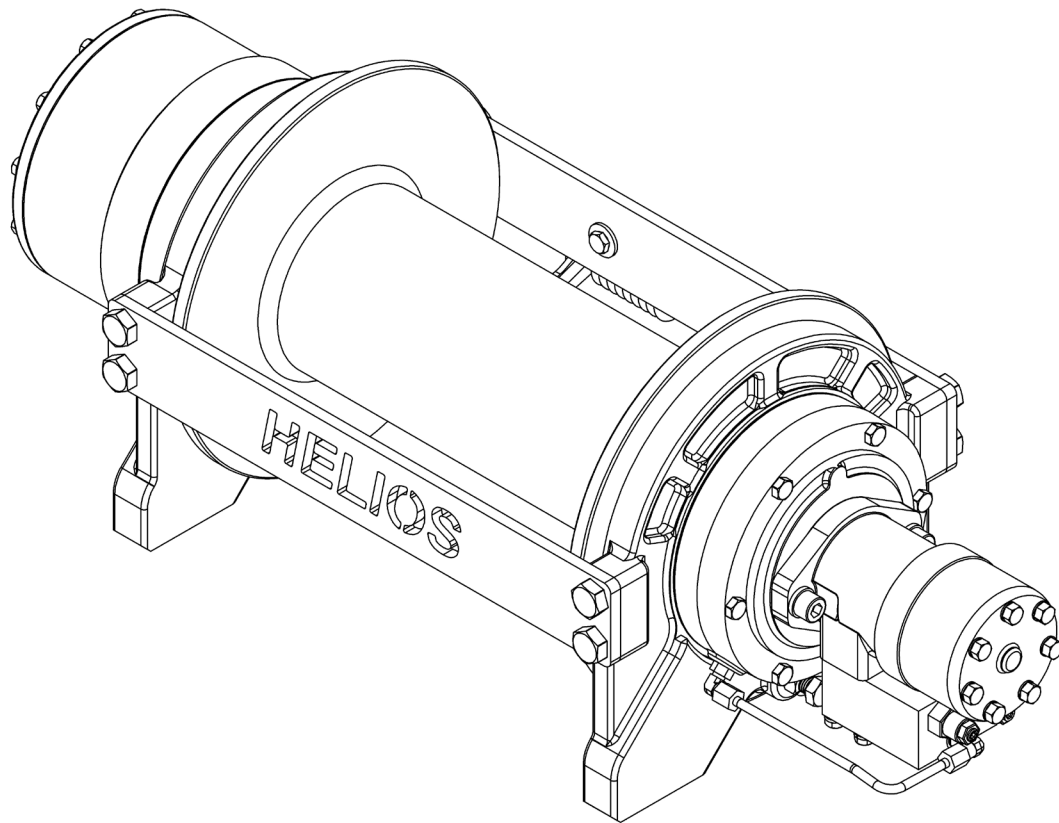




Operating/Service/Maintenance Manual

HELIOS 20K

OM 914312-0725-C



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.

Rated Line Pull		20,000	(lbs.)			
		9,070	(Kg.)			
Gear Reduction		25.53:1				
Weight (without cable)		320 lbs. (145.2 Kg)				
LAYER OF CABLE		1	2	3	4	5
*Rated line pull per layer	lbs.	20,000	16,971	14,732	13,015	11,656
	Kg.	9,070	7,697	6,682	5,903	5,287
*Cable Capacity	ft.	35	80	135	195	260
	m	10	24	41	59	79
*Line Speed	FPM	21.8	25.7	29.6	33.5	37.5
	MPM	6.6	7.8	9	10.2	11.4
* These specifications are based on recommended wire rope of .56 inch dia. EIPS and 12.2 cu.in./rev. motor at 2400 psi working pressure.						
*Directional control valve: 3-position, 4 way motor spool (open center).						
*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 5/8" synthetic rope.

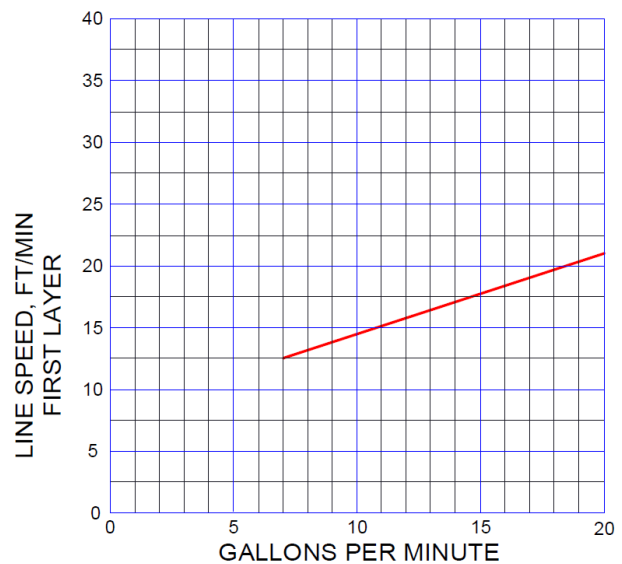
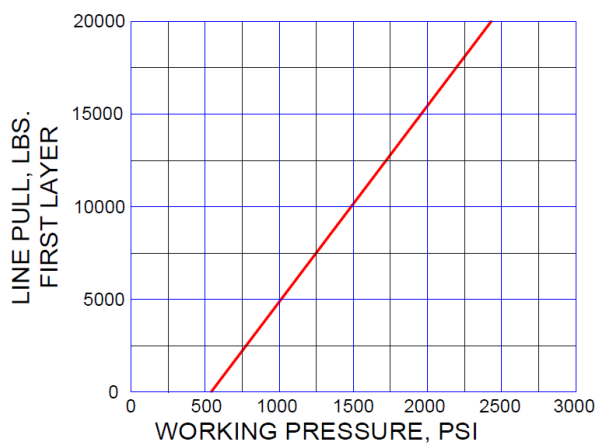
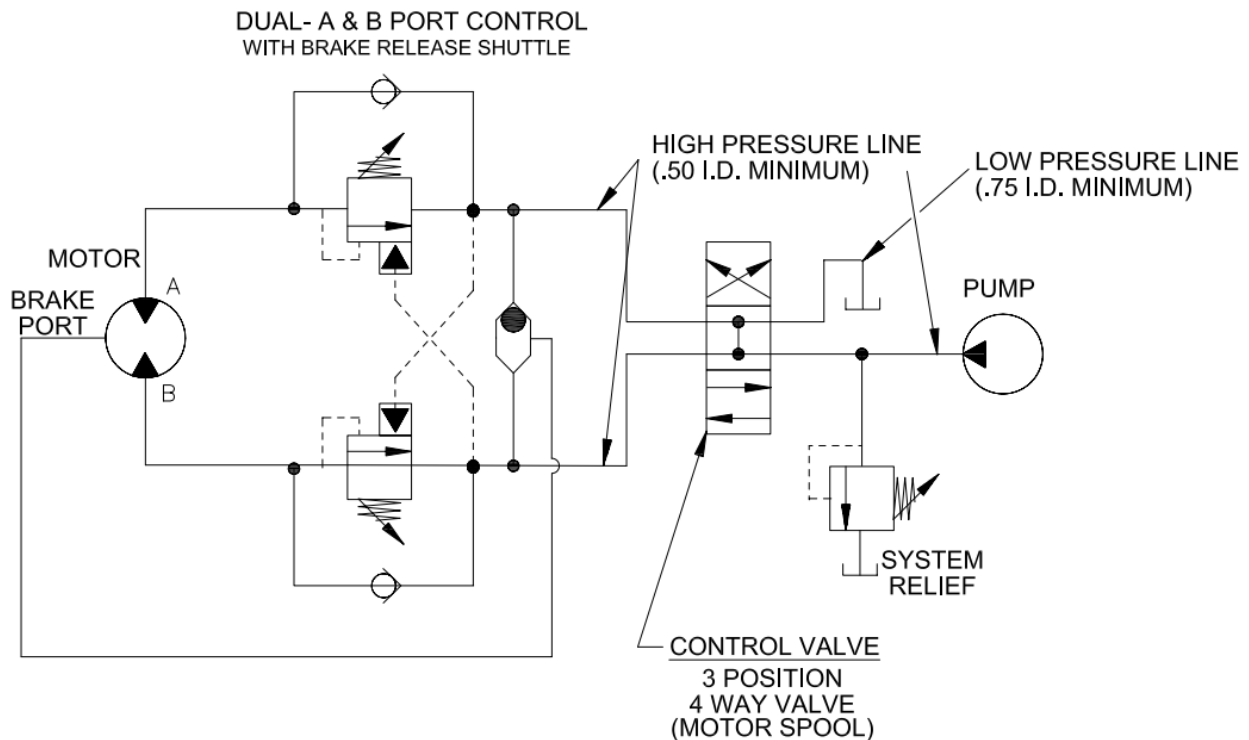
A minimum of 8 wraps of Ramsey Winch recommended synthetic rope is necessary to hold load.

Cable anchor is not designed to hold load.

2 Hydraulic System Requirements

Refer to the performance charts to properly match your hydraulic system to Helios 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 12.2 cubic inches with 20 GPM maximum flow rate. See page 18 for motor port size.



BASED ON 12.2 CU.IN./REV. 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

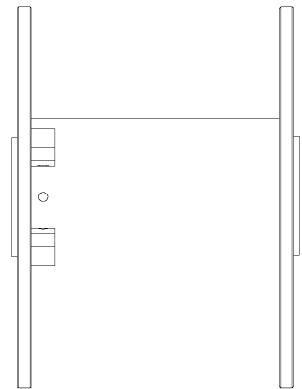
Do not attempt to engage the clutch by first running the winch motor and then moving the clutch control valve to the "clutch-engaged" position while the motor is running. Do not start picking up the load at the same time the clutch is being engaged.

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. 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 (MBS 47,500 lbs.). Maximum Winch capacity is 250 ft. of 5/8" 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.

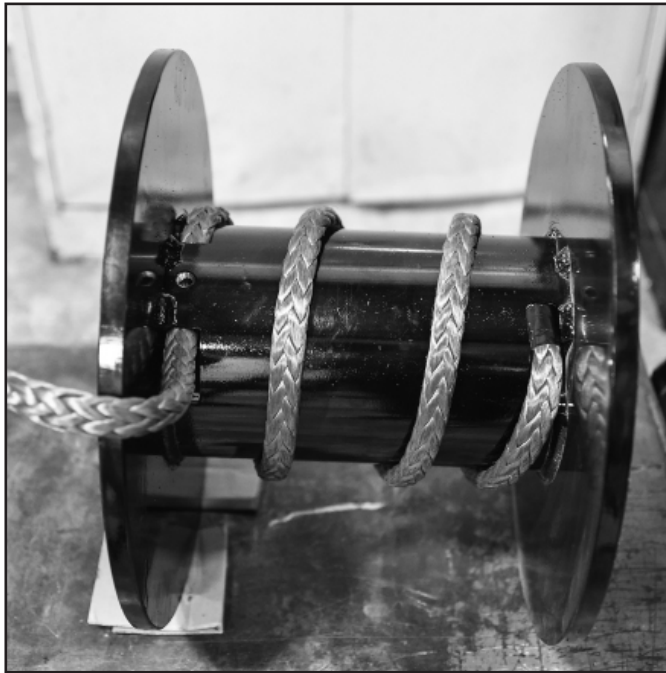


Synthetic Rope Installation 4

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



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



4 Synthetic Rope Installation

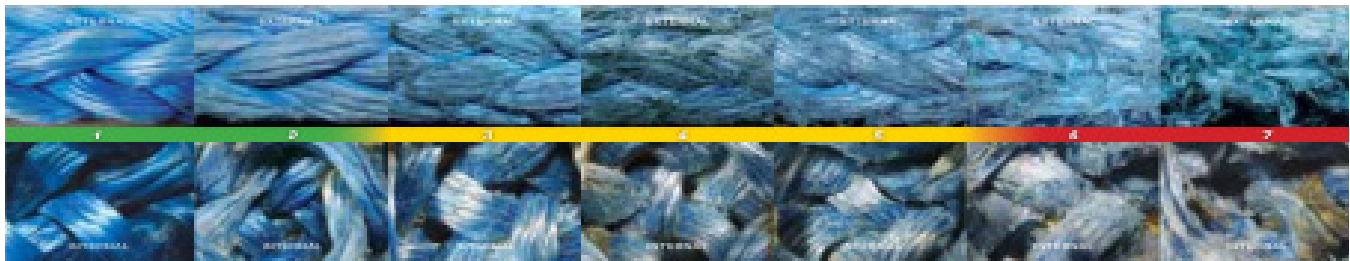
7. Wind rope onto drum (no load) for minimum of 8 wraps before applying load to install entire length of rope.



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.

