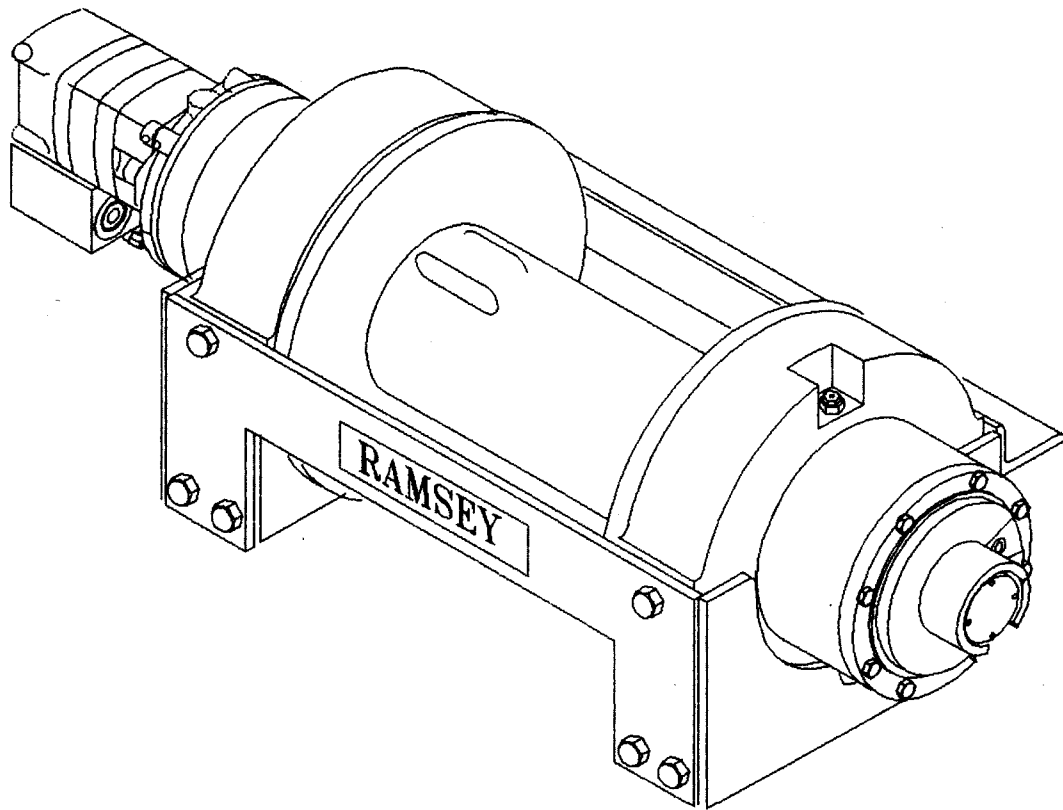




OPERATING, SERVICE AND MAINTENANCE MANUAL



MODEL RPH-25,000 INDUSTRIAL PLANETARY WINCH



**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 (lbs.).....		25,000				
(Kgs.).....		11,340				
Gear Reduction.....		25.53:1				
Weight (without cable).....		380 lb. (172,0 Kgs.)				
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	9,430	8,110	7,070	6,300
*Cable capacity	Ft.	35	75	125	185	245
	M.	10	22	38	56	74
*Line speed (at 15 GPM)	FPM	27	31	36	41	46
	MPM	8,3	9,5	11,1	11,8	14,0
* These specifications are based on recommended wire rope of .62" dia. Extra Improved Plow Steel or equivalent.						
** Does not comply with SAE J706						

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 FRAME MOUNTING

Use (8) 1/2 inch diameter grade 8 or better bolts to attach lower mounting frame to wrecker.

CABLE INSTALLATION

The RPH-25000 winch has two tapered pockets cast into the drum. One pocket is for installations with the wire rope wound over the drum. The other pocket is for an underwound wire rope. When properly used, the wedge pocket design is one of the most secure anchoring methods available.

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.
2. Slide the wire rope through narrow end of the pocket against the drum flange and wrap the wire rope around the anchor "puck" and pull the wire rope and anchor back into the wide end of the pocket. Use a soft hammer to drive the back side of the wire rope, firmly seating the wire rope and anchor, into the pocket.
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.

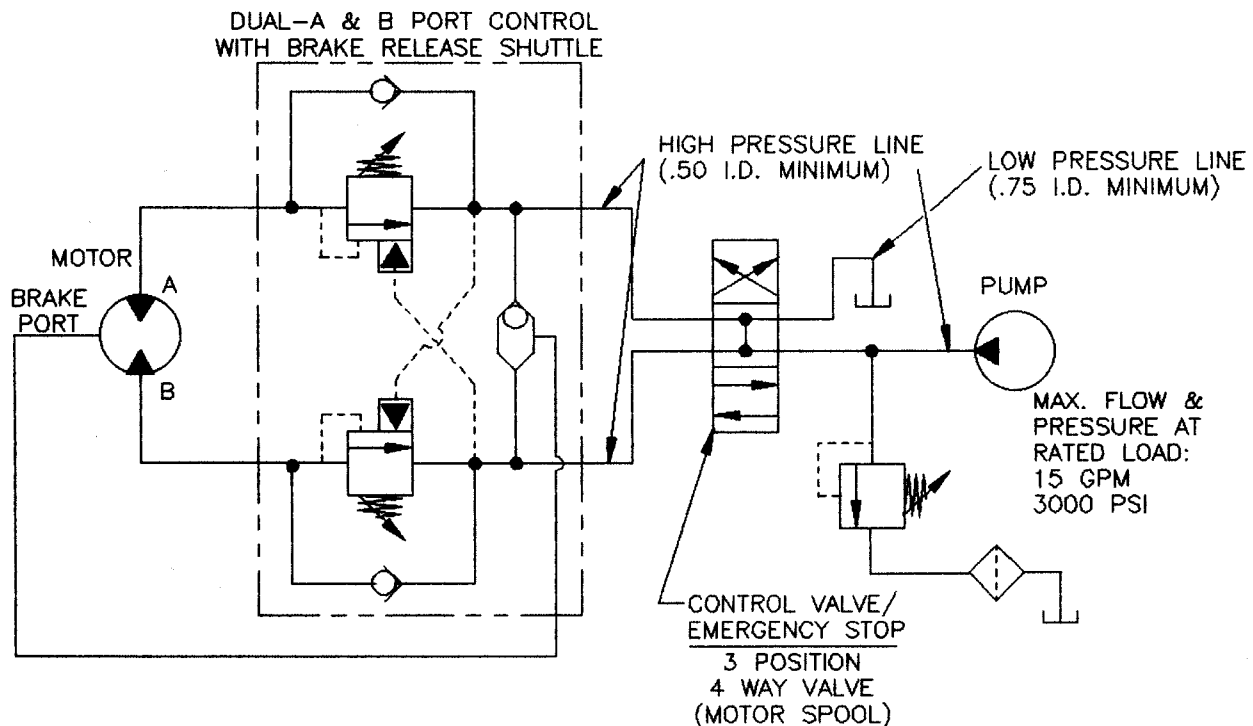
The wire rope can easily be removed from the drum by driving the anchor out the wide end of the pocket.

