

# WILDCAT<sup>®</sup> WINCH SERIES

By **RAMSEY  
WINCH<sup>®</sup>**

OPERATING, SERVICE AND MAINTENANCE MANUAL



## WILDCAT 85K MODEL WC 85R 85,000 LB INDUSTRIAL WINCH



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

OM-914274-0715-D

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# RAMSEY HYDRAULIC PLANETARY WINCH MODEL WC 85 K

**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 post-age 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\***

<b>APPROXIMATE WEIGHT</b> ..... 1685 LBS.										
<b>WORKING PRESSURE:</b> ..... 2750 PSI										
<b>CABLE DIAMETER:</b> ..... 1 INCH										
<b>MAX FLOW:</b> ..... 60 GPM										
LAYER OF CABLE	CABLE CAPACITY		LOW SPEED				HIGH SPEED			
			LINE PULL		LINE SPEED		LINE PULL		LINE SPEED	
	Ft	m	Lb	Kg	fpm	mpm	Lb	Kg	fpm	mpm
1	45	13	85000	38550	27	8	37000	16780	58	18
2	105	32	70800	32110	31	9	30800	13970	68	21
3	170	51	60700	27530	36	11	26400	11970	78	24
4	250	76	53100	24080	41	12	23100	10470	89	27
5	335	102	47200	21400	46	14	20500	9290	99	30
* These specifications are based on recommended wire rope of 1" Extra Improved Plow Steel Cable and a 10.28 cu. In. / Rev. motor.										

**WARNINGS:**

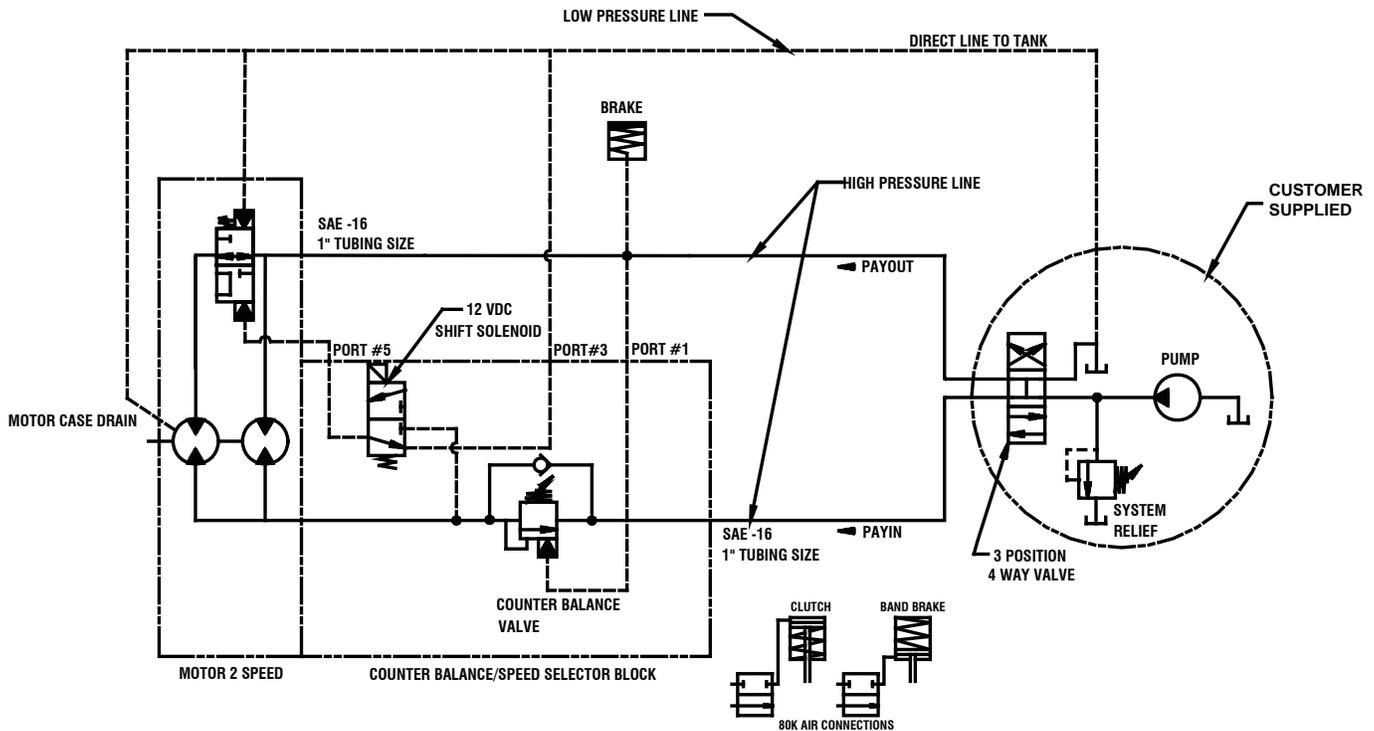
- CLUTCH MUST BE FULLY ENGAGED BEFORE STARTING THE WINCHING OPERATION.**
- DO NOT START WINCH MOTOR BEFORE ENGAGING CLUTCH.**
- DO NOT DISENGAGE CLUTCH UNDER LOAD.**
- STAY OUT FROM UNDER AND AWAY FROM RAISED LOADS.**
- STAND CLEAR OF CABLE WHILE PULLING. DO NOT TRY TO GUIDE CABLE.**
- DO NOT EXCEED 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.**
- BAND BRAKE IS NOT TO BE USED TO HOLD LOAD**

# HYDRAULIC SYSTEM REQUIREMENTS

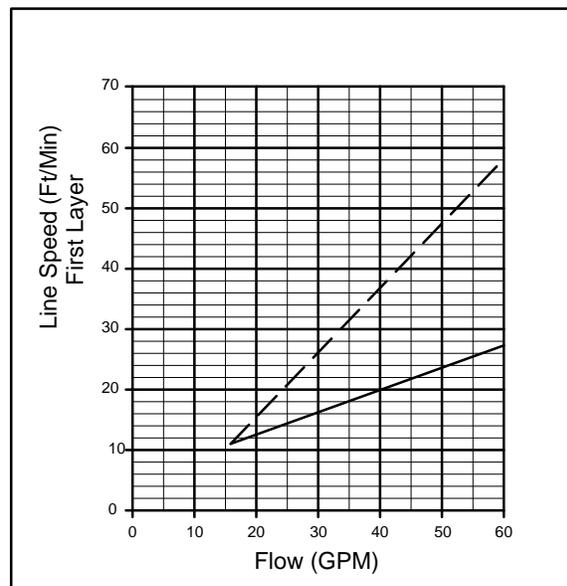
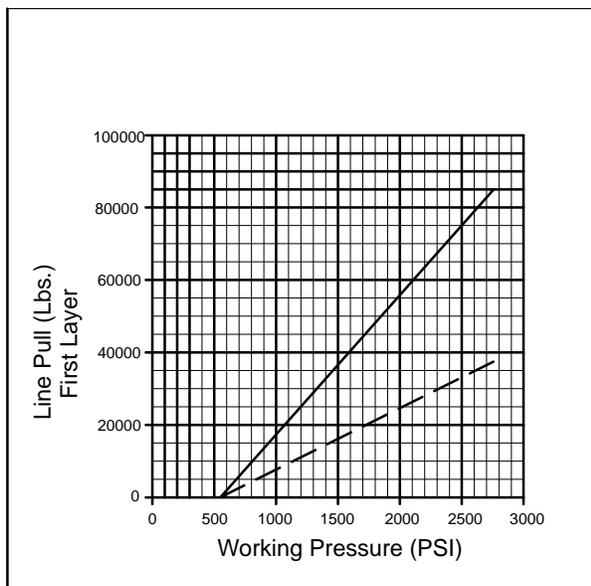
Refer to the performance charts, below, to properly match your hydraulic system to winch performance. The charts consist of:

- (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 10.28 cubic inches/rev with 60 GPM maximum flow rate. Motor has (2) 1"-12 SAE straight thread o-ring ports.

**Note: A motor spool (open center) directional control valve is required for brake operation.**



## PERFORMANCE CHARTS



BASED ON 10.28 CU IN/REV MOTOR



# **CLUTCH OPERATION**

**WARNING: CLUTCH MUST BE FULLY ENGAGED BEFORE STARTING THE WINCHING OPERATION.**

To engage clutch:

1. Move clutch control to engage the clutch.
2. Run the motor in the cable out direction until the drum begins to turn.

**WARNING: DO NOT DISENGAGE CLUTCH UNDER LOAD.**

To disengage clutch:

1. Run the winch in the “cable out” direction until the load is off the cable.
2. Move the clutch control to disengage the clutch. The cable may now be spooled off.

