

**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!**

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INTRODUCTION

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-400125 lbs. (57 Kgs.) G-400/GY-400.....135 lbs. (61 Kgs.) H-400/HY-400150 lbs. (68 Kgs.) HG-400/HGY-400160 lbs. (73 Kgs.)				
Layer of Cable		1	2	3	4	
Rated Line Pull per layer for 400/G-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	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	Ft.	20	45	70	105	
	M.	6	13	21	31	
Line Speed		Worm RPM	1	2	3	4
400/G-400	FPM	840	33	40	47	53
H-400/HG-400	MPM		10	12	14	16
Y-400/GY-400	FPM	840	34	40	47	54 **
HY-400/HGY-400	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 loyer 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. Set 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.

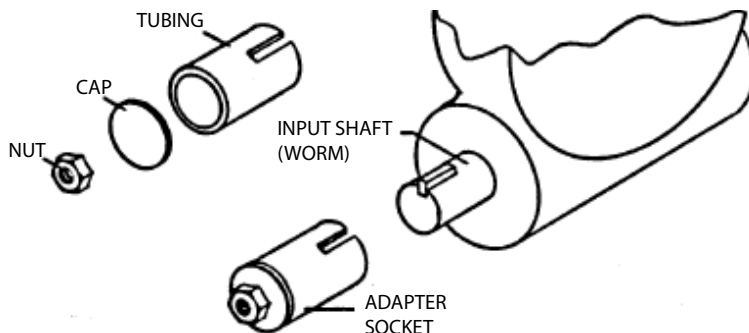
ADJUSTING THE OIL COOLED WORM BRAKE

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 over heating, and damage to the brake parts. Tighten the lock nut after adjustment is completed.

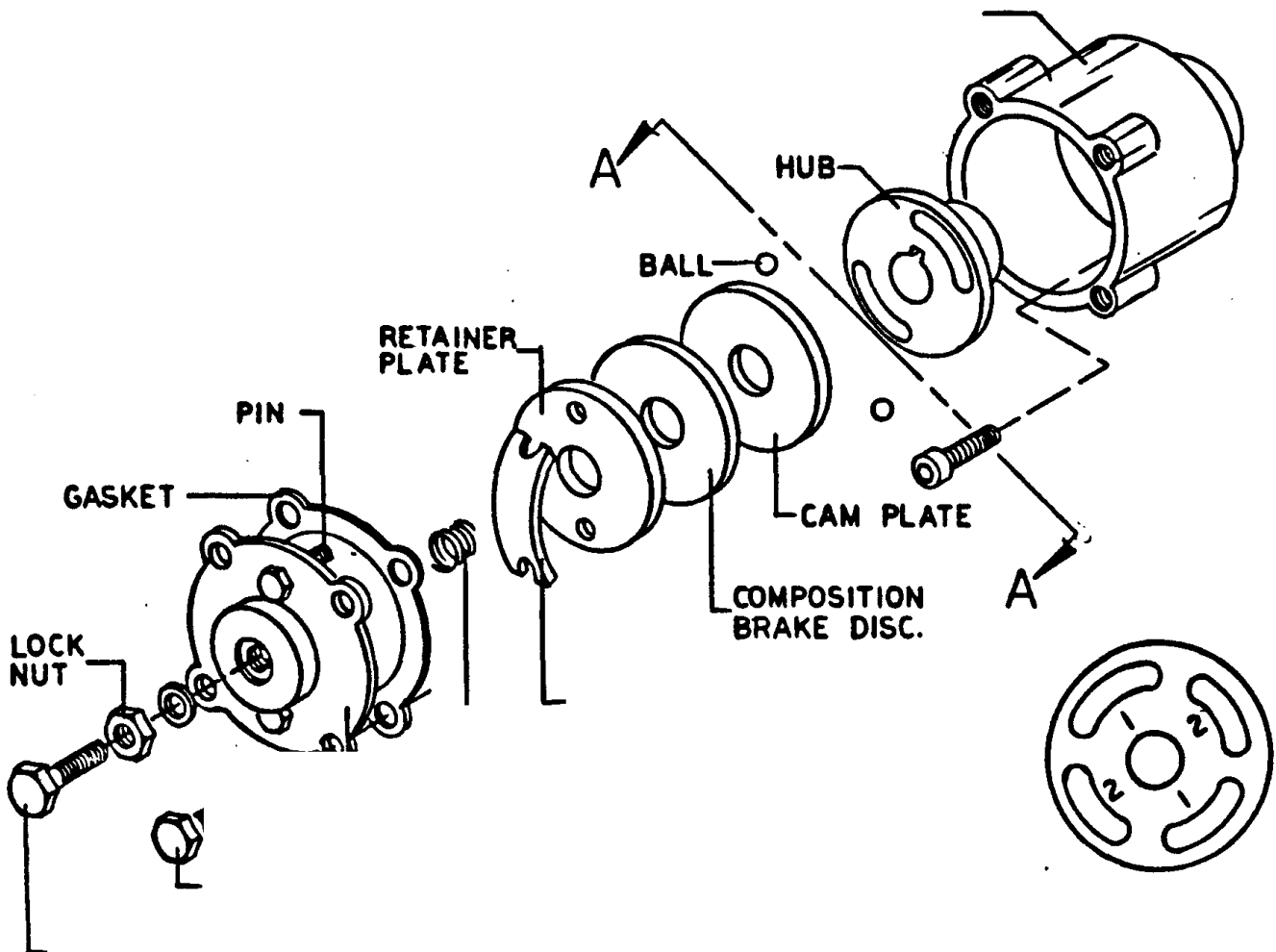
If the brake does not respond to adjustment then a new leaf spring and brake disc is needed.

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.



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, pages). 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.

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 ROPE 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-20Ag, R-30 ,700B, 8001.
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).

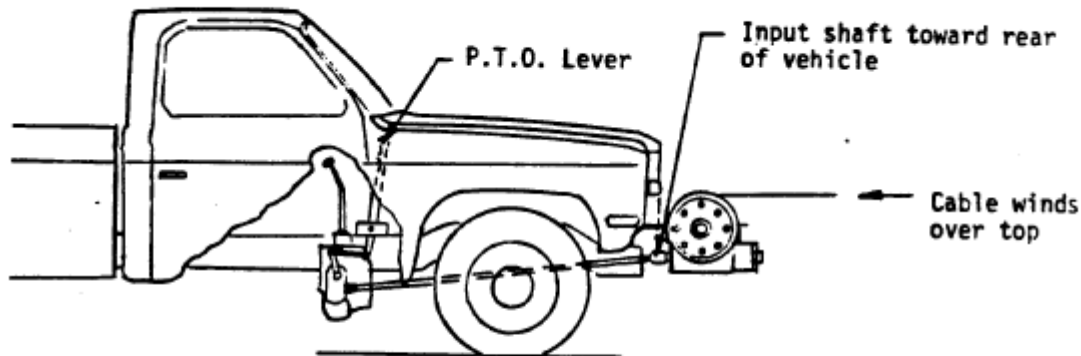


DIAGRAM 2

Three factors determine brake assembly arrangement.

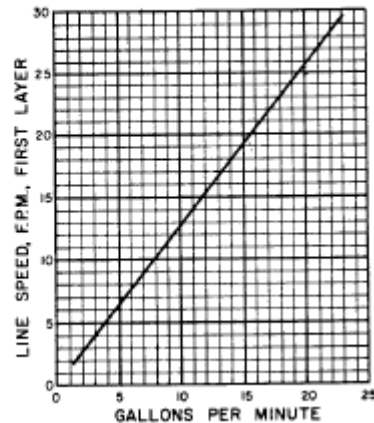
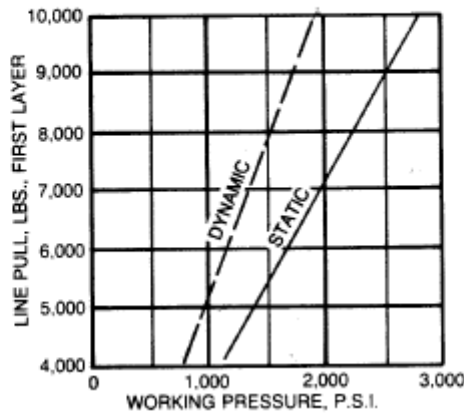
HYDRAULIC SYSTEMS AND PERFORMANCE CHARTS

