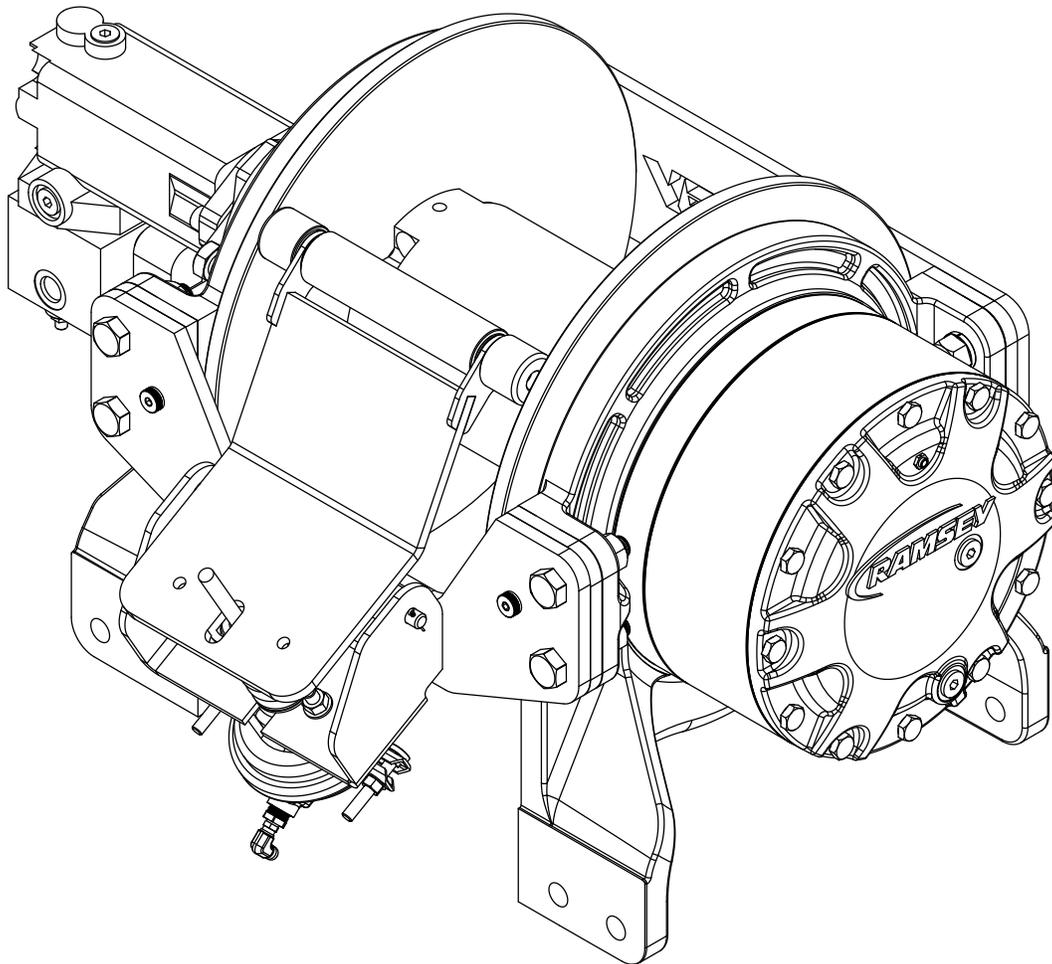




Operating/Service/Maintenance Manual

Hercules 50K

OM 914289-0918-B



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 *(LOW SPEED)							
RELATED LINE PULL (LBS.)		50,000					
(KGS.)		2,670					
GEAR REDUCTION		51.35:1					
WEIGHT (WITHOUT CABLE)		740 LBS. (336 KGS.)					
LAYER OF CABLE		1	2	3	4	5	6
RATED LINE PULL PER LAYER	LBS.	50,000	41,800	36,000	31,600	28,100	25,400
	KGS.	22,680	18,960	16,320	14,330	12,740	11,500
CABLE CAPACITY	FT.	25	60	100	145	190	250
	M.	7	18	30	44	57	76
LINE SPEED (AT 25GPM)	FPM	20	22	25	28	31	35
	MPM	5.6	6.6	7.6	8.6	9.5	10.5
* THESE SPECIFICATIONS ARE BASED ON RECOMMENDED WIRE ROPE OF .75" DIAMETER EIPS CABLE AND 11.9 CU. IN./REV. MOTOR AT 2900 PSI WORKING PRESSURE.							
* USE ONLY RAMSEY WINCH RECOMMENDED 3/4" SYNTHETIC ROPE.							
* 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 3/4" synthetic rope.

A minimum of 8 wraps of Ramsey Winch recommended synthetic rope is necessary to hold load.

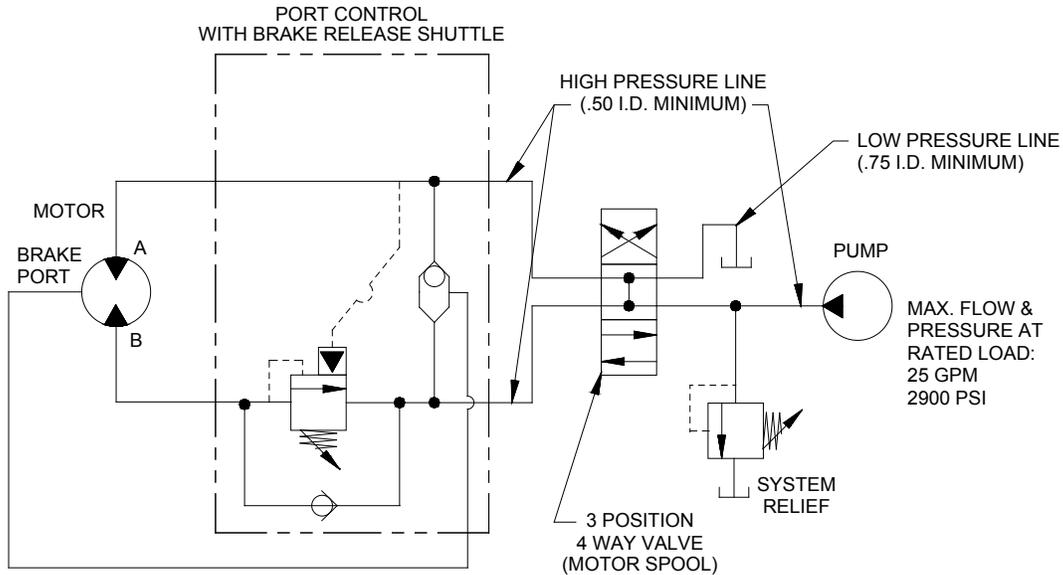
Cable anchor is not designed to hold load.

2 Hydraulic System Requirements

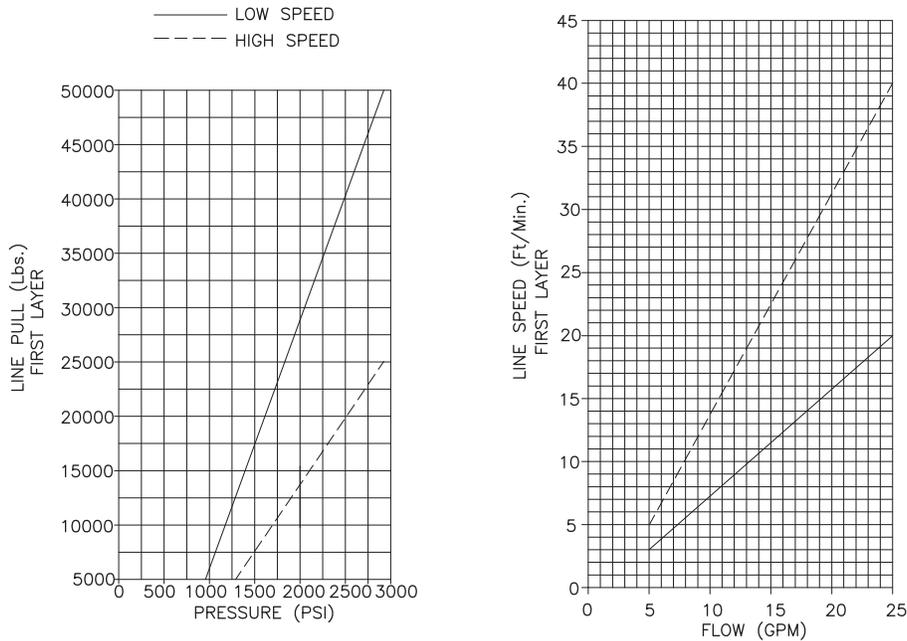
Refer to the performance charts to properly match your hydraulic system to Hercules 50K winch performance.

