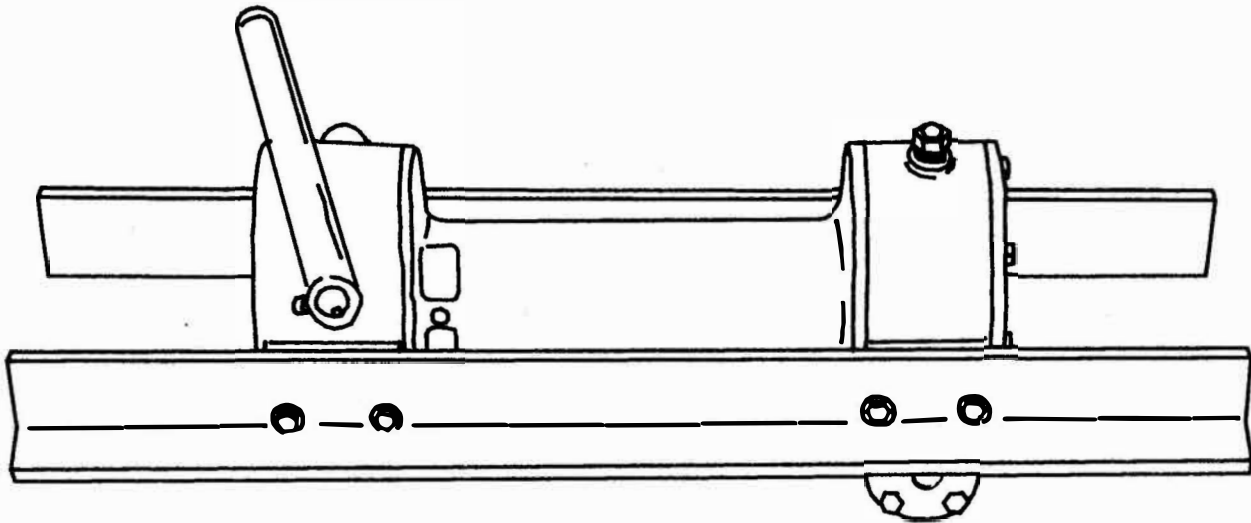




**OPERATING, SERVICE AND  
MAINTENANCE MANUAL**



**MODEL 600 SERIES  
MODEL H-600 SERIES  
LEVER EQUIPPED  
INDUSTRIAL LOW-MOUNT  
WINCHES**



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

## NOTES

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## RAMSEY WINCH MODEL 600/H-600 SERIES

### PLEASE READ THIS MANUAL CAREFULLY.

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

### WARRANTY INFORMATION

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

SPECIFICATIONS: CONFORMS TO SAE J706							
Rated Line Pull 1st Layer		(lbs).....	12,000				
		(kg).....	5,430				
Gear Reduction:		600/H-600.....	40:1				
Shipping Weight:							
600.....	160 lbs (73 kg)	H-600.....	185 lb (84 kg)				
Y-600.....	155 lbs (70 kg)	HY-600.....	180 lb (82 kg)				
X-600.....	170 lbs (77 kg)	HX-600.....	195 lb (88 kg)				
Layer of Cable			1	2	3	4	5**
Rated Line Pull per layer for 600/H-600	lbs		12,000	9,800	8,300	7,200	6,300
	kg		5,431	4,430	3,750	3,260	2,850
*Standard Drum Cable capacity per layer 600/H-600	ft		20	55	90	130	180
	m		6	16	27	39	54
*Short "Y" Drum Cable capacity per layer Y600/HY-600	ft		15	40	65	95	135
	m		4	12	19	28	39
*Long Drum Cable capacity per layer X600/HX-600	ft		30	65	110	165	225
	m		9	19	33	50	68
Line Speed		Worm RPM	1	2	3	4	5
600/H-600			25	31	37	42	48
Y-600/HY-600	FPM	870	7.6	7.6	11.2	12.7	14.5
X-600/HX-600	MPM						
*These specifications are based on recommended cable of 1/2" (13mm) 6x19 extra improved plow steel cable.							
** 5th layer does not conform to SAE J706							

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

## TECHNIQUES OF OPERATION

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

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

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

1. TO DISENGAGE CLUTCH, run winch in the reverse (reel out) direction until the load is off the cable. Grasp the clutch handle and move it toward the cable drum to the "OUT" position. The cable may now be pulled from the cable drum by hand.
2. TO ENGAGE CLUTCH, move the clutch handle away from the cable drum to the "IN" position, while slowly running the winch in the forward (reel in) direction, until the clutch jaws move into engagement with the drum jaws. When the cable drum starts rotating, stop and make sure that the clutch is engaged and thus that the clutch handle is fully at the "IN" position. The plastic plug in the top of the clutch housing may be removed for inspection of the clutch to assure total engagement. 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. Remove the plastic plug in the top of the housing and observe if the clutch is fully engaging. 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 600/H-600 Series Winches are furnished with recommended mounting angles. Angle size is 3/8 x 2-1/2 x 3 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 9/16" dia. hole in drum barrel. Secure cable to drum barrel, using setscrew furnished with winch. **TIGHTEN SETSCREW SECURELY.**
3. Carefully run winch in the "reel-in" direction. Keeping tension on end of cable, spool all the cable onto the cable drum, taking care to form neatly wrapped layers.

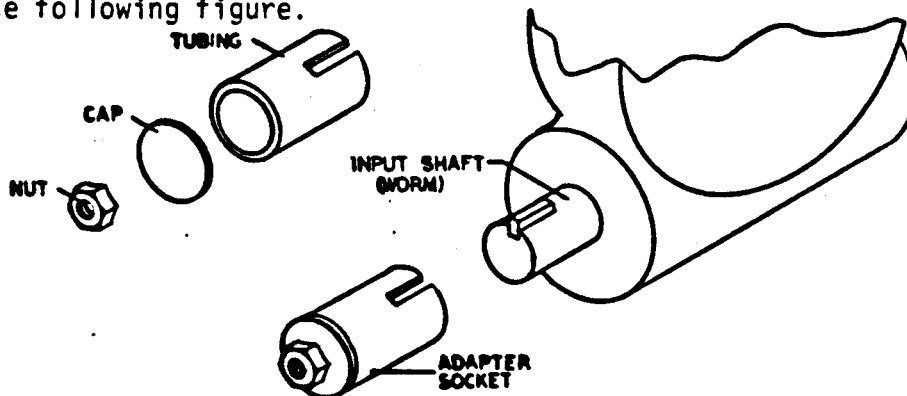
## ADJUSTING THE OIL COOLED WORM BRAKE

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

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

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

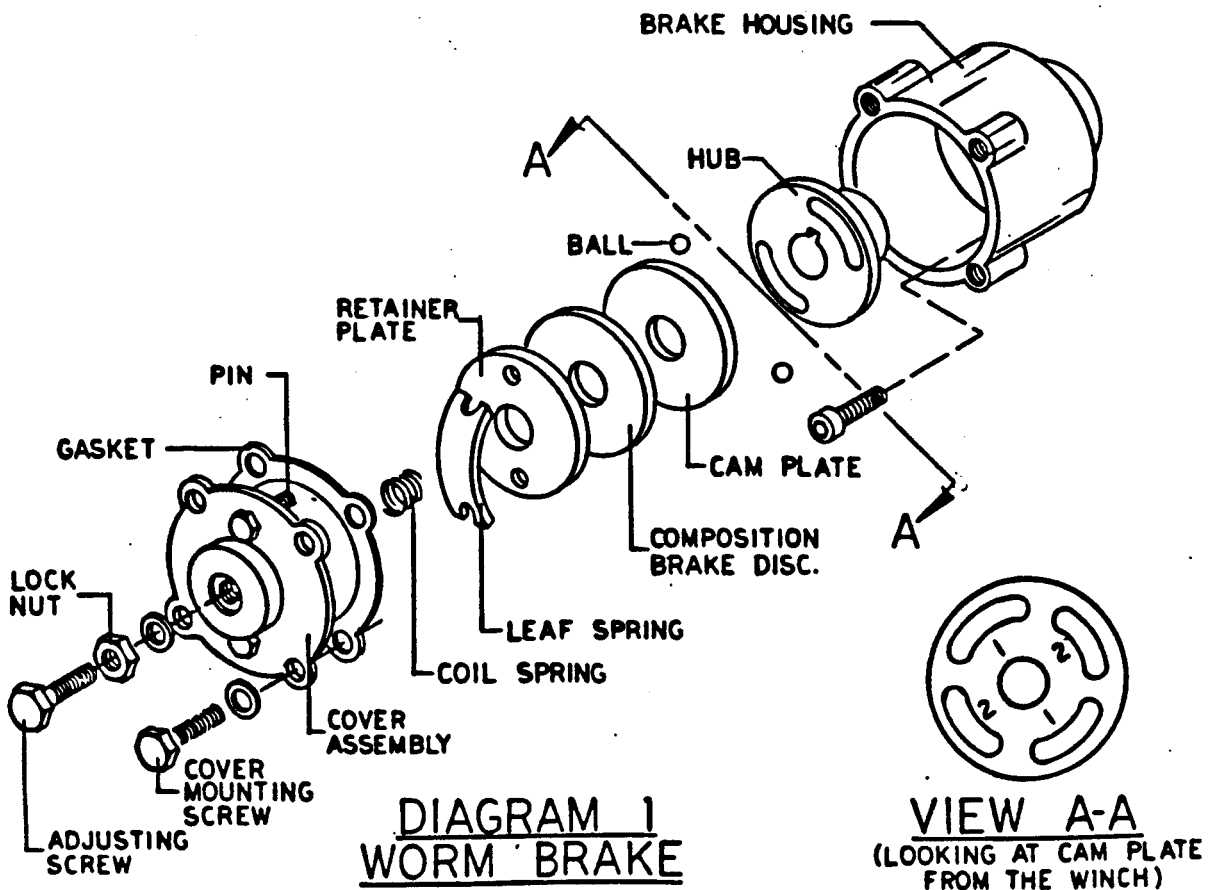
A torque wrench can be equipped with a special adapter to fit the input shaft (worm) of the winch. The adapter can be made by welding a nut to the end of a piece of tubing as shown in the following figure.



