of the capscrews into the two tapped holes of cover and tighten. This will pull the cover loose from gear housing.

Remove cover gasket (item #44) and pull shaft (item #21), with gear attached, from gear housing.

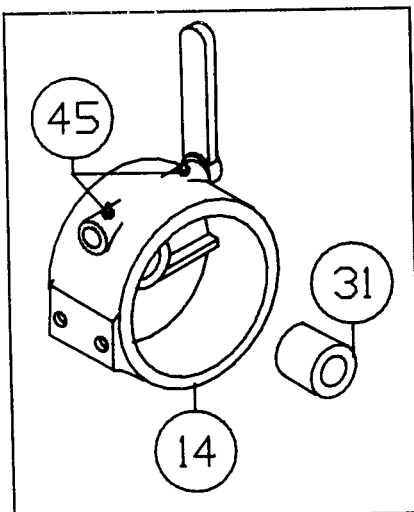
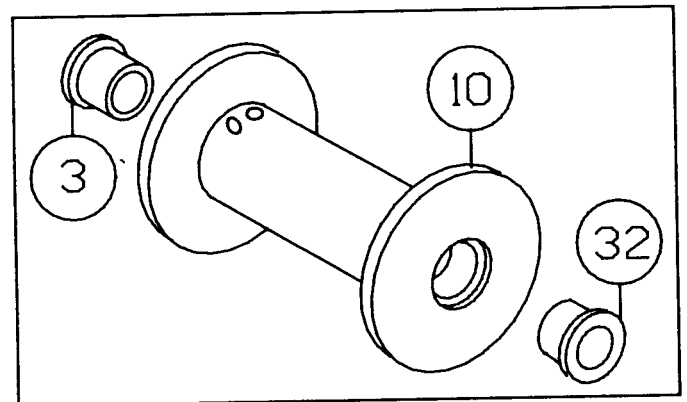
7. Check gear teeth for signs of wear. Replace if necessary by pressing gear (item #12) from shaft. Press new gear over shaft and keys until end of keys, on long end of shaft, are flush with gear.

Examine shaft, keys and keyways. If distortion of keys and/or keyways are evident, shaft and keys should be replaced. Tap keys (item #19) into shaft keyways. Press gear over shaft and keys until end of keys, on long end of shaft, are flush with gear.



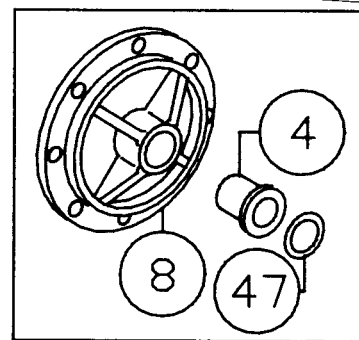
8. Check gear housing bushing (item #4) and quad ring (item #47) for signs of wear. Replace if necessary by pressing old bushing from gear housing. Press new bushing into place and insert new quad ring into groove inside of bushing.

9. Check drum bushings (items #3 & #32) for signs of wear. Replace if necessary by pressing old bushings from drum. Press new ones into place. NOTE: If bushings are replaced, it will be necessary to run a 9/16 (.56) dia. drill through cable pocket. The following drum assemblies are available with new bushings pressed in place and predrilled:  
 #234141 400 Series drum assembly  
 #234067 Y-400 Series drum assembly

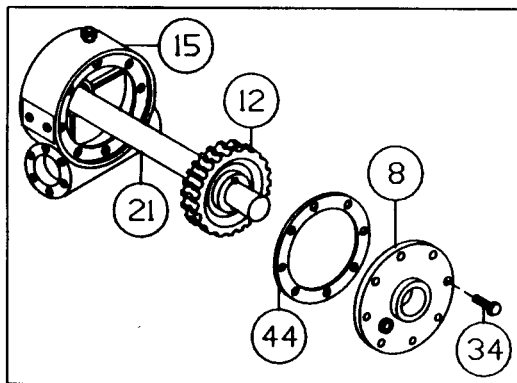


10. Check clutch housing bushing (item #31) for wear. If necessary, remove old bushing and press new bushing into place. Apply grease to lube fittings (item #45) to lubricate clutch shifter shaft.

11. Check cover bushing (item #4) and quad ring (item #47) for signs of wear. If necessary remove old bushing and press new bushing into place and insert new quad ring into groove inside of bushing.

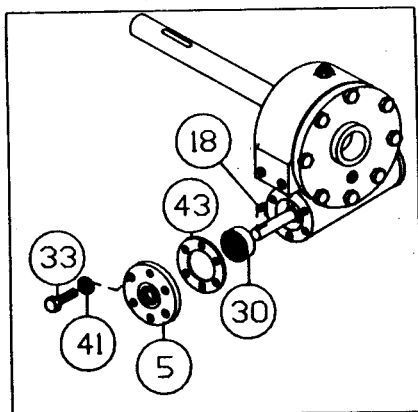
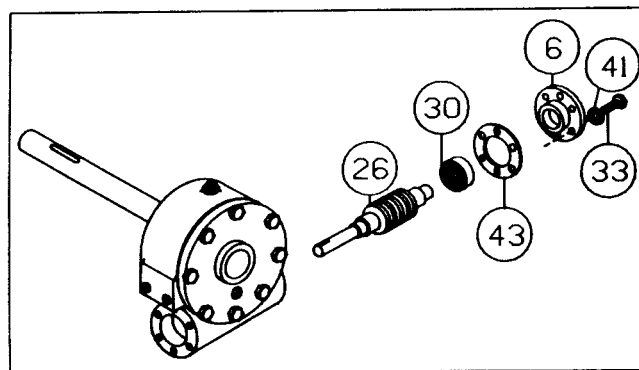


RE-ASSEMBLY



12. Apply grease to end of shaft, opposite gear. Apply grease to bushing in gear housing (item #15). Place greased end of shaft through bushing in gear housing (item #15). Place gasket (item #44) onto gear housing cover (item #8). Apply grease to gear end of shaft and cover bushing. Place cover onto shaft and secure to housing with eight (item #34) capscrews. Tighten capscrews to 12 ft. lbs. (16.1 Nm.) each.

