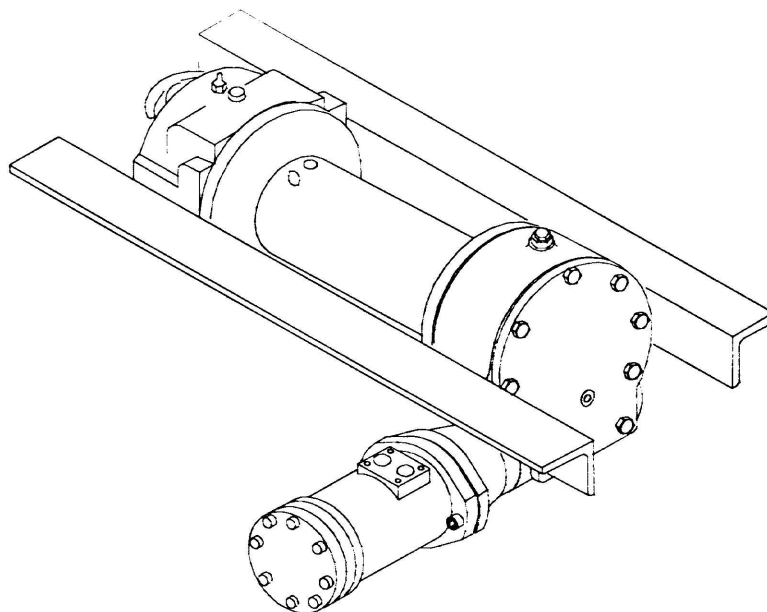




OPERATING, SERVICE AND MAINTENANCE MANUAL



MODEL 200 SERIES MODEL H 200 SERIES RAM-LOK® EQUIPPED INDUSTRIAL LOW-MOUNT WINCHES

INCLUDES 200/Y-200, 246/Y-246, D-200/DY-200, H-200/HY-200, H-246/H-Y246, HD-200/HDY-200
AND MODELS EQUIPPED WITH OPTIONAL ADJUSTABLE, AUTOMATIC,
OIL COOLED SAFETY BRAKE: G-200 SERIES & HG-200
ALSO INCLUDES MODEL H-200 SERIES WITH AIR SHIFTER CLUTCH



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

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RAMSEY WINCH MODEL 200/H-200 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 ^Δ

Rated Line Pull (lbs. 1st Layer).....		8,000 lbs.			
Gear Reduction: 200/H-200.....		60:1			
246/H-246.....		46:1			
D-200/HD-200.....		30:1			
Weight: 200/246/D-200.....		85 lbs. (39 Kgs.)			
H-200/H-246/HD-200.....		110 lbs. (50 Kgs.)			
Y-200/Y-246/YD-200.....		80 lbs. (36 Kgs.)			
HY-200/HY-246/HYD-200.....		105 lbs. (48 Kgs.)			
Layer of Cable		1	2	3	4
Rated Line Pull	Lbs.	8,000	6,700	5,700	5,000
per layer	Kgs.	3,620	3,030	2,610	2,290
Long Drum	Ft.	25	60	95	140
Cable capacity	M.	8	18	30	43
per layer					
Short "Y" Drum	Ft.	15	30	55	75
cable capacity	M.	4	9	16	22
per layer					
Line Speed	Worm RPM	1	2	3	4
200	FPM	16.8	20.0	23.0	26.0
Y-200	MPH	5.0	6.0	7.0	8.0
246	FPM	22.0	26.0	29.0	34.0
Y-246	MPH	6.6	7.8	8.8	10.5
D-200	FPM	33.0	40.0	46.0	53.0
YD-200	MPH	10.1	12.1	14.1	16.1
H-200	FPM	12.6	15.1	17.5	20.0
HY-200	MPH	3.8	4.5	5.3	6.0
H-246	FPM	16.5	19.7	22.0	26.0
HY-246	MPH	5.0	5.9	6.6	7.9
HD-200	FPM	25.0	30.0	35.0	40.0
HDY-200	MPH	7.6	9.1	10.6	12.1

*These specifications are based on recommended 3/8 inch dia. extra improved plow steel wire rope or equivalent.

^ΔWinch only conforms to SAE J706. For SAE qualification of mounting angles, if applicable, consult Ramsey Engineering.

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.

When pulling a load where there is even a remote chance of cable failure, place a blanket, jacket or tarpaulin over the cable about six feet behind the hook. This will slow the snap back of a broken cable and could prevent serious injury.

NOTE: The Ramsey level winder for both drum lengths is an available accessory for tightly respooling unloaded cable onto the drum.

The Ram-lok® semi-automatic clutch allows rapid unspooling of the cable, from cable drum, for hooking onto the load. The clutch is operated by the "T-handle", located on the end of the winch as follows:

1. **TO DISENGAGE CLUTCH**, run the winch in the reverse (reel out) direction until the load is off the cable. Pull outward on the clutch handle, rotate it counter-clockwise 90° and release. The clutch is now locked out and the cable may be pulled off by hand.
2. **TO ENGAGE CLUTCH**, pull outward on the handle, rotate it clockwise 90° and release. Run the winch in reverse until the clutch handle snaps fully in or until the cable drum starts turning. At this point make sure the clutch handle is all the way in. The plastic plug in top of clutch housing may be removed, for inspection of clutch to assure total engagement. After the clutch is fully engaged, the winch is ready for winching in the cable.

The Ram-lok® air-shifter clutch allows rapid unspooling of the cable, from cable drum, for hooking onto the load. The clutch is operated by an air cylinder as follows:

1. **TO DISENGAGE CLUTCH**, run the winch in the reverse (reel out) direction until the load is off the cable. Apply 60-125 PSI to inlet port fitting of air cylinder.
2. **TO ENGAGE CLUTCH**, remove air pressure from air cylinder. Run the winch in reverse until the cable drum starts turning. The plastic plug in top of clutch housing may be removed, for inspection of clutch to assure total engagement. After the clutch is fully engaged, the winch is ready for winching in the cable.



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 PEOPLE.

A MINIMUM OF 5 WRAPS OF CABLE AROUND THE DRUM BARREL IS NECESSARY TO HOLD THE LOAD.
CABLE SETSCREW 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. Check the action of the sliding clutch, making sure it is fully engaging and disengaging with the cable drum. Remove the plastic plug in top of the housing and observe if the clutch is fully engaging. If clutch is not fully engaging, inspect clutch shifter assembly parts, check for damage or excessive wear and replace as necessary. 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. 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.
4. 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.
5. Check alignment of chain and sprockets and adjust as required to minimize wear.
6. 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 200/H-200 Series Winches are furnished with recommended mounting angles. Angle size is 1/4 x 2-1/2 x 2-1/2 x 36" Lg. high strength 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 7/16" 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.

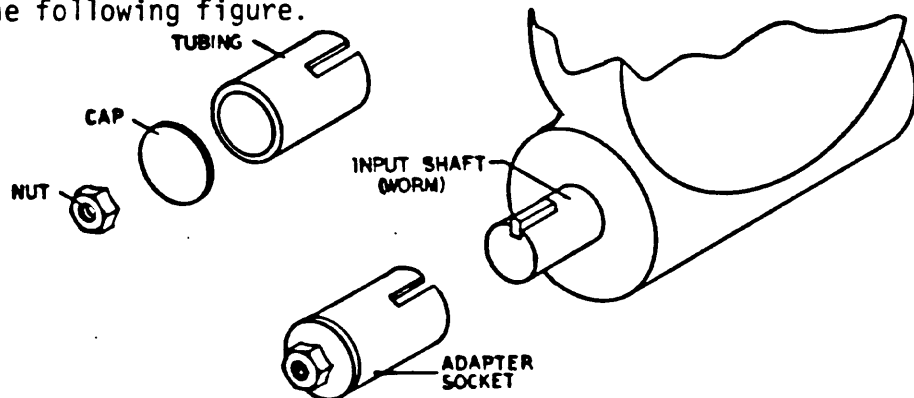
ADJUSTING THE OIL COOLED WORM BRAKE

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.

