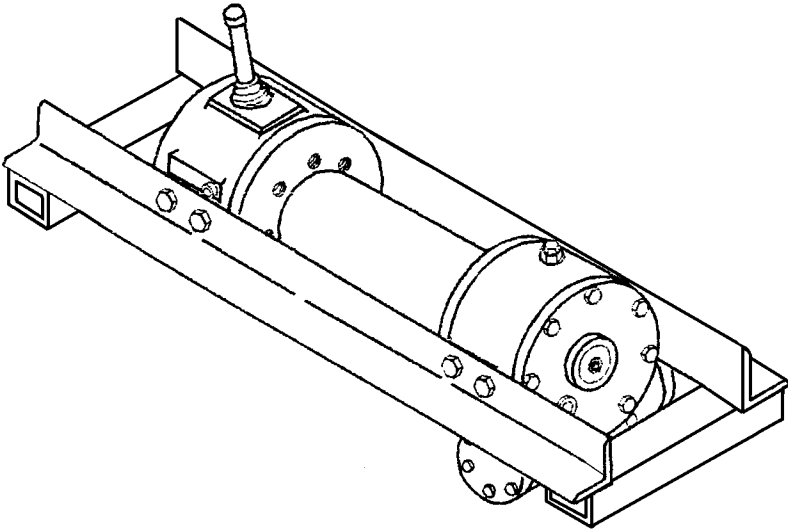




# Operating, Service and Maintenance Manual



## Model H-800 DOW-LOK EQUIPPED INDUSTRIAL LOW-MOUNT WINCH

U.S. PATENT #4379502  
PER JERR-DAN SPECIFICATIONS



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



# Table of Contents

Warranty Information .....	4
Specifications .....	4
Techniques of Operation .....	5
Safeguards & Warnings .....	5
Winch Maintenance .....	6
Winch Mounting .....	6
Cable Installation .....	6
Hydraulic System / Performance Charts .....	7
Typical Layout / Hydraulic System Diagram .....	7
Troubleshooting Tips .....	8
Instructions for Overhaul of Winch	
Disassembly .....	9-12
Reassembly .....	12-15
Dimensional Drawings .....	16
Parts List and Parts Drawings .....	17-18
Limited Warranty .....	back cover

# Ramsey Winch Model H-800 Dow-Lok®

## 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.

<b>SPECIFICATIONS: Conforms to SAE J706</b>						
Rated Line Pull	1st Layer	lbs.	20,000			
		kg.	9,060			
Gear Reduction:	All Models		40:1			
Shipping Weight:	H-800		369 lbs. (167 kg.)			
	Layer of Cable	1	2	3	4	5**
Rated Line Pull	lbs.	20,000	16,600	14,200	12,400	11,000
all Models	kg.	9,060	7,510	6,430	5,610	4,980
* Cable Capacity	ft.	35	75	125	180	240
	M	10	22	38	54	72
Line Speed	Refer to chart of line speed versus GPM on page 5					
* These specifications are based on recommended cable of 5/8" (16 mm) 6 x 19 extra improved plow steel cable.						
** Fifth layer does not conform to SAE J706						

**Note:** The rated line pulls shown are for the winch only. Consult 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 to you.

The uneven spooling of cable, while pulling a load, is not a problem, unless there is a cable pileup on one end of the 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 Dow-lok® clutch provides free spooling and clutch engagement with the cable drum. With the clutch disengaged, the cable can be freespoiled off the drum. For winching in the load the clutch must be fully engaged with the drum.

The Dow-lok® clutch is latched into either the engaged, "IN" position or the disengaged "OUT" position by a pin at the bottom of the shifter handle which fits into latching slots.

