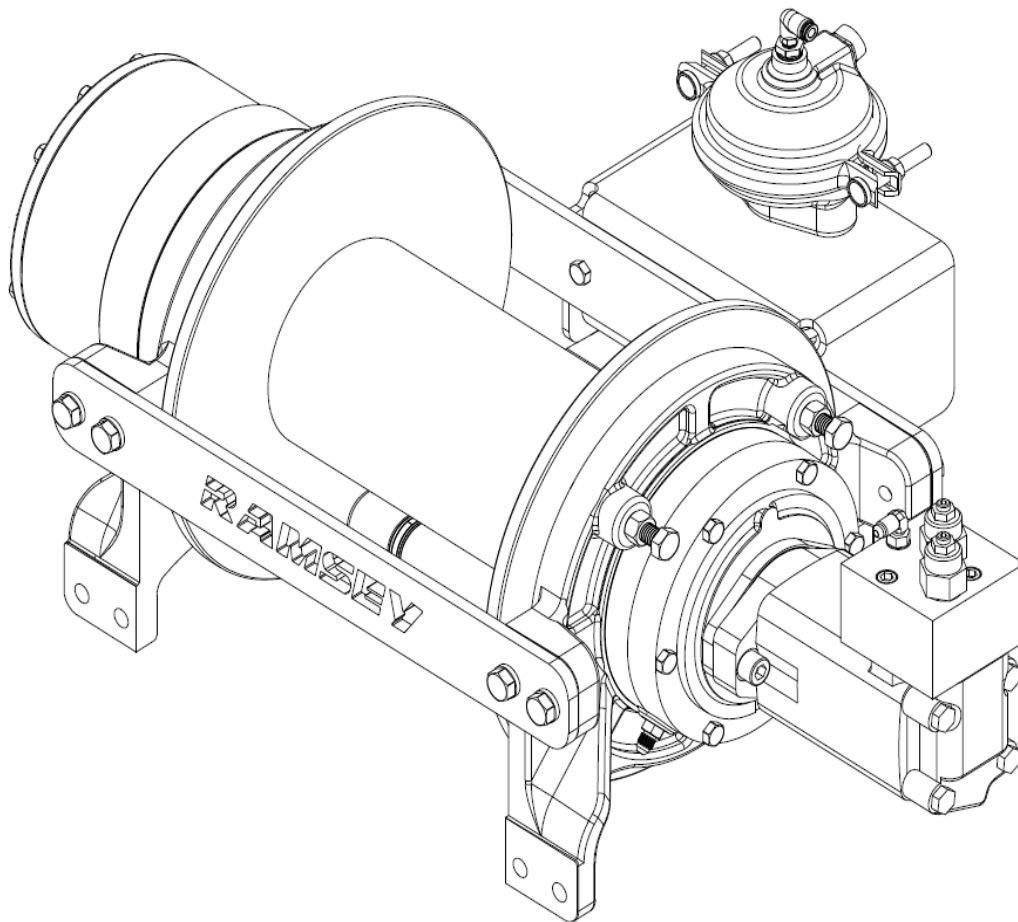




Operating/Service/Maintenance Manual

Hercules 20K

OM 914308-0326-E



CAUTION

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

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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						
RELATED LINE PULL (LBS.)		20,000				
(KGS.)		9,070				
GEAR REDUCTION		25.53:1				
WEIGHT (WITHOUT CABLE)		345 LBS. (156.5 KGS.)				
LAYER OF CABLE		1	2	3	4	5
RATED LINE PULL PER LAYER	LBS.	20,000	16,900	14,700	12,900	11,600
	KGS.	9,070	7,660	6,660	5,850	5,260
CABLE CAPACITY	FT.	30	65	110	155	210
	M.	9	19	33	47	64
LINE SPEED (LOW) (AT 20GPM)	FPM	33	38	43	48	54
	MPM	10.0	11.5	13.0	14.5	16.4
* THESE SPECIFICATIONS ARE BASED ON RECOMMENDED WIRE ROPE OF .56" DIAMETER EIPS CABLE AND 8.0 CU. IN./REV. MOTOR AT 2850 PSI WORKING PRESSURE.						
* DIRECTIONAL CONTROL VALVE: 3-POSITION, 4 WAY MOTOR SPOOL.						
* WINCH MEETS SAE J706.						

 **WARNING** 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 drum barrel is necessary to hold the load.

Cable anchor is not designed to hold load.

Use only Ramsey Winch recommended 9/16" synthetic rope.

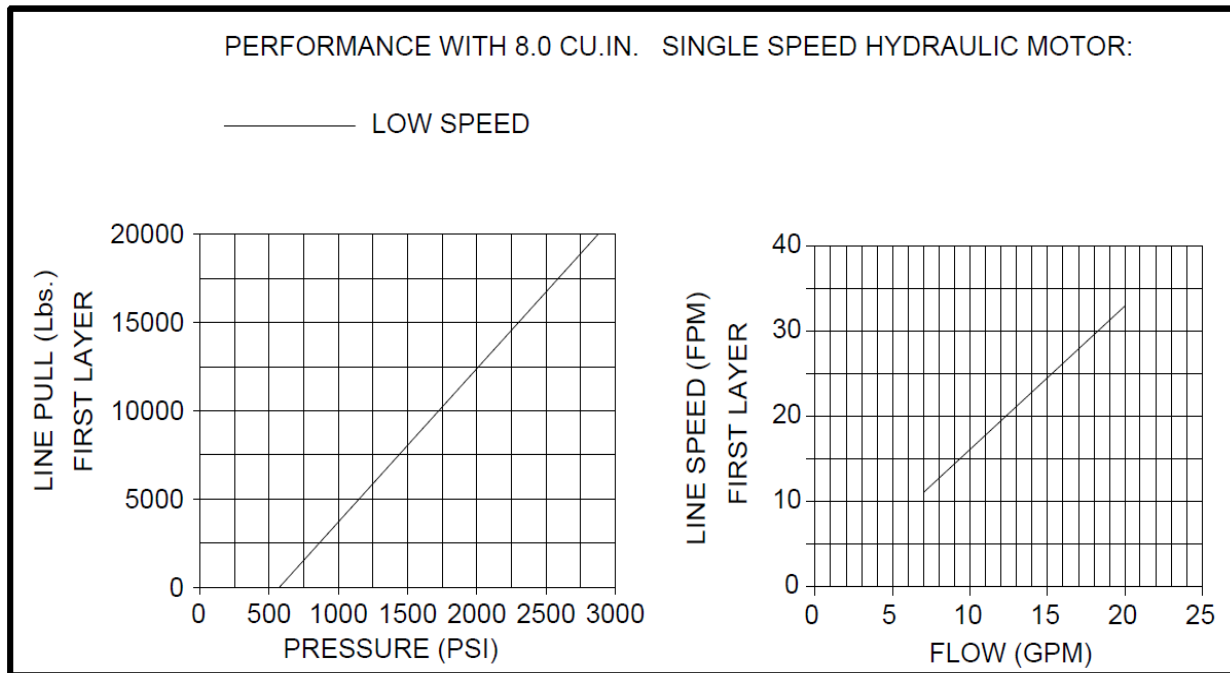
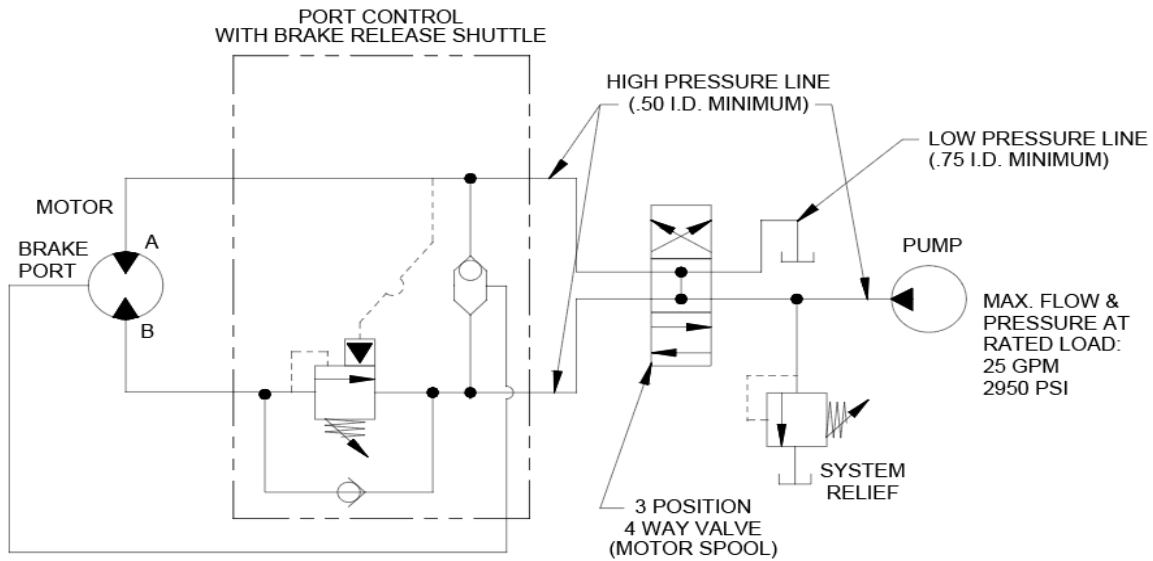
A minimum of 8 wraps of Ramsey Winch recommended synthetic rope is necessary to hold the load. Cable anchor is not designed to hold load.

2 Hydraulic System Requirements

Refer to the performance charts to properly match your hydraulic system to Hercules 20K winch performance.

(1) Line pull (lbs.) first layer vs. working pressure (PSI) and (2) line speed (FPM) first layer vs. flow (GPM). Performance is based on a motor displacement of 8.0 cubic inches with 25 GPM maximum flow rate. See page 19 for motor port size.

TYPICAL LAYOUT



Winch Operation 3

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 the 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.

CLUTCH OPERATION

To engage clutch:

1. Move the clutch control valve to the "clutch engaged" position.
2. Anytime the temperature is below freezing, run the 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

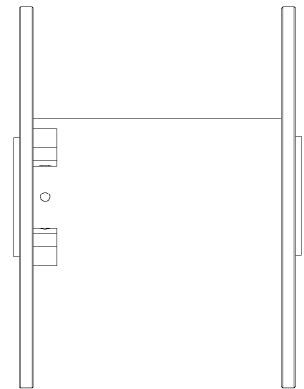
Do not attempt to engage the clutch by first running the winch motor and then moving the clutch control valve to the "clutch-engaged" position while the motor is running. Do not start picking up the load at the same time the clutch is being engaged.

