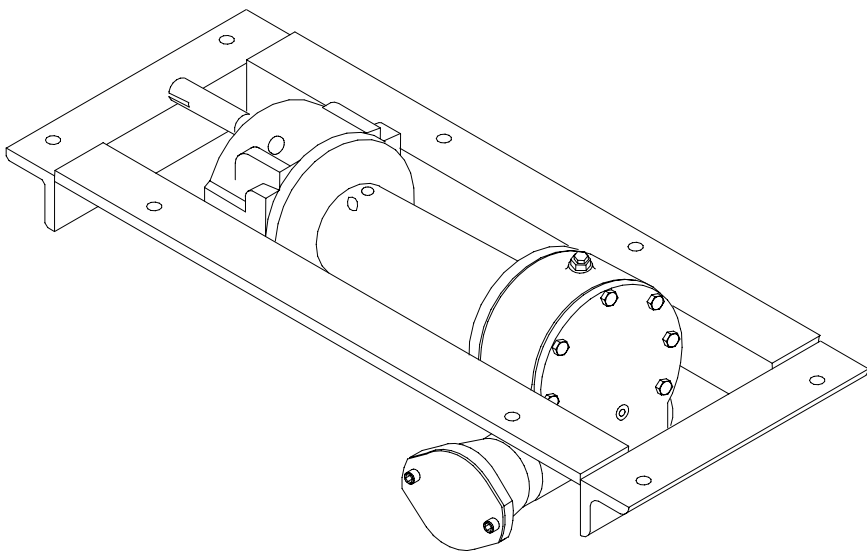




# OPERATING, SERVICE AND MAINTENANCE MANUAL



## MODEL HDG 350 RAM-LOK<sup>®</sup> INDUSTRIAL LOW-MOUNT



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



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# RAMSEY WINCH MODEL HDG-350 RAM-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 (lbs.) .....	10,000
(kg) .....	4,536
Gear Reduction .....	30:1
Weight (without cable) .....	110lbs. (50 kg)
Duty Cycle (ft.) .....	.183

LAYER OF CABLE		1	2	3	4**
*Rated line pull	lbs.	10,000	8,100	6,900	4,800
per layer	kg	4,536	3,670	3,120	2,180
*Cable capacity	ft.	20	50	85	125
	m	6	15	25	37
*Line speed	FPM	32	38	44	54
	(at 15 GPM) MPM	9,7	11,5	13,3	16,4

\*These specifications are based on recommended wire rope of 7/16 inch diameter extra improved plow steel or equivalent.

\*\*Does not conform to SAE J706 specifications.

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



## **WARNINGS**

**CLUTCH MUST BE TOTALLY ENGAGED BEFORE STARTING THE WINCHING OPERATION.**

**DO NOT DISENGAGE CLUTCH UNDER LOAD.**

**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.**

**DO NOT USE WINCH AS A TIE DOWN. DO NOT MAINTAIN LOAD ON WINCH CABLE DURING TRANSIT.**

## 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 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 Remote Rod-adaptor shifter** is operated as follows:

1. **TO DISENGAGE CLUTCH<sub>1</sub>**, run the winch in the reverse (reel out) direction until the load is off the cable. Lift up knob and pull out, lock in place. See warning label located by shifter knob. The clutch is now locked out and the cable may be pulled off by hand.
2. **TO ENGAGE CLUTCH<sub>1</sub>**, lift up knob then release. See warning label located by shifter knob. Run the winch in reverse until the shifter knob snaps fully in or

until the cable drum starts turning. At this point make sure the shifter knob 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 Manual T-Handle Shifter** is operated as follows:

1. **TO DISENGAGE CLUTCH<sub>1</sub>**, run the winch in the reverse (reel out) direction until the load is off the cable. Pull outward on the T-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<sub>1</sub>**, 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. To confirm this, remove the plastic plug on top of the clutch housing to inspect the clutch for total engagement. After the clutch is fully engaged, the winch is ready for winching in the cable.

**The Air Shifter** is operated as follows:

1. **TO DISENGAGE CLUTCH<sub>1</sub>**, run the winch in the reverse (reel out) direction until the load is off the cable. Apply 60-120 PSI to inlet port fitting of air cylinder. Run winch in the forward (reel in) direction to disengage the clutch.
2. **TO ENGAGE CLUTCH<sub>1</sub>**, remove air pressure from the air cylinder. Run the winch in reverse until the cable drum starts turning. After the clutch is fully engaged, the winch is ready for winching in the cable.

## **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 gases may escape.
3. Lubricate cable with light oil.

### **B. MONTHLY**

1. Check the action of the sliding clutch—ensure it is fully engaging and disengaging with the cable drum. To observe if the clutch is fully engaging, remove the plastic plug in top of the housing. 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.
2. Grease the shaft and barth keys the jaw clutch slides on using Mobilith SHC 007 Synthetic Grease or equivalent. Replace plastic plug when finished.
3. Check the winch mounting bolts. If any are missing, replace them and securely tighten any that are loose. Make sure to use only SAE grade 5 bolts or better.
4. 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.

## **CABLE INSTALLATION**

1. Unwind cable by rolling it out along the ground to prevent kinking. Securely wrap end of cable, opposite hook, with plastic or similar tape to prevent fraying.
2. Insert the end of cable, opposite hook end, into the 1/2" dia. hole in drum barrel. Secure cable to drum barrel, using setscrew furnished with winch. **TIGHTEN SETSCREW SECURELY.**
3. Carefully run winch in the "Reel-in" direction. Keeping tension on end of cable, spool all the cable onto the cable drum, taking care to form neatly wrapped layers.

## WORM BRAKE MAINTENANCE

### BRAKE ADJUSTMENT

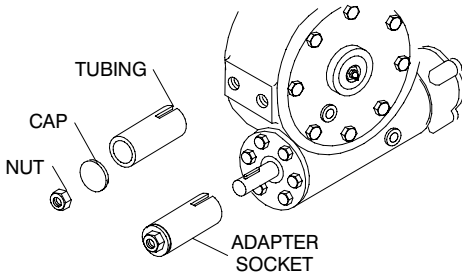
The oil cooled, fully adjustable, automatic safety brake operates in the worm housing lubricant, all parts being submerged in oil. When the brake wears to the point that the load begins to drift, the brake can be adjusted as follows:

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 figure at right.

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 HDG-350 should be 9-15 ft-lbs. (15-20 Nm), If 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, checked the torque reading. Continue this procedure until the proper torque reading is achieved. Then tighten the lock nut.

### SERVICING THE BRAKE

Refer to the Worm Brake Diagram on the following page while following these instructions.

1. Back off the lock nut, then the adjusting screw, both two turns or more by turning them counter-clockwise.
2. Remove the cover mounting screws.
3. Remove the cover along with coil spring and leaf spring.
4. Remove the retainer plate, composition brake disc, cam plate and balls. Note which slots balls are in.
5. 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 balls in #1 slots of cam. 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. Install brake disc.
3. Install retainer plate, smooth side toward brake disc.
4. Install the gasket on the cover with a small amount of grease or sealer.
5. The coil spring goes over the adjusting screw on the inside of the cover.
6. 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.
7. Install brake housing cover, making sure the protruding pins go through the leaf spring and into the holes in the retainer plate. Tighten capscrews to 7-8 ft-lbs. (9-10 Nm) torque.
8. Bolt cover into place with the mounting screws. Install drain plug and add 1 pint of SAE 140 EP oil.

9. Turn winch in the reel in direction at least one turn of the input shaft.
10. Turn the adjusting screw in until it is finger tight.