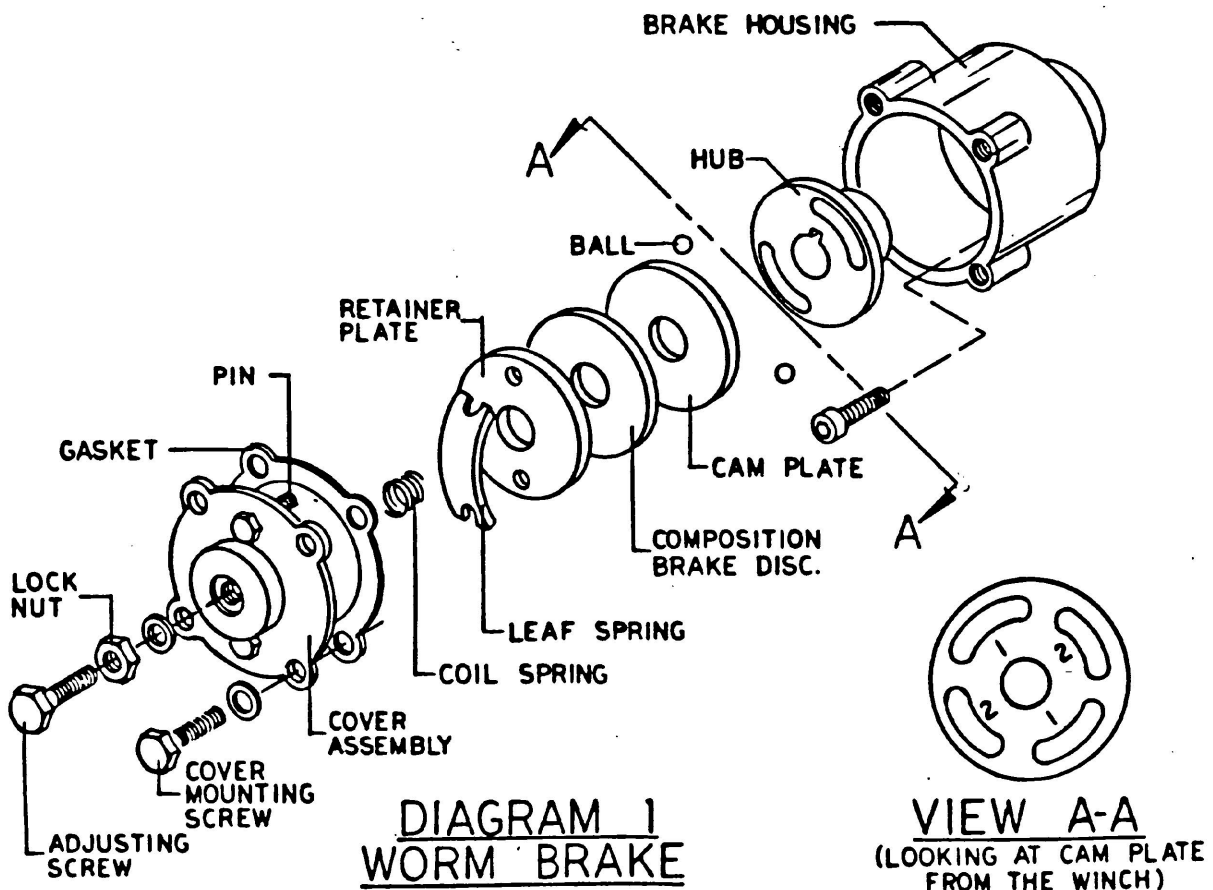
A torque wrench can be equipped with a special adapter to fit the input shaft (worm) of the winch. The adapter can be made by welding a nut to the end of a piece of tubing as shown in the following figure.



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 Model 200/246 should be 8 to 13 ft. lbs. (D-200, 13 to 18 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 1/8" thick when new. Replace if thinner than 0.080" or if surfaces are glazed or burnt.
 - b). Inspect the flat, ground surface of the cam plate and retainer plate for glazing, warpage, or other damage. Glazing can be removed by scraping carefully.
 - c). Inspect the leaf spring. It should be bowed 1/8".



RE-ASSEMBLING AND CHECKING THE BRAKE

1. Press brake hub into place over worm shaft and key.
2. Assemble ball into appropriate slots of cam. (Refer to diagram 1, page 5). Use stiff grease to hold balls into place and slide cam over end of worm. Be sure that balls are secure, between cam slots and hub slots. Refer to Page 7 to determine proper ball slot setting.
3. Install brake disc.
4. Install retainer plate, smooth side toward brake disc.
5. Install the gasket on the cover with a small amount of grease or sealer.
6. The coil spring goes over the adjusting screw on the inside of the cover.
7. Install the notches of the leaf spring on the pins protruding through the cover. The hollow side of the leaf spring goes toward the brake.
8. Install brake housing cover, making sure the protruding pins go through the leaf spring and into the holes in the retainer plate.
9. Bolt cover into place with the mounting screws. Install drain plug and add 1 pint of SAE 140 EP 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).

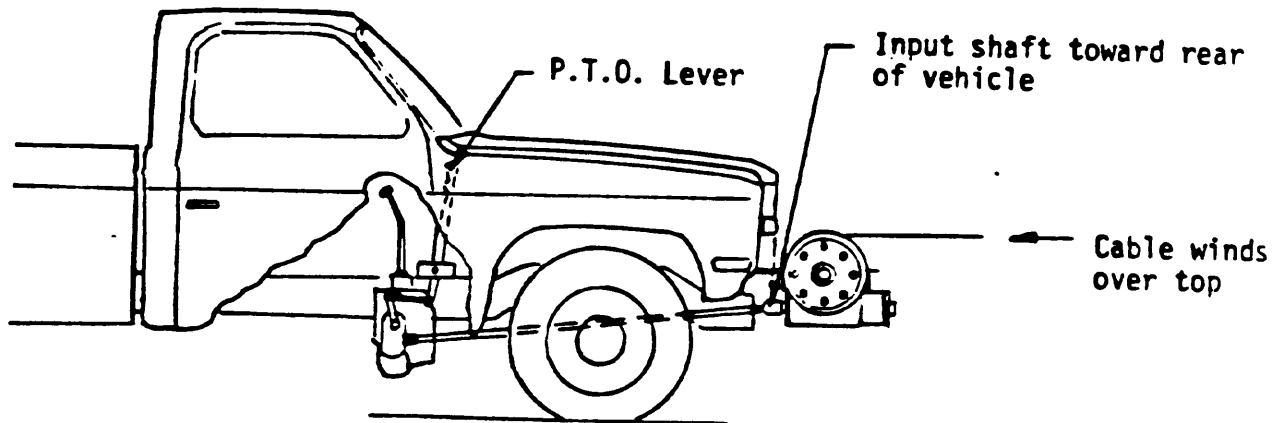


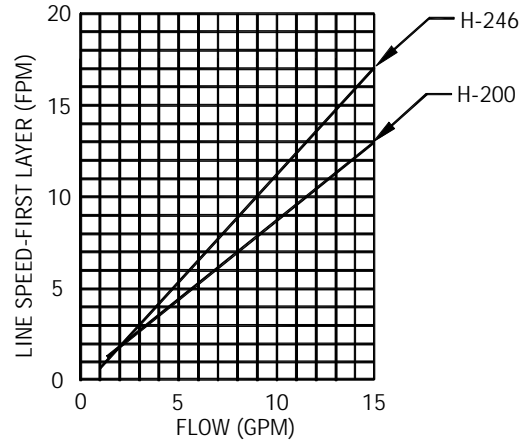
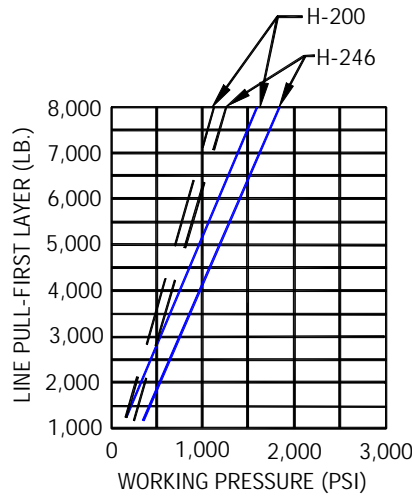
DIAGRAM 2

Three factors determine brake assembly arrangement.

HYDRAULIC SYSTEMS

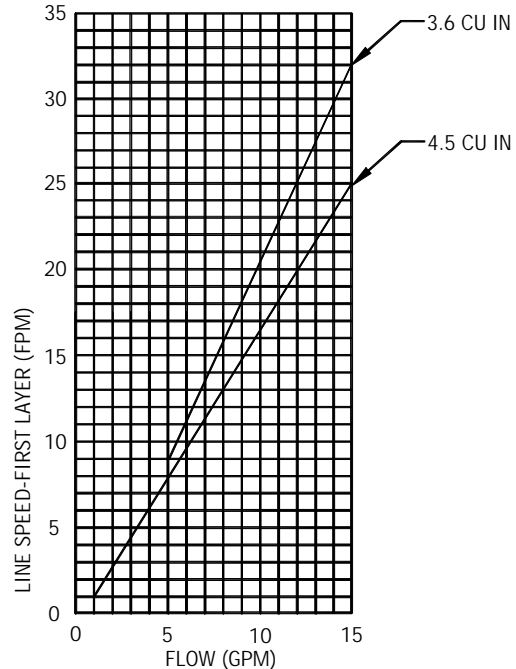
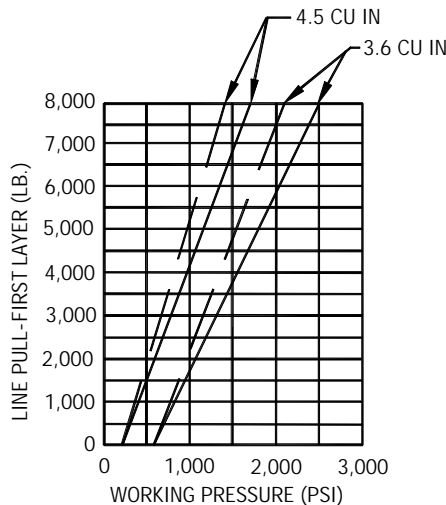
Refer to the performance charts, below, to properly match your hydraulic system to the H-200 Series winch performance. The charts consist of:
 (1) Line speed, first layer (F.P.M.) vs. gallons per minute (G.P.M.) and
 (2) Line pull (lbs.) first layer vs. working pressure (P.S.I.). STATIC (solid line) refers to hoisting a suspended load from rest; DYNAMIC (dotted line) refers to maintaining the motion of a moving load.

H-200 / H-246 PERFORMANCE*
 8,000 LB. DUTY RATING
 60:1 GEAR RATIO (H-200)
 46:1 GEAR RATIO (H-246)



*PERFORMANCE BASED ON A MOTOR DISPLACEMENT OF 4.5 CU IN WITH 15 GPM MAXIMUM FLOW RATE. SEE PAGE 17 FOR MOTOR PORT SIZE.