## **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.

Drum bushings are oil impregnated with synthetic oil. The drum bushings do not require additional grease.

### **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 on the gear housing cover and the brake housing cover. Be sure they are not plugged.
3. Lubricate cable with light oil.
4. Apply a high quality lithium grease to clutch spline. Apply band brake to control drum. Declutch drum and apply grease to spline between clutch and drum.

### **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. Refill the winch to the oil level plug with all purpose GL-5 oil, (see page 5) for gear lube compatible with your climate.
3. Inspect winch for damage and wear.

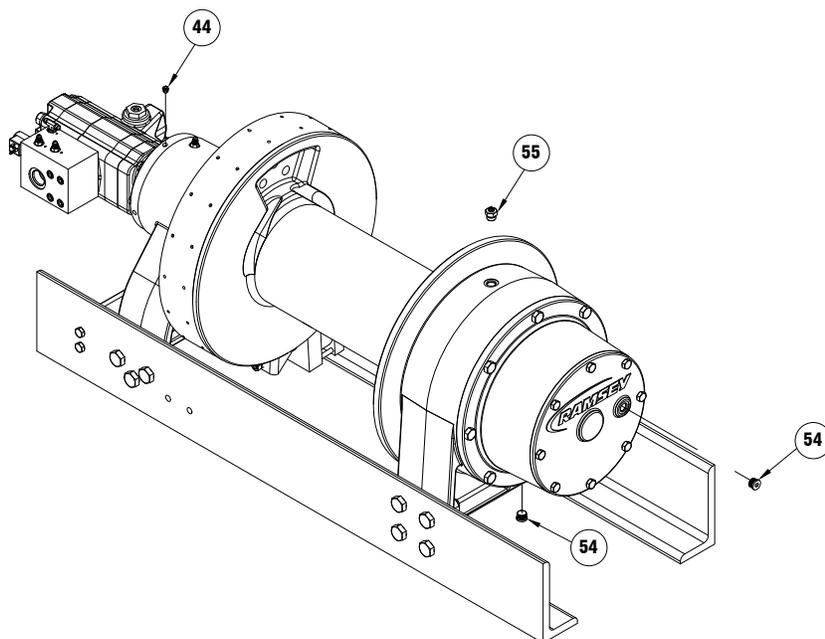
# LUBRICANT CHART AND TROUBLE SHOOTING GUIDE

Lubricant Description*	Temp Range F(C)		
	Min Ambient & Operating	Max Ambient	Max Operating
80W140 Synthetic	-25 (-32)	125 (52)	225 (107)
75W90 Synthetic	-40 (-40)	115 (46)	215 (102)
80W90 Conventional	-20 (-29)	100 (38)	180 (82)
85W140 Conventional	20 (6)	120 (50)	200 (93)
*Use API GL-5 or EP lubricants.			

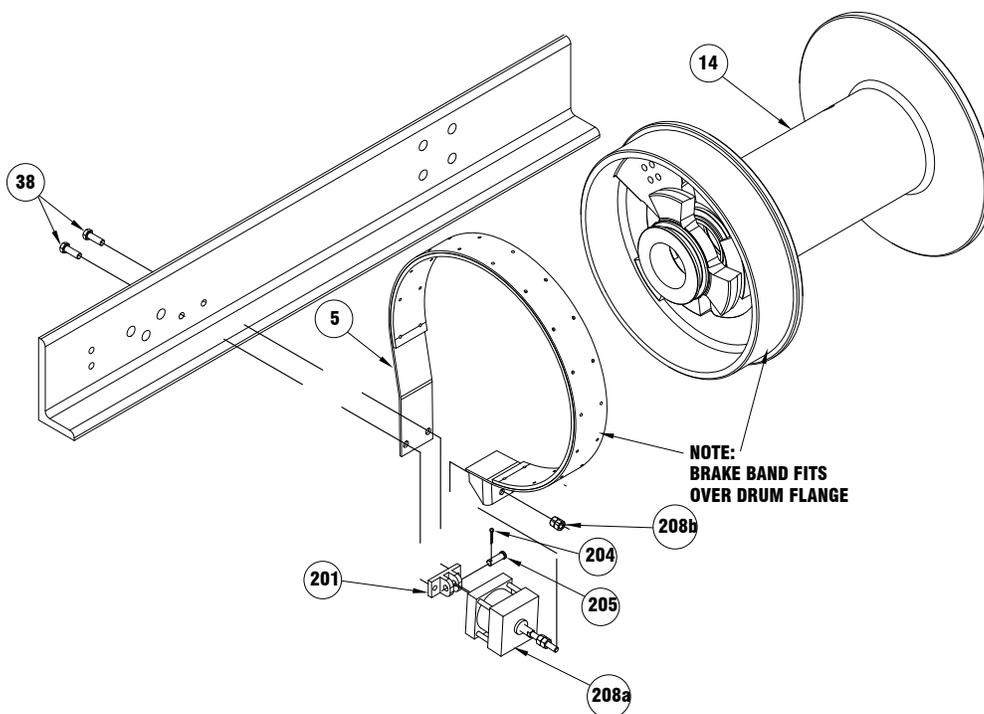
CONDITIONS	POSSIBLE CAUSE	CORRECTION
<b>OIL LEAKS FROM WINCH</b>	<ol style="list-style-type: none"> <li>1. Seals damaged or worn.</li> <li>2. Too much oil.</li> <li>3. Damaged o-rings.</li> <li>4. Case drain not connected.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace seal</li> <li>2. Drain excess oil. Refer to page 6.</li> <li>3. Replace o-rings.</li> <li>4. Connect case drain.</li> </ol>
<b>WINCH RUNS TOO SLOW</b>	<ol style="list-style-type: none"> <li>1. Low flow rate.</li> <li>2. Hydraulic motor worn out.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check flow rate. Refer to HYDRAULIC SYSTEMS performance chart on page 2.</li> <li>2. Replace motor.</li> </ol>
<b>CABLE DRUM WILL NOT FREESPOOL</b>	<ol style="list-style-type: none"> <li>1. Clutch not disengaged</li> </ol>	<ol style="list-style-type: none"> <li>1. Check operation. Refer to Clutch Operation on page 4.</li> </ol>
<b>BRAKE WILL NOT HOLD</b>	<ol style="list-style-type: none"> <li>1. Incorrect directional control valve. (cylinder spool, closed center).</li> <li>2. Excessive hydraulic system back pressure.</li> <li>3. Sprag clutch worn out.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use only a motor spool (open center) directional control valve.</li> <li>2. Reduce system back pressure to less than 100 psi.</li> <li>3. Replace sprag clutch mechanism.</li> </ol>
<b>BRAKE WILL NOT RELEASE</b>	<ol style="list-style-type: none"> <li>1. Brake line disconnected or blocked</li> </ol>	<ol style="list-style-type: none"> <li>1. Repair brake line.</li> </ol>
<b>WINCH WILL NOT OPERATE AT HIGH SPEED</b>	<ol style="list-style-type: none"> <li>1. Shift solenoid not working.</li> </ol>	<ol style="list-style-type: none"> <li>1. Verify shift spool is energized.</li> </ol>
<b>WINCH OPERATES ERRATICALLY ON INHAUL</b>	<ol style="list-style-type: none"> <li>1. Sprag hub is reversed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Install sprag hub correctly.</li> </ol>