To disengage clutch: Run the winch in the "cable out" direction until the load is off the cable.

4. Move the clutch control valve to the "clutch-disengaged" position.
5. The cable may now be pulled off by hand.

CABLE INSTALLATION

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. Insert the end of cable, opposite hook end, into the hole in drum barrel. Secure cable to drum barrel, using setscrew furnished with winch. **TIGHTEN SETSCREW SECURELY.**
3. Carefully run the 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.



SYNTHETIC ROPE

NOTICE

The roller tensioner must be removed to use synthetic rope.

1. Use only 12 strand (HMPE) high modulus polyurethane fiber coated synthetic rope, commonly known as Dyneema.
2. Install and anchor synthetic rope as shown below.

4 Synthetic Rope Installation

1. Tape the end of the rope with electrical tape 2"-3" from end as shown in picture. This will aid in installing the rope through the anchor hole.



2. Run rope through anchor hole. Pull approximately 60" of rope past anchor.

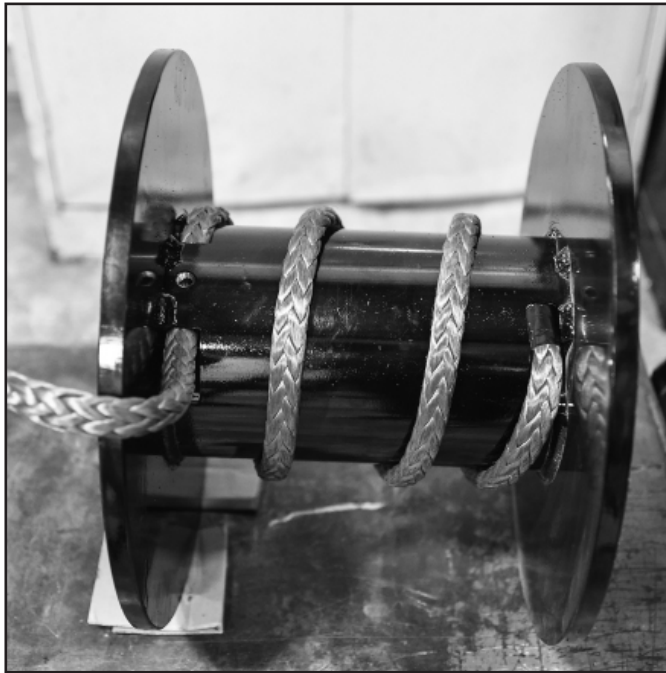


Synthetic Rope Installation 4

3. Spiral wrap rope around drum barrel, approximately 3 times, evenly spaced to second flange.



6. Pull excess slack from rope until rope is tight against drum barrel. Tape end of rope onto drum.



4 Synthetic Rope Installation

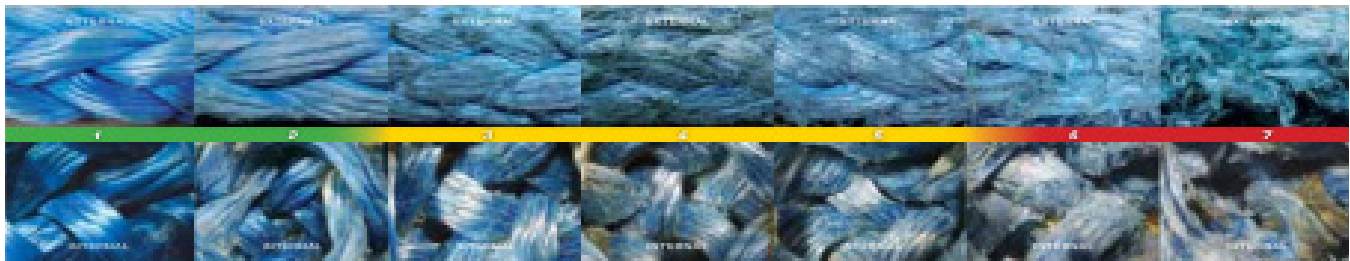
7. Wind rope onto drum (no load) for minimum of 8 wraps before applying load to install entire length of rope.



Rope Inspection Techniques 5

INSPECTION	WHAT	CAUSE	CORRECTIVE ACTION:
CUT STRANDS REPAIR OR RETIRE	<ul style="list-style-type: none"> TWO OR MORE CUT STRANDS IN PROXIMITY 	<ul style="list-style-type: none"> ABRASION SHARP EDGES AND SURFACES CYCLIC TENSION WEAR 	IF POSSIBLE, REMOVE AFFECTED SECTION AND RESPLICE WITH A STANDARD END-FOR-END SPLICE. IF RESPLICING IS NOT POSSIBLE, RETIRE THE ROPE.
COMPRESSION NOT PERMANENT REPAIR	<ul style="list-style-type: none"> VISIBLE SHEEN STIFFNESS REDUCED BY FLEXING THE ROPE NOT TO BE CONFUSED WITH MELTING OFTEN SEEN ON WINCH DRUMS 	<ul style="list-style-type: none"> FIBER MOLDING ITSELF TO THE CONTACT SURFACE UNDER A RADIAL LOAD. 	FLEX THE ROPE TO REMOVE COMPRESSION.
PULLED STRAND NOT PERMANENT REPAIR	<ul style="list-style-type: none"> STRAND PULLED AWAY FROM THE REST OF THE ROPE IS NOT CUT OR OTHERWISE DAMAGE 	<ul style="list-style-type: none"> SNAGGING ON EQUIPMENT OR SURFACES 	WORK BACK INTO THE ROPE.
MELTED OR GLAZED FIBER REPAIR OR RETIRE	<ul style="list-style-type: none"> FUSED FIBERS VISIBLY CHARRED AND MELTED FIBERS, YARNS, AND/OR STRANDS EXTREME STIFFNESS UNCHANGED BY FLEXING 	<ul style="list-style-type: none"> EXPOSURE TO EXCESSIVE HEAT, SHOCK LOAD, OR A SUSTAINED HIGH LOAD 	IF POSSIBLE, REMOVE AFFECTED SECTION AND RESPLICE WITH A STANDARD END-FOR-END SPLICE. IF RESPLICING IS NOT POSSIBLE, RETIRE THE ROPE.
DISCOLORATION/ DEGRADATION REPAIR OR RETIRE	<ul style="list-style-type: none"> FUSED FIBERS BRITTLE FIBERS STIFFNESS 	<ul style="list-style-type: none"> CHEMICAL CONTAMINATION 	IF POSSIBLE, REMOVE AFFECTED SECTION AND RESPLICE WITH A STANDARD END-FOR-END SPLICE. IF RESPLICING IS NOT POSSIBLE, RETIRE THE ROPE.
INCONSISTENT DIAMETER REPAIR OR RETIRE	<ul style="list-style-type: none"> FLAT AREAS LUMPS AND BUMP 	<ul style="list-style-type: none"> SHOCK LOADING BROKEN INTERNAL STRAND 	IF POSSIBLE, REMOVE AFFECTED SECTION AND RESPLICE WITH A STANDARD END-FOR-END SPLICE. IF RESPLICING IS NOT POSSIBLE, RETIRE THE ROPE.
ABRASION REPAIR OR RETIRE	<ul style="list-style-type: none"> BROKEN FILAMENTS AND YARNS 	<ul style="list-style-type: none"> ABRASION SHARP EDGES AND SURFACES CYCLIC TENSION WEAR 	CONSULT ABRASION IMAGES* AND RATE INTERNAL/EXTERNAL ABRASION LEVEL OF ROPE. EVALUATE ROPE BASED ON ITS MOST DAMAGED SECTION.

Minimal strength loss (continue use)
 Significant strength loss (consult rope supplier)
 Severe strength loss (retire rope)



6 Maintenance

Adhering to the following maintenance schedule will keep your winch in top condition and performing as it should with a minimum of repair.

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 the gear housing cover. Be sure that it is not plugged.
3. Lubricate cable with light oil.

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.
3. Inspect synthetic rope and follow inspection criteria.

Annually

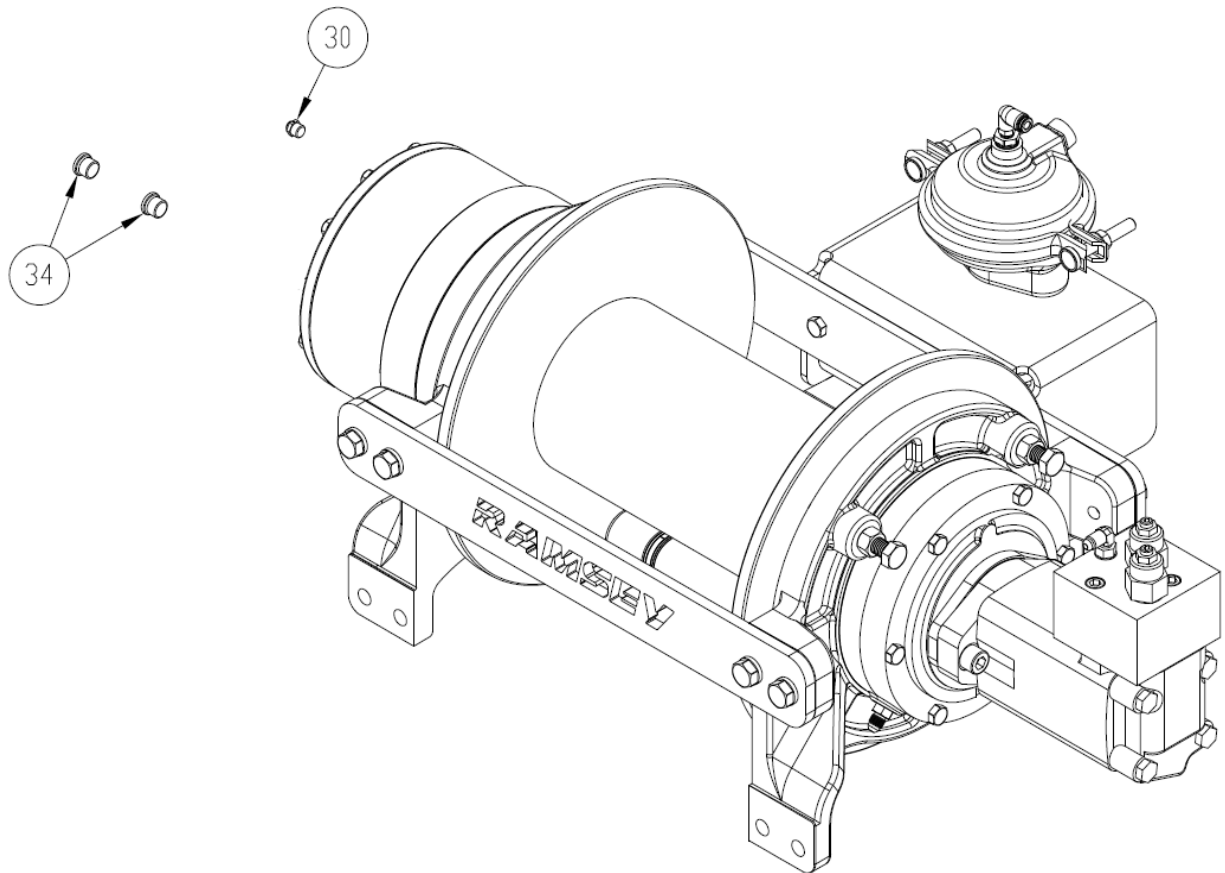
1. Drain the oil from the winch annually or more often if winch is used frequently.
2. Fill the winch to the oil level plug with clean kerosene. Run the winch a few seconds with no load in the reel in direction. Drain the kerosene from the winch.
3. Refill the winch to the oil level plug with all-purpose SAE 75W-90 synthetic gear oil.
4. Inspect frame and surrounding structure for cracks or deformation.