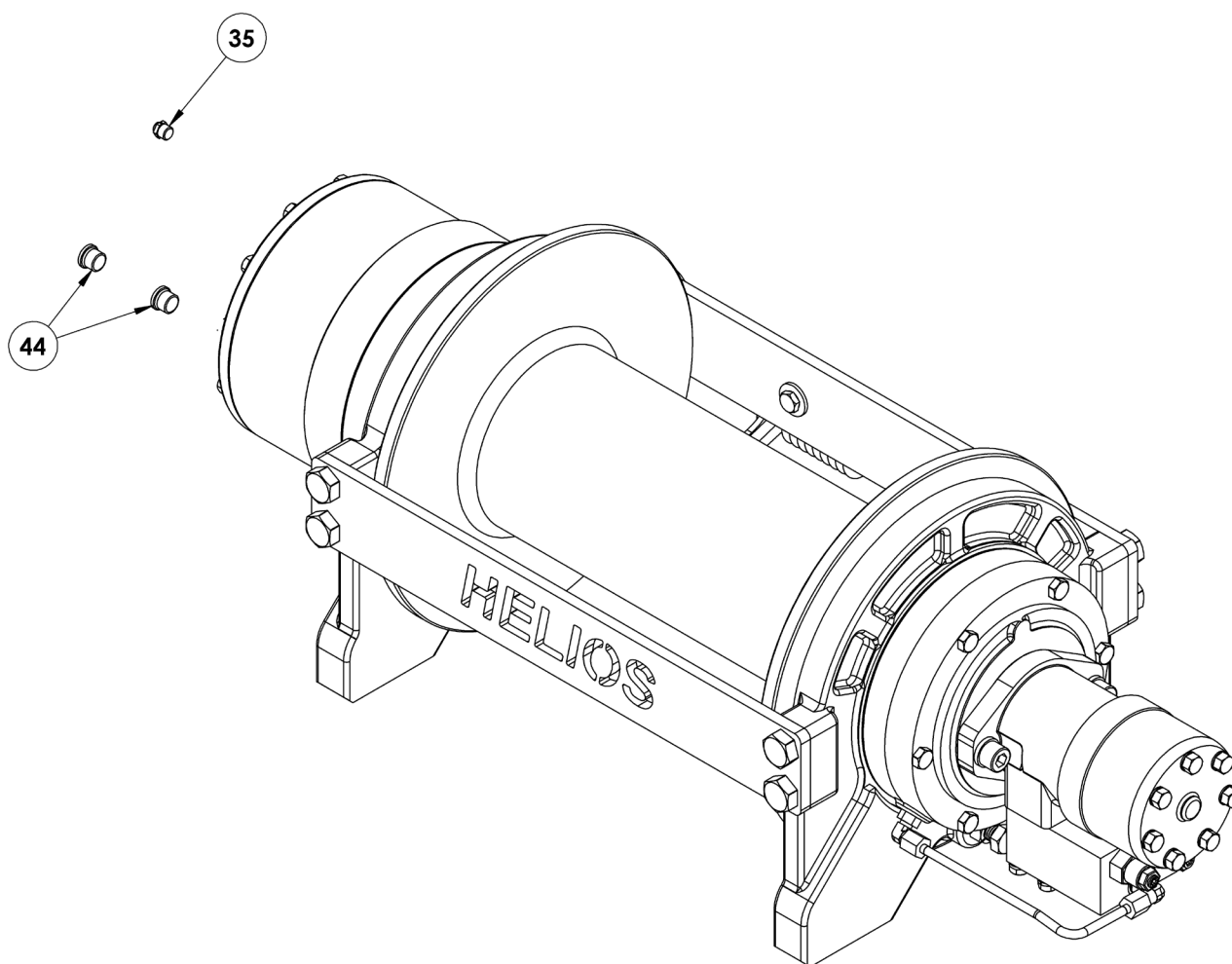
Annually

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

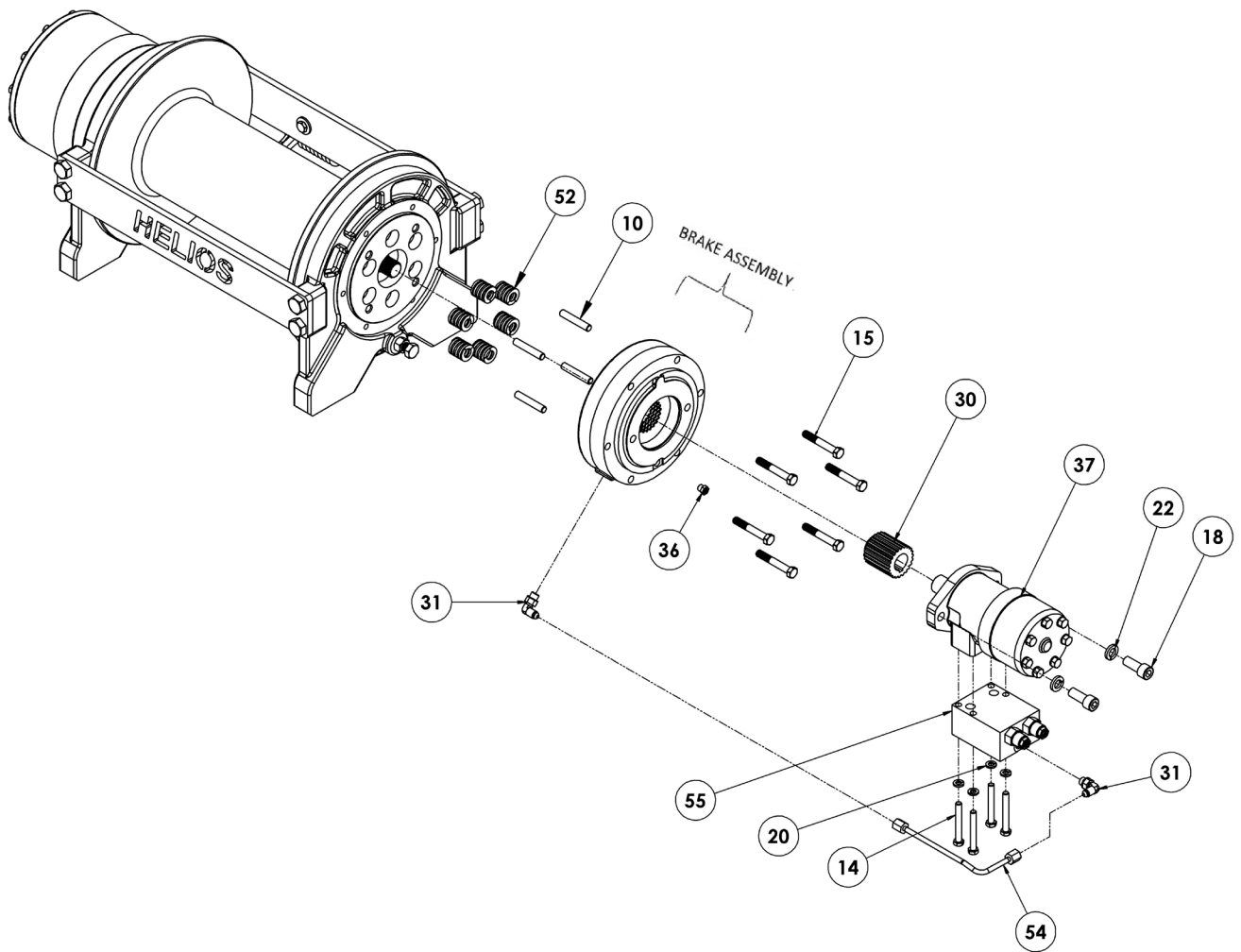
Disassembly

1. Drain oil from gear box by removing O-ring plug #44 and relief fitting #35.



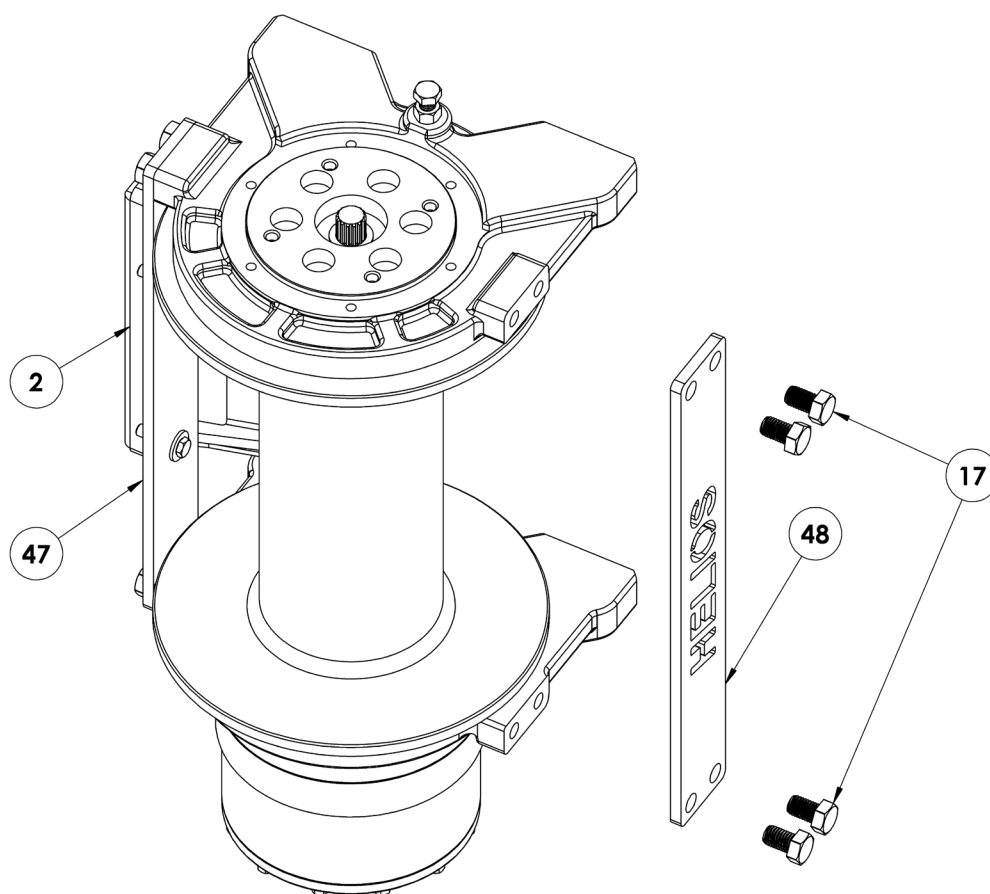
7 Instructions for Overhaul

2. Disconnect brake tube #54 from valve #55 and fitting #31 on brake assembly. Remove motor #37 and gasket #32 by removing (2) capscrews #18. Remove valve #55, if needed from motor by loosening (4) capscrews #14. Remove brake parts from brake assembly. Examine brake discs for signs of wear and replace if necessary. Examine O-ring and backup rings for signs of wear and replace if necessary. See page 20 for all brake parts.



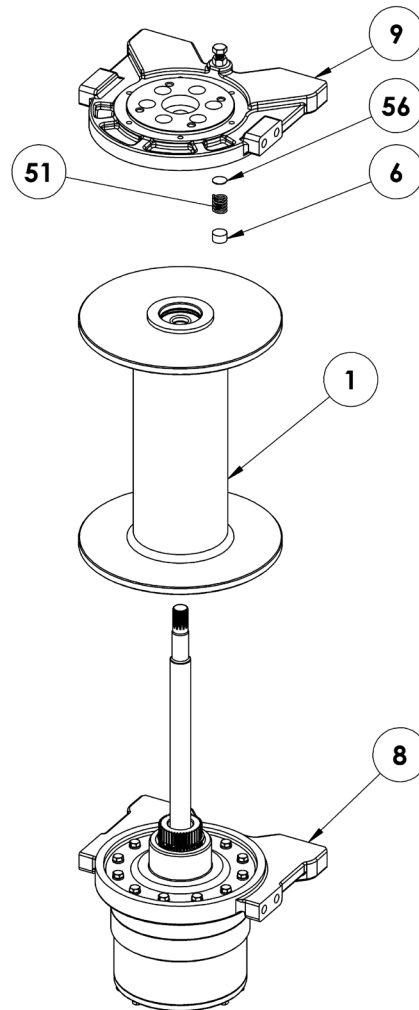
Instructions for Overhaul 7

3. Stand winch up on gear box end as shown. Remove winch tie plates #47 and #48 by removing (8) capscrews #17. Remove roller tensioner #2 and inspect for damage or wear.



7 Instructions for Overhaul

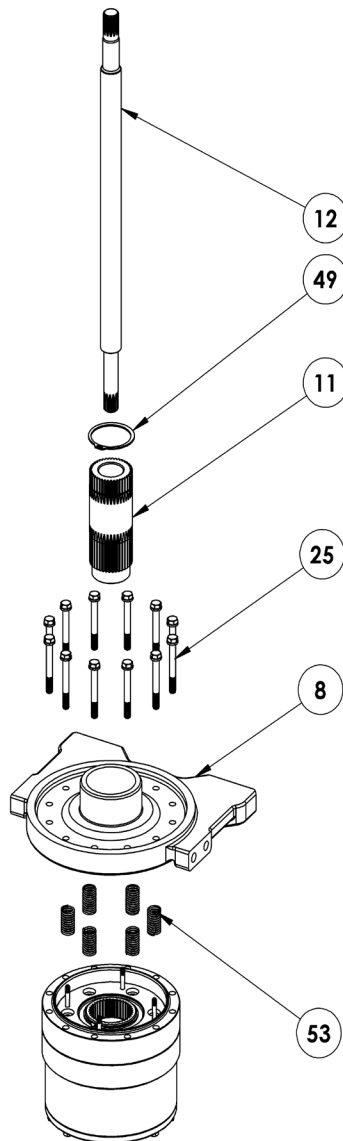
4. Pull motor end bearing #9 from drum assembly #1. Drag brake, brake parts #6, #51, and #56 may fall out when motor end bearing #9 is removed. Pull drum assembly #1 from gear end bearing #8. Remove quad rings from grooves in drum bushings. Examine drum assembly for signs of wear.