## INSTRUCTIONS FOR DISASSEMBLY

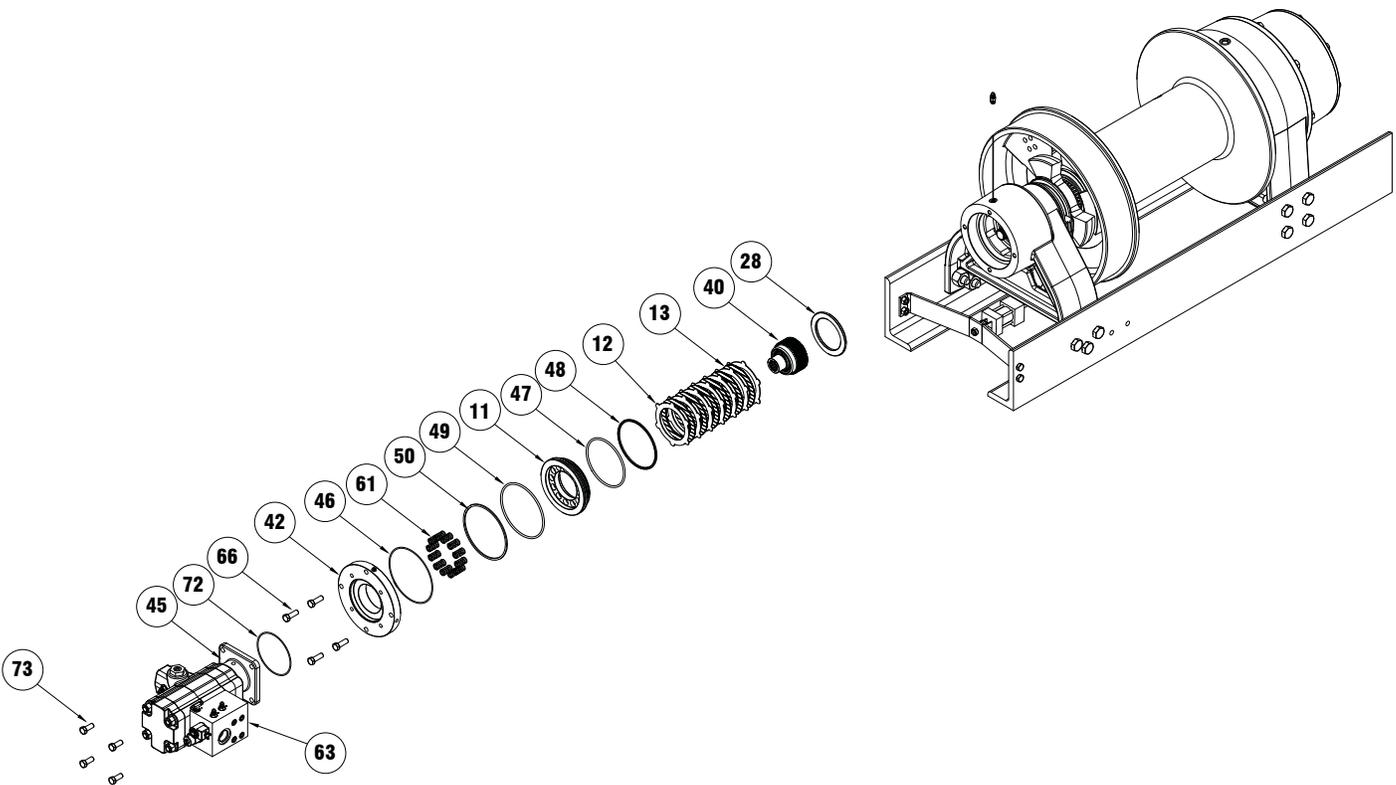
1. Remove wire rope from drum.
2. Drain oil from winch by removing (2) plugs #54, removing the lower plug first.
3. When replacing lubricant, use 264 oz of applicable lube for your climate form table on page 5, adding 4 oz at #44 and the remaining at # 55.



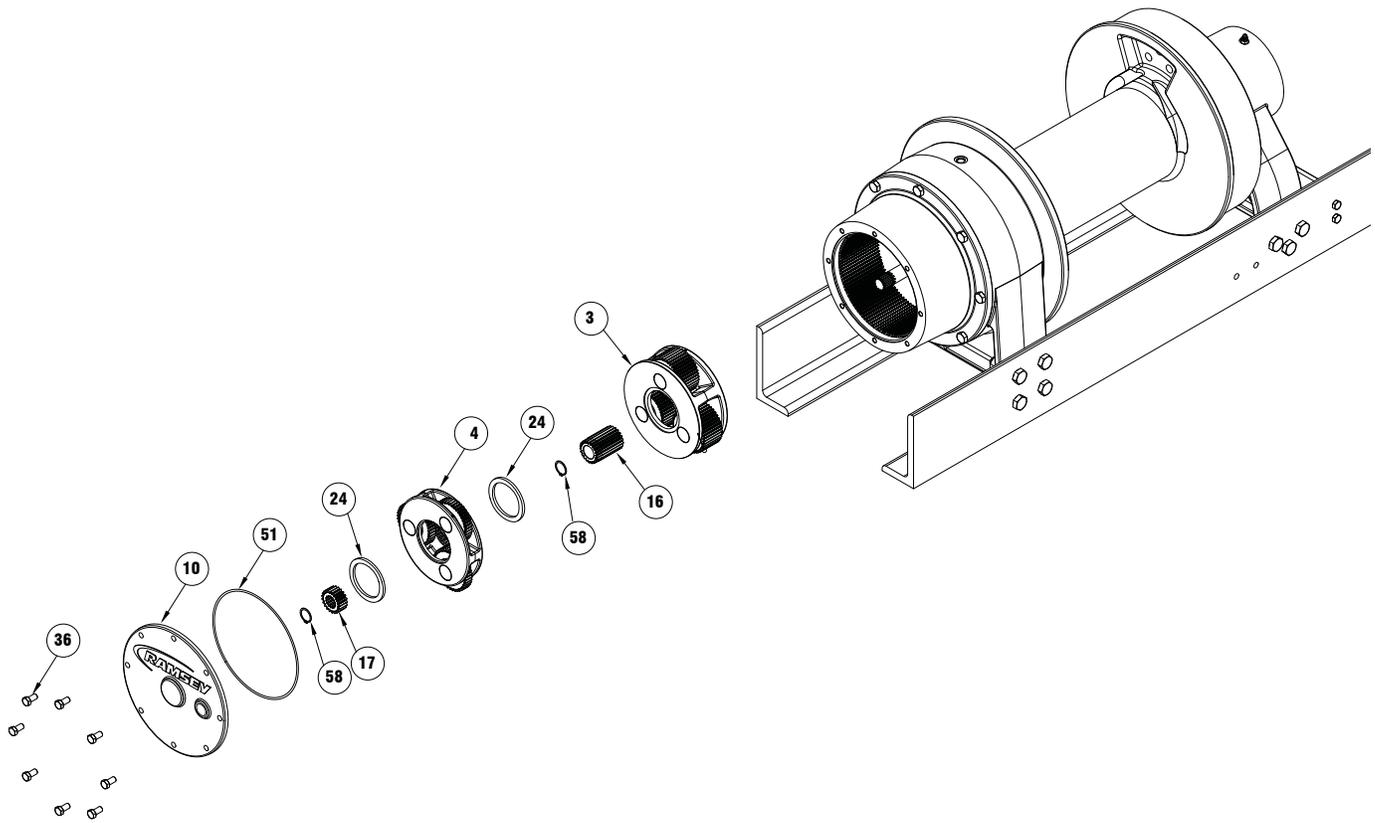
4. Remove (2) nuts #208b from air cylinder #208a. Air cylinder may now be removed. If needed, mounting bracket #201 may be removed by removing pin #204 from pin #205 and then sliding pin out of mounting bracket. Brake band #5 may be expanded over drum flange to barrel for easiest removal.



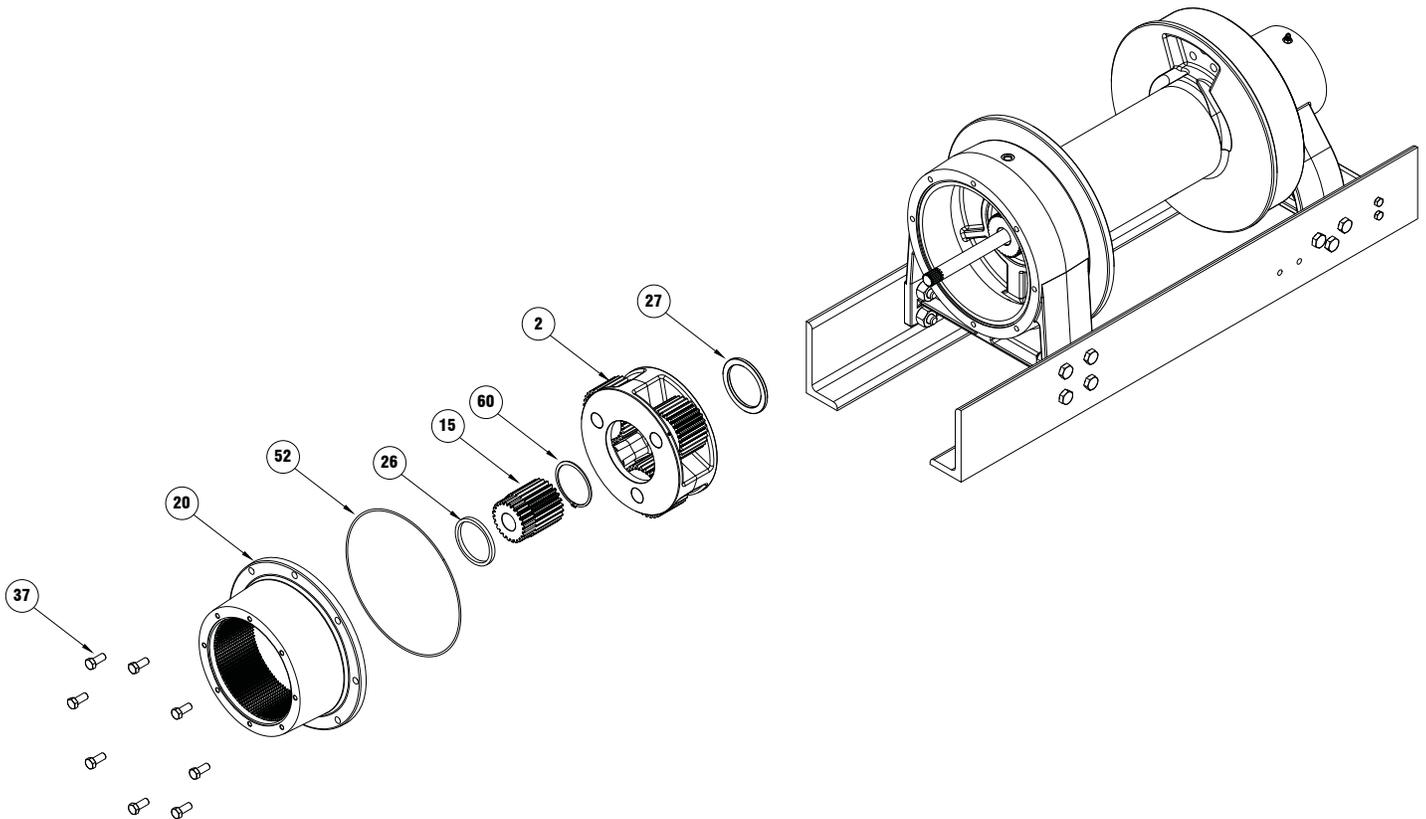
5. Remove motor #45 from winch by first disconnecting hydraulic lines (see page 17), solenoid wires, and then remove (4) bolts #73. O-ring #72 may now be removed.
6. Remove brake cover #42 by removing (4) bolts #66. The cover is spring loaded, use care when removing. Remove o-ring #46 then springs #61 may be removed; residual oil may be present in the brake housing.
7. Remove piston #11 including o-rings and backup rings #47, #48, #49, and #50 by using a momentary puff of compressed air into the brake port located on top of the end bearing. Capture the piston by placing a shop rag over the opening prior to using air.
8. Remove the sprag brake hub assembly #40, (7) stator plates #12, (6) disc brakes #13, and the spacer #28. The sprag brake hub assembly #40 is not a serviceable part, if damaged a replacement assembly should be ordered.