HYDRAULIC SYSTEM REQUIREMENTS

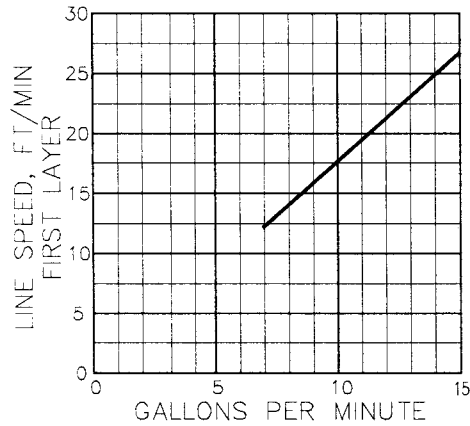
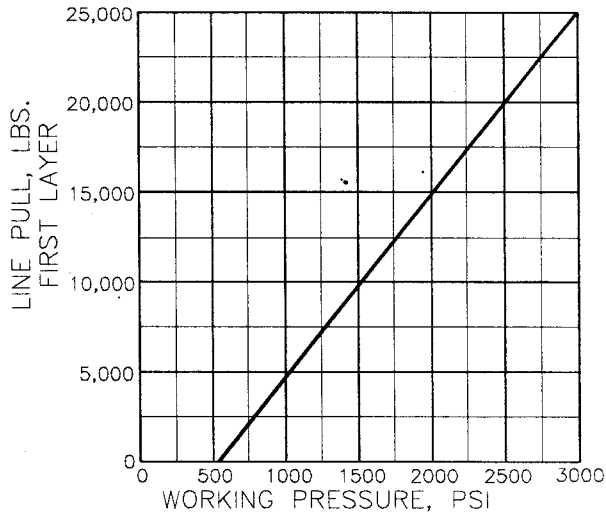
Refer to the performance charts, below, to properly match your hydraulic system to RPH-25000 winch performance. The charts consist of :

(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 8.0 cubic inches with 15 GPM maximum flow rate. See page 13 for motor port size.

TYPICAL LAYOUT



PERFORMANCE CHARTS



BASED ON 8.0 CU. IN./REV. MOTOR

CLUTCH OPERATION

To engage clutch:

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.
 - 2a. 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.
3. 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 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.

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.

TROUBLE SHOOTING GUIDE

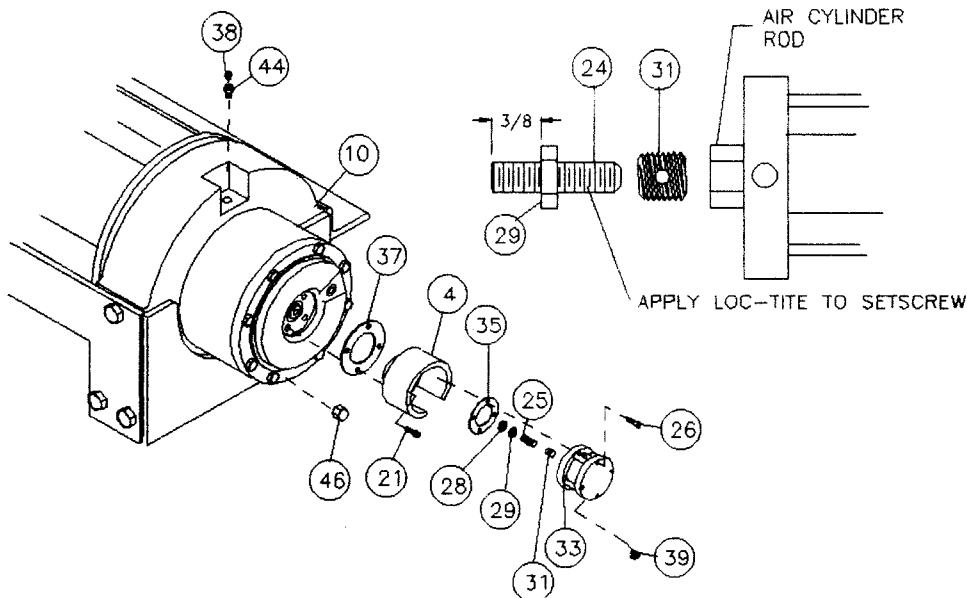
CONDITIONS	POSSIBLE CAUSE	CORRECTION
OIL LEAKS FROM WINCH	<ol style="list-style-type: none">1. Seals damaged or worn.2. Too much oil.3. Damaged gaskets.	<ol style="list-style-type: none">1. Replace seal.2. Drain excess oil. Refer to OPERATION.3. Replace gaskets.
WINCH RUNS TOO SLOW HYDRAULIC	<ol style="list-style-type: none">1. Low flow rate2. Hydraulic motor worn out.	<ol style="list-style-type: none">1. Check flow rate. Refer to SYSTEMS flow chart page 3.2. Replace motor.
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 13.
BRAKE WILL NOT RELEASE	<ol style="list-style-type: none">1. Air in hydraulic system	<ol style="list-style-type: none">1. Bleed air from brake. Refer to page 12.

INSTRUCTIONS FOR OVERHAUL

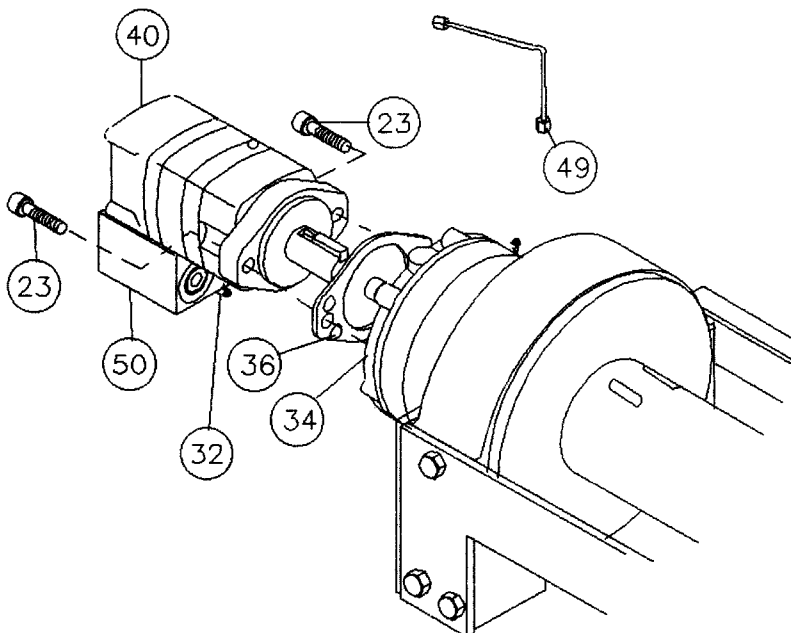
1. Drain oil from gear housing (item #10) by removing pipe cap (item #46) from pipe nipple in end bearing. Remove reducer and relief fitting (items #44 & #38).