(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 11.9 cubic inches with 25 GPM maximum flow rate. See page 10 for motor port size.

TYPICAL LAYOUT



PERFORMANCE WITH 11.9/5.95 IN³ 2-SPEED HYDRAULIC MOTOR:



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 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

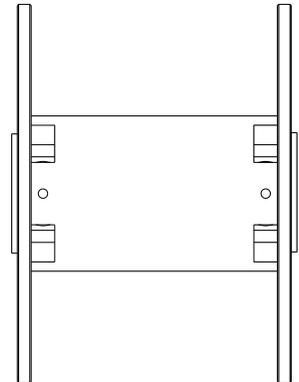
Do not attempt to engage the clutch by first running the winch motor and then moving the clutch control valve to the "clutch-engaged" position while the motor is running. Do not start picking up the load at the same time the clutch is being engaged.

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. This winch has a cable anchor located at each end of the drum which allows cable installation on either end.
2. 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.
3. 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.**
4. 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 (MBS 58,000 lbs.). Maximum Winch capacity is 250 ft. of 3/4" rope.
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 anchor hole.



4. Push rope into anchor hole until it is even with back side of hole.

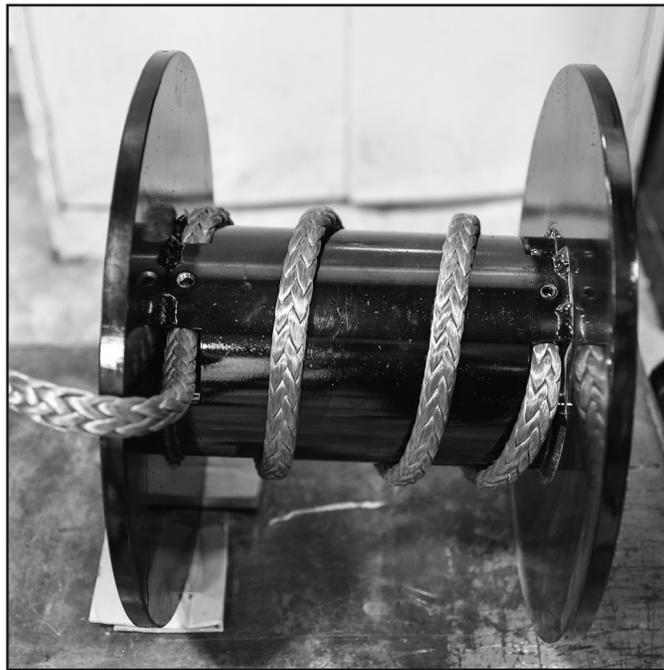


4 Synthetic Rope Installation

5. Tighten anchor set screw until it is flush with drum barrel.



6. Pull excess slack from rope until rope is tight against drum barrel.



Synthetic Rope Installation 4

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



5 Rope Inspection Techniques

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)



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

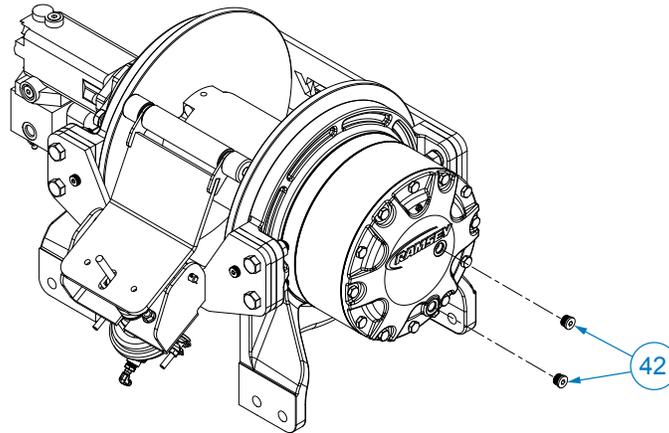
1. Drain the oil from the winch annually or more often if winch is used frequently.
2. Fill the winch to the oil level plug with clean kerosene. Run the winch a few seconds with no load in the reel in direction. Drain the kerosene from the winch.
3. Refill the winch to the oil level plug with all-purpose 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: 100PSI MINIMUM REQUIRED. REFER TO PAGE 15 FOR PORT LOCATION.
BRAKE WILL NOT RELEASE	1. BRAKE LINE DISCONNECTED OR BLOCKED	1. CHECK BRAKE FUNCTION

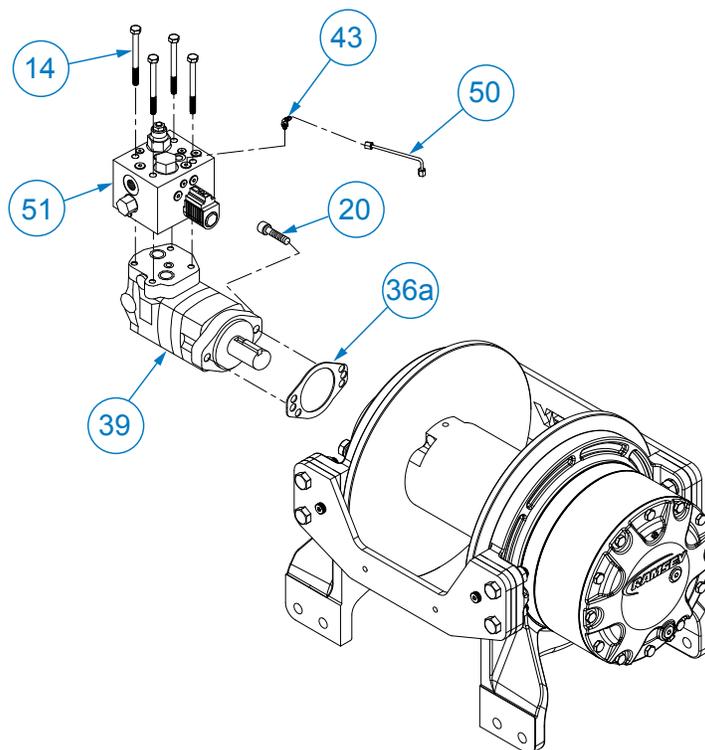
7 Instructions for Overhaul

Disassembly

1. Drain oil from gear housing cover by removing o-ring plugs #42. Remove tensioner assembly.

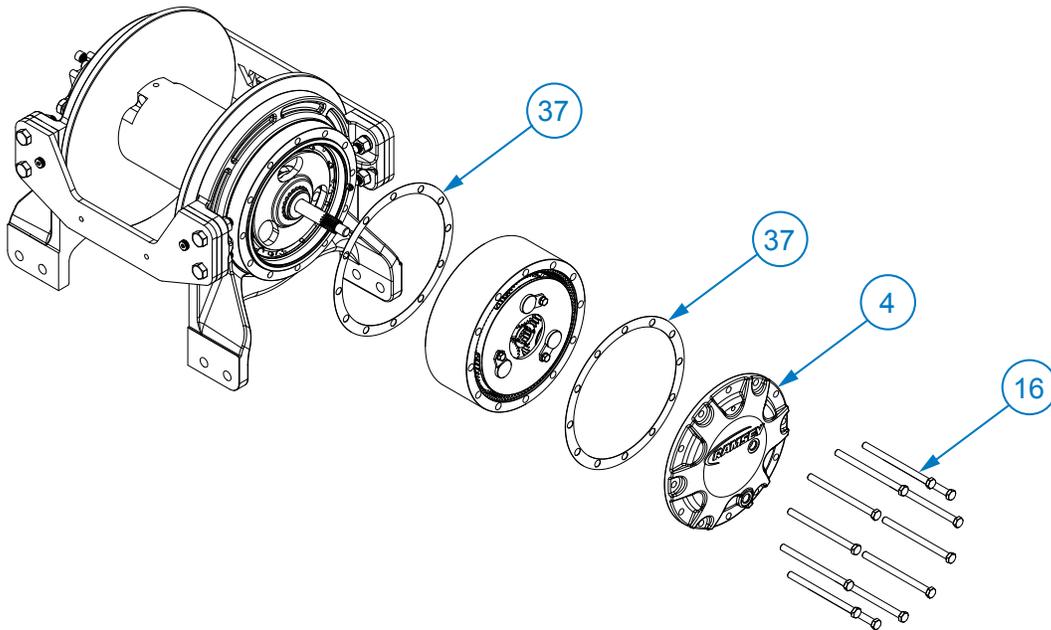


2. Disconnect hose #50 from elbow #43 on valve #51 and fitting #29 on brake #36. Remove motor #39 and gasket #36a by removing (2) cap screws #20. Remove valve #51, if needed, from motor by loosening (4) cap screws #14.