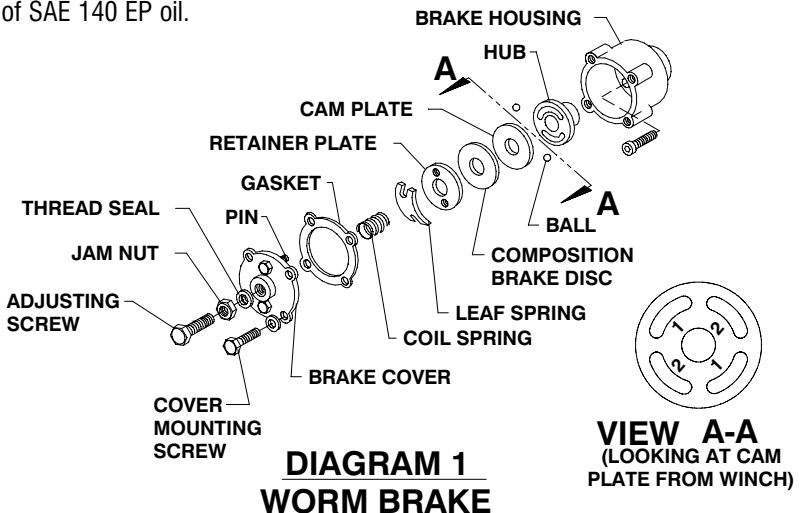
## TEST FOR PROPER BRAKE ASSEMBLY

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 plates, then carefully follow the instructions for re-assembling and checking the brake.



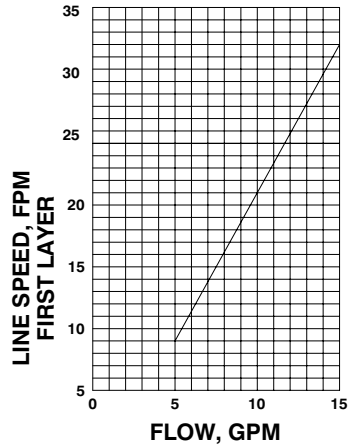
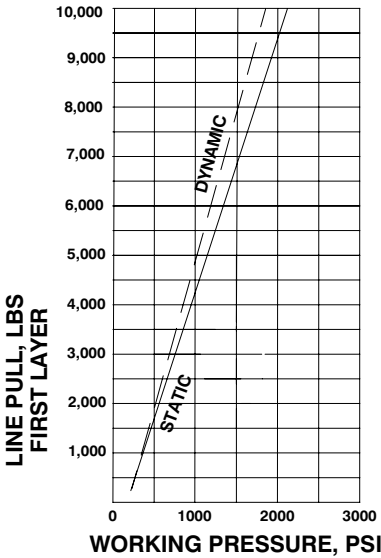
# HYDRAULIC SYSTEMS

Refer to performance charts, below, to properly match your hydraulic system to the HDG-350 winch performance. The charts consist of:

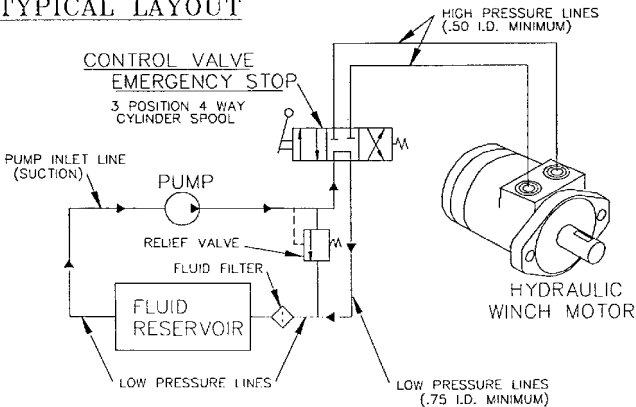
1. Line pull (lbs.) first layer vs. working pressure (PSI). STATIC (solid line) refers to hoisting a suspended load from rest; DYNAMIC (dashed line) refers to maintaining the motion of a moving load.
2. Line speed, first layer (FPM) vs. gallons per minute (GPM).

**Performance based on a motor displacement of 3.6 cubic inches with 15 GPM maximum flow rate.**

## HDG-350 PERFORMANCE 10,000 LB. DUTY RATING - 30:1 GEAR RATIO



### TYPICAL LAYOUT



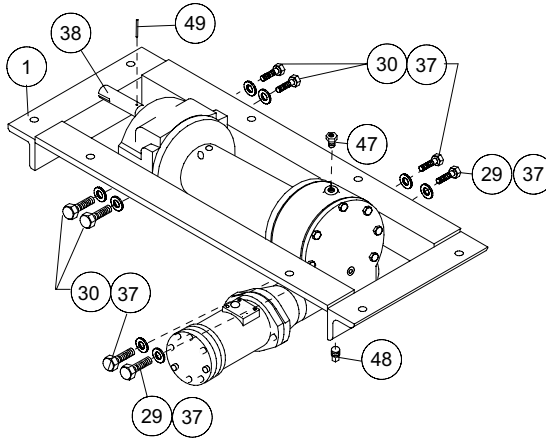
## TROUBLESHOOTING GUIDE

<b>CONDITION</b>	<b>POSSIBLE CAUSE</b>	<b>CORRECTION</b>
Clutch inoperative or binds up	<ol style="list-style-type: none"> <li>1. Dry or rusted shaft</li> <li>2. Bent yoke or linkage. 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>
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 9.</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 out hole in motor adapter	<ol style="list-style-type: none"> <li>1. Hydraulic motor shaft seal.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace damaged seal.</li> </ol>

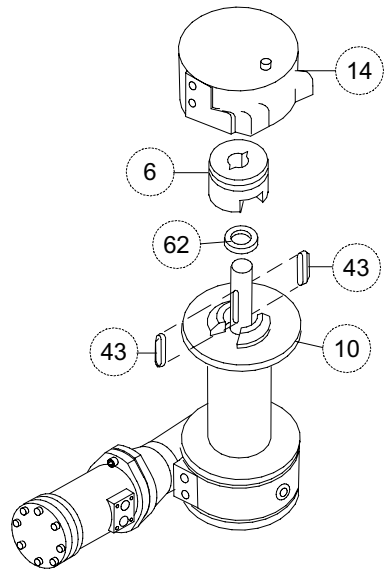
# INSTRUCTIONS FOR OVERHAUL OF RAMSEY MODEL HDG-350 RAM-LOK®

## DIS-ASSEMBLY

1. Drain oil from gear housing by removing (item #48) plug from bottom of gear housing. Remove plug (Item #47) from top of gear housing. Remove adapter rod (item #38) by driving pin (item #49) from shifter shaft of winch. Remove mounting frame (item #1) from winch by removing hardware shown.

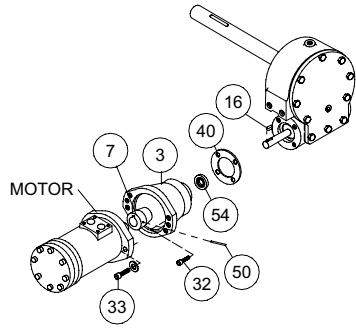


2. Remove clutch housing (item #14) and clutch (item #6) from winch assembly. Remove two keys (item #43) from keyways. A screwdriver can be used, at notch, to aid in the removal of keys. Once keys have been removed, drum (item #10) and thrust washer (item #62) can be removed from drum shaft.



- Remove motor and coupling (item #7) from (item #3) adapter by unscrewing two (item #33) cap-screws with lockwasher.