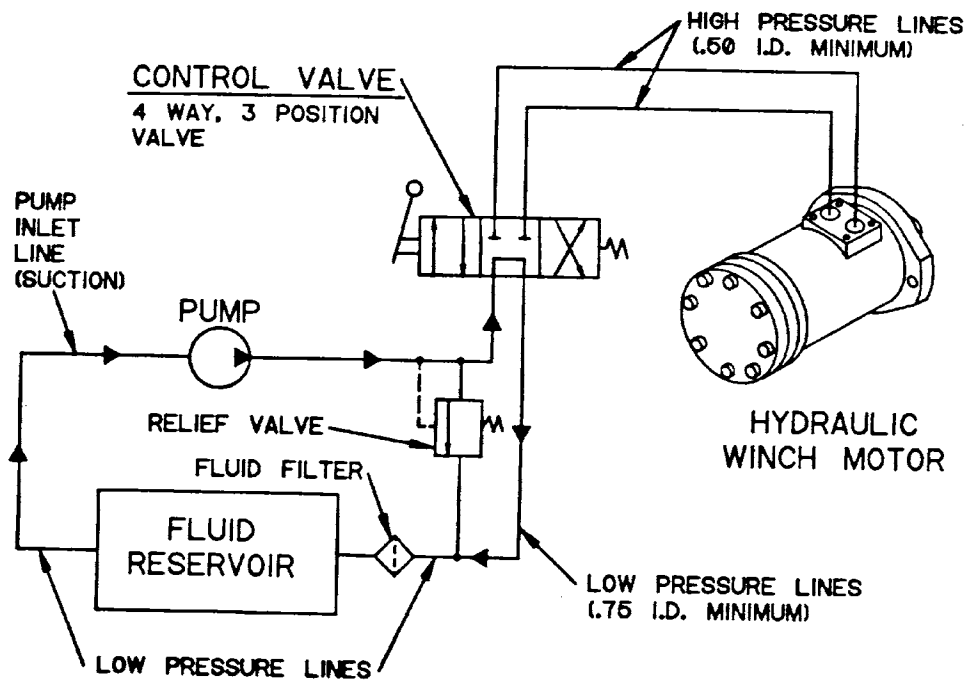
HD-200 PERFORMANCE*
 8,000 LB. DUTY RATING
 30:1 GEAR RATIO (HD-200)



*PERFORMANCE BASED ON A MOTOR DISPLACEMENT OF 3.6 CU IN & 4.5 CU IN WITH 15 GPM MAXIMUM FLOW RATE. SEE PAGE 17 FOR MOTOR PORT SIZE.

LEGEND

—— DYNAMIC
 ——— STATIC



TROUBLE SHOOTING TIPS

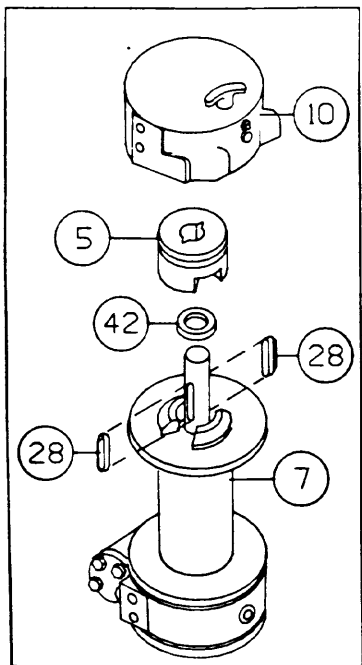
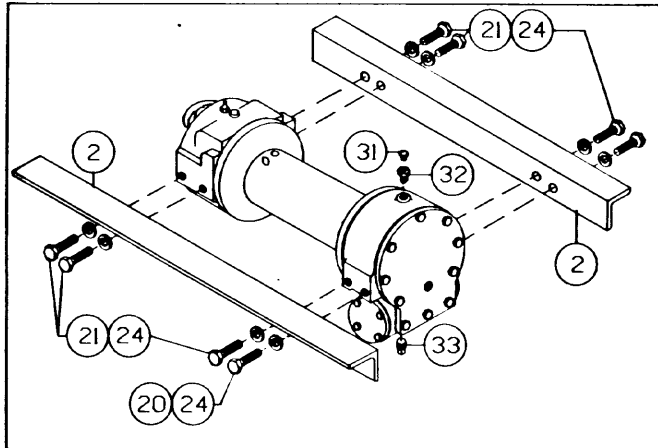
CONDITION	POSSIBLE CAUSE	CORRECTION
CLUTCH INOPERATIVE OR BINDS UP.	<ol style="list-style-type: none"> 1. Dry or rusted shaft. 2. Bent yoke or linkage. 3. Clutch jaws are in contact. 	<ol style="list-style-type: none"> 1. Clean and lubricate. 2. Replace yoke or shaft assembly. 3. See TECHNIQUES OF OPERATION.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

INSTRUCTIONS FOR OVERHAUL OF RAMSEY
MODEL 200/H-200 SERIES RAM-LOK[®] WINCHES

DISASSEMBLY

Refer to Parts List & Parts Drawing Pages for actual
item numbers and corresponding parts numbers.

1. Drain oil from gear housing by removing (item #33) plug from bottom of gear housing. Remove plugs (items #31 & #32) from top of gear housing. Remove mounting angles from winch by removing hardware shown.



2. Remove clutch housing (item #10) and clutch (item #5) from winch assembly.

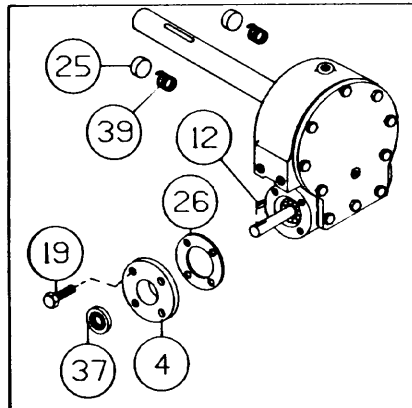
Remove two keys (item #28) from keyways. A screwdriver can be used, at notch, to aid in the removal of keys. Once keys have been removed, drum (item #7) and thrust washer (item #42) can be removed from drum shaft.

3. Remove key (item #12) from worm shaft.

Remove bearing cap (item #4) and gasket (item #26) by unscrewing four capscrews (item #19).

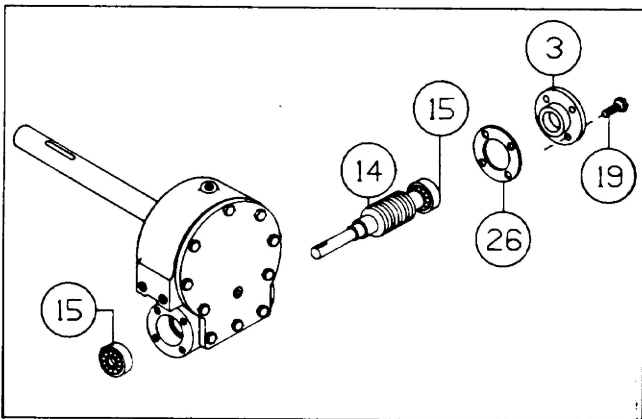
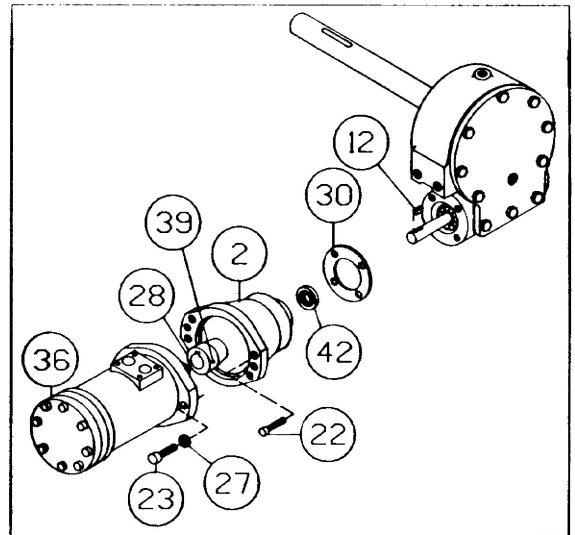
Remove seal (item #37) from bearing cap and press new seal into place.

Drag brake disc (item #25) and spring (item #39) should be examined and replaced if necessary.



- Remove motor (item #36) and coupling (item #28) from (item #2) adapter by unscrewing two (item #23) capscrews.

Remove key (item #12) from worm shaft. Unscrew four capscrews (item #22) and remove adapter from gear housing. Replace adapter seal (item #42) and gasket (item #30).



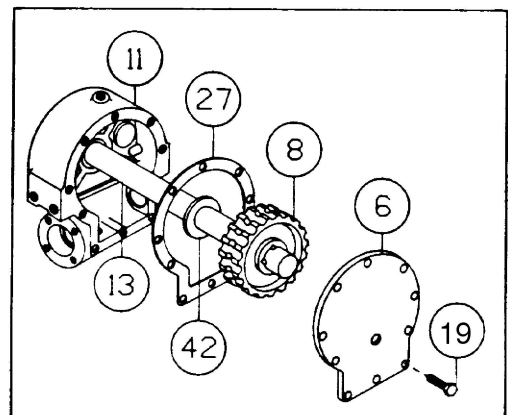
- Remove bearing cap (item #3) from gear housing by unscrewing four capscrews (item #19). Remove worm (item #14) and bearings (item #15) from gear housing. Use soft hammer to gently tap input end of worm and drive worm and bearing from gear housing. Once worm has been removed from housing, bearing can be pressed from end of worm.

Check for signs of wear or damage to worm (item #14) and bearing (item #15). Replace if necessary.