Instructions for Overhaul 7

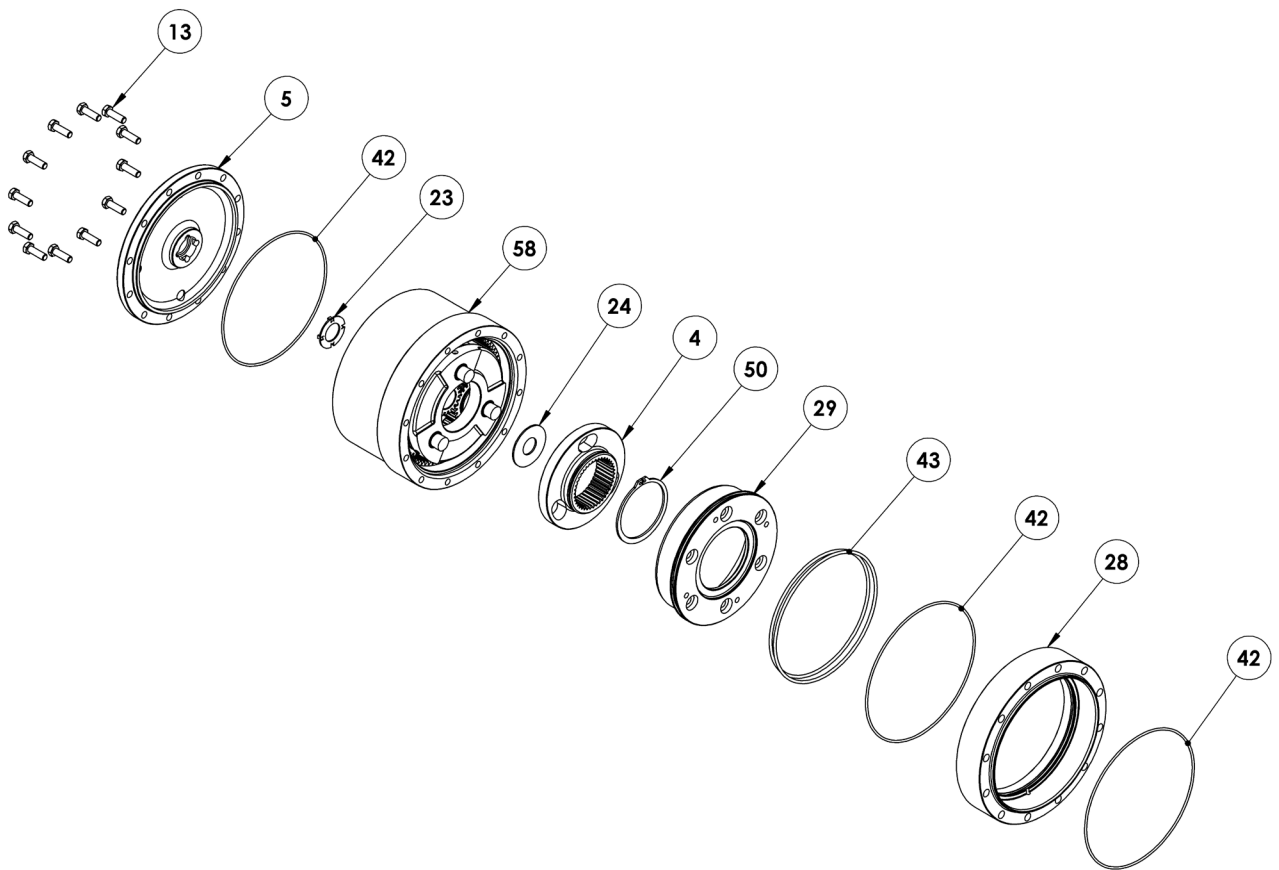
5. Remove output shaft #12 from gear end bearing #. Remove and inspect output coupling #11 for damage or wear. Replace if damaged. Remove gear end bearing by removing the (12) capscrews #25.

Note: The gear end bearing will be spring loaded and will "spring up" slightly when last capscrew is removed. Remove (6) springs #53.



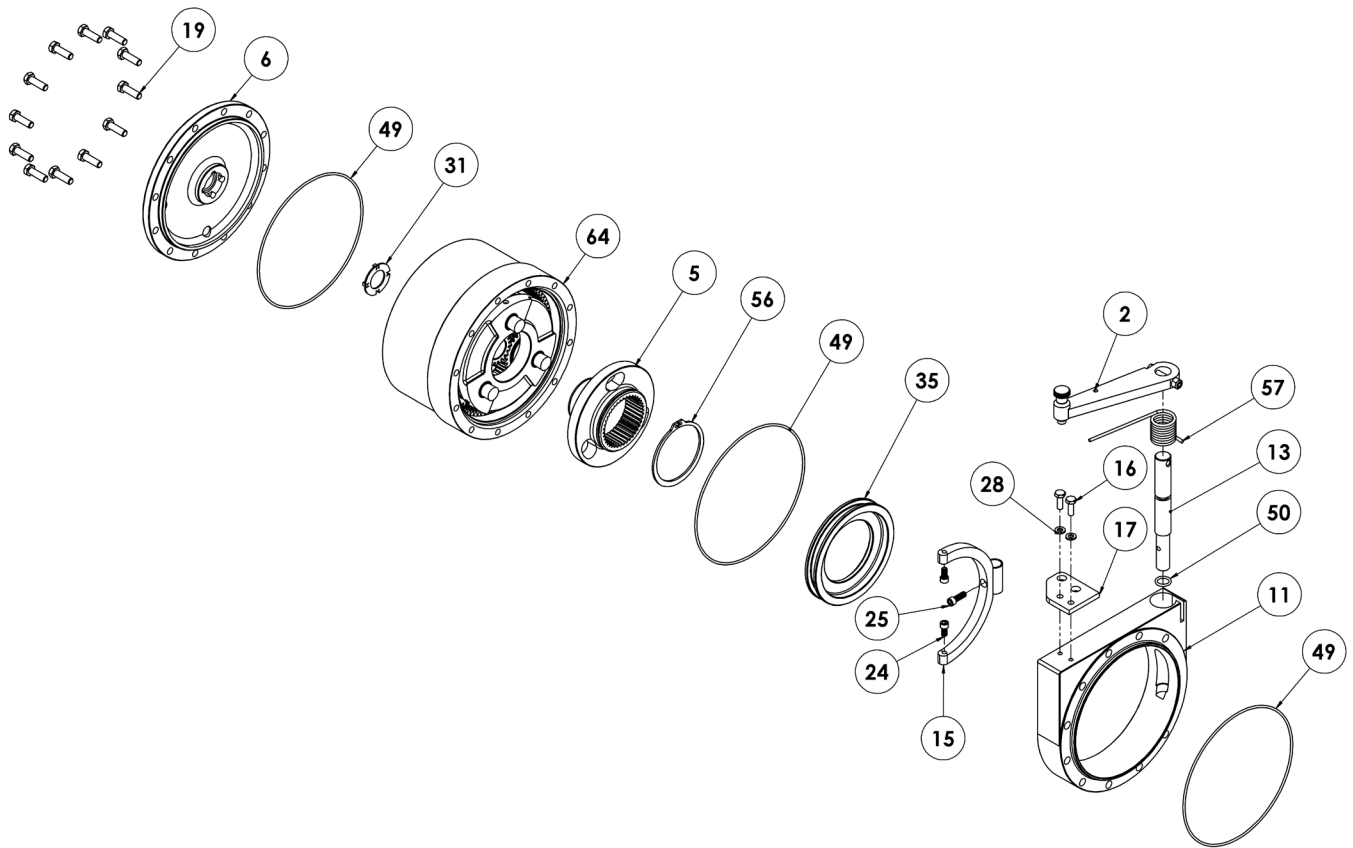
7 Instructions for Overhaul

6. AIR SHIFT VERSION. Remove clutch housing #28 with piston #29 and clutch #4 inside from gearbox assembly #58. Inspect clutch for wear or damage and replace if required. Remove clutch #4 from piston by removing retainer ring #50. To remove piston from clutch housing apply air to 1/8" port on bottom of clutch housing. Remove O-rings #43 from grooves on piston and clutch housing and inspect for damage or wear. Inspect gear box assembly #58 for damage or wear. Replace complete gear box assembly if gears are damaged. Remove the (12) capscrews #13 from gear box cover #5 to remove the cover. Inspect o-ring #42 and thrust washer #23 for damage or wear and replace if necessary.



Instructions for Overhaul 7

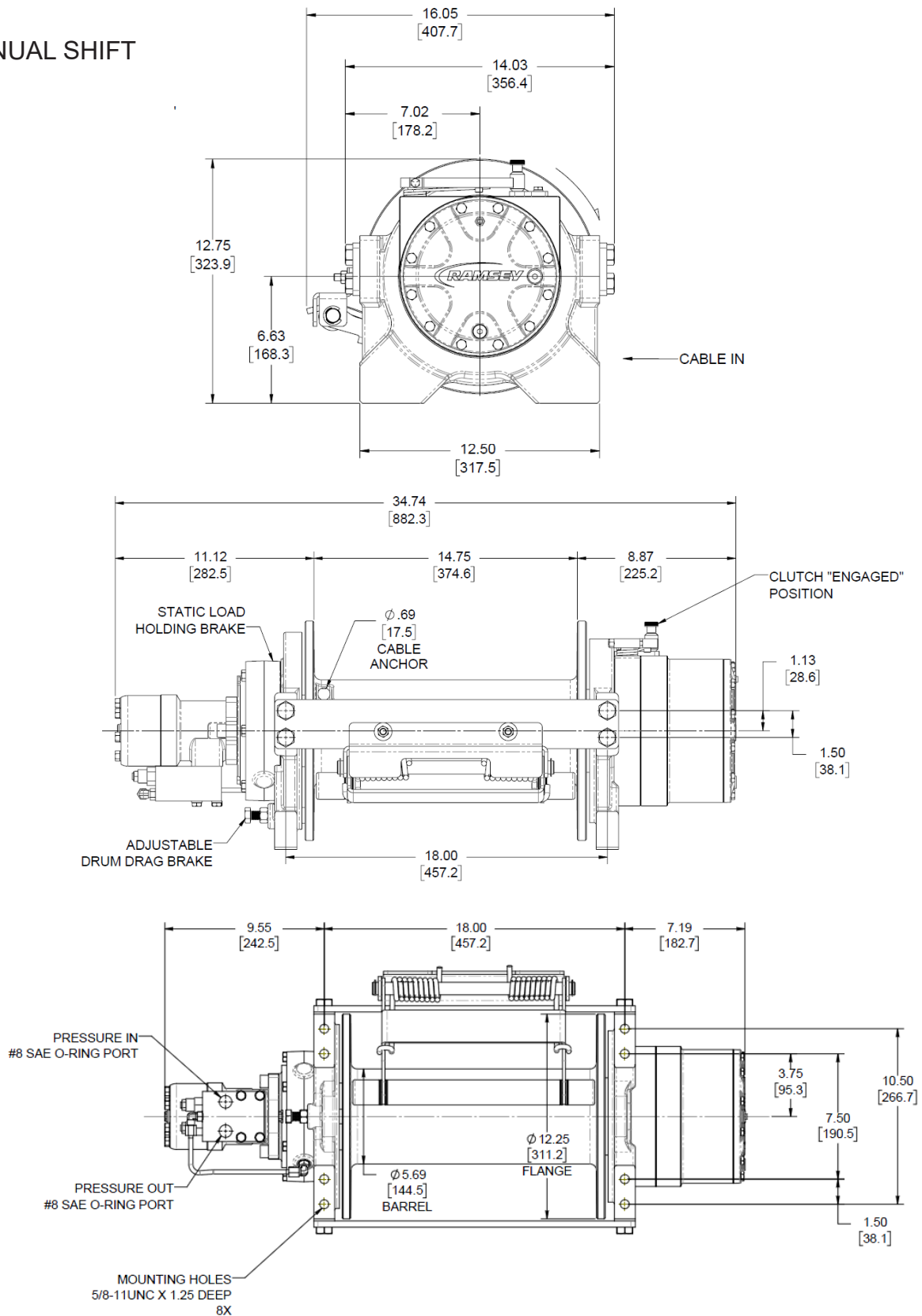
7. MANUAL SHIFT VERSION. Remove clutch housing #11 with shifter assembly and clutch #5 inside from gearbox assembly #64. Inspect clutch for wear or damage and replace if required. Remove clutch #5 from shifter plate #35 by removing retainer ring #56. Inspect gear box assembly #64 for damage or wear. Replace complete gear box assembly if gears are damaged. Remove shifter assembly from clutch housing #11 by removing capscrew #25 from yoke #15. Inspect all parts for wear and replace if necessary.



