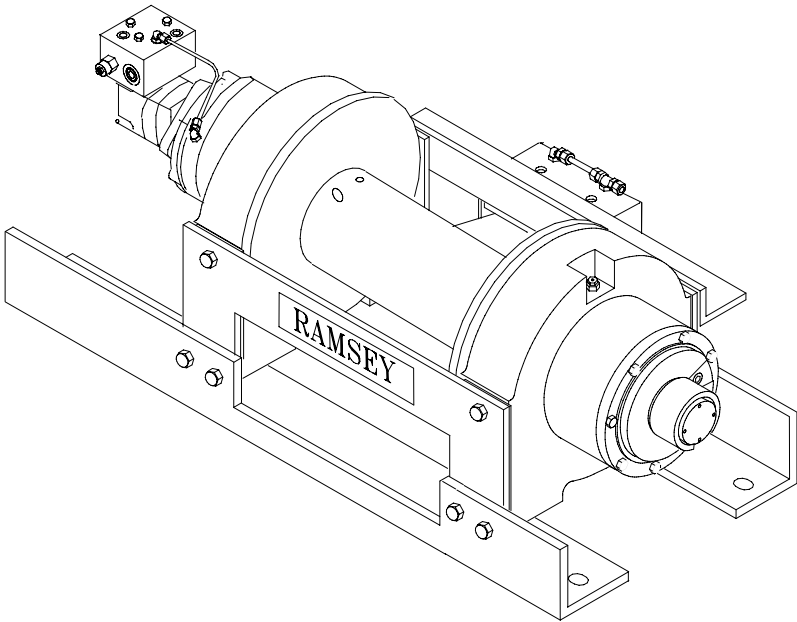




OPERATING SERVICE AND MAINTENANCE MANUAL



MODEL RPH 25,000 INDUSTRIAL PLANETARY WINCH PER JERR-DAN SPECIFICATIONS



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

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RAMSEY HYDRAULIC PLANETARY WINCH MODEL RPH 25,000

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. Do not operate this winch until you have carefully read and understand the "WARNINGS" and "OPERATION" sections of this manual.

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 our winch, please follow instructions for prompt service on all warranty claims. Refer to back page for limited warranty.

SPECIFICATIONS*

Rated Line Pull(lb.)						25,000
(Kg)						11,340
Gear Reduction						25.53:1
Weight (without wire rope and tensioner)460 lb. (208,6 Kg)
LAYER OF CABLE		1	2	3	4	5
* Rated line pull per layer	Lbs.	25,000	20,800	17,900	15,600	13,900
	Kg	11,340	9,340	8,110	7,070	6,300
* Cable Capacity	Ft.	30	65	110	160	215
	M	9	19	33	48	65
* Line Speed (at 15 GPM)	FPM	22	27	30	34	38
	MPM	6,9	7,9	9,2	9,8	11,6
* These specifications are based on recommended wire rope of .62" dia. Extra Improved Plow Steel or Equivalent.						

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 START WINCH MOTOR BEFORE ENGAGING CLUTCH.

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 ANCHOR IS NOT DESIGNED TO HOLD LOAD.

WINCH ANGLE MOUNTING

Use (8) 5/8" diameter grade 5 or better bolts to attach mounting angles to the wrecker.

CABLE INSTALLATION / TENSIONER OPERATION

CAUTION: THE CABLE TENSIONER IS NOT INTENDED TO BE ENERGIZED ON A BARE DRUM. Before applying air to the cable tensioner, engage the clutch and run the winch in the reel in direction winding one full wrap of cable on the drum. This prevents damage to the cable tensioner.

1. Unwind cable by rolling it out along the ground to prevent kinking. Securely wrap end of wire rope, opposite hook, with plastic or similar tape to prevent fraying.

CAUTION: WINCH IS DESIGNED FOR UNDERWIND CABLE USE ONLY.

2. Insert the end of cable, opposite hook end, under drum barrel and into the cable anchor hole in drum barrel. Secure cable to drum barrel, using set screw furnished with winch. **TIGHTEN SETSCREW SECURELY.**
3. Engage the clutch and carefully run the winch in the "reel-in" direction. Keeping tension on end of cable, spool about five wraps of cable onto the drum and stop. Using a hammer, tap these five wraps tightly over against the cable anchor flange side of the cable drum. Finish winding all the cable onto the cable drum. As cable winds onto the drum, watch the tensioner. Tensioner must be free to move without obstruction to function properly. If tensioner touches any surrounding structure, correct the problem.

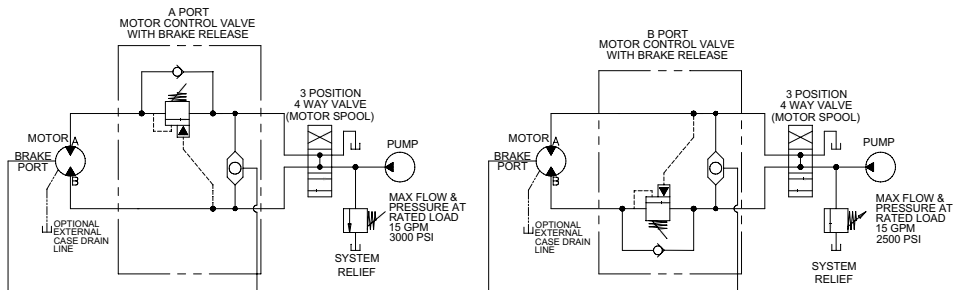
Adjust the free-spool effort of the cable tensioner. Disengage the winch clutch and free spool some cable off the drum. Adjust the air pressure to the cable tensioner to achieve the desired free spool effort that also prevents "bird nesting" of the cable.

CAUTION: DO NOT EXCEED 80 PSI AIR PRESSURE TO THE AIR TENSIONER ACTUATORS.

Once you have adjusted the air pressure to the desired level, only minor adjustment may be required if your pressure regulator setting drifts.