If new air cylinder is required, remove air cylinder (item #33) from adapter (item #4) by removing (4) capscrews (item #26). Remove breather vent (item #39). Remove washer (item #28), nut and setscrew (items #29 & #25) and insert (item #31) from end of air cylinder rod. Apply Loc-tite to threads of nut (item #29) and thread onto setscrew (item #25) to 3/8 inch from drive end, as shown below. Apply Loc-tite to threads of setscrew and thread insert (item #31) over end of setscrew and against nut. Use setscrew and nut to thread insert (item #31) 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 #39) and relief fitting (item #38) are not damaged and in good operating condition. Replace if necessary.

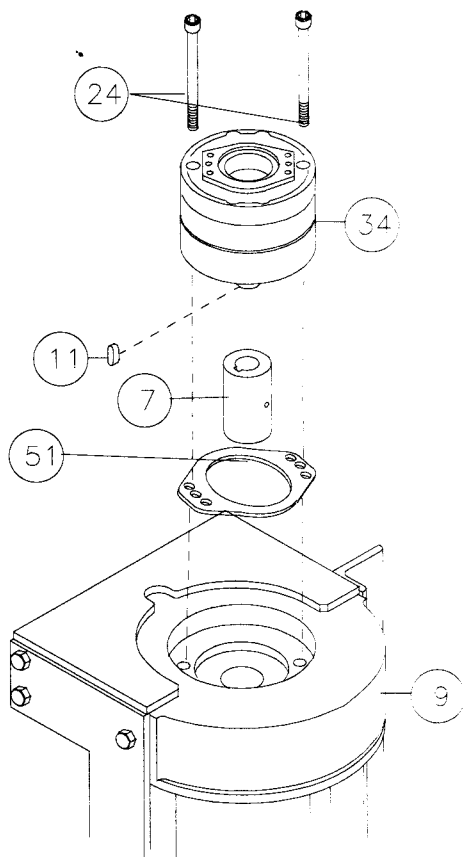
Remove air cylinder adapter (item #4) and gasket (item #37) from gear housing cover by unscrewing (4) capscrews (item #21).



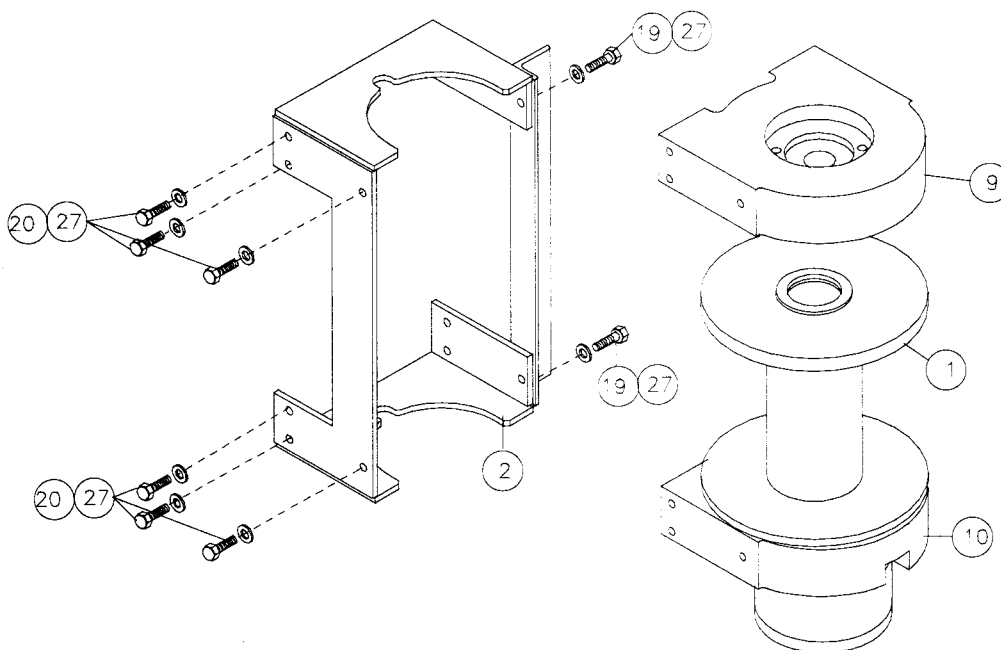
2. Disconnect tube (item #49) from elbows (item #32), as shown. Remove motor (item #40) and gasket (item #36) by removing (2) capscrews (item #23). Remove valve (item #50), if needed, from motor by removing (3) capscrews (item #22), as shown on page 14.



3. Remove brake assembly (item #34) by removing (2) mounting screws (item #24) attaching brake to end bearing (item #9). CAUTION: Brake is spring loaded by clutch spring and must be restrained against end bearing as mounting screws (item #24) are removed. Remove coupling (item #7) and gasket (item #51) from end bearing. Take note of mounting configuration for proper mounting of parts during re-assembly.



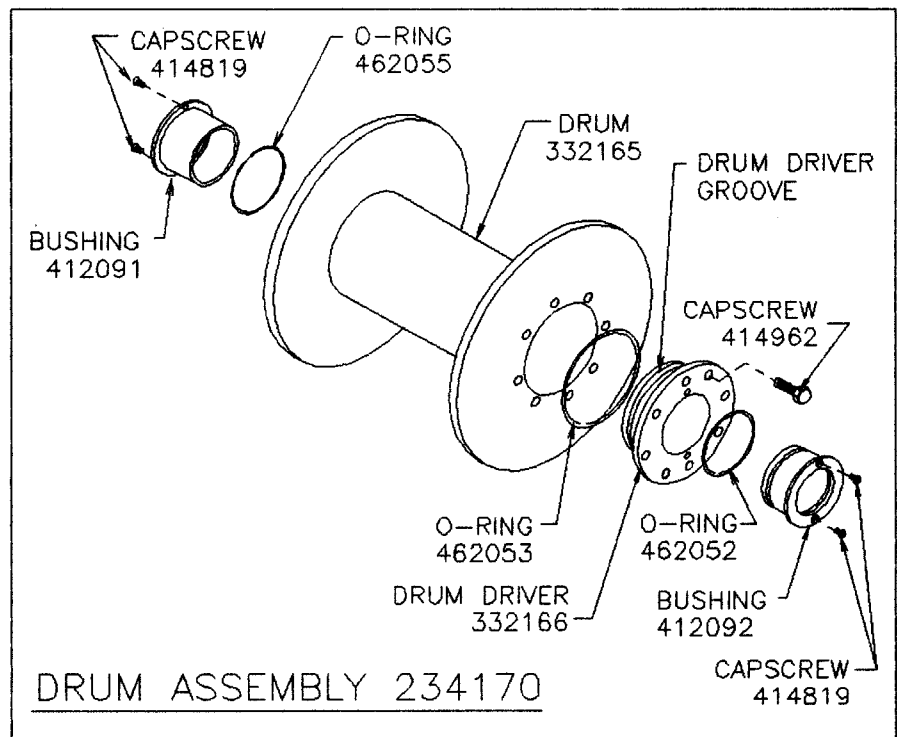
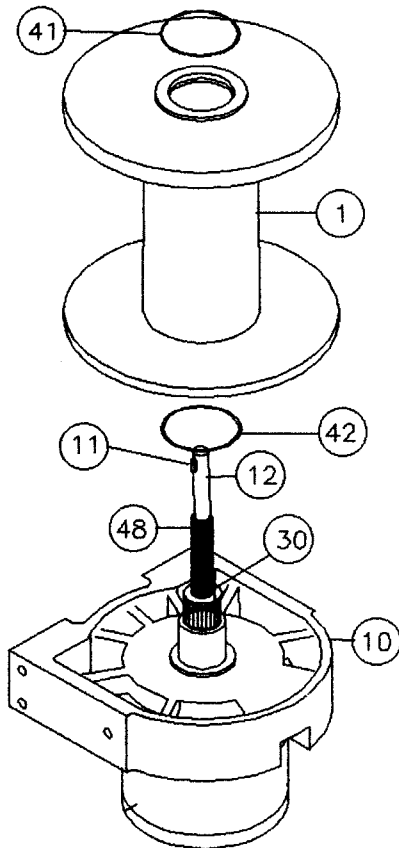
4. Remove winch from upright mounting frame (item #2) by removing (10) capscrews (item #20), (10) lockwashers (item #27) and (2) capscrews (item #19) with (2) lockwashers (item #27). Pull motor end bearing (item #9) from drum assembly (item #1).