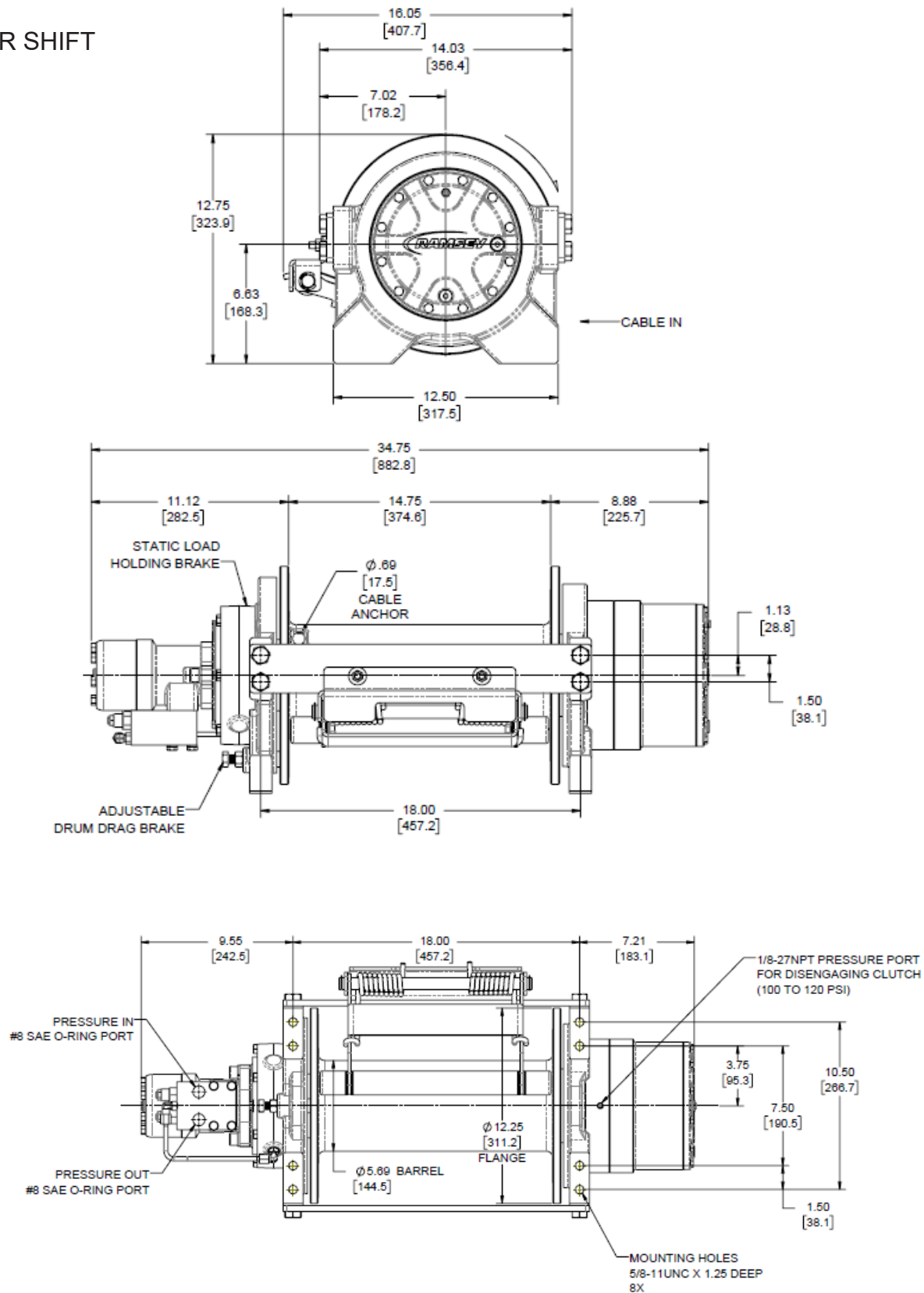
Remove the (12) capscrews #19 from the gear box cover #6 to remove the cover. Inspect O-ring #49 and thrust washer #31 for damage or wear and replace if necessary.

8 General Dimensions

MANUAL SHIFT

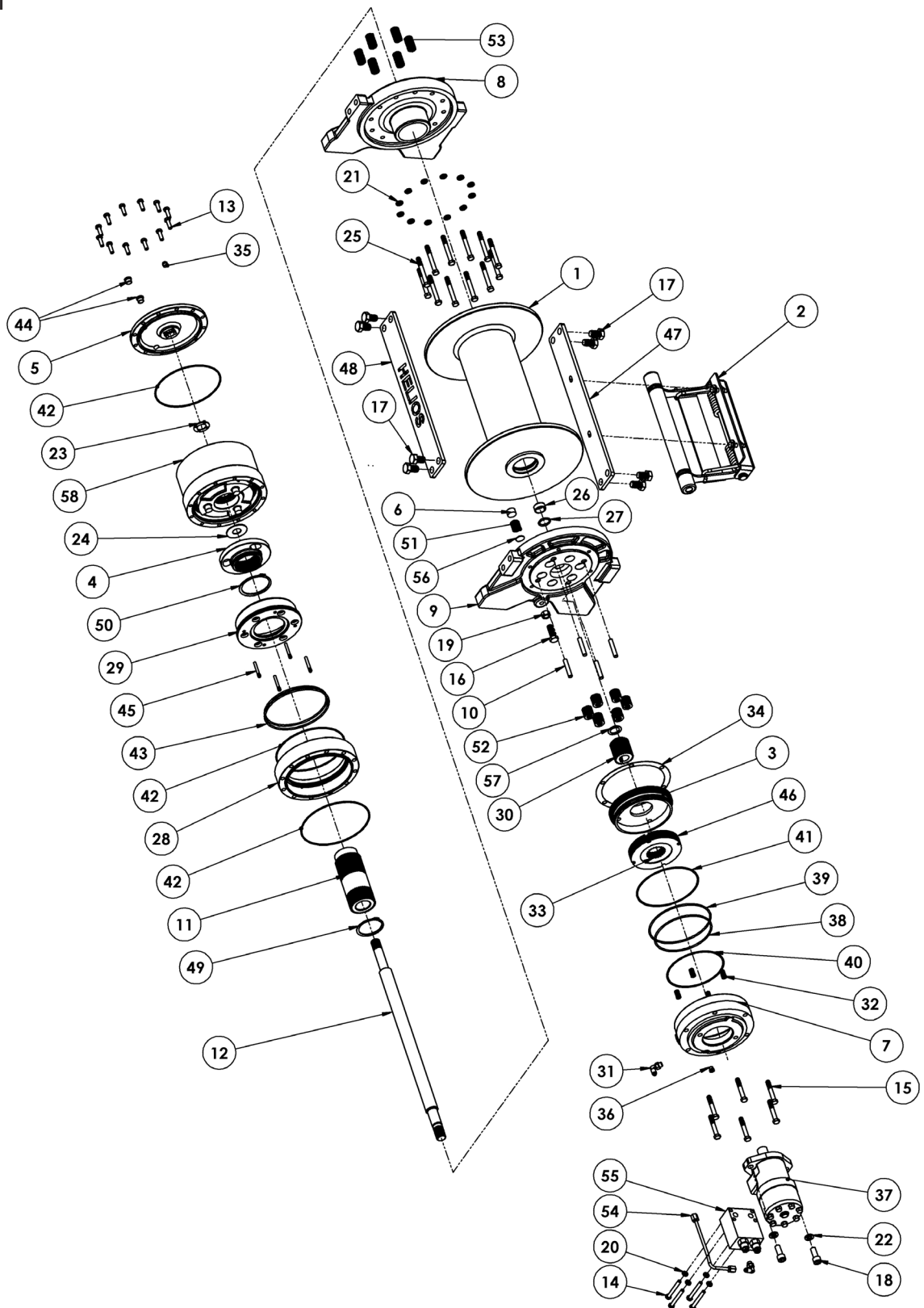


AIR SHIFT



9 Winch Exploded View

AIR SHIFT



Winch Exploded View 9

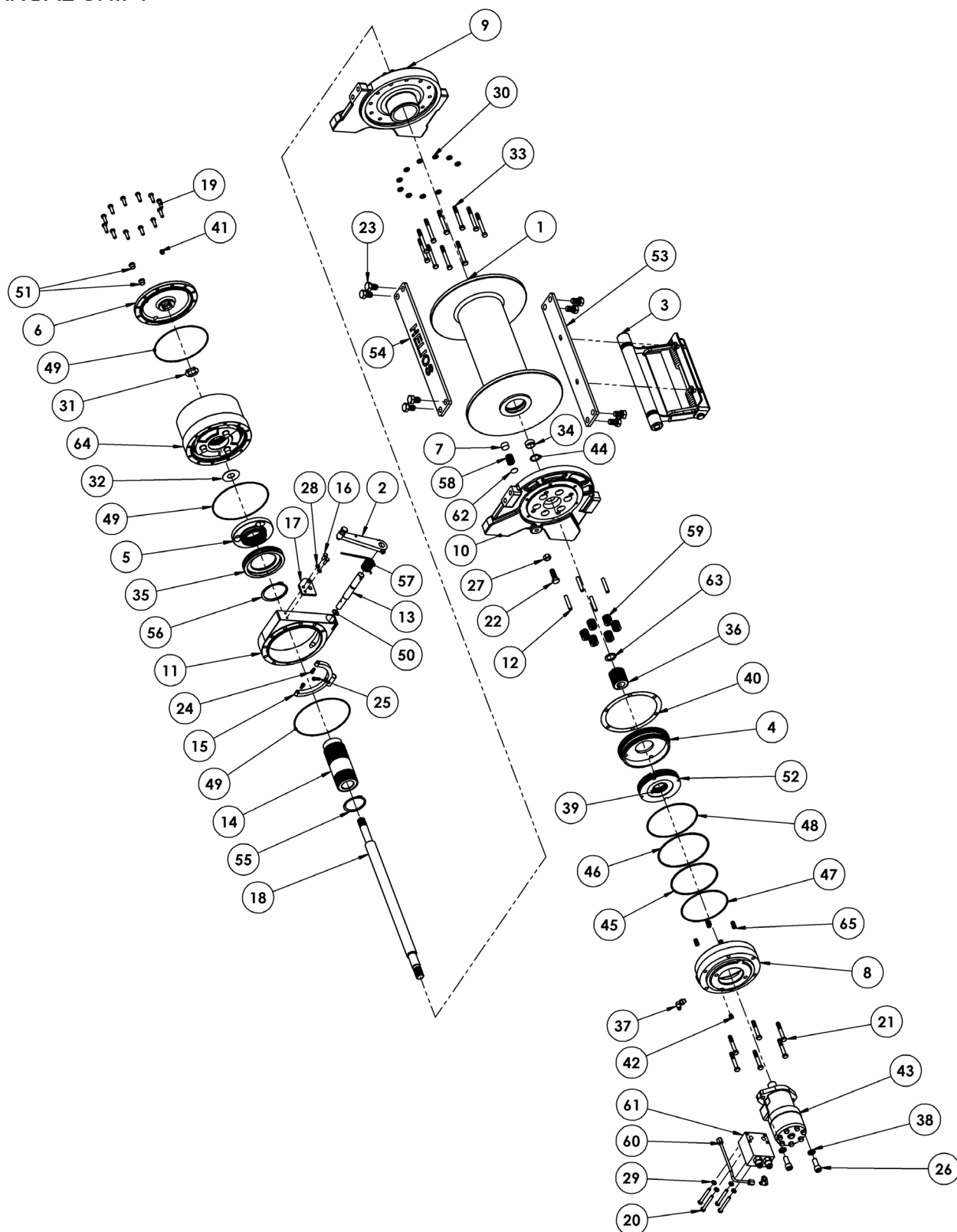
ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	234288	ASSEMBLY-DRUM, SIERRA H20
2	1	299802	ASSEMBLY-ROLLER TENSIONER
3	1	306042	PISTON-BRAKE,RPH-12000
4	1	324527	CLUTCH-HERC25K
5	1	328204	COVER-GEAR BOX, MACHINED, HERC25K
6	1	330015	PUCK-DRAG, DRUM FREESPOOL
7	1	338302	HOUSING-BRAKE,RPH-12000
8	1	338484	GEAR END BEARING-MACHINED, SIERRA 20K
9	1	338485	MOTOR END BEARING-MACHINED, SIERRA 20K
10	4	346045	PIN-BRAKE,RPH12,.375 DIA.X2.125 LG.
11	1	357579	COUPLING-OUTPUT, HERC25K
12	1	357587	SHAFT-INPUT, SIERRA 20K
13	12	414136	CAPSCREW-5/16-18 X 1.0 LG HX HD GR5 Z/P
14	4	414159	CS-5/16-18UNCX2.50,HXHD,GR5,ZP,N/P
15	6	414303	BOLT-3/8-16NC X2 1/2,HXHD,GR-5, Z/P
16	1	414548	CAPSCREW 1/2-13 X 1.5 LG HXHD
17	8	414664	CAPSCREW-5/8-11NC X1LG HXHD,GR-5
18	2	414948	CAPSCREW-1/2-13NC X 1.25 LG SOC HD
19	1	418069	NUT-1/2-13NC HEX REG,ZINC PLATED
20	4	418163	LOCKWASHER-5/16 MED SECT Z/P
21	12	418177	LOCKWASHER-3/8 ID MED SECT,ZINC PLT
22	2	418218	WASHER-LOCK, 1/2 MED SECT. Z/P
23	1	418443	WASHER-THRUST, COVER,RPH20000
24	1	418462	CLUTCH WASHER 2.125 OD X .878 ID X .070
25	12	420047	CAPSCREW-3/8-16NC X 3 LG, HX HD, ZP, GR8
26	1	402121	BEARING-RPH12,GARLOCK BRG#16DU08/EQ
27	1	462056	O-RING-AS-568-214
28	1	426076	CYLINDER
29	1	426077	PISTON-CLUTCH, HERC25K
30	1	431015	COUPLING-MOTOR,P/M, RPH-12000