HYDRAULIC SYSTEM REQUIREMENTS

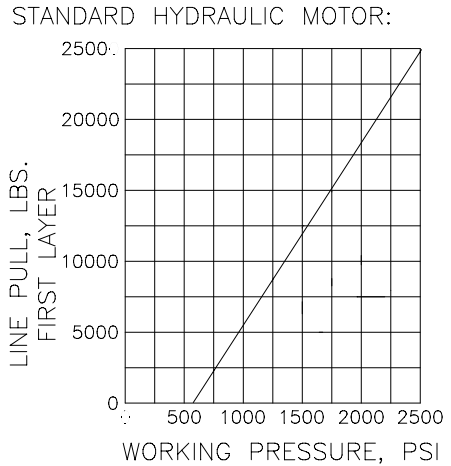
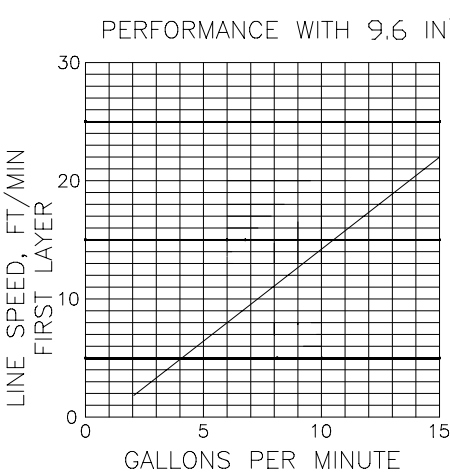
CAUTION: SYSTEM BACK PRESSURE MUST NOT EXCEED 50 PSI OR BRAKE SHAFT SEAL FAILURE CAN OCCUR. IF BACK PRESSURE EXCEEDS 50 PSI, AND CANNOT BE REDUCED, AN EXTERNAL CASE DRAIN LINE SHOULD BE RUN FROM THE MOTOR CASE DRAIN PORT (SEE PAGES 15-16) TO TANK OR A LINE/CONNECTION THAT HAS A PRESSURE BELOW 50 PSI. THE DRAIN LINE MUST BE ROUTED SO THAT SOMEWHERE ALONG ITS PATH, THE LINE IS HIGHER THAN THE MOTOR SHAFT CENTERLINE.



TYPICAL HYDRAULIC SYSTEM SCHEMATIC

Refer to the performance charts to properly match your hydraulic system to RPH-25000 winch performance. The charts consist of:

(1) Line pull (lb.) first layer vs. working pressure (PSI) and (2) Line speed, first layer (FPM) vs. gallons per minute (GPM). Performance based on a motor displacement of 9.6 cubic inches with 15 GPM maximum flow rate. See page 15 for motor port size.



CLUTCH OPERATION

1. Move the clutch control valve to the "clutch-engaged" position.
2. Anytime the temperature is below freezing, run motor in the "cable out" direction only until the drum starts to turn. In extreme cold temperatures (below 0° F/-18° C), pull out on the cable by hand only until the drum starts to turn.
3. Wait at least 3 seconds for the clutch to fully engage, after which the winch is ready to winch in the cable.

WARNING: Do not attempt to engage the clutch by first running the winch motor and then moving the clutch control valve to the "clutch-engaged" position while the motor is running. Do not start picking up the load at the same time the clutch is being engaged.

To disengage clutch:

1. Run the winch in the "cable out" direction until the load is off the cable.
2. Move the clutch control valve to the "clutch-disengaged" position.

The cable may now be pulled off by hand.

WINCH OPERATION

The best way to get acquainted with how your winch operates is to make test runs before you use it. Plan your test in advance. Remember, you hear your winch, as well as see it operate; learn 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.

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 not plugged. Lubricate cable with light oil.

B. MONTHLY

1. Check the winch mounting bolts. If any are missing, replace them and securely tighten any that are loose. Use grade 5 or better bolts.
2. 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 seconds 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 SAE 80W-140 gear oil.
4. Inspect frame and surrounding structure for cracks or deformation.

TROUBLESHOOTING GUIDE

CONDITION	POSSIBLE CAUSE	CORRECTION
Oil leaks from winch	<ol style="list-style-type: none">1. Seal damaged or worn.2. Too much oil.3. Damaged gasket.4. Damaged brake shaft seal.	<ol style="list-style-type: none">1. Replace seal.2. Drain excess oil. See Overhaul Section, Step 15.3. Replace gasket.4. Replace brake, check back pressure to motor. If back pressure is more than 50 PSI, reduce back pressure or add external case drain line.
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 2.
Cable drum will not freespool.	<ol style="list-style-type: none">1. Clutch not disengaged.	<ol style="list-style-type: none">1. Check air pressure to clutch cylinder 90 psi minimum required - Refer to page 15.

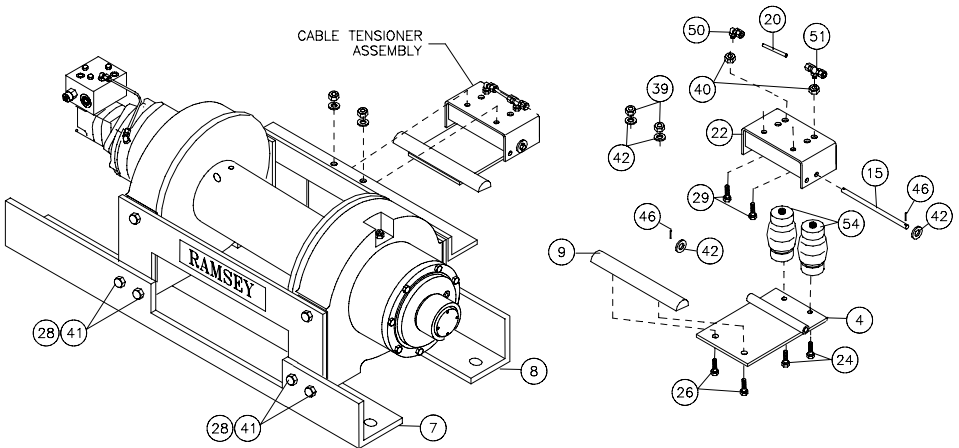
INSTRUCTIONS FOR OVERHAUL

1. Remove wire rope from winch. Disconnect hydraulic and air lines. Remove winch and frame from vehicle mounting.

Remove (2) nuts and washers (item #39 & #42) from air tensioner mounting bracket and remove air tensioner assembly from winch frame. If air tensioner does not need service, move on to STEP 2.