TROUBLESHOOTING GUIDE		
CONDITIONS	POSSIBLE CAUSE	CORRECTION
OIL LEAKS FROM WINCH	1. SEALS DAMAGED OR WORN 2. TOO MUCH OIL 3. DAMAGED GASKETS	1. REPLACE SEAL 2. DRAIN EXCESS OIL. REFER TO OPERATION 3. REPLACE GASKETS
WINCH RUNS TOO SLOW	1. LOW FLOW RATE 2. HYDRAULIC MOTOR WORN OUT	1. CHECK FLOW RATE. REFER TO HYDRAULIC SYSTEMS PERFORMANCE CHART PAGE 2. 2. REPLACE MOTOR
CABLE DRUM WILL NOT FREE-SPOOL	1. CLUTCH NOT DISENGAGED	1. CHECK AIR PRESSURE TO CLUTCH CYLINDER: 100 PSI MINIMUM REQUIRED. REFER TO PAGE 15 FOR PORT LOCATION.
BRAKE WILL NOT RELEASE	1. BRAKE LINE DISCONNECTED OR BLOCKED	1. CHECK BRAKE FUNCTION

Instructions for Overhaul 7

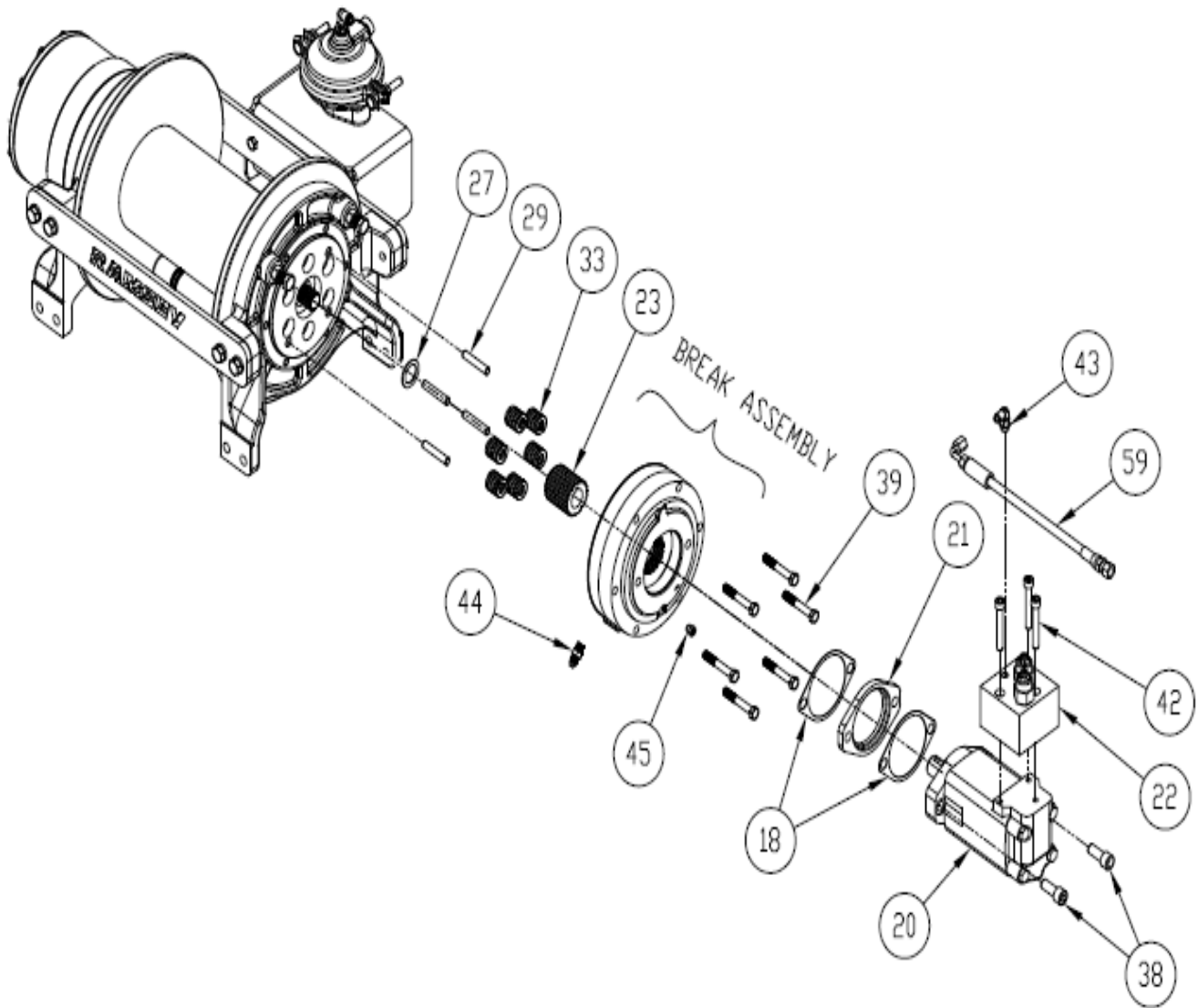
Disassembly

1. Drain oil from gear housing by removing oil drain plug, o-ring plug #34 and relief fitting #30. Remove tensioner assembly.



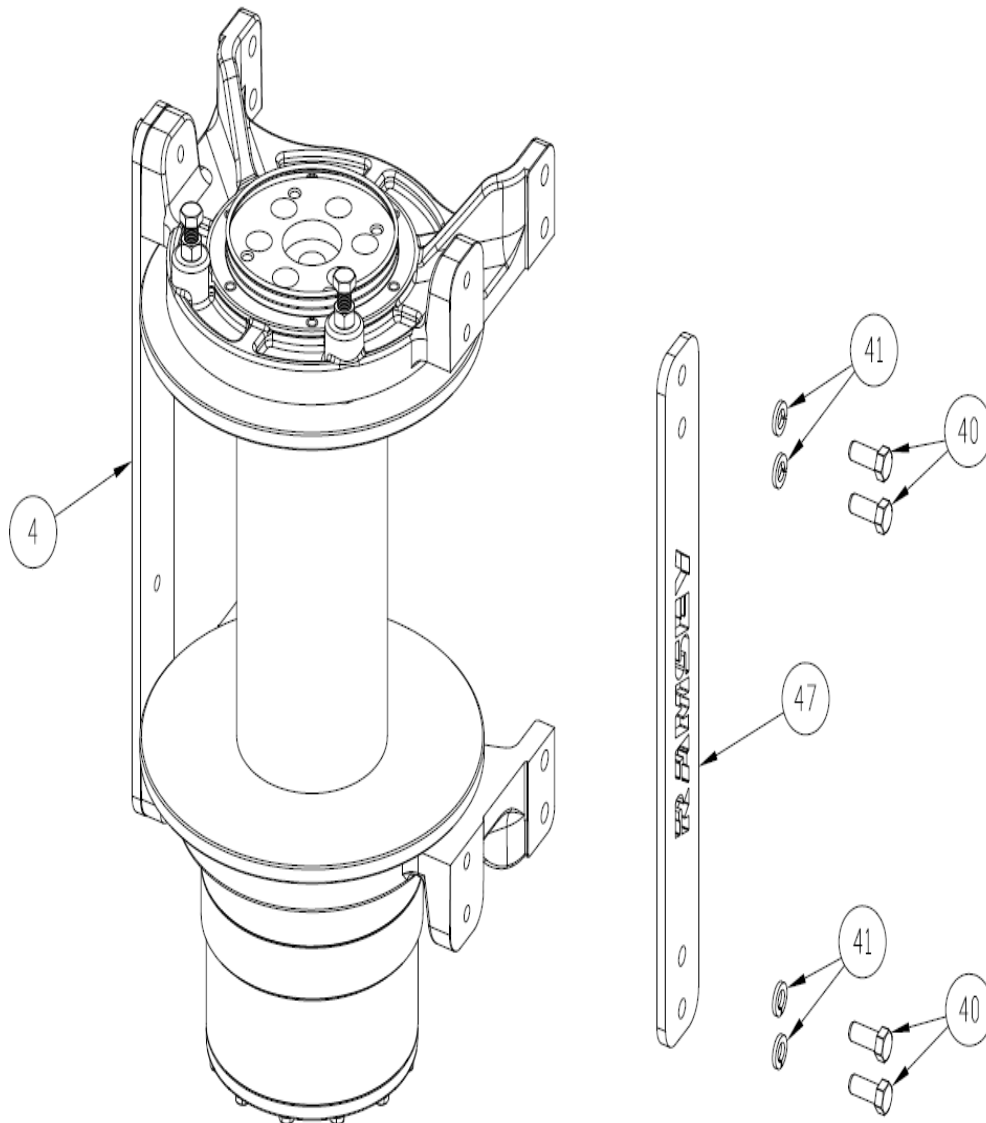
7 Instructions for Overhaul

2. Disconnect hose #59 from fitting #43 and fitting #44 on brake assembly. Remove motor #20 and gasket #18 by removing (2) capscrews #38. Remove brake assembly, motor coupling #23, brake spring #33 and thrust washer #27.