After welding the cap and nut to the tubing, slot the tubing as shown. This will allow the special adapter to slide over the keyway and will then act as a large socket. A torque wrench can then be used to apply the proper torque. Turn the torque wrench so that the drum turns in the spool out direction or lowering direction. The torque rating for the brake on the Model 600/H-600 should be 20 to 25 ft. lbs. If the torque wrench does not show the proper value as it turns, then the worm brake adjusting bolt should be turned clockwise 1/4 turn. Each time the adjusting bolt is turned, check the torque reading. Continue this procedure until the proper torque reading is achieved. Then tighten the lock nut.

## SERVICING OF THE OIL COOLED SAFETY BRAKE

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



## RE-ASSEMBLING AND CHECKING THE BRAKE

1. Press brake hub into place over worm shaft and key.
2. Assemble ball into appropriate slots of cam. (Refer to diagram 1, page 5). Use stiff grease to hold balls into place and slide cam over end of worm. Be sure that balls are secure, between cam slots and hub slots. Refer to Page 7 to determine proper ball slot setting.
3. Install brake disc.
4. Install retainer plate, smooth side toward brake disc.
5. Install the gasket on the cover with a small amount of grease or sealer.
6. The coil spring goes over the adjusting screw on the inside of the cover.
7. Install the notches of the leaf spring on the pins protruding through the cover. The hollow side of the leaf spring goes toward the brake.
8. Install brake housing cover, making sure the protruding pins go through the leaf spring and into the holes in the retainer plate.
9. Bolt cover into place with the mounting screws. Install drain plug and add 2 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).

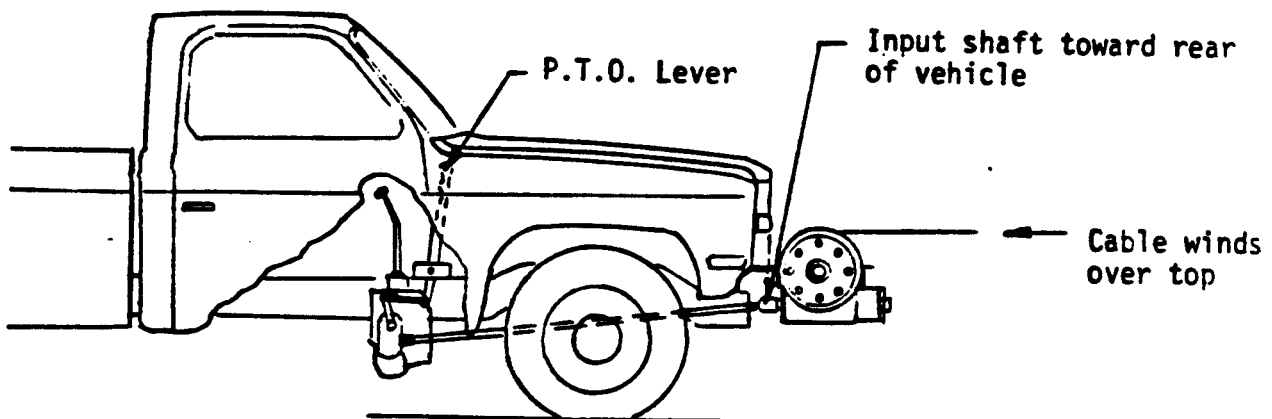


DIAGRAM 2

Three factors determine brake assembly arrangement.

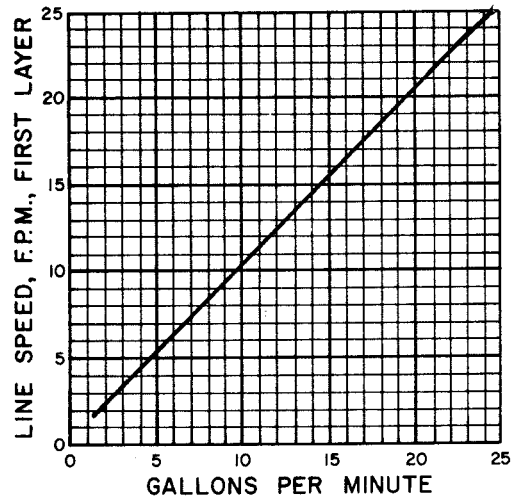
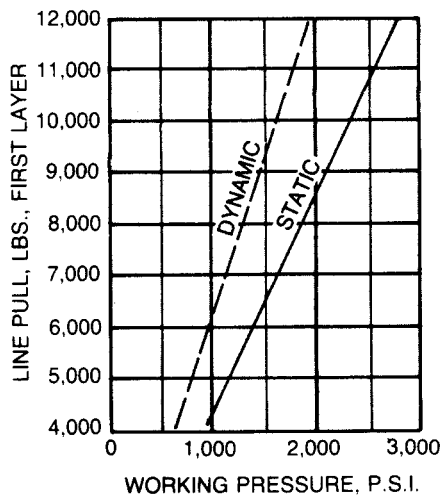
# HYDRAULIC SYSTEMS

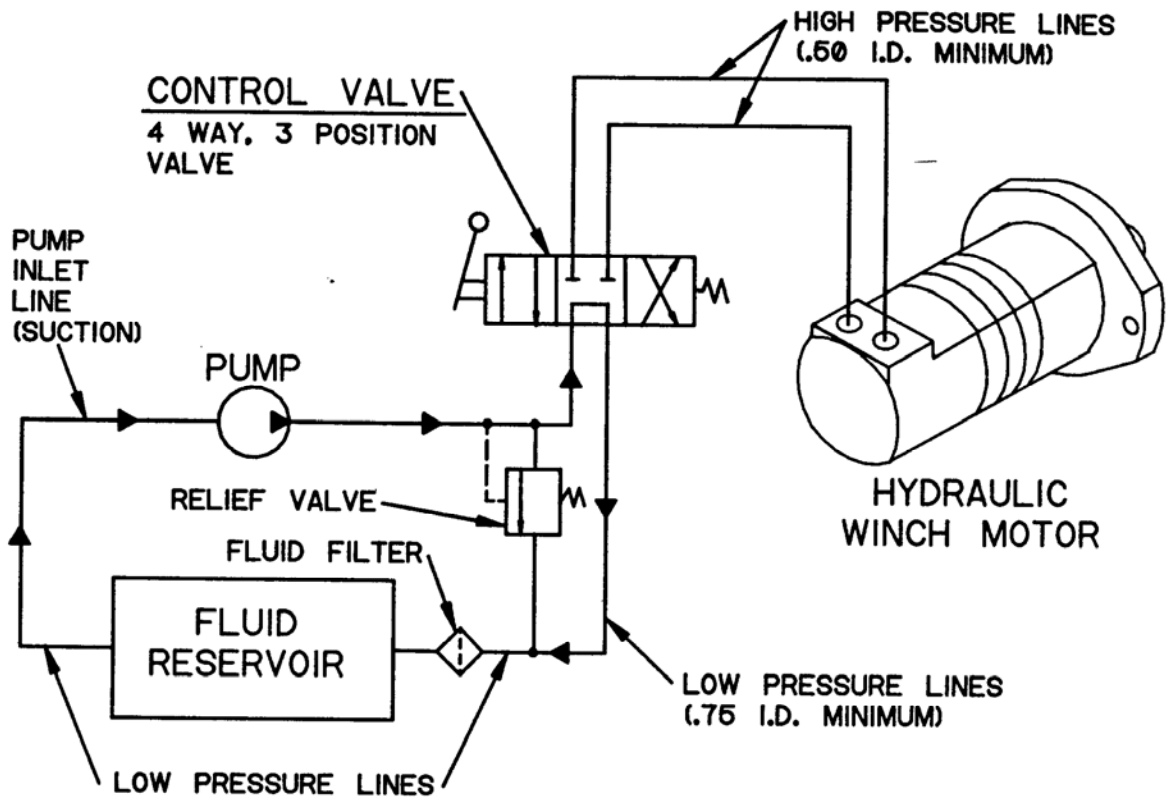
Refer to the performance charts, below, to properly match your hydraulic system to the H-600 Series Winch performance. The charts consist of:

- (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 25 GPM maximum flow rate. See page 17 for motor port size.