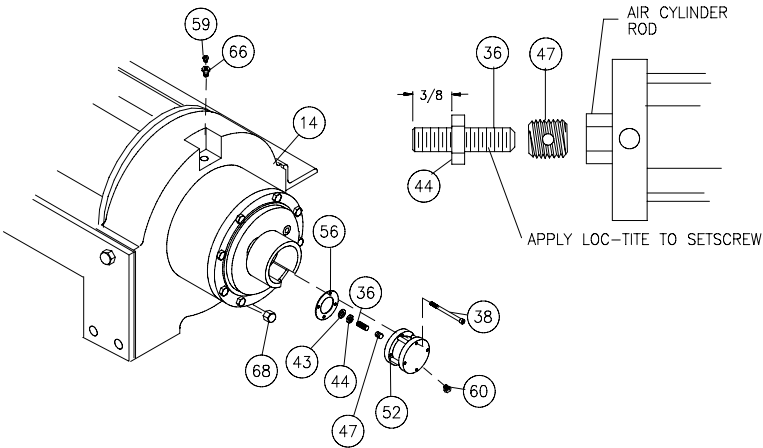
Loosen tube fittings (item #50 & #51), remove tube (item #20), remove fittings. Remove nuts (item #40) under air fittings and screw (item #24) on opposite end of air actuators (item #54). Replace actuators. Actuator nut and screws tightening torque should be no more than 10 ft-lbs each. Fitting should be no more than 1/4 turn beyond hand tight. Tensioner bar (item #9) is held in place by 2 screws (item #26). Use a thread-locking compound when replacing. Torque to 30 ft-lbs each.

Remove winch and frame from mounting angles (items #7 & #8) by removing (8) cap-screws and lockwashers (items #28 & #41).

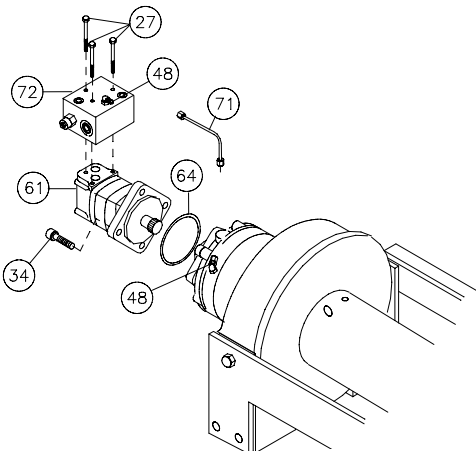


2. Drain oil from gear housing (item #14) by removing pipe cap (item #68) from pipe nipple in end bearing. Remove reducer and relief fitting (items #66 & #59).

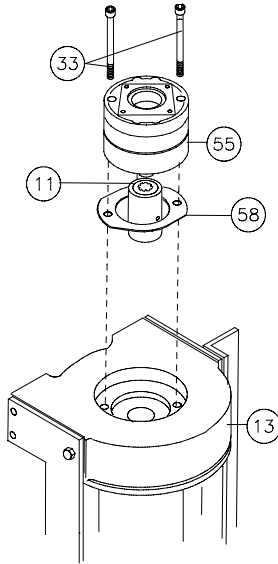
If new air cylinder is required, remove air cylinder (item #52) cover by removing (4) cap-screws (item #38). Remove breather vent (item #60). Remove washer (item #43), nut and setscrew (items #44 & #36) and insert (item #47) from end of air cylinder rod. Apply Loc-tite to threads of nut (item #44) and thread onto setscrew (item #36) to 3/8 inch from drive end, as shown below. Apply Loc-tite to threads of setscrew and thread insert (item #47) over end of setscrew and against nut. Use setscrew and nut to thread insert (item #47) into end of air cylinder rod. Tighten nut against cylinder rod, keeping 3/8 inch distance from drive end of setscrew to nut. Be sure breather vent (item #60) and relief fitting (item #59) are not damaged and in good operating condition. Replace if necessary.



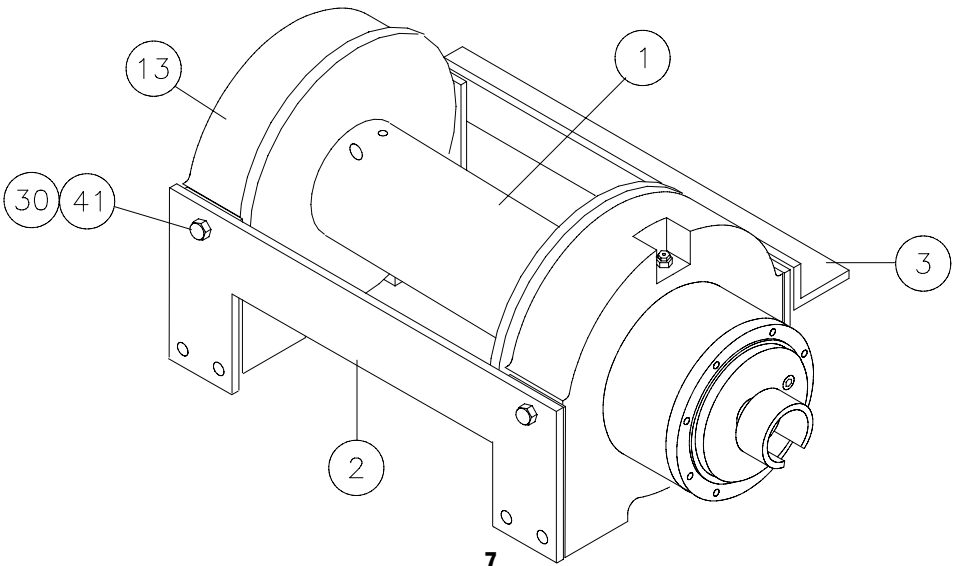
3. Disconnect tube (item #71) from elbows (item #48), as shown. Remove motor (item #61) and O-ring (item #64) by removing (4) capscrews (item #32). Remove valve (item #72), if needed, from motor by removing (3) capscrews (item #27), as shown.