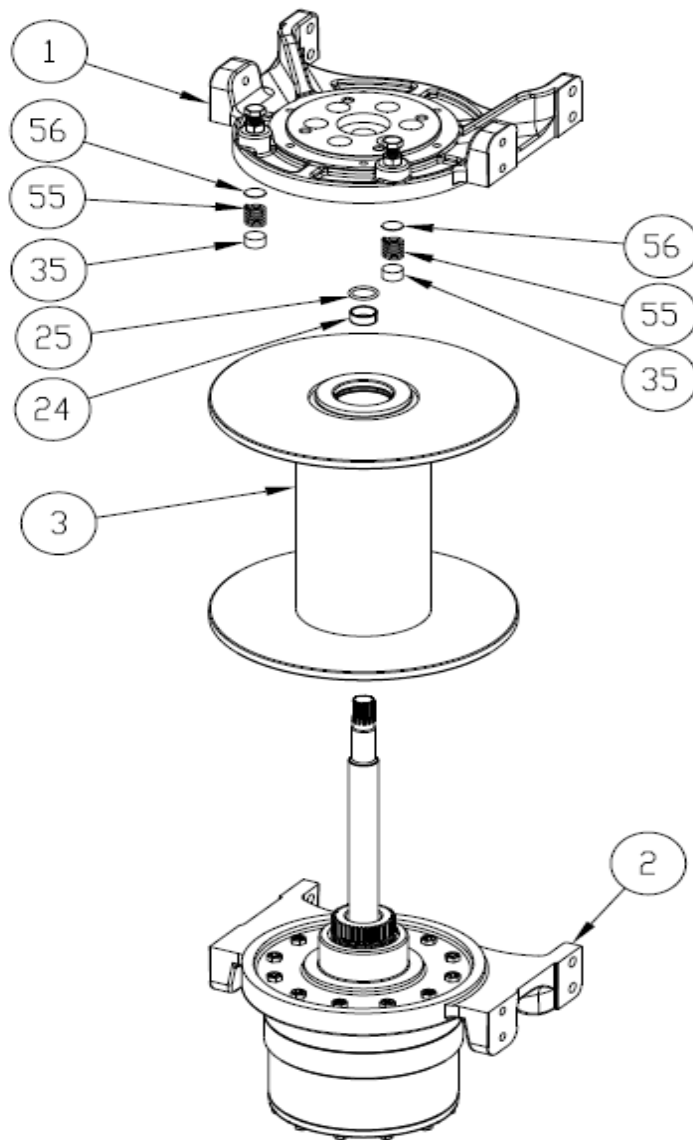
Instructions for Overhaul 7

3. Stand winch up on gear box end as shown. Remove winch tie plates #4 and #47 by removing (8) capscrews #40 and (8) lock washers #41.



7 Instructions for Overhaul

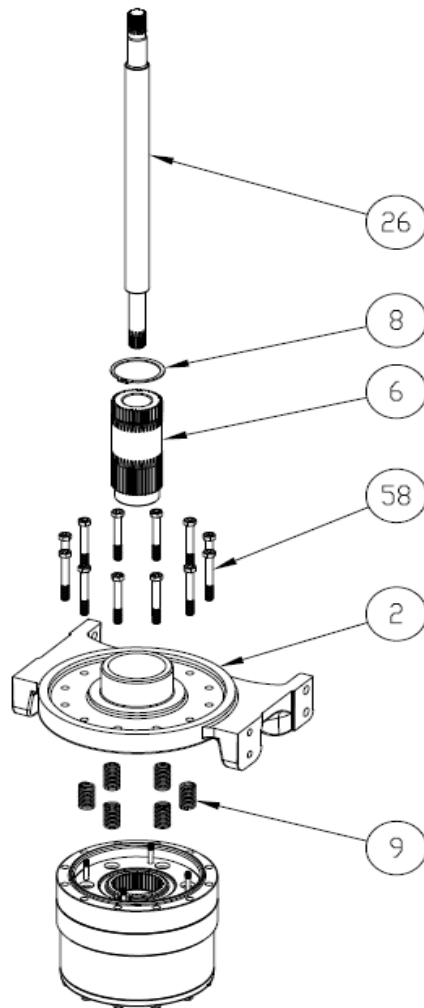
4. Pull motor end bearing #1 from drum assembly #3. Drag brake, brake parts #35, #55, and #56 may fall out when motor end bearing #1 is removed.



Instructions for Overhaul 7

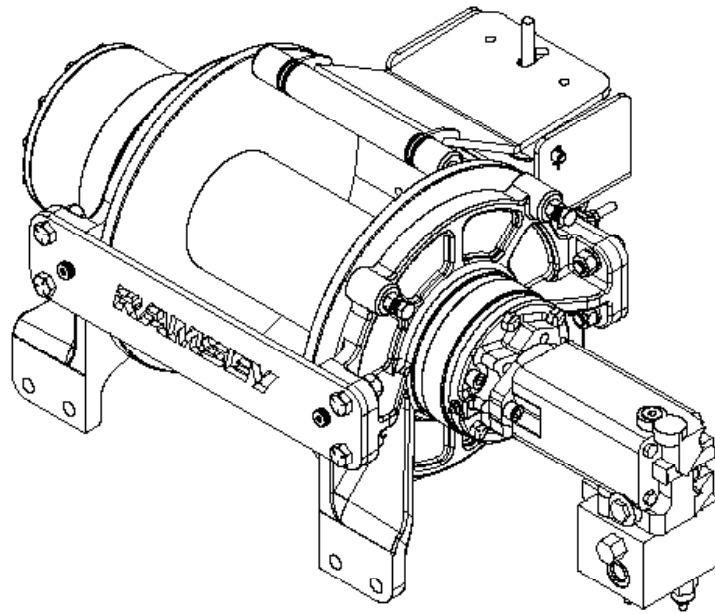
5. Remove output shaft #26 from gear end bearing #2. Remove and inspect output coupling #6 for damage or wear. Remove gear end bearing by removing the (12) capscrews #58.

Note: The gear end bearing will be spring loaded and will "spring up" slightly when last capscrew is removed. Remove (6) springs #9.