1. TO UNLATCH CLUTCH, run winch in the reverse (reel out) direction until the load is off the cable. Grasp handle firmly and while pushing on the top of the handle with the thumb for leverage, lift until pin clears latching slots.
2. TO DISENGAGE CLUTCH, unlatch and push handle to "OUT" position and fully insert pin into latching slots. **Do not attempt to disengage with a load on the winch.**
3. TO ENGAGE CLUTCH, unlatch and pull handle toward "IN" position as far as it will go. In order to attain full engagement, internal elements of the clutch must be aligned. This alignment will take place when cable drum or cable drum shaft turns a maximum of 1/4 revolution. The clutch will automatically spring into engagement and pin will drop into "IN" slots when this alignment takes place. **Do not attempt to lift a load unless pin is fully into "IN" slots. Keep clear of spring loaded handle during automatic engagement.**

## SAFEGUARDS - WARNINGS



1. **Clutch should be totally engaged before starting the winching operation.**
2. **Do not disengage clutch under load.**
3. **Do not leave clutch engaged when winch is not in use.**
4. **Stay out from under and away from raised loads.**
5. **Stand clear of cable while pulling. Do not try to guide cable.**
6. **Do not exceed maximum line pull ratings shown in specifications.**
7. **Do not use winch to lift, support, or otherwise transport personnel.**
8. **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 gear housing. Be sure that it is in good operating condition so that hot oil gases may escape.
3. Lubricate cable with light oil.

### B. MONTHLY

1. Lubricate the various grease fittings located in the ends of cable drum shaft, end bearings, clutch housing, or clutch operating linkage. Any good grade of grease containing moly-disulfide is acceptable.
2. In the case of jaw clutch winches, check the action of 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. 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.

## CABLE INSTALLATION

The Ramsey Model H-800 "Dow-Lok"® winch has two tapered pockets cast into the drum. One pocket is for installations with the wire rope wound over the drum. The other pocket is for an underwound wire rope.

1. Slide the wire rope through narrow end of the pocket against the drum flange.
2. Wrap the wire rope around the anchor "puck" and pull the wire rope and anchor back into the wide end of the pocket.
3. Use a soft hammer to drive the back side of the wire rope, firmly seating the wire rope and anchor, into the pocket.

The wire rope can easily be removed from the drum by driving the anchor out the wide end of the pocket.

Carefully run the 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.

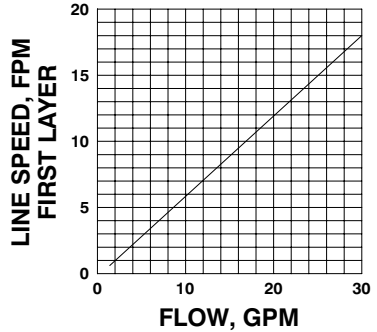
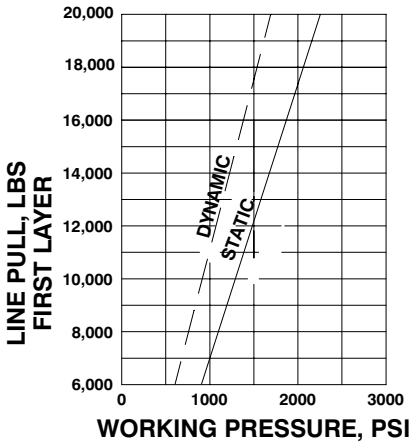
# HYDRAULIC SYSTEM REQUIREMENTS

Refer to the performance charts below, to properly match your hydraulic system to H-800 Dow-Lok® winch performance. The charts consist of :

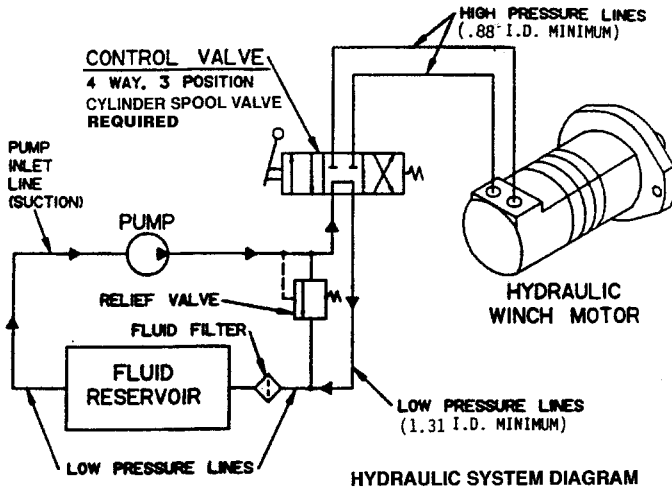
- (1) Line pull (lb.) first layer vs. working pressure (PSI). STATIC (solid line) refers to hoisting a suspended load from rest; DYNAMIC (dotted line) refers to maintaining the motion of a moving load.
- (2) Line speed, first layer (FPM) vs. Flow, gallons per minute (GPM).