For models with optional worm brake refer to Pg. 5, SERVICING OF THE OIL COOLED SAFETY BRAKE, for disassembly instructions.

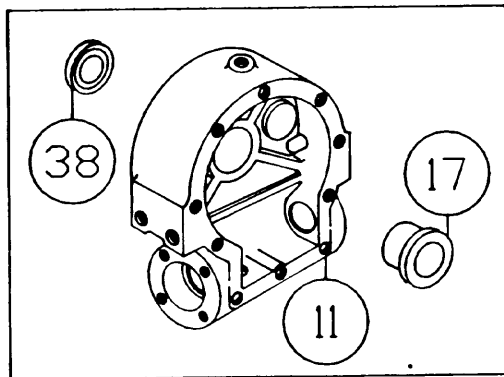
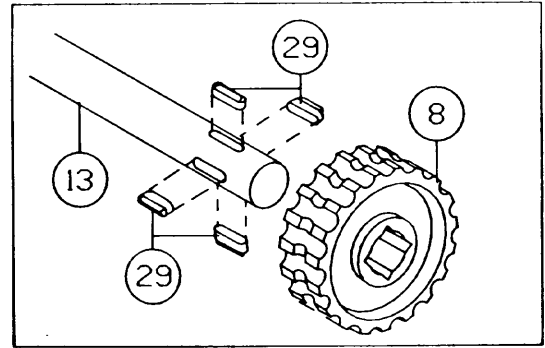
- Remove gear housing cover (item #6) from gear housing (item #11) by unscrewing capscrews (item #19). Thread two of the capscrews into the two tapped holes of cover and tighten. This will pull the cover loose from gear housing.

Remove cover gasket (item #27) and pull shaft (item #13), with gear attached, and thrust washer (item #42) from gear housing.



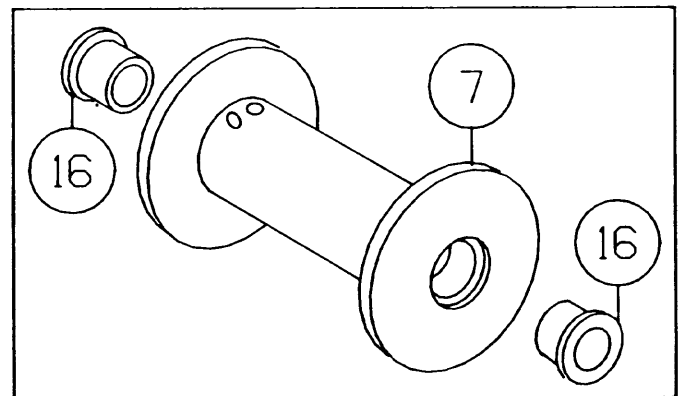
7. Check for signs of wear on gear teeth. If replacement of gear is necessary, replace as follows:

- a) Press gear (item #8) from shaft (item #13).
- b) Examine shaft keys and keyways. If distortion of keys and/or keyways is evident, shaft and keys should be replaced.
- c) Use a soft hammer to gently tap keys (item #29) into keyways. Press gear (item #8) over shaft and keys. Gear must be centered over keys.

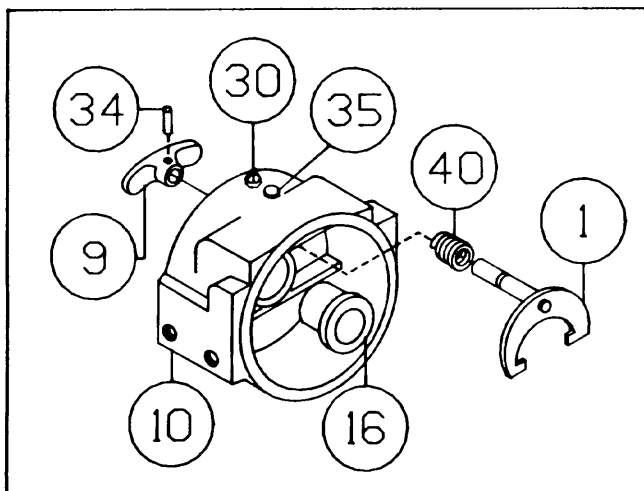


8. Remove seal (item #38) from back of (item #11) gear housing. Press bushing (item #17) from gear housing. Press new bushing and seal back into place.

9. Check drum bushings (item #16) for signs of wear. Replace if necessary by pressing old bushings from drum. Press new ones into place.

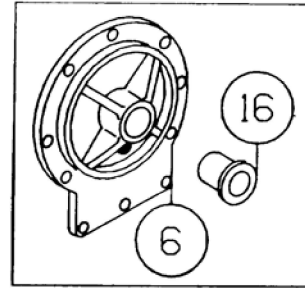


10. Examine shifter assembly (item #1) for damage to yoke. Yoke should be firmly attached to shaft, yet, able to swivel freely around shaft. Replace if necessary by removing pin (item #34) from handle (item #9).

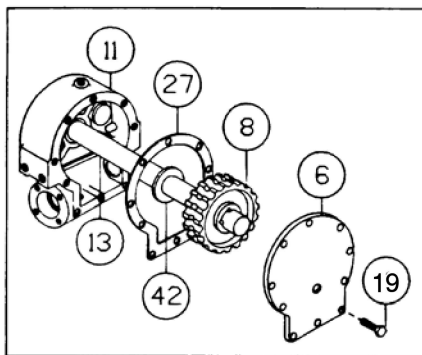


Remove rubber plug (item #35) from housing. Unscrew setscrew enough to allow shifter assembly to be removed from housing. Install new shifter assembly (item #1) by placing end of shaft, opposite yoke, through spring (item #40) and into housing (item #10). Attach (item #9) handle to shaft using roll pin (item #34). Tighten setscrew, in housing, enough to allow shifter assembly to operate properly. Replace rubber plug (item #35).

11. Check cover bushing (item #16) for signs of wear. If necessary remove old bushing and press bushing into place.

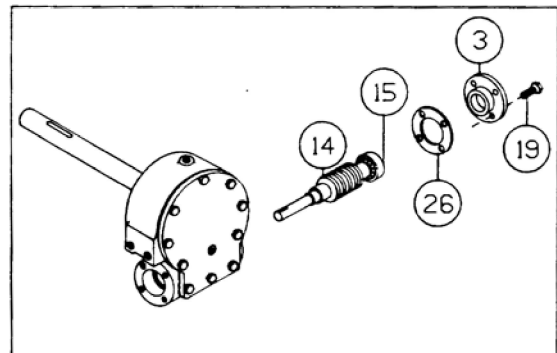


RE-ASSEMBLY

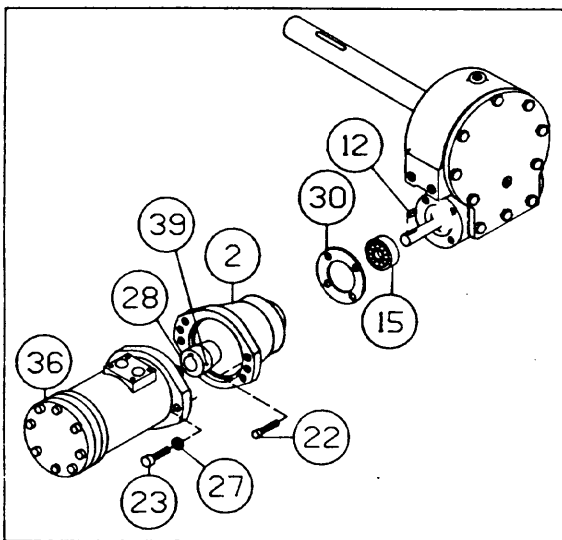
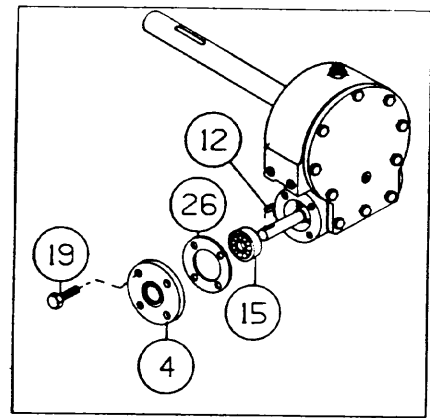


12. Apply grease to end of shaft, opposite gear. Apply grease to bushing in gear housing (item #11). Place greased end of shaft through thrust washer (item #42) and bushing in gear housing (item #11). Place gasket (item #27) onto gear housing cover (item #6). Apply grease to gear end of shaft and cover bushing. Place cover onto shaft and secure to housing with ten (item #19) cap screws. Tighten cap screws to 8 ft-lbs. (10.8 Nm) each.

13. Press bearing (item #15) onto worm (item #14). 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 #26) onto bearing cap (item #3). Use four cap screws (item #19) to secure cap to gear housing. **TIGHTEN CAPSCREWS TO 8 FT. LBS. (10.8 Nm.) EACH.**



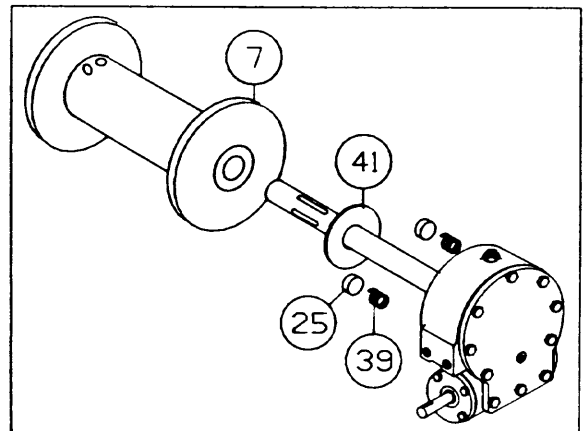
14. Press bearing (item #15) onto worm and into gear housing. **NOTE:** Be sure that thick shoulder of bearings outer race (side with manufacturer's name and part number) is out, away from worm threads. Attach bearing cap (item #4), to gear housing. Use four (item #19) capscrews to secure. **TIGHTEN CAPSCREWS TO 8 FT. LBS. (10.8 Nm) EACH.** Tap key (item #12) into keyway.