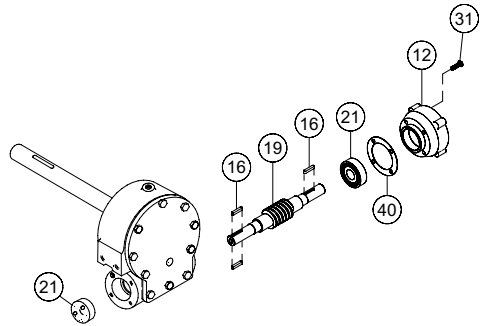
Remove key (item #16) from worm shaft. Unscrew four capscrews (item #32) and remove adapter from gear housing. Replace adapter seal (item #54) and gasket (item #40).



- See page 8 for servicing the oil cooled brake. Remove brake housing from gear housing by unscrewing four capscrews (item #31). Remove worm (item #19) and bearings (item #21) from gear housing. Use soft hammer to gently tap input end of worm and drive worm and bearing from gear housing.

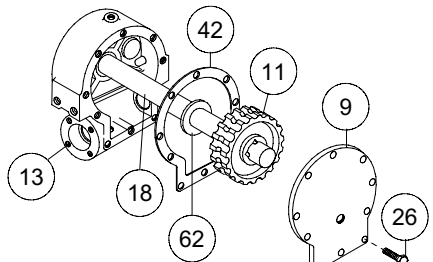
Once worm has been removed from housing, bearing can be pressed from end of worm.

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



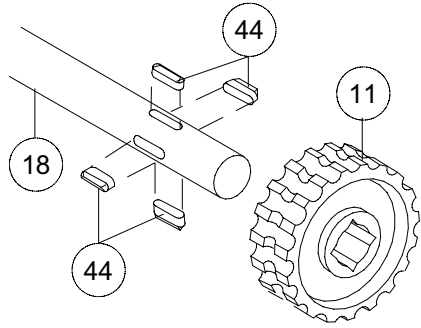
- Remove gear housing cover (item #9) from gear housing (item #13) by unscrewing capscrews (item #26). Thread two of the capscrews into the two tapped holes of cover and tighten. This will pull the cover loose from gear housing.

Remove cover gasket (item #42) and pull shaft (item #18), with gear attached, and thrust washer (item #62) from gear housing.

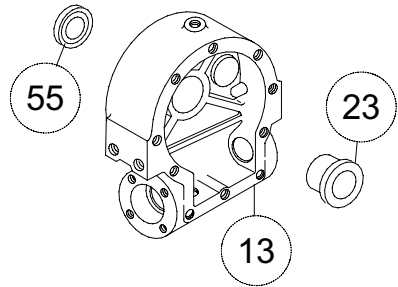


6. Check for signs of wear on gear teeth. If replacement of gear is necessary, replace as follows:

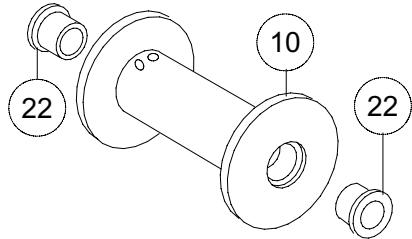
- a) Press gear (item #11) from shaft (item #18).
- b) Examine shaft keys and keyways. If distortion of keys and/or keyways is evident, shaft and keys should be replaced.
- c) Use a soft hammer to gently tap keys (item #44) into keyways. Press gear (item #11) over shaft and keys. Gear must be centered over keys.



7. Remove seal (item #55) from back of (item #13) gear housing. Press bushing (item #23) from gear housing. Press new bushing and seal back into place.

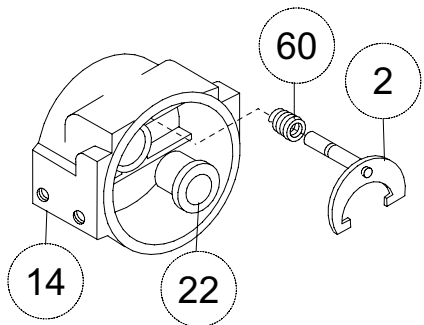


8. Check drum bushings (item #22) for signs of wear. Replace if necessary by pressing old bushings from drum. Press new ones into place.

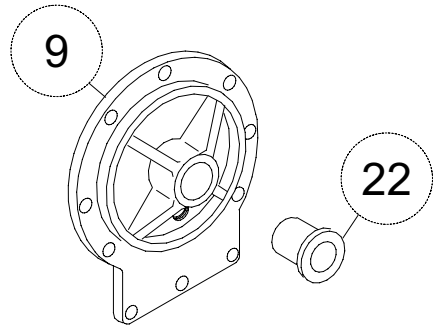


9. Examine shifter assembly (item #2) for damage to yoke. Yoke should be firmly attached to shaft, yet, able to swivel freely around shaft. Replace if necessary.

Install new shifter assembly (item #2) by placing end of shaft, opposite yoke, through spring (item #60) and into housing (item #14).

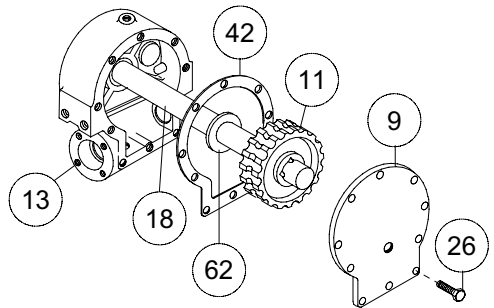


10. Check cover bushing (item #22) for signs of wear. If necessary remove old bushing and press bushing into place.

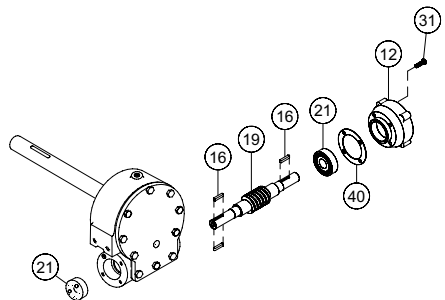


## RE-ASSEMBLY

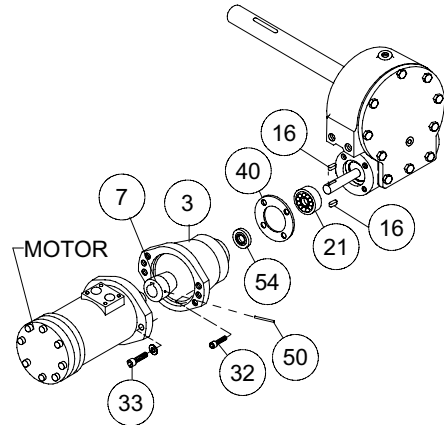
11. Apply grease to end of shaft, opposite gear. Apply grease to bushing in gear housing (item #13). Place greased end of shaft through thrust washer (item #62) and bushing in gear housing (item #13). Place gasket (item #42) onto gear housing cover (item #9). Apply grease to gear end of shaft and cover bushing. Place cover onto shaft and secure to housing with ten (item #26) cap-screws. Tighten capscrews to 8 ft. lbs. (10.8 Nm.) each.



12. Press bearing (item #21) onto worm (item #19). 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 #40) onto brake housing. Use four capscrews (item #31) to secure brake housing to gear housing. **TIGHTEN CAPSCREWS TO 8 FT. LBS. (10.8 Nm.) EACH.** See *Re-assembling and Checking the Brake* in this manual to complete brake assembly.

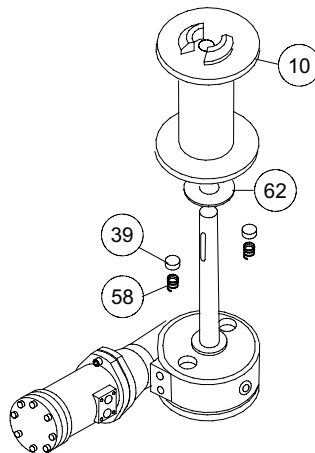


13. Press bearing (item #21) onto worm and into housing. NOTE: Be sure that thick shoulder of bearings outer race (side with manufacturer's name and part number) is out, away from worm threads. Place gasket (item #40) onto adapter (item #3). Attach adapter to gear housing using four (4) capscrews (item #32). TIGHTEN CAPSCREWS TO 12 FT. LBS. (16.3 Nm.) EACH. Insert key (item #16) into keyway of worm shaft. Slide tapered end of coupling (item #7) over end of worm shaft. Be sure roll pin (item #50) is in coupling.