Performance based on a motor displacement of 14.9 cubic inches with 30 GPM maximum flow rate. See page 16 for motor port size.

## H-800 PERFORMANCE 20,000 LB. DUTY RATING 40:1 GEAR RATIO



## TYPICAL HYDRAULIC LAYOUT



# TROUBLESHOOTING GUIDE

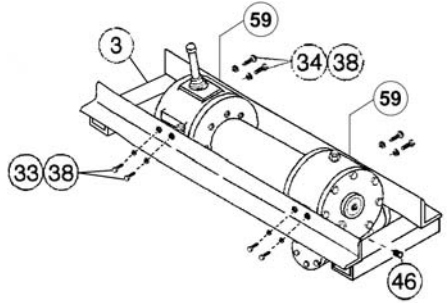
CONDITIONS	POSSIBLE CAUSE	CORRECTION
CLUTCH INOPERATIVE OR BINDS UP	<ol style="list-style-type: none"> <li>1. Dry or rusted shaft.</li> <li>2. Bent yoke or linkage.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean and lubricate.</li> <li>2. Replace yoke or shaft assembly.</li> </ol>
CLUTCH HANDLE WON'T LATCH	<ol style="list-style-type: none"> <li>1. Debris in clutch.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean and lubricate.</li> </ol>
LOAD DRIFTS DOWN	<ol style="list-style-type: none"> <li>1. Winch cable used as tie down during transit.</li> <li>2. Worn out hydraulic component.</li> </ol>	<ol style="list-style-type: none"> <li>1. Do not use winch cable as a tie down.</li> <li>2. Replace control valve or motor.</li> </ol>
OIL LEAKS FROM WINCH	<ol style="list-style-type: none"> <li>1. Seals 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.</li> <li>3. Replace gasket.</li> </ol>
WINCH RUNS TOO SLOW	<ol style="list-style-type: none"> <li>1. Low flow rate.</li> <li>2. Hydraulic motor worn out.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check flow rate. Refer to <i>Hydraulic System Requirements</i>.</li> <li>2. Replace motor.</li> </ol>
CABLE DRUM WILL NOT FREESPOOL	<ol style="list-style-type: none"> <li>1. Winch not mounting squarely, causing end bearings to bind drum.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check mounting.</li> </ol>
CABLE BIRDNESTS WHEN CLUTCH IS DISENGAGED	<ol style="list-style-type: none"> <li>1. Drag brake disk worn.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace discs.</li> </ol>
HYDRAULIC FLUID LEAKS FROM HOLE IN MOTOR ADAPTER	<ol style="list-style-type: none"> <li>1. Damaged motor shaft seal.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace seal.</li> </ol>



# Instructions for Overhaul of Ramsey Model H-800 Dow-lok® Disassembly

1. Drain oil from gear housing by removing pipe plug (item #46) from gear housing.

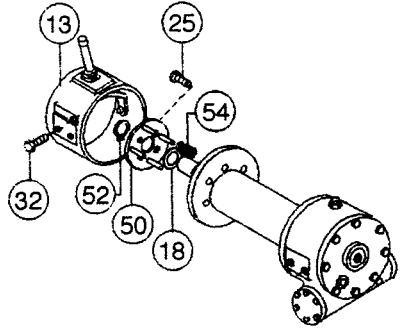
Shift clutch into the engaged "IN" position.  
Remove frame (item #3) and spacers (item #59) from winch assembly.