HYDRAULIC SYSTEMS

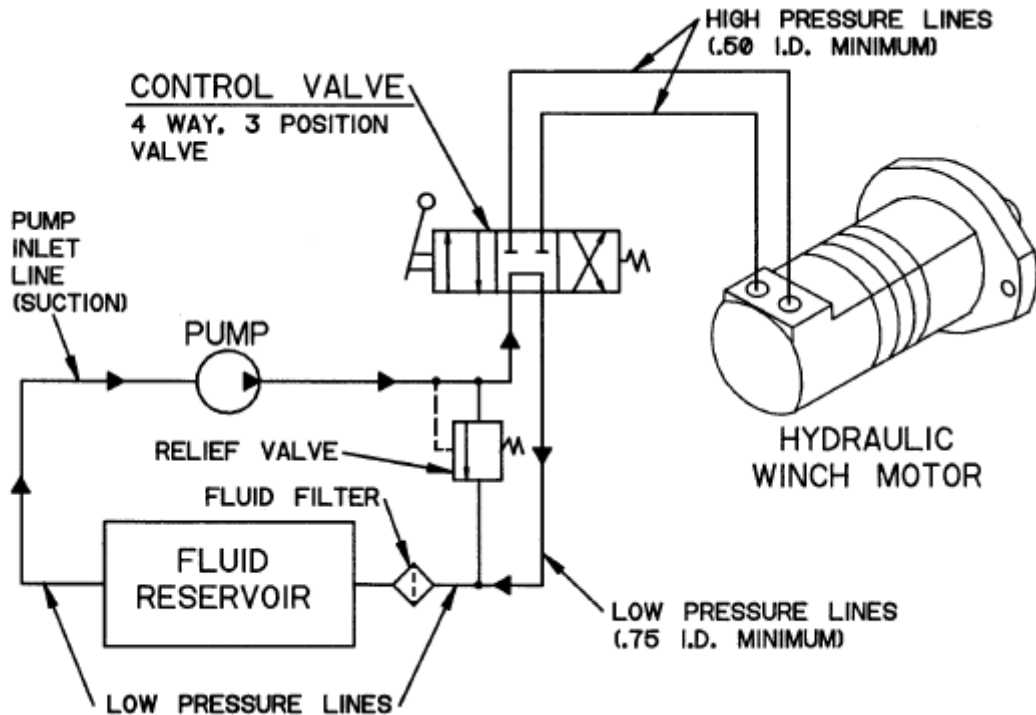
Refer to the performance charts, below, to properly match your hydraulic system to the H-400 Series winch performance. The charts consist of: (1) Line speed, first layer (F.P.M.) vs. gallons per minute (G.P.M.) and (2) Line pull (lbs.) first layer vs. working pressure (P.S.I.). STATIC (solid line) refers 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 1 for motor port size.

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



TROUBLESHOOTING TIPS

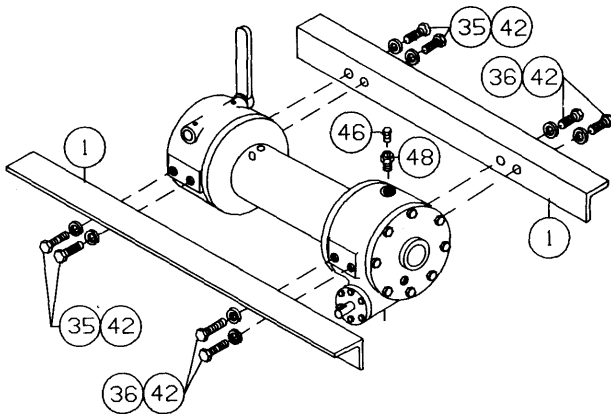


CONDITION	POSSIBLE CAUSE	CORRECTION
CLUTCH INOPERATIVE OR BINDS UP.	<ol style="list-style-type: none"> 1. Dry or rusted shaft. 2. Bent yoke or linkage. 3. Clutch jaws are in contact. 	<ol style="list-style-type: none"> 1. Clean and lubricate. 2. Replace yoke or shaft assembly. 3. See TECHNIQUES OF OPERATION.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

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

DIS-ASSEMBLY

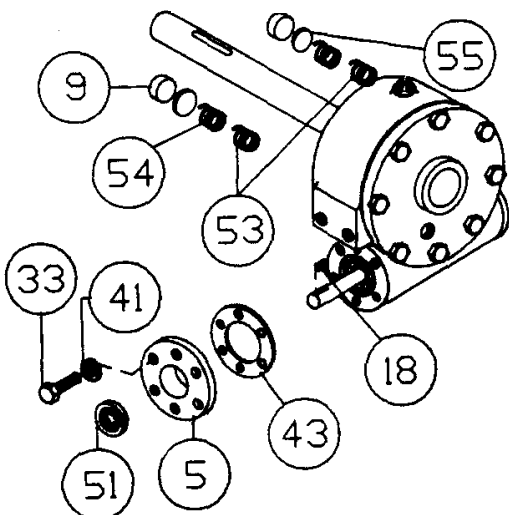
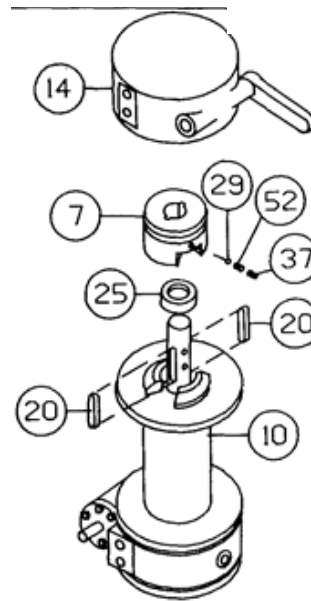
Refer to parts list and parts drawing pages for actual item numbers and corresponding part numbers.



1. Drain oil from gear housing by removing (item #SO) 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.

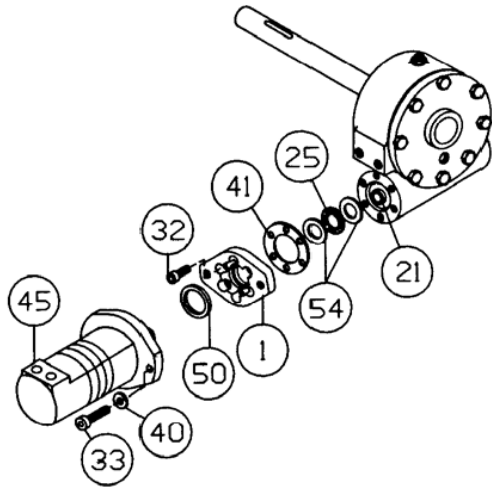
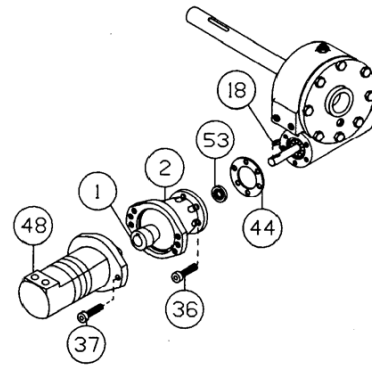
Remove two keys (item #20) from keyways. Once keys have been removed, drum (item #10) and drum spacer (item #25) can be removed from drum shaft.



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).

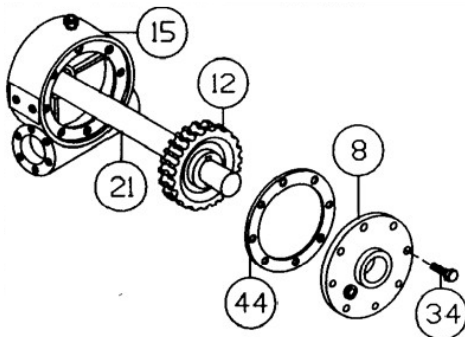
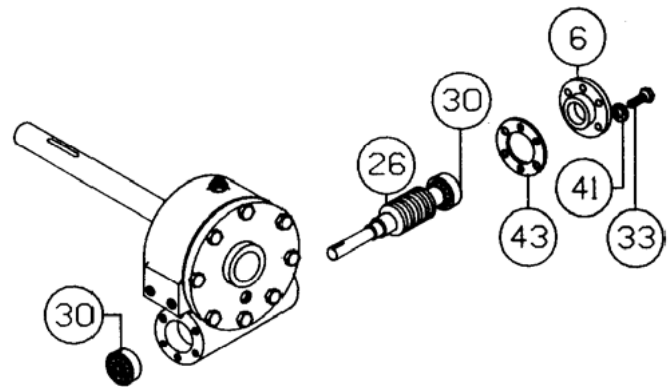


- 4a. Remove motor (item #45) from adapter (item #1) by removing two capscrews and lockwashers (items #33 & #40). Remove adapter (item #1) from gear housing by removing six (item #32) capscrews. Replace seal (item #50) and gasket (item #41). Remove thrust bearing (item #25) and thrust washers (item #54).

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.

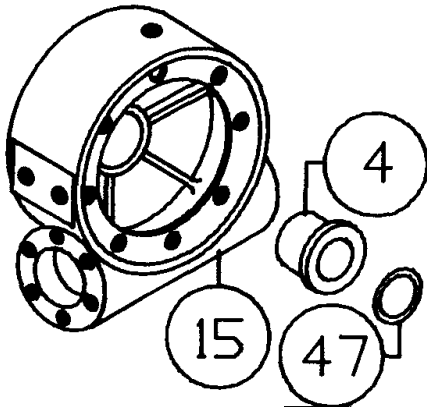
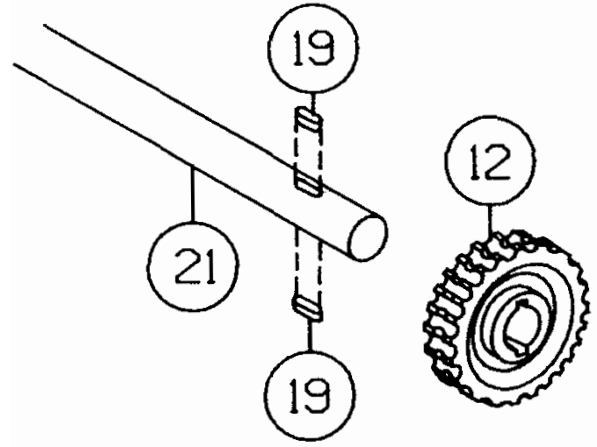


6. Remove gear housing cover (item #8) from gear housing (item #15) by unscrewing eight capscrews (item #34). Thread two of the capscrews into the two tapped holes of cover and tighten. This will pull the cover loose from gear housing.

