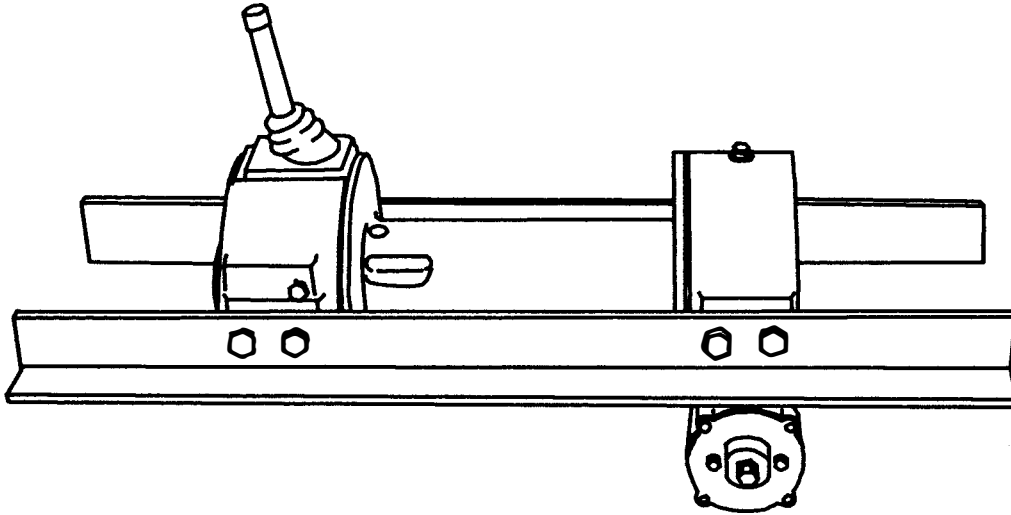




# OPERATING, SERVICE AND MAINTENANCE MANUAL



## MODEL 700 SERIES MODEL H-700 SERIES DOW-LOK<sup>®</sup> EQUIPPED INDUSTRIAL LOW-MOUNT WINCHES

U.S. PATENT #4379502



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

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**RAMSEY WINCH MODELS 700 & H-700 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.

SPECIFICATIONS: CONFORMS TO SAE J706							
Rated Line Pull 1st layer (lb.).....15,000 (kgs.).....6,790							
Gear Reduction: All Models.....35:1							
Shipping Weight: 700.....245 lb. (111 Kgs.) H-700.....258 lb. (117 Kgs.)							
Layer of Cable		1	2	3	4	5**	
Rated Line Pull All Models	Lb.	15,000	12,300	10,500	9,100	8,100	
	Kgs.	6,790	5,570	4,750	4,120	3,660	
*Cable capacity 700/H-700	Ft.	20	50	85	125	170	
	M.	6	15	25	38	51	
X-700/HX-700	Ft.	35	75	125	185	250	
	M.	10	22	38	56	76	
Line Speed	Worm RPM	1	2	3	4	5**	
700	FPM	760	28	35	40	46	53
	MPM		8.7	10.6	12.2	14.0	16.2
H-700	FPM	713	27	33	38	44	50
	MPM (30GPM)		8.2	10.0	11.5	13.3	15.2
*These specifications are based on recommended cable of 9/16" (14mm) 6x19 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 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 Dow-Lok<sup>®</sup> 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<sup>®</sup> 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.

TO UNLATCH CLUTCH, grasp handle firmly and while pushing on the top of the handle with the thumb for leverage, lift until pin clears latching slots.

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.

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:**

CLUTCH MUST BE TOTALLY ENGAGED BEFORE STARTING THE WINCHING OPERATION.

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 700/H-700 Series Winches are furnished with recommended mounting angles. Angle size is 1/2 x 3 x 3 high strength steel angle.

## CABLE INSTALLATION

The Ramsey Model 700 "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 under-wound wire rope.

When properly used, the wedge pocket design is one of the most secure anchoring methods available.

1. Slide the wire rope into the 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.

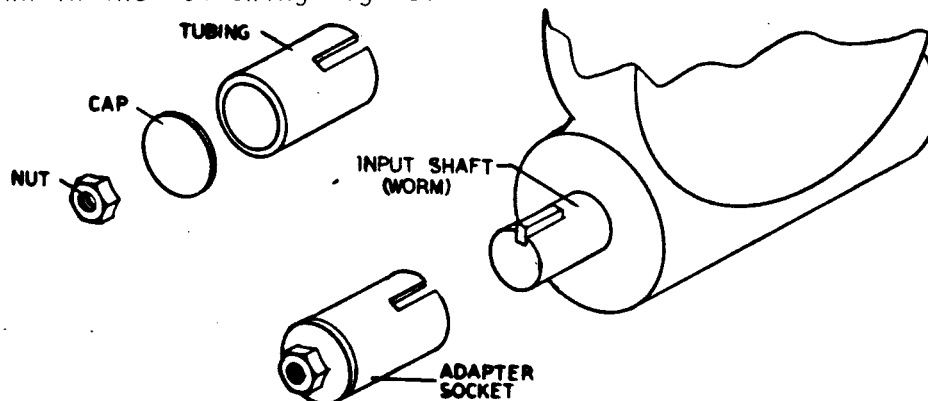
## ADJUSTING THE OIL COOLED WORM BRAKE

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.

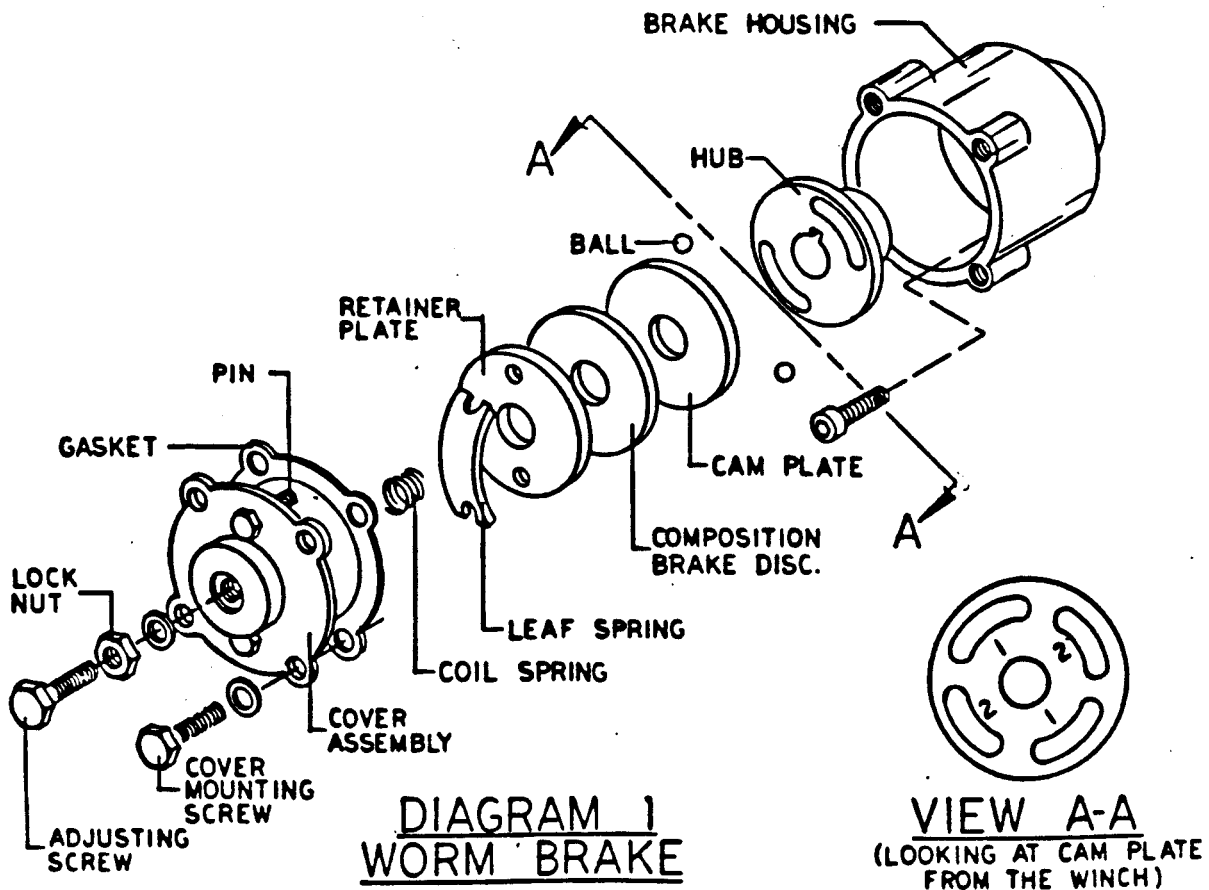
A torque wrench can be equipped with a special adapter to fit the input shaft (worm) of the winch. The adapter can be made by welding a nut to the end of a piece of tubing as shown in the following figure.