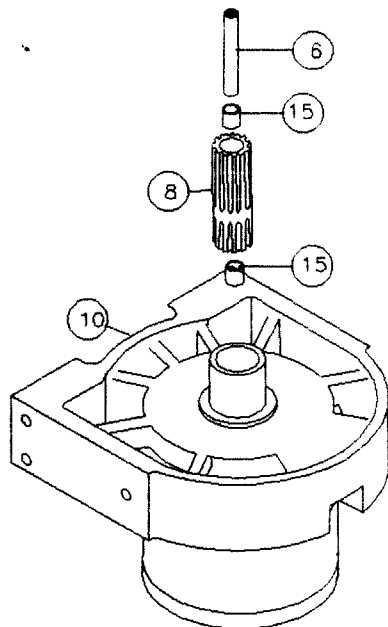
5. Pull drum assembly (item #1) upward from end bearing (item #10). Remove quad-rings (item #41 & #42) from grooves in drum bushings. Remove input shaft (item #12), clutch spring (item #48) and washer (item #30) from end bearing (item #10). Examine key (item #11) and input shaft for signs of wear, replace 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) capscrews (414962). Place well-oiled o-ring (462053) into drum driver groove and attach driver to drum (332165) using (8) capscrews (414962). Torque capscrews 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) capscrews (414819).

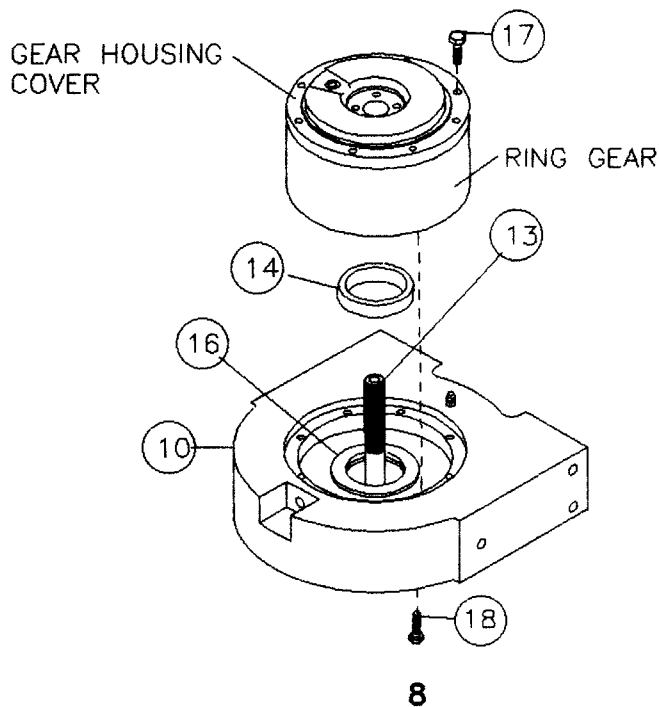


6. Remove output coupling (item #8) and coupling shaft (item #6) from end bearing (item #10). Examine bearings (item #15), pressed in output coupling (item #8), for signs of wear. Replace bearings, if necessary, by pressing old bearings from coupling and press new bearings (item #15) into each end of output coupling (item #8). Place coupling shaft (item #6) into bearings (item #15).



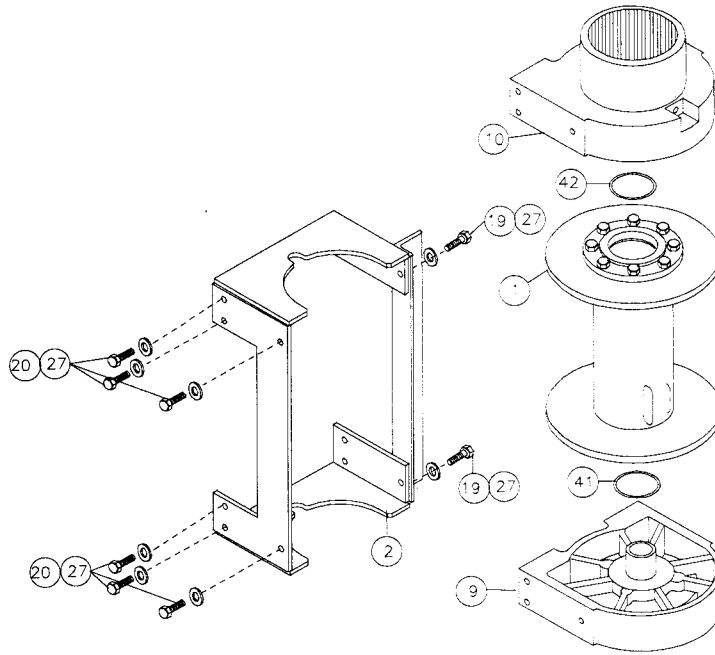
7. Remove (8) capscrews (item #17) to pull gear housing cover from ring gear. Remove input thrust washer, sun gear and carrier assemblies and spacer (item #14) from inside of ring gear. Examine splines of ring gear and if necessary, remove ring gear from end bearing (item #10) by removing (9) capscrews (item #18). Examine bushing (item #16) 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 #10). 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 (9) capscrews (item #18). Examine shifter shaft (item #13) for signs of wear, replace if necessary.