**H-600, HY-600,  
HX-600 Series  
Performance**  
**12,000 Lb. Duty Rating**  
**40:1 Gear Ratio**





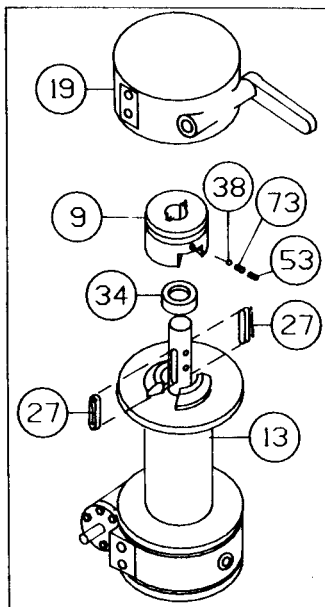
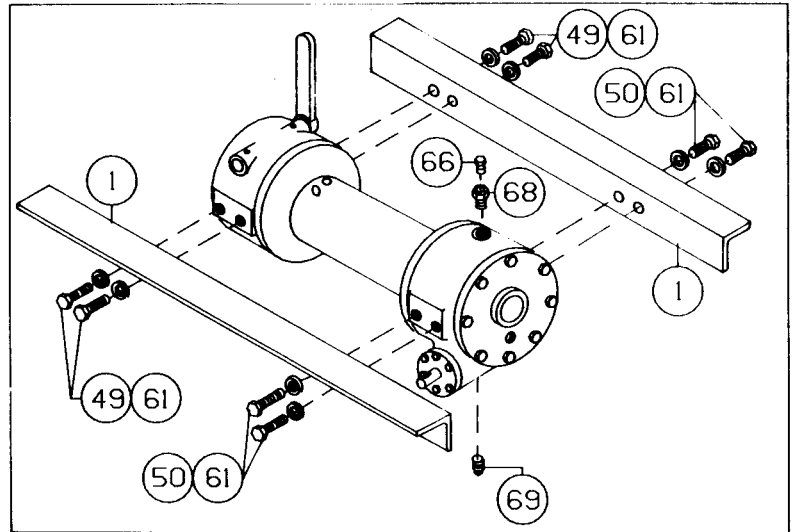
TROUBLE SHOOTING TIPS

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

INSTRUCTIONS FOR OVERHAUL OF RAMSEY  
MODEL 600/H-600 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 #69) plug from bottom of gear housing. Remove relief fittings and reducer (items #66 & #68) from top of gear housing. Remove mounting angles from winch by removing hardware shown.



2. Slide clutch housing (item #19) from end of drum shaft. Remove setscrew, spring and poppet ball (items #53, #73 and #38) from jaw clutch (item #9). Slide jaw clutch from end of drum shaft.

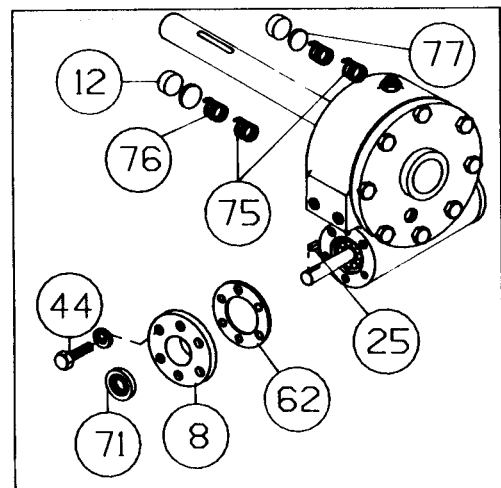
Remove two keys (item #27) from keyways. Once keys have been removed, drum (item #13) and drum spacer (item #34) can be removed from drum shaft.

3. Remove key (item #25) from worm shaft.

Remove bearing cap (item #8) and gasket (item #62) by unscrewing six capscrews (item #44) and lockwashers.

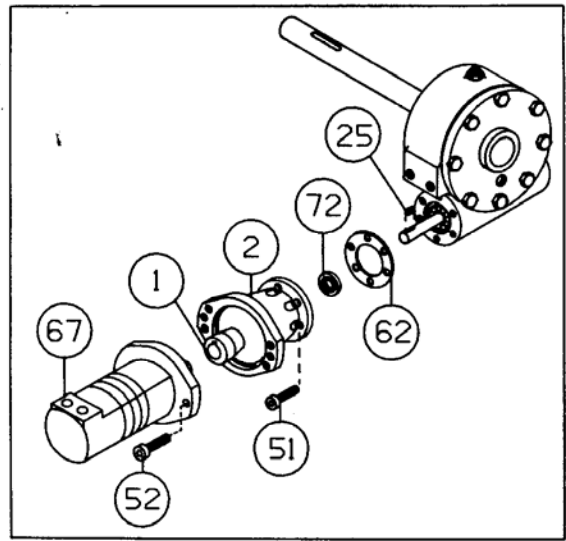
Remove seal (item #71) from bearing cap and press new seal into place.

Drag brake disc (item #12), spacer (item #77) and springs (items #75 & #76) should be examined and replaced if necessary.

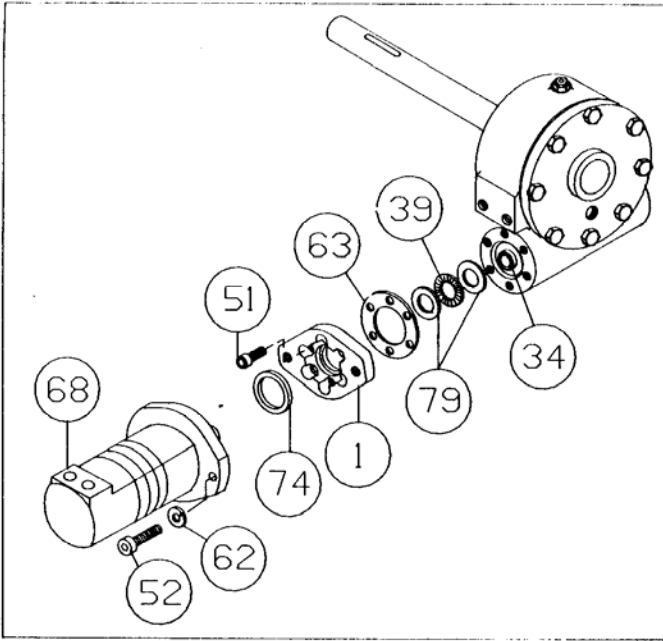


4. Remove motor (item #67) and coupling assembly (item #1) from (item #2) adapter by unscrewing two (item #52) capscrews.

Remove key (item #25) from worm shaft. Unscrew six capscrews (item #51) and remove adapter from gear housing. Replace adapter seal (item #72) and gasket (item #62).

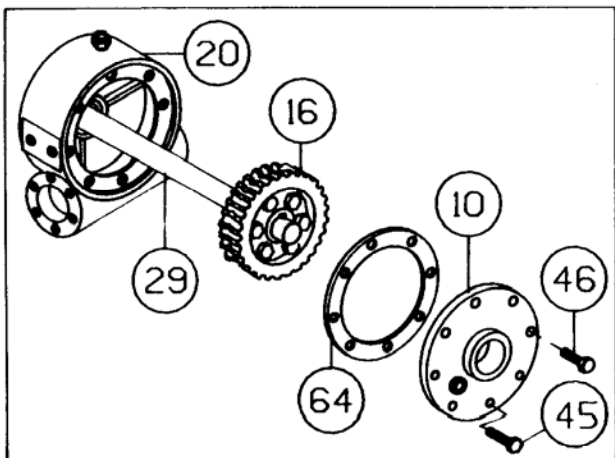
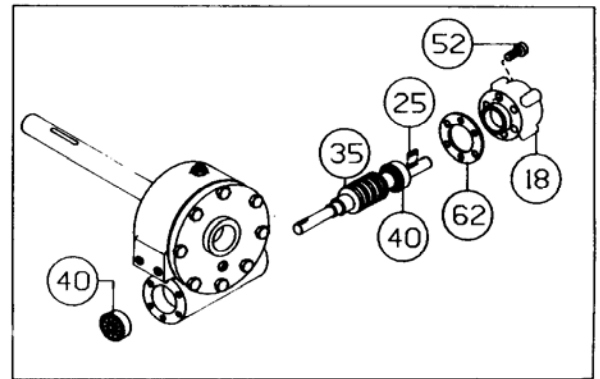


- 4a. Remove motor (item #68) from adapter (item #1) by removing two capscrews and lockwashers (items #52 & #62). Remove adapter (item #1) from gear housing by removing six (item #51) capscrews. Replace seal (item #74) and gasket (item #63). Remove thrust bearing (item #39) and thrust washer (item #79).



5. Refer to page 3, SERVICING OIL COOLED SAFETY BRAKE. Remove brake housing (item #18) from gear housing by unscrewing six (item #52) capscrews. Remove worm (item #35) and bearings (item #40) 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 #35) and bearing (item #40). Replace if necessary.

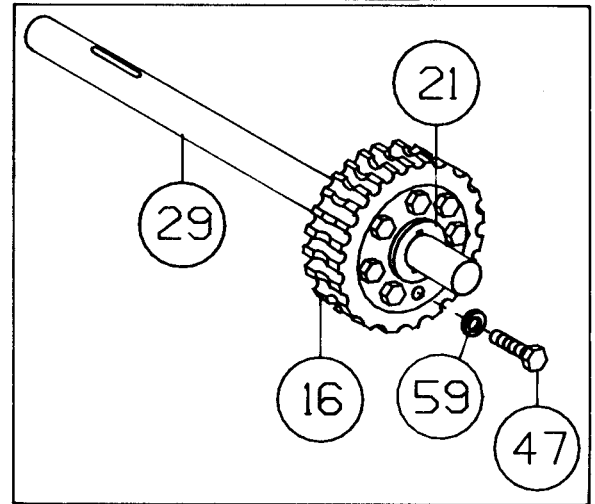


6. Remove gear housing cover (item #10) from gear housing (item #20) by unscrewing capscrews (items #46 & #45). Thread two of the capscrews into the two tapped holes of cover and tighten. This will pull the cover loose from gear housing.

Remove cover gasket (item #64) and pull shaft (item #29), with gear attached, from gear housing.