Place motor shaft, with key in keyway, into coupling. Secure motor to adapter, using two (2) capscrews (item #33) and lockwashers. TIGHTEN CAPSCREWS TO 75 FT. LBS. (102 Nm.) EACH.

14. Place winch with gear housing cover down on work bench. Drum shaft should be in vertical position. Slide thrust washer (item #62) over drum shaft and slide downward until washer rests on gear housing. Set springs (item #58) into pockets of gear housing with drag brakes (item #39) on top of springs. Slide drum assembly (item #10) onto drum shaft with drum jaws upward.

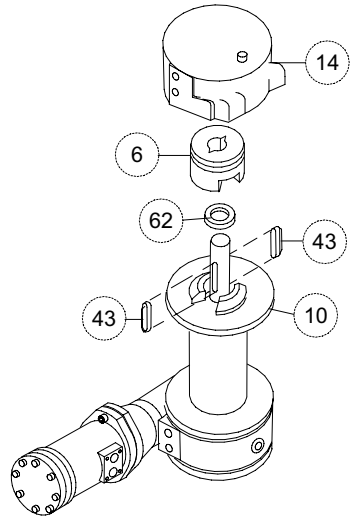


15. Place thrust washer (item #62) over end of drum shaft and slide downward until spacer rests on drum. Press drum downward to compress springs in gear housing.

Insert keys (item #43) 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 Mobilith SHC 007 Synthetic grease to keys and end of shaft. place jaw clutch (item #6) over end of shaft and slide jaw clutch over keys.

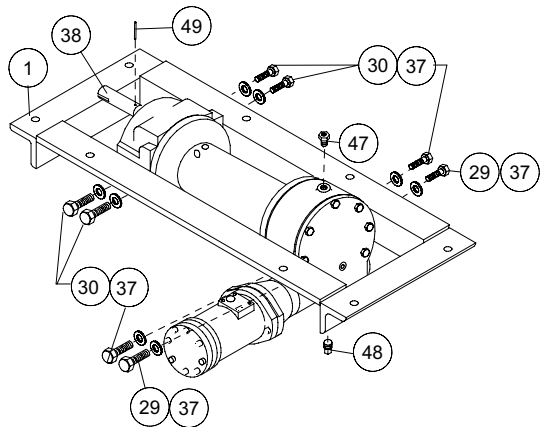
Set clutch housing (item #14) over end of drum shaft. Pull jaw clutch (item #6) upward, toward clutch housing, enough to allow yoke, in clutch housing, to fit properly in groove around jaw clutch.

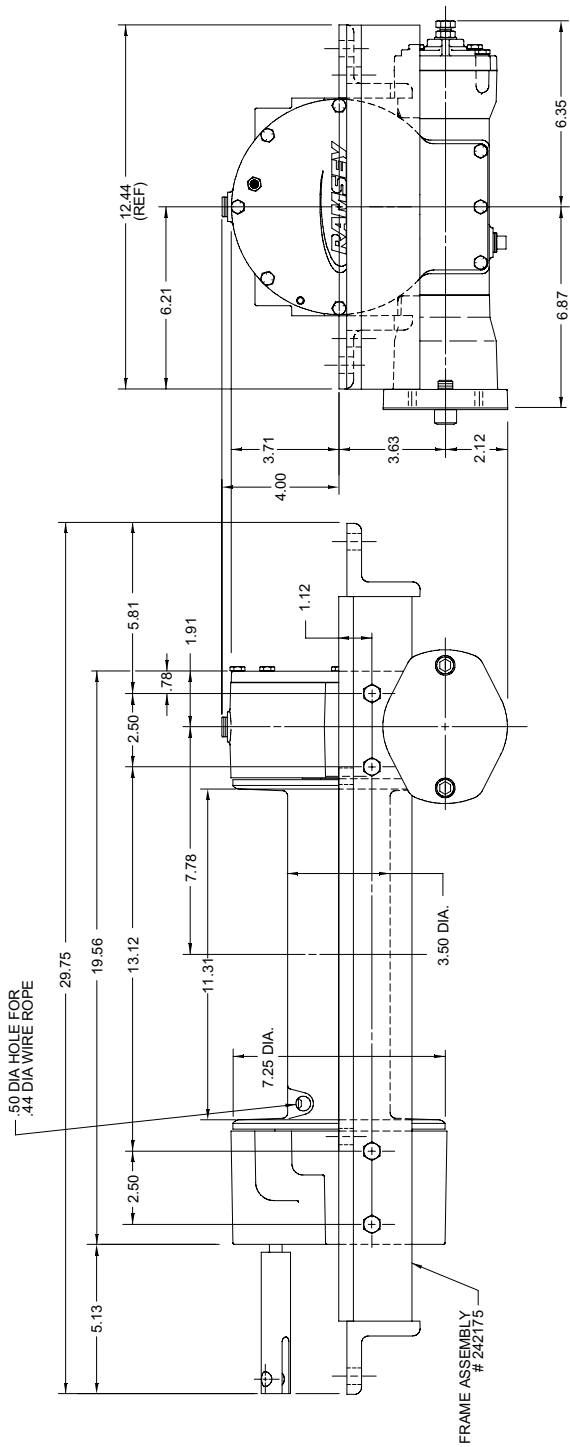


16. Attach frame assembly (item #1) using six cap screws (item #30) with lockwashers and two cap screws (item #29) with lockwasher. Torque cap screws to 34 ft. lbs. (46 Nm.) each. Insert plug (item #48) into bottom of gear housing. Permatex may be applied to threads to help prevent leakage.

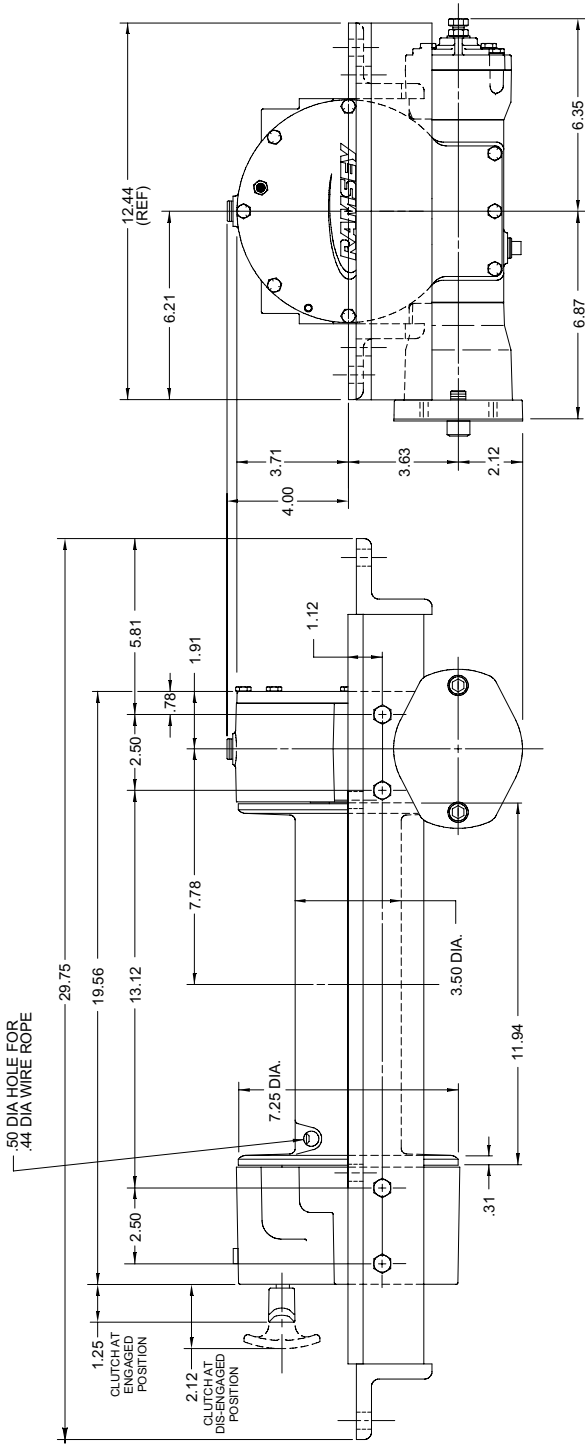
Attach adapter rod (item #38) to clutch shaft using pin (item #49).