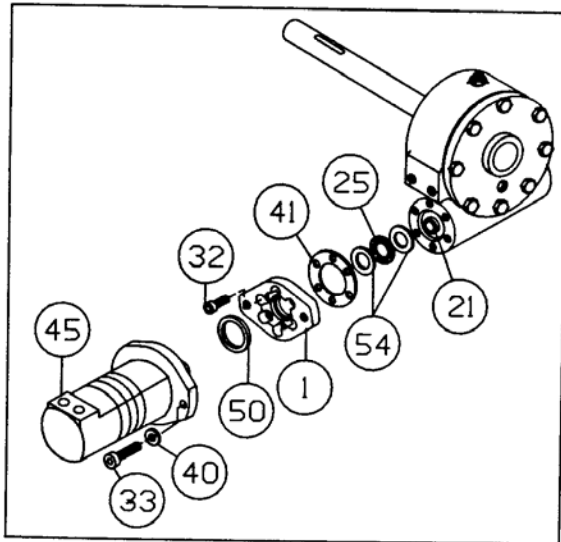
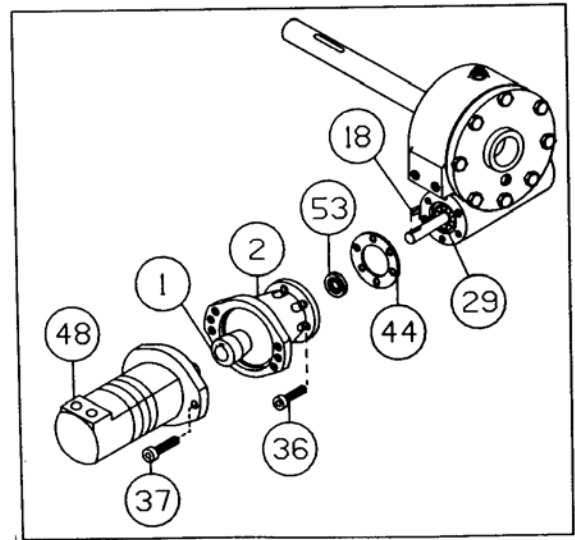
13. Press bearing (item #30) onto worm (item #26). NOTE: Be sure that thick shoulder of bearings outer race (side with manufacturer's name and part number) is out, away from worm threads. Press bearing and worm into gear housing. Slip gasket (item #43) onto bearing cap (item #6). Use six capscrews (item #33) and lockwashers (item #41) to secure cap to gear housing. Tighten capscrews to 12 ft. lbs. (16.1 Nm.) each.



14. Press bearing (item #30) onto worm and into gear housing. NOTE: Be sure that thick shoulder of bearings outer race (side with manufacturer's name and part number) is out, away from worm threads. Attach bearing cap (item #5), to gear housing. Use six (item #33) capscrews to secure. Tighten capscrews to 18 ft. lbs. (24.4 Nm.) each. Tap key (item #18) into keyways.

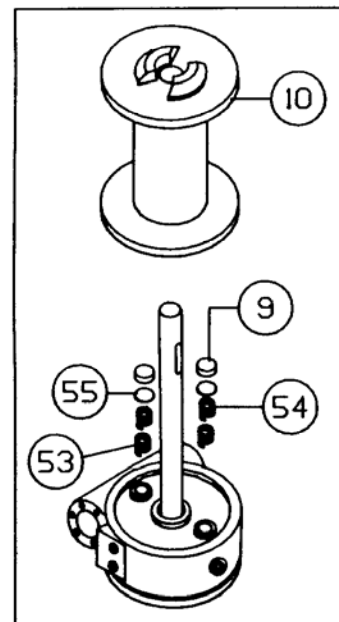
15. Press bearing (item #29) onto worm and into housing. NOTE: Be sure that thick shoulder of bearings outer race (side with manufacturer's name and part number) is out, away from worm threads. Attach adapter (item #2) to gear housing using six capscrews (item #36). Tighten capscrews to 12 ft. lbs. (16.1 Nm.) each. Insert key (item #18) into keyway of worm shaft. Slide tapered end of coupling (item #1) over end of worm shaft.

Place motor shaft, with key in keyway, into coupling. Secure motor (item #48) to adapter, using two capscrews (item #37). Tighten capscrews to 39 ft. lbs. (53 Nm.) each.



- 15a. Place thrust washers (item #54) and thrust bearing (item #25) over end of worm (item #21) and into housing. Attach adapter (item #1) with gasket (item #41) to housing, using six (item #32) capscrews. Tighten capscrews to 12 ft. lbs. (16 Nm.) each. Insert new seal (item #50) into adapter and carefully place motor shaft, with key in keyway, through seal, so as not to damage seal. Insert motor shaft into end of worm (item #21). Secure motor (item #45) to coupling using two (item #33) capscrews with lockwashers (item #40). Tighten capscrews to 39 ft. lbs. (53 Nm.) each.

16. Place winch with gear housing cover down on work bench. Drum shaft should be in vertical position. Set springs (items #53 & #54) into pockets of gear housing with drag brakes (item #9) on top of disc (item #55) and springs. Slide drum assembly (item #10) onto drum shaft with drum jaws upward.





- Slide spacer (item #25) over end of drum shaft. Press drum downward to compress drag brake springs in gear housing. Insert keys (item #20) into keyways. A rubber or brass mallet will be needed to gently tap keys into position.

Apply grease to keys and end of shaft. Place jaw clutch (item #7) over end of shaft and slide jaw clutch over keys.

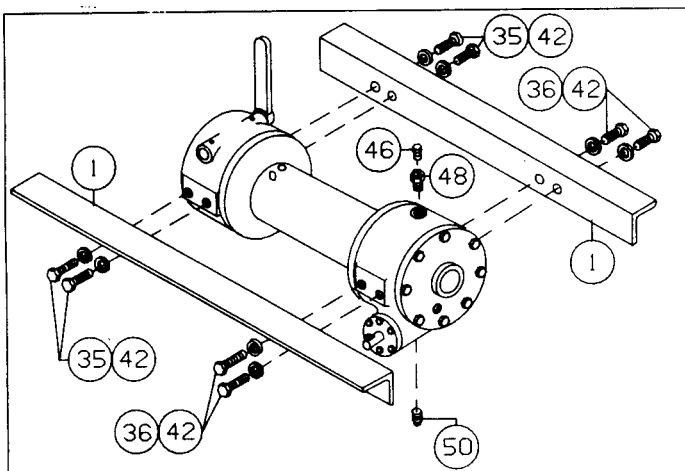
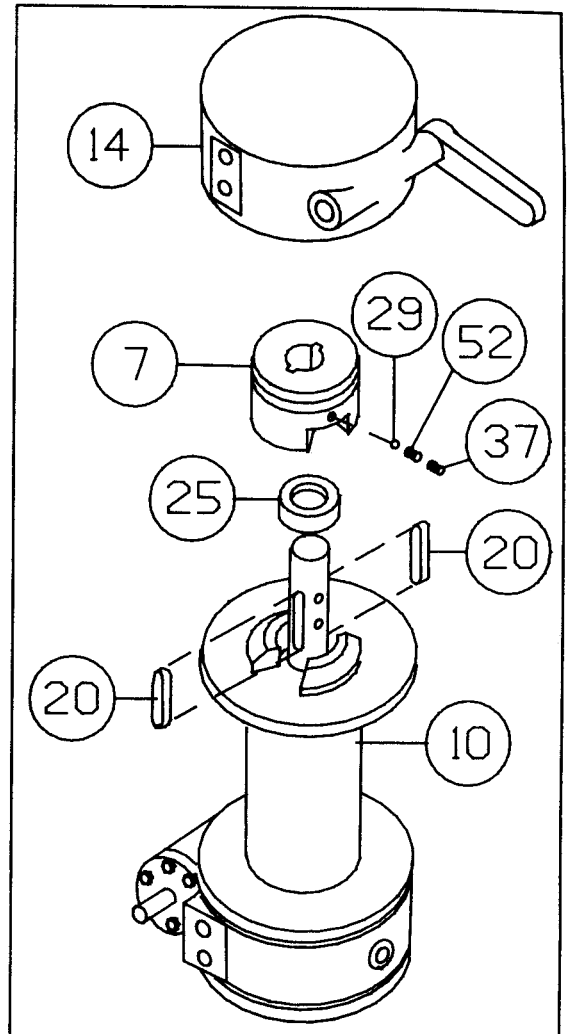
**NOTE:** Be sure that tapped hole on side of jaw clutch is on same side of shaft as the two ball detents. Insert ball poppet (item #29), spring (item #52) and setscrew (item #37) into tapped hole of jaw clutch.