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.

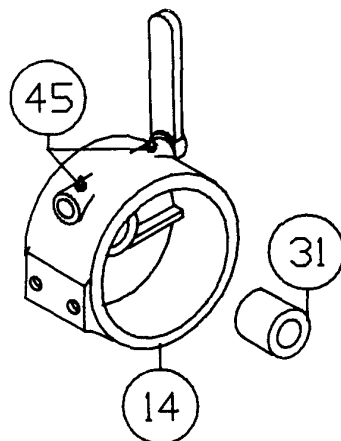
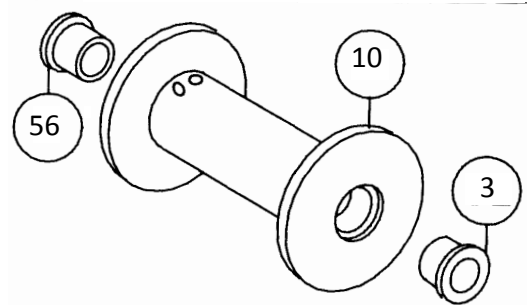
Examine shaft, keys and keyways. If distortion of keys and/or keyways are evident, shaft and keys should be replaced. Tap keys (item #19) into shaft keyways. Press gear over shaft and keys until end of keys, on long end of shaft, are flush with gear.



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.

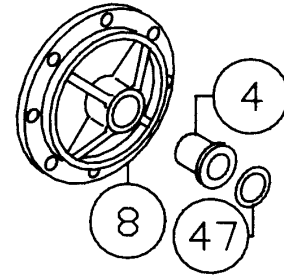
9. Check drum bushings (items #3 & #56) for signs of wear. Replace if necessary by pressing old bushings from drum. Press new ones into place. NOTE: If bushings are replaced, it will be necessary to run a 9/16 (.56) dia. drill through cable pocket. The following drum assemblies are available with new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

#234141 400 Series drum assembly
#2340b7 Y-400 Series drum assembly



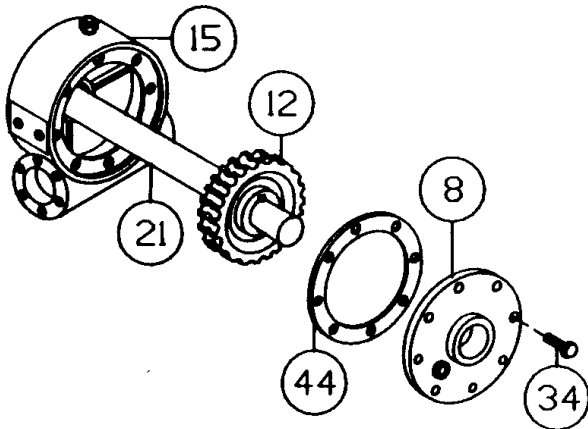
10. Check clutch housing bushing (item #31) for wear. If necessary, remove old bushing and press new bushing into place. Apply grease to lube fittings (item #45) to lubricate clutch shifter shaft.

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.



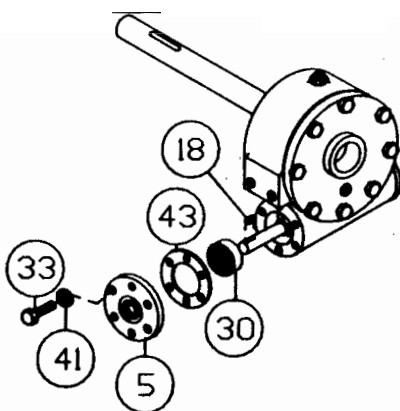
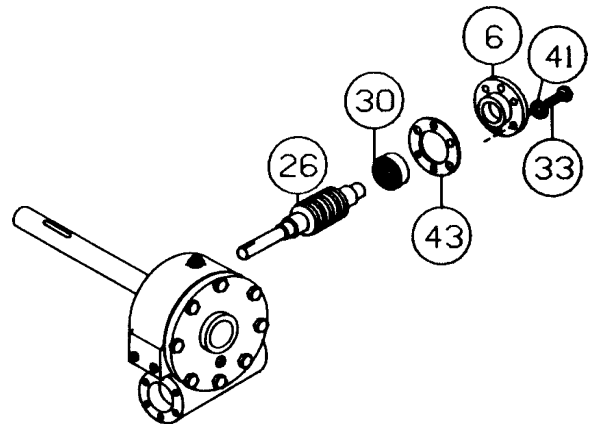
RE-ASSEMBLY

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 12ft. lbs. (16.1 Nm.) each.

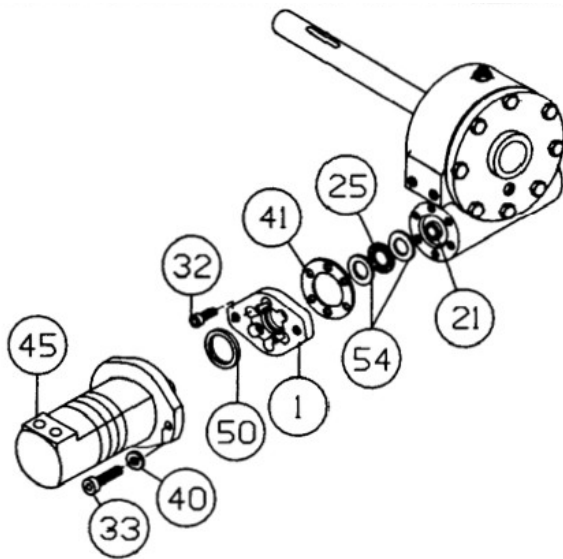
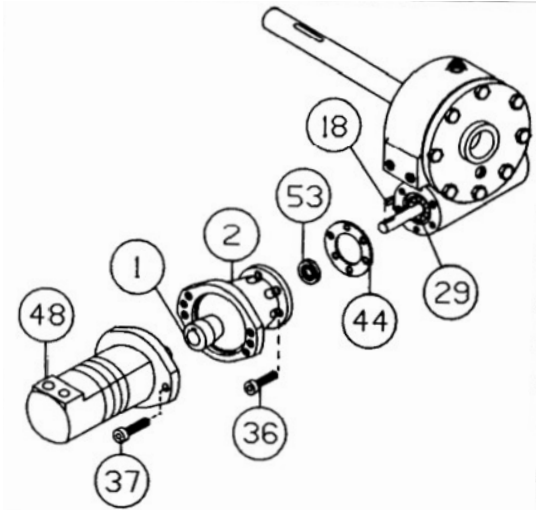
13. Press bearing (item #30) onto worm (item #26)
NOTE: Be sure that thick shoulder of bearings outer race (side with manufacturer's name and part number) is out, away from worm threads. Press bearing and worm into gear housing. Slip gasket (item #43) onto bearing cap (item #6). Use six cap screws (item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

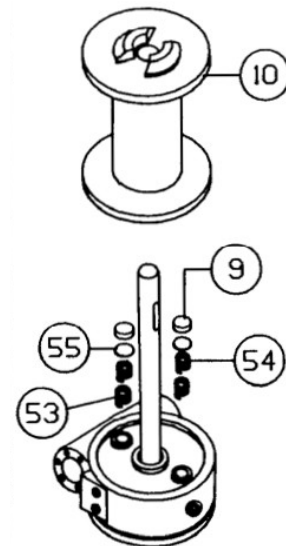
15. Press bearing (item #29) onto worm and into housing. NOTE: Be sure that thick shoulder of bearings outer race (side with manufacturer's name and part number) is out, away from worm threads. Attach adapter (item #2) to gear housing using six capscrews (item #36.). Tighten cap screws to 12 ft. lbs. (16.1 Nm.) each. Insert key (item #18) into keyway of worm shaft. Slide tapered end of coup ling (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 39ft. 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 39ft. 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 4 #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.



17. 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.