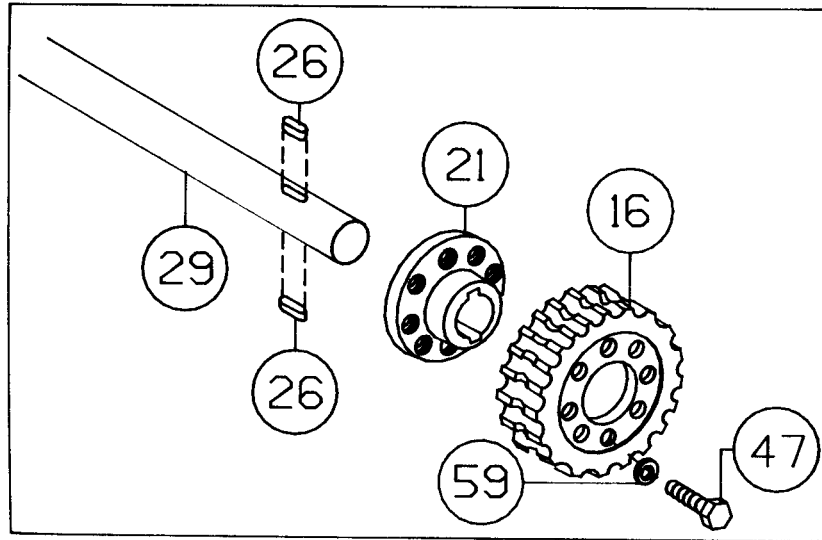
7. Check for signs of wear on gear teeth. If necessary, replace gear by removing six capscrews (item #47).

Place new gear (item #16) onto gear hub. Align holes in gear with holes in hub. Press gear onto hub. Be sure gear is seated all the way on the hub. Use six capscrews (item #47) and lockwashers (item #59) to secure gear to hub. Torque to 45 ft. lbs. (61 Nm.) each.

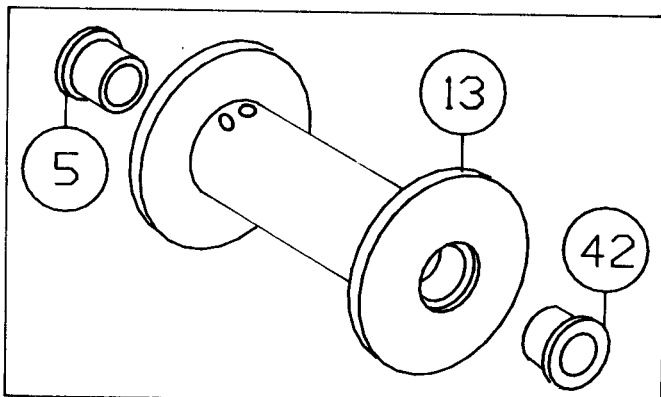
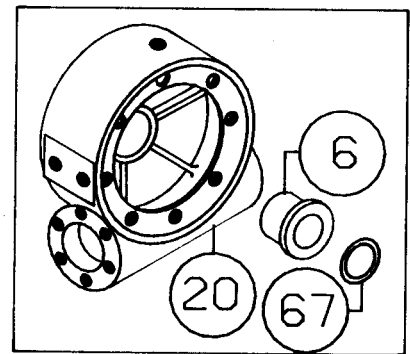


8. If shaft and/or hub is damaged, replace as follows:

- Tap keys (item #26) into short keyways of drum shaft (item #29).
- Press shaft (item #29) and keys through gear hub (item #21) until end of keys on long end of shaft are flush with hub.
- Secure gear to hub using six (item #47) capscrews with lockwashers (item #59). Torque to 45 ft. lbs. (61 Nm.) each.

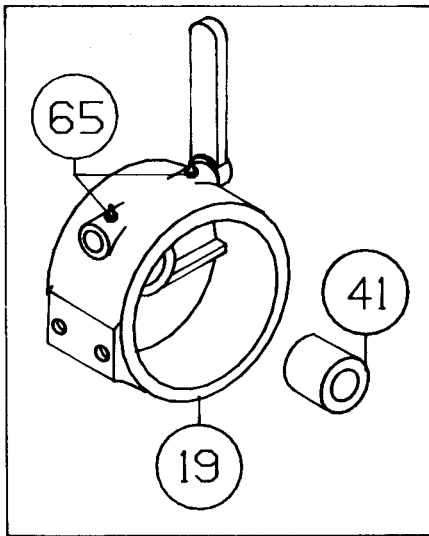


9. Check gear housing bushing (item #6) and quad ring (item #67) for signs of wear. Replace if necessary by pressing old bushing from gear housing. Press new bushing into place and insert new quad ring (item #67) into groove inside of bushing.



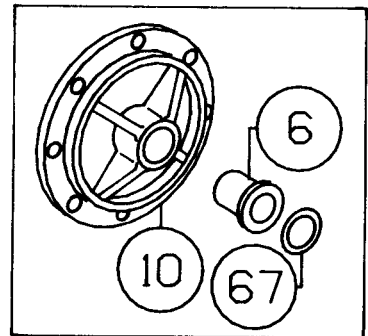
10. Check drum bushings (items #5 & #42) for signs of wear. Replace if necessary by pressing old bushings from drum. Press new ones into place.

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 pre-drilled: #234143 600 Series drum assemblies and #234144 X-600 Series drum assemblies.

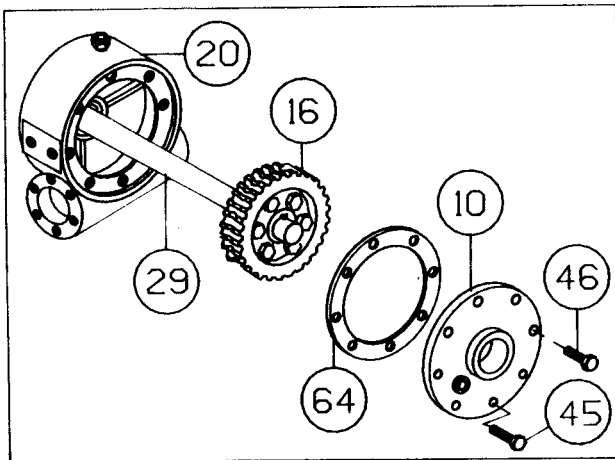


11. Check clutch housing bushing (item #41) for wear. If necessary, remove old bushing and press new bushing into place. Apply grease to lube fittings (item #65) to lubricate clutch shifter shaft.

12. Check cover bushing (item #6) and quad ring (item #67) for signs of wear. Replace if necessary by pressing old bushing from gear housing. Press new bushing into place and insert new quad ring (item #67) into groove inside of bushing.



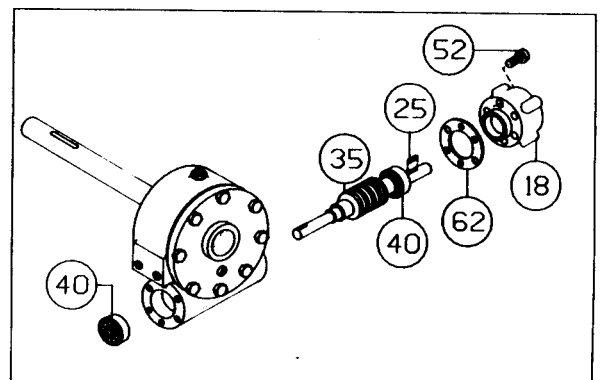
RE-ASSEMBLY



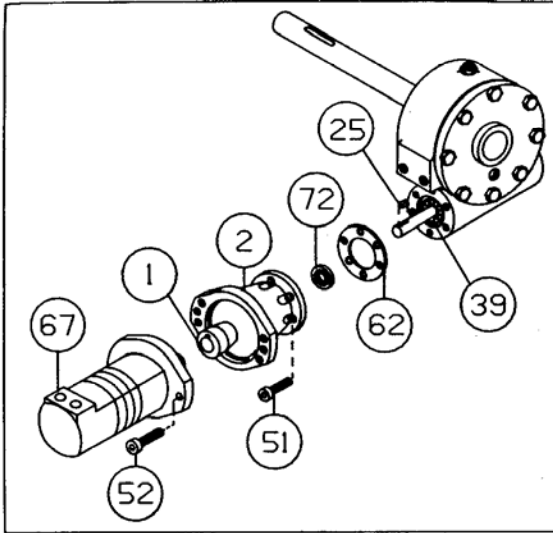
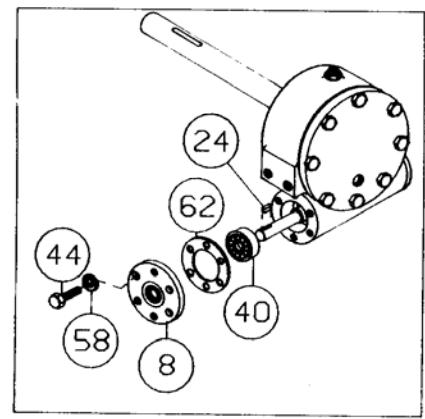
13. Apply grease to end of shaft, opposite gear. Apply grease to bushing in gear housing (item #20). Place greased end of shaft through bushing in gear housing (item #20). Place gasket (item #64) onto gear housing cover (item #10). Apply grease to gear end of shaft and cover bushing. Place cover onto shaft and secure to housing with seven (item #46) and one (item #45) capscrews. Tighten capscrews to 12 ft. lbs. (16.1 Nm.) each.

14. Press bearing (item #40) onto worm (item #35). 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 #62) onto brake housing (item #18). Use six capscrews (item #52) to secure brake housing to gear housing. Tighten capscrews to 12 ft. lbs. (16.1 Nm.) each.

Place key (item #25) into keyway of worm (item #35). Refer to page 6 for reassembly and checking of worm brake.