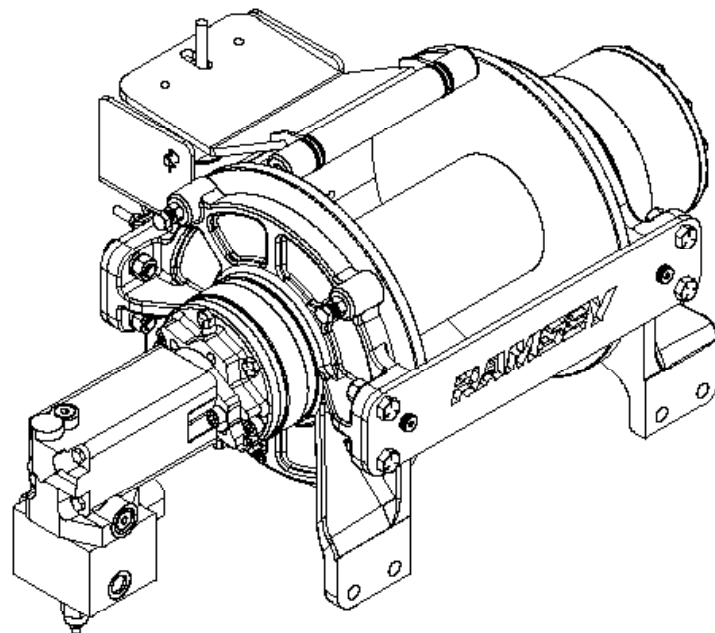


Winch Mounting Configuration 8

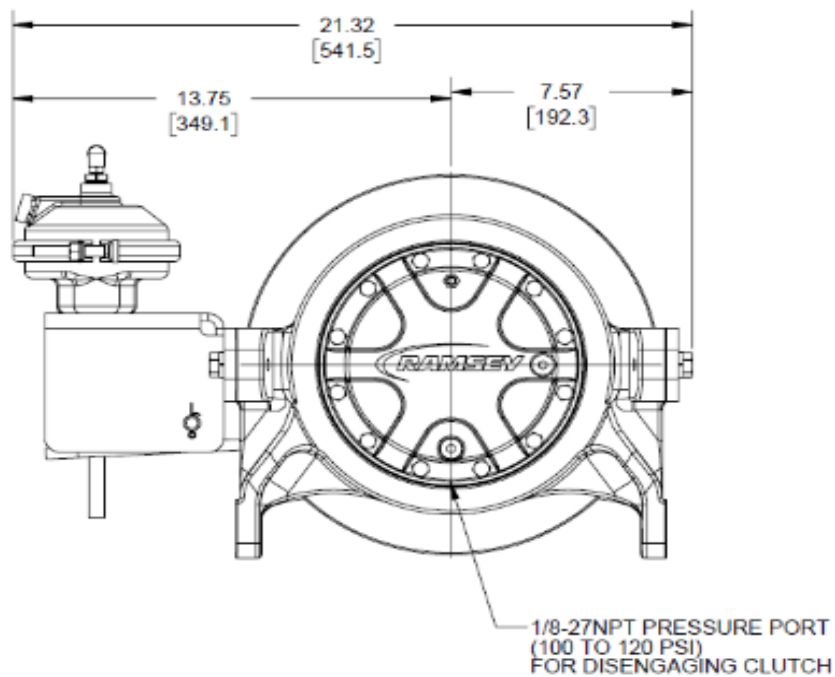
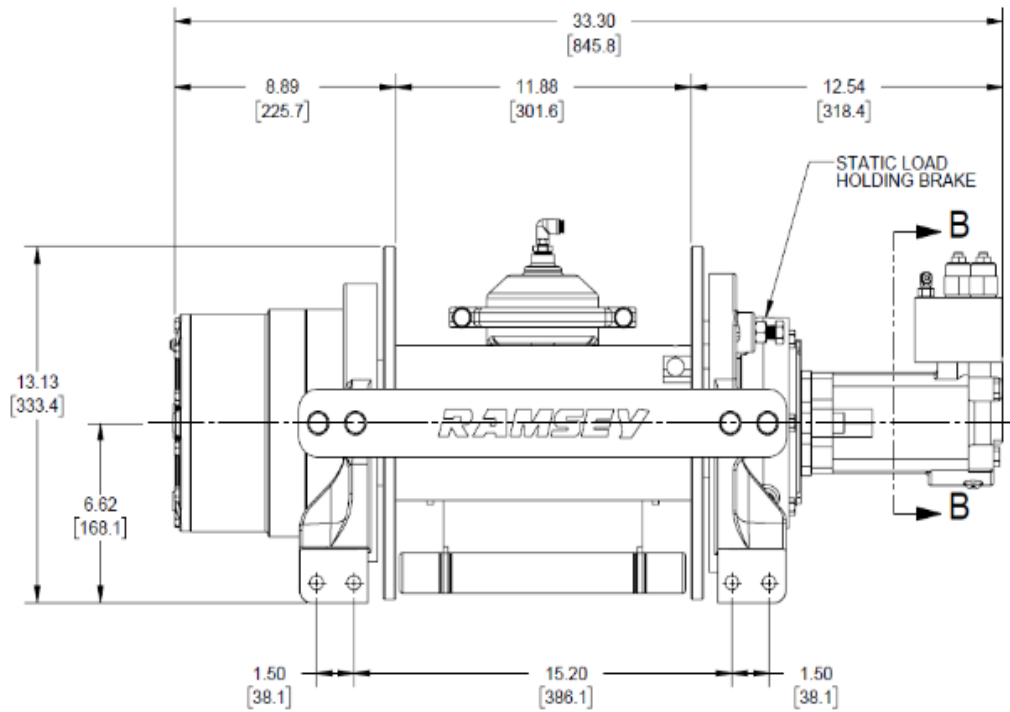
RIGHT HAND MOUNTING CONFIGURATION



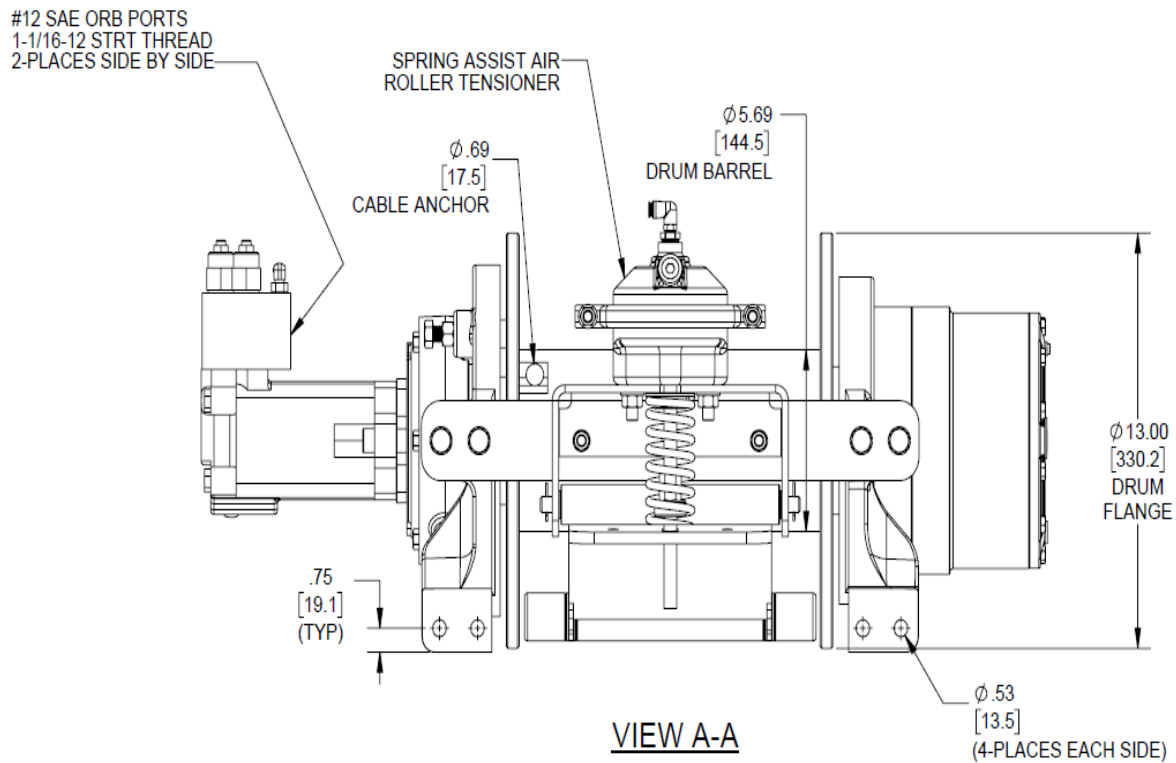
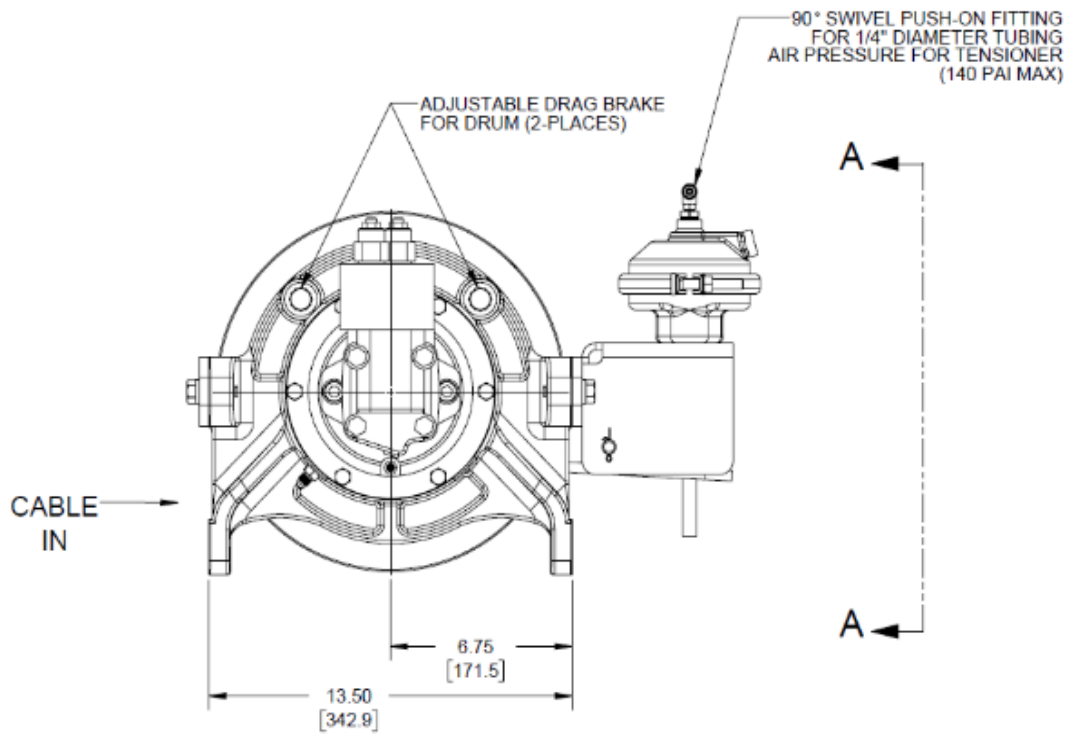
LEFT HAND MOUNTING CONFIGURATION