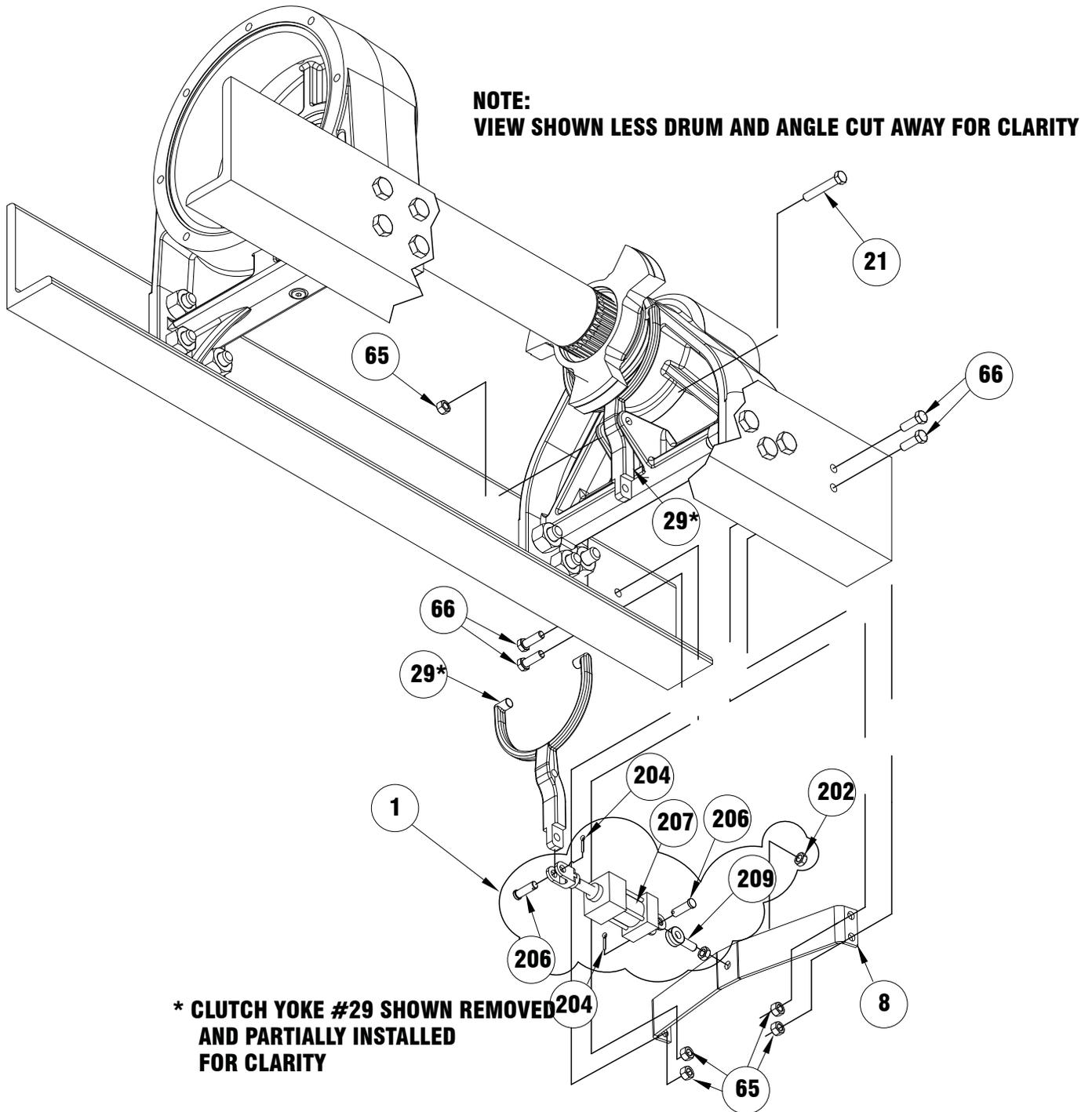
9. Remove (8) cover bolts #36; cover #10, and o-ring #51.
10. Remove snap ring #58, and sun gear #17.
11. The planetary carrier assembly #4 may now be removed along with (2) spacers #24.
12. Remove second snap ring #58 and intermediate sun gear #16.
13. Planetary carrier assembly #3 may now be removed.



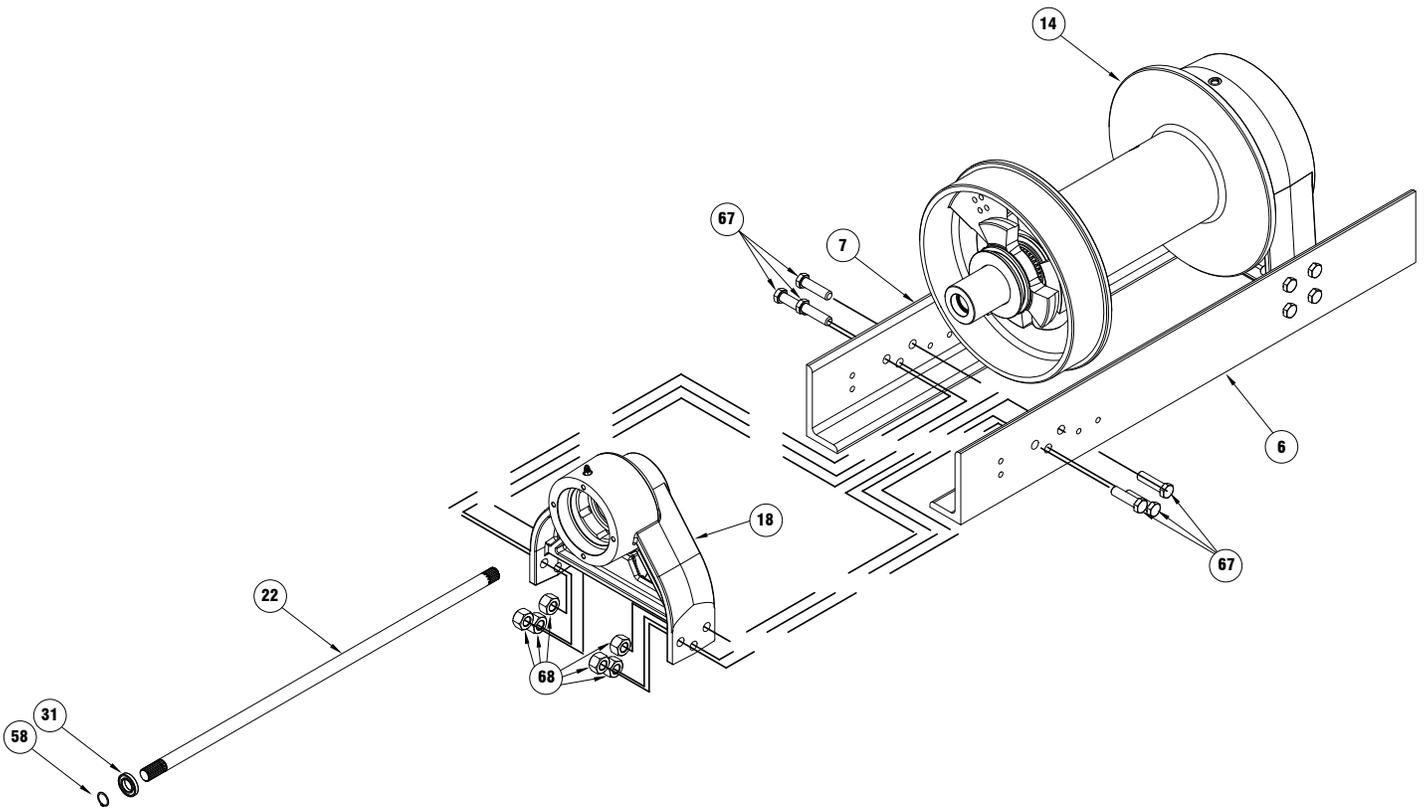
14. Using a nylon strap, support ring gear #20 from a hoist or boom, this ring gear is heavy. Remove (8) bolts #37 leaving the top most bolt for last. Remove the final bolt while supporting ring gear. Set ring gear aside. Remove the o-ring #52.
15. Remove spacer #26 and the output sun gear #15.
16. Using a large pair of snap ring pliers remove the snap ring #60 from the shaft located inside the planetary carrier assembly #2.
17. Using a nylon strap and hoist slide the output planetary carrier #2 from the ring gear housing. The output planetary carrier is heavy.
18. Remove the spacer #27.