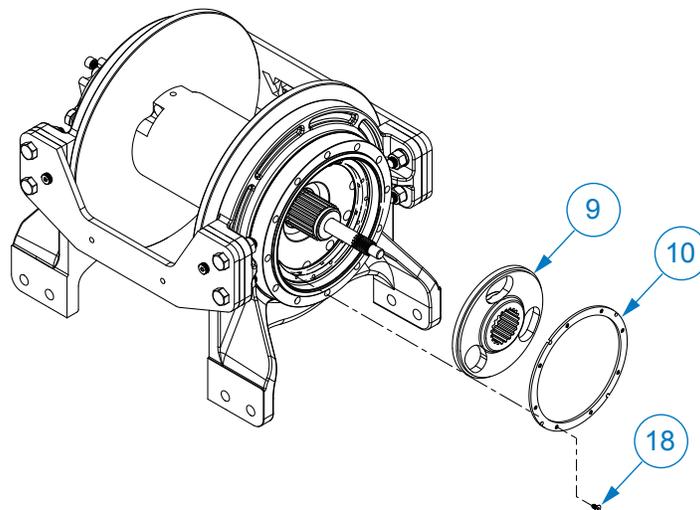


Instructions for Overhaul 7

3. Remove (12) cap screws #16 to remove gear housing cover and gasket from ring gear. Remove input thrust washer, sun gear and input carrier assembly from inside ring gear. Remove ring gear and gasket. Remove output carrier assembly. Replace if damaged or excessive wear.

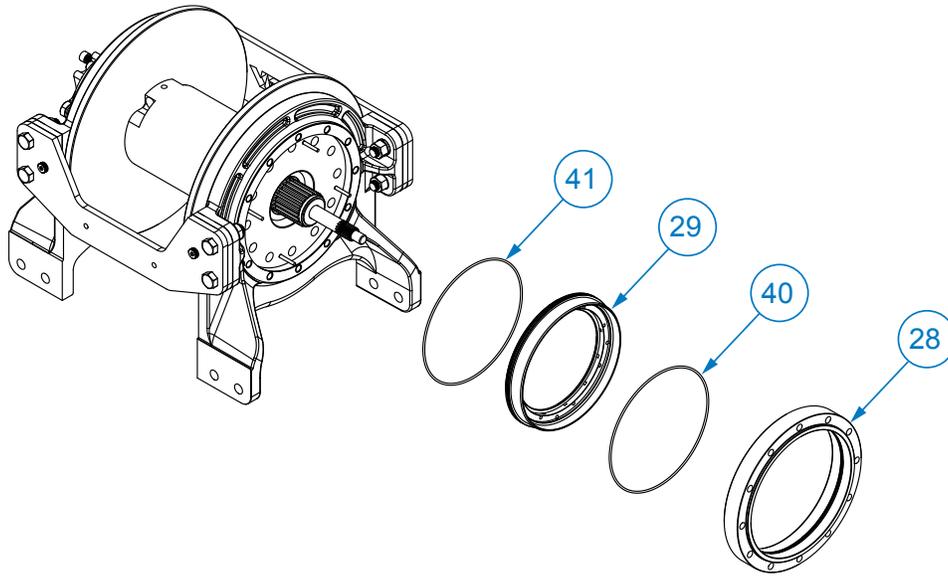


4. Remove (8) cap screws #18 to remove clutch retainer plate #10 from clutch piston. Remove clutch #9.

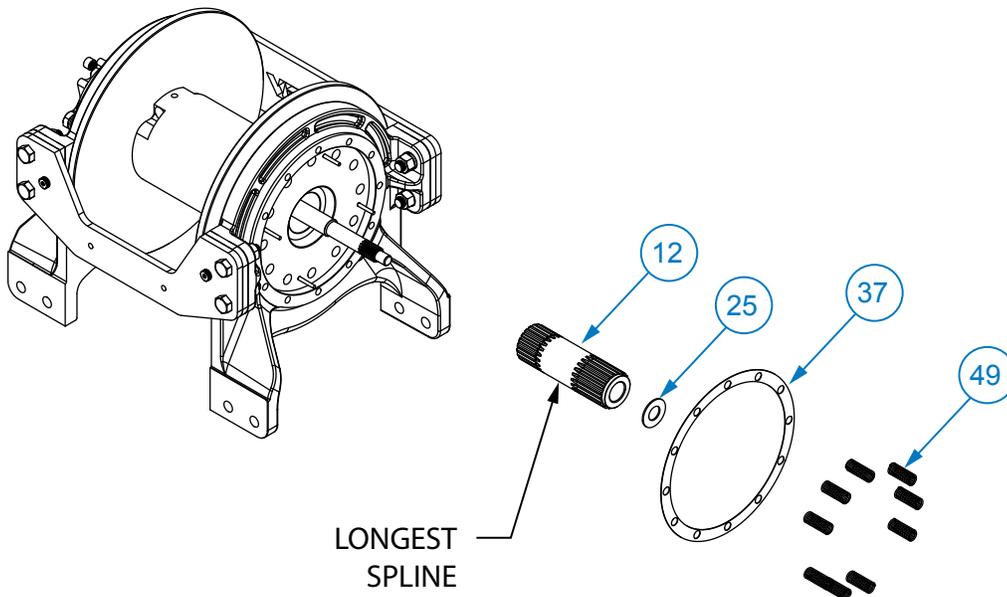


7 Instructions for Overhaul

5. Remove clutch housing #28 with piston #29 inside. To remove piston from clutch housing apply air to 1/8" port. Remove o-rings #40 and #41 and inspect for damage or wear.

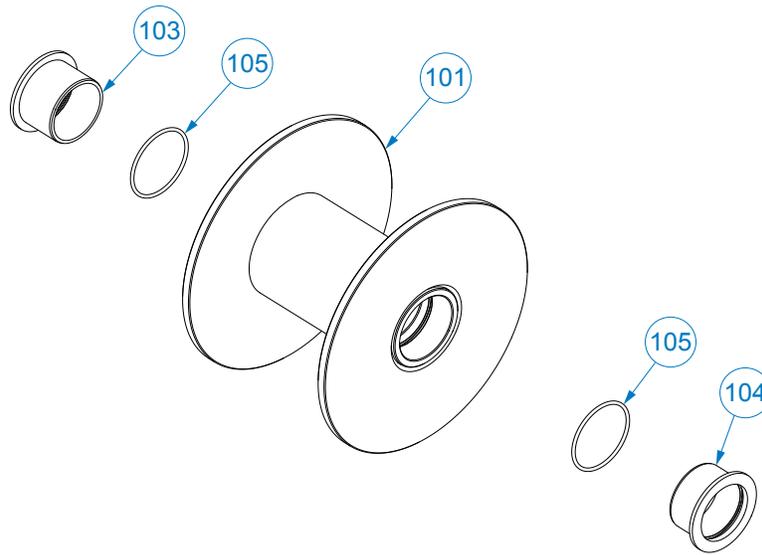


6. Remove (9) springs #49, thrust washer #25, gasket #37, output shaft #12 from gear end bearing. Replace if damaged or excessive wear.