4. Remove brake assembly (item #55) by removing (2) mounting screws (item #33) attaching brake to end bearing (item #13). Remove coupling (item #11) and gasket (item #58) from end bearing. Take note of mounting configuration for proper mounting of parts during re-assembly.



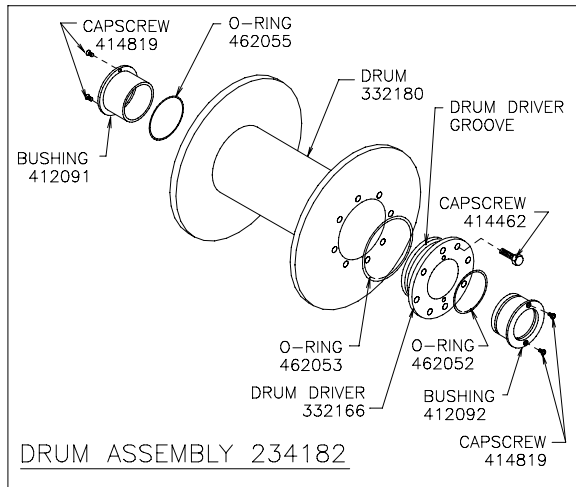
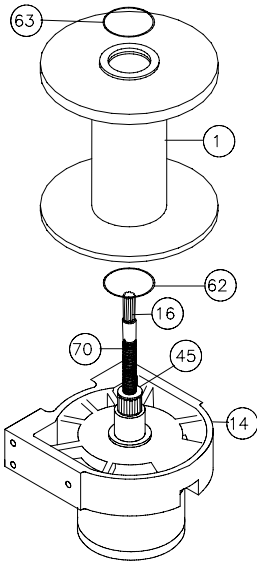
5. Remove winch from upright mounting frames (items #2 & #3) by removing (4) cap-screws and lockwashers. Pull motor end bearing (item #13) from drum assembly (item #1).



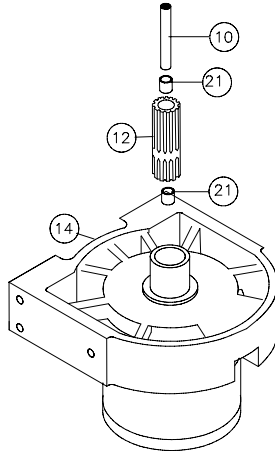
6. Pull drum assembly (item #1) upward from end bearing (item #14). Remove quad-rings (item #63 & #62) from grooves in drum bushings. Remove input shaft (item #16), clutch spring (item #70) and washer (item #45) from end bearing (item #14). Examine splined ends of input shaft for signs of wear, replace if damaged.

Examine drum assembly (item #1) for signs of wear. If splines inside of drum driver (332166) are damaged, drum driver must be replaced. Remove drum driver by unscrewing (8) capscrows (414462). Place well-oiled o-ring (462053) into drum driver groove and attach driver to drum (332180) using (8) capscrows (414462). Torque capscrows to 55 ft. lbs. each, in criss-cross pattern.

Press old bushings from drum and drum driver. Remove o-rings (462055 & 462052) from grooves in drum and drum driver-bushing (412092). Place well-oiled o-rings (462055 & 462052) into grooves in drum and outer diameter of drum driver bushing (412092). Press new bushing (412091) into end of drum opposite drum driver and press bushing (412092) into drum driver until flange of bushings are flush against drum and driver. Secure bushings to drum and drum driver using (2) capscrows (414819).

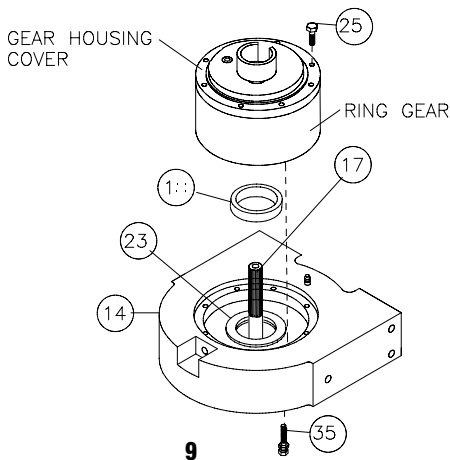


7. Remove output coupling (item #12) and coupling shaft (item #10) from end bearing (item #14). Examine bearings (item #21), pressed in output coupling (item #12), for signs of wear. Replace bearings, if necessary, by pressing old bearings from coupling and press new bearings (item #21) into each end of output coupling (item #12). Place coupling shaft (item #10) into bearings (item #21).



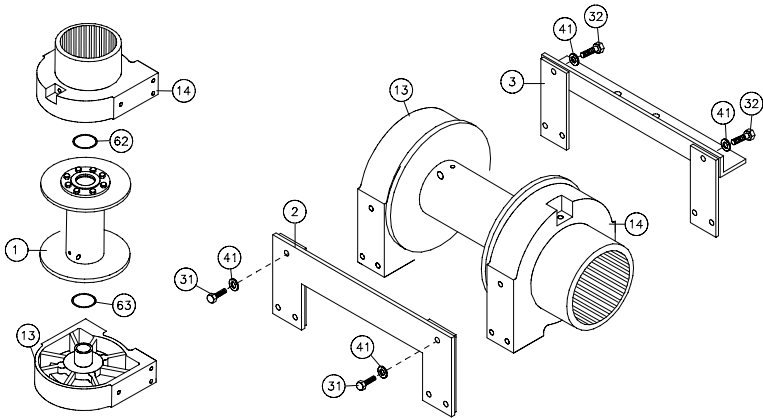
8. Remove (8) capscrews (item #25) to pull gear-housing cover from ring gear. Remove input thrust washer, sun gear and carrier assemblies and spacer (item #18) from inside of ring gear. Examine splines of ring gear and if necessary, remove ring gear from end bearing (item #14) by removing (12) capscrews (item #35). Examine bushing (item #23) for signs of wear. Replace bushing, if necessary, by pressing old bushing from housing and pressing new bushing into place.