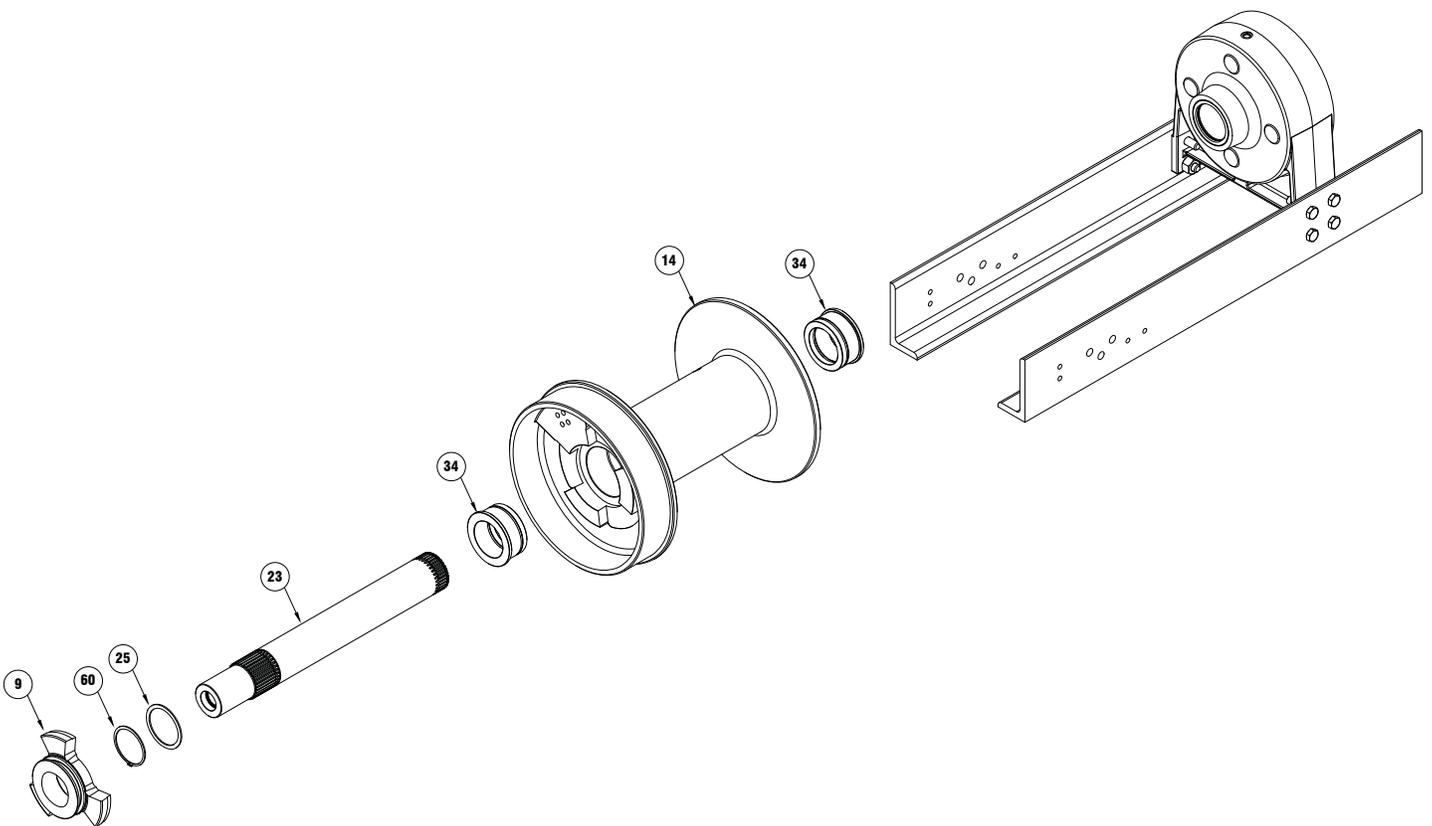
19. Remove the clutch cylinder #1 by removing the (2) cotter keys #204 and (2) pins #206 from either end of the air cylinder #207.
20. The clutch cylinder support angle #8 can be removed by removing the four bolts #66 and nuts #65 attaching it to the mounting angles.
21. Remove the clutch yoke #29 by removing center pivot bolt #21 and nut #65.



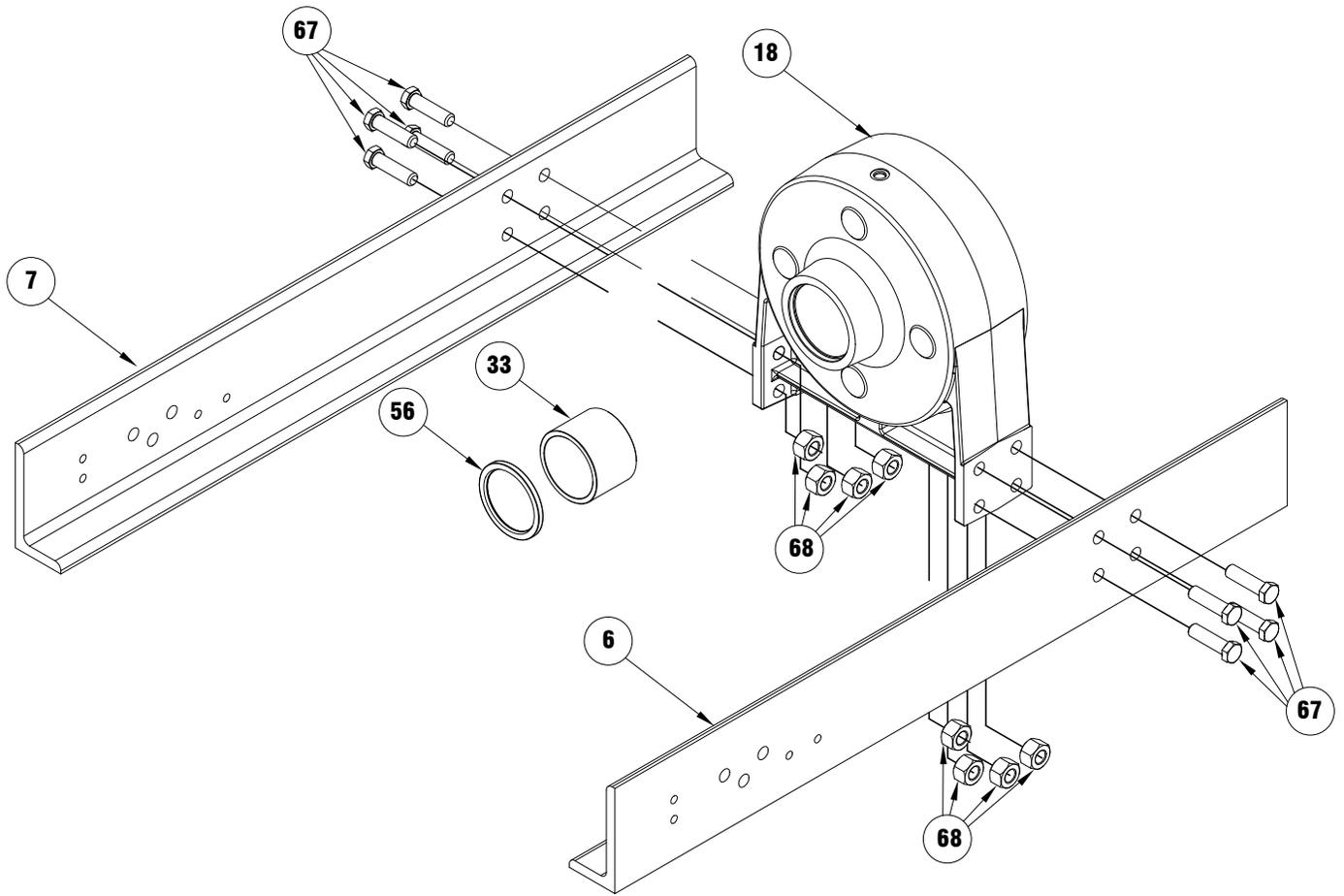
22. By removing snap ring #58 and ball bearing #31, the input shaft #22 may be removed.
23. To remove the motor end bearing #18, support drum #14 with a nylon strap or chain and hoist. Lift on the drum to tension the strap. Remove (6) bolts #67 and (6) nuts #68 attaching the end bearing to the mounting angles #6 and #7. The motor end bearing #18 will be supported on the output shaft end and may be slid off using a nylon strap and hoist to lift it.