If jaw clutch and, or drum shaft have been replaced two new detents MUST be drilled as follows:

Slide jaw clutch over end of shaft. Engage jaws of clutch with jaws of drum. Use a 3/8" dia. drill, using hole in jaw clutch as a guide, to drill a 1/8" deep detent (as measured to the center of the drill point) in shaft. Slide jaw clutch upward 15/16" and drill 2nd detent.

If only the clutch is replaced, the new detents are to be drilled on the side of the shaft opposite the old detents. Apply grease to bushing in clutch housing assembly (item #14). Set clutch housing onto end of drum shaft. Pull jaw clutch upward, toward clutch housing, enough to allow yoke in clutch housing, to fit properly in groove around jaw clutch. Slide clutch housing assembly and jaw clutch downward into place.

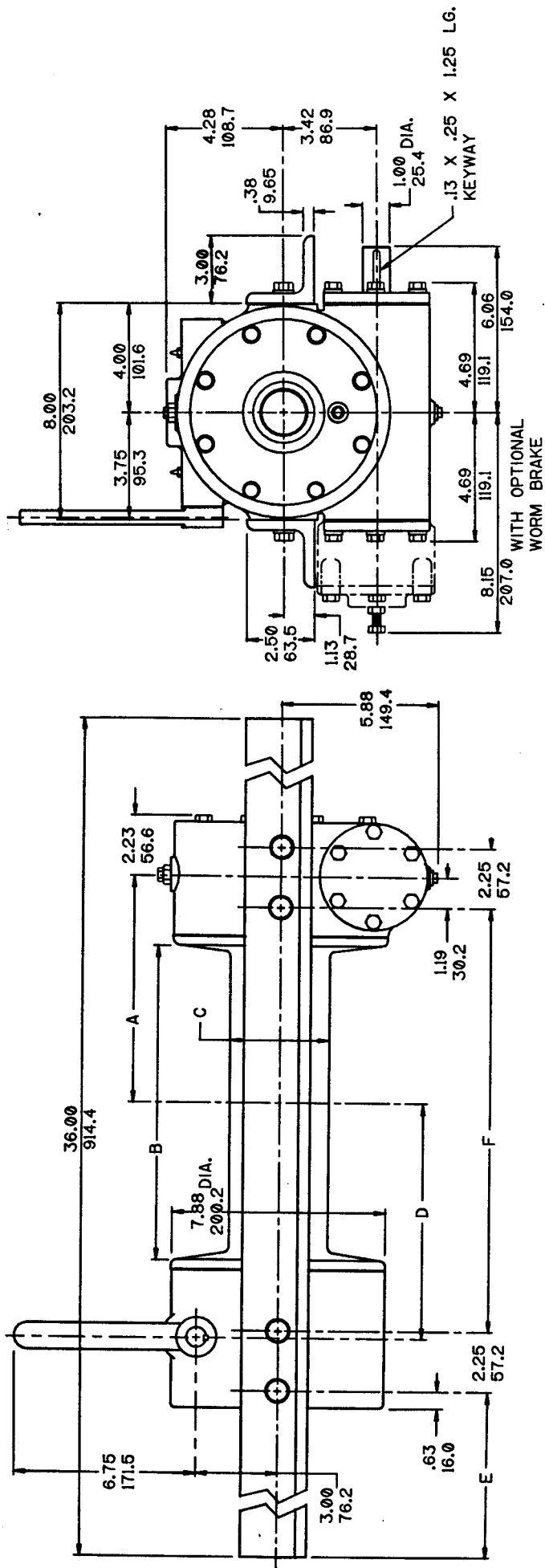
The setscrew should be tightened enough to allow ball, when placed in ball detents, to sufficiently hold jaw clutch "IN" and "OUT".



- Attach two mounting angles (item #1) using four (item #35) capscrews with lockwashers at clutch end and four (item #36) capscrews with lockwashers at gear housing end. Torque capscrews to 28 ft. lbs. (37.9 Nm.) each. Insert plug (item #50) into bottom of gear housing. Permatex may be applied to threads to help prevent leakage.

Pour 1-1/2 pint of EP 140 gear oil into housing thru hole in top of housing. Insert relief fitting (item #46) into reducer (item #48). Reducer should then be placed into hole on top of gear housing. Tighten fittings and reducer securely.