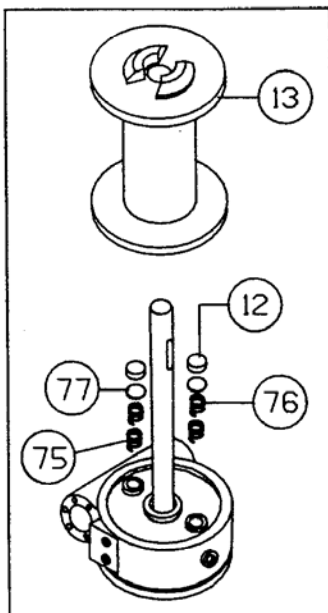
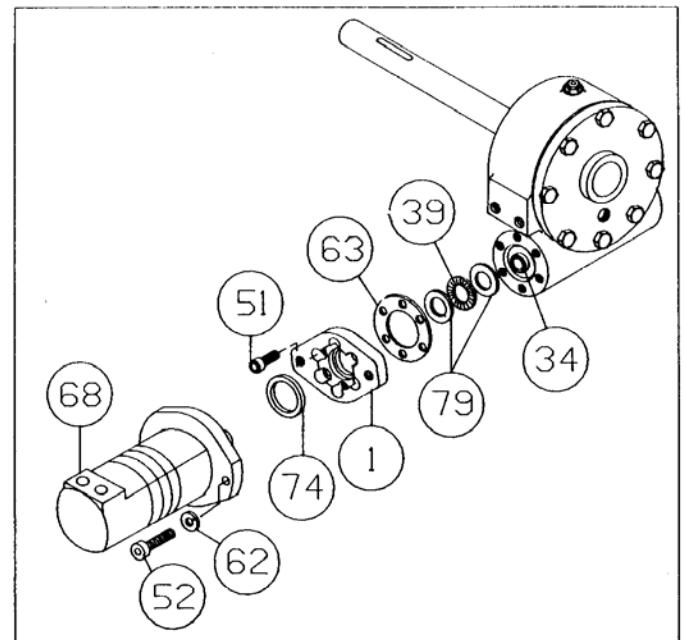
15. Press bearing (item #40) onto worm and into gear housing. **NOTE:** Be sure that thick shoulder of bearings outer race (side with manufacturer's name and part number) is out, away from worm threads. Attach bearing cap (item #8), to gear housing. Use six (item #44) capscrews to secure. Tighten capscrews to 18 ft. lbs. (24.4 Nm.) each. Tap key (item #25) into keyway.



16. Press bearing (item #39) 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 #51). Tighten capscrews to 12 ft. lbs. (16.1 Nm.) each. Insert key (item #25) into keyway of worm shaft. Slide tapered end of coupling (item #1) over end of worm shaft.

Place motor shaft, with key in keyway, into coupling. Secure motor (item #67) to adapter, using two capscrews (item #52). Tighten capscrews to 39 ft. lbs. (53 Nm.) each.

- 16a. Place thrust washers (item #79) and thrust bearing (item #39) over end of worm (item #34) and into housing. Attach adapter (item #1) with gasket (item #63) to housing, using six (item #51) capscrews. Tighten capscrews to 12 ft. lb. (16 Nm.) each. Insert seal (item #74) 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 #34). Secure motor (item #68) to coupling using two (item #52) capscrews with lock-washers (item #62). Tighten capscrews to 39 ft. lb. (53 Nm.) each.



17. Place winch with gear housing cover down on work bench. Drum shaft should be in vertical position. Set springs (items #75 & #76) into pockets of gear housing with drag brakes (item #12) on top of disc (item #77) and springs. Slide drum assembly (item #13) onto drum shaft with drum jaws upward.

18. Slide spacer (item #34) over end of drum shaft. Press drum downward to compress drag brake springs in gear housing. Insert keys (item #27) 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 #9) over end of shaft and slide jaw clutch over keys.

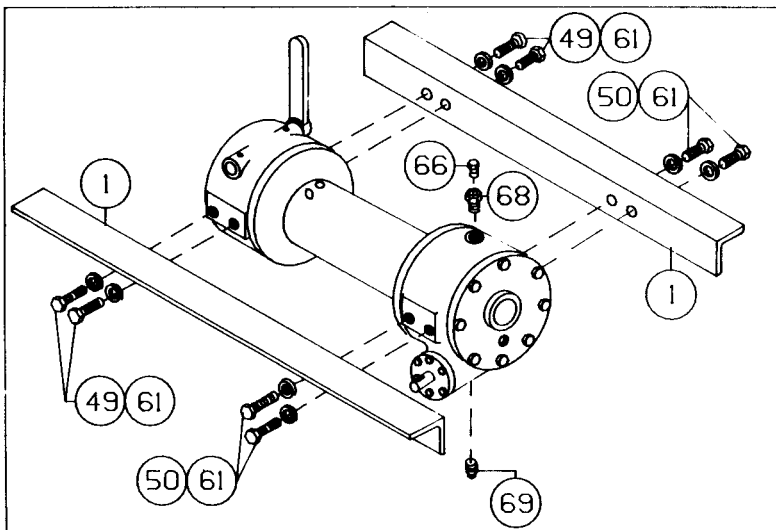
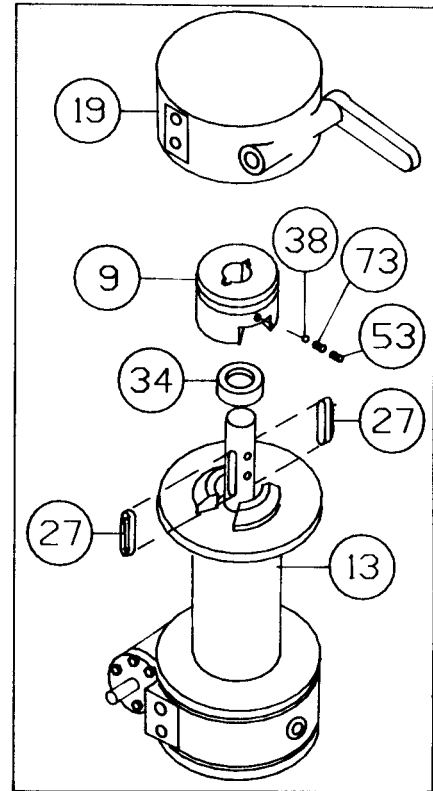
NOTE: Be sure that tapped hole on side of jaw clutch is on same side of shaft as the two ball detents. Insert ball poppet (item #38) spring (item #73) and setscrew (item #53) into tapped hole of jaw clutch.

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 #19). Set clutch housing onto end of drum shaft. Pull jaw clutch upward, toward clutch housing, enough to allow yoke in clutch housing, to fit properly in groove around jaw clutch. Slide clutch housing assembly and jaw clutch downward into place.

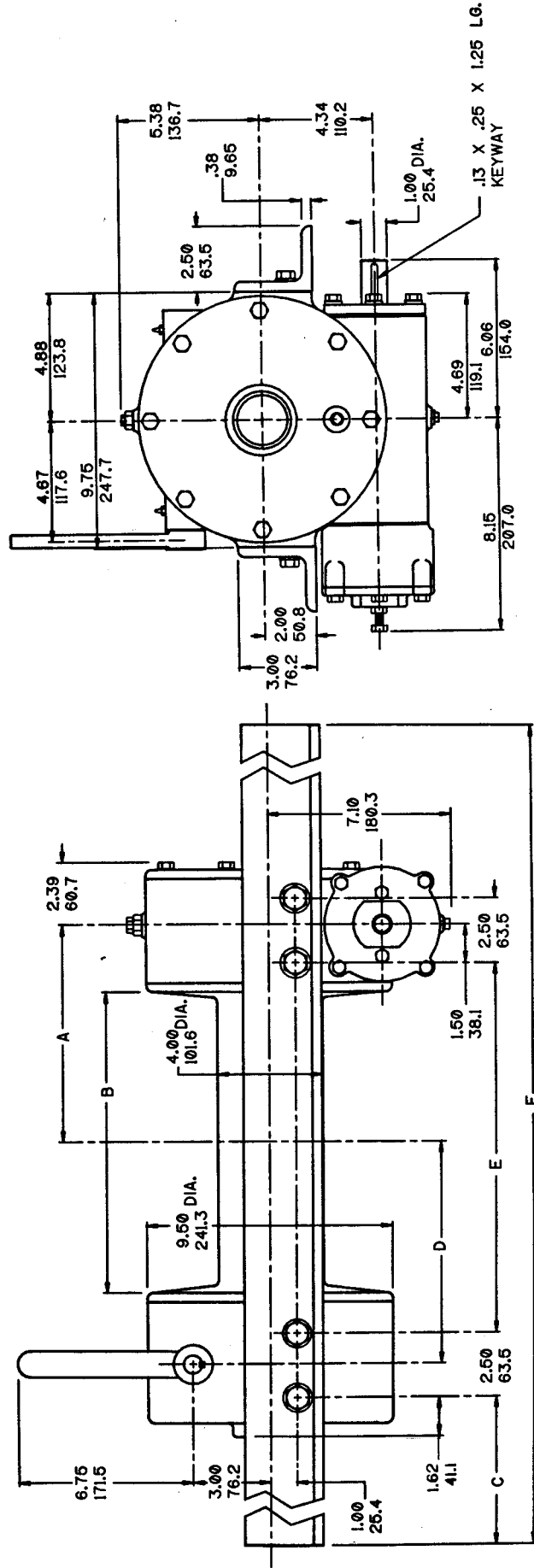
The setscrew should be tightened enough to allow ball, when placed in ball detents, to sufficiently hold jaw clutch "IN" and "OUT".



19. Attach two mounting angles (item #1) using four (item #49) cap screws with lockwashers at clutch housing end and four (item #50) cap screws with lockwashers at gear housing end. Torque cap screws to 28 ft. lbs. (37.9 Nm.) each. Insert plug (item #69) into bottom of gear housing. Permatex may be applied to threads to help prevent leakage.

Pour 2 pints of EP 140 gear oil into housing thru hole in top of housing. Insert relief fitting (item #66) into reducer (item #68). Reducer should then be placed into hole on top of gear housing. Tighten fittings and reducer securely.