2. Remove two capscrews (item #32) from clutch housing (item #13) and unlatch shifter assembly.

Remove clutch housing from end of drum shaft. Press in on retainer plate (item #50), to relieve the spring tension and remove the retainer ring (item #52)

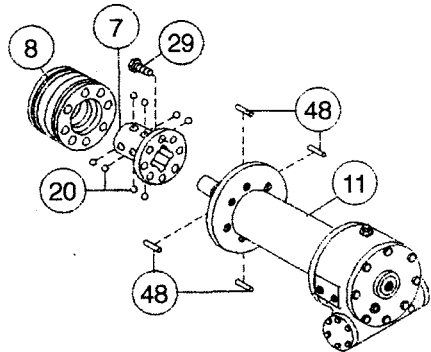
Remove four capscrews (item #25), retain-er plate (item #50), springs (item #54), and spacer (item #18).



3. Slide locking ring (item #8) from the clutch.  
Note: The locking ring cannot be removed unless the clutch is engaged, with dowel pins (item #48) seated in the shaft key-ways.

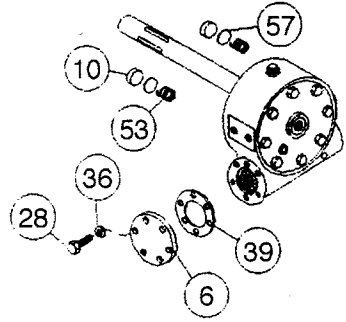
Rotate the drum so the eight balls (item #20) and four dowel pins (item #48) can be removed.

If necessary, the clutch (item #7) may be disassembled from the drum by removing the eight capscrews (item #29). Slide drum (item #11) from drum shaft.



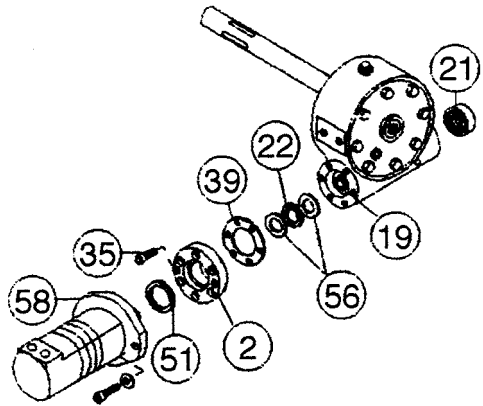
4. Remove bearing cap (item #6) and gasket (item #39) by unscrewing six capscrews (item #28) and lockwashers (item #36).

Drag brake disc (item #10) spacer (item #57), and spring (item #53) should be examined and replaced if necessary.



5. Remove motor (item #58) from adapter (item #2) by removing two capscrews and lockwashers. Remove adapter (item #2) from gear housing by removing six capscrews. Replace pilot seal (item #51) and gasket (item #39). Remove thrust bearing (item #22) and thrust washers (item #56).

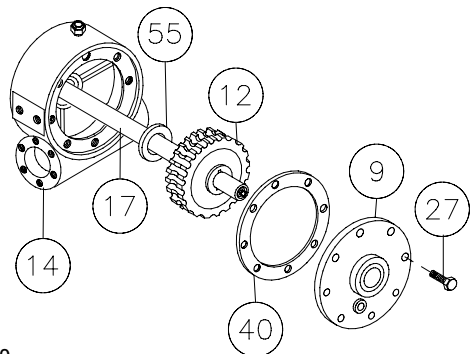
Remove worm (item #19) and bearing (item #21) from gear housing. Use a soft hammer to gently tap input end of worm and drive worm and bearing from gear housing. Once worm has been removed from housing bearing can be pressed from end of worm.



Check for signs of wear or damage to worm (item #19) and bearing (item #21). Replace if necessary.

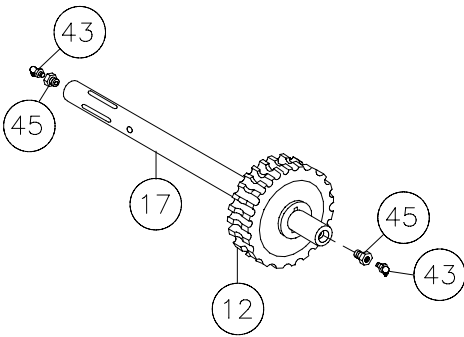
6. Remove gear housing cover (item #9) from gear housing (item #14) by unscrewing eight capscrews (item #27). Thread two of the capscrews into the two tapped holes of cover and tighten. This will pull the cover loose from the gear housing.