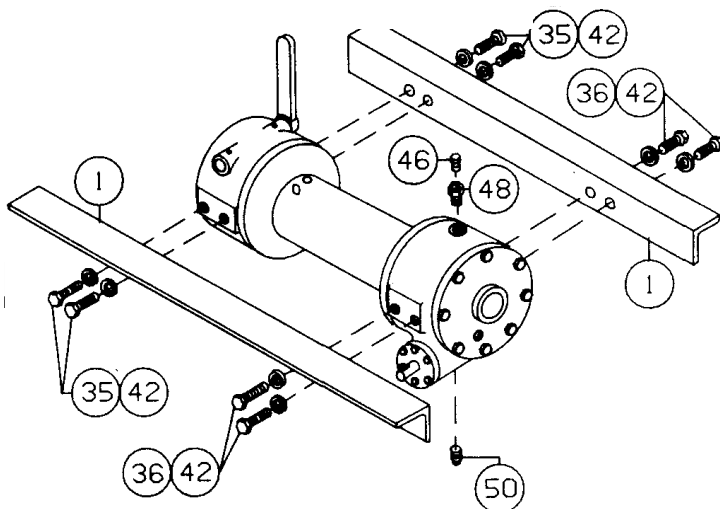
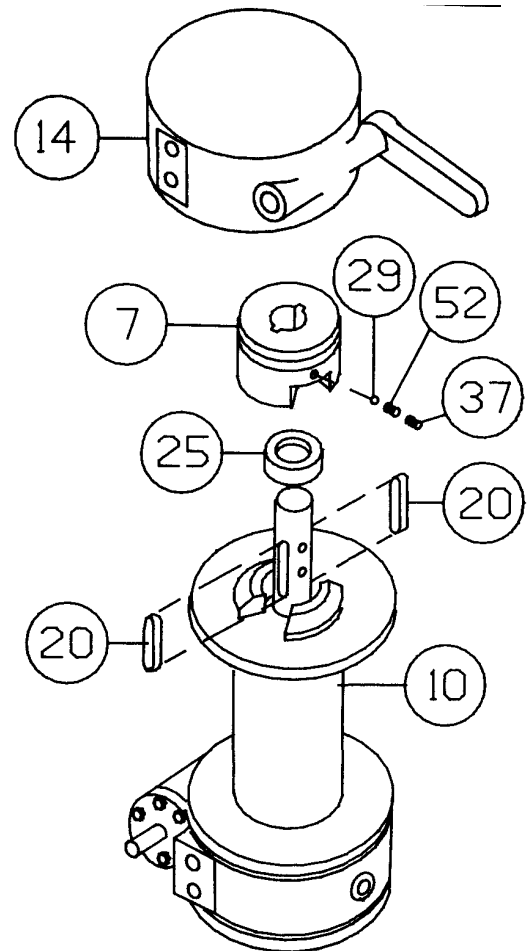
NOTE: Be sure that tapped hole on side of jaw clutch is on same side of shaft as the two ball detents. Insert ball poppet (item #29), spring (item #52) and setscrew (item #37) into tapped hole of jaw clutch.

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 down ward into place.

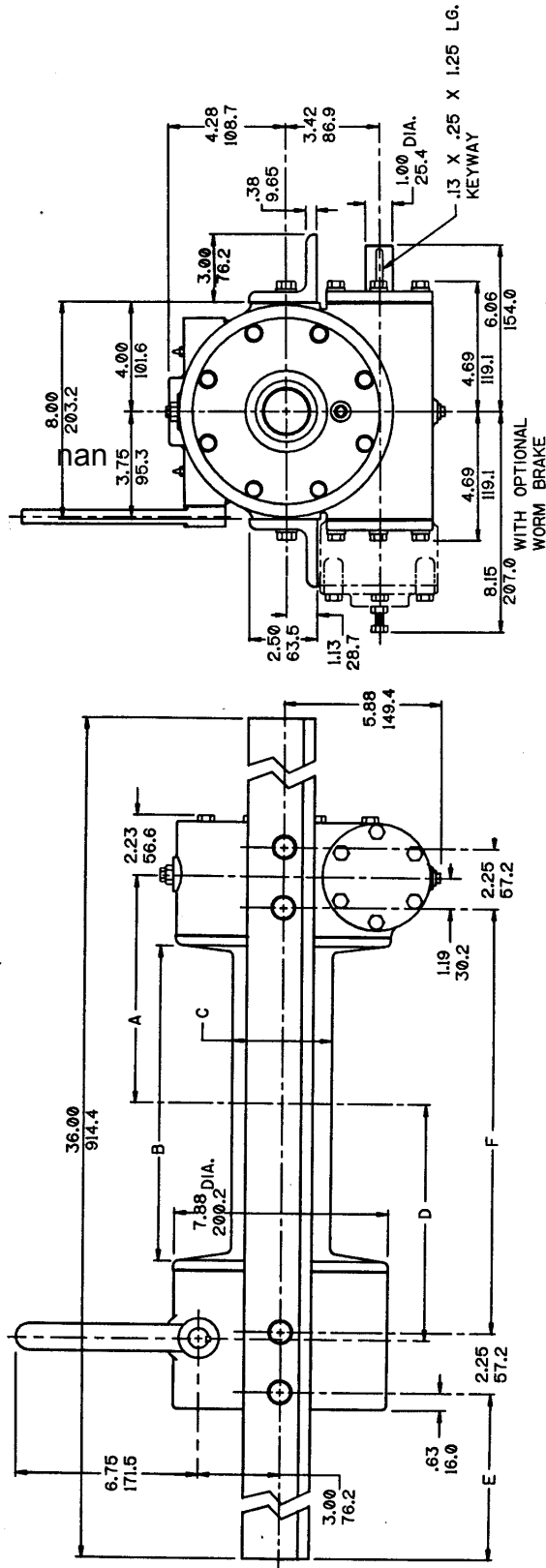
The setscrew should be tightened enough to allow ball, when placed in ball detents, to sufficiently hold jaw clutch "IN" and "OUT".



18. Attach two mounting angles (item #1) using four (item #35) capscrews with lockwashers at clutch end and four items #36) capscrews with lockwashers at gear housing end. Torque capscrews to 28ft. 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.

MODEL 400 DIMENSIONAL DRAWING

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



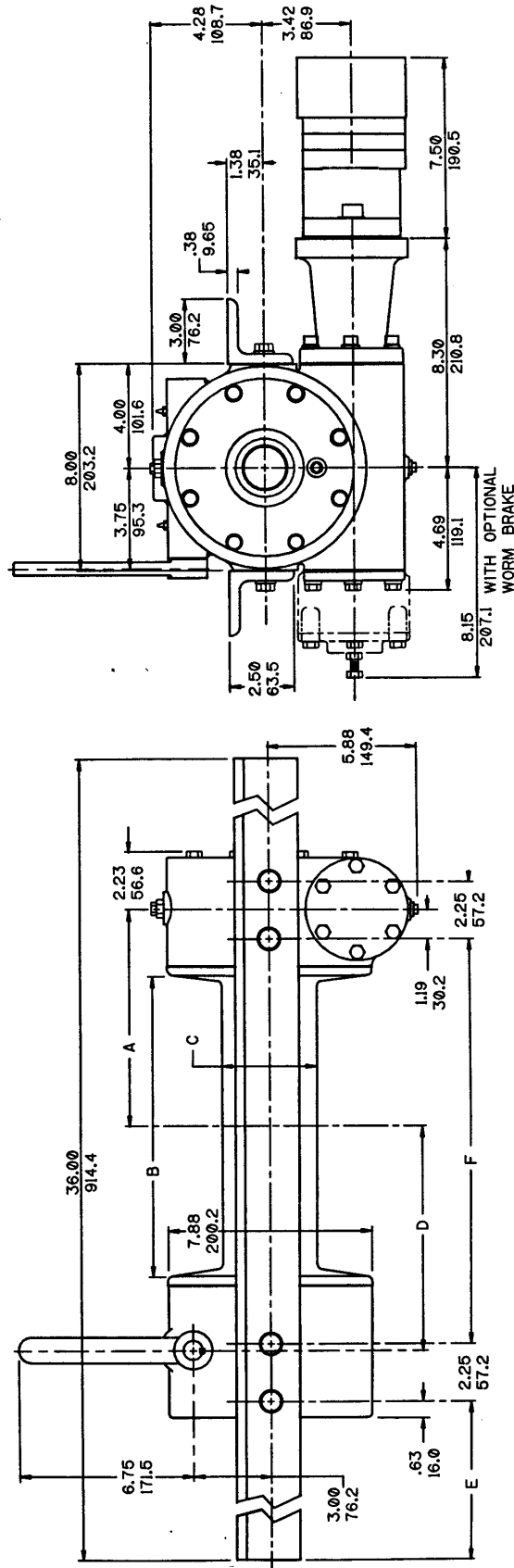
DIMENSIONS SHOWN ARE INCHES OVER MILLIMETERS