WINCH MODEL	A INCHES MM	B INCHES MM	C INCHES MM	D INCHES MM	E INCHES MM	F INCHES MM
600	8.44 214.3	11.75 298.5	10.31 262.0	8.75 222.3	14.44 366.7	40.00 1016.0
Y-600	7.00 177.8	8.75 222.3	9.72 246.9	7.31 185.7	11.56 293.7	36.00 914.4
X-600	10.12 257.0	14.69 373.1	10.63 270.0	10.41 264.4	17.75 450.9	44.00 1117.6

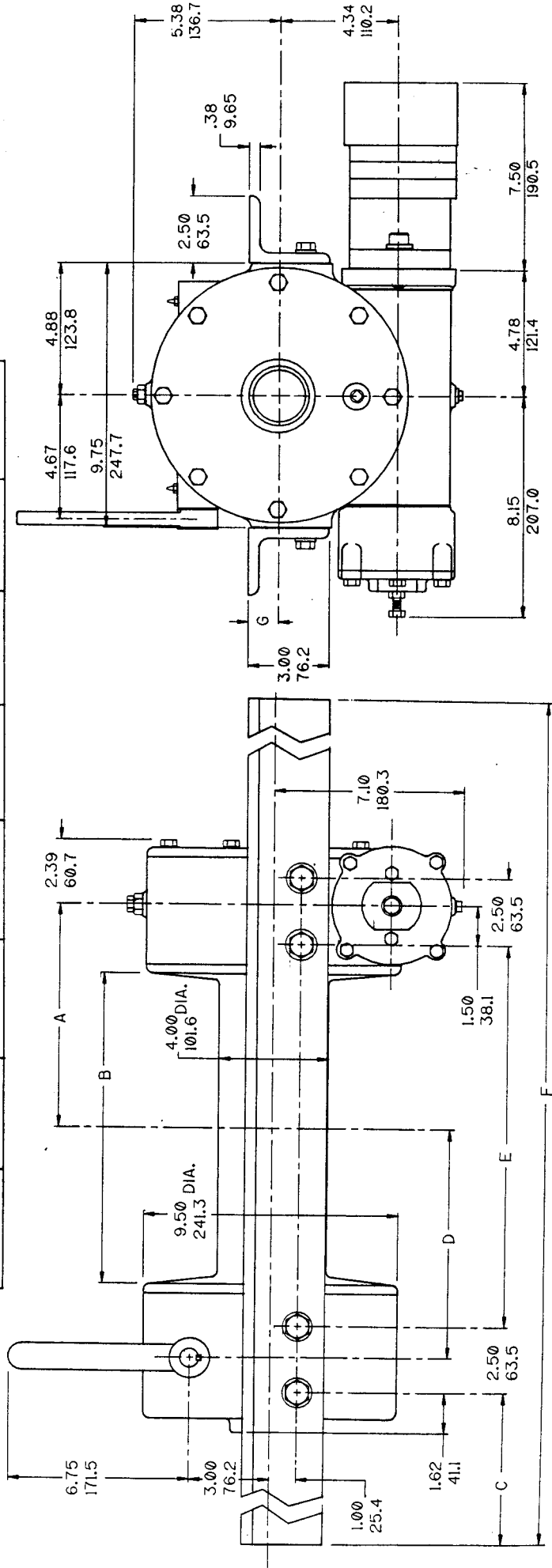


**DIMENSIONS SHOWN ARE INCHES OVER MILLIMETERS**

# Model 600

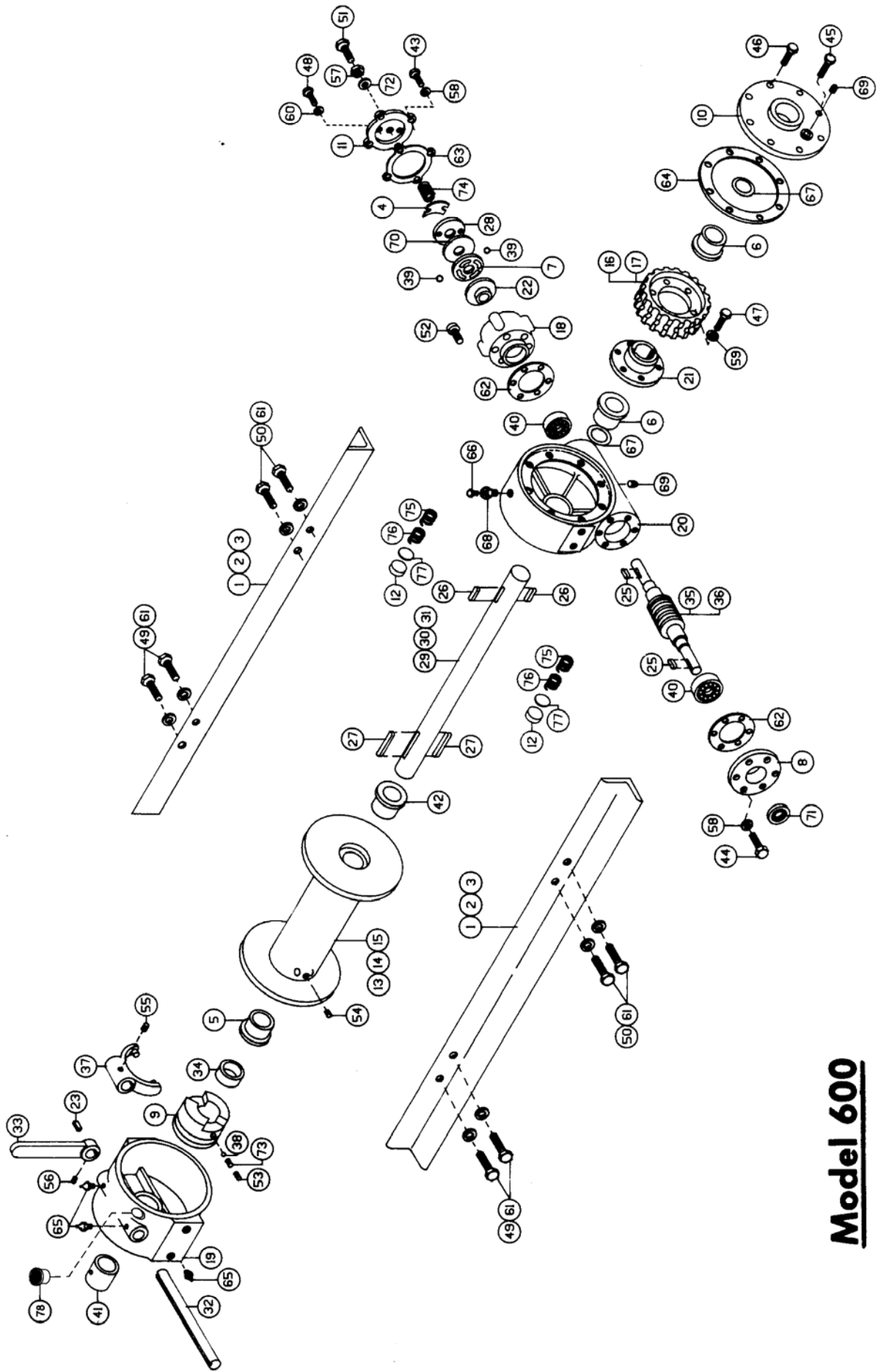


WINCH MODEL	A INCHES MM	B INCHES MM	C INCHES MM	D INCHES MM	E INCHES MM	F INCHES MM	G INCHES MM
H-600	8.44 214.3	11.75 298.5	10.31 262.0	8.75 222.3	14.44 366.7	40.00 1016.0	1.13 28.7
HY-600	7.00 177.8	8.75 222.3	9.72 246.9	7.31 185.7	11.56 293.7	36.00 914.4	1.06 26.9
HX-600	10.12 257.0	14.69 373.1	10.63 270.0	10.41 264.4	17.75 450.9	44.00 1117.6	1.06 26.9