9 Winch Exploded View

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
31	1	432018	FITTING-90° ELBOW, -4 SAE ORING TO -4 JIC
32	4	494112	SPRING-RPH12000,PRESSURE TO BRAKE
33	4	438022	DISC-BRAKE,RPH12000,.071 1035CR STL
34	1	442220	GASKET-BRAKE HSG.,RPH12000,#VCN-60
35	1	456008	FITTING-RELIEF1/8-27NPTF, 15 PSI MAX
36	1	456038	BREATHER VENT
37	1	458119	MOTOR-HYD
38	1	462057	O-RING-AS-568-256
39	1	462058	O-RING-AS-568-259
40	1	462059	RING-BACK-UP,VERCO #1750-256
41	1	462060	RING-BACK-UP,VERCO #1750-259
42	3	462063	O-RING-AS-568-165
43	2	462127	O-RING, 6.484 ID X 6.762 OD X .139THK, LOW TEMP, #2-260
44	2	468045	PLUG-O-RING BOSS, 9/16-18UNF-2B (SAE #6) HEX SOC HD
45	4	470156	THREADED TAPER PIN
46	5	474111	PLATE-SEPARATOR,BRAKE,RPH-12000
47	1	474258	TIE PLATE-TENSIONER MTG, SIERRA 20K
48	1	474262	TIE PLATE-WITH LOGO, HELIOS 20K
49	1	490080	RING-RETAINER, McMASTER-CARR #97633A460
50	1	490081	RING-RETAINER, McMASTER-CARR #97633A482
51	1	494002	SPRING-DRUM FREESPOOL
52	6	494110	SPRING-BRAKE,ASSOC#CV1000-1000-158
53	6	494140	SPRING- HDP 40-50
54	1	509009	TUBE ASSY-1/4OD,HYD.BRK.,RPH-12000
55	1	516074	VALVE-COUNTERBALANCE, DUAL CARTRIDGE, #8 ORB PORTS, HERC20K
56	1	530094	SPACER-BRAKE DISC
57	1	518052	WASHER-THRUST,1.37 O.D.,RPH-12000
58	1	530187	ASSEMBLY-GEAR BOX

Winch Exploded View 9

MANUAL SHIFT



9 Winch Exploded View

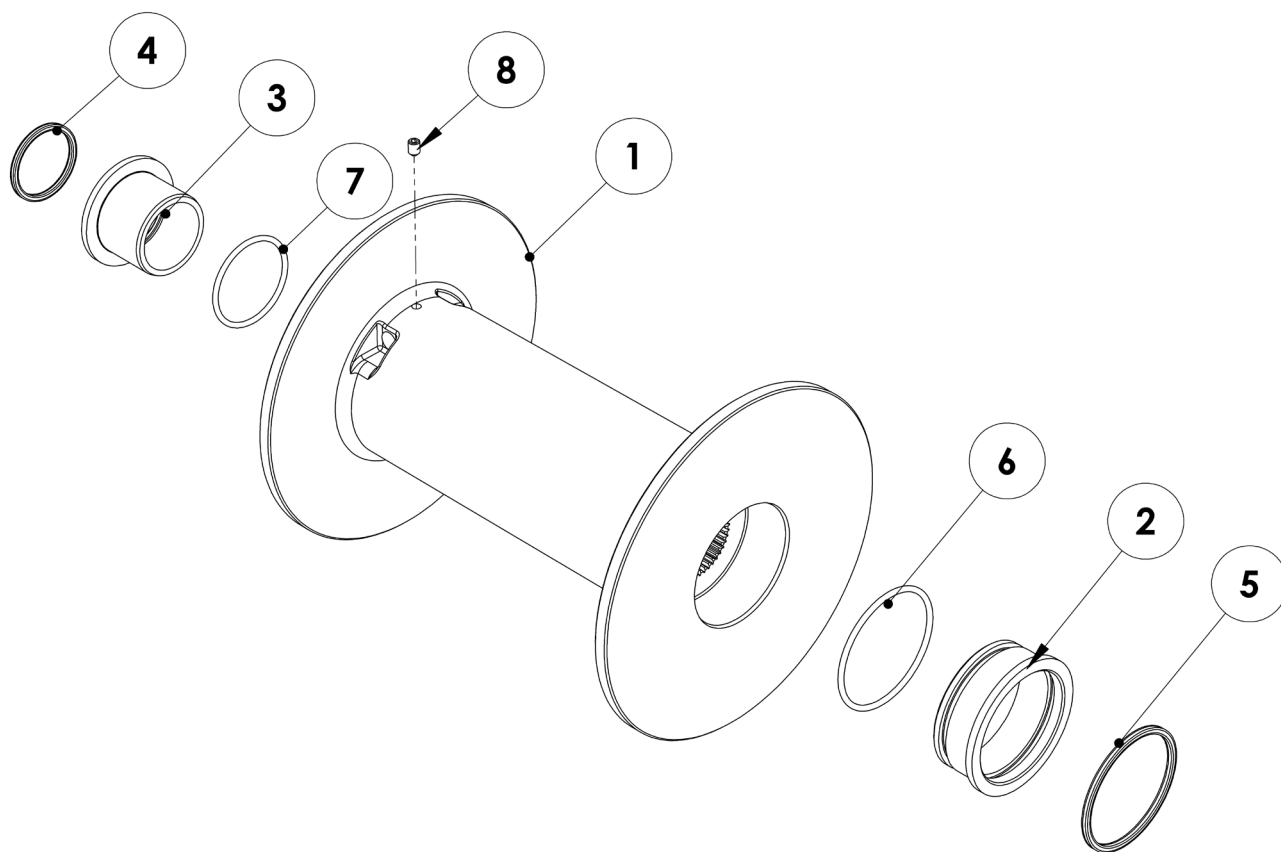
ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	234288	ASSEMBLY-DRUM, SIERRA H20
2	1	296813	ASSEMBLY-SHIFTER ARM, HELIOS 20K
3	1	299802	ASSEMBLY-SPRING ROLLER TENSIONER, HELIOS 20K, RECONFIGURED
4	1	306042	PISTON-BRAKE,RPH-12000
5	1	324527	CLUTCH-HERC25K
6	1	328204	COVER-GEAR BOX, MACHINED, HERC25K
7	1	330015	PUCK-DRAG, DRUM FREESPOOL
8	1	338302	HOUSING-BRAKE,RPH-12000
9	1	338484	GEAR END BEARING
10	1	338485	MOTOR END BEARING
11	1	338495	HOUSING-SHIFTER, MACHINED, MANUAL SHIFT
12	4	346045	PIN-BRAKE,RPH12,.375 DIA.X2.125 LG.
13	1	355150	SHAFT-SHIFTER
14	1	357579	COUPLING-OUTPUT
15	1	370070	WELDMENT-YOKE
16	2	414038	CAPSCREW-1/4-20NC X 3/4LG, SOCKET HD
17	1	408504	SHIFTER DETENT PLATE
18	1	357587	SHAFT-INPUT
19	12	414136	CAPSCREW-5/16-18 X 1.0 LG HX HD GR5 Z/P
20	4	414159	CAPSCREW-5/16-18NC X 2.50 LG HX Z/P NYLON PATCH
21	6	414303	BOLT-3/8-16NC X2 1/2,HXHD,GR-5, Z/P
22	1	414548	CAPSCREW 1/2-13 X 1.5 LG HXHD
23	8	414664	CAPSCREW-5/8-11NC X1LG HXHD,GR-5
24	2	414833	CAPSCREW-1/4-20NC X 1/2, HEX SOC HD, Z/P
25	1	414838	CAPSCREW-1/4-20NC X 3/4LG, SOCKET HD
26	2	414948	CAPSCREW-1/2-13NC X 1.25 LG SOC HD
27	1	418069	NUT-1/2-13NC HEX REG,ZINC PLATED
28	2	418149	LOCKWASHER-1/4 MED SECTION,ZINC PLT
29	4	418163	LOCKWASHER-5/16 MED SECT Z/P
30	10	418177	LOCKWASHER-3/8 MED SECT,ZINC PLATED
31	1	418443	WASHER-THRUST, COVER,RPH20000
32	1	418462	CLUTCH WASHER 2.125 OD X .878 ID X .070
33	10	420047	CAPSCREW-3/8-16NC X 3 LG, HX HD, ZP, GR8
34	1	402121	BEARING-RPH12,GARLOCK BRG#16DU08/EQ
35	1	426080	PLATE-SHIFTER, CLUTCH, HELIOS 20K

Winch Exploded View 9

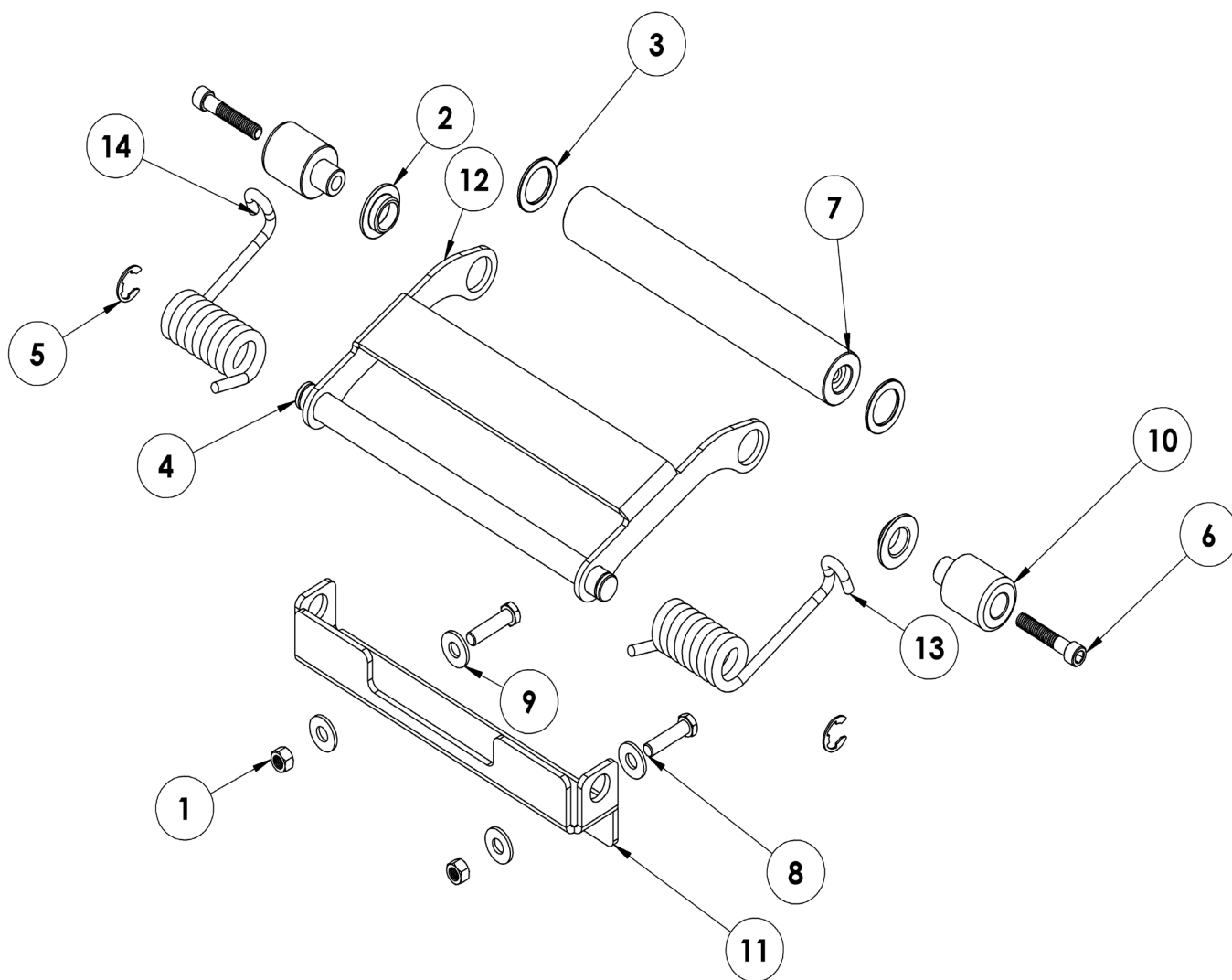
ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
36	1	431015	COUPLING-MOTOR,P/M, RPH-12000
37	1	432018	FITTING Parker#4-C5OX-S T-LOK, 7/16-20 90 degree
38	2	418218	WASHER-LOCK, 1/2 MED SECT. Z/P
39	4	438022	DISC-BRAKE,RPH12000,.071 1035CR STL
40	1	442220	GASKET-BRAKE HSG.,RPH12000,#VCN-60
41	1	456008	FITTING-RELIEF1/8-27NPTF, 15 PSI MAX
42	1	456038	FITTING-VENT,BREATHER,#ASP-1BV/EQIV
43	1	458119	MOTOR-HYD, 24.9 CU IN WHITE
44	1	462056	O-RING-AS-568-214
45	1	462057	O-RING-AS-568-256
46	1	462058	O-RING-AS-568-259
47	1	462059	RING-BACK-UP,VERCO #1750-256
48	1	462060	RING-BACK-UP,VERCO #1750-259
49	3	462063	O-RING-AS-568-165
50	1	462078	O-RING-.549 ID X .103 THK, 2-113, SHIFTER SHAFT
51	2	468045	PLUG-O-RING BOSS, 9/16-18UNF-2B (SAE #6) HEX SOC HD
52	5	474111	PLATE-SEPARATOR,BRAKE,RPH-12000
53	1	474258	TIE PLATE-TENSIONER MTG, SIERRA 20K
54	1	474262	TIE PLATE-WITH LOGO, HELIOS 20K
55	1	490080	RING-RETAINER, McMASTER-CARR #97633A460
56	1	490081	RING-RETAINER, McMASTER-CARR #97633A482
57	1	494173	SPRING-TORSION, 9 COILS, .135 WIRE
58	1	494002	SPRING-QQ-W-428 TYPE I MUSIC WIRE
59	6	494110	SPRING-BRAKE,ASSOC#CV1000-1000-158
60	1	509009	TUBE ASSY-1/4OD,HYD.BRK.,RPH-12000
61	1	516074	VALVE-COUNTERBALANCE, DUAL CARTRIDGE, #8 ORB PORTS, HERC20K
62	1	530094	SPACER-BRK DISC,20GAX7/8 D,W/438001
63	1	518052	WASHER-THRUST,1.37 O.D.,RPH-12000
64	1	530187	ASSEMBLY-GEAR BOX, HERC 25000
65	4	494112	SPRING-RPH12000,PRESSURE TO BRAKE