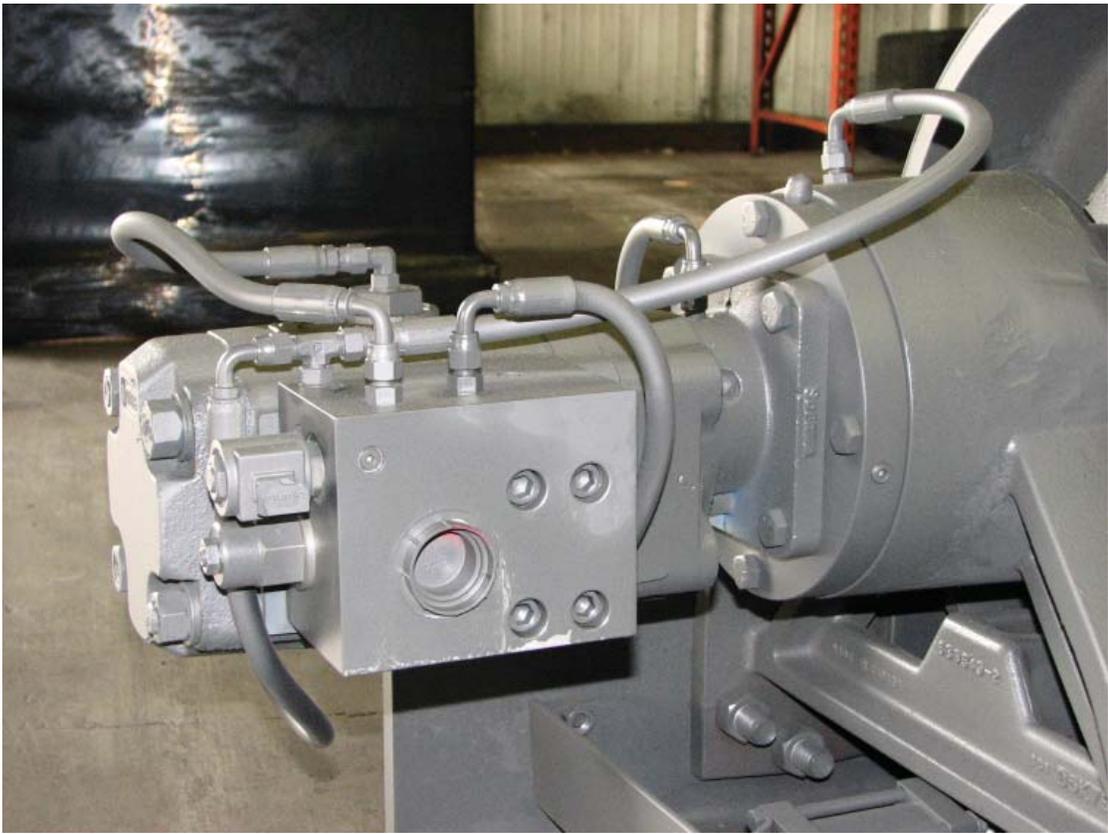
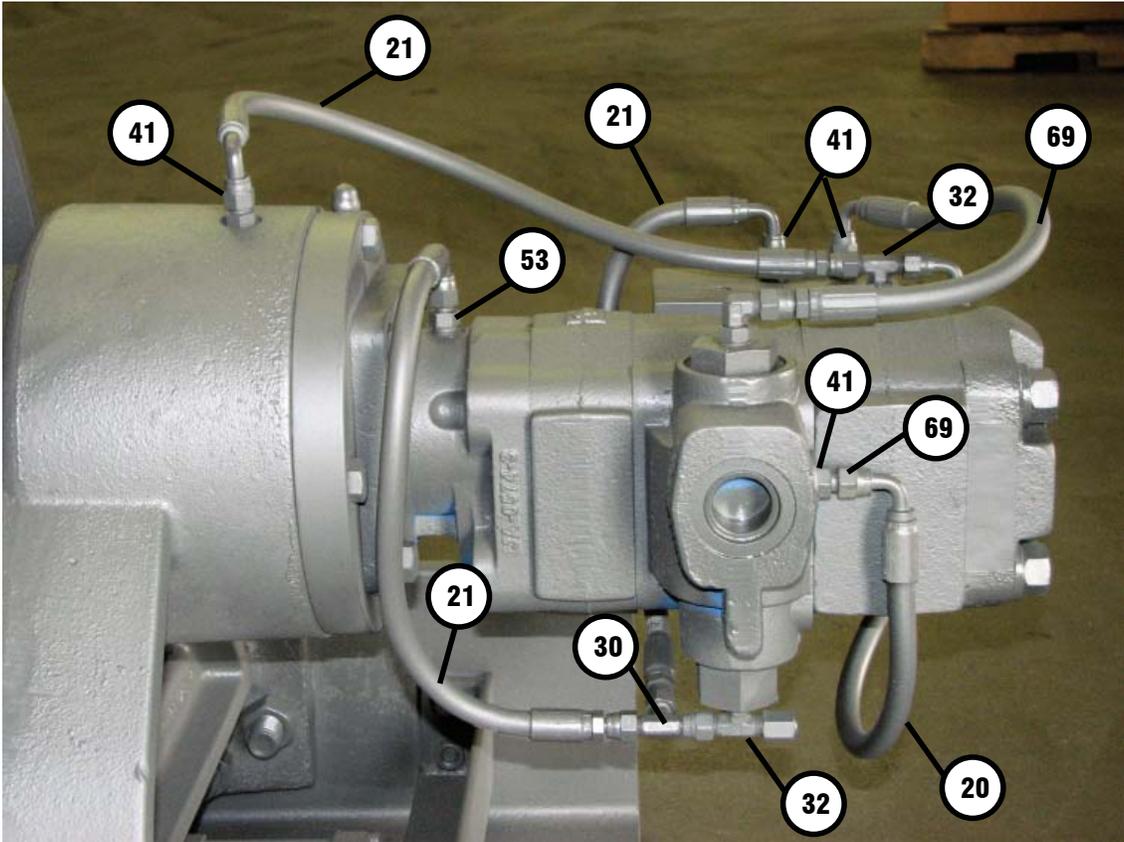
24. While continuing to support the drum #14, remove the clutch #9, snap ring #60 and spacer #25.
25. The output shaft #23 may be slid from the drum assembly.
26. The drum #14 is now supported only by the nylon strap and maybe removed as needed.
27. The (2) bushings #34 may be pressed from the drum if replacement is necessary.