- 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 700/H-700 should be 35 to 40 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 3 pints 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).

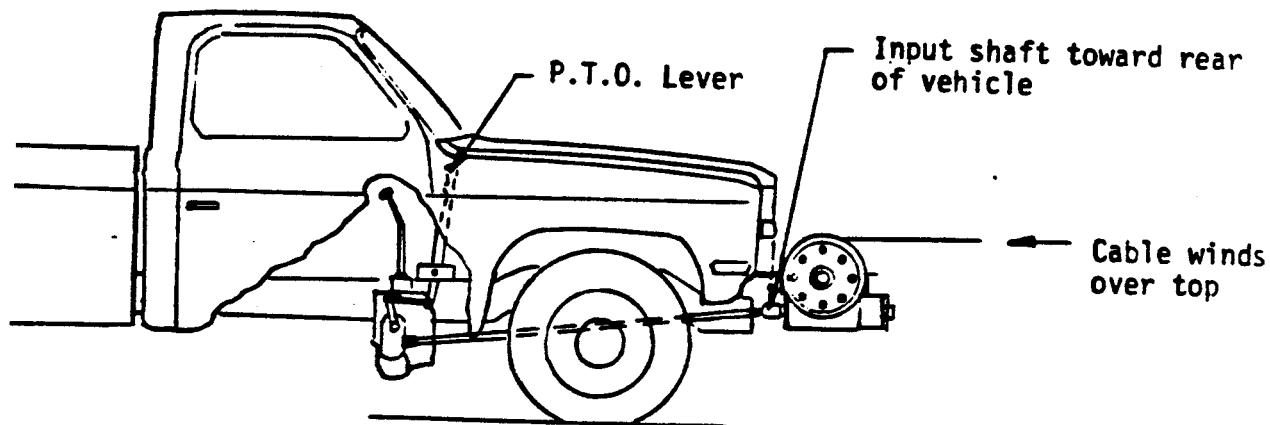


DIAGRAM 2

Three factors determine brake assembly arrangement.

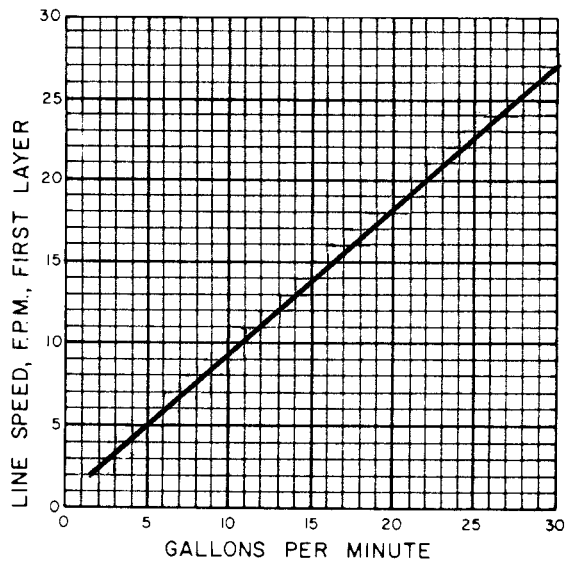
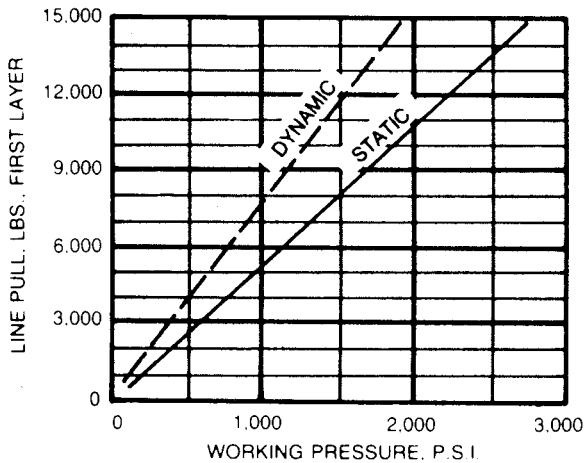
## HYDRAULIC SYSTEMS

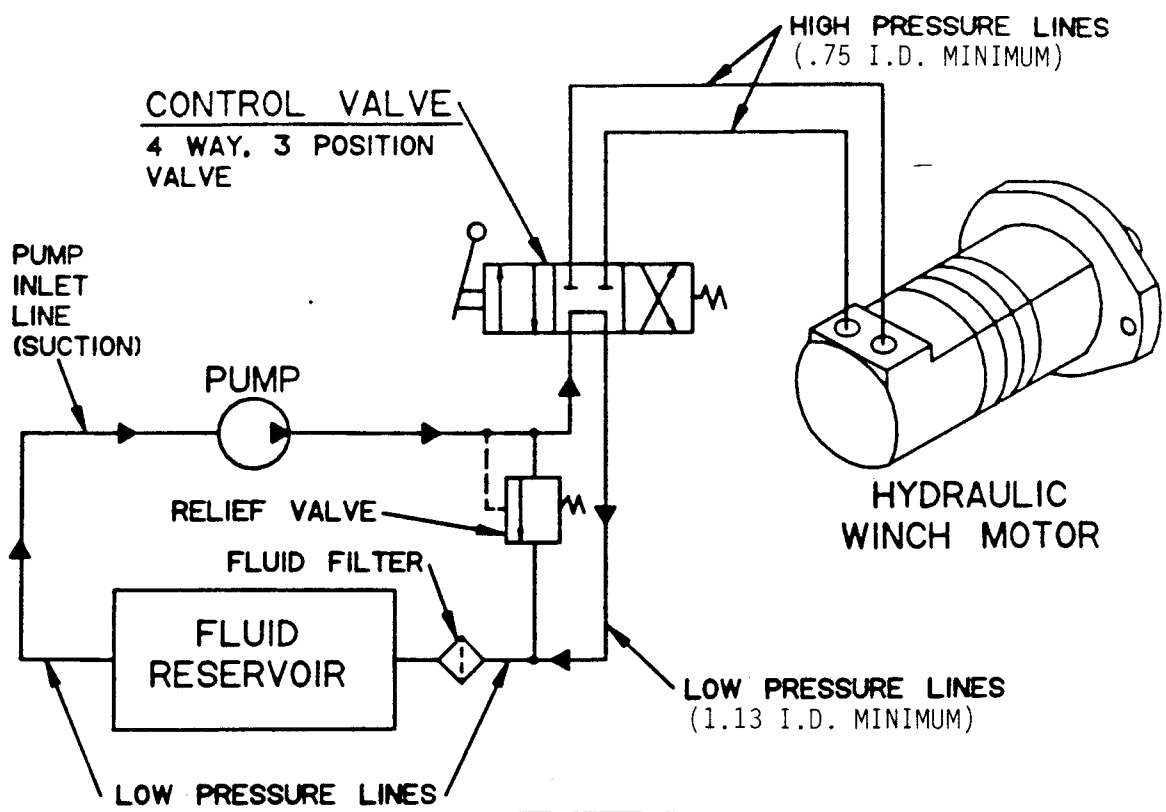
Refer to the performance charts, below, to properly match your hydraulic system to the H-700 Series Winch performance. The charts consist of:  
(1) Line speed, first layer (F.P.M.) vs. gallons per minute (G.P.M.) and  
(2) Line pull (lbs.) first layer vs. working pressure (P.S.I.). STATIC (solid line) 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 9.6 cubic inches with 30 GPM maximum flow rate. See page 17 for motor port size.