# Model H-600

SHORT COUPLING

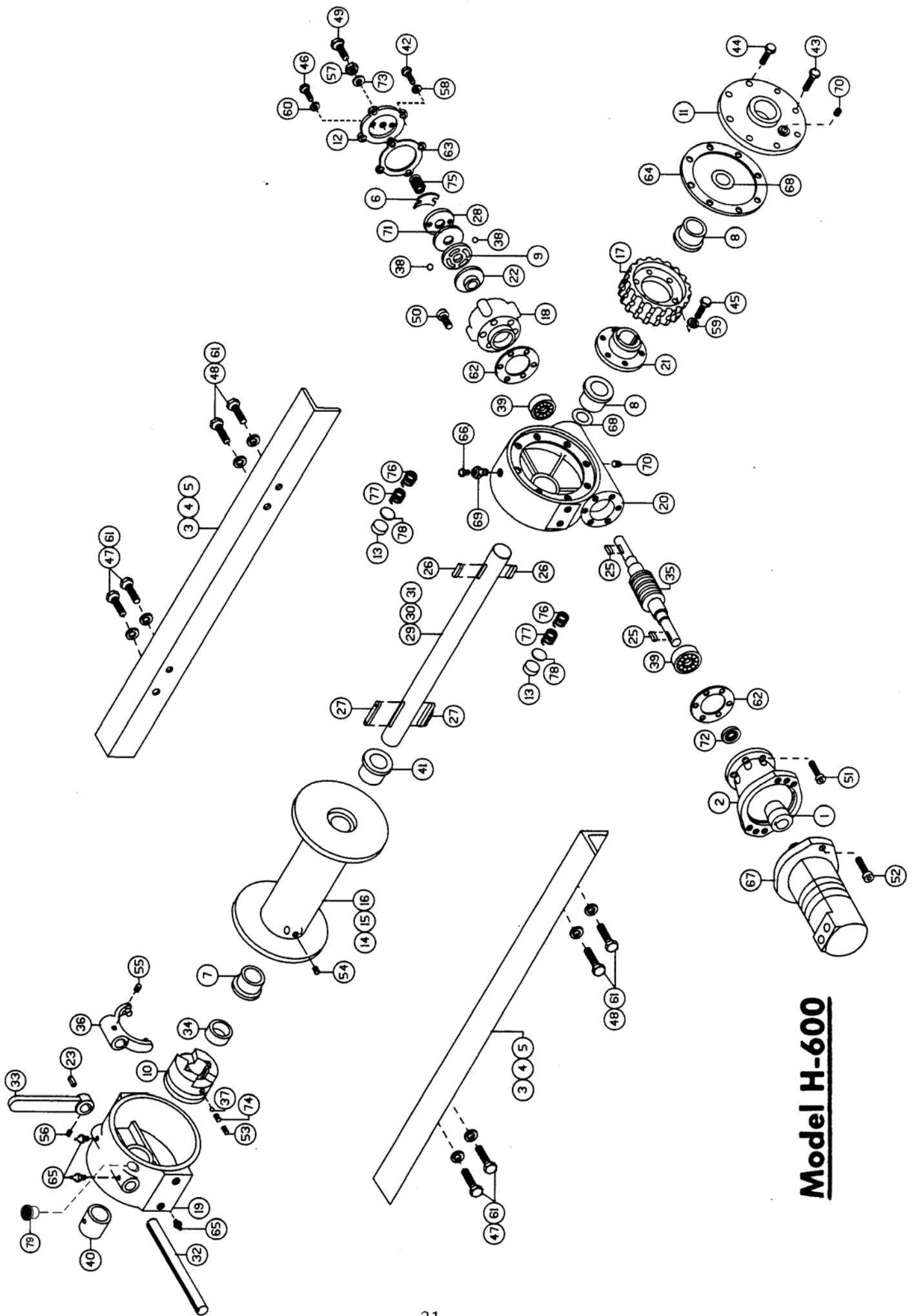


**Model 600**

# PARTS LIST

## Model 600

Item No.	Qty.	Part No.	Description	Item No.	Qty.	Part No.	Description
1	2	302116	ANGLE-X600	40	2	402044	BEARING-BALL
2	2	302122	ANGLE-Y600	41	1	412005	BUSHING
3	2	302234	ANGLE-600	42	1	412006	BUSHING-600
4	1	306036	SPRING-FLAT	43	4	414111	CAPSCREW 5/16-18NCx1-1/4 LG. HX.HD. GR.5
5	1	308046	BUSHING	44	6	414139	CAPSCREW 5/16-18NCx3/4 LG. HX.HD. GR.5 NY.IHVY.PATCH
6	2	308048	BUSHING	45	1	414140	CAPSCREW 5/16-18NCx1 LG. HX.HD. GR.5 NY.IHVY.PATCH
7	1	314003	PLATE-CAM	46	7	414141	CAPSCREW 5/16-18NCx1 LG. HX.HD. GR.8
8	1	316003	CAP	47	6	414283	CAPSCREW 3/8-24NFx1 LG. HX.HD. GR.5 NY.IHVY.PATCH
9	1	324163	CLUTCH-JAW	48	2	414398	CAPSCREW 7/16-14NCx1-1/4 LG. HX.HD. GR.5
10	1	328046	COVER	49	4	414457	CAPSCREW 7/16-14NCx1-1/4 LG. HX.HD. GR.5
11	1	328057	COVER-BRAKE	50	4	414481	CAPSCREW 7/16-14NCx1-1/4 LG. HX.HD. GR.5
12	2	330010	SHOE-DRAG BRAKE	51	1	414603	CAPSCREW 1/2-20NFx1-3/4 LG. HX.HD. GR.5 NY.IHVY.PATCH
13	1	332074	DRUM-Y600	52	6	414865	CAPSCREW 5/16-18NCx1 LG. HX.SOC.HD.
14	1	332140	DRUM-600	53	1	414971	SCREW-POPPET 1/2-20NF HD.-LESS DR. SLOT
15	1	332141	DRUM-X600	54	1	416059	SETScrew 3/8-16NCx1/2 LG. HX.HD. GR.5
16	1	334050	GEAR-R.H.	55	1	416109	SETScrew 5/16-18NCx1/2 LG. SQ.HD.
17	1	334082	GEAR-L.H.	56	1	416112	SETScrew 5/16-18NCx3/4 LG. SQ.HD.
18	1	338038	HOUSING-BRAKE	57	1	418067	NUT-JAM 1/2-20NF HX.
19	1	338040	HOUSING-CLUTCH	58	10	418163	LOCKWASHER 5/16 MED.SECT.
20	1	338085	HOUSING-GEAR	59	6	418176	LOCKWASHER 3/8 MED.SECT.
21	1	340014	HUB-GEAR	60	2	418184	WASHER-FLAT 3/8 ALUM.SECT.
22	1	340024	HUB-BRAKE	61	8	418198	LOCKWASHER 7/16 MED.SECT.
23	1	342024	KEY-SO.END	62	2	442182	GASKET
25	2	342051	KEY-RD.END	63	1	442190	GASKET
26	2	342120	KEY-BARTH	64	1	442191	GASKET
27	2	450017	PLATE-RETAINER	65	3	456006	FITTING-LUBE
28	1	352020	SHAFT-DRUM-X600	66	1	456008	FITTING-RELIEF
29	1	356806	SHAFT-DRUM-600	67	2	462003	QUAD-RING
30	1	357466	SHAFT-DRUM-Y600	68	1	468002	REDUCER
31	1	358945	SHAFT-SHIFTER	69	2	468011	PLUG-PIPE
32	1	358001	SHAFT-HANDLE	70	1	474004	PLATE
33	1	362007	SPACER-DRUM	71	1	486067	SEAL-OIL
34	1	368057	WORM-R.H.	72	1	486076	THREAD SEAL
35	1	368080	WORM-L.H.	73	1	494005	SPRING
36	1	370057	YOKE	74	1	494010	SPRING
37	1	400003	BALL-POPPET	75	2	494088	SPRING
38	1	400003	BALL-BRAKE	76	2	494089	SPRING
39	2	400007	BALL-BRAKE	77	2	530094	SPACER-BRAKE DISC
				78	1	472013	PLUG-PLASTIC