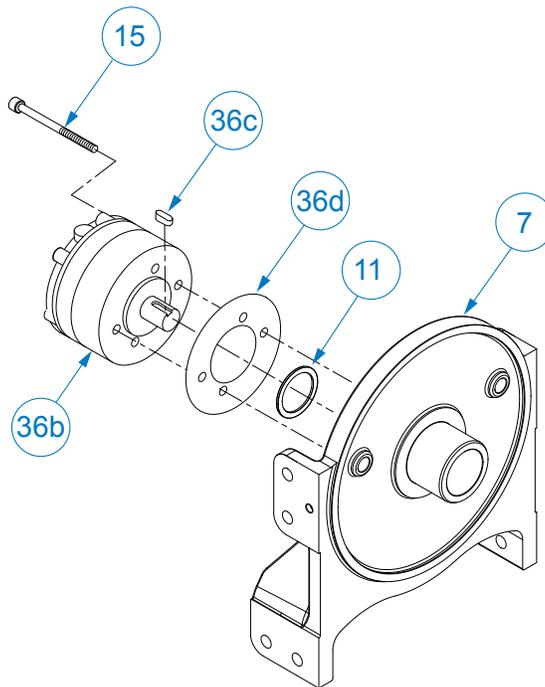


7 Instructions for Overhaul

9. If splines inside drum are damaged, drum must be replaced. If bushings show signs of wear, replace by pressing old bushings from drum #101 and removing o-rings from grooves in drum. Place well oiled o-rings #106 into drum. Press bushings #104 into drum until flange is flush and #103 is flush against drum.

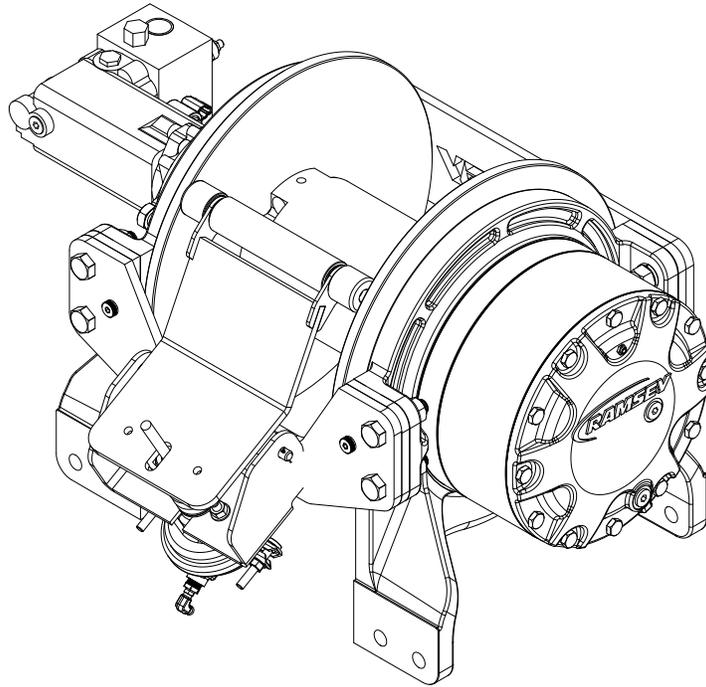


10. Remove brake assembly screws #15 attaching brake #36b to end bearing #7. Remove gasket #36d from end bearing. Take note of mounting configuration for proper mounting of parts during re-assembly.