15. Press bearing (item #15) 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. Place gasket (item #30) onto adapter (item #2). Attach adapter to gear housing using four (4) capscrews (item #22). **TIGHTEN CAPSCREWS TO 12 FT. LBS. (16.3 Nm) EACH.** Insert key (item #12) into keyway of worm shaft. Slide tapered end of coupling (item #28) over end of worm shaft. Be sure roll pin (item #39) is in coupling.

Place motor shaft, with key in keyway, into coupling. Secure motor (item #36) to adapter, using two (2) capscrews (item #23) and lockwashers. **TIGHTEN CAPSCREWS TO 75 FT. LBS. (102 Nm) EACH.**

16. Place winch with gear housing cover down on work bench. Drum shaft should be in vertical position. Slide thrust washer (item #41) over drum shaft and slide downward until washer rests on gear housing. Set springs (item #39) into pockets of gear housing with drag brakes (item #25) on top of springs. Slide drum assembly (item #7) onto drum shaft with drum jaws upward.

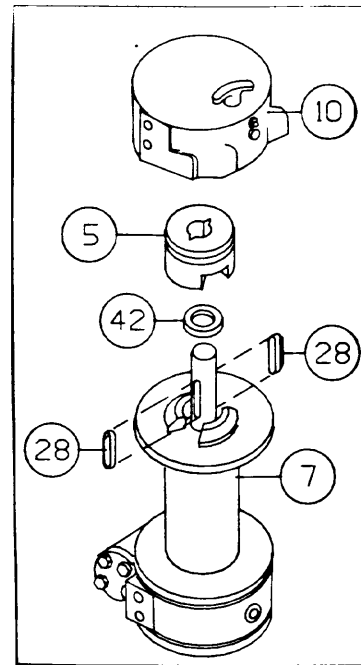


17. Place thrust washer (item #42) over end of drum shaft and slide downward until spacer rests on drum. Press drum downward to compress springs in gear housing.

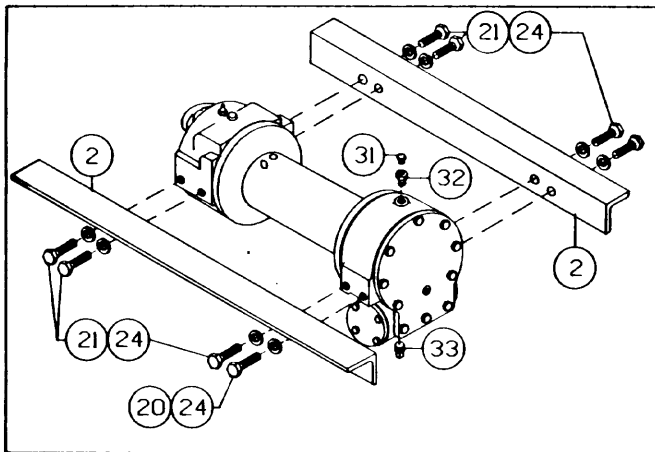
Insert keys (item #28) into keyways with sharp edge of keys pointing outward and notched end of keys upward. A rubber or brass mallet will be needed to gently tap keys into position.

Apply grease to keys and end of shaft. Place jaw clutch (item #5) over end of shaft and slide jaw clutch over keys.

Set clutch housing (item #10) over end of drum shaft. Pull jaw clutch (item #5) upward, toward clutch housing, enough to allow yoke, in clutch housing, to fit properly in groove around jaw clutch.

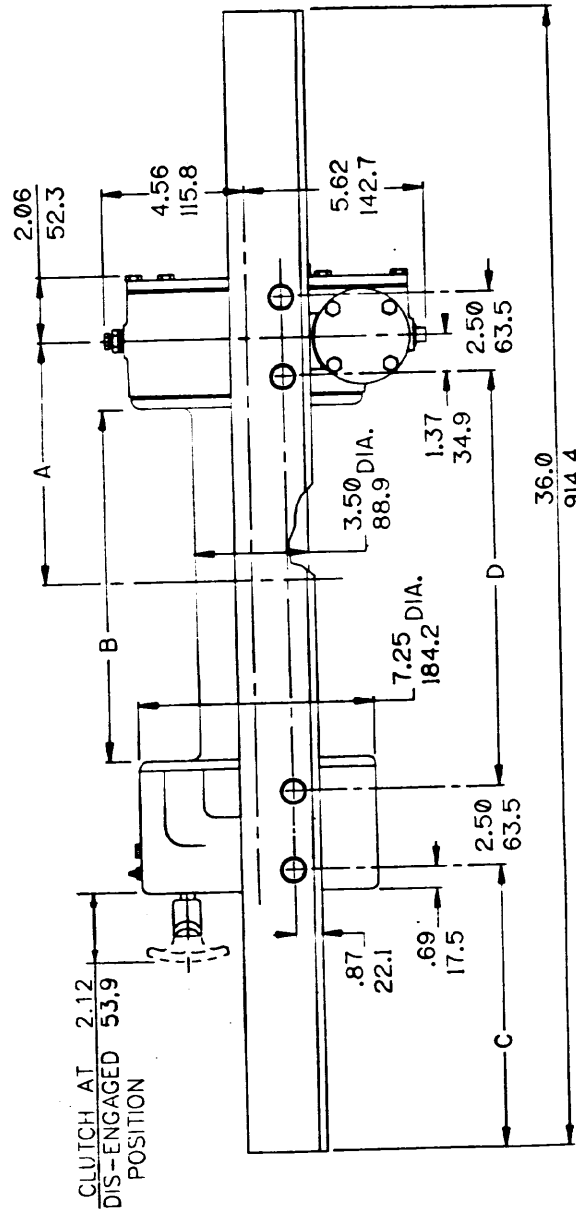
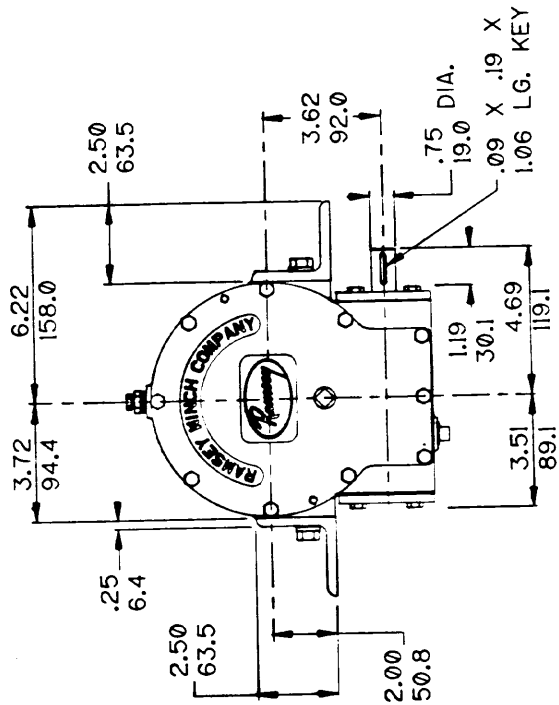


18. Attach two mounting angles (item #2) using six cap screws (item #21) with lockwashers and two cap screws (item #20). Torque cap screws to 34 ft. lbs. (46 Nm.) each. Insert plug (item #33) into bottom of gear housing. Permatex may be applied to threads to help prevent leakage.