Model 400

NOTES

MODEL H-400 DIMENSIONAL DRAWING

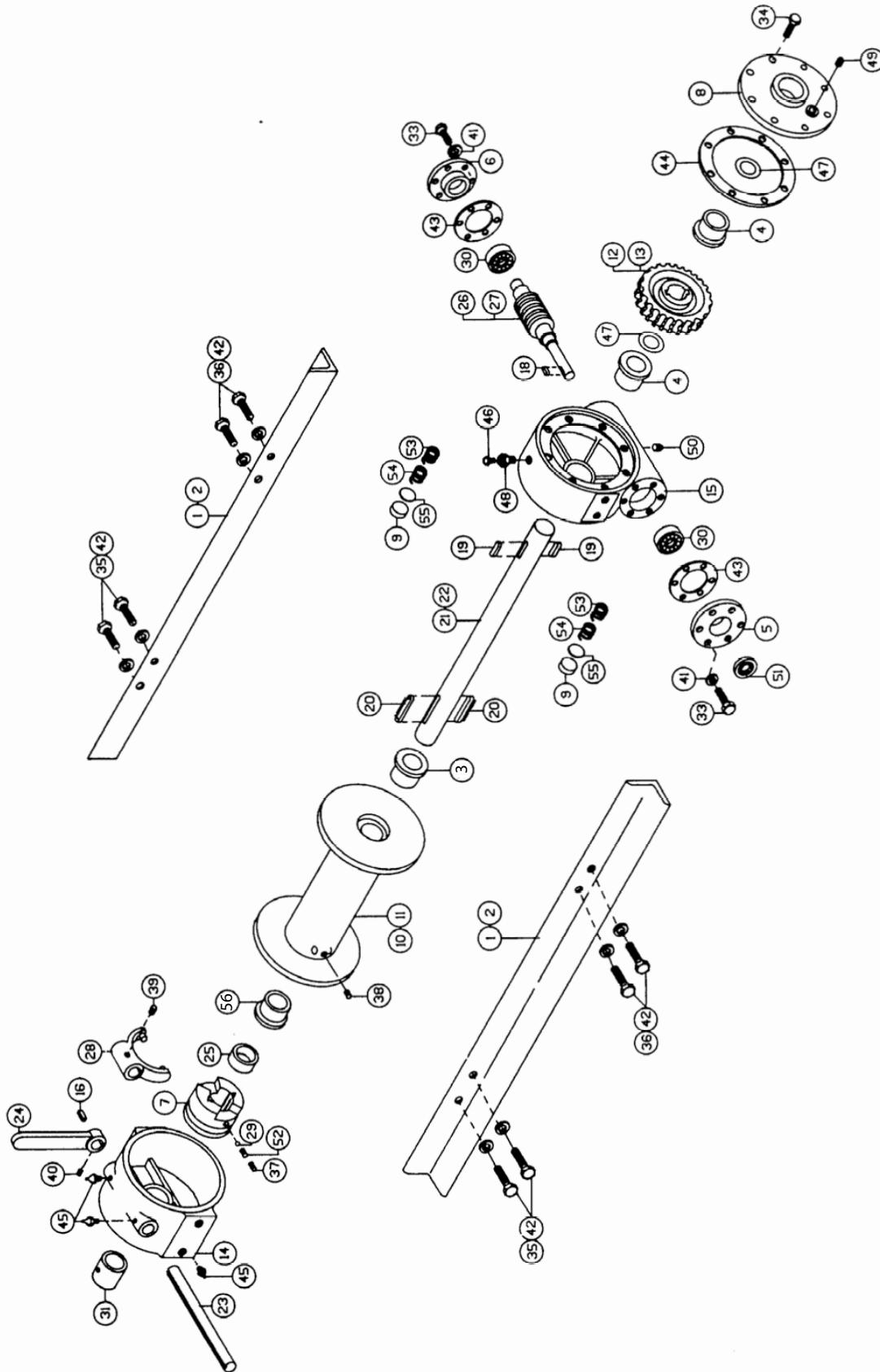
WINCH MODEL	A INCHES MM	B INCHES MM	C INCHES MM	D INCHES MM	E INCHES MM	F INCHES MM
400	8.44 214.4	11.63 295.4	3.63 92.2	8.75 222.3	7.87 199.9	15.75 400.1
Y-400	7.00 177.8	8.75 222.3	4.00 101.6	7.32 185.9	9.31 236.5	12.88 327.2



DIMENSIONS SHOWN ARE INCHES OVER MILLIMETERS

Model H 400

MODEL 400 EXPLODED VIEW



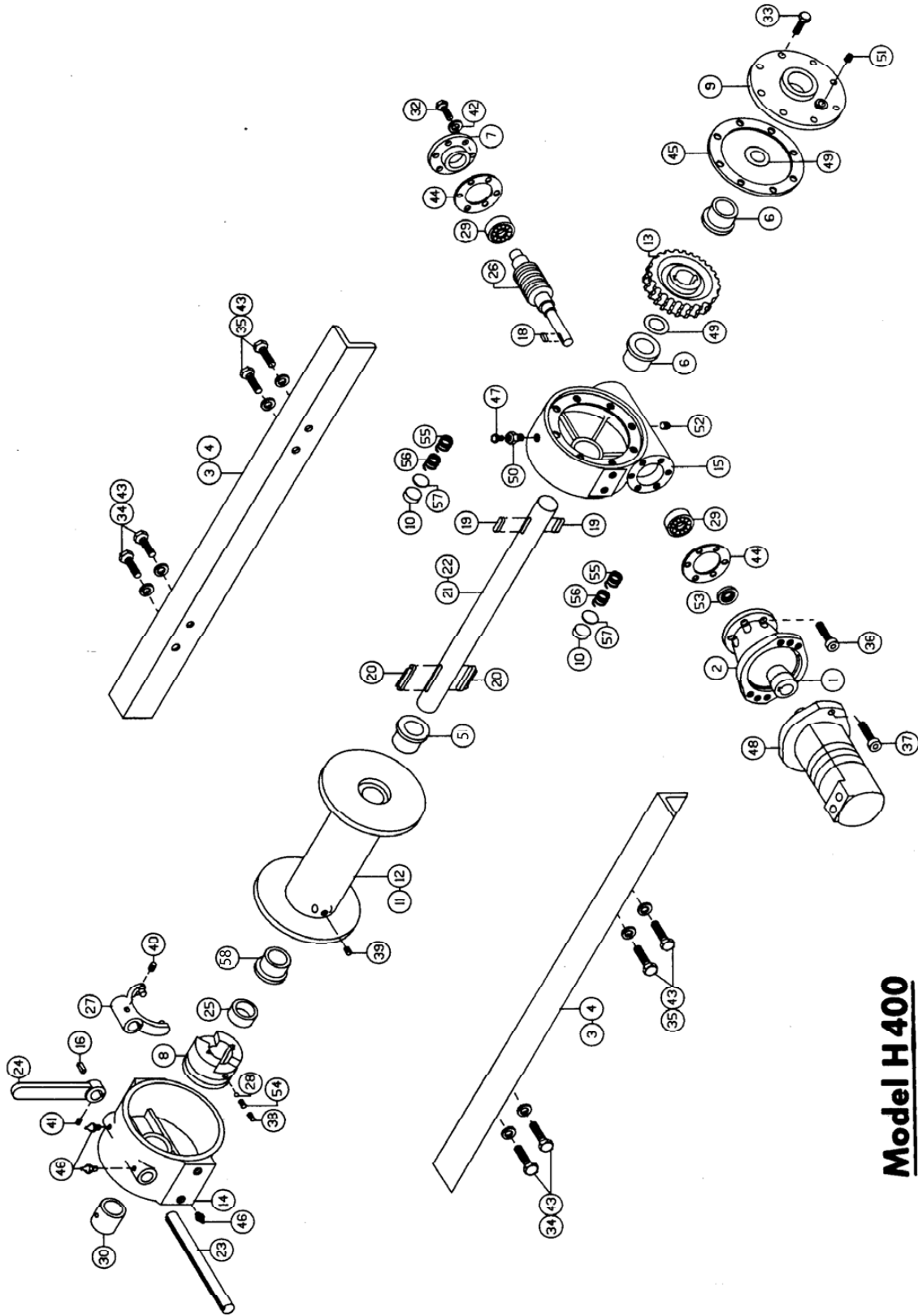
Model 400

*See page 25 for optional worm brake & parts list.

PARTS LIST FOR MODEL 400

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	2	302124	ANGLE 400
2	2	302125	ANGLE Y 400
3	1	308046	BUSHING
4	2	308048	BUSHING
5	1	316003	CAP
6	1	316004	CAP
7	1	324163	CLUTCH JAW
8	1	328010	COVER
9	2	330010	SHOE DRAG BRAKE
10	1	332074	DRUM Y400
11	1	332139	DRUM 400
12	1	334009	GEARY LH
13	1	334016	GEAR RH
14	1	338009	HOUSING CLUTCH
15	1	338010	HOUSING GEAR
16	1	342024	KEY SQ END
17	1		NO LONGER USED
18	1	342051	KEY RD END
19	2	342120	KEY RD END
20	2	450017	KEY BARTH
21	1	356702	SHAFT DRUM 400
22	1	356716	SHAFT DRUM Y400
23	1	356902	SHAFT SHIFTER
24	1	358001	SHIFTER HANDLE
25	1	362007	SPACER DRUM
26	1	368004	WORM RH
27	1	368006	WORM LH
28	1	370057	YOKE
29	1	400003	BALL POPPET
30	2	402044	BEARING BALL
31	1	412005	BUSHING
32			NO LONGER USED
33	12	414139	CAPSCREW 5/16- 18 NC X 1-1/4
34	8	414140	CAPSCREW 5/16- 18NC X 3/4
35	4	414457	CAPSCREW 7/16-14NC X 1 1/4
36	4	414481	CAPSCREW 7/16 - 14NC X 1 1/4
37	1	414971	SCREW POPPET
38	1	416059	SET SCREW 3/8 - 16 NC X 1/2
39	1	416109	SETSCREW 5/16 - 18NC X 1/2
40	1	416112	SET SCREW 5/16 - 18NC X 3/4
41	12	418163	LOCKWASHER 5/16
42	8	418198	LOCKWASHER 7/16
43	8	442182	GASKET
44	1	442183	GASKET
45	3	456006	FITTING LUBE
46	1	456008	FITTING RELIEF
47	2	462003	QUAD RING
48	1	468002	REDUCER
49	1	468010	PLUG PIPE
50	1	468011	PLUG PIPE
51	1	486011	SEAL OIL
52	1	486067	SPRING
53	2	494088	SPRING
54	2	494089	SPRING
55	2	530094	SPACER-BRAKE DISC
56	1	402400	BUSHING-DU