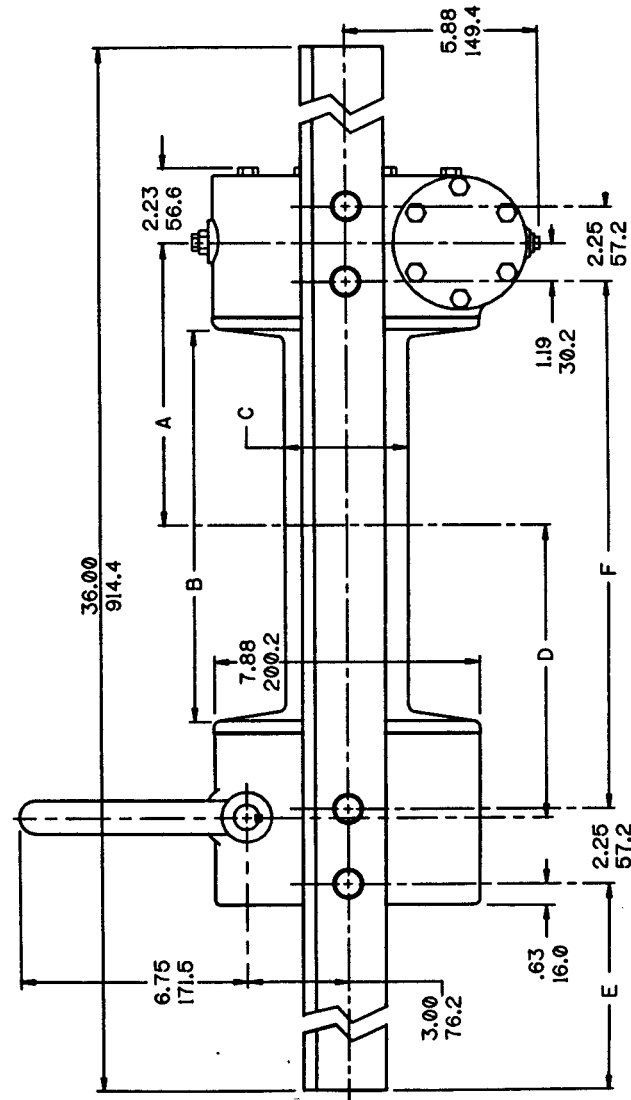
WINCH MODEL	A INCHES MM	B INCHES MM	C INCHES MM	D INCHES MM	E INCHES MM	F INCHES MM
400	8.44 214.4	11.63 295.4	3.63 92.2	8.75 222.3	7.87 199.9	15.75 400.1
Y-400	7.00 177.8	8.75 222.3	4.00 101.6	7.32 185.9	9.31 236.5	12.88 327.2



**DIMENSIONS SHOWN ARE INCHES OVER MILLIMETERS**

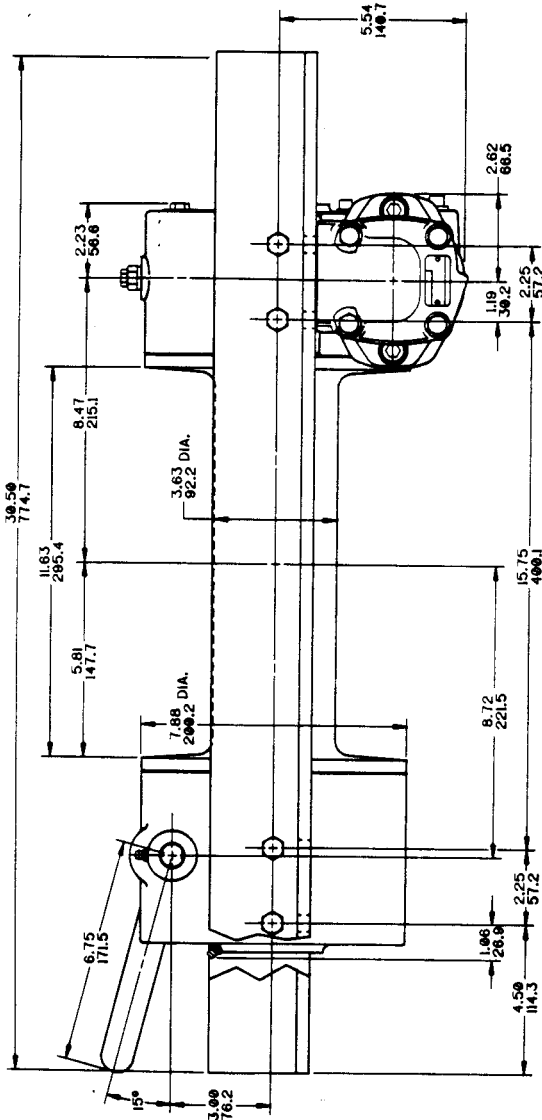
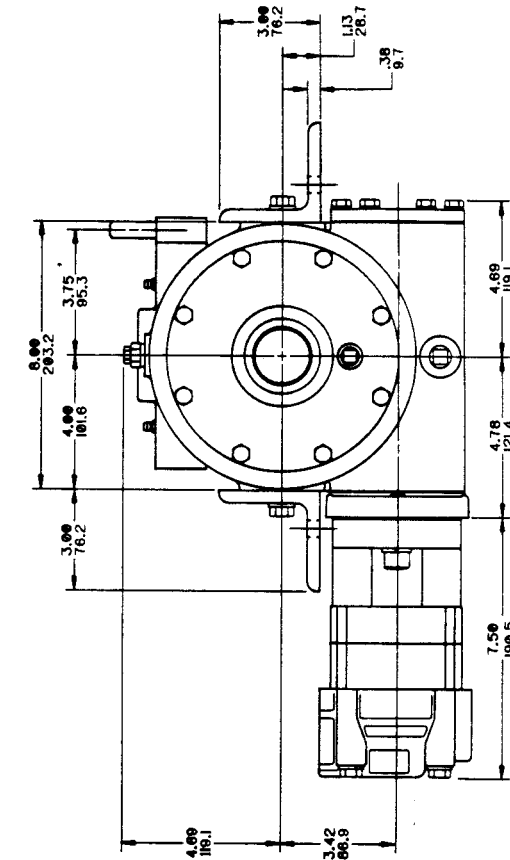
# Model 400

WINCH MODEL	A INCHES MM	B INCHES MM	C INCHES MM	D INCHES MM	E INCHES MM	F INCHES MM
H-400	8.44 214.4	11.63 295.4	3.63 92.2	8.75 222.3	7.87 199.9	15.75 400.1
HY-400	7.00 177.8	8.75 222.3	4.00 101.6	7.32 185.9	9.31 236.5	12.88 327.2