Remove cover gasket (item #40) and pull shaft (item #17), with gear (item #12) and spacer (item #55) attached, from gear housing.



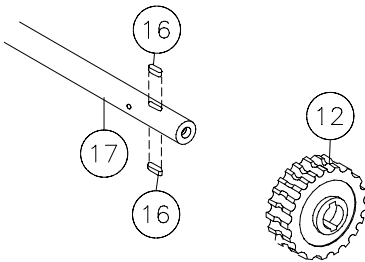
7. Check for signs of wear on gear teeth. If necessary, replace gear (item #12). If gear hub is damaged, replace gear.

Check lube fittings (item #43) for damage and replace if necessary. Remove lube fittings (item #43) and reducers (item #45) from ends of shaft, if following step 8 below, and reinstall after step 8.

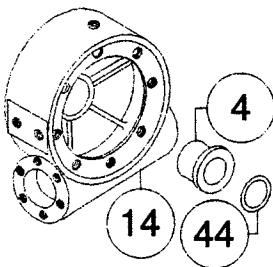


8. If shaft is damaged, replace as follows:

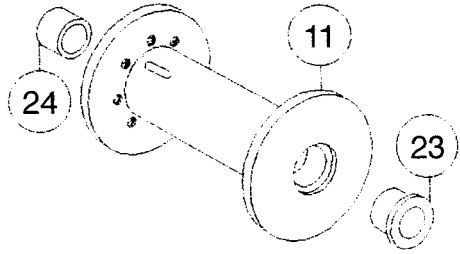
- a. Tap keys (item #16) into short keyways of drum shaft (item #17).
- b. Press shaft (item #17) and keys (item #16) through gear hub until end of keys on long end of shaft are flush with hub.



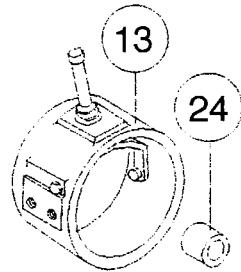
9. Check gear housing bushing (item #4) and o-ring (item #44) for signs of wear. Replace if necessary by pressing old bushing from gear housing (item #14). Press new bushing into place and insert new o-ring (item #44) into groove inside of bushing.



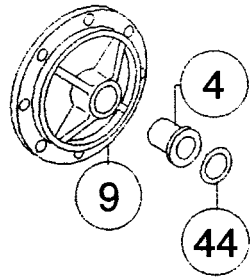
10. Check drum bushings (items #23 & #24) for signs of wear. Replace if necessary by pressing old bushings from drum (item #11). Press bushing (item #23) into bore in drum until its flange is seated against counterbore. Press bushing (item #24) into opposite bore on drum until end of bushing extends .50" from end of drum.



11. Check end bearing bushing (item #24) for signs of wear. If necessary, remove old bushing and press new bushing into place.

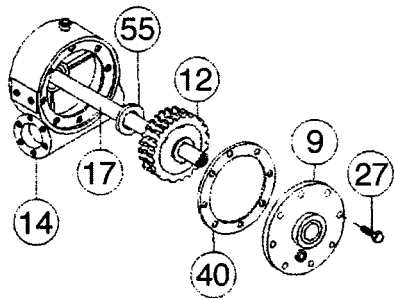


12. Check cover bushing (item #4) and o-ring (item #44) for signs of wear. Replace if necessary by pressing old bushing from gear housing cover (item #9). Press new bushing into place and insert new o-ring (item #44) into groove inside of bushing.