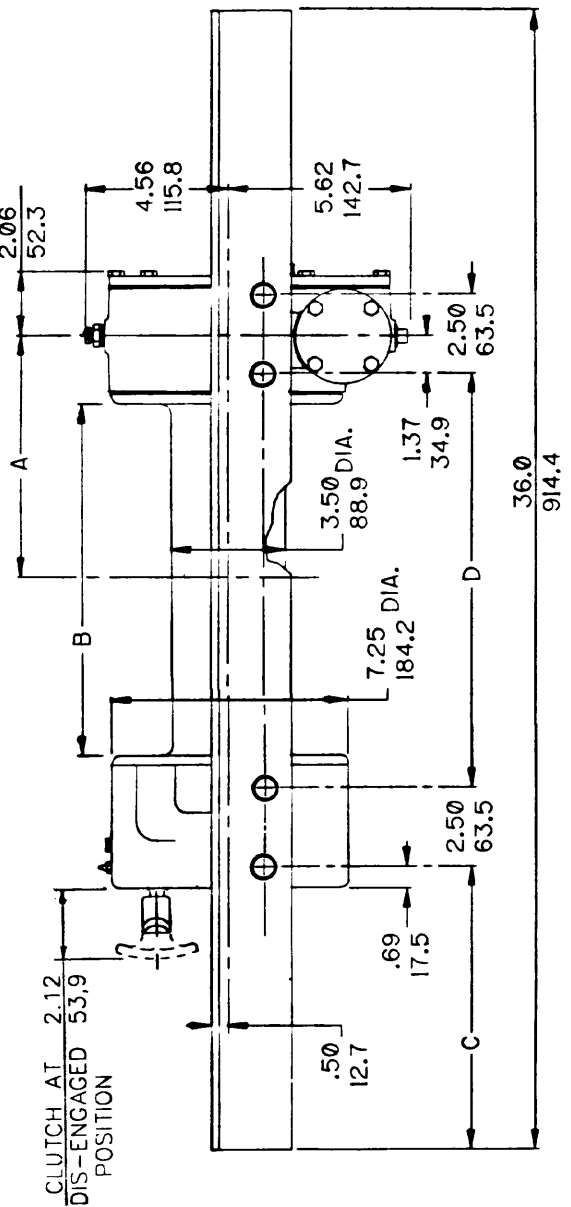
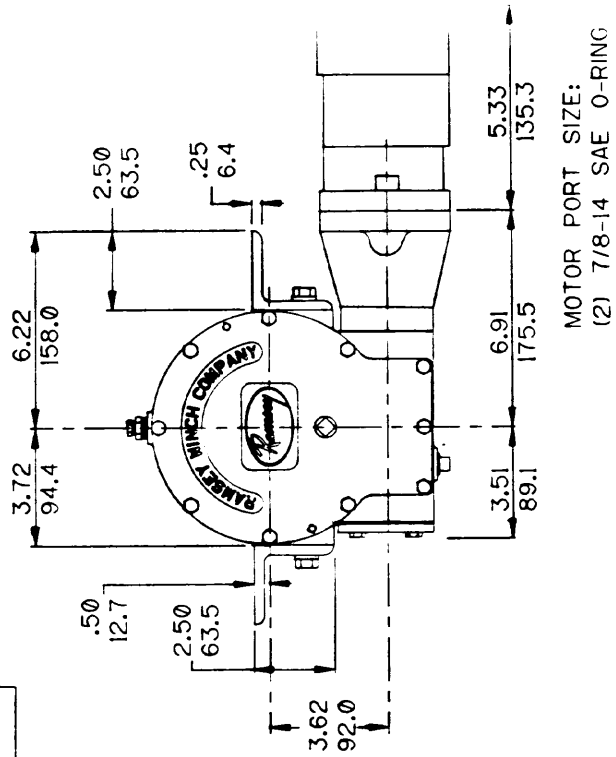
Pour 3/4 pint of SAE 140 EP gear oil (1 pt. if winch has a brake) into housing thru hole in top of housing. Insert relief fitting (item #31) into reducer (item #32). Reducer should then be placed into hole on top of gear housing. Tighten fitting and reducer securely.

WINCH MODEL	A INCHES MM	B INCHES MM	C INCHES MM	D INCHES MM
200	7.78 197.6	11.31 287.3	8.94 227.0	13.12 333.3
Y-200	5.28 134.1	6.31 160.3	11.44 290.5	8.12 206.3



DIMENSIONS SHOWN ARE INCHES OVER MILLIMETERS

WINCH MODEL	A INCHES MM	B INCHES MM	C INCHES MM	D INCHES MM
H-200	7.78 197.6	11.31 287.3	8.94 227.0	13.12 333.3
HY-200	5.28 134.1	6.31 160.3	11.44 290.5	8.12 206.3



DIMENSIONS SHOWN ARE INCHES OVER MILLIMETERS

MOTOR PORT SIZE:
(2) 7/8-14 SAE O-RING

INSTALLATION INSTRUCTIONS FOR TAGS 434385 AND 434386

**CLUTCH
ENGAGED**

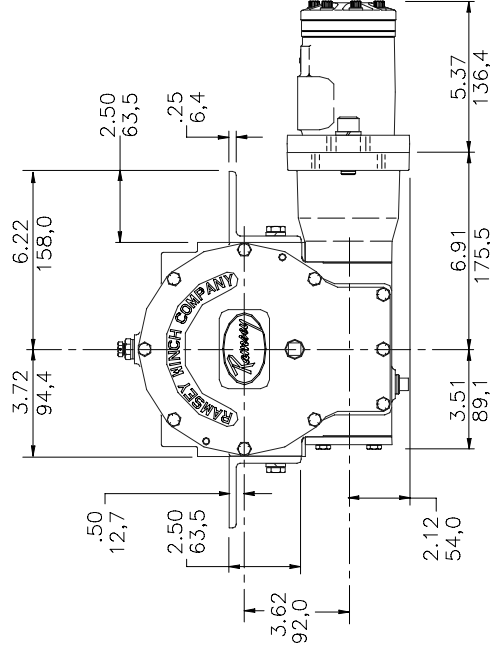
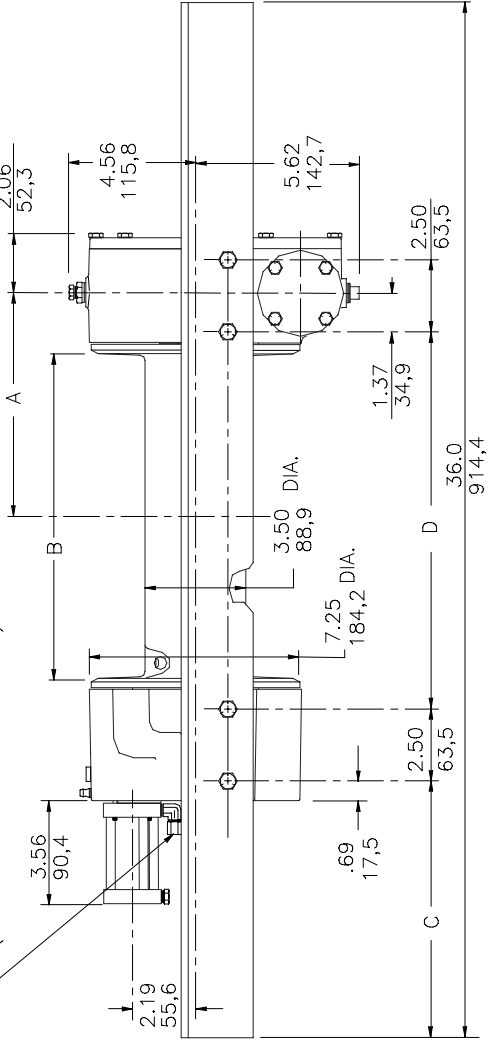
The clutch is spring loaded for engagement when air pressure is removed from air shifter. Verify air shifter control valve lever position for engaged position. This tag, 434385, must be mounted as near as possible to air shifter control lever in the ENGAGED position.

**CLUTCH
DISENGAGED**

The clutch is dis-engaged by applying 60-125 psi air pressure to air shifter. Verify air shifter control valve lever position for dis-engaged position. This tag, 434386, must be mounted as near as possible to air shifter control lever in the DIS-ENGAGED position.

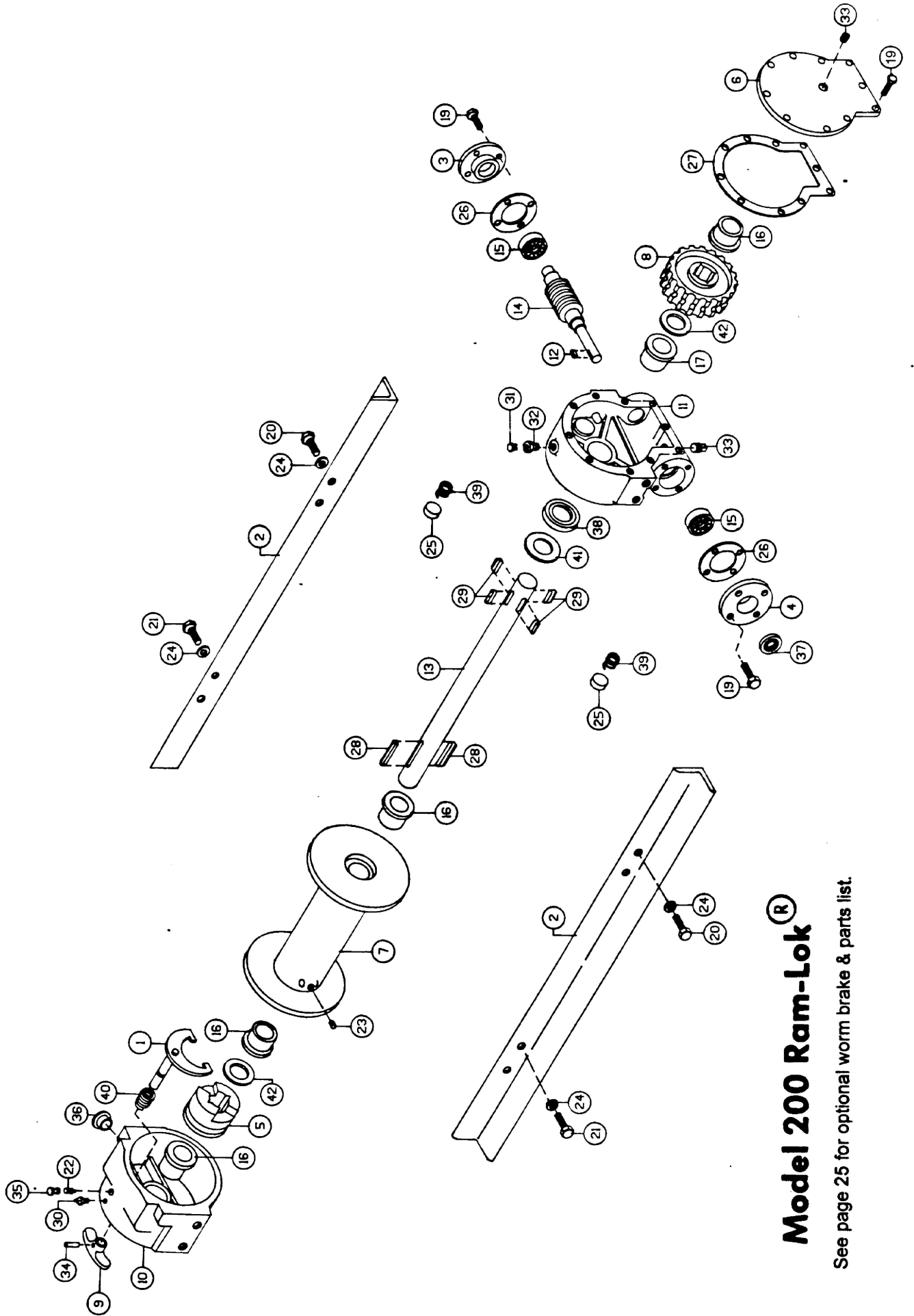
WINCH MODEL	A INCHES MM	B INCHES MM	C INCHES MM	D INCHES MM
H-200	7.78 197,6	11.31 287,3	8.94 227,0	13.12 333,3
HY-200	5.28 134,1	6.31 160,3	11.44 290,5	8.12 206,3

FITTING FOR .25" DIA. TUBING
60-125 PSI AIR PRESSURE
REQUIRED TO DISENGAGE CLUTCH.
(CLUTCH IS SPRING ENGAGED).