Pour 1 pint of SAE 140 EP gear oil into housing through hole in top of housing. Pipe plug (Item #47) should then be placed into hole on top of gear housing. Tighten securely.





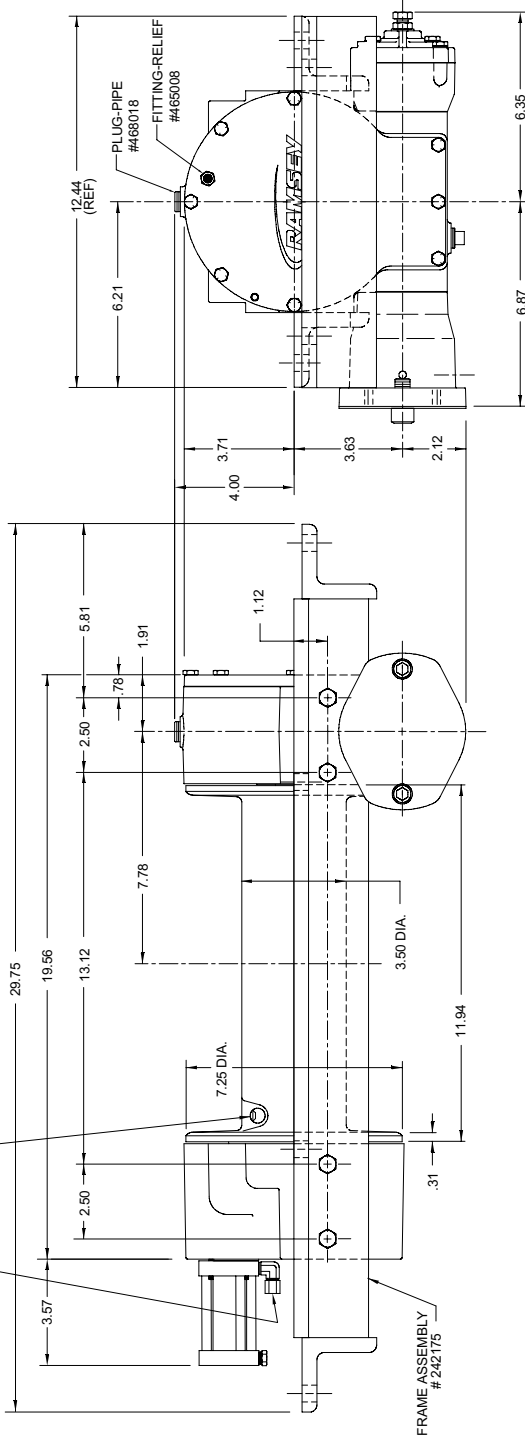
## MODEL HDG-350 RAM-LOK



**MODEL HDG-350 RAM-LOK® T-HANDLE SHIFTER**

COMPRESSION FITTING FOR 1/4 O.D. TUBING.  
 (60 PSI MINIMUM) (125 PSI MAXIMUM) FOR DISENGAGING CLUTCH.  
 (CLUTCH IS SPRING ENGAGED)