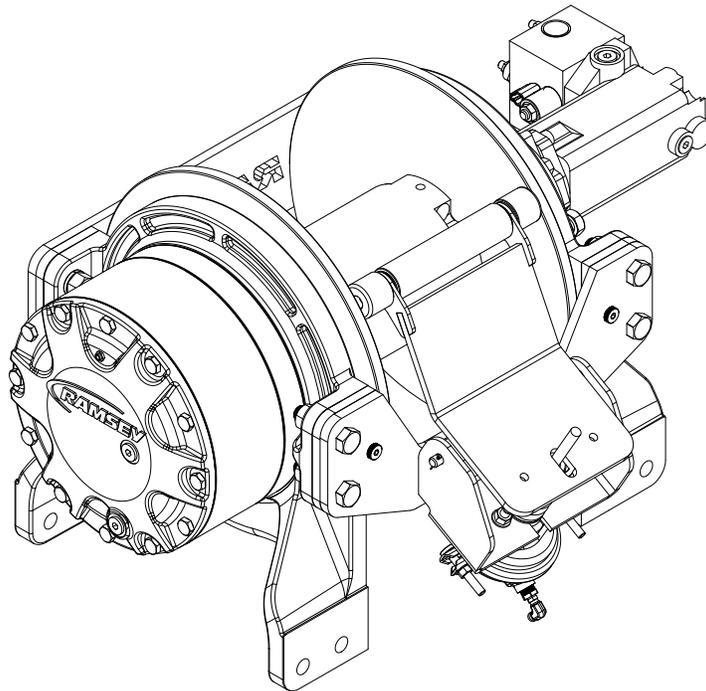


Winch Mounting Configuration 8

R.H. HIGH ANGLE MOUNTING CONFIGURATION

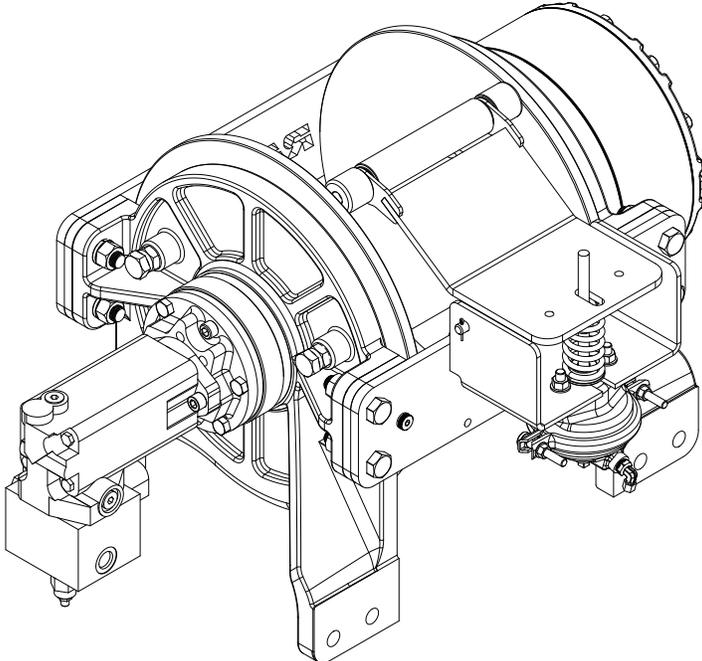


L.H. HIGH ANGLE MOUNTING CONFIGURATION

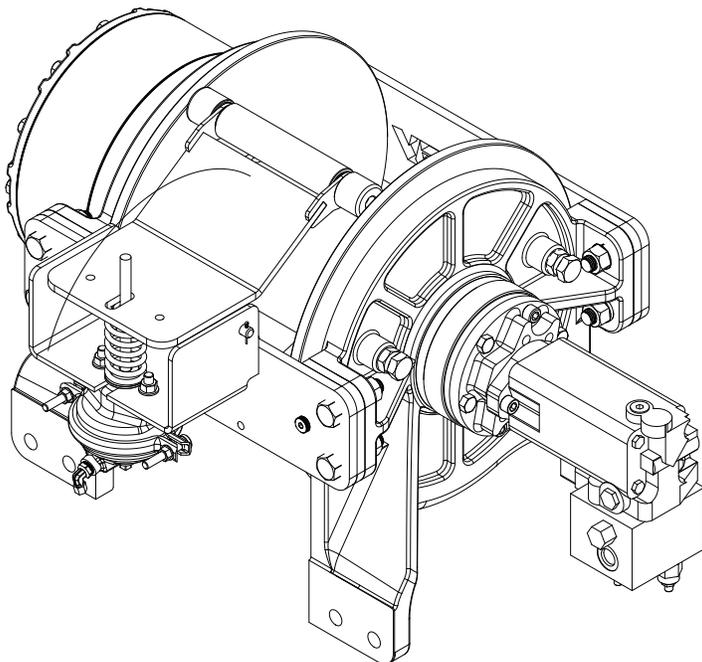


8 Winch Mounting Configuration

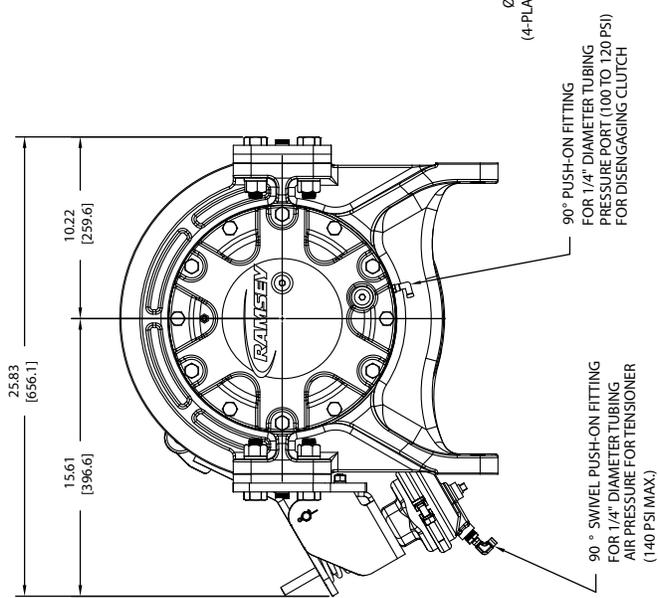
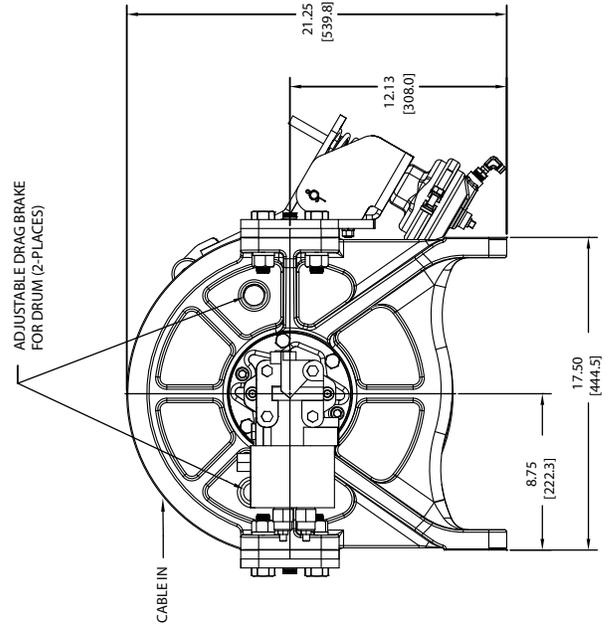
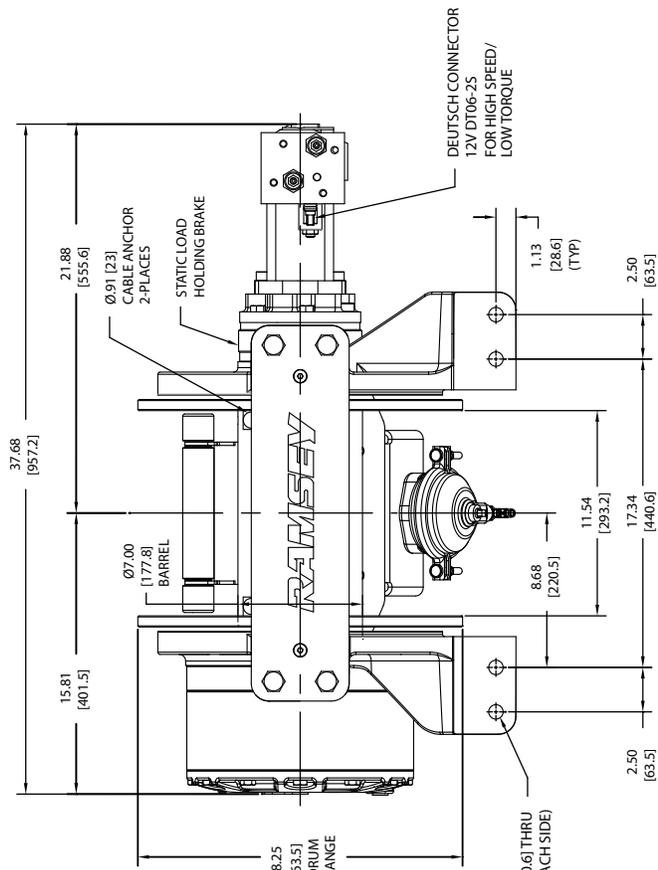
R.H. STANDARD MOUNTING CONFIGURATION



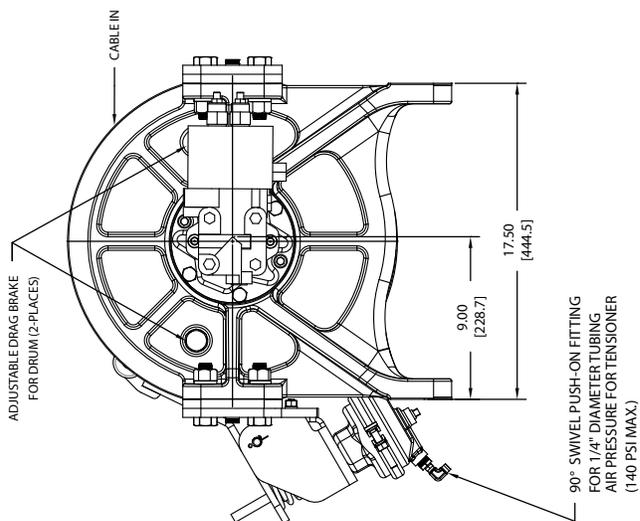
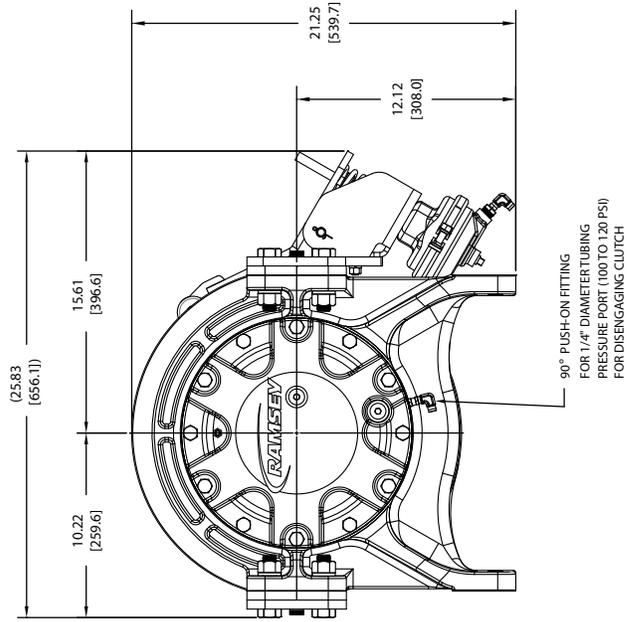
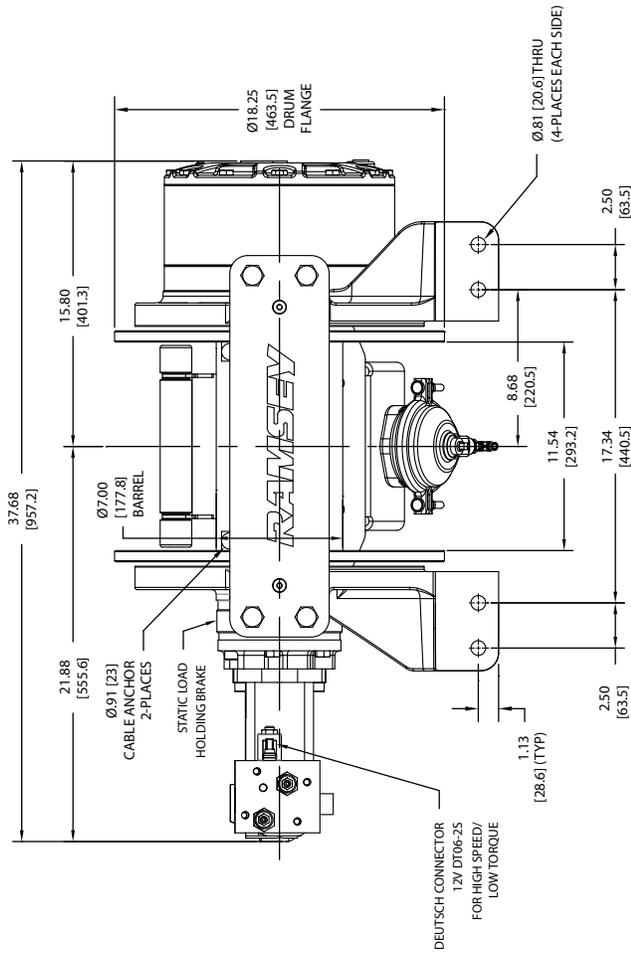
L.H. STANDARD MOUNTING CONFIGURATION