**MOTOR PORT SIZE:
(2) 7/8-24 SAE O-RING**

DIMENSIONS SHOWN ARE INCHES OVER MILLIMETERS



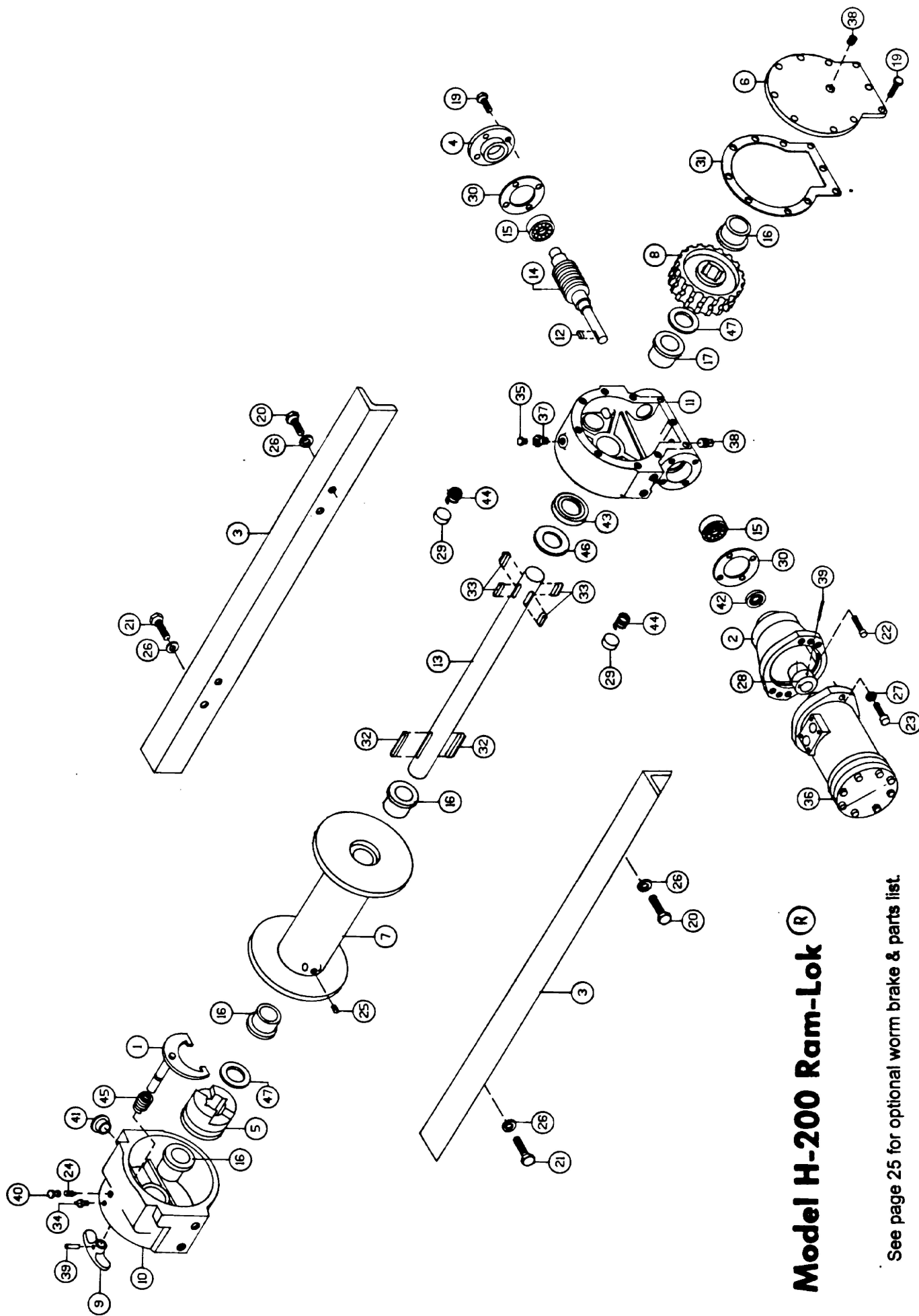
Model 200 Ram-Lok®

See page 25 for optional worm brake & parts list.

PARTS LIST [®]

Model 200 Ram-Lok

Item No.	Qty.	Part No.	Description	Item No.	Qty.	Part No.	Description
1	1	276056	SHIFTER ASS'Y	25	2	438014	DRAG BRAKE
2	2	302818	ANGLE-"STD"	26	2	442184	GASKET
3	2	302819	ANGLE-"Y"	27	1	442205	GASKET
4	1	316083	BEARING CAP	28	2	450006	KEY-BARTH
5	1	316084	BEARING CAP	29	4	450016	KEY-BARTH
6	1	324160	JAW CLUTCH	30	1	456001	FITTING-LUBE
7	1	328134	COVER	31	1	456008	FITTING-RELIEF
8	1	332007	DRUM-"Y"	32	1	468002	REDUCER
	1	332105	DRUM-"STD"	33	2	468011	PIPE PLUG
	1	334161	GEAR R.H. 60:1	34	1	470033	SPIROL PIN
	1	334162	GEAR L.H. 60:1	35	1	472012	PLUG-RUBBER
	1	334163	GEAR R.H. 46:1	36	1	472013	PLASTIC PLUG
	1	334164	GEAR L.H. 46:1	37	1	486009	OIL SEAL
	1	334165	GEAR R.H. 30:1	38	1	486017	OIL SEAL
	1	334166	GEAR L.H. 30:1	39	2	494002	SPRING
9	1	336010	HANDLE	40	1	494053	SPRING
10	1	338208	HOUSING-CLUTCH	41	1	518014	THRUST WASHER
11	1	338273	HOUSING-GEAR	42	2	518015	THRUST WASHER
12	1	342027	KEY				
13	1	357479	SHAFT-DRUM-"STD"				
14	1	357481	SHAFT-DRUM-"Y"				
	1	368002	WORM R.H. 46:1				
	1	368007	WORM R.H. 60:1				
	1	368008	WORM L.H. 60:1				
	1	368009	WORM L.H. 46:1				
	1	368010	WORM L.H. 30:1				
15	1	368011	WORM R.H. 30:1				
16	2	402002	BEARING-BALL				
17	4	412003	BUSHING				
	1	412045	BUSHING				
19	18	414045	CAPSCREW 1/4-20NCx7/8 LG. HX.HD. GR.5				
20	2	414279	CAPSCREW 3/8-16NCx3/4 LG. HX.HD. GR.5				
21	6	414282	CAPSCREW 3/8-16NCx1-1/4 LG. HX.HD. GR.5				
22	1	416030	SETSCREW 1/4-20NCx3/8 SOC.HD.LESS				
23	1	416059	SETSCREW 3/8-16NCx1/2 SOC.HD.LESS				
24	8	418177	LOCKWASHER 3/8 MED. SECT. C.P.				



Model H-200 Ram-Lok [®]

See page 25 for optional worm brake & parts list.

PARTS LIST [®]

Model H-200 Ram-Lok

Item No.	Qty.	Part No.	Description	Item No.	Qty.	Part No.	Description
1	1	276056	SHIFTER ASS'Y	24	1	416030	SETSCREW 1/4-20NCx3/8 SOC.HD.LESS
2	1	300057	ADAPTER	25	1	416059	SETSCREW 3/8-16NCx1/2 SOC.HD.LESS
3	2	302809	ANGLE-STD.	26	8	418177	LOCKWASHER 3/8 MED.SECT. C.P.
4	2	302810	ANGLE-Y	27	2	418218	LOCKWASHER 1/2-MED.SECT.
5	1	316083	BEARING CAP	28	1	431008	COUPLING
6	1	324160	JAW CLUTCH	29	2	438014	DISC-BRAKE
7	1	328134	COVER	30	2	442184	GASKET
8	1	332007	DRUM-Y"	31	1	442205	GASKET
9	1	332105	DRUM-STD."	32	2	450006	KEY-BARTH
10	1	334161	GEAR R.H. 60:1	33	4	450016	KEY-BARTH
11	1	334163	GEAR R.H. 46:1	34	1	456001	FITTING-LUBE
12	1	334165	GEAR R.H. 30:1	35	1	456008	FITTING-RELIEF
13	1	336010	HANDLE	36	1	458050	MOTOR-HYD.
14	1	338208	HOUSING-CLUTCH	37	1	468002	REDUCER
15	1	338273	HOUSING-GEAR	38	2	468011	PIPE PLUG
16	1	342027	KEY	39	2	470033	SPIROL PIN
17	1	357479	SHAFT-DRUM-STD"	40	1	472012	PLUG-RUBBER
18	1	357481	SHAFT-DRUM-Y"	41	1	472013	PLASTIC PLUG
19	1	368002	WORM R.H. 46:1	42	1	486009	OIL SEAL
20	1	368007	WORM R.H. 60:1	43	1	486017	OIL SEAL
21	1	368011	WORM R.H. 30:1	44	2	494002	SPRING
22	2	402002	BEARING-BALL	45	1	494053	SPRING
23	4	412003	BUSHING	46	1	518014	THRUST WASHER
24	1	412045	BUSHING	47	2	518015	THRUST WASHER
25	14	414045	CAPSCREW 1/4-20NCx7/8 LG. HX.HD. GR.5				
26	2	414279	CAPSCREW 3/8-16NCx3/4 LG. HX.HD. GR.5				
27	6	414282	CAPSCREW 3/8-16NCx1-1/4 LG. HX.HD. GR.5				
28	4	414842	CAPSCREW 1/4-20NCx1-3/4 LG. SOC.HD. LOK-WEL				
29	2	414952	CAPSCREW 1/2-13NCx1-1/2 LG. SOC.HD. C.P.				