Apply RTV sealing compound to ring gear-mounting surface of end bearing (item #14). Place ring gear onto end bearing, aligning holes in ring gear with holes and gear housing end bearing. Secure ring gear to end bearing using (12) capscrews (item #35). Torque to 44 ft.lbs, each in a criss-cross pattern. Examine shifter shaft (item #17) for signs of wear, replace if necessary.

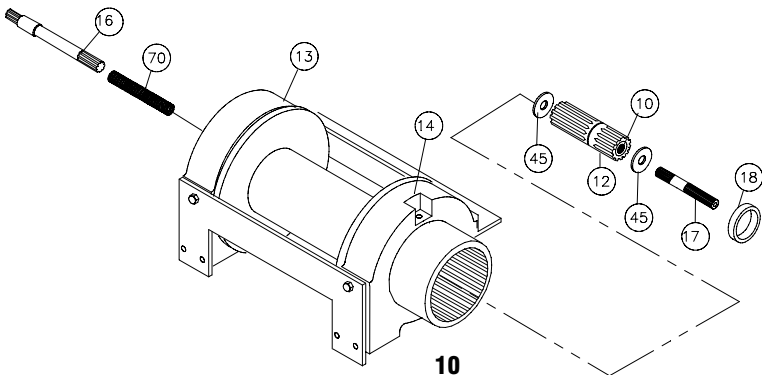


9. **NOTE:** DETERMINE MOUNTING CONFIGURATION OF WINCH (R.H. or L.H. MOUNTED) BEFORE ATTACHING FRONT AND REAR FRAME ASSEMBLY TO WINCH, TO ASSURE PARTS ARE MOUNTED TO PROPER SIDE, REFER TO WINCH MOUNTING CONFIGURATIONS, STEP 15 PAGE 13.

Seat well-oiled quad-rings (item #62 & #63) into groove of bushing in each end of drum assembly (item #1), as shown. Carefully set drum assembly (item #1) down over motor end bearing (item #13). Lift gear-housing end bearing (item #14) and set into place on drum assembly. Install front and rear frame assembly (items #2 & #3) using capscrews and lockwashers shown below. Tighten (4) capscrews securely, check rotation of cable drum.

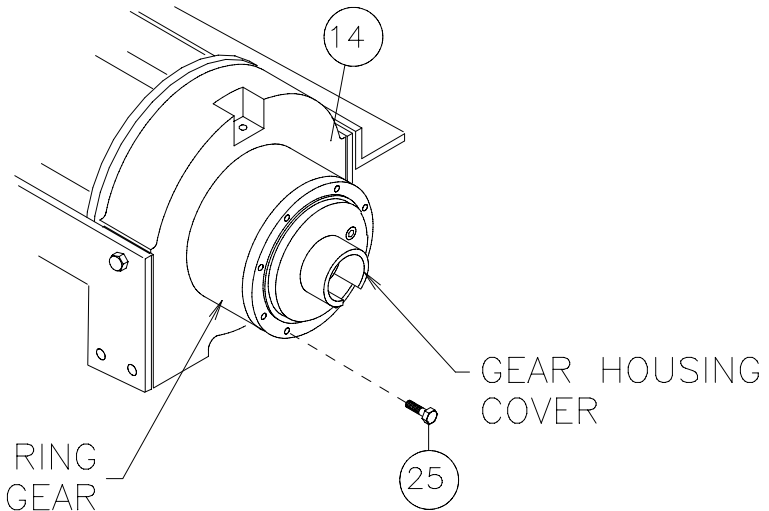


10. Liberally apply grease to shoulder of input shaft (item #16). Place spring (item #70) over longer splined end of shaft. Use grease to hold spring in place against shoulder of shaft. Place spring and shaft through motor end bearing (item #13) and drum until shaft extends through bushing (item #23) in end bearing (item #14). Place clutch washer (item #45) over splined end of shaft and against spring. Place end of output coupling assembly (item #12), with longest spline inward, through end bearing bushing (item #23) and mesh shaft coupling spline with splined end of shaft. Place short splined end of shifter shaft (item #17) through washer (item #45) and into shaft coupling (item #10), meshing splines of shifter shaft with splines in shaft coupling.

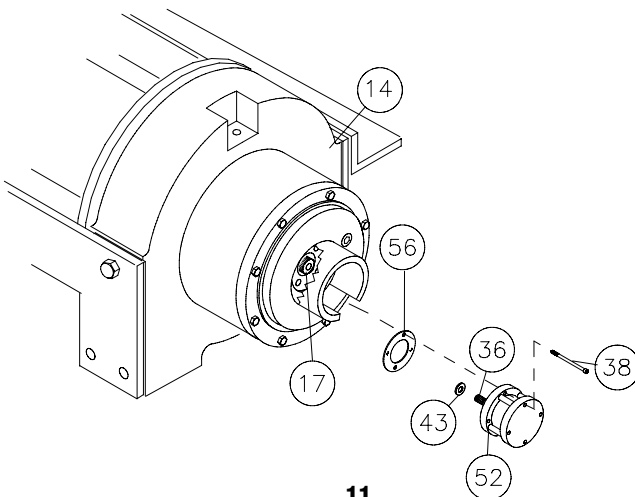


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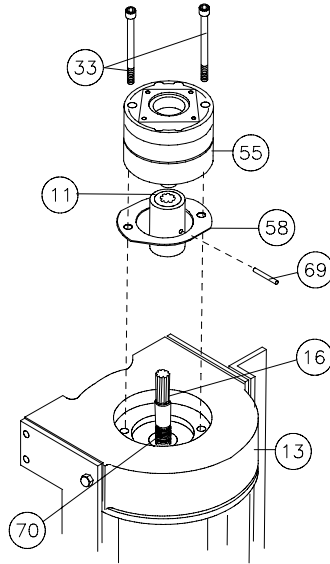
11. Place (2) gear carrier assemblies into ring gear meshing carrier gears with ring gear. Make sure that ring gear and carrier assemblies are securely against end bearing (item #14). Apply RTV sealing compound to cover mounting surface of ring gear and attach cover to ring gear. Use (8) capscrews (item #25) to secure gearbox cover to gear housing end bearing. Torque capscrews to 18 ft-lbs. each, in criss-cross pattern.