**DIMENSIONS SHOWN ARE INCHES OVER MILLIMETERS**

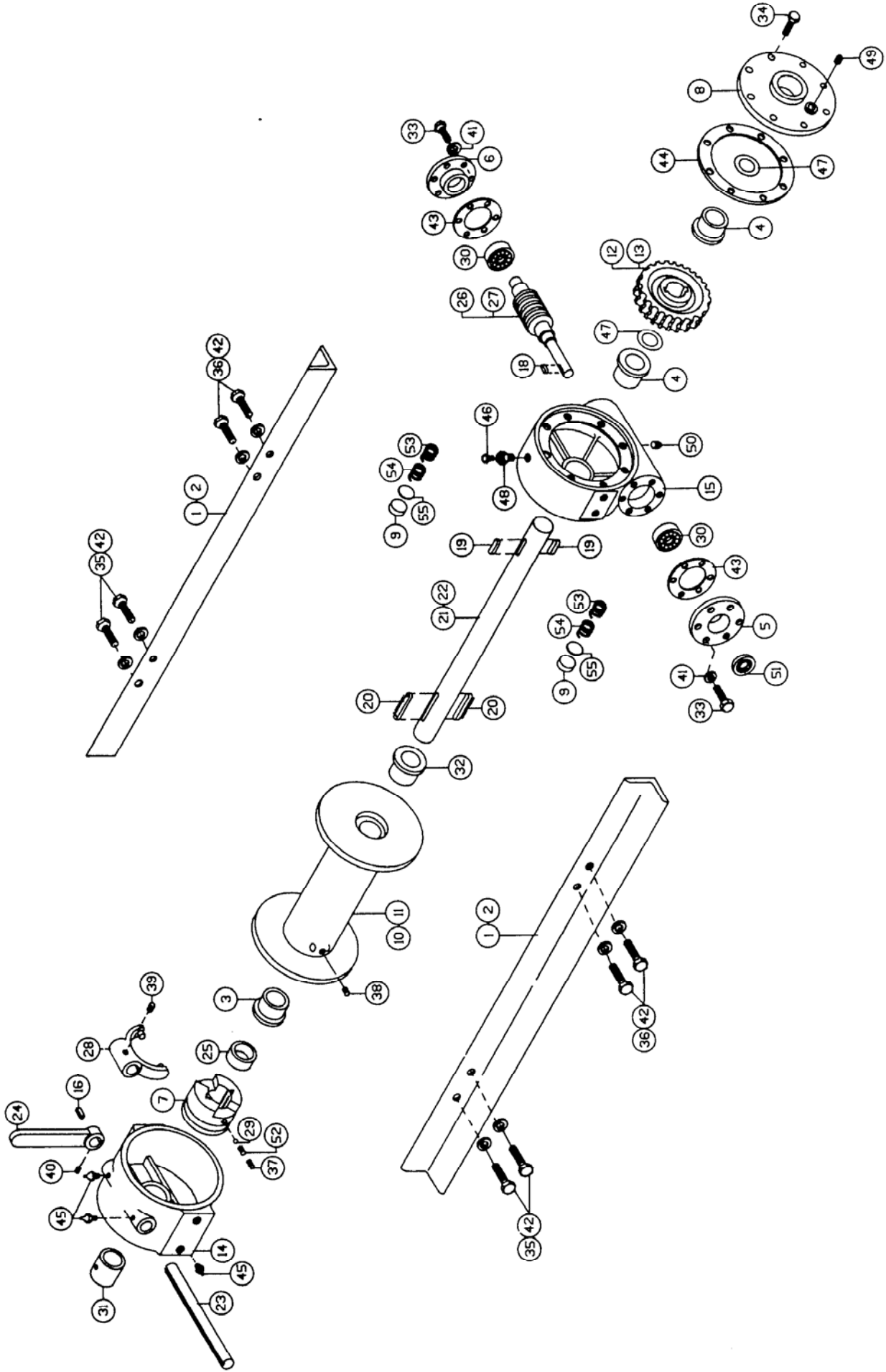
# **Model H 400**



DIMENSIONS SHOWN ARE INCHES OVER MILLIMETERS

# **Model H-400**

SHORT COUPLING



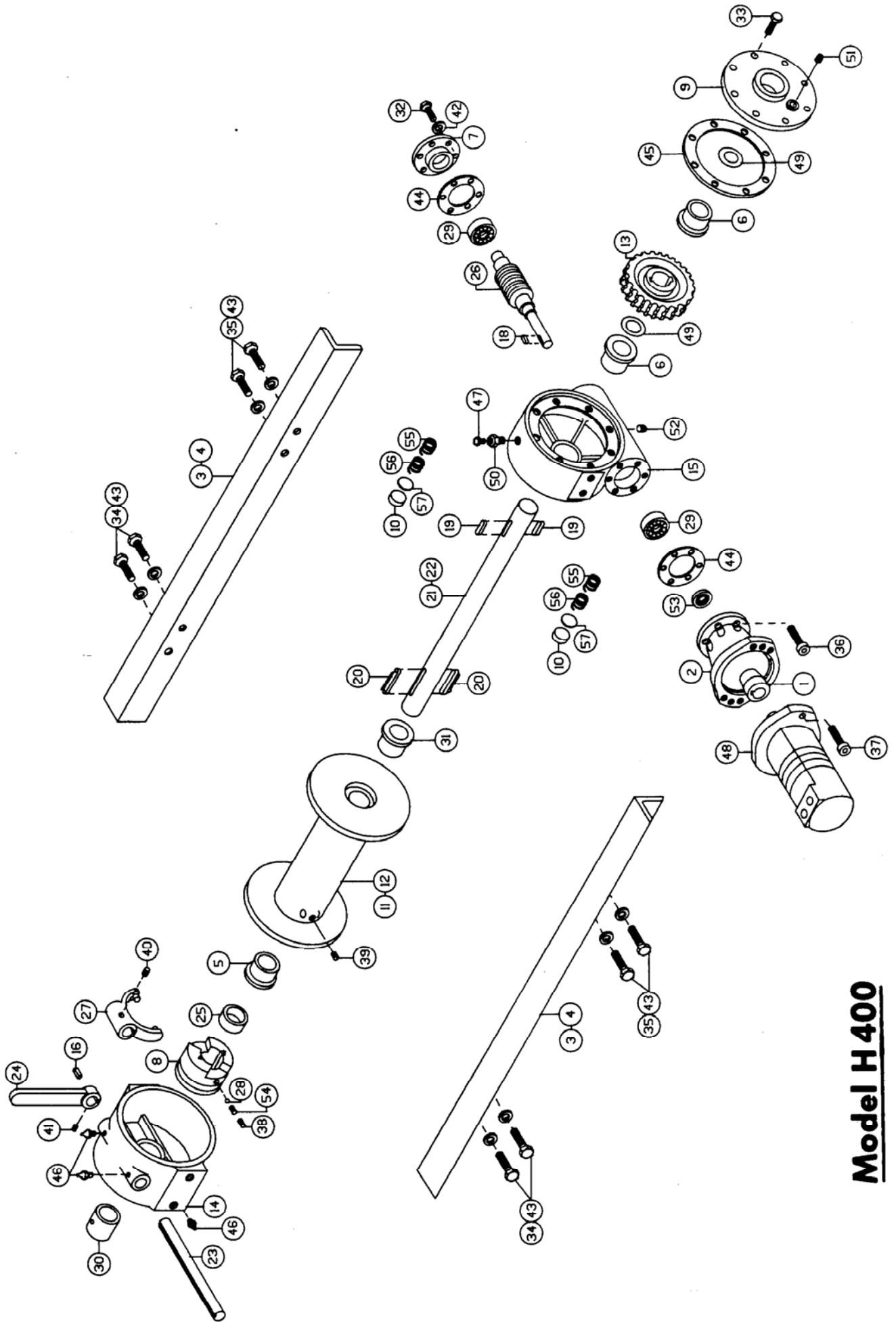
# Model 400

\*See page 2.5 for optional worm brake & parts list.