Model H-200 Ram-Lok®

with air-shifter clutch

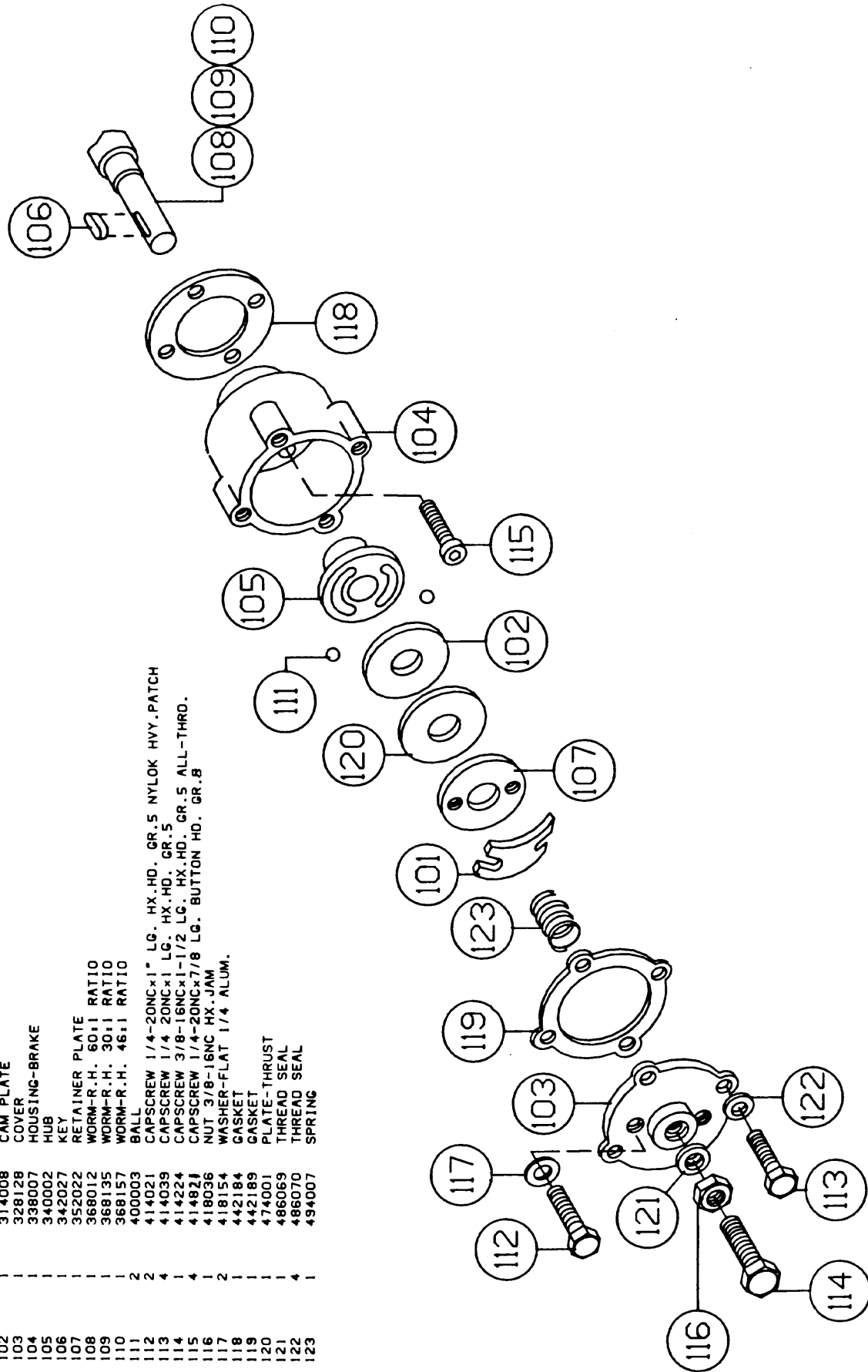
See page 25 for optional worm brake & parts list

PARTS LIST
MODEL H-200 AIR-SHIFTER RAM-LOK®

ITEM	QTY.	PART NO.	DESCRIPTION	ITEM	QTY.	PART NO.	DESCRIPTION
1	1	300057	ADAPTER	24	4	416198	SCREW #6-32NC x 1 LG. HX. SOC. HD.
2	2	302809	ANGLE-"STD"	25	1	418044	NUT 3/8-16 FLEX LOK
3	2	302810	ANGLE-"Y"	26	4	418136	LOCKWASHER #6 MED. SECT.
4	1	316083	BEARING	27	8	418177	LOCKWASHER 3/8 MED. SECT.
5	1	324160	JAW CLUTCH	28	2	418218	LOCKWASHER 1/2 MED. SECT.
6	1	328134	COVER	29	1	431008	COUPLING
7	1	332007	DRUM-"Y"	30	1	432031	FITTING-MALE
8	1	332105	DRUM-"STD"	31	1	433021	AIR-CYLINDER
9	1	334161	GEAR R.H. - 60:1	32	2	438014	DISC-BRAKE
10	1	334163	GEAR R.H. -46:1	33	2	442184	GASKET
11	1	334165	GEAR R.H. -30:1	34	1	442205	GASKET
12	1	338309	HOUSING-CLUTCH	35	2	450006	KEY-BARTH
13	1	338273	HOUSING-GEAR	36	4	450016	KEY-BARTH
14	1	342027	KEY	37	1	456001	FITTING-LUBE
15	1	357479	SHAFT-DRUM "STD"	38	1	456008	FITTING-RELIEF
16	1	357481	SHAFT-DRUM "Y"	39	1	456038	FITTING-BREATHER
17	1	368002	WORM R.H. -46:1	40	1	458050	MOTOR-HYD.
18	1	368007	WORM R.H. -60:1	41	1	468002	REDUCER
19	1	368011	WORM R.H. -30:1	42	2	468011	PIPE PLUG
20	1	370043	YOKE-SHIFTER	43	1	470033	SPIROL PIN
21	2	402002	BEARING-BALL	44	1	472012	PLUG-RUBBER
22	4	412003	BUSHING	45	1	472013	PLASTIC PLUG
23	4	412045	BUSHING	46	1	486009	OIL SEAL
24	14	414045	CAPSCREW 1/4-20NC X 7/8 HX. HD. GR.5	47	1	486017	OIL SEAL
25	2	414279	CAPSCREW 3/8-16NCx3/4 LG. HX. HD. GR.5	48	1	488012	SHIM-AIR SHIFTER
26	6	414282	CAPSCREW 3/8-16NCx1-1/4 LG. HX. HD. GR.5	49	2	494002	SPRING
27	4	414842	CAPSCREW 1/4-20NCx1-3/4 LG. SOC. HD. LOKWEL	50	1	494053	SPRING
28	2	414952	CAPSCREW 1/2-13NCx1-1/2 LG. SOC. HD. Z/P	51	1	518014	THRUST WASHER
29	1	416059	SETSCREW 3/8-16NCx 1/2 LG. SOC. HD. LESS	52	2	518015	THRUST WASHER

Item No. Qty. Part No. Description

101	1	306034	SPRING-FLAT
102	1	314008	CAM PLATE
103	1	328128	COVER
104	1	338007	HOUSING-BRAKE
105	1	340002	HUB
106	1	342027	KEY
107	1	352022	RETAINER PLATE
108	1	368012	WORM-R.H. 60:1 RATIO
109	1	368135	WORM-R.H. 30:1 RATIO
110	1	368157	WORM-R.H. 46:1 RATIO
111	2	400003	BALL
112	2	414021	CAPSCREW 1/4-20NCx1" LG. HX.HD. GR.5 NYLOK HVY.PATCH
113	4	414039	CAPSCREW 1/4 20NCx1 LG. HX.HD. GR.5
114	1	414224	CAPSCREW 3/8-16NCx1-1/2 LG. HX.HD. GR.5 ALL-THRD.
115	4	414821	CAPSCREW 1/4-20NCx7/8 LG. BUTTON HD. GR.8
116	1	418036	NUT 3/8-16NC HX.JAM
117	2	418154	WASHER-FLAT 1/4 ALUM.
118	1	442184	GASKET
119	1	474001	PLATE-THRUST
120	1	486069	THREAD SEAL
121	1	486070	THREAD SEAL
122	4	494007	SPRING
123	1		



LIMITED WARRANTY

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

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

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

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

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

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



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