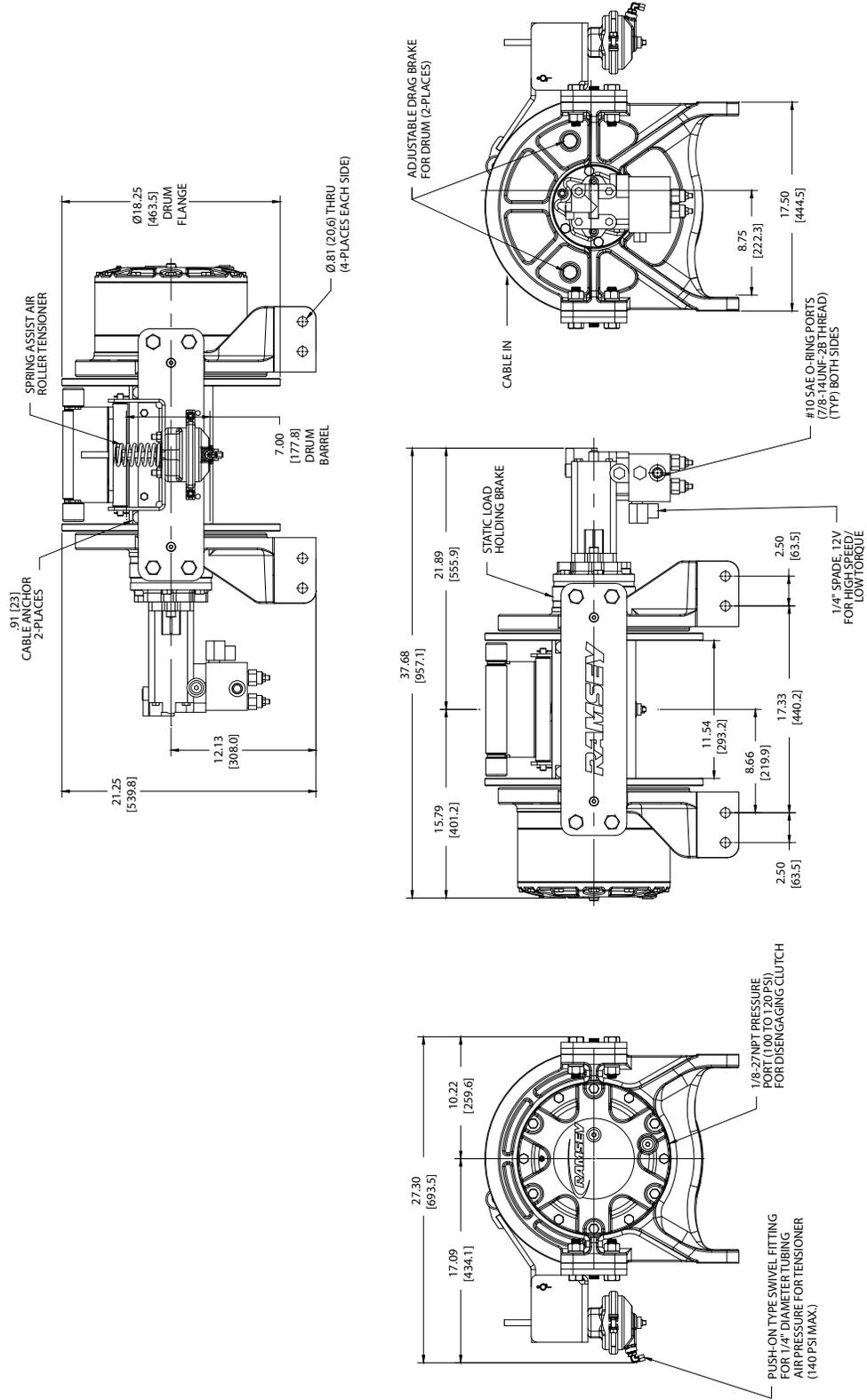
R.H. High Angle Mount Dimensional View 9



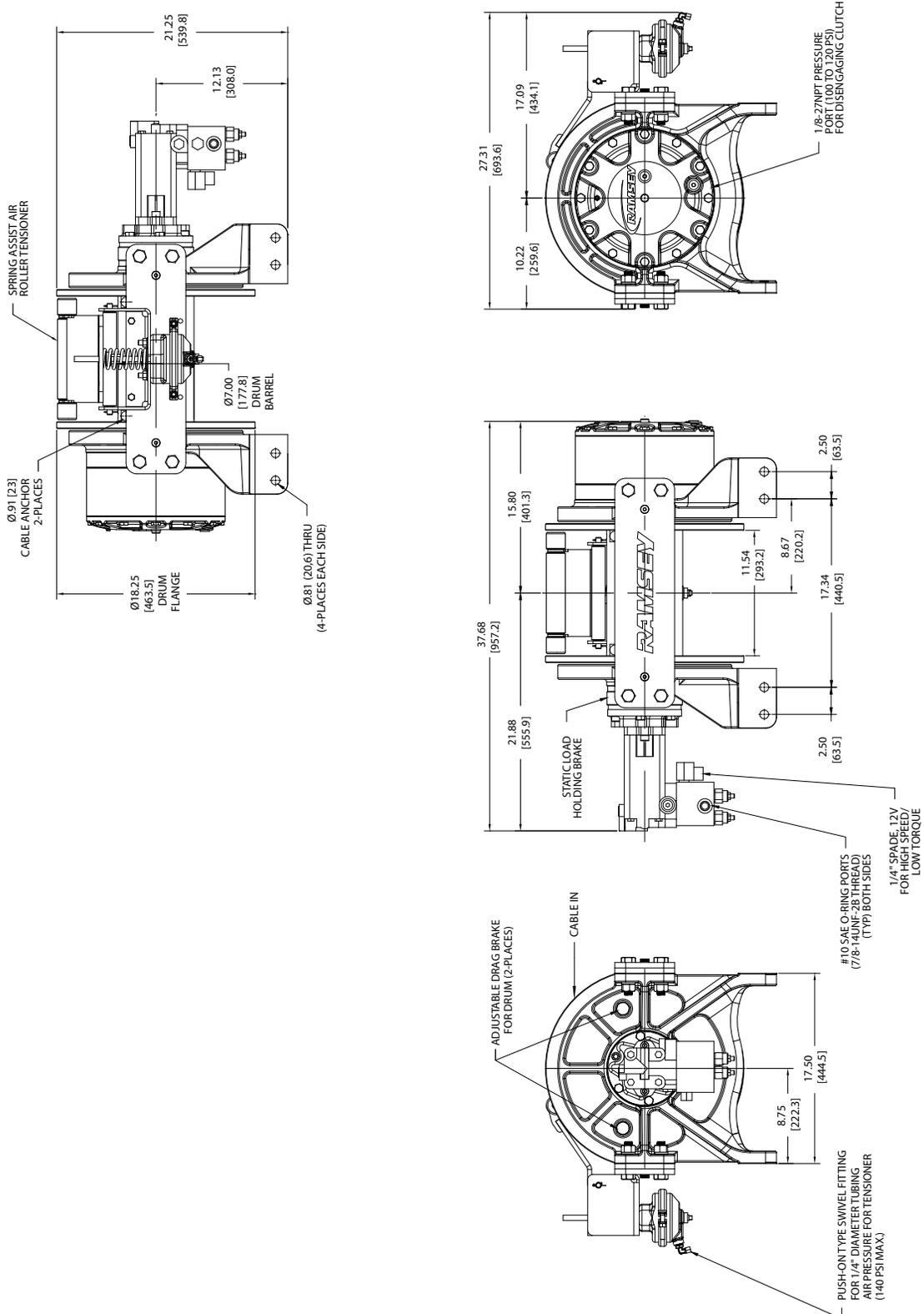
9 L.H. High Angle Mount Dimensional View