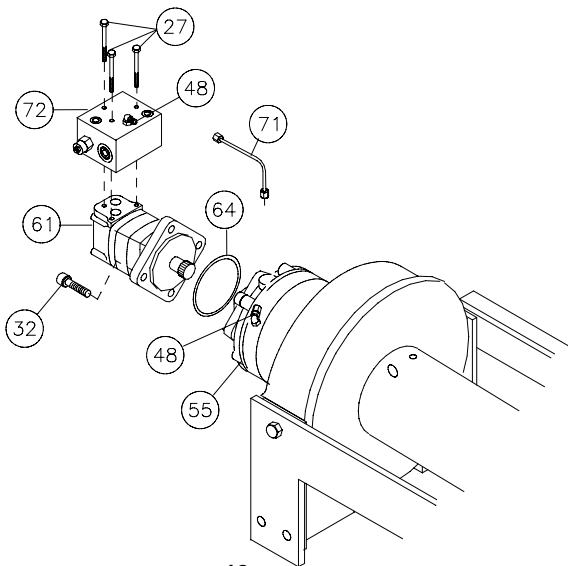
12. Pull rod from air cylinder as far as possible. Slide washer (item #43) over setscrew (item #36) and against nut attached to air cylinder rod. Place setscrew into hole of shifter shaft (item #17). Attach new air cylinder (item #52) and gasket (item #56) with sealer, to cover using (4) capscrews (item #38). Apply Loc-tite PST thread sealer to threads of capscrews. Torque capscrews to 5 ft-lbs. each, in criss-cross pattern.



13. With pin (item #69) installed in coupling, slide coupling (item #11) over end of input shaft below. Slide coupling over end of shaft (item #16). Place gasket (Item #58) into position on motor mounting surface of end bearing (item #13). Insert brake shaft into coupling. Use (2) screws (item #33) to attach brake assembly to motor end bearing. Torque capscrews to 85 ft lbs each.



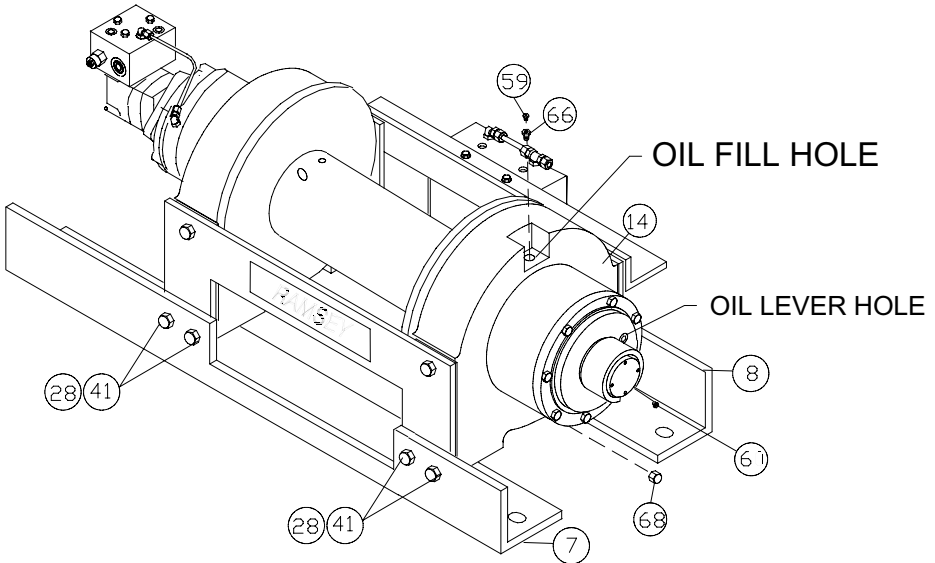
14. Attach motor (item #61) with well oiled o-ring (item #64) to brake (item #55). Use (2) capscrews (item #32) and torque to 74 ft. lbs. each. Securely connect tube (item #71) to elbow (item #48), in valve (item #72), and brake (item #55).



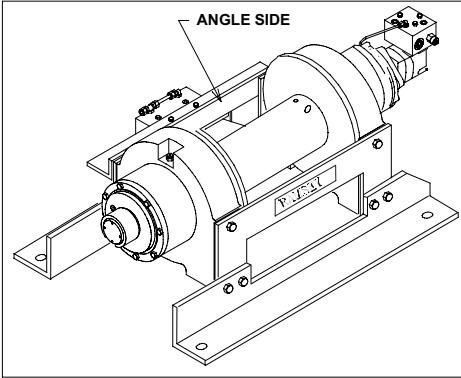
15. Apply Permatex to threads of pipe cap (item #68). Thread pipe cap onto pipe nipple in bottom of gear housing end bearing (item #13). Pour approx. 1.75 pints of SAE 80W-140 oil into end bearing. Check oil level by removing oil plug noted below. Insert relief fitting (item #59) and thread reducer (item #66) into end bearing at oil fill hole.

Install winch and connect pressure lines. Apply at least 230 PSI pressure to release brake and verify that brake releases, by observing that the winch drum rotates.