.50 DIA HOLE FOR  
 .44 DIA WIRE ROPE

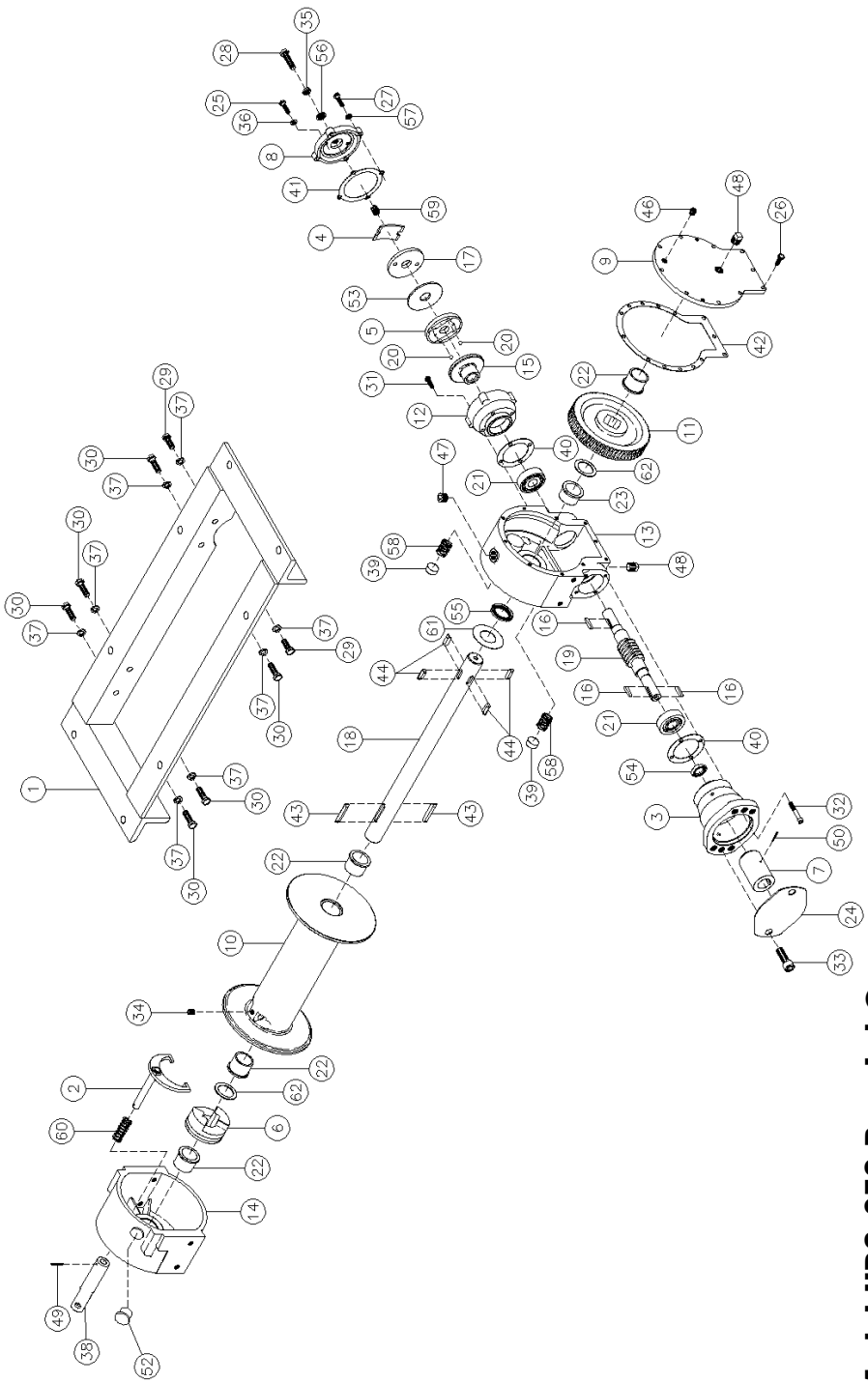


## MODEL HDG-350 RAM-LOK AIR SHIFTER



**PARTS LIST MODEL HDG-350**

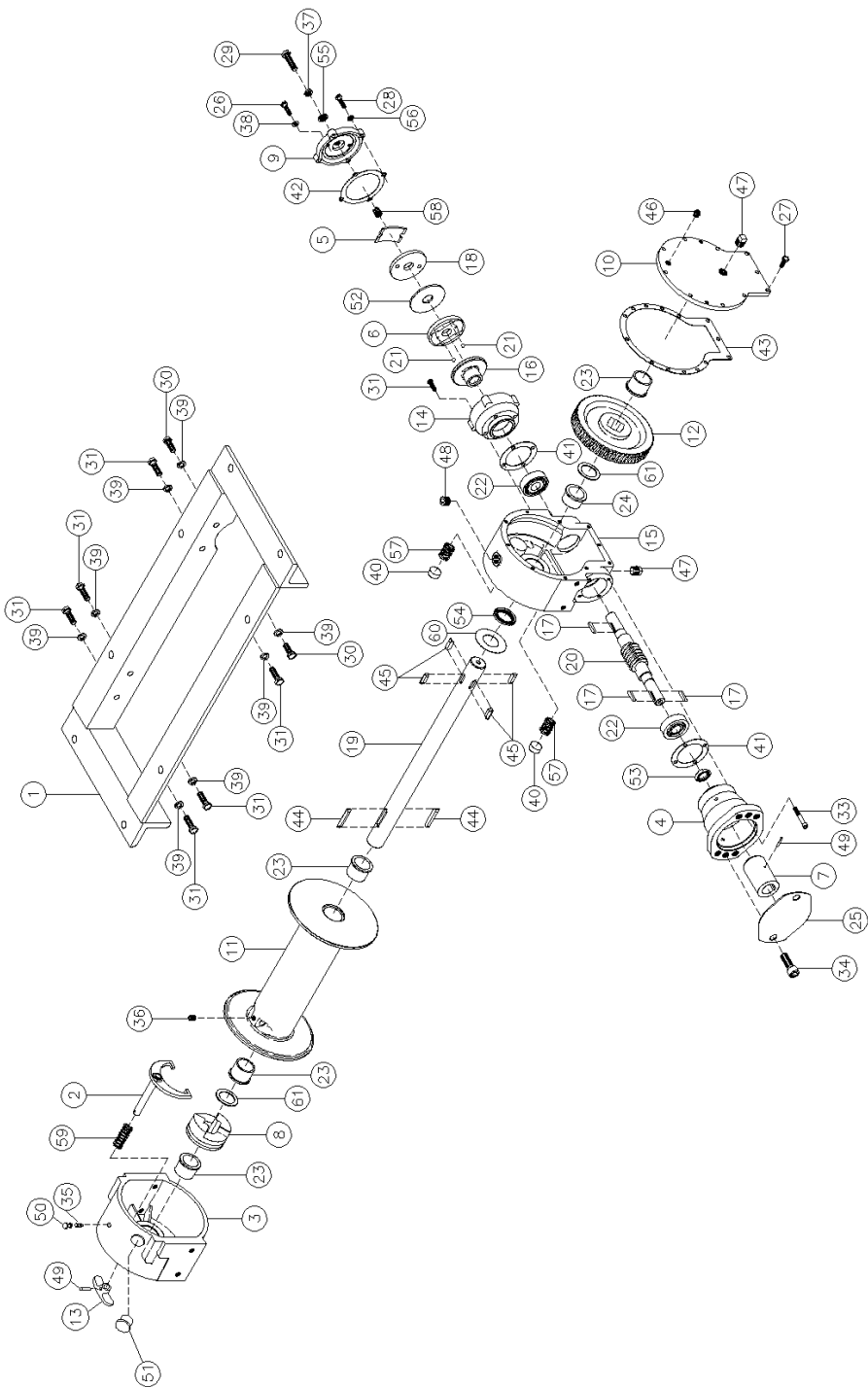
Item No.		Qty.		Description		Item No.		Qty.		Parts No.		Description	
1	242175	1	1	ASSEMBLY - FRAME	32	4	414842	4	CAPSCREW 1/4-20UNC X 1.75 LG SOC HD ZIP LOK-WEL				
2	276057	1	1	ASSEMBLY - SHIFTER	33	2	414952	2	CAPSCREW 1/2-13UNC X 1/50 LG HX SOC HD ZIP				
3	300057	1	1	ADAPTER	34	1	416059	1	SETSCREW 3/8-16UNC X .50 LG HX SOC. HEADLESS CUP PT.				
4	306034	1	1	SPRING - FLAT	35	1	418036	1	NUT - HX JAM 3/8-16UNC ZIP				
5	314008	1	1	PLATE - CAM	36	2	418154	2	WASHER - FLAT 1/4 ALUM				
6	324502	1	1	CLUTCH - JAW	37	8	418177	8	LOCKWASHER 3/8 MED SECT ZIP				
7	324500	1	1	COUPLING	38	1	426049	1	ADAPTER - ROD				
8	328128	1	1	COVER - BRAKE	39	2	438014	2	DISC - BRAKE				
9	328152	1	1	COVER - GEAR HOUSING	40	2	442184	2	GASKET				
10	332150	1	1	DRUM - CABLE	41	1	442189	1	GASKET				
11	334179	1	1	GEAR - R.H. 30:1	42	1	442205	1	GASKET				
12	338007	1	1	HOUSING - BRAKE	43	2	450006	2	KEY - BARTH				
13	338273	1	1	HOUSING - GEAR	44	4	450016	4	KEY - BARTH				
14	296633	1	1	HOUSING - CLUTCH	46	1	456008	1	FITTING - RELIEF				
15	340002	1	1	HUB - BRAKE	47	1	468018	1	PLUG - PIPE				
16	342027	3	3	KEY	48	2	468011	2	PLUG - PIPE				
17	352022	1	1	PLATE - RETAINER	49	1	470002	1	PIN - SPIROL				
18	357487	1	1	SHAFT - DRUM	50	1	470033	1	PIN - SPIROL				
19	368202	1	1	WORM - R.H. 30:1	52	1	472013	1	PLUG - PLASTIC				
20	400003	2	2	BALL	53	1	474001	1	PLATE - THRUST				
21	402002	2	2	BEARING - BALL	54	1	486009	1	SEAL - OIL				
22	412003	4	4	BUSHING	55	1	486017	1	SEAL - OIL				
23	412097	1	1	BUSHING	56	1	486069	1	SEAL - THREAD				
24	413013	1	1	COVER - ADAPTER	57	4	486070	4	SEAL - THREAD				
25	414021	2	2	CAPSCREW 1/4-20UNC X 1.0 LG ALLTRD HX HD GR5 NYLOK	58	2	494002	2	SPRING				
26	414045	10	10	CAPSCREW 1/4-20UNC X 7/8 LG HX HD GR5 ZIP	59	1	494007	1	SPRING				
27	414039	4	4	CAPSCREW 1/4-20UNC X 1.0 LG HX HD GR5	60	1	494053	1	SPRING				
28	414224	2	2	CAPSCREW 3/8-16UNC X 1.5 LG ALLTRD HX HD GR5 ZIP	61	1	518014	1	WASHER - THRUST				
29	414277	2	2	CAPSCREW 3/8-16UNC X 1.0 LG HX HD GR5 NYLOK	62	2	518015	2	WASHER - THRUST				
30	414282	6	6	CAPSCREW 3/8-16UNC X 1.25 LG HX HD GR5									
31	414839	4	4	CAPSCREW 1/4-20UNC X .88 LG HX SOC BTN HD BLK									