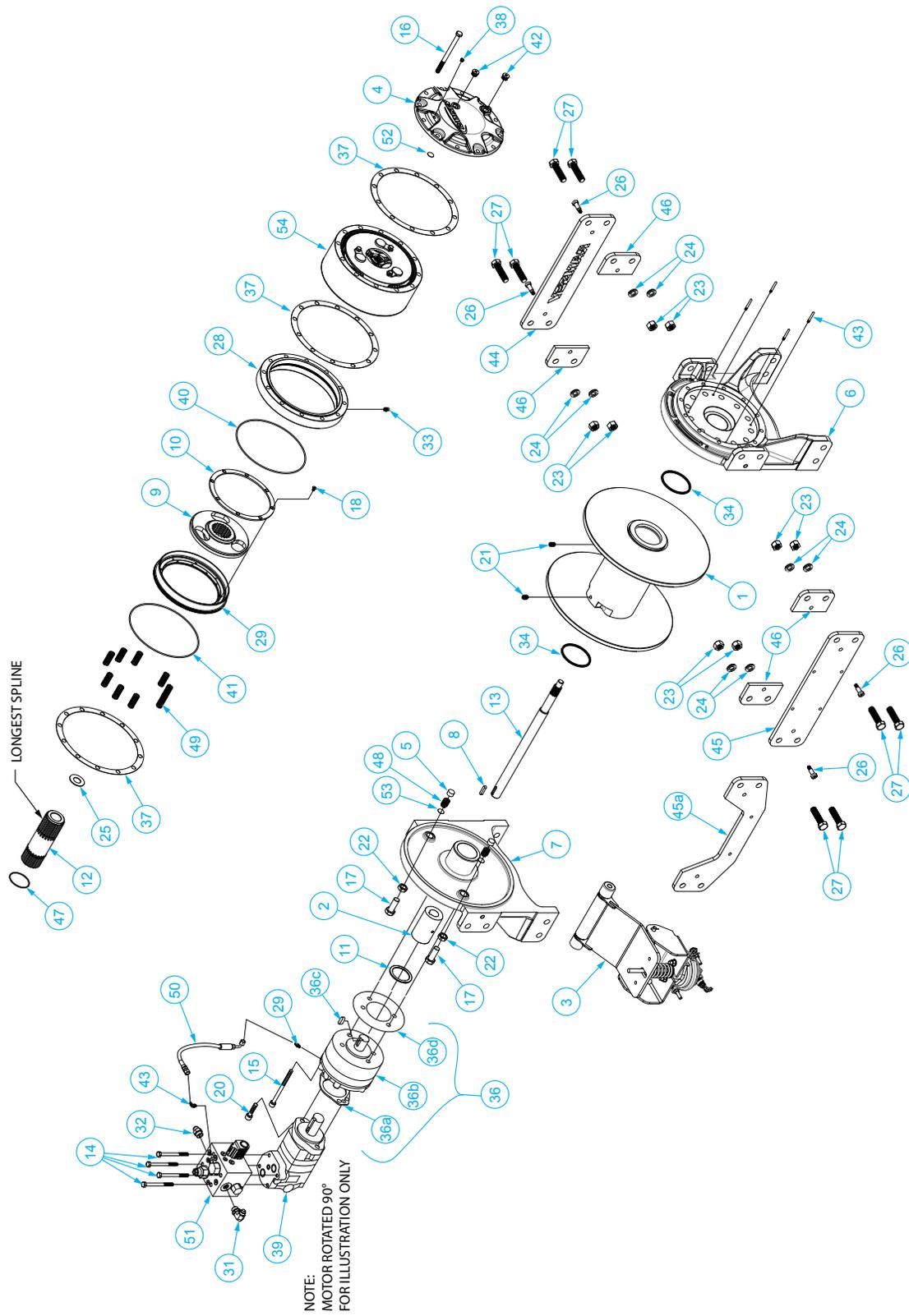
R.H. Standard Mount Dimensional View 10



10 L.H. Standard Mount Dimensional View



Winch Exploded View 11



11 Winch Exploded View

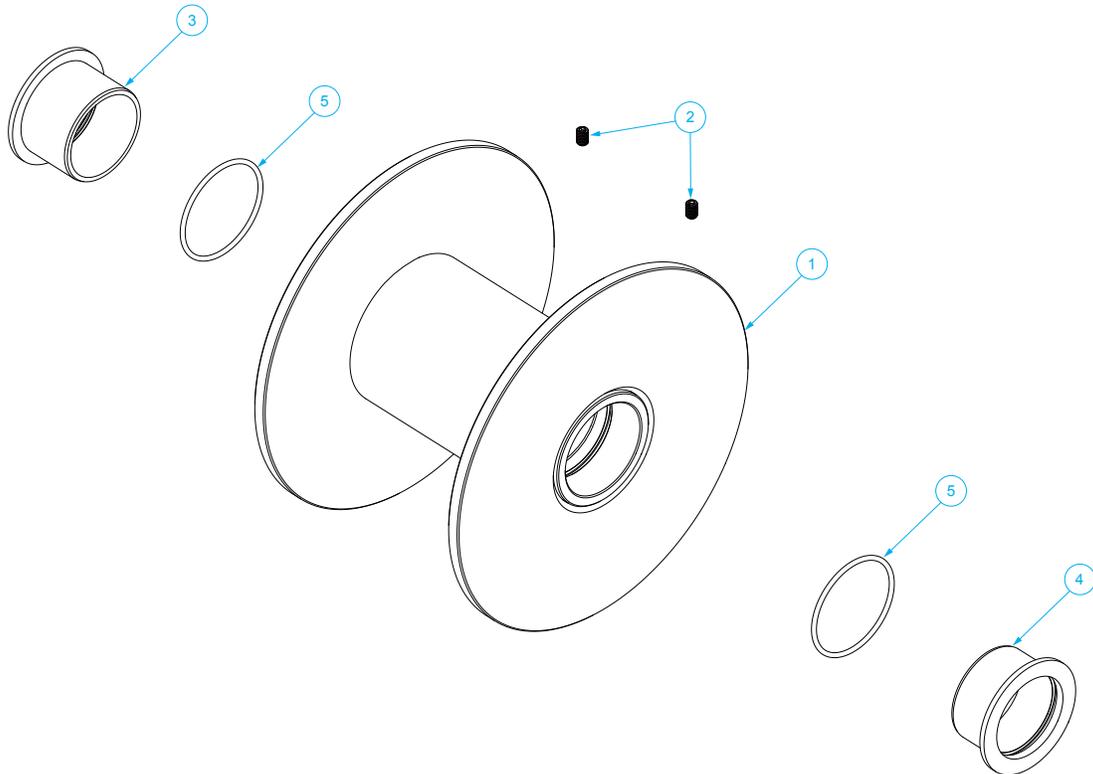
ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	234263	ASSEMBLY-DRUM, FABRICATED, HERC 50K
2	1	299733	ASSEMBLY-MOTOR COUPLING, H700 & H800
3	1	299777	ASSEMBLY-SPECIAL MOUNTED AIR ROLLER TENSIONER, HERC 50K
3a	1	299776	ASSEMBLY, STD AIR ROLLER TENSIONER, HERC 50K
4	1	328184	COVER GEAR HOUSING MACHINED HDP 40/50
5	2	330015	PUCK-DRUM DRAG FREESPOOL
6	1	338459	GEAR END BEARING-MACHINED, HERC 50K
7	1	338460	MOTOR END BEARING-MACHINED, HERC 50K
8	2	342081	KEY-RD ENDS,5/16X5/16X1.5LG, HT,PURC
9	1	342517	CLUTCH HDP40-50
10	1	352035	RING-RETAINING CLUTCH HDP40-50
11	1	352036	PLATE RETAINER, AUSCO
12	1	357543	COUPLING-OUTPUT HDP40-50
13	1	357546	SHAFT-INPUT HDP40-50
14	4	414400	CAP SCREW-3/8-24NF X4LG, HXHD,GR-5
15	2	414595	CAP SCREW-1/2-13NC x 3-1/2 LONG, HX SOC HD, GR8, BLACK OXIDE FINISH
16	12	414612	CAP SCREW-1/2-13NCX7 GR5,PLTD
17	2	414772	CAP SCREW-3/4-16NFX2LG HXHD GRADE 5
18	8	414819	BOLT-1/4-20NCX1/2,FLAT SOCHD,ND STP
19			N/A
20	2	414948	CAP SCREW-1/2-13NCX1 1/4LG,SOCKET HD
21	2	416072	SET SCREW-1/2-13NCX3/4LG HXSOCHD CUP
22	2	418098	NUT-3/4-16NF HEX JAM
23	8	418099	NUT-3/4-10NC HEX REG,ZINC PLATED
24	8	418249	LOCK WASHER-3/4 ID MED SECT,ZINC PLT
25	1	418520	WASHER-THRUST HDP40-50
26	4	418555	SHOULDER BOLT-1/2 X 1-1/4, Z/P
27	8	420030	CAP SCREW-3/4-10UNC X 3 LG, HX HD, GR-8, Z/P
28	1	426059	CYLINDER-CLUTCH HDP40-50
29	1	426060	PISTON-CLUTCH HDP40-50
30	1	432023	FITTING-7/16-20,PARKER#0503-4-4/EQ
31	1	432064	FITTING-HYD, #8 SAE MJIC TO #10 OMB, 90 DEG.
32	2	432065	FITTING-HYD, #8 MJIC TO #10 SAE OMB, STRT.
33	1	432066	FITTING-AIR, PUSH-ON STRT QUICK CONNECT
34			N/A
35			N/A
36	1	438044	BRAKE ASSEMBLY
36a	1		MOTOR AND GASKET
36b	1		BRAKE
36c	1		KEY
36d	1		ADAPTER PLATE GASKET
37	3	442210	GASKET-GEAR BX,#14-01-045-001,IPH45
38	1	456008	RELIEF FIT-1/8-27PFT,BALL CHECK,Z/P
39	1	458126	MOTOR-HYDRAULIC, TWO SPD 2000 SERIES 11.9 CU IN DISPLACEMENT RPH35000 CL#193-0014-001
40	1	462103	O RING 2-274 MS-28775 LOW TEMP
41	1	462104	O RING 2-275 MS-28775 LOW TEMP