### H-700 Series Performance

15,000 Lb. Duty Rating  
35:1 Gear Ratio





TROUBLE SHOOTING TIPS

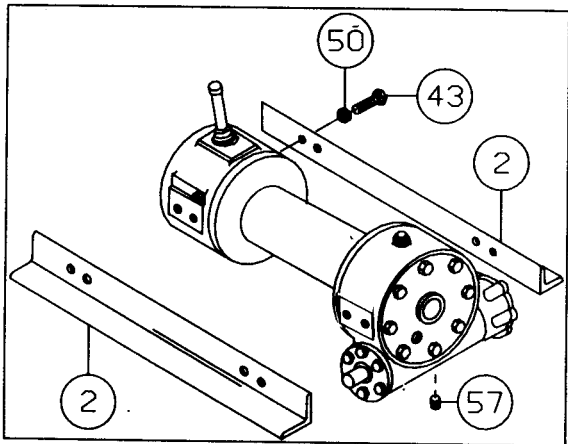
CONDITION	POSSIBLE CAUSE	CORRECTION
CLUTCH INOPERATIVE OR BINDS UP.	<ol style="list-style-type: none"> <li>1. Dry or rusted shaft.</li> <li>2. Bent yoke or linkage.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean and lubricate.</li> <li>2. Replace yoke or shaft assembly.</li> </ol>
CLUTCH 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 lube per page 15 paragraph 19</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>
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 700/H-700 "DOW-LOK" WINCH

DISASSEMBLY

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

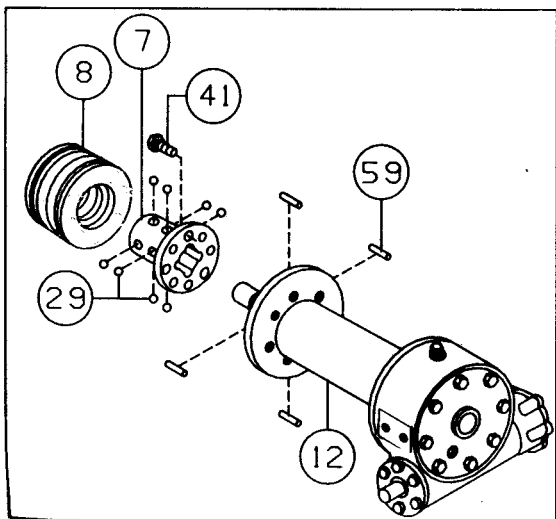
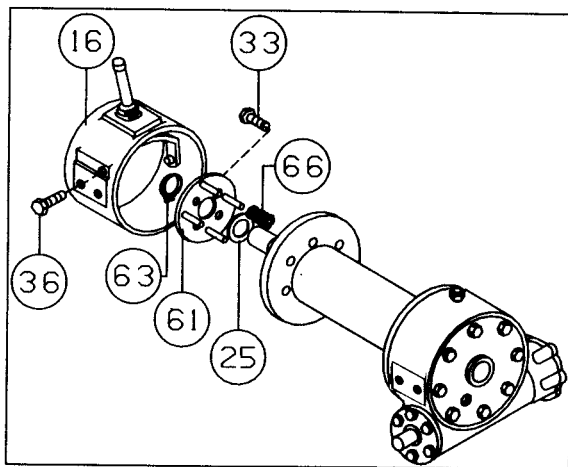


- (1)  
Drain oil from gear housing by removing pipe plug (item #57) from gear housing.  
Shift clutch into the engaged "IN" position.  
Remove frame angles (item #2) from winch assembly.

- (2)  
Remove two capscrews (item #36) from clutch housing (item #16) and unlatch shifter assembly.

Remove clutch housing from end of drum shaft. Press in on retainer plate (item #61), to relieve the spring tension and remove the retainer ring (item #63).

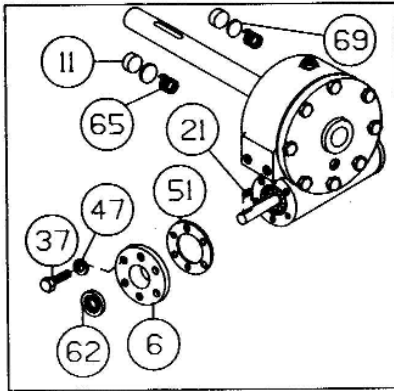
Remove four capscrews (item #33), retainer plate (item #61), springs (item #66) and spacer (item #25).



- (3)  
Slide the locking ring (item #8) from the clutch. NOTE: The locking ring cannot be removed unless the clutch is engaged, with dowel pins (item #59) seated in the shaft keyways.

Rotate the drum so the eight balls (item #29) and four dowel pins (item #59) can be removed.

If necessary, the clutch (item #7) may be disassembled from the drum by removing eight capscrews (item #41). Slide drum (item #12) from drum shaft.



(4)

Remove key (item #21) from worm gear shaft.

Remove bearing cap (item #6) and gasket (item #51) by unscrewing six capscrews (item #37) and lockwashers (item #47).

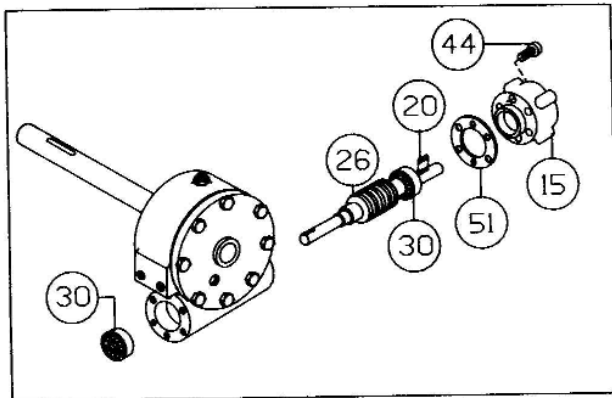
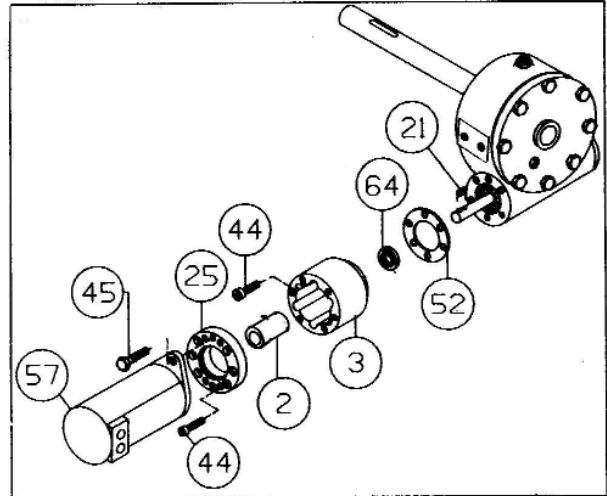
Remove seal (item #62) from bearing cap and press new seal into place.