MODEL H-400 EXPLODED VIEW



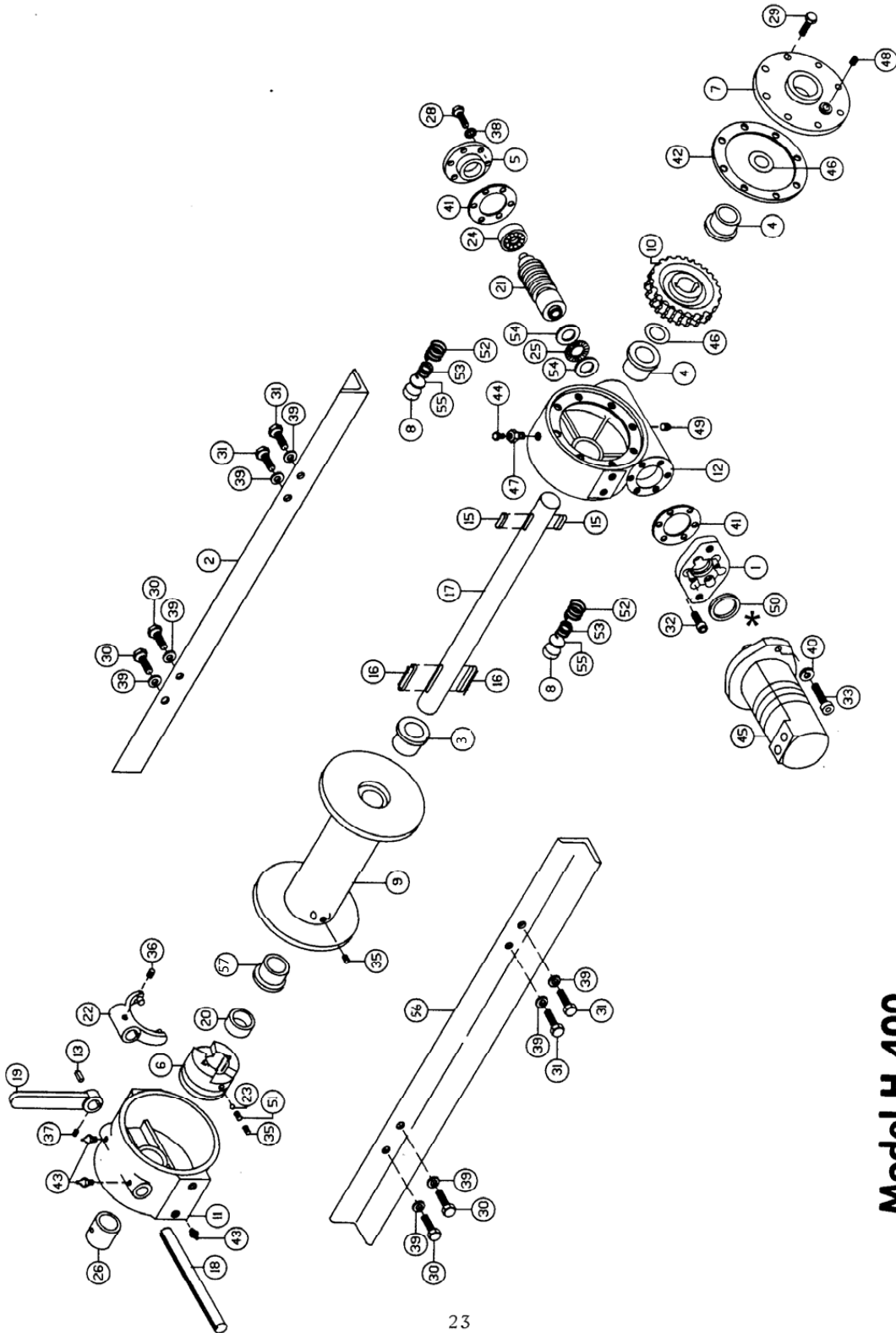
Model H 400

*See page 25 for optional worm brake parts list.

PARTS LIST FOR MODEL H-400

ITEM NO.	QTY	PART NO.	DESCRIPTION	ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	299043	COUPLING ASSY	30	1	412005	BUSHING
2	1	300043	ADAPTER	31			NO LONGER USED
3	2	302459	ANGLE H400	32	6	414139	CAPSCREW 5/16- 18 NC X 1-1/4
4	2	302669	ANGLE HY400	33	8	414140	CAPSCREW 5/16- 18NC X 3/4
5	1	309046	BUSHING	34	4	414457	CAPSCREW 7/16-14NC X 1 1/4
6	2	309048	BUSHING	35	4	414481	CAPSCREW 7/16 - 14NC X 1 1/4
7	1	316004	CAP	36	6	414871	CAPSCREW 5/16 18NC X 1 1/4
8	1	324163	CLUTCH JAW	37	2	414950	CAPSCREW 1/2 - 13NC X 1 3/4
9	1	328010	COVER	38	1	414971	SCREW POPPET
10	2	330010	SHOE DRAG BRAKE	39	1	416059	SETSCREW 3/8 16 NC X 1/2
11	1	332074	DRUM 6400	40	1	416109	SETSCREW 5/16 - 18NC X 1/2
12	1	332138	DRUM 400	41	1	416112	SET SCREW 5/16 - 18NC X 3/4
13	1	334016	GEAR RH	42	6	418163	LOCKWASHER 5/16
14	1	338009	HOUSING CLUTCH	43	8	418198	LOCKWASHER 7/16
15	1	338010	HOUSING GEAR	44	2	442182	GASKET
16	1	342024	KEY SQ END	45	1	442183	GASKET
17	1		NO LONGER USED	46	3	456006	FITTING LUBE
18	2	342051	KEY RD END	47	1	456008	FITTING RELIEF
19	2	342120	KEY RD END	48	1	458025	MOTOR - HYD
20	1	450017	SKEY BARTH	49	2	462003	QUAD RING
21	1	356702	SHAFT DRUM 400	50	1	468002	REDUCER
22	1	356716	SHAFT DRUM Y400	51	1	468010	PLUG PIPE
23	1	356902	SHAFT SHIFTER	52	1	468011	PLUG PIPE
24	1	358001	SHIFTER HANDLE	53	1	486067	SEAL OIL
25	1	362007	SPACER DRUM	54	1	494005	SPRING
26	1	368004	WORM RH	55	2	494088	SPRING
27	1	370057	YOKE	56	2	494089	SPRING
28	1	400003	BALL POPPET	57	2	530094	SPACER-BRAKE DISC
29	2	402044	BEARING BALL	58	1	402400	BUSHING-DU

MODEL H-400 SHORT COUPLING EXPLODED VIEW



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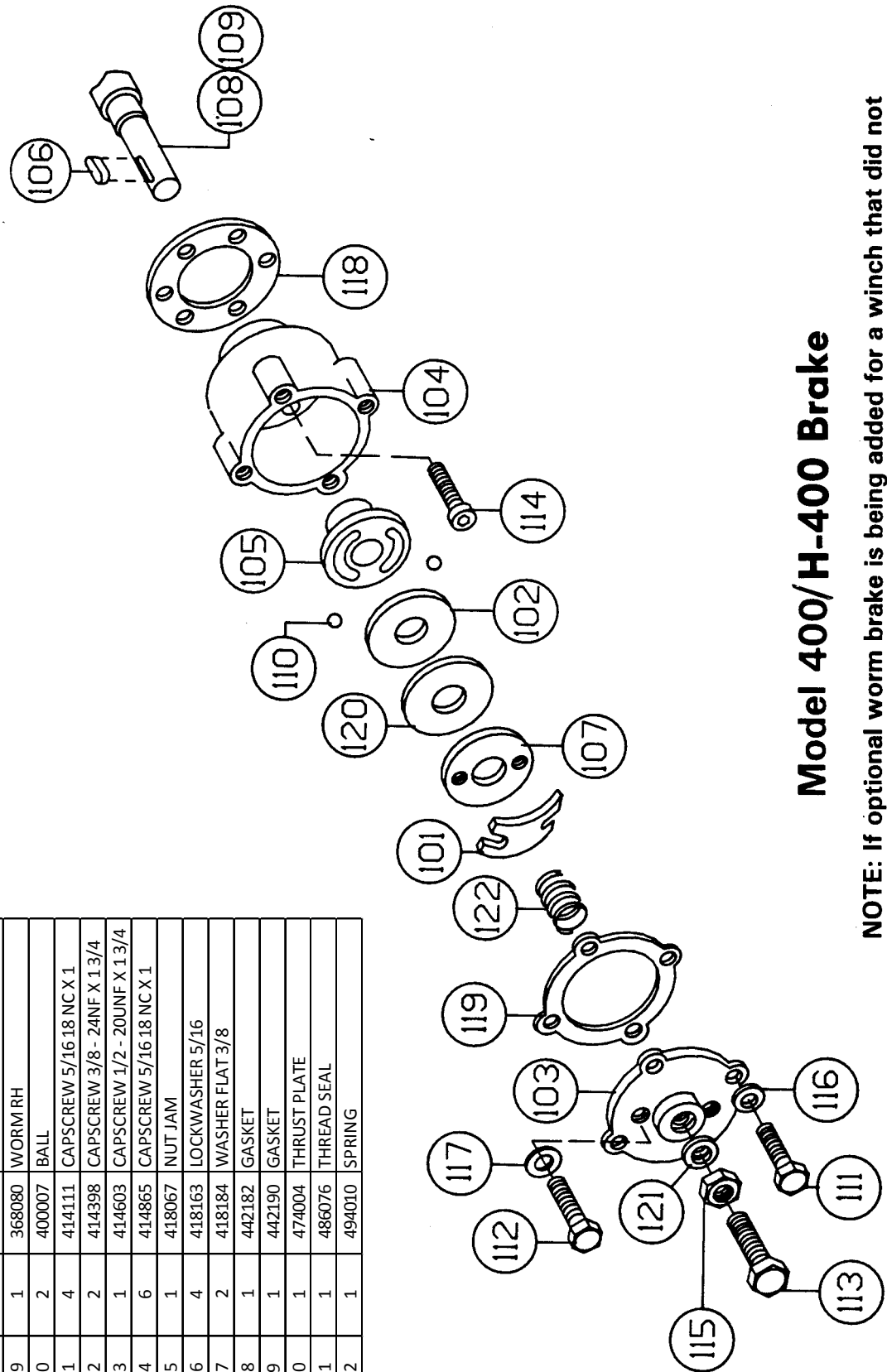
Model H-400
SHORT COUPLING