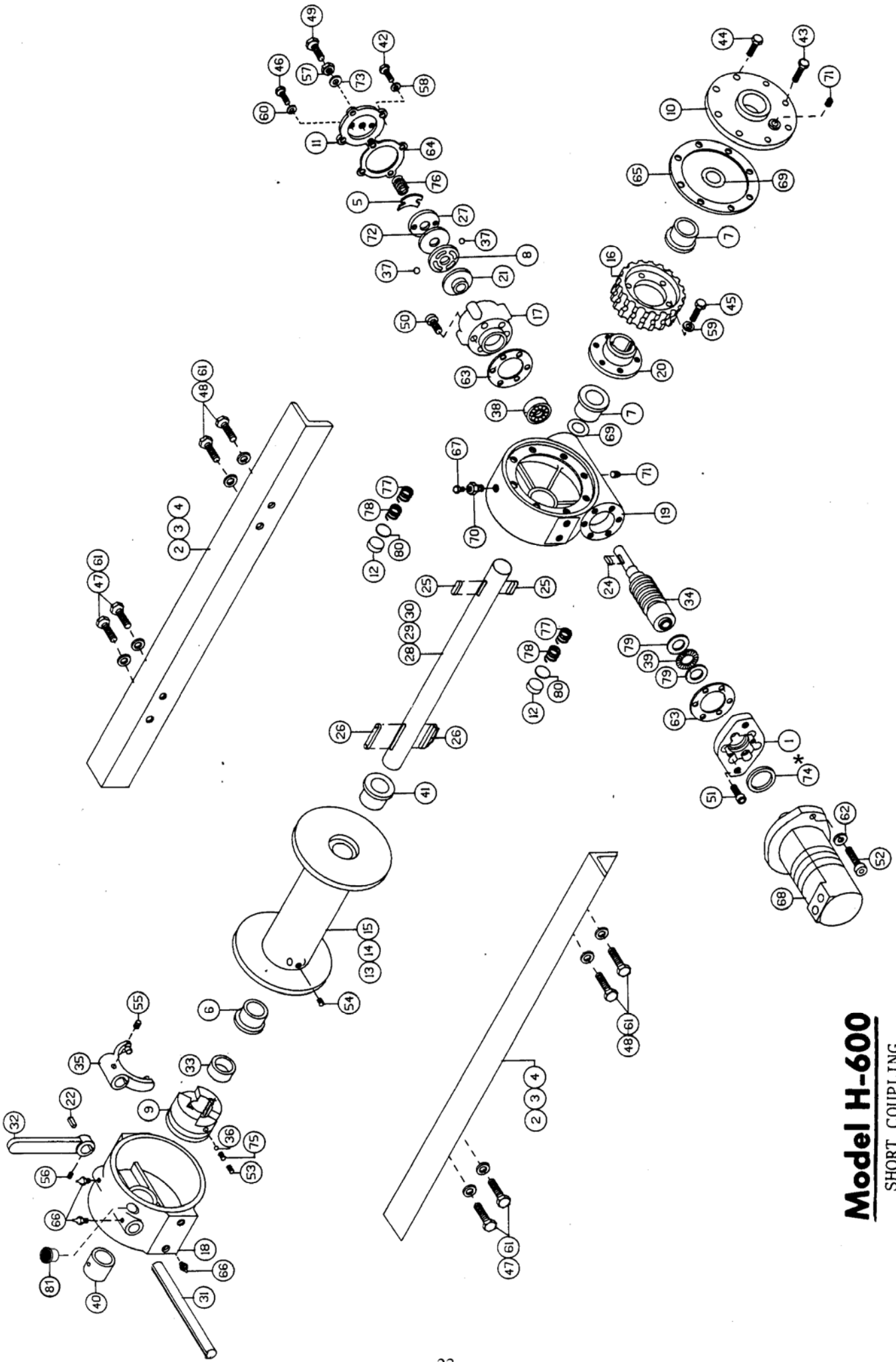


**Model H-600**

# PARTS LIST

## Model H-600

Item No.	Qty.	Part No.	Description	Item No.	Qty.	Part No.	Description
1	1	299043	COUPLING	41	1	412006	BUSHING
2	1	300043	ADAPTER	42	4	414111	CAPSCREW 5/16-18NCx1 LG. HX. HD. GR. 5
3	2	302229	ANGLE-600	43	1	414140	CAPSCREW 5/16-18NCx3/4 LG. HX. HD. GR. 5 NYLOK HVY. PAT
4	2	302380	ANGLE-Y600	44	7	414141	CAPSCREW 5/16-18NCx1 LG. HX. HD. GR. 5 NYLOK HVY. PATCH
5	2	302417	ANGLE-X600	45	6	414283	CAPSCREW 3/8-16NCx1-1/4 LG. HX. HD. GR. 8
6	1	306036	SPRING-FLAT	46	2	414398	CAPSCREW 3/8-24NFx1 LG. HX. HD. GR. 5 NYLOK HVY. PATCH
7	1	308046	BUSHING	47	4	414457	CAPSCREW 7/16-14NCx1-1/4 LG. HX. HD. GR. 5
8	2	308048	BUSHING	48	4	414481	CAPSCREW 1/2-20NFx1-3/4 LG. HX. HD. GR. 5 NYLOK HVY. PAT
9	1	314003	PLATE-CAM	49	1	414603	CAPSCREW 5/16-18NCx1 LG. HX. SOC. HD.
10	1	324163	CLUTCH-JAW	50	6	414865	CAPSCREW 5/16-18NCx1-1/4 LG. SOC. HD. LOK-WEL
11	1	328046	COVER-G. HSG.	51	6	414871	CAPSCREW 1/2-13NCx1-3/4 LG. SOC. HD. LOK-WEL
12	1	328057	COVER-BRAKE	52	2	414950	SCREW-POPPET 1/2-20NF HD. -LESS DR. SLOT
13	2	330010	SHOE-DRAG BRAKE	53	1	414971	SETSCREW 3/8-16NCx1/2 LG. HX. SOC. HD.
14	1	332074	DRUM-Y600	54	1	416059	SETSCREW 5/16-18NCx1/2 LG. SO. HD.
15	1	332140	DRUM-600	55	1	416109	SETSCREW 5/16-18NCx3/4 LG. SO. HD.
16	1	332141	DRUM-X600	56	1	416112	SETSCREW 5/16-18NCx3/4 LG. SO. HD.
17	1	334050	GEAR-R. H.	57	1	418067	NUT-JAM 1/2-20NF HX.
18	1	338038	HOUSING-BRAKE	58	4	418163	LOCKWASHER 5/16 MED. SECT. C. P.
19	1	338040	HOUSING-CLUTCH	59	6	418176	LOCKWASHER 3/8 MED. SECT.
20	1	338085	HOUSING-GEAR	60	2	418184	LOCKWASHER 3/8 ALUM.
21	1	340014	HUB-GEAR	61	8	418198	LOCKWASHER 7/16 MED. SECT. C. P.
22	1	340024	HUB-BRAKE	62	2	442182	GASKET
23	1	342024	KEY-SQ. END	63	1	442190	GASKET
25	2	342051	NOT USED	64	1	442191	GASKET
26	2	342120	KEY-RD. END	65	3	456006	FITTING-LUBE
27	2	450017	KEY-RD. END	66	1	456008	FITTING-RELIEF
28	1	352020	KEY-BARTH	67	1	458025	MOTOR-HYD.
29	1	356806	PLATE-RETAINER	68	2	462003	QUAD-RING
30	1	357466	SHAFT-DRUM-X600	69	1	468002	REDUCER
31	1	357468	SHAFT-DRUM-600	70	2	468011	PLUG-PIPE
32	1	357468	SHAFT-DRUM-Y600	71	1	474004	PLATE
33	1	356945	SHAFT-SHIFTER	72	1	486067	SEAL-OIL
34	1	358001	SHIFTER-HANDLE	73	1	486076	THREAD SEAL
35	1	362007	SPACER-DRUM	74	1	494005	SPRING
36	1	368057	WORM-R. H.	75	2	494010	SPRING
37	1	370057	YOKE	76	2	494088	SPRING
38	1	400003	BALL-POPPET	77	2	494089	SPRING
39	2	400007	BALL	78	2	530094	SPACER-BRAKE DISC
40	1	402044	BEARING-BALL	79	1	472013	PLUG-PLASTIC



**Model H-600**  
SHORT COUPLING

# PARTS LIST

## Model H-600 SC

SHORT COUPLING

Item No.	Qty.	Part No.	Description	Item No.	Qty.	Part No.	Description
1	1	30062	ADAPTER	42	4	414111	CAPSCREW 5/16-18NCx1 LG. HX.HD. GR.5
2	2	30229	ANGLE-600	43	1	414140	CAPSCREW 5/16-18NCx3/4 LG. HX.HD. GR.5 NYLOK HVY.PATCH
3	2	202380	ANGLE-Y600	44	7	414141	CAPSCREW 5/16-18NCx1 LG. HX.HD. GR.5 NYLOK HVY.PATCH
4	2	302417	ANGLE-X600	45	6	414283	CAPSCREW 3/8-16NCx1-1/4 LG. HX.HD. GR.8
5	1	306036	SPRING-FLAT	46	2	414398	CAPSCREW 3/8-24NFx1 LG. HX.HD. GR.5 NYLOK HVY.PATCH
6	1	308046	BUSHING	47	4	414457	CAPSCREW 7/16-14NCx1-1/4 LG. HX.HD. GR.5
7	2	308048	BUSHING	48	4	414481	CAPSCREW 7/16-14NCx1-1/4 LG. HX.HD. GR.5 NYLOK HVY.PATCH
8	1	314003	PLATE-CAM	49	1	414603	CAPSCREW 1/2-20NFx1-3/4 LG. HX.HD. GR.5 NYLOK HVY.PATCH
9	1	324163	CLUTCH-JAW	50	6	414865	CAPSCREW 5/16-18NCx1 LG. HX.SOC.HD.
10	1	328046	COVER-G.HSG.	51	6	414887	CAPSCREW 5/16-18NCx1 LG. BUTTON HD. LOK-WEL
11	1	328057	COVER-BRAKE	52	2	414952	CAPSCREW 1/2-13NCx1-1/2 LG. SOC.HD. LOK-WEL
12	2	330010	SHOE-DRAG BRAKE	53	1	414971	SCREW-POPPET 1/2-20NF HD.-LESS DR. SLOT
13	1	332074	DRUM-Y600	54	1	416059	SETScrew 3/8-16NCx1/2 LG. HX.SOC.HD.
14	1	332140	DRUM-600	55	1	416109	SETScrew 5/16-18NCx1/2 LG. SQ.HD.
15	1	332141	DRUM-X600	56	1	416112	SETScrew 5/16-18NCx3/4 LG. SQ.HD.
16	1	334050	GEAR-R.H.	57	1	418067	NUT-JAW 1/2-20NF HX
17	1	338038	HOUSING-BRAKE	58	4	418163	LOCKWASHER 5/16 MED.SECT. C.P.
18	1	338040	HOUSING-CLUTCH	59	6	418176	LOCKWASHER 3/8 MED.SECT.
19	1	338270	HOUSING-GEAR	60	2	418194	WASHER-FLAT 3/8 ALUM.
20	1	340014	HUB-GEAR	61	8	418198	LOCKWASHER 7/16 MED.SECT. C.P.
21	1	340024	HUB-BRAKE	62	2	418218	LOCKWASHER 1/2 MED.SECT. C.P.
22	1	342024	KEY-SQ. END NOT USED	63	2	442182	GASKET
24	1	342051	KEY-RD. END	64	1	442190	GASKET
25	2	342120	KEY-RD. END	65	1	442191	GASKET
26	2	450017	KEY-BARTH	66	3	456006	FITTING-LUBE
27	1	352020	PLATE-RETAINER	67	1	456008	FITTING-RELIEF
28	1	356806	SHAFT-DRUM-X600	68	1	458025	MOTOR-HYD.
29	1	357466	SHAFT-DRUM-600	69	2	462003	QUAD-RING
30	1	357468	SHAFT-DRUM-Y600	70	1	468002	REDUCER
31	1	356945	SHAFT-SHIFTER	71	2	468011	PLUG-PIPE
32	1	358001	SHIFTER-HANDLE	72	1	474004	PLATE
33	1	362007	SPACER-DRUM	73	1	486076	THREAD SEAL
34	1	368195	WORM-R.H.	74*	1	486079	SEAL-PILOT
35	1	370057	YOKE	75	1	462029	O-RING
36	1	400003	BALL-POPPET	76	1	494005	SPRING
37	2	400007	BALL	77	2	494010	SPRING
38	1	402014	BEARING-BALL	78	2	494088	SPRING
39	1	402107	BEARING-THRUST	79	2	518026	WASHER THRUST
40	1	412005	BUSHING	80	2	530094	SPACER-DRAG BRAKE
41	1	412006	BUSHING	81	1	472013	PLUG - PLASTIC

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

**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).