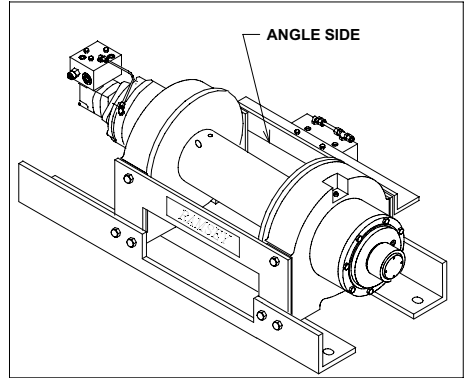
16. Check proper operation of clutch by applying air pressure to clutch air cylinder to disengage clutch. Verify that winch freespools. Re-engage clutch. A loud noise should be heard when clutch engages. Winch drum should not freespool.
17. Operate winch forward and reverse to verify that drum rotates.
18. Place winch and frame into angles (Item #7 & #8) and attach using capscrews and lock-washers shown below. Tighten (4) upper-most capscrews securely, check rotation of cable drum. Tighten (8) lower-most capscrews securely, check rotation of cable drum. Torque the (4) upper-most capscrews to 85 ft.lbs. each, then the (8) lower-most capscrew to 85 ft.lbs. each. Make sure cable drum assembly rotates freely at this point.