Drag brake disc (item #11), spacer (item #69) and spring (item #65) should be examined and replaced if necessary.

(5)

Remove motor (item #57) from adapter plate (item #25) by removing capscrews (item #45). Remove adapter plate and coupling (item #2) from adapter (item #3) by unscrewing six capscrews (item #44).

Remove key (item #21) from worm shaft. Unscrew six capscrews (item #44) and remove adapter from gear housing. Replace adapter seal (item #64) and gasket (item #52).



(6)

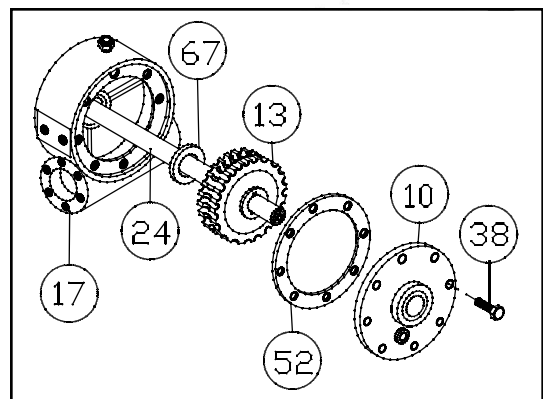
Refer to page 5, SERVICING OIL COOLED SAFETY BRAKE. Remove brake housing (item #15) from gear housing by unscrewing six (item #44) capscrews. Remove key (item #20) from worm. Remove worm (item #26) and bearings (item #30) from gear housing. Use a soft hammer to gently tap input end of worm and drive worm and bearing from gear housing. Once worm has been removed from housing, bearing can be pressed from end of worm.

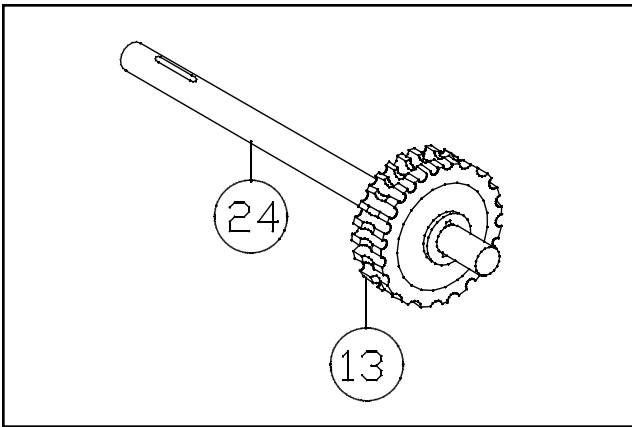
Check for signs of wear or damage to worm (item #26) and bearings (item #30). Replace if necessary.

(7)

Remove gear housing cover (item #10) from gear housing (item #17) by unscrewing eight capscrews (item #38). 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 #52) and pull shaft (item #24), with gear (item #13) and spacer (item #67) attached, from gear housing.

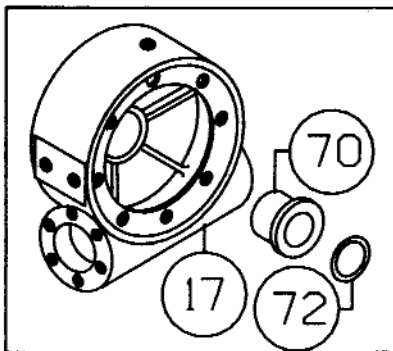
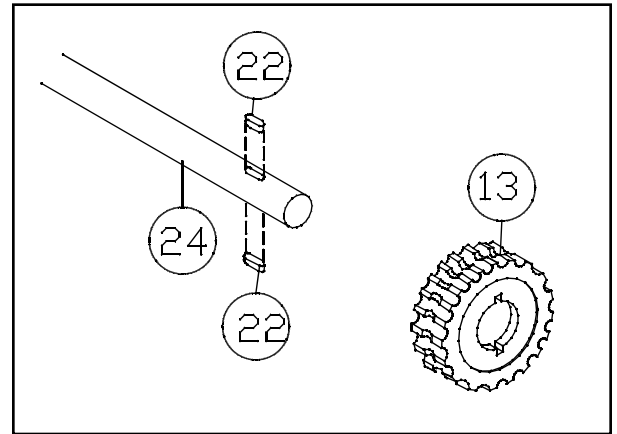




(8)  
Check for signs of wear on gear teeth. If necessary, replace gear.

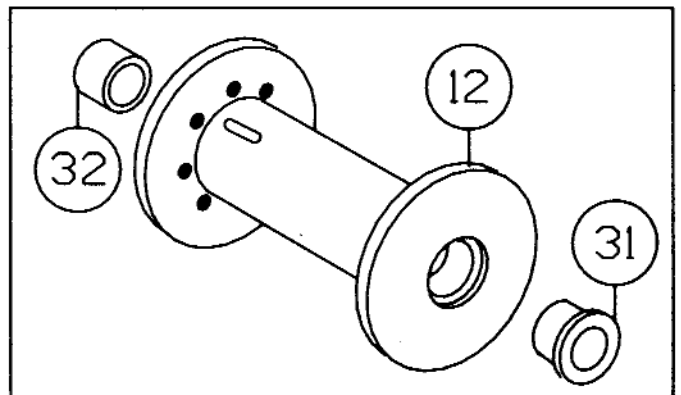
(9)  
If shaft or gear is damaged, replace as follows:

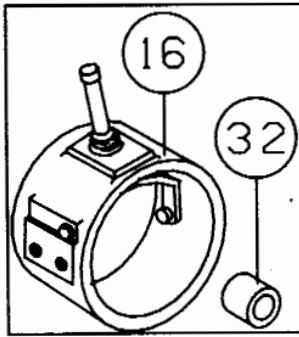
- a. Tap keys (item #22) into short keyways of drum shaft (item #24).
- b. Press shaft (item #24) and keys through gear (item #13) until end of keys on long end of shaft are flush with gear hub.



(10)  
Check gear housing bushing (item #70) and o-ring (item #72) for signs of wear. Replace if necessary by pressing old bushing from gear housing. Press new bushing into place and insert new o-ring (item #72) into groove inside of bushing.

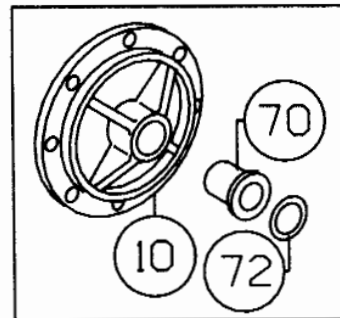
(11)  
Check drum bushings (items #31 & #32) for signs of wear. Replace if necessary by pressing old bushings from drum (item #12). Press bushing (item #31) into bore in drum until its flange is seated against bottom of counterbore. Press bushing (item #32) into opposite bore on drum until end of bushing extends .50" from end of drum.



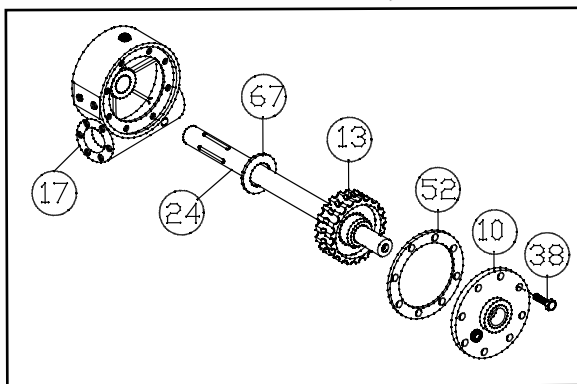


(12)  
Check end bearing bushing (item #32) for signs of wear. If necessary, remove old bushing and press new bushing into place.