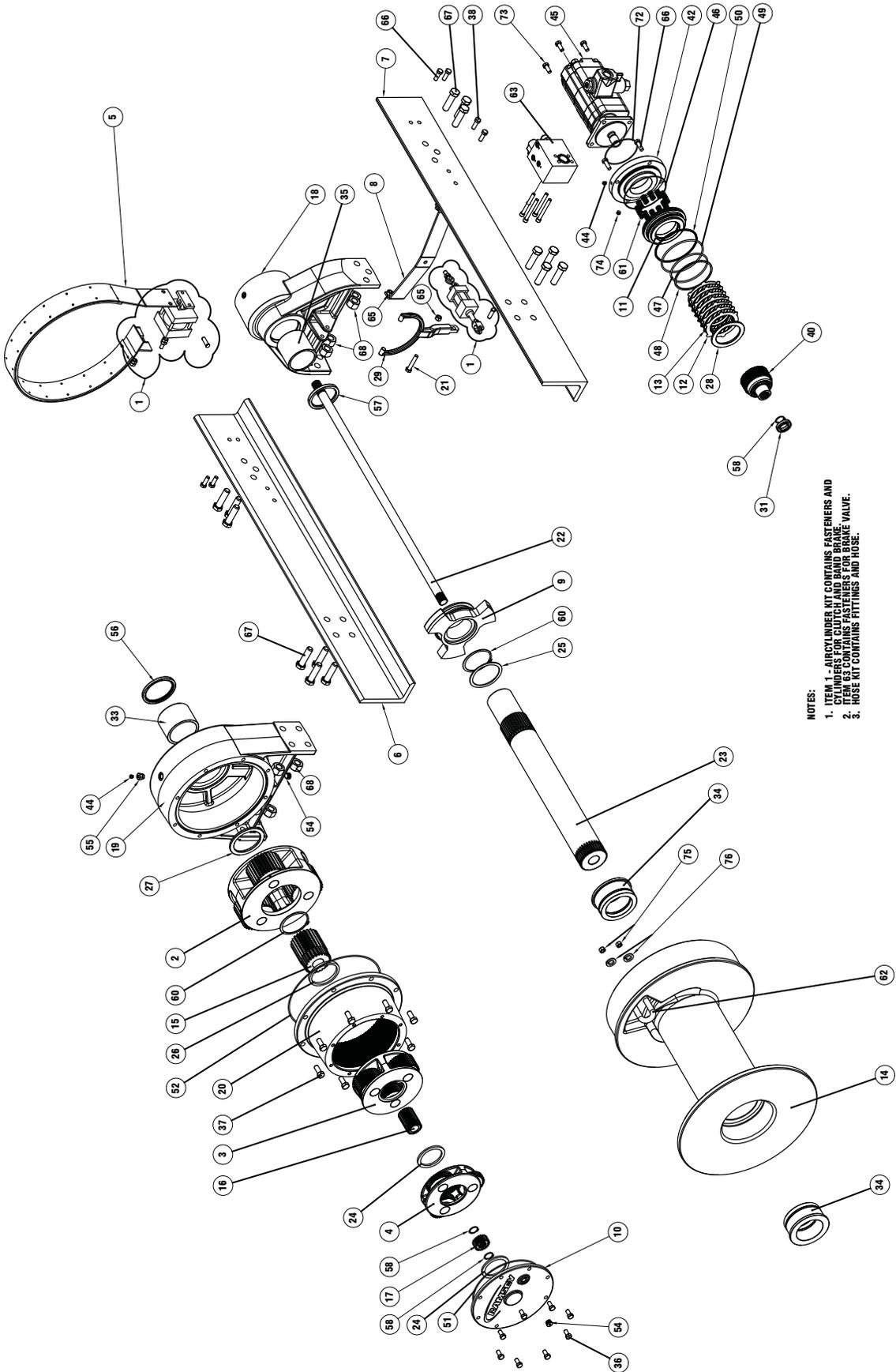
28. To remove gear end bearing #18, from mounting angles #6 and #7, first remove (4) 7/8-9NC bolts #67 and (4) nuts #68 from each angle. Shaft oil seal #56 and end bearing bushing # 33 can be removed and replaced at this time, if necessary.



# HOSE HOOKUP



# PARTS DRAWING

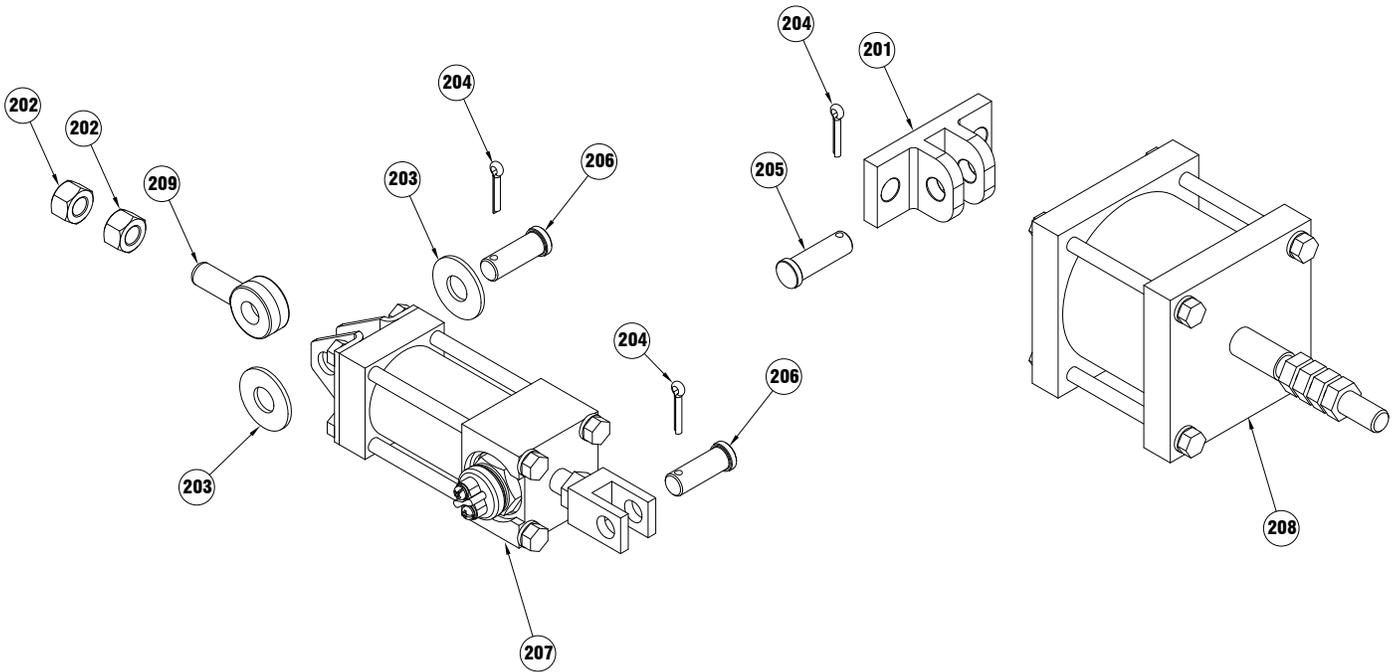


NOTES:  
 1. ITEM 1 - AIR CYLINDER KIT CONTAINS FASTENERS AND  
 CYLINDERS FOR CLUTCH AND BAND BRAKE.  
 2. HOSE KIT CONTAINS FITTINGS AND HOSE.  
 3. HOSE KIT CONTAINS FITTINGS AND HOSE.