**Model HDG-350 Ram-Lok®**

**PARTS LIST MODEL HDG-350 T-Handle Shifter**

Item No.	Qty.	Part No.	Description	Item No.	Qty.	Part No.	Description
1	1	242175	ASSEMBLY - FRAME	32	4	414839	CAPSCREW 1/4-20UNC X .88 LG HX SOC BTN HD BLK
2	1	276059	ASSEMBLY - SHIFTER	33	4	414842	CAPSCREW 1/4-20UNC X 1.75 LG SOC HD ZIP LOK-WEL
3	1	296640	HOUSING - CLUTCH	34	2	414952	CAPSCREW 1/2-13UNC X 1/50 LG HX SOC HD ZIP
4	1	300057	ADAPTER	35	1	416030	SETSCREW 1/4-20UNC X 3/8 HX SOC
5	1	306034	SPRING - FLAT	36	1	416059	SETSCREW 3/8-16UNC X .50 LG HX SOC. HEADLESS CUP PT.
6	1	314008	PLATE - CAM	37	1	418036	NUT - HX JAM 3/8-16UNC Z/P
7	1	324500	COUPLING	38	2	418154	WASHER - FLAT 1/4 ALUM
8	1	324502	CLUTCH - JAW	39	8	418177	LOCKWASHER 3/8 MED SECT Z/P
9	1	328128	COVER - BRAKE	40	2	438014	DISC - BRAKE
10	1	328152	COVER - GEAR HOUSING	41	2	442184	GASKET
11	1	332150	DRUM - CABLE	42	1	442189	GASKET
12	1	334179	GEAR - R.H. 30:1	43	1	442205	GASKET
13	1	336010	HANDLE	44	2	450006	KEY - BARTH
14	1	338007	HOUSING - BRAKE	45	4	450016	KEY - BARTH
15	1	338273	HOUSING - GEAR	46	1	456008	FITTING - RELIEF
16	1	340002	HUB - BRAKE	47	2	468011	PLUG - PIPE
17	3	342027	KEY	48	1	468018	PLUG - PIPE
18	1	352022	PLATE - RETAINER	49	2	470033	PIN - SPIROL
19	1	357487	SHAFT - DRUM	50	1	472012	PLUG - RUBBER
20	1	368202	WORM - R.H. 30:1	51	1	472013	PLUG - PLASTIC
21	2	400003	BALL	52	1	474001	PLATE - THRUST
22	2	402002	BEARING - BALL	53	1	486009	SEAL - OIL
23	4	412003	BUSHING	54	1	486017	SEAL - OIL
24	1	412097	BUSHING	55	1	486069	SEAL - THREAD
25	1	413013	COVER - ADAPTER	56	4	486070	SEAL - THREAD
26	2	414021	CAPSCREW 1/4-20UNC X 1.0 LG ALL TRD HX HD GR5 NYLOK	57	2	494002	SPRING
27	10	414045	CAPSCREW 1/4-20UNC X 7/8 LG HX HD GR5 ZIP	58	1	494007	SPRING
28	4	414039	CAPSCREW 1/4-20UNC X 1.0 LG HX HD GR5	59	1	494053	SPRING
29	1	414224	CAPSCREW 3/8-16UNC X 1.5 LG ALL TRD HX HD GR5 ZIP	60	1	518014	WASHER - THRUST
30	2	414277	CAPSCREW 3/8-16UNC X 1.0 LG HX HD GR5 NYLOK	61	2	518015	WASHER - THRUST
31	6	414282	CAPSCREW 3/8-16UNC X 1.25 LG HX HD GR5				



**Model HDG-350 Ram-Lok® T-Handle Shifter**

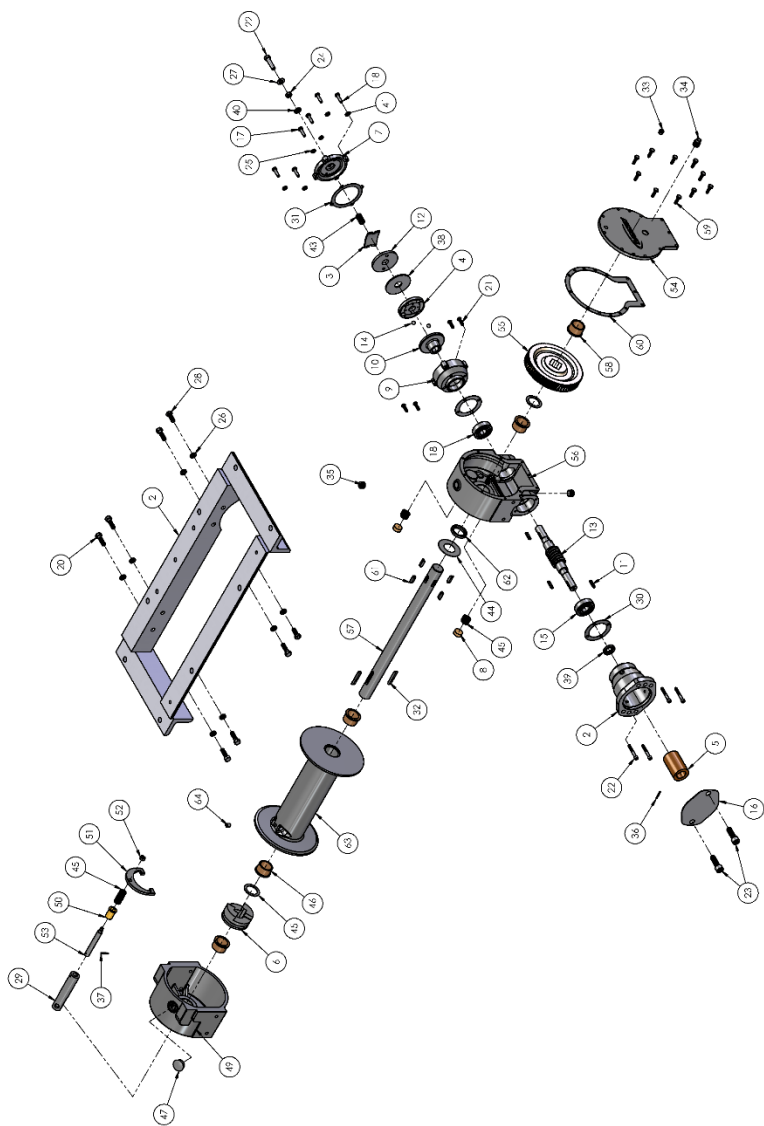
**PARTS LIST MODEL HDG-350 AIR SHIFTER**