MODEL H-400 SHORT COUPLING PARTS LIST

ITEM NO.	QTY.	PART NO.	DESCRIPTION	ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	300062	ADAPTER	30	4	414457	CAPSCREW 7/16-14NC X 1 1/4
2	1	302956	ANGLE	31	4	414481	CAPSCREW 7/16 - 14NC X 1 1/4
3	1	308046	BUSHING	32	6	414887	CAPSCREW 5/16 - 18NC X 1
4	2	308048	BUSHING	33	2	414952	CAPSCREW 1/2 X 13 NC X 1-1/2
5	1	316004	CAP BEARING	34	1	414971	SCREW POPPET
6	1	324163	CLUTCH JAW	35	1	416059	SET SCREW 3/8 - 16 NC X 1/2
7	1	328010	COVER	36	1	416109	SETSCREW 5/16 - 18NC X 1/2
8	2	330010	SHOE DRAG BRAKE	37	1	416112	SET SCREW 5/16 - 18NC X 3/4
9	1	332139	DRUM	38	6	418163	LOCKWASHER 5/16
10	1	334016	GEAR RH	39	8	418198	LOCKWASHER 7/16
11	1	338009	HOUSING CLUTCH	40	2	418218	LOCKWASHER 1/2
12	1	338269	HOUSING GEAR	41	2	442182	GASKET
13	1	342024	KEY SQ END	42	1	442183	GASKET
14			NO LONGER USED	43	3	456006	FITTING LUBE
15	2	342120	KEY RD END	44	1	456008	FITTING RELIEF
16	2	450017	KEY BARTH	45	1	458025	MOTOR
17	1	356702	SHAFT DRUM	46	2	462003	QUAD RING
18	1	356902	SHAFT SHIFTER	47	1	468002	REDUCER
19	1	358052	SHIFTER HANDLE	48	1	468010	PLUG PIPE
20	1	362007	SPACER DRUM	49	1	468011	PLUG PIPE
21	1	368183	WORM RH	50	1	486079	SEAL PILOT
22	1	370057	YOKE			462029	O-RING
23	1	400003	BALL POPPET	51	1	494005	SPRING
24	1	402044	BEARING BALL	52	2	494088	SPRING
25	1	402107	BEARING THRUST	53	2	494089	SPRING
26	1	412005	BUSHING	54	2	518026	WASHER THRUST
27			NO LONGER USED	55	2	530094	SPACER-BRAKE DISC
28	6	414139	CAPSCREW 5/16 - 17 NC X 1-1/4	56	1	302955	ANGLE
29	8	414140	CAPSCREW 5/16 18NC X 3/4	57	1	402400	BUSHING - DU

MODEL 400/H-400 BRAKE DRAWING AND PARTS LIST

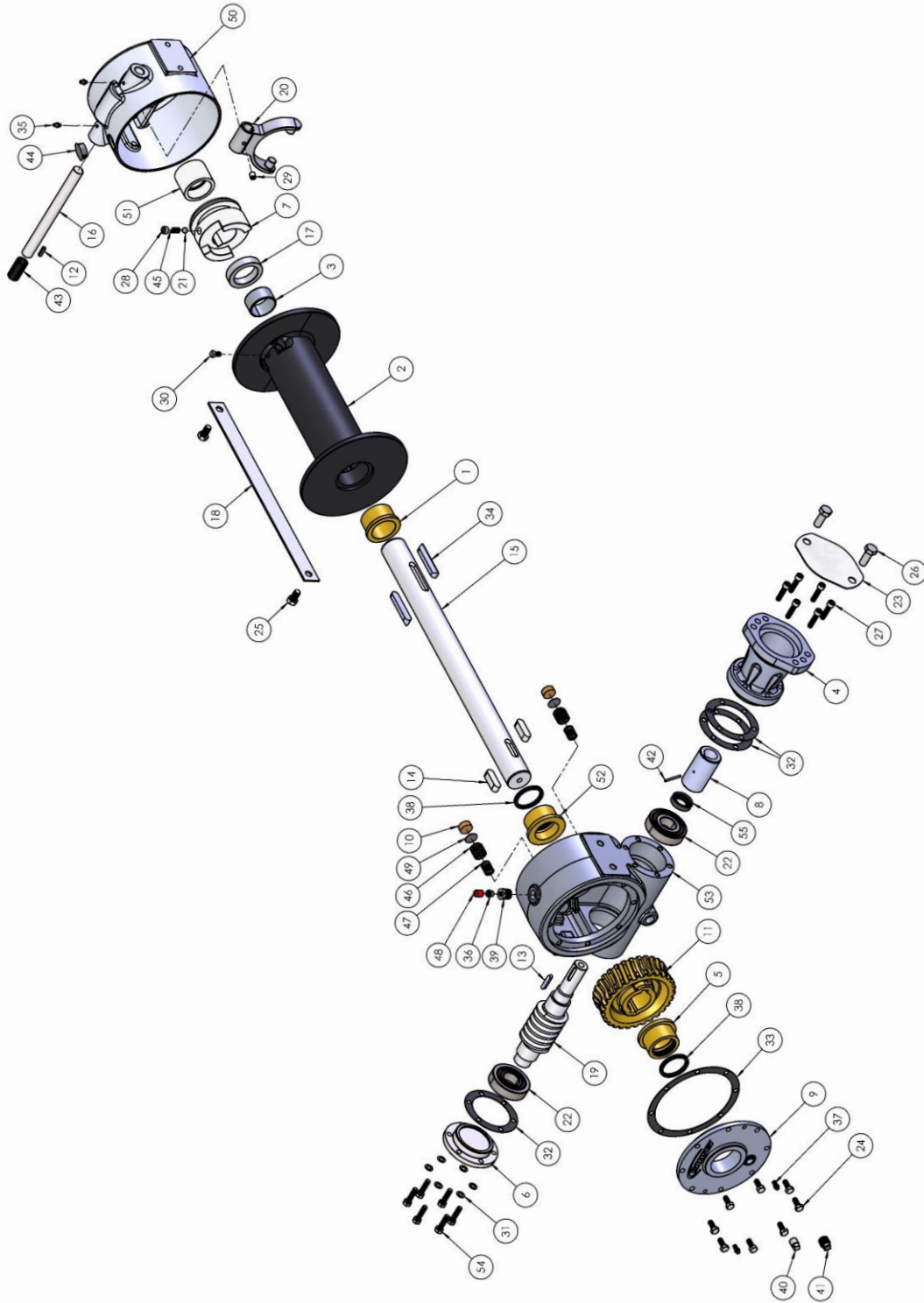
ITEM NO.	QTY.	PARTS NO	DESCRIPTION
101	1	306036	SPRING FLAT
102	1	314003	CAM PLATE
103	1	328057	COVER
104	1	338038	HOUSING BRAKE
105	1	340024	HUB
106	1	342051	KEY
107	1	352020	RETAINER PLATE
108	1	368057	WORMRH
109	1	368080	WORMRH
110	2	400007	BALL
111	4	414111	CAPSCREW 5/16 18 NC X 1
112	2	414398	CAPSCREW 3/8 - 24NF X 1 3/4
113	1	414603	CAPSCREW 1/2 - 20UNF X 1 3/4
114	6	414865	CAPSCREW 5/16 18 NC X 1
115	1	418067	NUT JAM
116	4	418163	LOCKWASHER 5/16
117	2	418184	WASHER FLAT 3/8
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.