(13)  
Check cover bushing (item #70) and o-ring (item #72) for signs of wear. Replace if necessary by pressing old bushing from gear housing. Press new bushing into place and insert new o-ring (item #72) into groove inside of bushing.



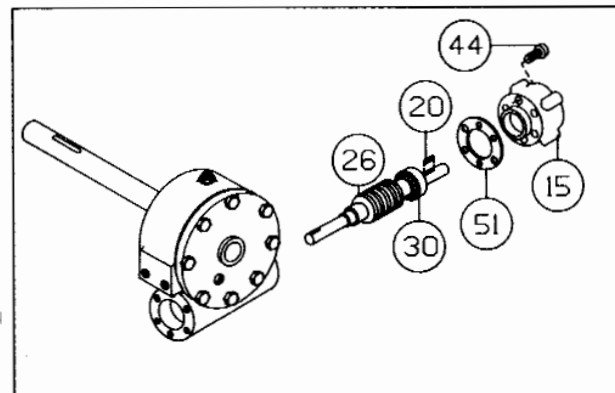
#### RE-ASSEMBLY

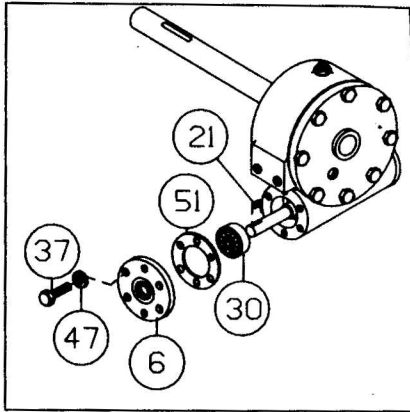


(14)  
Slide spacer (item #67) over long end of shaft and place against gear hub. Apply grease to end of shaft, opposite gear. Apply grease to bushing in gear housing (item #17). Place greased end of shaft through bushing in gear housing (item #17). Place gasket (item #52) onto gear housing cover (item #10). Apply grease to gear end of shaft and cover bushing. Place cover onto shaft and secure to housing with eight (item #38) capscrews. Tighten capscrews to 39 ft. lbs. (52 Nm.) each.

(15)  
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 #51) onto brake housing (item #15). Use six capscrews (item #44) to secure brake housing to gear housing. Tighten capscrews to 45 ft. lbs. (61 Nm.) each.

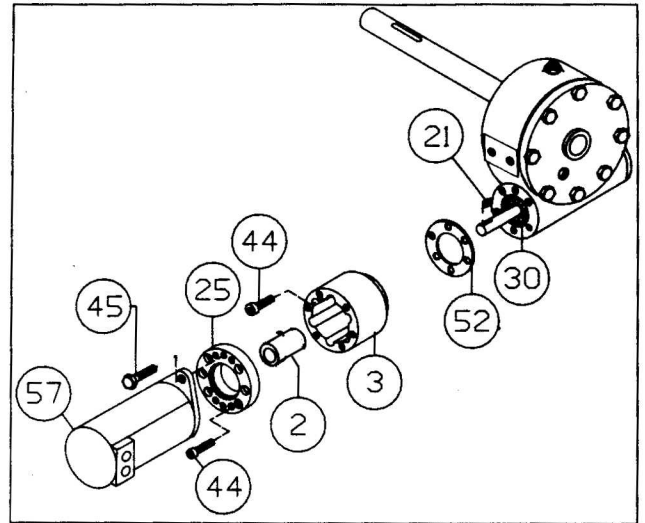
Place key (item #20) into keyway of worm (item #26). Refer to page 6 for reassembly and checking of worm brake.



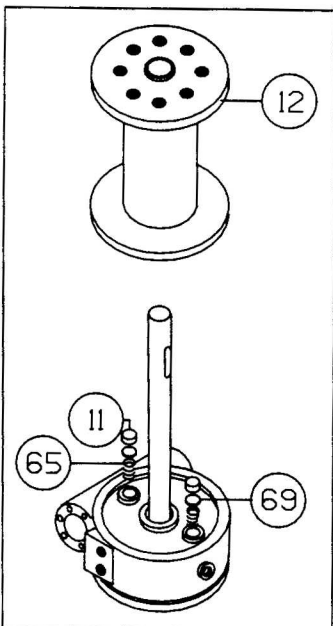


(16)  
 Press bearing (item #30) onto worm and into gear housing. NOTE: Be sure that thick shoulder of bearings outer race (side with manufacturer's name and part number) is out, away from worm threads. Attach bearing cap (item #6), to gear housing. Use six (item #37) capscrews to secure. Tighten capscrews to 39 ft. lbs. (52 Nm.) each. Tap key (item #21) into keyway.

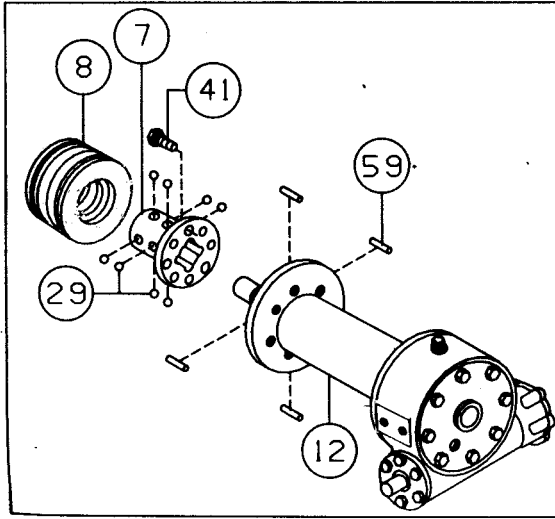
(17)  
 Press bearing (item #30) onto worm and into housing. NOTE: Be sure that thick shoulder of bearings outer race (side with manufacturer's name and part number) is out, away from worm threads. Attach adapter (item #3) to gear housing using six capscrews (item #44). Tighten capscrews to 45 ft. lbs. (61 NM.) each. Insert key (item #21) into keyway of worm shaft. Slide coupling (item #2) over end of worm shaft. Attach adapter plate (item #25) to adapter using six capscrews (item #44). Tighten capscrews to 45 ft. lbs. (61 Nm.) each.



Place motor shaft, with key in keyway, into coupling. Secure motor (item #57) to adapter, using two capscrews (item #45). Tighten capscrews to 102 ft. lbs. (138 Nm.) each.



(18)  
 Place winch with gear housing cover down on work bench. Drum shaft should be in vertical position. Set springs (item #65) into pockets of gear housing with drag brakes (item #11) on top of disc (item #69) and springs. Slide drum assembly (item #12) onto drum shaft as shown.



(19)  
Place clutch (item #7) over end of drum shaft. Align the clutch over the pilot bushing in drum. Install the eight cap screws (item #41) and torque the cap screws to 103 ft. lbs. (139 Nm.) to securely seat the clutch to the drum.