Item No.	Qty.	Part No.	Description	Item No.	Qty.	Part No.	Description
1	1	242175	ASSEMBLY - FRAME	34	1	416089	SETSCREW 3/8-16UNC X .50 LG HX SOC. HEADLESS CUP PT.
2	1	298644	HOUSING - CLUTCH	35	4	416198	SCREW #6-32NC X 1 LG HXSOC HD ZIP
3	1	300057	ADAPTER	36	1	418036	NUT - HX JAM 3/8-16UNC ZIP
4	1	306034	SPRING - FLAT	37	1	418044	LOCKNUT 3/8-16NC
5	1	314008	PLATE - CAM	38	4	418136	LOCKWASHER #6 MED SECT ZIP
6	1	324500	COUPLING	39	2	418154	WASHER - FLAT 1/4 ALUM
7	1	324502	CLUTCH - JAW	40	8	418177	LOCKWASHER 3/8 MED SECT ZIP
8	1	328128	COVER - BRAKE	41	1	432033	ELBOW FITTING
9	1	328152	COVER - GEAR HOUSING	42	1	433021	AIR CYLINDER
10	1	332150	DRUM - CABLE	43	2	438014	DISC - BRAKE
11	1	334179	GEAR - R.H. 30:1	44	2	442184	GASKET
12	1	338007	HOUSING - BRAKE	45	1	442189	GASKET
13	1	338273	HOUSING - GEAR	46	1	442205	GASKET
14	1	340002	HUB - BRAKE	47	2	450006	KEY - BARTH
15	3	342027	KEY	48	4	450016	KEY - BARTH
16	1	352022	PLATE - RETAINER	49	1	456008	FITTING - RELIEF
17	1	357487	SHAFT - DRUM	50	1	456038	BREATHER VENT
18	1	368202	WORM - R.H. 30:1	51	2	468011	PLUG - PIPE
19	1	370058	YOKE	52	1	468018	PLUG - PIPE
20	2	400003	BALL	53	1	470033	PIN - SPIROL
21	2	402002	BEARING - BALL	54	1	472013	PLUG - PLASTIC
22	4	412003	BUSHING	55	1	474001	PLATE - THRUST
23	1	412097	BUSHING	56	1	486009	SEAL - OIL
24	1	413013	COVER - ADAPTER	57	1	486017	SEAL - OIL
25	2	414021	CAPSCREW 1/4-20UNC X 1.0 LG ALLTRD HX HD GR5 NYLOK	58	1	486069	SEAL - THREAD
26	10	414045	CAPSCREW 1/4-20UNC X 7/8 LG HX HD GR5 ZIP	59	4	486070	SEAL - THREAD
27	4	414039	CAPSCREW 1/4-20UNC X 1.0 LG HX HD GR5	60	1	488012	SHIM
28	1	414224	CAPSCREW 3/8-16UNC X 1.5 LG ALLTRD HX HD GR5 ZIP	61	2	494002	SPRING
29	2	414277	CAPSCREW 3/8-16UNC X 1.0 LG HX HD GR5 NYLOK	62	1	494007	SPRING
30	6	414282	CAPSCREW 3/8-16UNC X 1.25 LG HX HD GR5	63	1	494053	SPRING
31	4	414839	CAPSCREW 1/4-20UNC X .88 LG HX SOC BTN HD BLK	64	1	518014	WASHER - THRUST
32	4	414842	CAPSCREW 1/4-20UNC X 1.75 LG SOC HD ZIP LOK-WEL	65	2	518015	WASHER - THRUST
33	2	414952	CAPSCREW 1/2-13UNC X 1/50 LG HX SOC HD ZIP				



# KITS AND MAINTENANCE PARTS

121551



# KITS AND MAINTENANCE PARTS

121551

Item#	QTY.	PART NUMBER	DESCRIPTION	KITS									
				207030	207031	207058	222055	246053	248055	250520	283081		
1	1	242175	FRAME ASSY-BOX										
2	1	300057	ADAPTER										
3	1	306034	SPRING-FLAT,BRK	X									
4	1	314008	CAMP LATE, DIA-2.87 OD			X							
5	1	324500	COUPLING-HYD.MOTOR									X	
6	1	324502	JAW CLUTCH				X						
7	1	328128	COVER-WM BRK,G7/G200,.321										
8	2	330010	SHOE-DRAG BRK,7/8DIA X 3/8LG		X								
9	1	338007	BRAKE HOUSING										
10	1	340002	HUB-BRAKE			X							
11	3	342027	KEY-RD ENDS,3/16X3/16X1LG									X	
12	1	352022	RETAINER PLATE			X							
13	1	368202	WORM-RH DGL LEAD										
14	2	400003	BALL-POPPET 3/8 OD	X									
15	2	402002	BEARING-BALL								X		
16	1	413013	COVER-HYD ADP										
17	2	414021	BOLT-1/4NCX1,HXD,G8										
18	4	414039	CAPSCREW-1/4-20NC X 1 LG,HEXHD,GR 5										
19	1	414224	BOLT-3/8-16NCX1 1/2,HX,G5										
20	6	414320	BOLT-3/8-16NCX1 1/4,HXHD,GR5										
21	4	414821	CAPSCREW-1/4-20NC X 7/8,HXSOCBUTTHD										
22	4	414842	CAPSCREW-1/4-20NCX1 3/4,HXSOCD										
23	2	414952	CAPSCREW-1/2-13NCX1 1/2LG,SOCHD										
24	1	418036	NUT-3/8-16 NC,HEX JAM										
25	2	418154	WASHER-1/4 FLAT										
26	8	418177	LOCKWASHER-3/8 MED SECT										
27	1	418181	WASHER-3/8 ID SAE FLAT										
28	2	420016	BOLT-3/8-16NCX1,HXHD,GR5										
29	1	426049	ADAPTER-ROD				X						
30	2	442184	GASKET-BRG CAP								X		
31	1	442189	GASKET-BRK HSG COVER,200								X		
32	2	450006	KEY-BARTH,5/16X1 7/8LG								X		

# KITS AND MAINTENANCE PARTS

121551

Item#	QTY.	PART NUMBER	DESCRIPTION	KITS									
				207030	207031	207058	222055	246053	248055	250520	283081		
33	1	456008	RELIEF FIT-1/8-27PFT,BALL CHECK										
34	1	468011	PIPE PLUG-3/8-18NPTF, 7/16 SQ										
35	2	468018	PIPE PLUG-3/8-18NPTF HXSOCHD										
36	1	470002	SPIROL PIN-1/8 X 1 LG				X						
37	1	470033	SPIROL PIN-1/8X7/8										X
38	1	474001	PLATE-THRUST	X									
39	1	486009	OIL SEAL-RL						X				
40	1	486069	SEAL-3/8 THRD,BRK COVER						X				
41	4	486070	SEAL, DIA--531 OD						X				
42	2	494002	SPRING-QQ-W-428 TYPE I MUSIC WIRE		X								
43	1	494007	SPRING-WM BRK COV.,.525X9/16LG	X									
44	1	518014	THRUST WASHER-2.51 OD X 0.032 THK						X				
45	2	518015	THRUST WASHER-1.75 OD X 0.063 THK						X				
46	3	412045	BUSHING, DIA. 1.502 OD X .937 LG						X				
47	1	472013	PLUG-PLAST										
48	1	494053	SPRING					X					
49	1	338351	HOUSING-CLUTCH										
50	1	412108	BUSHING-SHIFTER SHAFT					X					
51	1	370058	YOKE-SHIFTER					X					
52	1	418461	LOCKNUT-5/16-18, GRADE A					X					
53	1	489031	SHAFT-SHIFTER					X					
54	1	328152	COVER-GEAR HSG										
55	1	334179	GEAR-RH WORM								X		
56	1	338273	HOUSING-GEAR										
57	1	357487	SHAFT-OUTPUT									X	
58	2	412097	BUSHING-GEAR HSG							X			
59	10	414045	CAPSCREW-1/4-20NCX7/8 LG. HEX HD, GR 5										
60	1	442205	GASKET-GH CVR						X			X	
61	4	450016	KEY-BARTH,5/16X.15/16L									X	
62	1	486017	OIL SEAL, 1.750 OD								X		
63	1	332150	DRUM-CABLE										
64	1	416059	SETSCREW3/8-16NCX1/2 HX SOCK HD CUP										

**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).