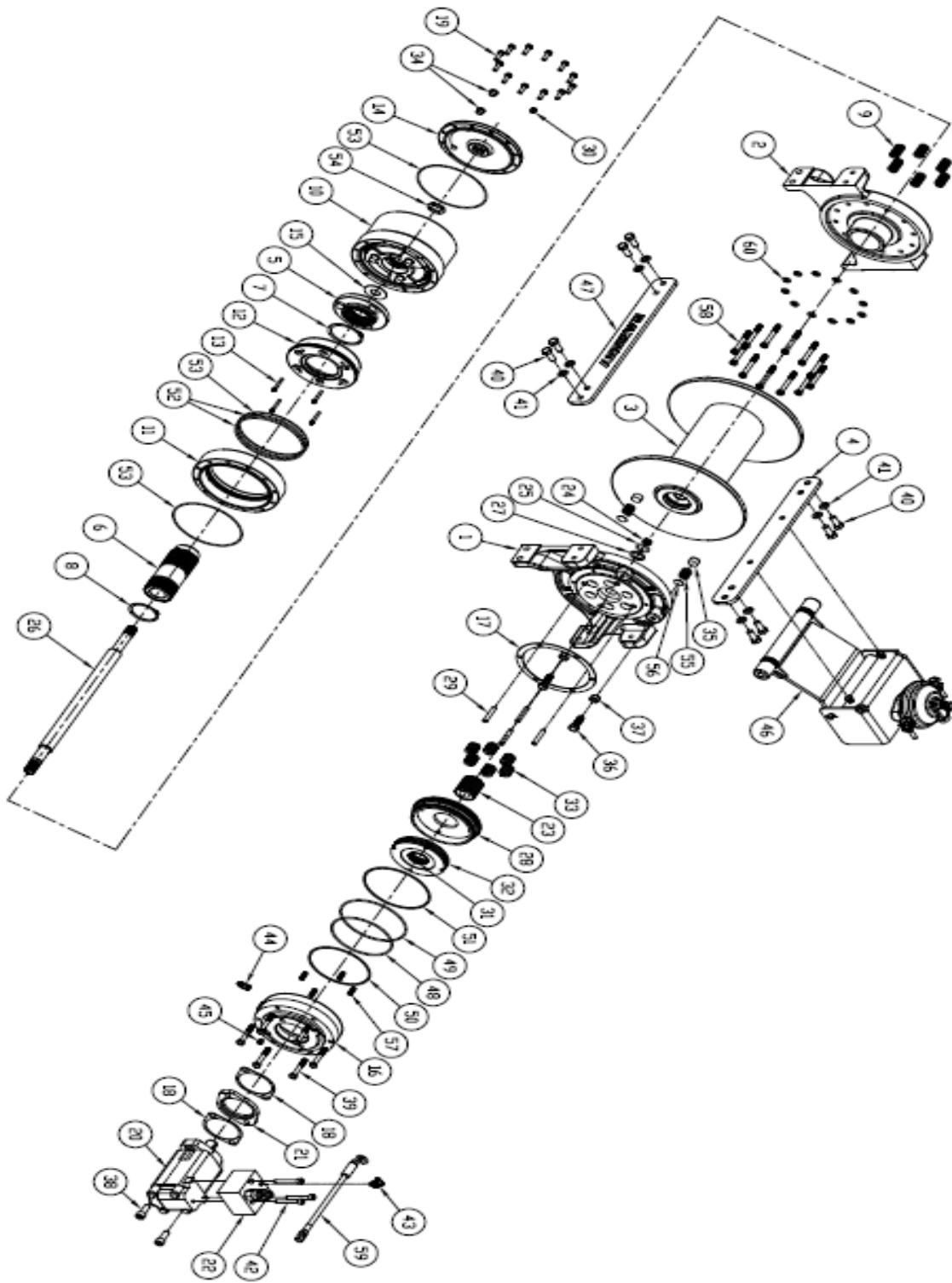
9 General Dimensions



General Dimensions 9



10 Winch Exploded View



Winch Exploded View 10

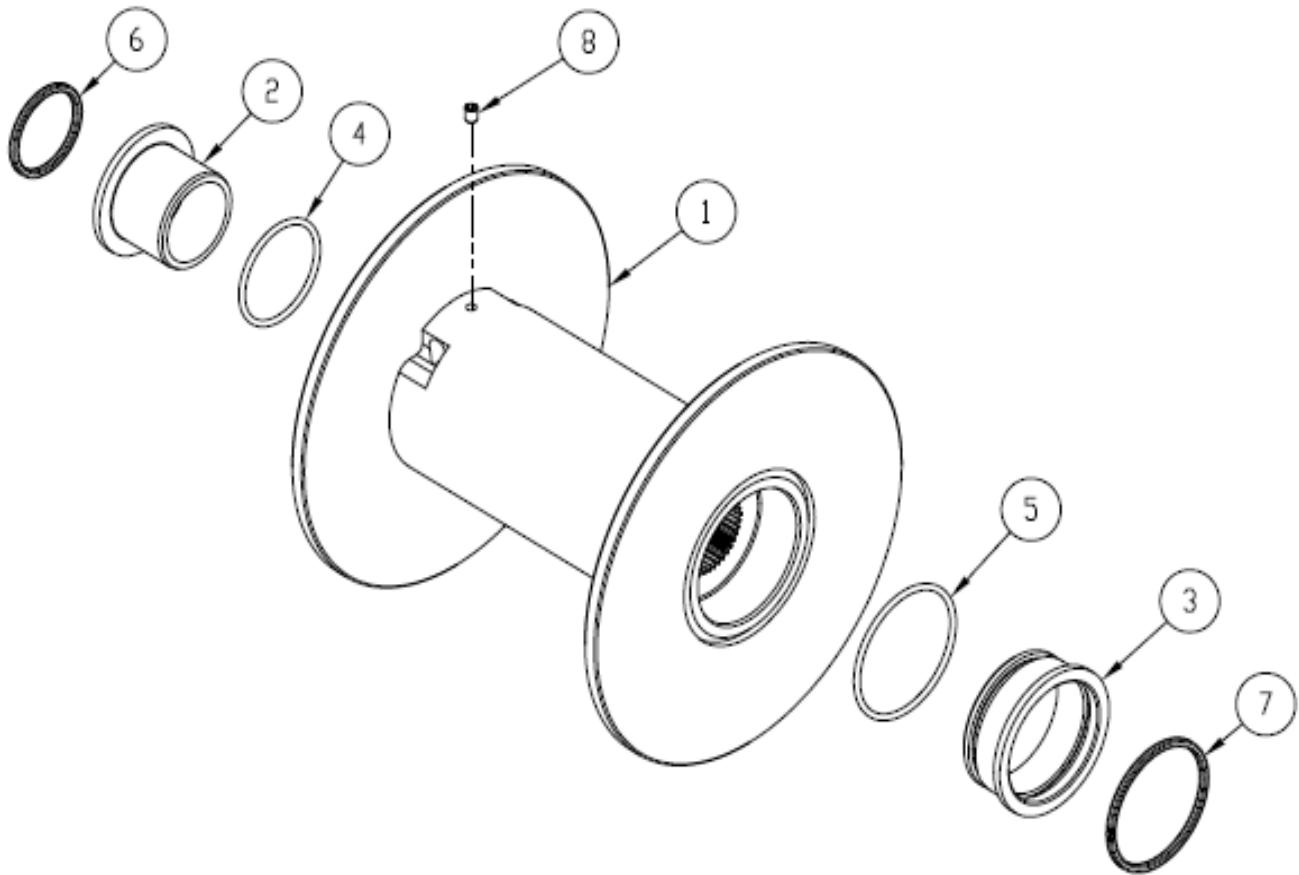
ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	338481	MOTOR END BEARING
2	1	338482	GEAR END BEARING
3	1	234281	DRUM ASSEMBLY
4	1	474255	TIE PLATE
5	1	324527	CLUTCH
6	1	357579	COUPLING - OUTPUT
7	1	490081	RING - RETAINER
8	1	490080	RING - RETAINER
9	6	494140	SPRING - CLUTCH
10	1	530187	ASSEMBLY - GEAR BOX
11	1	426076	CYLINDER - CLUTCH
12	1	426077	PISTON - CLUTCH
13	4	470156	TAPER PIN
14	1	328204	COVER - GEAR BOX
15	1	418462	THRUST WASHER
16	1	338302	HOUSING - BRAKE
17	1	442220	GASKET - BRAKE
18	2	442223	GASKET - MOTOR
19	12	414136	CAPSCREW - 5/16-18 X 1.0 L.G HX HD GR5 Z/P
20	1	458081	MOTOR - HYD - 8 CID - 2000 SERIES CHAR-LYNN - 1 1/4 SPLINE
21	1	362298	SPACER - MOTOR
22	1	516011	VALVE - MOTOR CONTROL
23	1	431015	COUPLING - MOTOR
24	1	402121	BEARING
25	1	462056	O-RING
26	1	357586	SHAFT - INPUT
27	1	518052	WASHER
28	1	306042	PISTON - BRAKE
29	4	346045	PIN - BRAKE
30	1	456008	FITTING - RELIEF 1/8-27NPTF, 15 PSI MAX
31	4	438022	DISC - BRAKE
32	5	474111	SEPERATOR PLATE - BRAKE
33	6	494110	SPRING - BRAKE
34	2	468045	PLUG - O'RING
35	2	330015	PUCK - DRAG, DRUM FREESPOOL
36	2	414548	CAPSCREW 1/2-13 X 1.5 L.G. HX HD
37	2	418069	NUT - 1/2-13NC HEX REG, ZINC PLATED
38	2	414948	CAPSCREW 1/2-13 X 1.25 L.G. SOC HD
39	6	414303	BOLT 3/8-16NC X 2 1/2, HX HD, 2/P, GR5
40	8	414961	CAPSCREW 1/2-13UNC X 1.25 L.G. HX HD GR8 Z/P
41	8	418218	WASHER - LOCK, 1/2 MED SECT. Z/P

Winch Exploded View 10

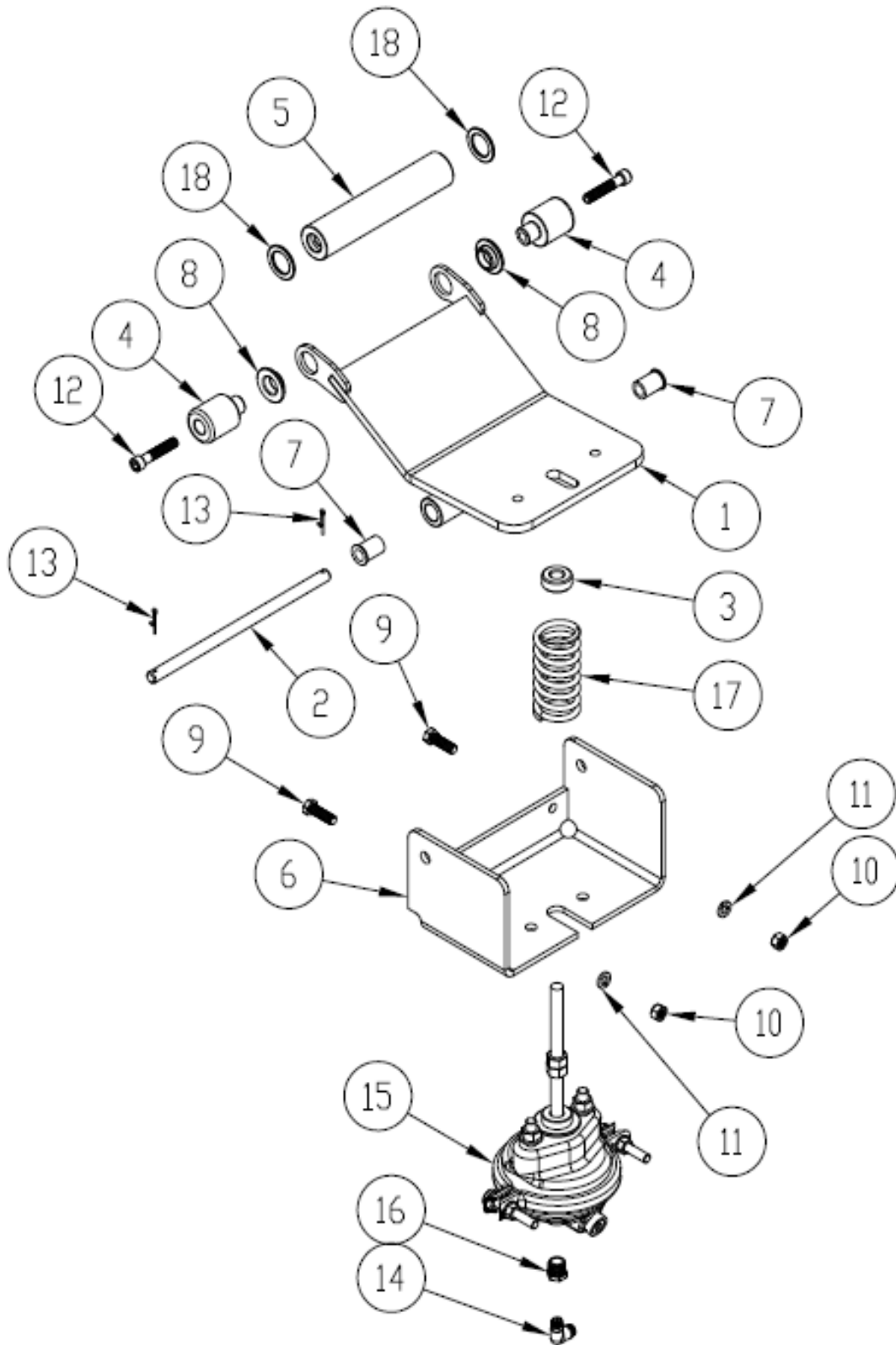
ITEM NO.	QTY	PART NO.	DESCRIPTION
42	3	414935	CAPSCREW - 3/8-16NC X 2.5 L.G SOC HD
43	2	432018	FITTING - 90° ELBOW, -4 SAE ORING TO -4 JIC
44	1	432023	FITTING JIC O-RING NIPPLE
45	1	456038	BREATHER VENT
46	1	299789	ASSEMBLY AIR ROLLER TENSIONER
47	1	474254	TIE PLATE
48	1	462057	O-RING
49	1	462058	O-RING
50	1	462059	RING BACK-UP
51	1	462060	RING BACK-UP
52	2	462127	O-RING
53	3	462063	O-RING
54	1	418443	WASHER - THRUST, COVER
55	2	494002	SPRING - DRUM FREESPOOL
56	2	530094	SPRING - BRAKE DISC
57	4	494112	SPRING, PRESSURE TO BRAKE
58	12	420047	CAPSCREW
59	1	590139	HYDRAULIC BRAKE HOSE
60	12	418177	WASHER LOCK - 3/8 MED