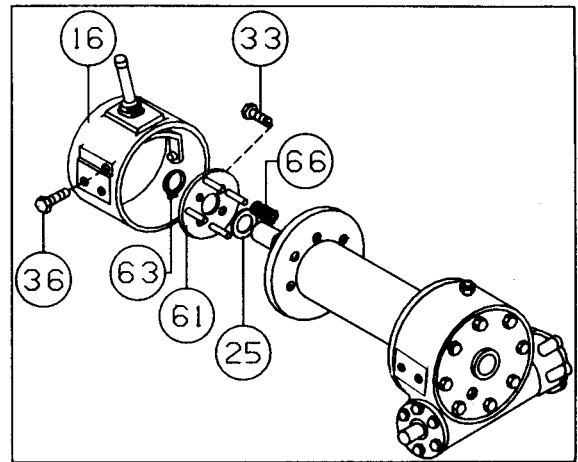
Rotate the drum to align the clutch slots with the shaft keyways. Lightly grease four dowel pins, eight balls. Use molybdenum disulfide or graphite bearing grease. Insert the four dowel pins (item #59) and eight balls (item #29). In the engaged position the balls are nearly flush with the clutch.

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.

(20)  
Place four springs (item #66) over four roll pins on retainer plate (item #61). Install spacer (item #25) and retainer plate and secure to clutch using four cap screws (item #33). Tighten cap screws to 9.7 ft. lbs. (13 Nm.) each. Firmly seat the retainer ring (item #63) into drum shaft groove.

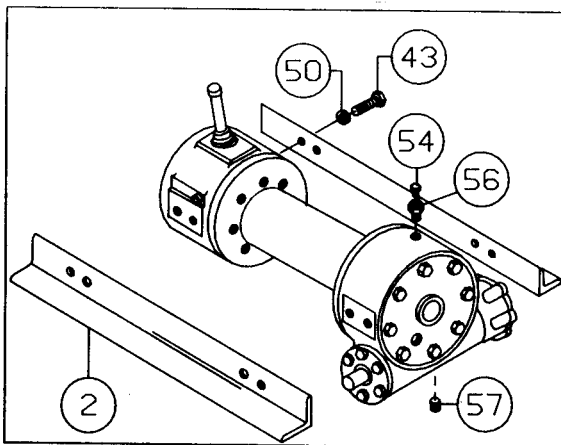
Set the shifter assembly so that the screw heads engage the external groove in the locking ring (item #8). Push the clutch housing (item #16) onto the drum shaft and latch the shifter assembly in the engaged "IN" position. Insert the two cap screws (item #36).



(21)  
Attach mounting angles (item #2) to winch assembly. Use cap screws (item #43) and lockwashers (item #50). Tighten cap screws to 173 ft. lbs. Insert plug (item #57) into hole in bottom of gear housing. Remove plugs (items #56 & #54) from top of housing. Pour 3 pints of E.P. 140 oil into hole and replace plugs.

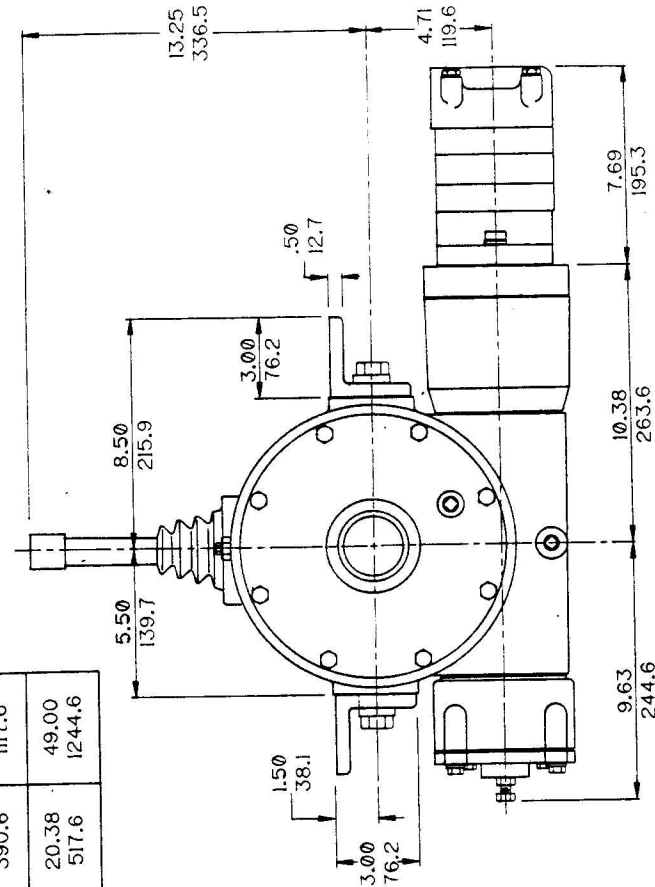
Check the action of the clutch by shifting and freespooling the winch drum several times.

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 plastic lever cover from pattern plate. Tighten the four cap screws which hold the plate to housing. Snap lever cover back into place around the pattern plate.

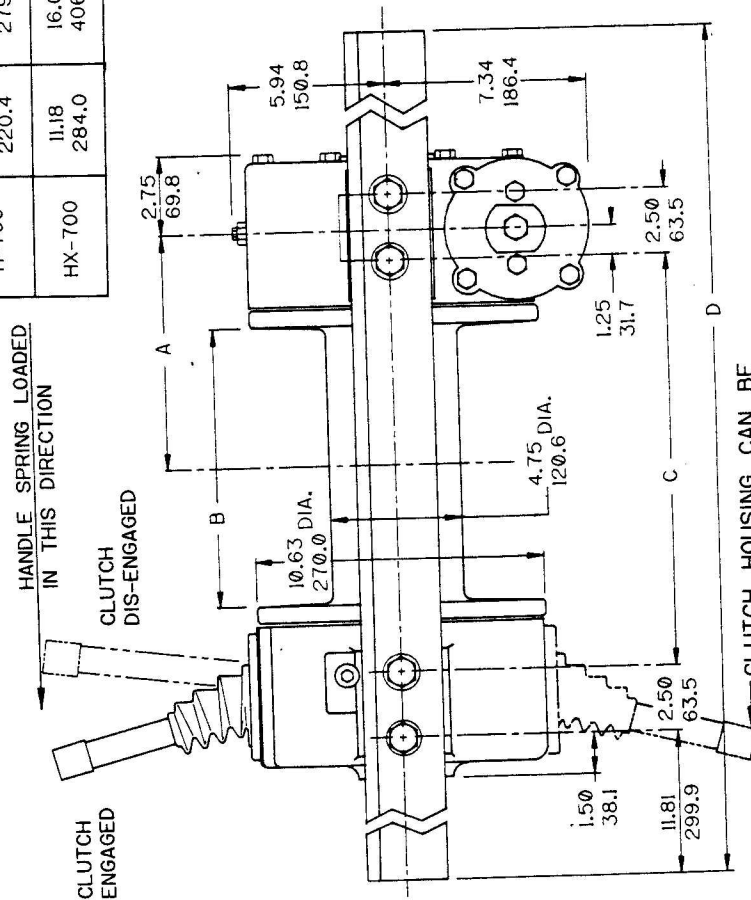




WINCH MODEL	A INCHES MM	B INCHES MM	C INCHES MM	D INCHES MM
H-700	8.68 220.4	11.00 279.4	15.38 390.6	44.00 1117.6
HX-700	11.18 284.0	16.00 406.4	20.38 517.6	49.00 1244.6