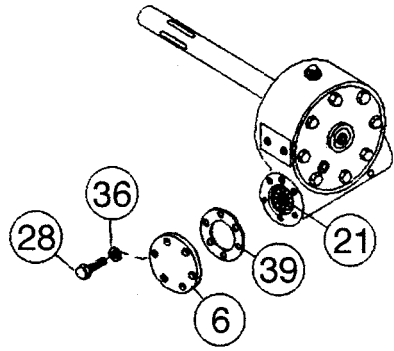


## REASSEMBLY

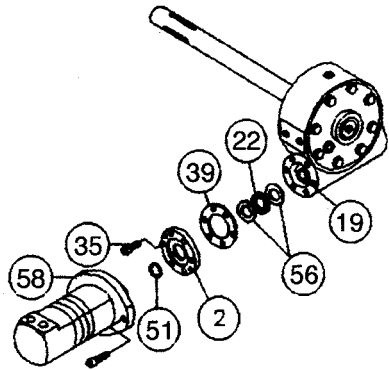
13. Slide spacer (item #55) over long end of shaft and place against gear hub. Apply grease to end of shaft, opposite gear. Apply grease to bushing in gear housing (item #14). Place greased end of shaft through bushing in gear housing (item #14). Place gasket (item #40) onto gear housing cover (item #9). Apply grease to gear end of shaft and cover bushing. Place cover onto shaft and secure to housing with eight (item #27) capscrews. Tighten capscrews to 39 ft. lb. (52 Nm.) each.



14. Press bearing (item #21) onto worm and into housing. **NOTE:** Be sure that thick shoulder of bearing's outer race (side with manufacturer's name and part number) is out, away from worm threads. Attach bearing cap (item #6) to gear housing using six capscrews (item #28) with lockwashers (item #36). Tighten capscrews to 39 ft. lb. (52 Nm.) each.

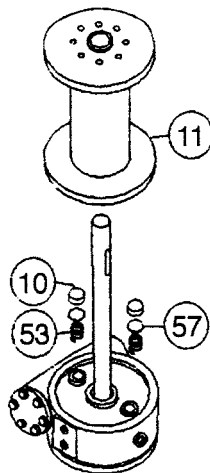


15. Place thrust washers (item#56) and thrust bearing (item #22) over end of worm (item #19) and into housing. Attach adapter (item #2) with gasket (item #39) to housing, using six (item #35) capscrews. Tighten capscrews to 52 ft. lb. (61 Nm.) each.

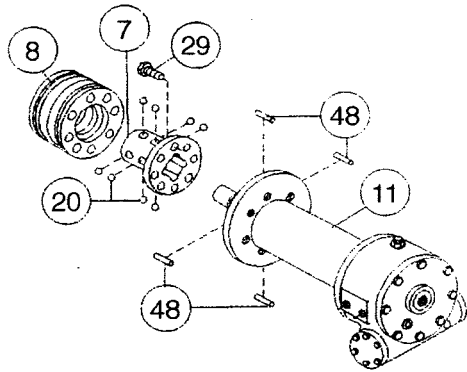


Insert pilot seal (item #51) into adapter and carefully place motor shaft, with the key in keyway, through seal, so as not to damage seal. Insert motor shaft into end of worm (item #19). Secure motor (item #58) to coupling using two capscrews. Tighten capscrews to 102 ft. lbs. (138 Nm.) each.

16. Place winch with gear housing cover down on work bench. Drum shaft should be in vertical position. Set springs (item #53) into pockets of gear housing with drag brakes (item #10) on top of disc (item #57) and springs. Slide drum assembly (item #14) onto drum shaft as shown.



17. Place clutch (item #7) over end of drum shaft. Align the clutch over the pilot bushing in drum. Install the eight capscrews (item #29) and torque the capscrews to 103 ft. lb. (139 Nm.) to securely seat the clutch to the drum.

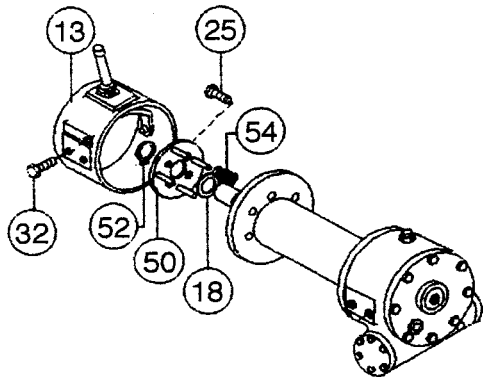


Rotate the drum to align the clutch slots with the shaft keyways. Lightly grease four dowel pins (item #48) and eight balls (item #20). Use molybdenum disulfide or graphite bearing grease. Insert the four dowel pins (item #48) and eight balls (item #20). In the engaged position the balls are nearly flush with the clutch.