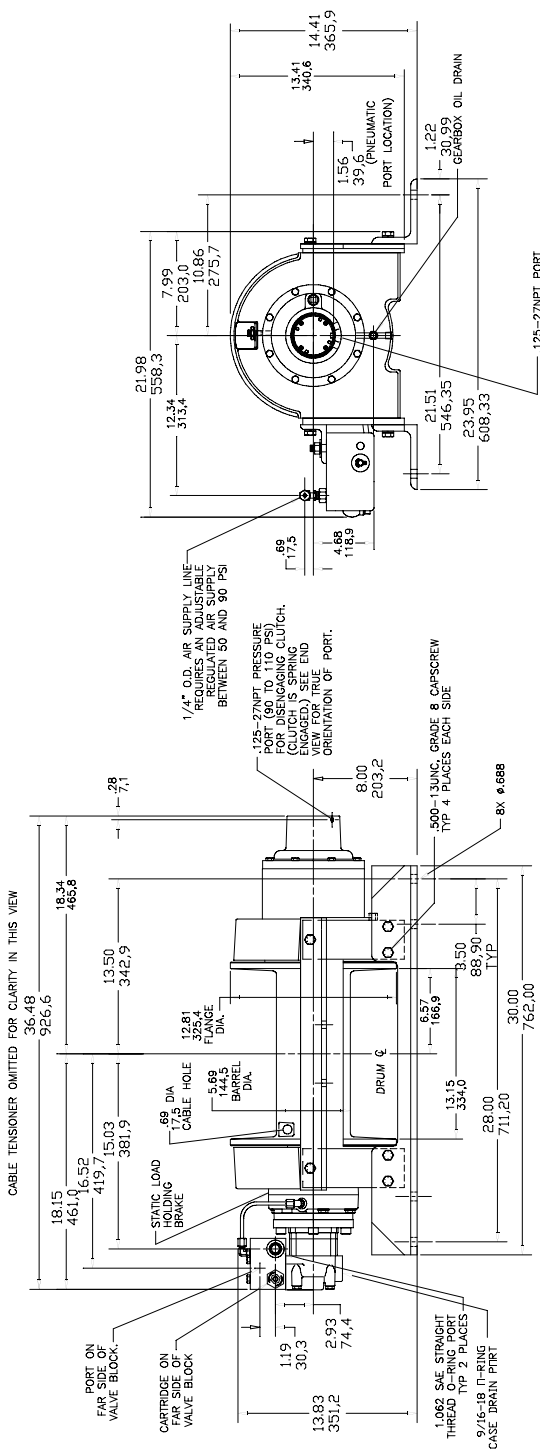
WINCH MOUNTING CONFIGURATIONS



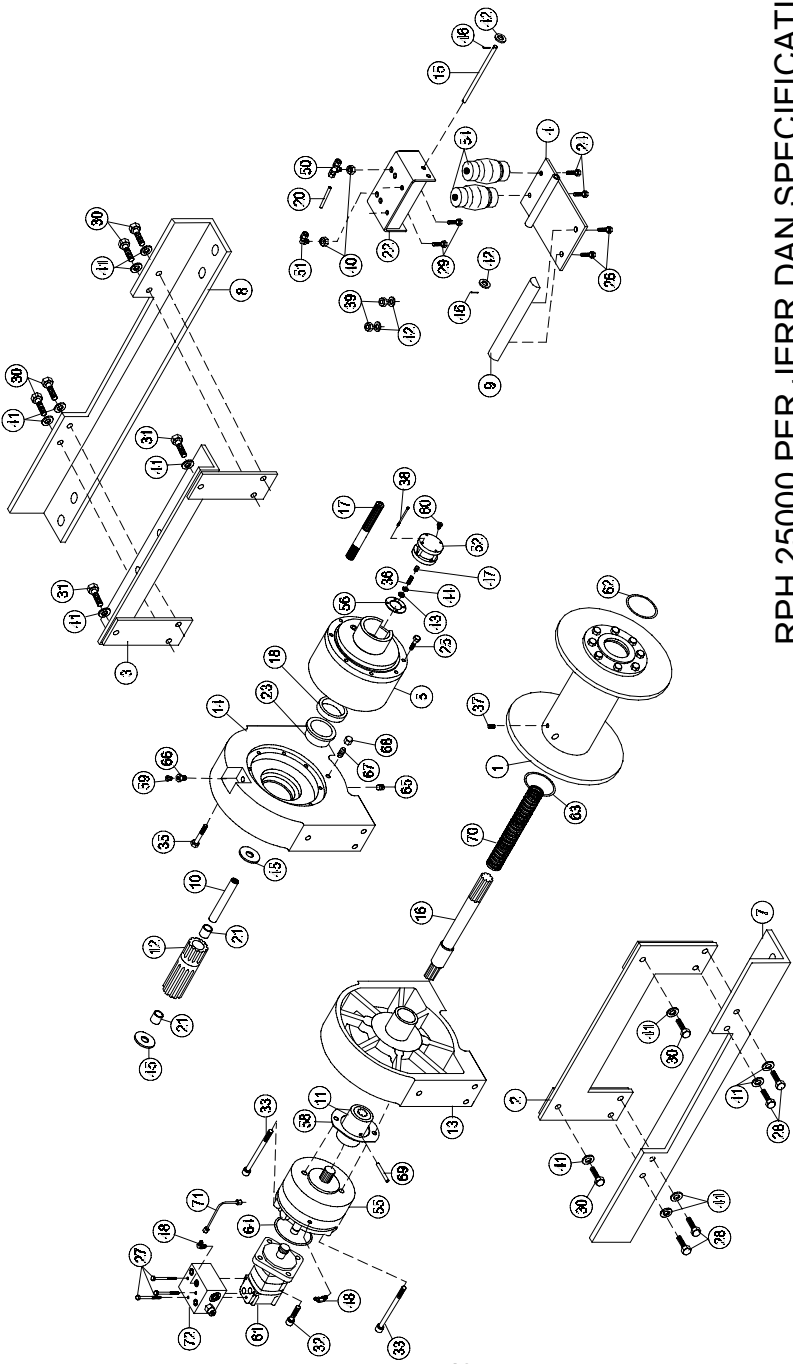
**L.H. MOUNTING
CONFIGURATION**



**R.H. MOUNTING
CONFIGURATION**



RPH 25,000 L.H. (123508)



RPH 25000 PER JERR DAN SPECIFICATIONS

PARTS LIST RPH 25,000 (UNDERWOUND) PER JERR-DAN SPECIFICATIONS

BEGINNING SERIAL NO. 9770898

ITEM	QTY	PART NO.	DESCRIPTION	ITEM	QTY	PART NO.	DESCRIPTION
1	1	234182	DRUM ASSY.	36	1	416051	SETScrew 5/16-24 NF X 1 LG SOC HD CUP
2	1	242164	ASSY-FRAME, WINCH MTG-FRONT	37	1	416059	SETScrew 3/8-16 NC X 1/2 LG HK SOC HD CUP
3	1	242166	ASSY-FRAME, WINCH MTG-REAR	38	4	416233	SCREW-#10-24 NC X 2-1/2 HK SOC HD
4	1	265027	TENSIONER PLATE ASSY.	39	2	418069	NUT 1/2-13NC HK, REG. ZP
5	1	296504	GEAR BOX ASSY.	40	2	418080	NUT 5/8-11NC HK, REG. ZP
6	1		<i>NOT USED</i>	41	12	418218	LOCKWASHER 1/2 ID MED. SECT.
7	1	303047	ANGLE-R.H. FRONT	42	4	418233	WASHER 1/2 USS FLAT ZP
8	1	303048	ANGLE-L.H. FRONT	43	1	418432	WASHER-THRUST 5/16 ID
9	1	303058	ANGLE-R.H. REAR	44	1	418433	NUT-LOCK 5/16-24NF X 3/16 THK.
10	1	304171	BAR-AIR TENSIONER	45	2	418462	WASHER, CLUTCH
11	1	324294	COUPLING-SHAFT	46	2	424005	COTTER PIN 1/8 DIA X 1 LG
12	1	324298	COUPLING-BRAKE	47	1	426045	INSERT-THREADED 5/16-24NF
13	1	324299	COUPLING-OUTPUT	48	2	432018	FITTING-90 DEG. ELBOW
14	1	338313	END BEARING-MOTOR	49			<i>NOT USED</i>
15	1	346046	END BEARING-GEAR HSG.	50	1	432039	FITTING-TEE
16	1	357505	SHAFT-INPUT	51	1	432041	FITTING-90 DEG ELBOW
17	1	358073	SHAFT-INPUT SHIFTER	52	1	433014	AIR CYLINDER
18	1	362269	SPACER	53			<i>NOT USED</i>
19	1		<i>NOT USED</i>	54	2	433023	AIR ACTUATOR
20	1	365041	TUBE-PLASTIC, 1/4" DIA, AIR TENSIONER	55	1	438023	BRAKE
21	2	402119	BEARING	56	1	442217	GASKET-AIR CYL.
22	1	408227	BRACKET-ASSY, AIR TENSIONER	57			<i>NOT USED</i>
23	1	412090	BUSHING-THRUST, GEAR HSG.	58	1	442224	GASKET-BRAKE
24	2	414137	CAPSCREW 5/16-18NC X 3/4 LG HK HD GR 5 ZP	59	1	456008	RELIEF FITTING
25	8	414152	CAPSCREW 5/16-18NC X 1-1/4 LG HK HD GR 5	60	1	456038	FITTING-BREATHER VENT
26	2	414278	CAPSCREW 3/8-16NC X 3/4 LG HK HD GR 5 ZP	61	1	458138	MOTOR
27	3	414305	CAPSCREW 3/8-16NC X 3-1/4 LG HK HD GR 5 ZP	62	1	462012	QUAD-RING 2-5/8 OD X 2-1/4 ID X 3/16
28	4	414540	CAPSCREW 1/2-13 NC X 2 LG HK HD GR 5 ZP	63	1	462050	QUAD-RING
29	2	414548	CAPSCREW 1/2-13 NC X 1-1/2 LG HK HD GR 5 ZP	64	1	462062	O-RING
30	6	414562	CAPSCREW 1/2-13 NC X 1-3/4 LG HK HD GR 5 ZP	65	1	468017	PIPE PLUG 1/4-18NPTF-HEX SOC. HD
31	2	414564	CAPSCREW 1/2-13 NC X 1-1/2 LG HK HD GR 5	66	1	468024	REDUCER 1/8-1/4 NPTF ZP
32	4	414948	CAPSCREW 1/2-13 NC X 1-1/4 LG HK SOC HD	67	1	468036	PIPE NIPPLE 1/8-1/4 NPTF BOTH ENDS
33	2	414958	CAPSCREW 1/2-13 NC X 4 LG HK SOC HD	68	1	468037	PIPE CAP
34	12	415207	BOLT - M10X1.25 MM LG HK HD GR 8.8	69	1	470091	PIN-SPRING
				70	1	494108	SPRING-CLUTCH SHIFTER, 192 DIA
				71	1	509014	TUBE ASSY-HYDRAULIC BRAKE RELEASE
				72	1	516019	VALVE-MOTOR CONTROL RH ASSY
					1	516023	VALVE-MOTOR CONTROL LH ASSY

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.

See warranty card for details.



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