MOTOR PORT SIZE:  
(2) 7/8-14 straight thread o-ring ports

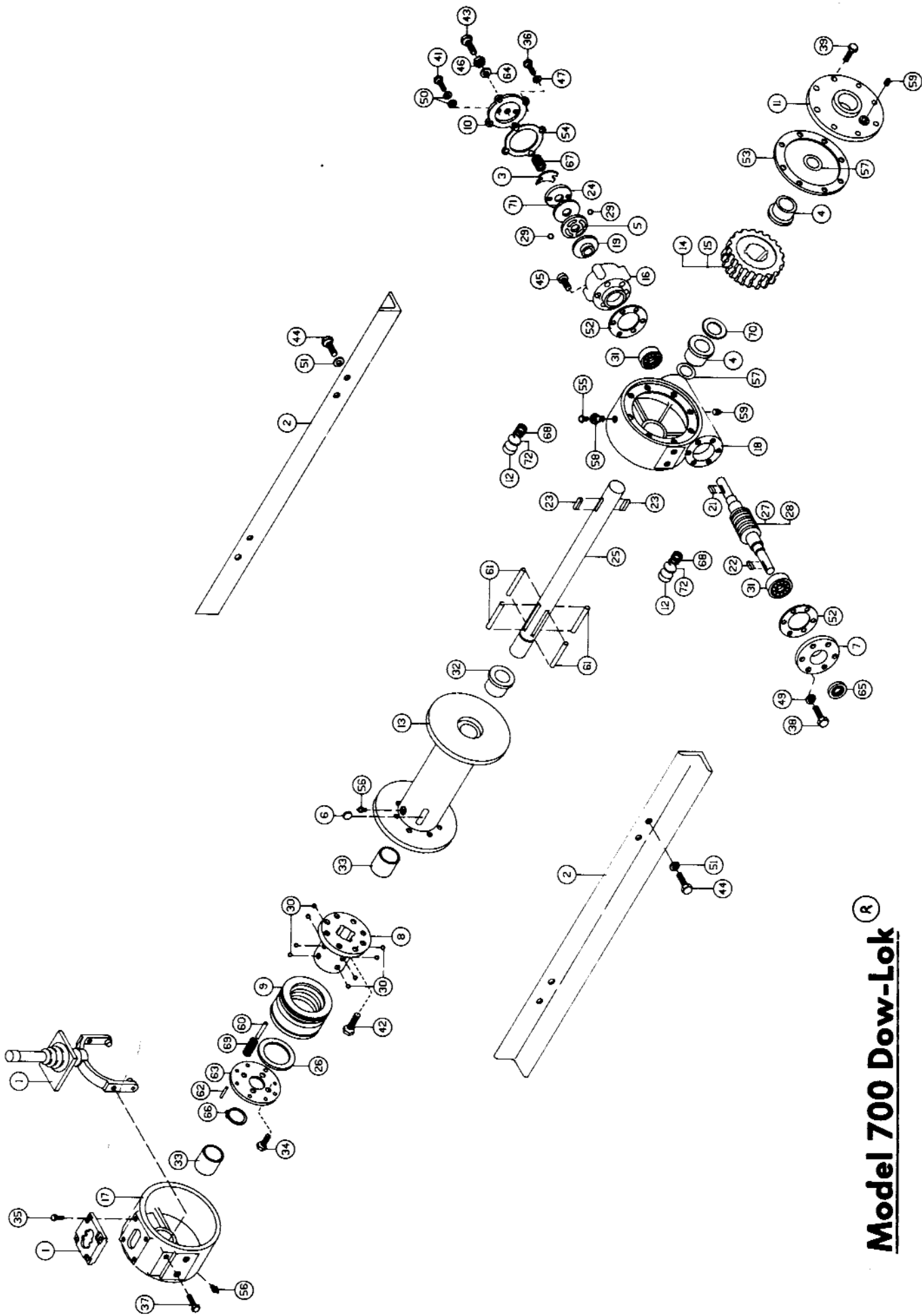


HANDLE SPRING LOADED  
IN THIS DIRECTION

CLUTCH  
DIS-ENGAGED

CLUTCH  
ENGAGED

CLUTCH HOUSING CAN BE  
ROTATED 180° FOR  
CUSTOMER INSTALLATION

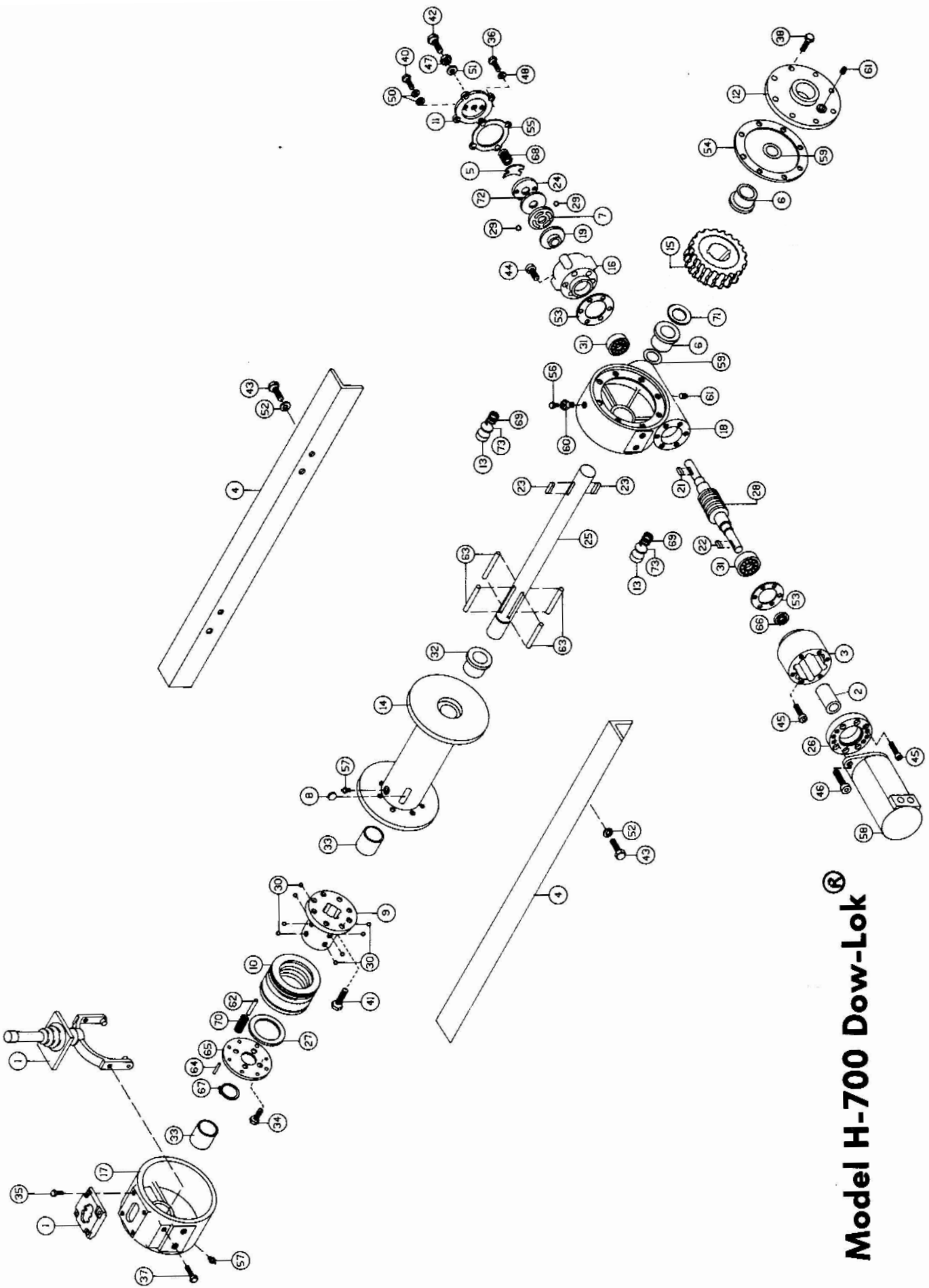


**Model 700 Dow-Lok®**

# PARTS LIST

## Model 700 Dow-Lok™

Item No.	Qty.	Part No.	Description	Item No.	Qty.	Part No.	Description
1	1	276035	SHIFTER ASS'Y.	39	8	414277	CAPSCREW 3/8-16NCx1 LG. HX.HD. GR.5 NYLOK HVY. PATCH
2	2	302120	ANGLE X-700	41	2	414389	CAPSCREW 3/8-24NFx1-1/4 LG. HX.HD. ALL-THRD. GR.5 NYH/P
3	1	302118	SPRING-FLAT	42	8	414571	CAPSCREW 1/2-20NFx1 LG. HX.HD. GR.5
4	2	306033	BUSHING	43	1	414603	CAPSCREW 1/2-20NFx1-3/4 LG. HX.HD. ALL-THRD. GR.5
5	1	308080	CAM PLATE	44	8	414668	CAPSCREW 5/8-11NCx1-1/2 LG. HX.HD. GR.5
6	1	314007	CABLE ANCHOR	45	6	414897	CAPSCREW 3/8-16NCx1 LG. SOC.HD.
7	1	316006	CAP-BEARING	46	1	418057	NUT 1/2-20NF HX.JAM
8	1	324153	CLUTCH	47	4	418163	LOCKWASHER 5/16 MED. SECT. C.P.
9	1	324320	LOCKING RING	49	6	418177	LOCKWASHER 3/8 MED. SECT. C.P.
10	1	328027	COVER-BRAKE	50	4	418184	WASHER-FLAT 3/8 ALUM.
11	1	328123	COVER-GEAR HSG.	51	8	418237	LOCKWASHER 5/8 MED. SECT. C.P.
12	2	330010	SHOE-DRAG BRAKE	52	2	442192	GASKET
13	1	332122	DRUM X-700	53	1	442193	GASKET
14	1	332123	DRUM	54	1	442194	GASKET
15	1	334194	GEAR-R. H.	55	1	456008	FITTING-RELIEF
16	1	334195	GEAR-L. H.	56	2	456031	FITTING-LUBE
17	1	338221	HOUSING-BRAKE	57	2	462021	QUAD-RING
18	1	338241	HOUSING-CLUTCH	58	1	468002	REDUCER
19	1	338243	HOUSING-GEAR	59	2	468011	PIPE PLUG
		340011	HUB-BRAKE	60	4	470042	PIN-DOWEL
21	1	342053	KEY	61	4	470044	PIN-DOWEL
22	1	342092	KEY	62	4	470056	PIN-ROLL
23	2	342142	KEY	63	1	474031	PLATE-RETAINER
24	1	352021	SHAFT-DRUM X-700	64	1	486076	THREAD SEAL
25	1	357436	SHAFT-DRUM	65	1	486088	SEAL-OIL
26	1	357437	SPACER	66	1	490026	RING-RETAINER
27	1	362229	WORM-R. H.	67	1	494010	SPRING
28	1	368095	WORM-L. H.	68	2	494021	SPRING-DISC
29	2	400007	BALL-BRAKE	69	4	494069	SPRING
30	6	400011	BALL-CLUTCH	70	1	518017	THRUST WASHER
31	2	402045	BEARING-BALL	71	1	530007	DISC-BRAKE
32	1	412053	BUSHING	72	2	530094	SPACER-BRAKE
33	2	412054	BUSHING				
34	4	414038	CAPSCREW 1/4-20NCx3/4 LG. HX.HD. GR.5				
35	4	414069	CAPSCREW 5/16-18NCx3/4 LG. HX.HD.				
36	4	414111	CAPSCREW 5/16-18NCx1 LG. HX.HD. GR.5				
37	2	414224	CAPSCREW 3/8-16NCx1-1/2 LG. HX.HD. ALL-THRD.				
38	6	414282	CAPSCREW 3/8-16NCx1-1/4 LG. HX.HD. GR.5				