Winch Exploded View 11

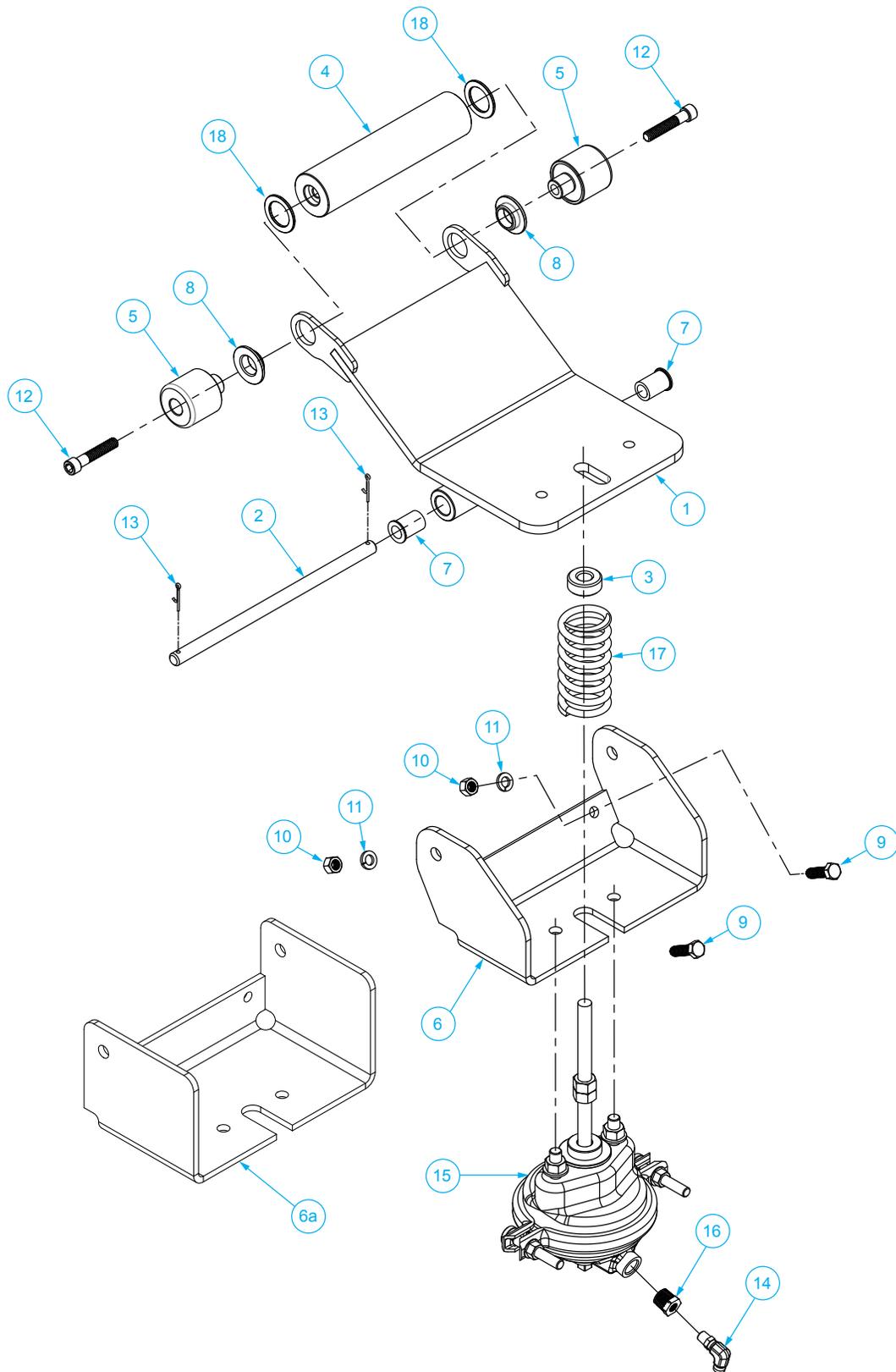
ITEM NO.	QTY	PART NO.	DESCRIPTION
42	2	468041	PLUG-3/4-16 (-8 SAE) WITH O-RING, SOC HD
43	4	470156	THREADED TAPER PIN
44	1	474244	TIE PLATE-HERC 50K, W/RAMSEY LOGO
45	1	474247	TIE PLATE-TIE PLATE, HERC 50K, W/STD TENS MTG
45a	1	474245	TIE PLATE-FOR SPECIAL MOUNTED TENSIONER, HERC 50K
46	4	474246	SPACER-TIE PLATE, HERC 50K
47	1	490072	RING-RETAINING, EXTERNAL
48	2	494002	SPRING-QQ-W-428 TYPE I MUSIC WIRE
49	9	494140	SPRING-HDP40-50, LEE SPRING # LC085J06
50	1	509139	HOSE 4-4 90 DEG 37 DEG FLARE - 13.39 INCH
51	1	516024	VALVE, MTR CONTROL 24V
51a	1	516025	VALVE, MTR CONTROL 12V
52	1	518027	THRUST DISC-.035X.922DIA/ALL PLANET
53	2	530094	SPACER-BRK DISC,20GAX7/8 D, W/438001

12 Drum Assembly

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	234248	DRUM ASSEMBLY-FABRICATED, SHORT, HDP 50
2	2	416072	SET SCREW-1/2-13NCX3/4LG HXSOCHD CUP
3	1	412078	BUSHING-DRUM,SAE 660 BRZ,IPH-45000
4	1	412079	BUSHING-DRUM,SAE 660BRZ,4 3/8IDX3LG
5	2	462043	O-RING-AS-568-348,3/16X4 3/4X4 3/8



Cable Tensioner 13



13 Cable Tensioner

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	265129	WELDMENT-LEVER ARM
2	1	346046	PIN-PIVOT
3	1	352038	RETAINER
4	1	354066	ROLLER
5	2	354067	ROLLER-SHORT
6	1	408453	BRACKET
6a	1	408452	BRACKET (STANDARD)
7	2	412108	BUSHING
8	2	412178	TENSIONER BUSHING
9	2	414316	CAP SCREW-3/8 X 1-1/4
10	2	418045	NUT-3/8
11	2	418177	LOCK WASHER-3/8
12	2	420031	CAP SREW
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

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 on 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 on 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.