11 Drum Assembly

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	234280	WELDMENT-DRUM
2	1	412188	BUSHING
3	1	412092	BUSHING
4	1	462054	O-RING
5	1	462052	O-RING
6	1	462013	QUAD RING
7	1	462050	QUAD RING
8	1	416059	SET SCREW



Roller Tensioner 12

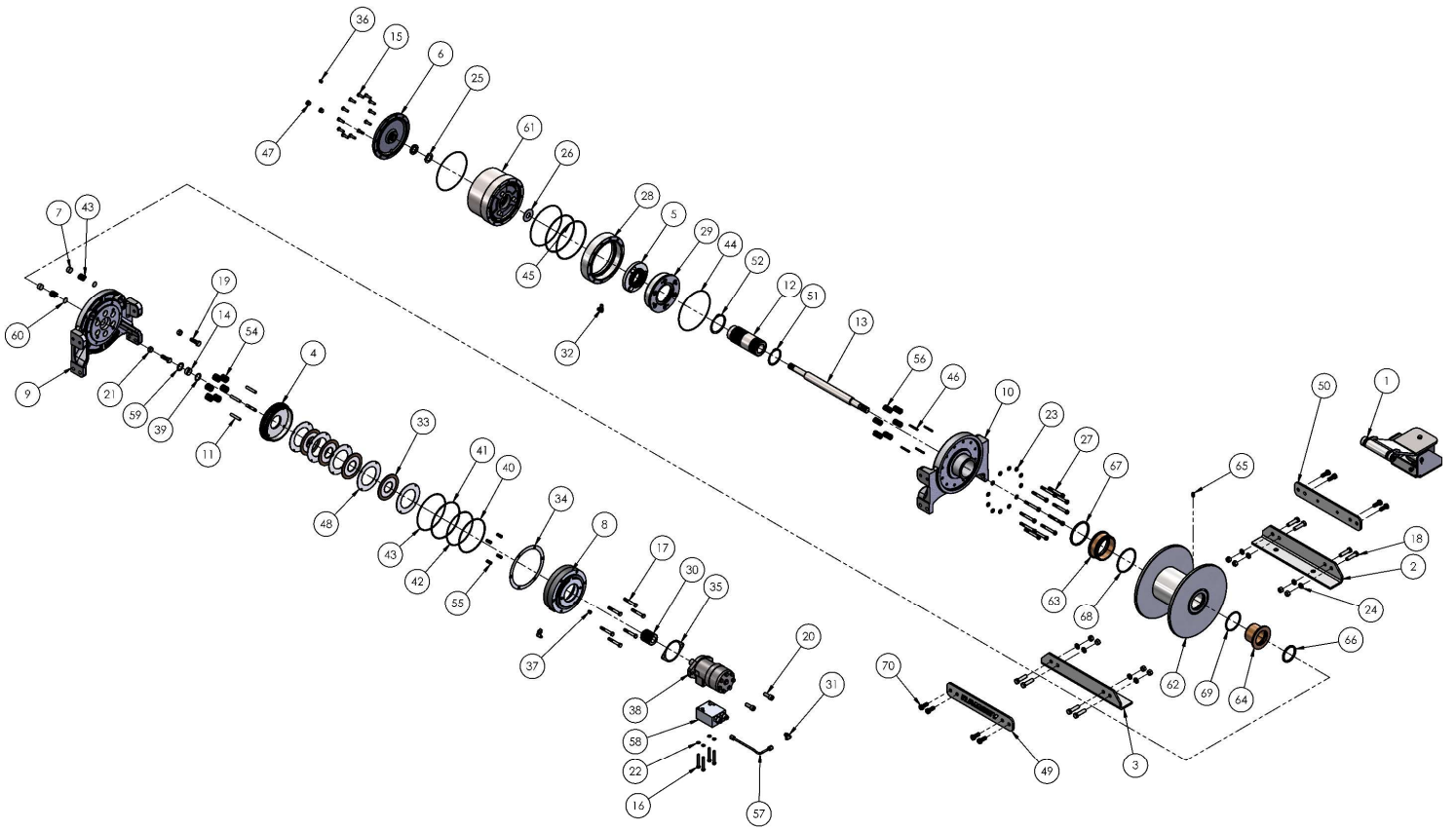


12 Roller Tensioner

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	265135	WELDMENT-LEVER ARM
2	1	346046	PIN-PIVOT
3	1	352038	RETAINER
4	2	354083	ROLLER-SHORT
5	1	354084	ROLLER
6	1	408452	BRACKET
7	2	412108	BUSHING
8	2	412178	TENSIONER BUSHING
9	2	414316	CAPSCREW-3/8 X 1-1/4
10	2	418045	NUT-3/8
11	2	418177	LOCKWASHER-3/8
12	2	420031	CAPSCREW
13	2	424005	COTTER PIN
14	1	432041	FITTING-AIR
15	1	433036	AIR CYLINDER
16	1	468002	REDUCER BUSHING
17	1	494155	SPRING
18	2	518100	WASHER