KITS AND MAINTENANCE PARTS - 120282, 120283



KITS AND MAINTENANCE PARTS - 120282, 120283

ITEM #	QTY.	PART NUMBER	DESCRIPTION	WINCH(ES)		KITS				
				120282	120283	222086	246055	250525	283096	248075
1	1	308046	BUSHING-DRM							X
2	1	332293	DRUM-CABLE							
3	1	402400	BUSHING-DU							X
4	1	300043	ADPT-HJ8							
5	1	308048	BUSHING							
6	1	316004	CAP-BRG							
7	1	324163	JAW CLUTCH			X				
8	1	324212	COUPLING						X	
9	1	328010	COVER-GEAR HSG							
10	2	330010	SHOE-DRAG BRK							
11	1	334016	GEAR-RH					X		
12	1	342024	KEY-SQ END			X				
13	1	342051	KEY-RD ENDS						X	
14	2	342120	KEY-RD ENDS					X		
15	1	356702	SHAFT-DRUM					X		
16	1	356902	SHAFT-SHIF			X				
17	1	362007	SPACER-DRUM							
18	1	364046	STRAP-SHIP							
19	1	368004	WORM-RH							
20	1	370057	YOKE-CLUTCH			X				
21	1	400003	BALL-POPPET							
22	2	402044	BEARING-BALL					X		
23	1	413013	COVER-HYD ADP							
24	8	414140	BOLT-5/16-18NCX3/4,HXD							
25	2	414411	CAPSCREW-7/16-14NC X3/4LG,HXHD							
26	2	414521	CAPSCREW-1/2-13NCX1LG HXHD							
27	6	414871	SCREW-5/16-18NCX1-1/4,HXSOC							
28	1	414971	SCREW-POPPET			X				
29	1	416059	SETSCREW3/8-16NCX1/2			X				
30	1	416109	SETSCREW-5/16-18NCX1/2							
31	6	418163	LOCKWASHER-5/16							
32	3	442182	GASKET-BRG CAP				X	X		
33	1	442183	GASKET-GH COV				X	X		
34	2	450017	KEY-BARTH,1/2 X2 3/4LG							
35	2	456006	FITTING-LUBE							
36	1	456008	RELIEF FIT							
37	2	456040	FITTING-LUBE							
38	2	462003	QUAD-RING				X	X		
39	1	468002	RED-3/8-1/8NPTF							
40	1	468010	PIPE PLUG-1/4-18 NPTF							

KITS AND MAINTENANCE PARTS - 120282, 120283

				WINCH(ES)		KITS				
ITEM #	QTY.	PART NUMBER	DESCRIPTION	120282	120283	222086	246055	250525	283096	248075
41	1	468011	PIPE PLUG-3/8-18NPTF							
42	1	470018	ROLL PIN-1/8 X1 5/8LG						X	
43	1	472006	CAP-PLAST			X				
44	1	472013	PLUG-PLAST							
45	1	494005	SPRING							
46	2	494088	SPRING-DISC BRK							
47	2	494089	SPRING-DISC BRK							
48	1	530069	COVER-VENT PLUG							
49	2	530094	SPACER-BRK DISC							
50	1	338278	HOUSING-CLUTCH							
51	1	412005	BUSHING							X
52	1	308048	BUSHING							
53	1	338010	HOUSING							
54	6	414139	CAPSCREW-5/16-18NCX1 1/4LG,HXHD							
55	1	486067	SEAL-OIL,DOUBLE LIP				X			

**RAMSEY WINCH INDUSTRIAL WINCH
LIMITED WARRANTY**

1.1 Scope of Warranty Coverage. Upon the terms and subject to the conditions set forth in this limited warranty:

- (a) RAMSEY WINCH (referred to herein as “**RAMSEY WINCH**” or the “**Manufacturer**”) warrants to each initial end user customer (a “**Purchaser**”) of a new industrial winch together with any accessories manufactured and sold directly from RAMSEY WINCH (the “**Product**”) that the Product shall be free from defects in material and workmanship, under normal working and service conditions, for a period of eighteen (18) months from the date the Product is shipped from RAMSEY WINCH. (the “**Warranty Term**”). A Purchaser shall be eligible for an additional eighteen (18) months of coverage in addition to the Warranty Term (also referred to as the “**Standard (+) PLUS benefit**”) only if the Purchaser (i) complies with Section 1.2(a) and (ii) registers the Product during the Warranty Term at myproduct.ramseywinch.com.
- (b) Notwithstanding the foregoing, this warranty does not cover components damaged by accident, abuse, misuse, neglect, untrained operators, collision, overloading, modification, disassembly, rework, misapplication, improper installation, lack of lubrication or maintenance, or improper service. This warranty does not cover the paint or material finish, rope (wire or synthetic), removal or reinstallation of the winch, or normal wear and tear and loss of functionality due to aging of the Product (which may include but is not limited to bearings, bushings, seals, O-rings, gaskets, brake material, motor brushes, electrical cables and more).

1.2 Eligibility of Warranty Coverage.

- (a) A Purchaser shall be eligible for warranty coverage under this Limited Warranty during the Warranty Term only if:
 - (i) Prior to placing a Product in service, and throughout use of the Product during the Warranty Term, the Purchaser provides (or causes to be provided) proper storage such that foreign objects (e.g. rain or debris) cannot enter any Product through entry ports which are normally closed during operation.; and
 - (ii) The Purchaser maintains, or causes to be maintained, the Product according to commercially reasonable standards and utilizes the Product for the purposes for which it was created; and
 - (iii) No repairs or alterations have been made by any party other than RAMSEY WINCH, including Purchaser, unless otherwise authorized in writing by RAMSEY WINCH.

1.3 Transferability of Warranty.

- (a) This warranty is transferable only from the Purchaser to the first subsequent transferee (the “**Transferee**”) of the Product from Purchaser upon (i) written notification to RAMSEY WINCH and (ii) registration of the transfer, both within 30 days of such Product transfer.
- (b) Upon satisfaction of transfer requirements set forth in Section 1.3(a), the Transferee shall succeed to all the rights and obligations of the Purchaser set forth in this Limited Warranty.

1.4 Certain Limitations on Scope of Warranty Service.

- (a) Any obligation of RAMSEY WINCH under this warranty, statutory or otherwise, is limited to the repair of the Product, at its factory or Authorized Service Centers. Notwithstanding the foregoing, if field service or repair is performed by RAMSEY WINCH at the request of the Purchaser and no defect is found with material or workmanship of the Product, the Purchaser shall compensate RAMSEY WINCH for its time and expenses within thirty (30) days of delivery of an invoice relating to the same. If repair is determined by RAMSEY WINCH in its sole, absolute and uncontrolled discretion to be impossible or impractical, then RAMSEY WINCH may satisfy this warranty by replacing the Product. RAMSEY WINCH will not provide any cash payment or credits for defective materials or workmanship.

- (b) Purchaser shall be responsible for any and all freight charges for any Product receiving warranty service under this limited warranty. Any travel time, transportation charges, freight charges, or similar costs incurred by RAMSEY WINCH in connection with the replacement or repair of defective parts, shall, be the responsibility of the Purchaser. If applicable, RAMSEY WINCH shall invoice Purchaser for the total amount of such charges within sixty (60) days of fulfilling its duties under this warranty, payable within thirty (30) days of delivery of such invoice. In no event shall RAMSEY WINCH be liable for bills for service, labor or other expenses that have been incurred by the Purchaser without approval or prior authorization by RAMSEY WINCH for inspection, maintenance, or repair of the Product.
- (c) If a Product is found to be operable upon inspection, the Product, at Purchaser's election, may be either (1) returned to the Purchaser with a service charge from RAMSEY WINCH for inspection, cleaning, and routine replacement of all rubber components and any other parts that show wear; or (2) RAMSEY WINCH can dispose of the product safely.

1.5 **Limitations of Liability.** RAMSEY WINCH shall in no event be liable for punitive, special or consequential damages relating to the Product or this Warranty. RAMSEY WINCH makes no warranty in respect to third-party accessories, upgrades, or additions to the Product.

1.6 **Improving Product.** RAMSEY WINCH reserves the right to improve the Product through changes in design or materials as it may deem desirable or necessary without being obligated to incorporate, upgrade, or otherwise modify previously manufactured products.

1.7 **Limitations of Warranty.**

- (a) THE WARRANTY SET FORTH ABOVE IS THE ONLY EXPRESS WARRANTY. RAMSEY WINCH HEREBY DISCLAIMS AND EXCLUDES ANY OTHER EXPRESS, IMPLIED, OR STATUTORY WARRANTIES, ARISING BY OPERATION OF LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE, OF TRADE, OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND INTELLECTUAL PROPERTY RIGHTS OF A THIRD PARTY.
- (b) ANY IMPLIED WARRANTY WHICH BY LAW MAY NOT BE EXCLUDED IS LIMITED IN DURATION TO ONE (1) YEAR FROM THE DATE OF ORIGINAL RETAIL PURCHASE OF THE PRODUCT.
- (c) This warranty gives you specific legal rights, and you may also have other rights which vary from jurisdiction to jurisdiction.
- (d) This warranty is valid only in the U.S.A. and Canada. For warranty outside the U.S.A. and Canada contact your nearest Ramsey Winch Distributor.

1.8 **No Modifications to Warranty.** No RAMSEY WINCH dealer, distributor, agent or employee is authorized to make any modification, extension or addition to this warranty.

1.9 **How to Apply for Warranty Coverage.**

All claims are handled by contacting your nearest Ramsey Winch Distributor. For questions, please contact customer support: rwcustomersupport@ramseyindustries.com.

Visit [Dealer Locator - Ramsey Winch](#) for Ramsey Winch Distributor locations and contact information.

Additional warranty, service support, product information, and parts information can be found on www.ramseywinch.com.

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