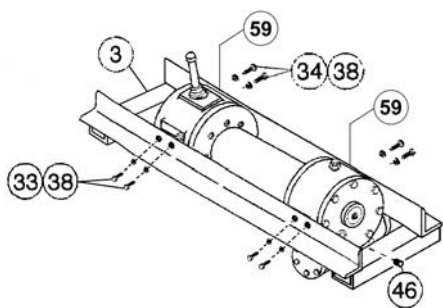
Lightly grease the internal and external groove and bore in locking ring (item #8) and clutch (item #7).

Slide locking ring onto the clutch. When fully engaged, the locking ring touches the clutch flange and there is .71 to .73 inches between the end of the locking ring and the end of the clutch.

18. Place four springs (item #54) over four roll pins on retainer plate (item #50). Install spacer (item #18) and retainer plate and secure to clutch using four capscrews (item #25). Tighten capscrews to 9.7 ft. lb. (13 Nm.) each. Firmly seat the retainer ring (item #52) into drum shaft groove.



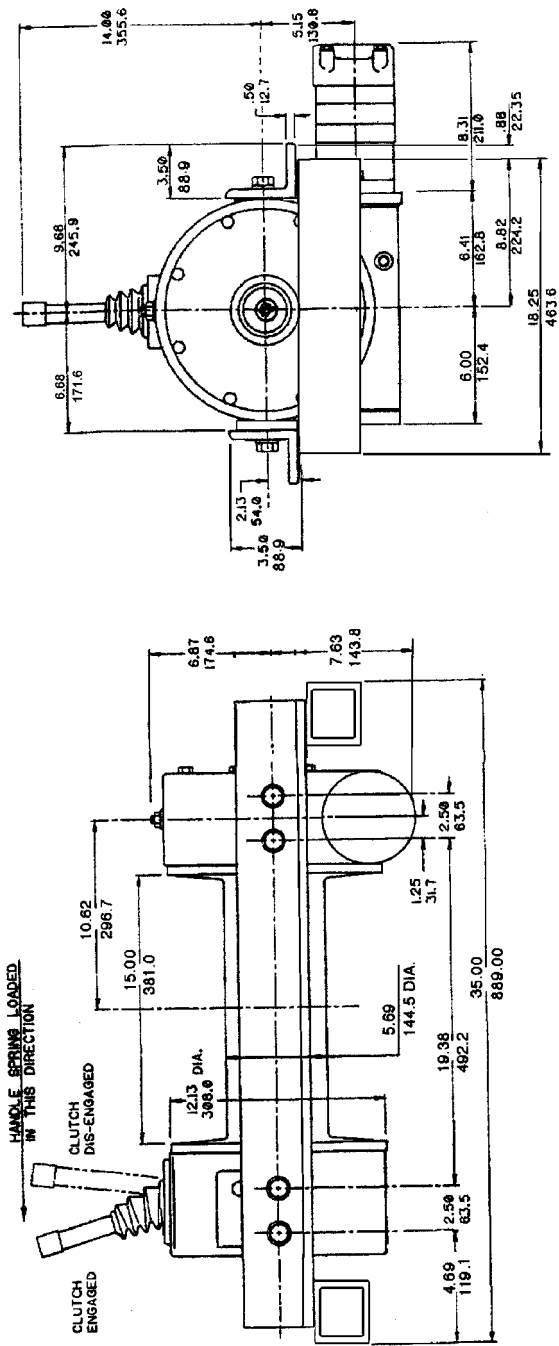
Set the shifter assembly so that the screw heads engage the external groove in the locking ring (item #8). Push the clutch housing (item #13) onto the drum shaft and latch the shifter assembly in the engaged "IN" position. Insert the two capscrews (item #32).



19. Attach frame and spacers (item #59) to winch assembly. Use capscrews (items #34 and #33) and lockwashers (item #38). Tighten to 290 ft-lbs. (393 Nm) each. Insert plug (item #46) into hole in bottom of gear housing. Remove plugs (items #41 and #45) from top of housing. Pour 3 3/4 pints of E.P. 140 oil into hole and replace plugs.

Check the action of the clutch by shifting and freespooling the winch drum several times.