Kits and Maintenance Parts 13

127708



13 Kits and Maintenance Parts

127708

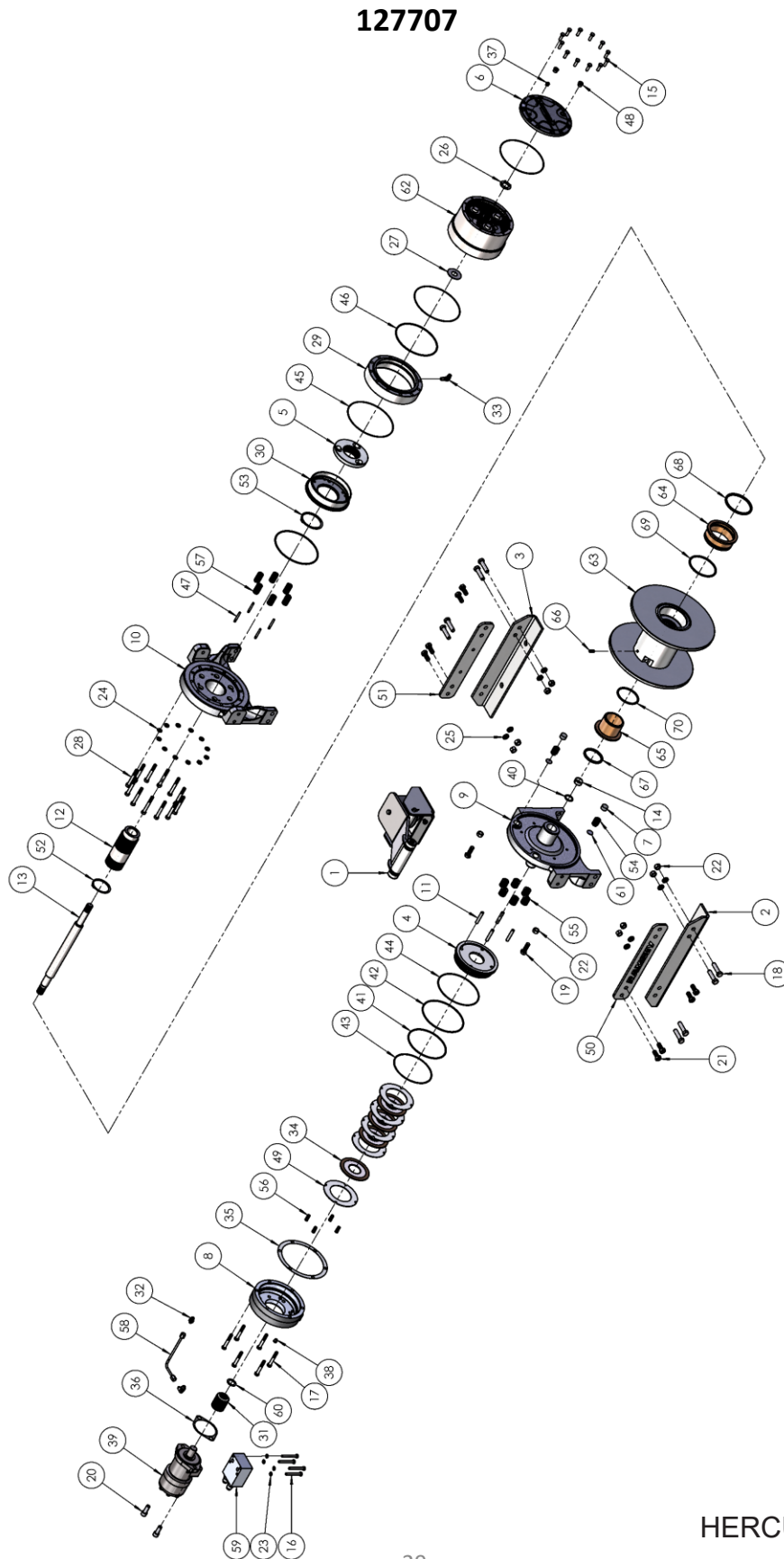
Item#	QTY.	PART NUMBER	DESCRIPTION	KITS				
				207021	222060	246070	248059	283084
1	1	299803	ASSEMBLY-AIR TENSIONER					
2	1	303205	BASE ANGLE-ONE					
3	1	303206	BASE ANGLE-TWO					
4	1	306042	PISTON-BRAKE	X				
5	1	324527	CLUTCH		X			
6	1	328213	COVER-GEAR BOX					
7	2	330015	PUCK-DRUM DRAG					
8	1	338302	HSG-BRAKE,RPH-12000					
9	1	338481	MOTOR END BEARING					
10	1	338482	GEAR END BEARING					
11	4	346045	PIN-BRAKE,RPH12,.375 DIA.X2.125 LG.	X				
12	1	357579	COUPLING-OUTPU					
13	1	357591	SHAFT-INPUT					
14	1	402121	BEARING-RPH12,GARLOCK BRG				X	
15	12	414136	CAPSCREW-5/16-18NCX1LG,HXHD,GR5					
16	4	414159	CS-5/16-18UNCX2.50,HXHD,GR5					
17	6	414303	BOLT-3/8-16NC X2 1/2,HXHD,GR-5					
18	8	414513	CAPSCREW-1/2-13 X 2.0 LG HX HD GR8					
19	2	414548	CAPSCREW-1/2-13NCX1 1/2,HXHD,G5					
20	2	414948	CAPSCREW-1/2-13NCX1 1/4LG,SOCKET HD					
21	10	418069	NUT-1/2-13NC HEX REG					
22	4	418163	LOCKWASHER-5/16 MED SECT					
23	12	418177	LOCKWASHER-3/8 MED SECT					
24	8	418218	LOCKWASHER-1/2 ID MED SECT					
25	1	418443	WASHER-THRUST					
26	1	418462	CLUTCH WASHER 2.125 OD X .878 ID X .070					
27	12	420047	CAPSCREW-3/8-16NC X 3 LG, HX HD, GR8					
28	1	426076	CYLINDER-CLUTCH					
29	1	426077	PISTON-CLUTCH		X			
30	1	431015	COUPLING-MOTOR	X				X
31	2	432018	FITTING C5OX-S T-LOK, 7/16-20 90 degree					
32	2	432041	FITTING-AIR					
33	4	438022	DISC-BRAKE					
34	1	442220	GASKET-BRAKE HSG			X		
35	1	442223	GASKET-MOTOR FLANGE			X		X

Kits and Maintenance Parts 13

127708

Item#	QTY.	PART NUMBER	DESCRIPTION	KITS				
				207021	222060	246070	248059	283084
36	1	456008	RELIEF FIT-1/8-27PFT					
37	1	456038	FITTING-VENT					
38	1	458124	MOTOR-HYDRAULIC, 9.78 CU IN					
39	1	462056	O-RING, I.D. DIA-.984			X		
40	1	462057	O-RING, I.D.DIA-5.734			X		
41	1	462058	O-RING, I.D DIA- 6.234			X		
42	1	462059	RING-BACK-UP, I.D. 5.750			X		
43	1	462060	RING-BACK-UP, I.D. DIA-6.250			X		
44	3	462063	O-RING, I.D. DIA-6.487		X	X		
45	2	462127	O-RING, 6.484 ID X 6.762 OD X .139THK		X	X		
46	4	470156	THREADED TAPER PIN		X			
47	2	472052	PLUG-SAE O-RING, .562-18NF					
48	5	474111	PLATE-SEPARATOR					
49	1	474260	TIE PLATE-WITH LOGO					
50	1	474261	TIE PLATE-TENS MTG					
51	1	490080	RING-RETAINER					
52	1	490081	RING-RETAINER		X			
53	2	494002	SPRING-QQ-W-428 TYPE					
54	6	494110	SPRING-BRAKE					
55	4	494112	SPRING					
56	6	494140	SPRING-HDP40-50		X			
57	1	509009	TUBE ASSY-1/4OD, HYD. BRK					
58	1	516074	VALVE-COUNTERBALANCE					
59	1	518052	WASHER-THRUST, 1.37 O.D.				X	
60	2	530094	SPACER-BRK DISC, 20GAX7/8 D					
61	1	530187	ASSEMBLY-GEAR BOX					
62	1	234289	WELDMENT-SHORT DRUM					
63	1	412092	BUSHING-DRUM, GEAR HSG. END				X	
64	1	412188	BUSHING-DRUM, MOTOR END				X	
65	1	416065	SETSCREW-3/8-16UNCX3/4LG, HXSOHD					
66	1	462013	QUAD-RING-2 7/8ODX2 1/2IDX3/16			X		
67	1	462050	QUAD-RING			X		
68	1	462052	O-RING, 3 7/8 ID			X		
69	1	462054	O-RING-3/16X3IDX3 3/8OD			X		
70	8	414961	BOLT 1/2-13NC X 1/1/4 LG, HX HD GR8,					

13 Kits and Maintenance Parts



Kits and Maintenance Parts 13

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Item#	QTY.	PART NUMBER	DESCRIPTION	KITS				
				207021	222060	246070	248059	283084
1	1	299803	AIR TENSIONER					
2	1	303205	BASE ANGLE-ONE					
3	1	303206	BASE ANGLE-TWO					
4	1	306042	PISTON-BRAKE	X				
5	1	324527	CLUTCH		X			
6	1	328213	COVER-GEAR BOX					
7	2	330015	PUCK-DRUM DRAG					
8	1	338302	HSG-BRAKE					
9	1	338481	MOTOR END BEARING					
10	1	338482	GEAR END BEARING					
11	4	346045	PIN-BRAKE,.375 DIA.X2.125 LG.	X				
12	1	357579	COUPLING-OUTPUT					
13	1	357591	SHAFT-INPUT					
14	1	402121	BEARING				X	
15	12	414136	CAPSCREW-5/16-18NCX1LG,HXHD,GR5					
16	4	414159	CS-5/16-18UNCX2.50,HXHD,GR5					
17	6	414303	BOLT-3/8-16NC X2 1/2,HXHD,GR-5					
18	8	414513	CAPSCREW-1/2-13 X 2.0 LG HX HD GR8					
19	2	414548	CAPSCREW-1/2-13NCX1 1/2,HXHD,G5					
20	2	414948	CAPSCREW-1/2-13NCX1 1/4LG					
21	8	414961	BOLT 1/2-13NC X 1/1/4 LG, HX HD GR8					
22	10	418069	NUT-1/2-13NC HEX REG					
23	4	418163	LOCKWASHER-5/16					
24	12	418177	LOCKWASHER-3/8					
25	8	418218	LOCKWASHER-1/2 ID					
26	1	362360	WASHER-THRUST					
27	1	418462	CLUTCH WASHER 2.125 OD X .878 ID X .070					
28	12	420047	CAPSCREW-3/8-16NC X 3 LG, HX HD, GR8					
29	1	426076	CYLINDER-CLUTCH					
30	1	426077	PISTON-CLUTCH		X			
31	1	431015	COUPLING-MOTOR	X				X
32	2	432018	FITTING, 7/16-20 90 degree					
33	1	432041	FITTING-AIR,PUSH IN					
34	4	438022	DISC-BRAKE					
35	1	442220	GASKET-BRAKE HSG			X		

13 Kits and Maintenance Parts

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Item#	QTY.	PART NUMBER	DESCRIPTION	KITS				
				207021	222060	246070	248059	283084
36	1	442223	GASKET-MOTOR FLANGE			X		X
37	1	456008	RELIEF FIT-1/8-27PFT					
38	1	456038	FITTING-VENT,BREATHER					
39	1	458124	MOTOR-HYDRAULIC					
40	1	462056	O-RING, ID-.984			X		
41	1	462057	O-RING, ID-5.734			X		
42	1	462058	O-RING, ID-6.234			X		
43	1	462059	RING-BACK-UP, ID-5.75			X		
44	1	462060	RING-BACK-UP, ID-6.25			X		
45	3	462063	O-RING, ID-7		X	X		
46	2	462127	O-RING, 6.484 ID X 6.762 OD X .139THK		X	X		
47	4	470156	THREADED TAPER PIN		X			
48	2	472052	PLUG-SAE O-RING,.562-18NF					
49	5	474111	PLATE-SEPARATOR,BRAKE					
50	1	474260	TIE PLATE					
51	1	474261	TIE PLATE					
52	1	490080	RING-RETAINER, ID-2.892					
53	1	490081	RING-RETAINER, ID-2.428		X			
54	2	494002	SPRING					
55	6	494110	SPRING-BRAKE					
56	4	494112	SPRING PRESSURE TO BRAKE					
57	6	494140	SPRING		X			
59	1	516074	VALVE-COUNTERBALANCE					
60	1	518052	WASHER-THRUST,1.37 O.D				X	
61	2	530094	SPACER-BRK DISC,20GAX7/8 D					
62	1	530187	ASSEMBLY-GEAR BOX					
63	1	234289	DRUM					
64	1	412092	BUSHING-DRUM,GEAR HSG.END				X	
65	1	412188	BUSHING-DRUM, MOTOR END				X	
66	1	416065	SETSCREW-3/8-16UNCX3/4LG,HXSOHD					
67	1	462013	QUAD-RING-2 7/8ODX2 1/2IDX3/16			X		
68	1	462050	QUAD-RING			X		
69	1	462052	O-RING 3 7/8 ID			X		
70	1	462054	O-RING-3/16X3IDX3 3/8OD			X		

**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.
- (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.

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.

Notes