10 Drum Assembly

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	332303	DRUM-MACHINED, SIERRA H20
2	1	412092	BUSHING-DRUM,GEAR HSG.END,RPH20000
3	1	412188	BUSHING-DRUM, MOTOR END, HERC25K & 35K
4	1	462013	QUAD-RING-2 7/8ODX2 1/2IDX3/16Q4333
5	1	462050	QUAD-RING-MINN RUBBER #Q4343-366Y
6	1	462052	O-RING-PARKER #AS-568-344, 3 7/8 ID
7	1	462054	O-RING-3/16X3IDX3 3/8OD #AS-568-337
8	1	416059	SETSCREW3/8-16NCX1/2 HX SOCK HD CUP



Cable Tensioner 11

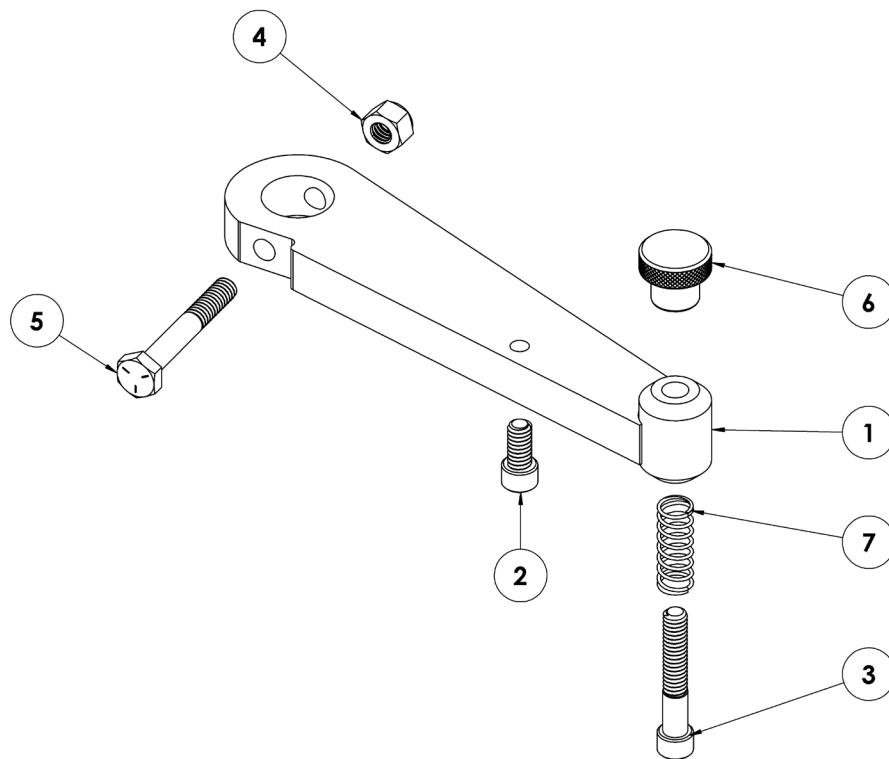


11 Cable Tensioner

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	2	418045	NUT-3/8
2	2	412178	TENSIONER BUSHING
3	2	518100	WASHER
4	1	346075	SHAFT-PIVOT
5	2	490076	RETAINER
6	2	420031	CAPSREW
7	1	354079	ROLLER-LONG
8	2	414224	CAPSCREW-3/8-16 X 1.0 LG HX HD GR5, Z/P
9	4	418182	WASHER-FLAT
10	2	354087	ROLLER-SHORT
11	1	408498	BRACKET-MOUNTING
12	1	408497	BRACKET
13	1	494168	SPRING-RH
14	1	494169	SPRING-LH

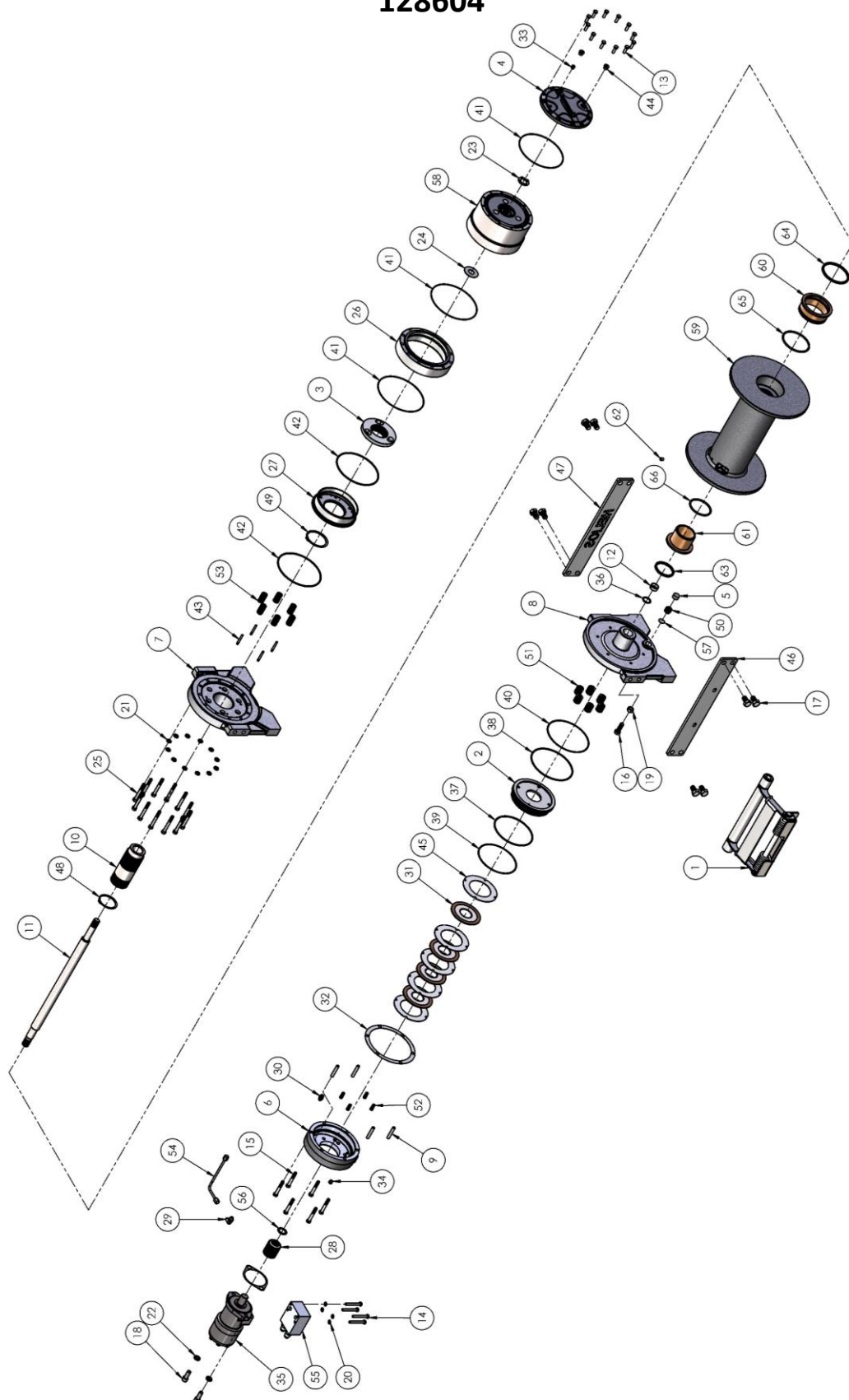
Shifter Handle 12

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	336039	SHIFTER HANDLE-MACHINED, HELIOS 20K
2	1	414833	CAPSCREW-1/4-20NC X 1/2, HEX SOC HD, Z/P
3	1	414857	SCREW-1/4-20NCX1.5LG,HXSOCHD,NYL,ZP
4	1	418018	NUT-1/4-20NC,HEX,ELASTIC STOP
5	1	420052	CAPSCREW-1/4-20UNC X 1-3/4, HEX HD, GR5, Z/P
6	1	452008	KNOB-SHIFTER, HELIOS 20K
7	1	494172	SPRING-COMPRESSION, 1.00L, .375 OD, .035 WIRE



13 Kit and Maintenance Parts

128604



Kits and Maintenance Parts 13

128604

Item#	QTY.	PART NUMBER	DESCRIPTION	KITS					
				207021	207026	222060	246069	248059	283084
1	1	299802	ASSEMBLY-SPRING ROLLER TENSIONER						
2	1	306042	PISTON-BRAKE	X					
3	1	324527	CLUTCH			X			
4	1	328213	COVER-GEAR BOX						
5	1	330015	PUCK-DRUM DRAG						
6	1	338302	HSG-BRAKE						
7	1	338484	GEAR END BEARING						
8	1	338485	MOTOR END BEARING						
9	4	346045	PIN-BRAKE,.375 DIA.X2.125 LG.	X					
10	1	357579	COUPLING-OUTPUT						
11	1	357587	SHAFT-INPUT						
12	1	402121	BEARING					X	
13	12	414136	CAPSCREW-5/16-18NCX1LG,HXHD,GR5						
14	4	414159	CS-5/16-18UNCX2.50,HXHD,GR5						
15	6	414303	BOLT-3/8-16NC X2 1/2,HXHD,GR-5						
16	1	414548	CAPSCREW-1/2-13NCX1 1/2,HXHD,G5						
17	8	414664	CAPSCREW-5/8-11NC X1LG HXHD,GR-5						
18	2	414948	CAPSCREW-1/2-13NCX1 1/4LG,SOCKET HD						
19	1	418069	NUT-1/2-13NC HEX REG						
20	4	418163	LOCKWASHER-5/16						
21	12	418177	LOCKWASHER-3/8						
22	2	418218	LOCKWASHER-1/2 ID						
23	1	362360	WASHER-THRUST						
24	1	418462	CLUTCH WASHER 2.125 OD X .878 ID X .070						
25	12	420047	CAPSCREW-3/8-16NC X 3 LG, HX HD, GR8						
26	1	426076	CYLINDER-CLUTCH						
27	1	426077	PISTON-CLUTCH			X			
28	1	431015	COUPLING-MOTOR	X					X
29	2	432018	FITTING 7/16-20 90 degree						
30	1	432023	FITTING-7/16-20						
31	4	438022	DISC-BRAKE		X				
32	1	442220	GASKET-BRAKE HSG		X		X		
33	1	456008	RELIEF FIT-1/8-27PFT						
34	1	456038	FITTING-VENT,BREATH						
35	1	458119	MOTOR-HYDRAULIC						
36	1	462056	O-RING, .984 .I.D.				X		
37	1	462057	O-RING, 5.734 .I.D.		X		X		
38	1	462058	O-RING, 6.234 .I.D.		X		X		
39	1	462059	RING-BACK-UP, 5.750 .I.D.		X		X		
40	1	462060	RING-BACK-UP, 6.250 .I.D.		X		X		