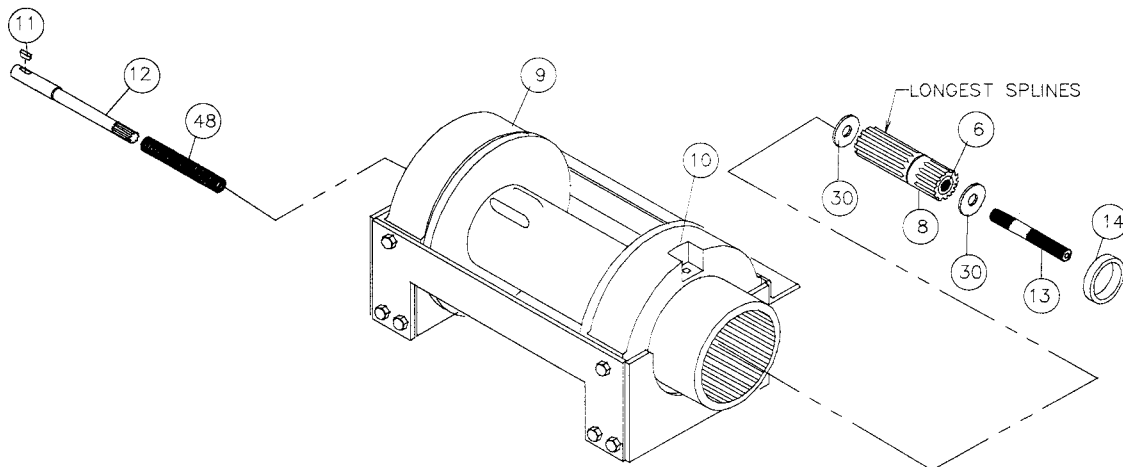
8. NOTE: DETERMINE MOUNTING CONFIGURATION OF WINCH (R.H. or L.H. MOUNTED) BEFORE ATTACHING UPRIGHT FRAME TO WINCH, TO ASSURE PARTS ARE MOUNTED TO PROPER SIDE, REFER TO WINCH MOUNTING CONFIGURATIONS, STEP 14 PAGE 12.

Seat well-oiled quad-rings (item #41 & #42) 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 #9). Lift gear housing end bearing (item #10) and set into place on drum assembly. Attach upright frame (item #2) to end bearings. Install (4) upper-most capscrews (items #20 & #19) with lockwashers (item #27) and hand tighten. Install (8) lower-most capscrews with lockwashers (item #20 & #27). Tighten (4) upper-most capscrews securely, check rotation of cable drum. Tighten (8) lower-most capscrews securely, check rotation of cable drum. Torque the upper-most (item #19) to capscrews to 85 ft.lbs. each, then lower-most (item #20) capscrew to 102 ft.lbs. each. Make sure cable drum assembly rotates freely at this point.

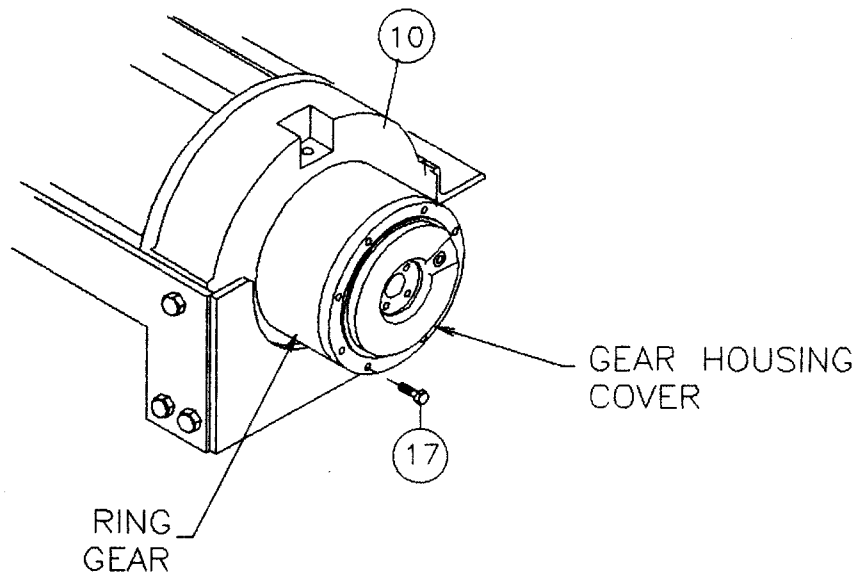


9. Gently tap key (item #11) into keyway of input shaft (item #12). Liberally apply grease to shoulder of input shaft (item #12). Place spring (item #48) over splined end of shaft. Use grease to hold spring in place on shaft.

Place spring and splined end of shaft through motor end bearing (item #9) and drum until shaft extends through bushing (item #16) in end bearing (item #10). Place clutch washer (item #30) over splined end of shaft and against spring. Place end of output coupling assembly (item #8), with longest splines, through end bearing bushing (item #16) and mesh shaft coupling spline with splined end of shaft. Place short splined end of shifter shaft (item #13) through washer (item #30) and into shaft coupling (item #6), meshing splines of shifter shaft with splines in shaft coupling.

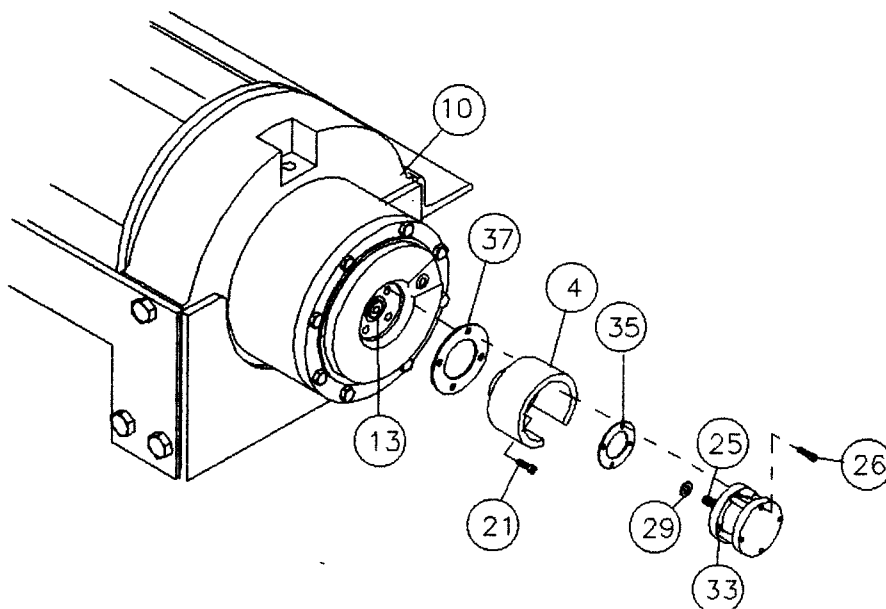


10. Place (2) gear carrier assemblies into ring gear meshing carrier gears with ring gear. Make sure that ring gear and carrier assemblies are securely against end bearing (item #10). Apply RTV sealing compound to cover mounting surface of ring gear and attach cover to ring gear. Use (8) capscrews (item #17) to secure gear box cover to gear housing end bearing. Torque capscrews to 28 ft. lbs. each, in criss-cross pattern.