**Model H-700 Dow-Lok®**

# PARTS LIST

## Model H-700 Dow-Lok™

Item No.	Qty.	Part No.	Description	Item No.	Qty.	Part No.	Description
1	1	276035	SHIFTER ASS'Y.	40	2	414389	CAPSCREW 3/8-24NFx1-1/4 LG. HX. HD. ALL-THRD. GR.5 NYLON
2	1	299733	COUPLING ASS'Y.	41	8	414571	CAPSCREW 1/2-20NFx1 LG. HX. HD. GR.5
3	1	300047	ADAPTER	42	1	414603	CAPSCREW 1/2-20NFx1-3/4 LG. HX. HD. ALL-THRD. GR.5
4	2	302120	ANGLE	43	8	414666	CAPSCREW 5/8-11NCx1-1/2 LG. HX. HD. GR.5
5	2	302718	ANGLE HX-700	44	6	414897	CAPSCREW 3/8-16NCx1 LG. SOC. HD.
6	2	306033	SPRING-FLAT	45	12	414908	CAPSCREW 3/8-16NCx1-1/2 LG. SOC. HD. LOC-WEL
7	2	308080	BUSHING	46	2	414950	CAPSCREW 1/2-13NCx1-3/4 LG. SOC. HD. LOC-WEL
8	1	314007	CAM PLATE	47	1	418067	NUT 1/2-20NF HX. JAM
9	1	314011	CABLE ANCHOR	48	4	418163	LOCKWASHER 5/16 MED. SECT. C.P.
10	1	325153	CLUTCH	50	4	418184	WASHER-FLAT 3/8 ALUM.
11	1	324320	LOCKING RING	51	1	486076	THREAD SEAL
12	1	328027	COVER-BRAKE	52	8	418237	LOCKWASHER 5/8 MED. SECT. C.P.
13	1	328123	COVER-GEAR HSG.	53	2	442192	GASKET
14	2	330010	SHOE-DRAG BRAKE	54	1	442193	GASKET
15	1	332122	DRUM HX-700	55	1	442194	GASKET
16	1	334194	GEAR-R. H.	56	1	456008	FITTING-RELIEF
17	1	338221	HOUSING-BRAKE	57	2	456031	FITTING-LUBE
18	1	338241	HOUSING-CLUTCH	58	1	458027	MOTOR-HYD.
19	1	338243	HOUSING-GEAR	59	2	462021	QUAD-RING
20	1	340011	HUB-BRAKE	60	1	468002	REDUCER
21	1	342053	KEY	61	2	470042	PIPE PLUG
22	1	342092	KEY	62	4	470044	PIN-ROLL
23	2	342142	KEY	63	4	470044	PIN-DOWEL
24	1	352021	PLATE-RETAINER	64	4	470056	PIN-ROLL
25	1	357456	SHAFT-DRUM HX-700	65	1	474031	PLATE-RETAINER
26	1	362189	SPACER-ADAPTER PLATE	66	1	486068	SEAL-OIL
27	1	362229	SPACER	67	1	490026	RING-RETAINER
28	1	368085	WORM-R. H.	68	1	494010	SPRING
29	2	400007	BALL-BRAKE	69	2	494021	SPRING-DISC
30	8	402011	BALL-CLUTCH	70	4	494069	SPRING
31	2	402045	BEARING-BALL	71	1	518017	THRUST WASHER
32	1	412053	BUSHING	72	1	530007	DISC-BRAKE
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34	4	414038	CAPSCREW 1/4-20NCx3/4 LG. HX. HD. GR.5				
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36	4	414111	CAPSCREW 5/16-18NCx1 LG. HX. HD. GR.5				
37	2	414224	CAPSCREW 3/8-16NCx1-1/2 LG. HX. HD. GR.5 ALL-THRD.				
38	8	414277	CAPSCREW 3/8-16NCx1 LG. HX. HD. GR.5 NYLON HVY. PATCH				

**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](http://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](mailto: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](http://www.ramseywinch.com).