The shift pattern plate on top of the clutch housing is adjusted at the factory to provide reliable shifting of the Dow-lok® clutch. If the plate should loosen or be removed, you must readjust the plate. Shift the handle to disengage the clutch and hold against the internal stop. With the latching pin in the "OUT" slots, push the shift pattern plate toward the cable drum. Unsnap the plastic lever cover from the pattern plate. Tighten the four capscrews which hold the plate to the housing. Snap lever cover back into place around the pattern plate.



DIMENSIONS SHOWN ARE INCHES OVER MILLIMETERS

**Model H-800 Dow-Lok®**  
Short Coupling







Item No.	Qty.	Parts No.	Description
1	1	276033	SHIFTER ASSEMBLY
2	1	300048	ADAPTER
3	1	242172	FRAME
4	2	308083	BUSHING
5	1	314010	CABLE ANCHOR ("STD." DRUM ONLY)
6	1	316021	CAP BEARING
7	1	324151	CLUTCH
8	1	324318	LOCKING RING
9	1	328122	COVER - GEAR HOUSING
10	2	330010	SHOE - DRAG BRAKE
11	1	332167	DRUM (STANDARD)
12	1	334188	GEAR - R.H.
13	1	338235	HOUSING - CLUTCH
14	1	338242	HOUSING - GEAR
15	1	340068	HUB - GEAR
16	2	342053	KEY
17	1	357498	SHAFT - DRUM (STD.)
18	1	362224	SPACER
19	1	368190	WORM
20	8	400011	BALL - CLUTCH
21	1	402045	BEARING - BALL
22	1	402109	BEARING - THRUST
23	1	412051	BUSHING
24	2	412052	BUSHING
25	4	414038	CAPSCREW 1/4-20NC X 3/4 LG HX HD GR5
26	4	414069	CAPSCREW 5/16-18NC X 3/4 LG HX HD
27	8	414277	CAPSCREW 3/8-16NC X 1 LG HX HD GR5 NYLOK HVY P
28	6	414282	CAPSCREW 3/8-16NC X 1-1/4 LG HX HD GR5
29	8	414571	CAPSCREW 1/2-20NF X 1 LG HX HD GR5

Item No.	Qty.	Parts No.	Description
32	2	414619	CAPSCREW 1/2-13NC X 2-1/2 LG HX HD ALL-THRD ZP
33	4	414751	CAPSCREW 3/4-10NC X 1-3/4 GR5 NYLOK HVY PATCH
34	4	414754	CAPSCREW 3/4-10NC X 2-1/2 LG HX HD GR5
35	6	414913	CAPSCREW 3/8-16NC X 1-1/4 SOC HD ND ST
36	6	418177	LOCKWASHER 3/8 MED SECTION ZP
38	8	418249	LOCKWASHER 3/4 MED SECT
39	2	442192	GASKET
40	1	442195	GASKET
41	1	456008	FITTING - RELIEF
42	1	456031	FITTING - LUBE
43	2	456039	FITTING
44	2	461013	QUAD-RING
45	3	468002	REDUCER
46	1	468011	PIPE PLUG
47	4	470042	PIN - ROLL
48	4	470044	PIN - DOWEL
49	4	470056	PIN - ROLL
50	1	474030	PLATE - RETAINER
51	1	486079	SEAL - PILOT
52	1	490025	RING - RETAINER
53	2	494022	SPRING - DISC
54	4	494069	SPRING
55	1	518016	THRUST WASHER
56	2	518036	WASHER - THRUST
57	2	530094	SPACER - BRAKE
58	1	*	MOTOR
59	2	362280	SPACER
60	1	468018	PIPE PLUG

\* Motor not furnished by Ramsey

## **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 such defective parts, nor shall it apply to a product upon which repair or alterations have been made, unless authorized by the Manufacturer, or for equipment misused, neglected, or which has not been installed correctly.

RAMSEY WINCH shall in no event be liable for special or consequential damages. RAMSEY WINCH makes no warranty in respect to accessories such as being subject to the warranties of their manufacturers.

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

*See warranty card for details.*



### **RAMSEY WINCH COMPANY**

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