11. Place gasket (item #37) into position on gear box cover with sealer and attach adapter to cover using (4) capscrews (item #21). Apply Loctite PST thread sealer to threads of capscrews. Torque capscrews to 13 ft. lbs. each, in criss-cross pattern.

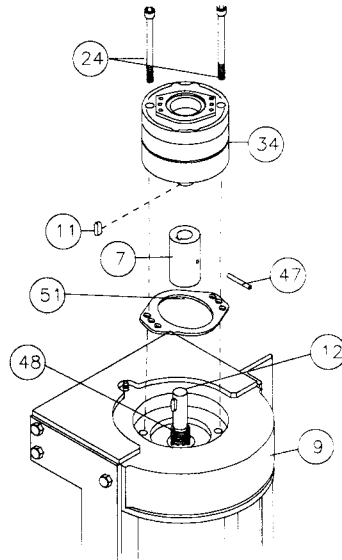
Pull rod from air cylinder as far as possible. Slide washer (item #29) over setscrew (item #25) and against nut attached to air cylinder rod. Place setscrew into hole of shifter shaft (item #13). Attach new air cylinder (item #33) and gasket (item #35) with sealer, to adapter using (4) capscrews (item #26). Apply Loctite PST thread sealer to threads of capscrews. Torque capscrews to 5 ft. lbs. each, in criss-cross pattern.



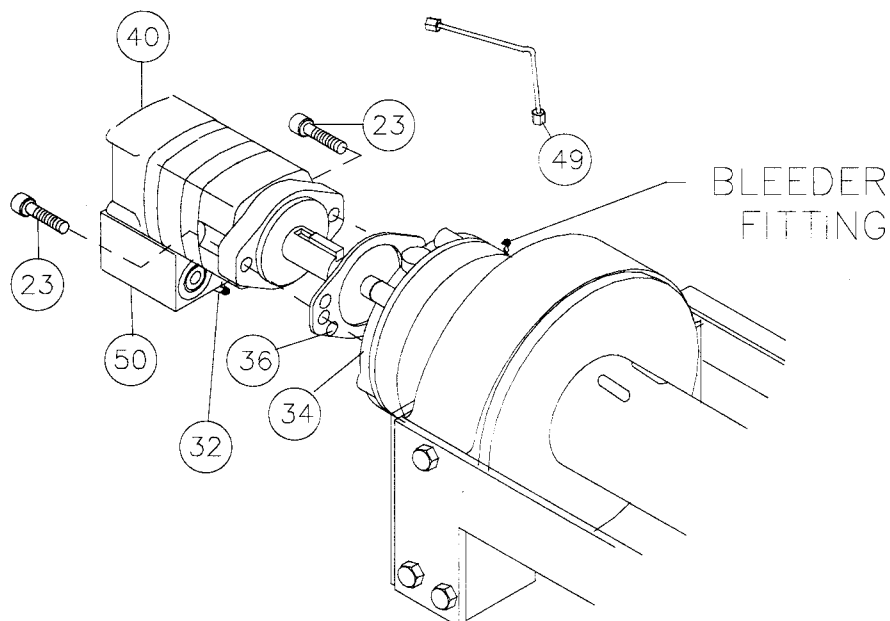
12. With pin (item #46) installed in coupling, align keyway of coupling (item #7) with key and end of input shaft below. Slide coupling over end of shaft (item #12). Place gasket (Item #51) into position on motor mounting surface of end bearing (item #9). Insert brake shaft (with key) into coupling. Use (2) screws (item #24) to attach brake assembly to motor end bearing.

Alternately tighten one, then the other of the capscrews (item #24) in a back and forth manner, thus compressing spring (item #48) and pulling the brake assembly down against end bearing (item #9). Torque capscrews to 85 ft lbs each.

NOTE: Care must be taken to assure brake assembly is seated properly prior to installing 1/2-13UNC assembly bolts. Damage will occur to rotor stack or shaft snap ring if not properly seated.

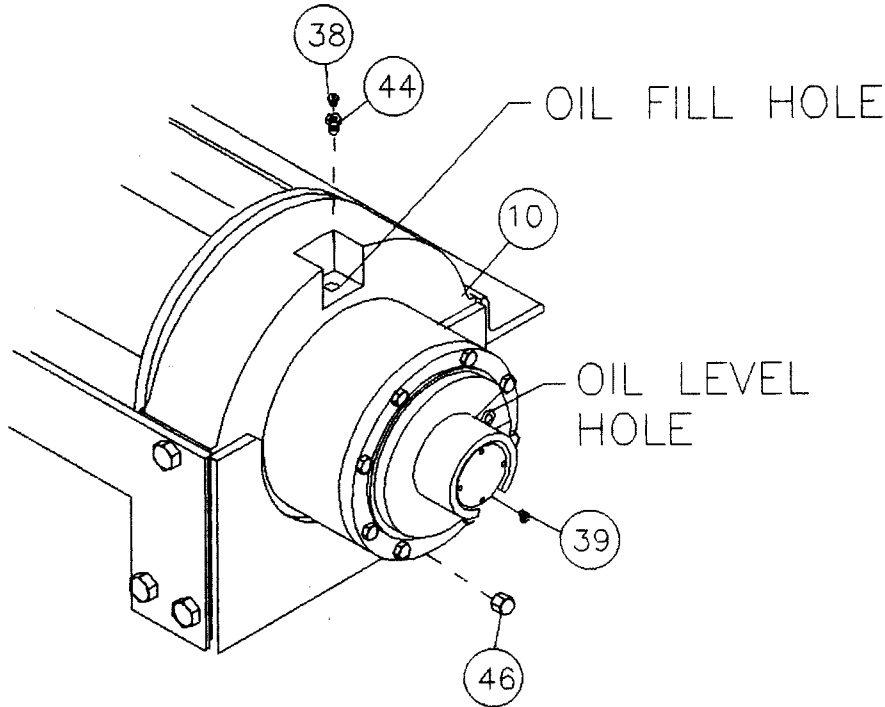


13. Attach motor (item #40) with gasket (item #36) to brake (item #34). Use (2) capscrews (item #23) and torque to 74 ft. lbs. each. Securely connect tube (item #49) to elbow (item #32), in bottom of valve (item #50), and brake (item #34).