# PARTS LIST

## Model 400

Item No.	Qty.	Part No.	Description	Item No.	Qty.	Part No.	Description
1	2	302124	ANGLE-400	33	12	414139	CAPSCREW 5/16-18NCx1-1/4 LG. HX.HD. GR.5 NY. H/P
2	2	302125	ANGLE-Y400	34	8	414140	CAPSCREW 5/16-18NCx3/4 LG. HX.HD. GR.5 NY. H/P
3	1	308046	BUSHING	35	4	414457	CAPSCREW 7/16-14NCx1-1/4 LG. HX.HD. GR.5
4	2	308048	BUSHING	36	4	414481	CAPSCREW 7/16-14NCx1-1/4 LG. HX.HD. GR.5 NY. H/P
5	1	316003	CAP	37	1	414971	SCREW-POPPET 1/2-20NF HD.-LESS DR. SLOT
6	1	316004	CAP	38	1	416059	SETSREW 3/8-16NCx1/2 LG. HX.SQC.HD. CUP PT.
7	1	324163	CLUTCH-JAW	39	1	416109	SETSREW 5/16-18NCx1/2 LG. SQ.HD. CUP PT.
8	1	328010	COVER	40	1	416112	SETSREW 5/16-18NCx3/4 LG. SQ.HD. CUP PT.
9	2	330010	SHOE-DRAG BRAKE	41	12	418163	LOCKWASHER 5/16 MED.SECT. C.P.
10	1	332074	DRUM-Y400	42	8	418198	LOCKWASHER 7/16 MED.SECT. C.P.
11	1	332139	DRUM-400	43	2	442182	GASKET
12	1	334009	GEAR-L.H.	44	1	442183	GASKET
13	1	334016	GEAR-R.H.	45	3	456006	FITTING-LUBE
14	1	338009	HOUSING-CLUTCH	46	1	456008	FITTING-RELIEF
15	1	338010	HOUSING-GEAR	47	2	462003	GUAD-RING
16	1	342024	KEY-SQ.END	48	1	468002	REDUCER
18	1	342051	NO LONGER USED	49	1	468010	PLUG-PIPE
19	2	342120	KEY-RD.END	50	1	468011	PLUG-PIPE
20	2	450017	KEY-BARTH	51	1	486067	SEAL-OIL
21	1	356702	SHAFT-DRUM-400	52	1	494005	SPRING
22	1	356716	SHAFT-DRUM-Y400	53	2	494088	SPRING
23	1	356902	SHAFT-SHIFTER	54	2	494089	SPRING
24	1	358001	SHIFTER-HANDLE	55	2	530094	SPACER-BRAKE DISC
25	1	362007	SPACER-DRUM				
26	1	368004	WORM-R.H.				
27	1	368006	WORM-L.H.				
28	1	370057	YOKE				
29	1	400003	BALL-POPPET				
30	2	402044	BEARING-BALL				
31	1	412005	BUSHING				
32	1	412006	BUSHING				



## Model H 400

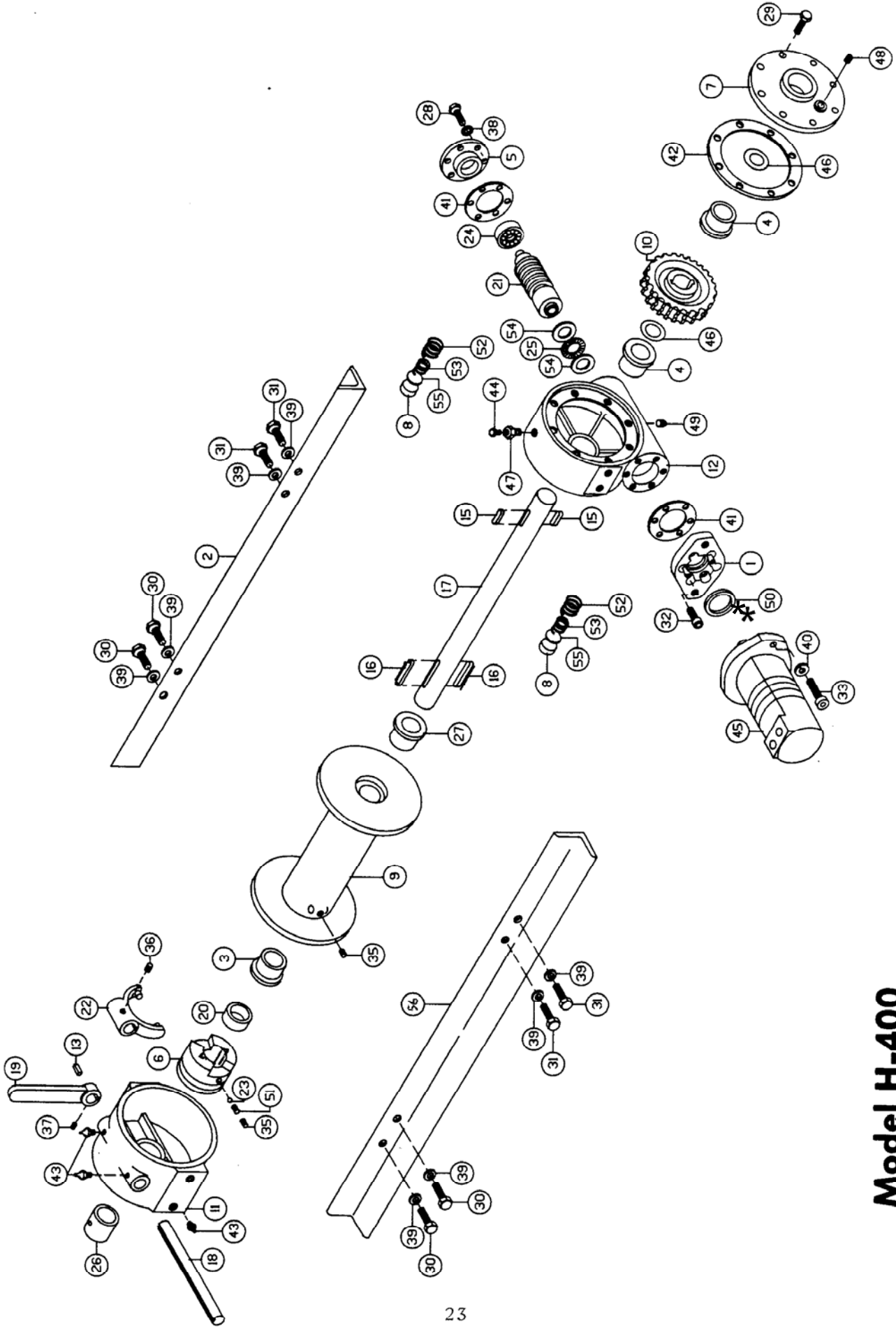
\*See page 2.5 for optional worm brake parts list.