# PARTS LIST

ITEM QTY	PART NO	DESCRIPTION	ITEM QTY	PART NO	DESCRIPTION
1	256131	AIR CYLINDER KIT	38	414622	BOLT-1/2-13NCX1 1/2LG HXHD,GR5 ALL THREAD
2	251329	OUTPUT CARRIER ASSEMBLY KIT	39	432018	FITTING JIC O-RING EL
3	296671	INTERMEDIATE CARRIER ASSEMBLY	40	296952	SPRAG BRAKE HUB ASSEMBLY
4	296672	INPUT CARRIER ASSEMBLY	41	432023	FITTING JIC O-RING NIPPLE
5	299748	BAND BRAKE	42	438043	BRAKE COVER
6	303150	LH MOUNTING ANGLE	43		NOT USED
7	303151	RH MOUNTING ANGLE	44	456008	FITTING-RELIEF1/8-27NPTF, 15 PSI MAX
8	312578	CLUTCH CYLINDER SUPPORT BRACKET	45	456216	MOTOR-HYD, 10.28 CU.IN., 2 SPD
9	324510	CLUTCH	46	462063	O-RING 2-165
10	328167	GEAR HOUSING COVER	47	462082	O-RING 2-358
11	330016	BRAKE PISTON	48	462083	BACK UP RING
12	330017	STRATOR PLATE	49	462084	O-RING 2-362
13	330018	DISC-BRAKE	50	462085	BACK UP RING
14	332229	DRUM	51	462092	O-RING 2-275
15	334243	GEAR-SUN	52	462093	O-RING 2-280
16	334199	GEAR-SUN	53	432053	FITTING JIC O-RING NIPPLE
17	334200	GEAR-SUN	54	468041	PLUG, -8 SAE, 3/4"-16 UNF
18	338378	END BEARING-MOTOR SIDE	55	468042	REDUCER-3/4-16 SAE O-RING X 1/8NPTF
19	338380	END BEARING-GEAR SIDE	56	486087	SEAL-OIL-SHAFT-SKF 42419
20	338381	HOUSING-GEAR	57	486088	SEAL-OIL-SHAFT-SKF 38653
21	414543	CAPSCREW-1/2-13NCX3LG,HXHD, GR 5	58	490006	SNAP RING 5100-125
22	357529	INPUT SHAFT	59	432054	FITTING JIC SWIVEL EL
23	357530	SHAFT-OUTPUT	60	490056	SNAP RING 5100-425
24	362301	SPACER	61	494129	SPRING-BRAKE
25	362302	SPACER-SHAFT	62	514023	U-BOLT
26	362303	SPACER 80K WINCH	63	516048	COUNTER BALANCE BLOCK
27	362304	SPACER	65	418069	NUT-1/2-13NC HEX REG,Z/P
28	362305	SPACER	66	414556	CAPSCREW-1/2-13NCX1 3/4 HXHD GR.5
29	370062	YOKE-SHIFTER	67	414790	BOLT-7/8-9NC X 3.25 LG,HXHD,GR8, Z/P
30	432048	FITTING JIC SWIVEL TEE	68	418108	NUT-7/8-9NC HEX REG Z/P
31	402132	BALL BEARING	69	509137	HOSE
32	432049	FITTING JIC BRANCH TEE	70	509140	HOSE
33	412119	END BEARING BUSHING	71	509141	HOSE
34	412160	DRUM BUSHING	72	462081	ORING 2-159
35	412121	END BEARING BUSHING	73	414578	BOLT-1/2-13NC X 1 1/4 LG, HXHD, GR 5
36	414521	CAPSCREW-1/2-13NCX1LG HXHD GR 5	74	468016	PIPE PLUG 1/8-27 NPTF
37	414658	BOLT-5/8-11NCX1 1/2LG,HXHD,Z/P,GR.5	75	418099	NUT - 3/4
			76	418249	LOCKWASHER - 3/4

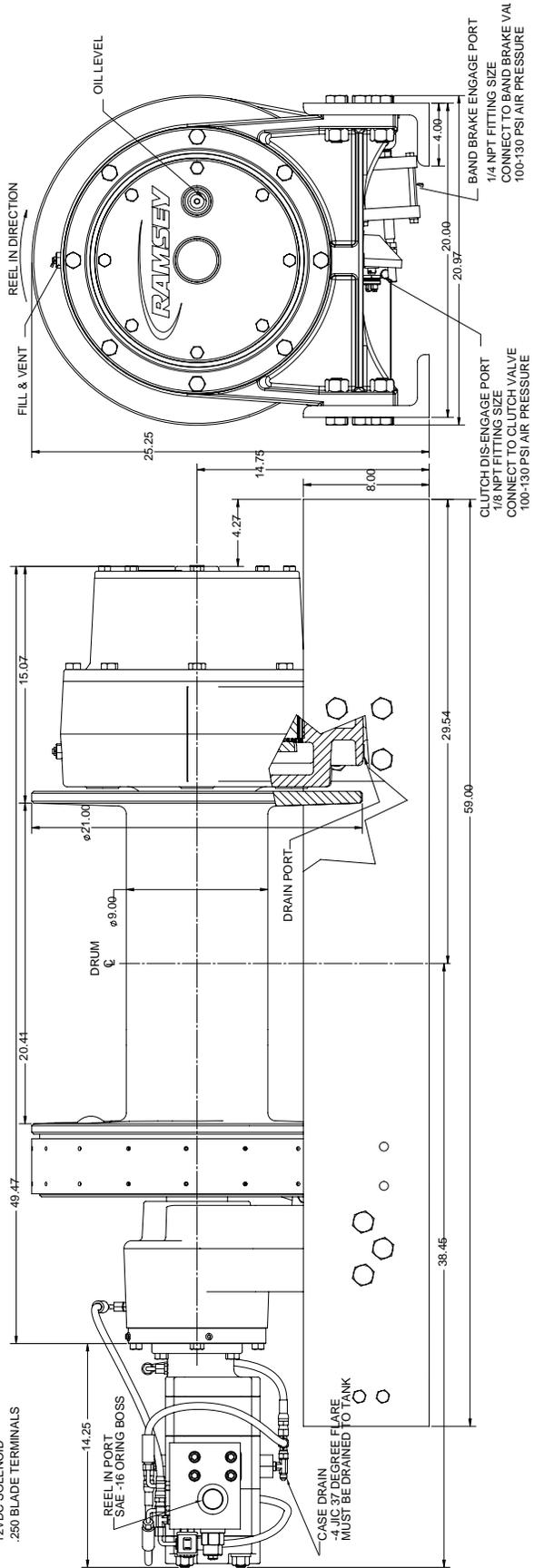
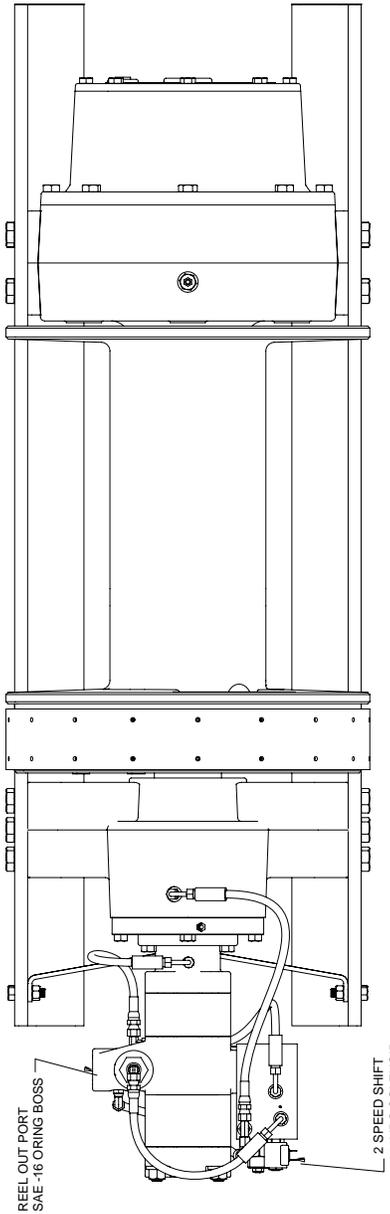
# AIR CYLINDER KIT #256131 PARTS LIST



ITEM	QTY	PART NO	DESCRIPTION
201	1	408422	MOUNTING BRACKET
202	2	418067	NUT-1/2-20NF HEX JAM
203	2	418223	WASHER-1/2 USS FLAT
204	3	424005	COTTER PIN- 1/8 DIA X 1 LG
205	1	424027	CLEVIS PIN-1/2 SHAFT DIA X 1 1/2 LG
206	2	424205	CLEVIS PIN-1/2 SHAFT DIA X 1 23/64 LG
207	1	433031	AIR CYLINDER
208	1	433032	AIR CYLINDER
209	1	448108	EYE BOLT

# DIMENSIONAL DRAWINGS

Bolt Size (inches)	Thds Per Inch	Bolt Torque (ft-lb)
		SAE Grade 5
		SAE Grade 8
7/16	14	54
1/2	13	78
5/8	11	154
3/4	10	257
7/8	9	382
1	8	587





## Limited Warranty

RAMSEY WINCH warrants each new RAMSEY Wildcat Winch to be free from defects in material and workmanship for a period of two (2) years from the date of purchase. Our new two year limited warranty is standard equipment on all Wildcat Winches manufactured after July 4th, 2014, and is also available for all Wildcat series winches currently in inventory at authorized distributors if the model and serial numbers are submitted to Ramsey Winch by August 30, 2014. End users who have purchased a winch since June 1, 2014, are also eligible for the two year warranty with purchase date, serial number, and model number submitted to an approved Wildcat Distributor by August 30, 2014.

Warranty General. 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 repairs or alterations have been made unless authorized by the Manufacturer, or for equipment misused, neglected or which has not been installed correctly.

To the fullest extent permitted by applicable law, the following are hereby excluded and disclaimed: 1. All warranties of fitness for a particular purpose; 2. All warranties of merchantability; 3. All claims for consequential or incidental damages. There are no warranties that extend beyond the description that appears on the face hereof. Some states do not allow the above exclusions or disclaimers in consumer transactions and as such this disclaimer/exclusion may not apply to your particular case. To the extent such warranties of fitness for a particular purpose or merchantability are deemed to apply to this product, they exist for only so long as the express limited warranty elsewhere set forth is in existence.

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 of 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.

This Warranty gives you specific legal rights and you may also have other legal rights, which vary from state to state.



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