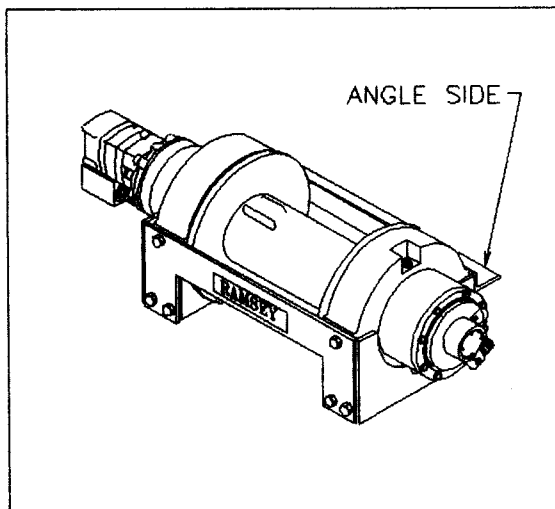


14. Apply Permatex to threads of pipe cap (item #46). Thread pipe cap onto pipe nipple in bottom of gear housing end bearing (item #10). Pour approx. 1.75 pints of SAE 80W-140 oil into end bearing. Check oil level by removing oil plug noted below. Insert relief fitting (item #38) and thread reducer (item #44) into end bearing at oil fill hole.

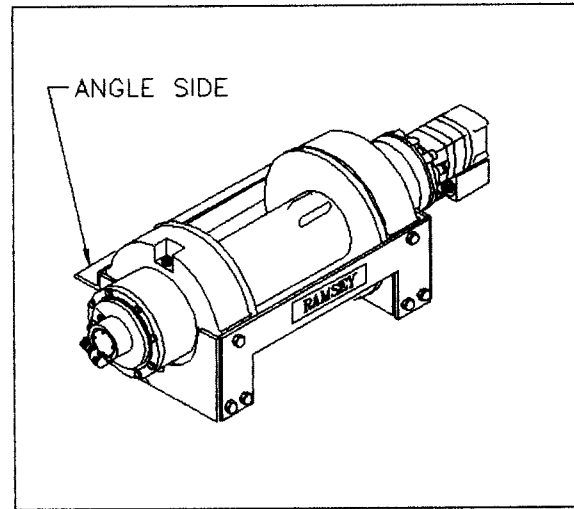
Install winch and connect pressure lines. Bleed pressure release section of brake by loosening bleeder fitting on brake and allowing air to escape while slowly applying hydraulic system pressure to the winch (refer to bleeder fitting in step 13). Apply at least 230 PSI pressure to release brake and verify that brake releases, by observing that the winch drum rotates.