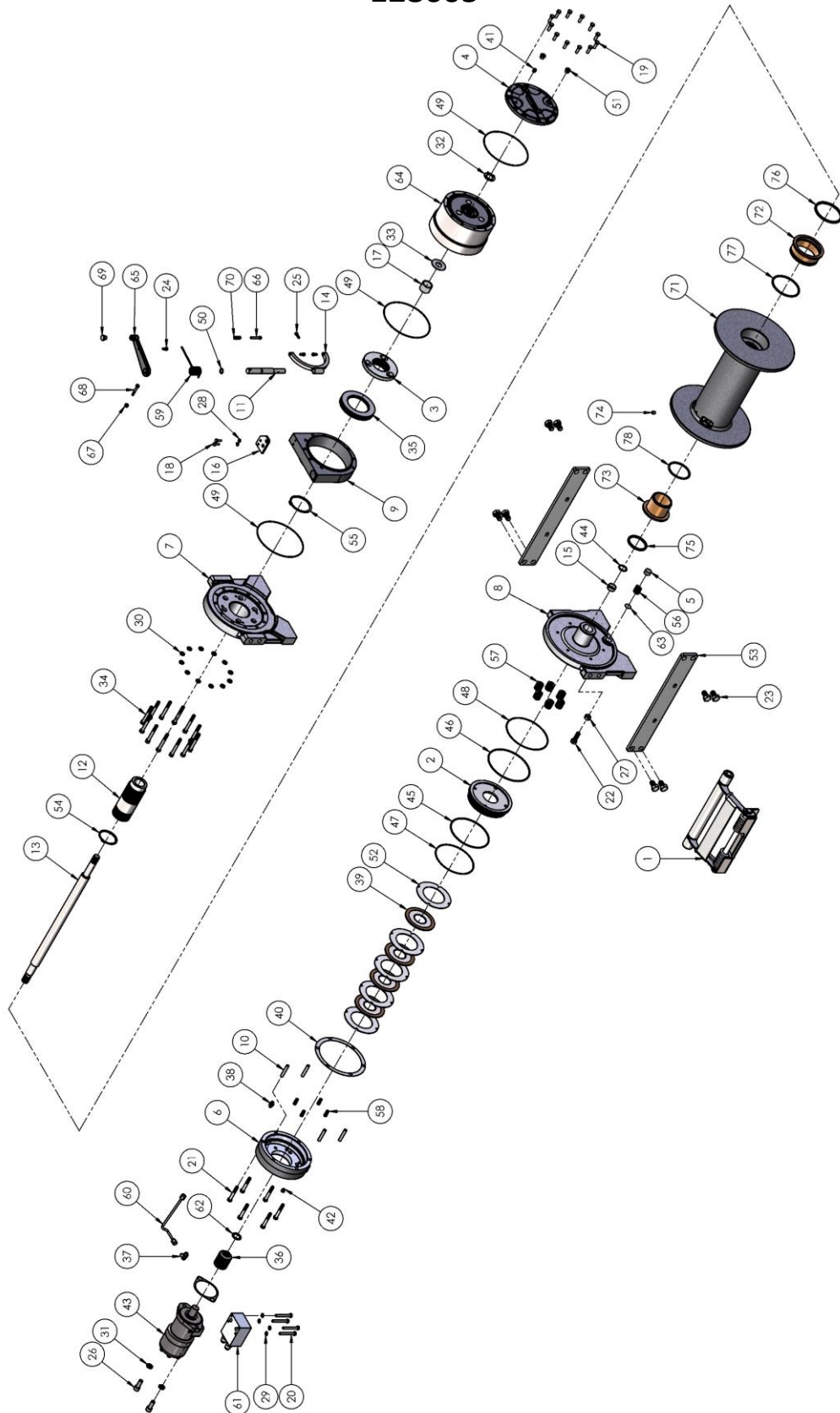
13 Kits and Maintenance Parts

128604

Item#	QTY.	PART NUMBER	DESCRIPTION	KITS					
				207021	207026	222060	246069	248059	283084
41	3	462063	O-RING, 6.692 .I.D.			X	X		
42	2	462127	O-RING, 6.484 ID X 6.762 OD X .139THK			X	X		
43	4	470156	THREADED TAPER PIN			X			
44	2	472052	PLUG-SAE O-RING,,562-18NF						
45	5	474111	PLATE-SEPARATOR,BRAKE		X				
46	1	474258	TIE PLATE-TENSIONER MTG						
47	1	474262	TIE PLATE-WITH LOGO						
48	1	490080	RING-RETAINER						
49	1	490081	RING-RETAINER			X			
50	1	494002	SPRING-QQ						
51	6	494110	SPRING-BRAKE		X				
52	4	494112	SPRING		X				
53	6	494140	SPRING			X			
54	1	509009	TUBE ASSY-1/4OD						
55	1	516074	VALVE-COUNTERBALANCE						
56	1	518052	WASHER-THRUST,1.37 O.D.		X			X	
57	1	530094	SPACER-BRK DISC,20GAX7/8 D						
58	1	530187	ASSEMBLY-GEAR BOX						
59	1	332303	DRUM						
60	1	412092	BUSHING-DRUM,GEAR HSG.END					X	
61	1	412188	BUSHING-DRUM, MOTOR END					X	
62	1	416059	SETSCREW3/8-16NCX1/2 HX SOCK HD CUP						
63	1	462013	QUAD-RING-2 7/8ODX2 1/2IDX3/16				X		
64	1	462050	QUAD-RING				X		
65	1	462052	O-RING, 3 7/8 ID				X		
66	1	462054	O-RING-3/16X3IDX3 3/8OD				X		

Kits and Maintenance Parts 13

128605



13 Kits and Maintenance Parts

128605

Item#	QTY.	PART NUMBER	DESCRIPTION	KITS					
				207021	207026	222063	246071	248059	283084
1	1	299802	ASSEMBLY-SPRING ROLLER TENSIONER						
2	1	306042	PISTON-BRAKE	X					
3	1	324527	CLUTCH			X			
4	1	328213	COVER-GEAR BOX						
5	1	330015	PUCK-DRUM DRAG						
6	1	338302	HSG-BRAKE						
7	1	338484	GEAR END BEARING						
8	1	338485	MOTOR END BEARING						
9	1	338495	HOUSING-SHIFTER						
10	4	346045	PIN-BRAKE,.375 DIA.X2.125 LG.	X					
11	1	355150	SHAFT-SHIFTER						
12	1	357579	COUPLING-OUTPUT						
13	1	357587	SHAFT-INPUT						
14	1	370070	WELDMENT-YOKE, MANUAL SHIFT						
15	1	402121	BEARING					X	
16	1	408504	PLATE-SHIFTER DETENT						
17	1	412044	BUSHING-CLUT HSG					X	
18	2	414038	CAPSCREW-1/4-20NCX3/4,HXHD,GR-5						
19	12	414136	CAPSCREW-5/16-18NCX1LG,HXHD,GR5						
20	4	414159	CS-5/16-18UNCX2.50,HXHD,GR5						
21	6	414303	BOLT-3/8-16NC X2 1/2,HXHD,GR-5						
22	1	414548	CAPSCREW-1/2-13NCX1 1/2,HXHD,G5						
23	8	414664	CAPSCREW-5/8-11NC X1LG HXHD,GR-5						
24	3	414833	CAPSCREW-1/4-20NC X 1/2, HEX SOC HD			X			
25	1	414838	CAPSCREW-1/4-20NC X 3/4LG, SOCKET HD						
26	2	414948	CAPSCREW-1/2-13NCX1 1/4LG, SOCKET HD						
27	1	418069	NUT-1/2-13NC HEX REG						
28	2	418149	LOCKWASHER-1/4						
29	4	418163	LOCKWASHER-5/16						
30	10	418177	LOCKWASHER-3/8						
31	2	418218	LOCKWASHER-1/2 ID						
32	1	362360	WASHER-THRUST						
33	1	418462	CLUTCH WASHER 2.125 OD X .878 ID X .070			X			
34	10	420047	CAPSCREW-3/8-16NC X 3 LG, HX HD, GR8						
35	1	426080	PLATE-SHIFTER			X			
36	1	431015	COUPLING-MOTOR	X					X
37	2	432018	FITTING 7/16-20 90 degree						
38	1	432023	FITTING-7/16-20						
39	4	438022	DISC-BRAKE		X				
40	1	442220	GASKET-BRAKE HSG		X		X		

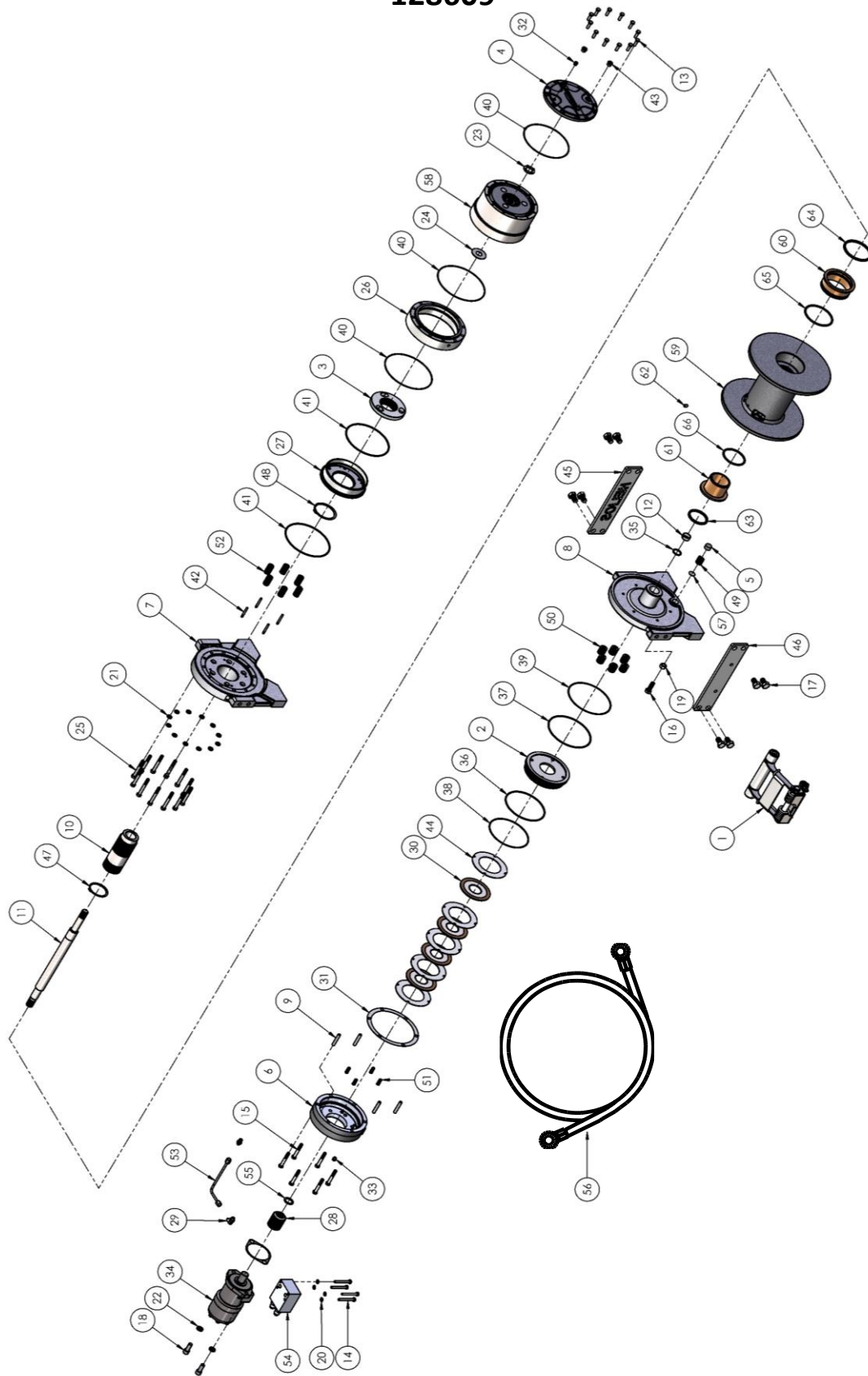
Kits and Maintenance Parts 13

128605

Item#	QTY.	PART NUMBER	DESCRIPTION	KITS					
				207021	207026	222063	246071	248059	283084
41	1	456008	RELIEF FIT-1/8-27PFT						
42	1	456038	FITTING-VENT,BREATHER						
43	1	458119	MOTOR-HYDRAULIC						
44	1	462056	O-RING, .984 .I.D.				X		
45	1	462057	O-RING, 5.734 .I.D.		X		X		
46	1	462058	O-RING, 6.234 .I.D.		X		X		
47	1	462059	RING-BACK-UP, 5.750 .I.D.		X		X		
48	1	462060	RING-BACK-UP, 6.250 .I.D.		X		X		
49	3	462063	O-RING, 6.692 .I.D.				X		
50	1	462078	O-RING, 6.484 ID X 6.762 OD X .139THK				X		
51	2	472052	PLUG-SAE O-RING,.562-18NF						
52	5	474111	PLATE-SEPARATOR,BRAKE		X				
53	2	474258	TIE PLATE-TENSIONER MTG						
54	1	490080	RING-RETAINER						
55	1	490081	RING-RETAINER			X			
56	1	494002	SPRING-QQ						
57	6	494110	SPRING-BRAKE		X				
58	4	494112	SPRING		X				
59	1	494173	SPRING						
60	1	509009	TUBE ASSY-1/4OD						
61	1	516074	VALVE-COUNTERBALANCE						
62	1	518052	WASHER-THRUST,1.37 O.D.		X			X	
63	1	530094	SPACER-BRK DISC,20GAX7/8 D						
64	1	530187	ASSEMBLY-GEAR BOX						
65	1	336039	SHIFTER HANDLE			X			
66	1	414857	SCREW-1/4-20NCX1.5LG,HXSOCHD			X			
67	1	418018	NUT-1/4-20NC,HEX			X			
68	1	420052	CAPSCREW-1/4-20UNC X 1-3/4, HEX HD, GR5			X			
69	1	452008	KNOB-SHIFTER			X			
70	1	494172	SPRING-COMPRESSION, 1.00L, .375 OD, .035 WIRE			X			
71	1	332303	DRUM						
72	1	412092	BUSHING-DRUM,GEAR HSG.END					X	
73	1	412188	BUSHING-DRUM, MOTOR END					X	
74	1	416059	SETSCREW3/8-16NCX1/2 HX SOCK HD CUP						
75	1	462013	QUAD-RING-2 7/8ODX2 1/2IDX3/16				X		
76	1	462050	QUAD-RING				X		
77	1	462052	O-RING, 3 7/8 ID				X		
78	1	462054	O-RING-3/16X3IDX3 3/8OD				X		