# PARTS LIST

## Model H-400

Item No.	Qty.	Part No.	Description	Item No.	Qty.	Part No.	Description
1	1	299043	COUPLING ASS'Y.	30	1	412005	BUSHING
2	1	300043	ADAPTER	31	1	412006	BUSHING
3	2	302459	ANGLE-H400	32	1	414139	CAPSCREW 5/16-18NCx3/4 LG. HX.HD. GR.5 NYLOK HVY.PATCH
4	2	308046	BUSHING	33	8	414140	CAPSCREW 7/16-14NCx1-1/4 LG. HX.HD. GR.5
5	1	308048	BUSHING	34	4	414457	CAPSCREW 7/16-14NCx1-1/4 LG. HX.HD. GR.5
6	2	316004	CAP	35	4	414481	CAPSCREW 5/16-18NCx1-1/4 LG. SOC.HD. LOK-WELL
7	1	324163	CLUTCH-JAW	36	6	414871	CAPSCREW 5/16-18NCx1-1/4 LG. SOC.HD. LOK-WELL
8	1	328010	COVER	37	2	414950	CAPSCREW 1/2-13NCx1-3/4 LG. SOC.HD. LOK-WELL
9	1	330010	SHOE-DRAG BRAKE	38	1	414971	SCREW-POPPET 1/2-20NF HD.-LESS DR. SLOT
10	2	332074	DRUM-Y400	39	1	416059	SETScrew 3/8-16NCx1/2 LG. HX.SOC.HD. CUP PT.
11	1	332138	DRUM-400	40	1	416109	SETScrew 5/16-18NCx1/2 LG. SQ.HD. CUP PT.
12	1	334016	GEAR-R.H.	41	1	416112	SETScrew 5/16-18NCx3/4 LG. SQ.HD. CUP PT.
13	1	338009	HOUSING-CLUTCH	42	6	418163	LOCKWASHER 5/16 MED.SECT. C.P.
14	1	338010	HOUSING-GEAR	43	8	418198	GASKET
15	1	342024	KEY-SQ.END	44	2	442182	GASKET
16	1		NO LONGER USED	45	1	442183	GASKET
18	1	342051	KEY-RD.END	46	3	456006	FITTING-LUBE
19	2	342120	KEY-RD.END	47	1	456008	FITTING-RELIEF
20	2	450017	KEY-BARTH	48	1	458025	MOTOR-HYD.
21	1	356702	SHAFT-DRUM-400	49	2	462003	QUAD-RING
22	1	356716	SHAFT-DRUM-Y400	50	1	468002	REDUCER
23	1	356902	SHAFT-SHIFTER	51	1	468010	PLUG-PIPE
24	1	358001	SHIFTER-HANDLE	52	1	468011	PLUG-PIPE
25	1	362007	SPACER-DRUM	53	1	486067	SEAL-OIL
26	1	370057	WORM-R.H.	54	1	494005	SPRING
27	1		YOKE	55	2	494088	SPRING
28	1	400003	BALL-POPPET	56	2	494089	SPRING
29	2	402044	BEARING-BALL	57	2	530094	SPACER-BRAKE DISC