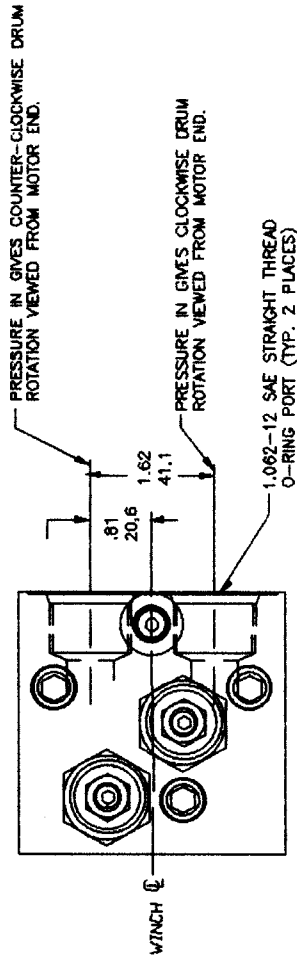
WINCH MOUNTING CONFIGURATIONS



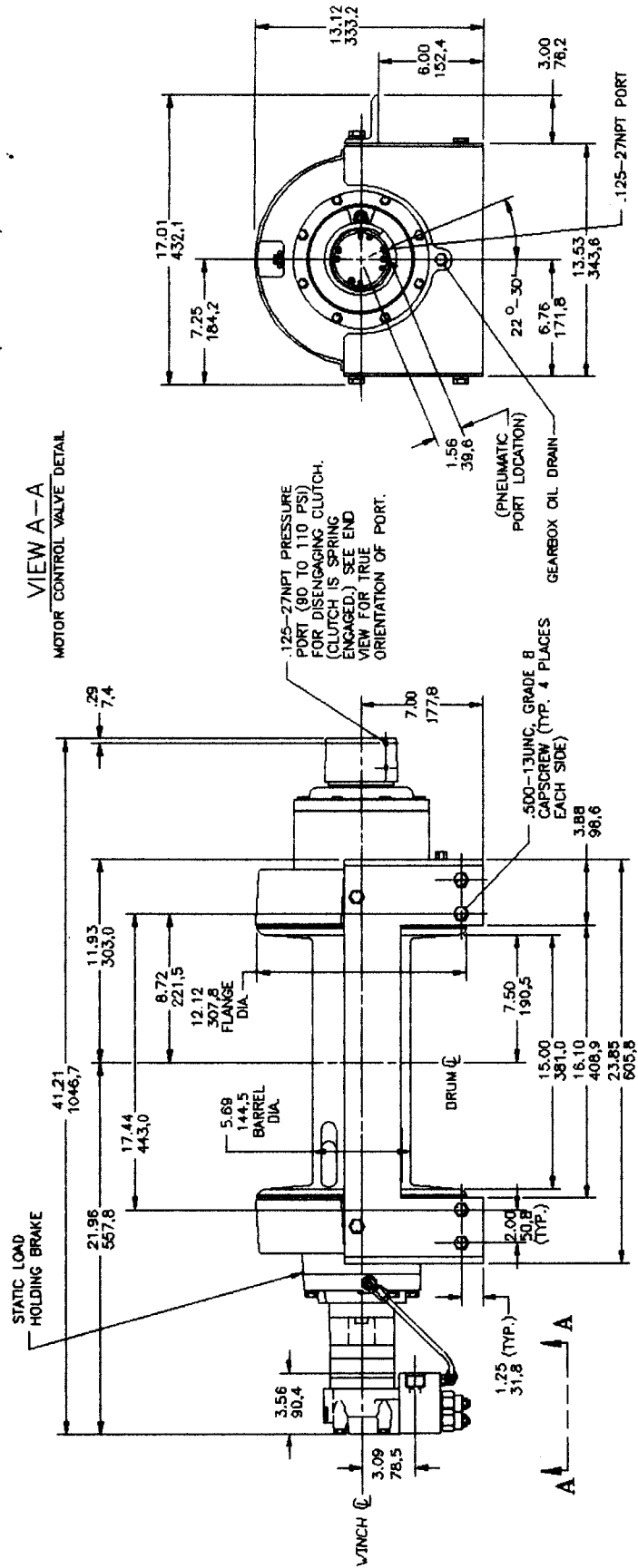
R. H. MOUNTING CONFIGURATION



L. H. MOUNTING CONFIGURATION

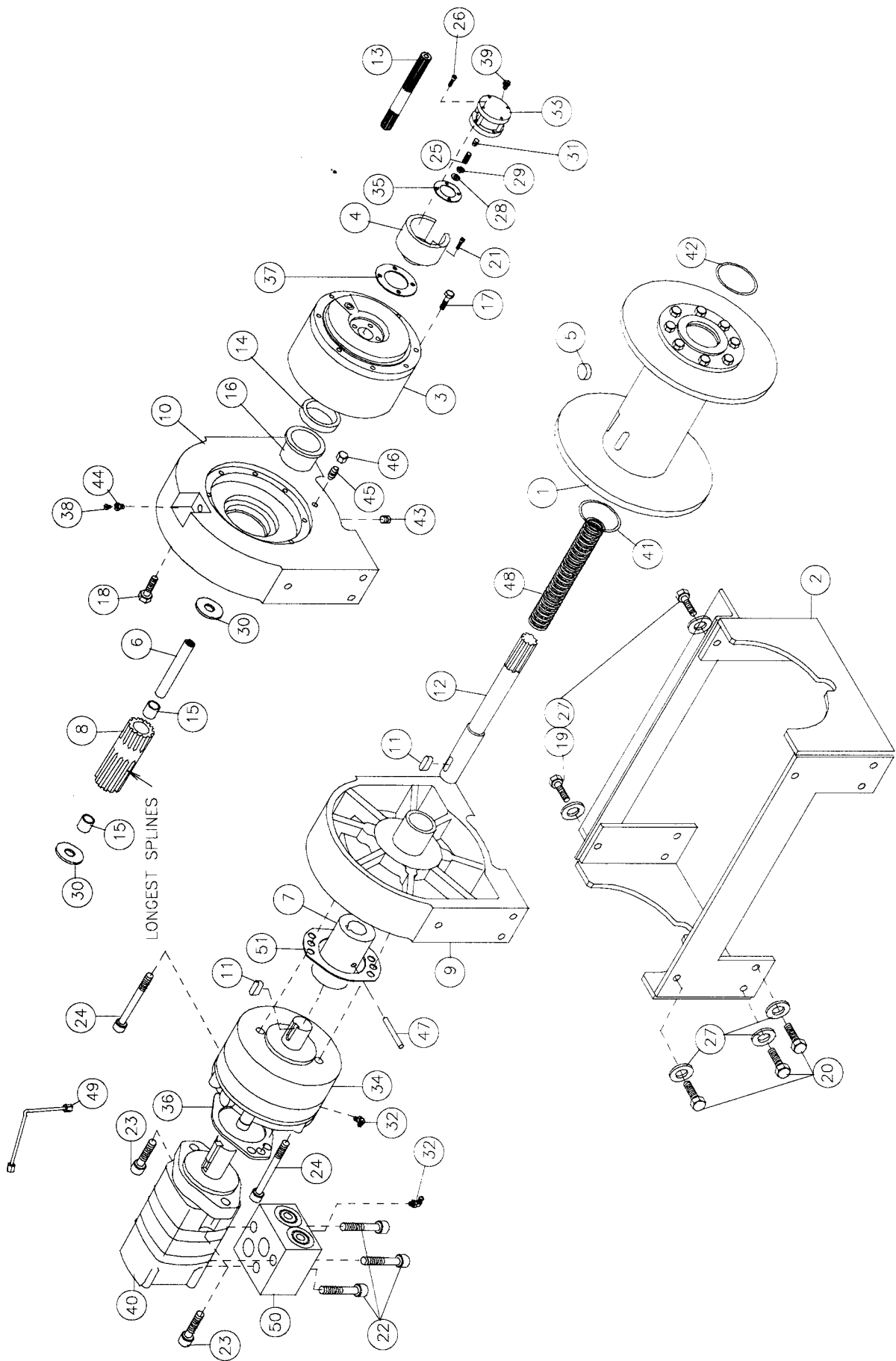


VIEW A-A
MOTOR CONTROL VALVE DETAIL



DIMENSIONS SHOWN ARE INCHES OVER MILLIMETERS

MODEL RPH-25,000



MODEL RPH 25,000

PARTS LIST FOR RPH-25000

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	234170	DRUM ASSEMBLY
2	1	242157	UPRIGHT MOUNTING FRAME
3	1	296451	GEAR BOX
4	1	300070	ADAPTER-AIR CYLINDER
5	1	314010	CABLE ANCHOR
6	1	324294	COUPLING-SHAFT
7	1	324290	COUPLING-BRAKE
8	1	324293	COUPLING-OUTPUT
9	1	338294	END BEARING-MOTOR
10	1	338299	END BEARING-GEAR
11	2	342194	KEY-RD. END
12	1	357496	SHAFT-INPUT
13	1	358070	SHIFTER SHAFT
14	1	362269	SPACER
15	2	402119	BEARING
16	1	412090	BUSHING-THRUST
17	8	414139	CAPSCREW 5/16-18NC X 1-1/4 LG. HX.HD. GR.5
18	9	414369	CAPSCREW 3/8-24NF X 2-1/4 LG. HX.HD. GR.5
19	2	414564	CAPSCREW 1/2-13NC X 1-1/2 LG. HX.HD.GR.5
20	10	414591	CAPSCREW 1/2-13NC X 1-1/4 LG. HX.HD.GR.8
21	4	414865	CAPSCREW 5/16-18NC X 1 LG. HX.SOC. HD.
22	3	414935	CAPSCREW 3/8-16NC X 2-1/2 LG. HX.SOC.HD.
23	2	414948	CAPSCREW 1/2-13NC X 1-1/4 LG. SOC.HD.
24	2	414958	CAPSCREW 1/2-13NC X 4 LG. SOC.HD.
25	1	416051	SETSCREW 5/16-24NFX 1 LG. SOC.HD.LESS
26	4	416233	CAPSCREW #10-24NC X 2-1/2 LG. HX.SOC.
27	12	418218	LOCKWASHER 1/2 MED.SECT.
28	1	418432	WASHER-THRUST
29	1	418433	NUT-5/16 24NF X 3/16 THK. LOCK
30	2	418462	WASHER-CLUTCH
31	1	426045	INSERT
32	2	432018	FITTING-HYD. 7/16-20 90° ELBOW
33	1	433014	AIR-CYLINDER
34	1	438020	BRAKE
*35	1	442217	GASKET-AIR CYLINDER
*36	1	442215	GASKET-BRAKE
*37	1	442218	GASKET-ADAPTER
38	1	456008	RELIEF FITTING
39	1	456038	BREATHER VENT
40	1	458081	MOTOR-HYD.
*41	1	462012	QUAD-RING
*42	1	462050	QUAD-RING
43	1	468017	PIPE PLUG
44	1	468024	REDUCER
45	1	468036	PIPE NIPPLE
46	1	468037	PIPE CAP
47	1	470091	PIN
48	1	494108	SPRING
49	1	509006	TUBE ASSEMBLY
50	1	516011	VALVE-CONTROL
*51	1	442224	GASKET-BRAKE

* THESE ITEMS ARE PART OF SEAL AND GASKET KIT #246047. ALSO INCLUDED ARE (3) O-RINGS USED IN DRUM ASSEMBLY 234170, REFER TO PAGE 7.

NOTES

NOTES

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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