**Model H-400**  
SHORT COUPLING

# PARTS LIST

## Model H-400SC

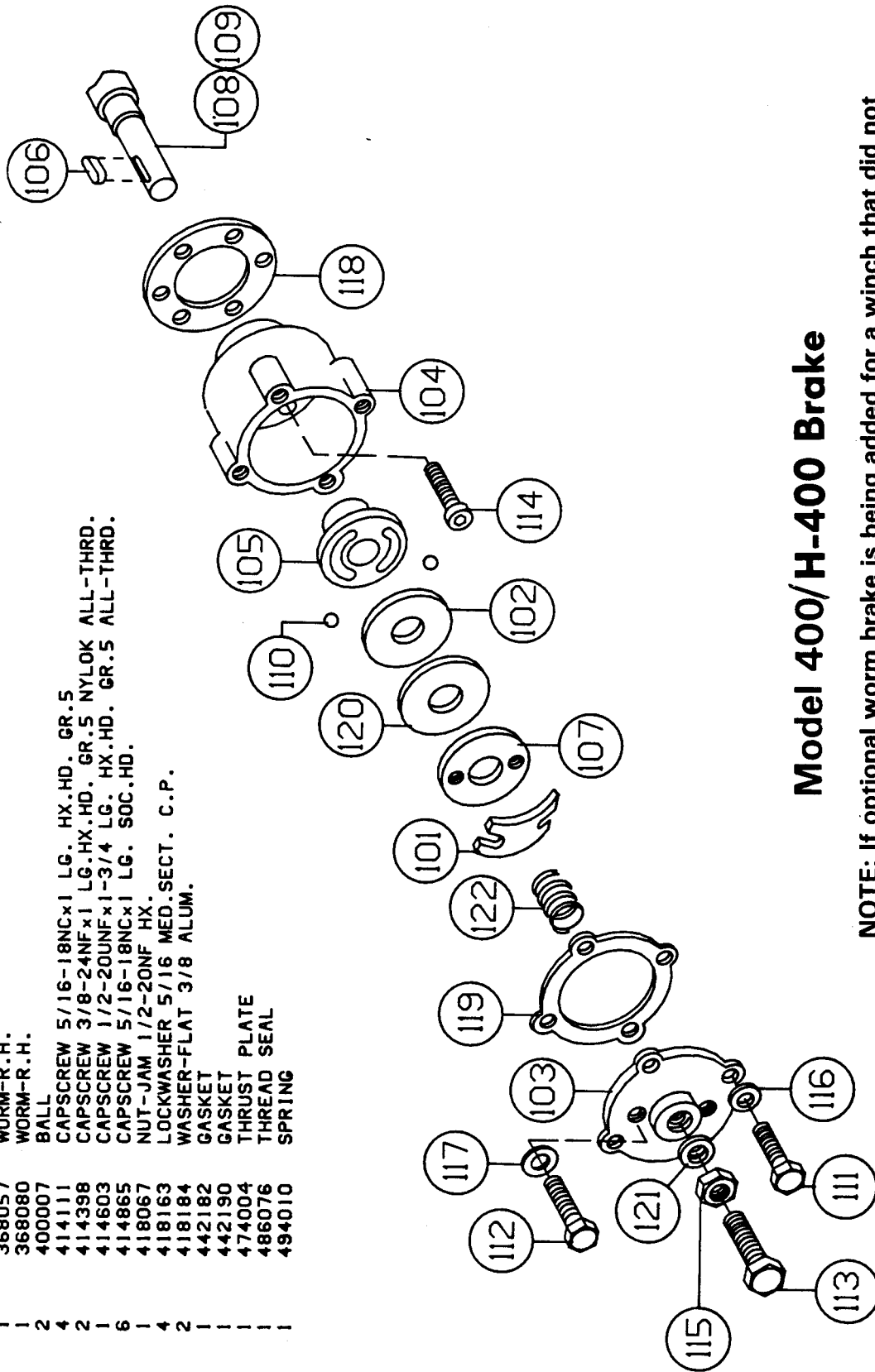
SHORT COUPLING

Item No.	Qty.	Part No.	Description	Item No.	Qty.	Part No.	Description
1	1	300062	ADAPTER	30	4	414457	CAPSCREW 7/16-14NCx1-1/4 LG. HX.HD. GR.5
2	1	302356	ANGLE	31	4	414481	CAPSCREW 7/16-14NCx1-1/4 LG. HX.HD. GR.5 NYLOK HVY.PAT
3	1	308046	BUSHING	32	6	414887	CAPSCREW 5/16-18NCx1 LG. HX.SOC. BUTTON HD. LOC-WEL
4	2	308048	BUSHING	33	2	414952	CAPSCREW 1/2-13NCx1-1/2 LG. SOC.HD. C.P.
5	1	316004	CAP-BEARING	34	1	414971	SCREW-POPPET 1/2-20NF HEADLESS SLOTTED
6	1	324163	CLUTCH-JAW	35	1	416059	SETScrew 3/8-16NCx1/2 LG. HX.SOC.HD. CUP PT.
7	1	328010	COVER	36	1	416109	SETScrew 5/16-18NCx1/2 LG. SQ.HD. CUP PT.
8	2	330010	SHOE-DRAG BRAKE	37	1	416112	SETScrew 5/16-18NCx3/4 LG. SQ.HD. CUP PT.
9	1	332139	DRUM	38	6	418163	LOCKWASHER 5/16 MED. SECT. C.P.
10	1	334016	GEAR-R.H.	39	8	418198	LOCKWASHER 7/16 MED. SECT. C.P.
11	1	338009	HOUSING-CLUTCH	40	2	418218	LOCKWASHER 1/2 MED. SECT. C.P.
12	1	338269	HOUSING-GEAR	41	2	442182	GASKET-BEARING CAP
13	1	342024	KEY-SQ. END 3/16x3/16x1/2 LG.	42	1	442183	GASKET-GEAR HOUSING COVER
15	2	342120	NO LONGER USED	43	3	456006	FITTING-LUBE
16	2	450017	KEY-RD. END 1/2x1/2x1-11/16 LG.	44	1	456008	FITTING-RELIEF
17	1	356702	KEY-BARTH 1/2x1/2x2-3/4 LG.	45	1	458025	MOTOR
18	1	356902	SHAFT-DRUM	46	2	462003	QUAD-RING
19	1	358052	HANDLE-SHIFTER	47	1	468002	REDUCER 3/8-18NPT-1/8-27NPT
20	1	362007	SPACER-DRUM	48	1	468010	PLUG-PIPE 1/4-18NPT SQ.HD.
21	1	368183	WORM-R.H.	49	1	468011	PLUG-PIPE 3/8-18NPT SQ.HD.
22	1	370057	YOKE	50*	1	486079	SEAL-PILOT
23	1	400003	BALL-POPPET	51	1	482029	O-RING
24	1	402044	BEARING-BALL	52	1	494005	SPRING
25	1	402107	BEARING-THRUST	53	2	494088	SPRING-DRAG BRAKE
26	1	412005	BUSHING	54	2	494089	SPRING-DRAG BRAKE
27	1	412006	BUSHING	55	2	518026	WASHER-THRUST
28	6	414139	CAPSCREW 5/16-17NCx1-1/4 LG. HX.HD. GR.5	56	2	530094	SPACER-DRAG BRAKE
29	8	414140	CAPSCREW 5/16-18NCx3/4 LG. HX.HD. GR.5 NYLOK HVY. PATCH		2	302955	ANGLE

\* IF MOTOR PILOT HEIGHT IS .11", USE P/N 486079  
 IF MOTOR PILOT HEIGHT IS .25", USE P/N 462029

PARTS LIST FOR 400/H-400 SERIES BRAKE

ITEM NO.	QTY.	PARTS NO.	DESCRIPTION
101	1	306036	SPRING-FLAT
102	1	314003	CAM PLATE
103	1	328057	COVER
104	1	338038	HOUSING-BRAKE
105	1	340024	HUB
106	1	342051	KEY
107	1	352020	RETAINER PLATE
108	1	368057	WORM-R.H.
109	1	368080	WORM-R.H.
110	2	400007	BALL
111	4	414111	CAPSCREW 5/16-18NCx1 LG. HX.HD. GR.5
112	2	414398	CAPSCREW 3/8-24NFx1 LG.HX.HD. GR.5 NYLOK ALL-THRD.
113	1	414603	CAPSCREW 1/2-20NFx1-3/4 LG. HX.HD. GR.5 ALL-THRD.
114	6	414865	CAPSCREW 5/16-18NCx1 LG. SOC.HD.
115	1	418067	NUT-JAM 1/2-20NF HX.
116	4	418163	LOCKWASHER 5/16 MED.SECT. C.P.
117	2	418184	WASHER-FLAT 3/8 ALUM.
118	1	442182	GASKET
119	1	442190	GASKET
120	1	474004	THRUST PLATE
121	1	486076	THREAD SEAL
122	1	494010	SPRING



**Model 400/H-400 Brake**

**NOTE:** If optional worm brake is being added for a winch that did not come with the optional brake, the worm must be replaced when the brake is being added.

## LIMITED WARRANTY

RAMSEY WINCH warrants each new RAMSEY Winch to be free from defects in material and workmanship for a period of one (1) year from date of purchase.

The obligation under this warranty, statutory or otherwise, is limited to the replacement or repair at the Manufacturer's factory, or at a point designated by the Manufacturer, of such part that shall appear to the Manufacturer, upon inspection of such part, to have been defective in material or workmanship.

This warranty does not obligate RAMSEY WINCH to bear the cost of labor or transportation charges in connection with the replacement or repair of defective parts, nor shall it apply to a product upon which repairs or alterations have been made, unless authorized by the Manufacturer, or for equipment misused, neglected or which has not been installed correctly.

RAMSEY WINCH, whose policy is one of continuous improvement, reserves the right to improve its products through changes in design or materials as it may deem desirable without being obligated to incorporate such changes in products of prior manufacture.

If field service at the request of the Buyer is rendered and the fault is found not to be with Ramsey Winch's product, the Buyer shall pay the time and expense of the field representative. Bills for service, labor or other expenses that have been incurred by the Buyer without approval or authorization by Ramsey Winch will not be accepted.



### **Ramsey Winch Company**

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