13 Kits and Maintenance Parts

128609



Kits and Maintenance Parts 13

128609

Item#	QTY.	PART NUMBER	DESCRIPTION	KITS					
				207021	207026	222060	246069	248059	283084
1	1	299805	ASSEMBLY-SPRING ROLLER TENSIONER						
2	1	306042	PISTON-BRAKE	X					
3	1	324527	CLUTCH			X			
4	1	328213	COVER-GEAR BOX						
5	1	330015	PUCK-DRUM DRAG						
6	1	338302	HSG-BRAKE						
7	1	338484	GEAR END BEARING						
8	1	338485	MOTOR END BEARING						
9	4	346045	PIN-BRAKE,.375 DIA.X2.125 LG.	X					
10	1	357579	COUPLING-OUTPUT						
11	1	357593	SHAFT-INPUT						
12	1	402121	BEARING					X	
13	12	414136	CAPSCREW-5/16-18NCX1LG,HXHD,GR5						
14	4	414159	CS-5/16-18UNCX2.50,HXHD,GR5						
15	6	414303	BOLT-3/8-16NC X2 1/2,HXHD,GR-5						
16	1	414548	CAPSCREW-1/2-13NCX1 1/2,HXHD,G5						
17	8	414664	CAPSCREW-5/8-11NC X1LG HXHD,GR-5						
18	2	414948	CAPSCREW-1/2-13NCX1 1/4LG,SOCKET HD						
19	1	418069	NUT-1/2-13NC HEX REG						
20	4	418163	LOCKWASHER-5/16						
21	12	418177	LOCKWASHER-3/8						
22	2	418218	LOCKWASHER-1/2 ID						
23	1	362360	WASHER-THRUST						
24	1	418462	CLUTCH WASHER 2.125 OD X .878 ID X .070						
25	12	420047	CAPSCREW-3/8-16NC X 3 LG, HX HD, GR8						
26	1	426076	CYLINDER-CLUTCH						
27	1	426077	PISTON-CLUTCH			X			
28	1	431015	COUPLING-MOTOR	X					X
29	2	432018	FITTING 7/16-20 90 degree						
30	4	438022	DISC-BRAKE		X				
31	1	442220	GASKET-BRAKE HSG		X		X		
32	1	456008	RELIEF FIT-1/8-27PFT						
33	1	456038	FITTING-VENT,BREATHER						
34	1	458119	MOTOR-HYDRAULIC						
35	1	462056	O-RING, .984 .I.D.				X		
36	1	462057	O-RING, 5.734 .I.D.		X		X		
37	1	462058	O-RING, 6.234 .I.D.		X		X		
38	1	462059	RING-BACK-UP, 5.750 .I.D.		X		X		
39	1	462060	RING-BACK-UP, 6.250 .I.D.		X		X		
40	3	462063	O-RING, 6.692 .I.D.			X	X		

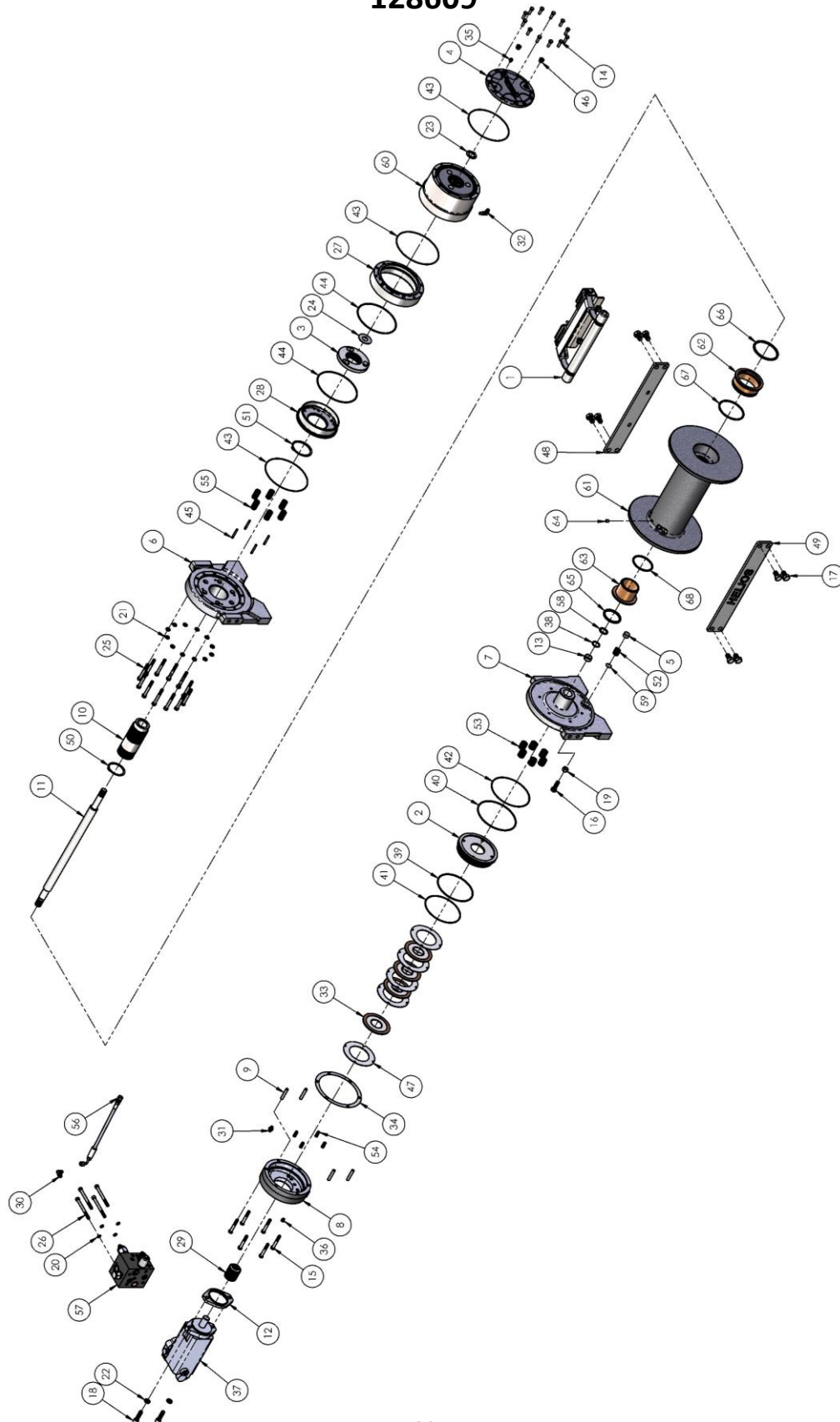
13 Kits and Maintenance Parts

128609

Item#	QTY.	PART NUMBER	DESCRIPTION	KITS					
				207021	207026	222060	246069	248059	283084
41	2	462127	O-RING, 6.484 ID X 6.762 OD X .139THK			X	X		
42	4	470156	THREADED TAPER PIN			X			
43	2	472052	PLUG-SAE O-RING, .562-18NF						
44	5	474111	PLATE-SEPARATOR,BRAKE		X				
45	1	474263	TIE PLATE-WITH LOGO						
46	1	474264	TIE PLATE-TENS MTG						
47	1	490080	RING-RETAINER						
48	1	490081	RING-RETAINER			X			
49	1	494002	SPRING-QQ						
50	6	494110	SPRING-BRAKE		X				
51	4	494112	SPRING		X				
52	6	494140	SPRING			X			
53	1	509009	TUBE ASSY-1/4OD						
54	1	516074	VALVE-COUNTERBALANCE						
55	1	518052	WASHER-THRUST,1.37 O.D.		X			X	
56	1	524204	ASSEMBLY-CABLE, 5/8 DIA x 100FT LG						
57	1	530094	SPACER-BRK DISC,20GAX7/8 D						
58	1	530187	ASSEMBLY-GEAR BOX						
59	1	332304	DRUM						
60	1	412092	BUSHING-DRUM,GEAR HSG.END					X	
61	1	412188	BUSHING-DRUM, MOTOR END					X	
62	1	416059	SETSCREW3/8-16NCX1/2 HX SOCK HD CUP						
63	1	462013	QUAD-RING-2 7/8ODX2 1/2IDX3/16				X		
64	1	462050	QUAD-RING				X		
65	1	462052	O-RING, 3 7/8 ID				X		
66	1	462054	O-RING-3/16X3IDX3 3/8OD				X		

Kits and Maintenance Parts 13

128609



13 Kits and Maintenance Parts

128614

Item#	QTY.	PART NUMBER	DESCRIPTION	KITS					
				207021	207026	222060	246069	248059	283084
1	1	299802	ASSEMBLY-SPRING ROLLER TENSIONER						
2	1	306042	PISTON-BRAKE	X					
3	1	324527	CLUTCH			X			
4	1	328213	COVER-GEAR BOX						
5	1	330015	PUCK-DRUM DRAG						
6	1	338484	GEAR END BEARING						
7	1	338485	MOTOR END BEARING						
8	1	338513	HSG-BRAKE						
9	4	346045	PIN-BRAKE, .375 DIA.X2.125 LG.	X					
10	1	357579	COUPLING-OUTPUT						
11	1	357587	SHAFT-INPUT						
12	1	362298	SPACER-MOTOR						
13	1	402121	BEARING					X	
14	12	414136	CAPSCREW-5/16-18NCX1LG,HXHD,GR5						
15	6	414303	BOLT-3/8-16NC X2 1/2,HXHD,GR-5						
16	1	414548	CAPSCREW-1/2-13NCX1 1/2,HXHD,G5						
17	8	414664	CAPSCREW-5/8-11NC X1LG HXHD,GR-5						
18	2	414954	CAPSCREW-1/2-13NCX1 1/4LG,SOCKET HD						
19	1	418069	NUT-1/2-13NC HEX REG						
20	4	418163	LOCKWASHER-5/16						
21	12	418177	LOCKWASHER-3/8						
22	2	418218	LOCKWASHER-1/2 ID						
23	1	362360	WASHER-THRUST						
24	1	418462	CLUTCH WASHER 2.125 OD X .878 ID X .070						
25	12	420047	CAPSCREW-3/8-16NC X 3 LG, HX HD, GR8						
26	4	420058	CAPSCREW-3/8-24UNF-2A X 4.00 LG, HEX SOC HD						
27	1	426076	CYLINDER-CLUTCH						
28	1	426077	PISTON-CLUTCH			X			
29	1	431015	COUPLING-MOTOR	X					X
30	2	432018	FITTING 7/16-20 90 degree						
31	1	432023	FITTING-7/16-20						
32	1	432041	FITTING-AIR,PUSH IN						
33	4	438022	DISC-BRAKE		X				
34	1	442220	GASKET-BRAKE HSG		X		X		
35	1	456008	RELIEF FIT-1/8-27PFT						
36	1	456038	FITTING-VENT,BREATHER						
37	1	458218	MOTOR-HYDRAULIC						
38	1	462056	O-RING, .984 .I.D.				X		
39	1	462057	O-RING, 5.734 .I.D.		X		X		
40	1	462058	O-RING, 6.234 .I.D.		X		X		

Kits and Maintenance Parts 13

128614

Item#	QTY.	PART NUMBER	DESCRIPTION	KITS					
				207021	207026	222060	246069	248059	283084
41	1	462059	RING-BACK-UP, 5.750 .I.D.		X		X		
42	1	462060	RING-BACK-UP, 6.250 .I.D.		X		X		
43	3	462063	O-RING, 6.692 .I.D.			X	X		
44	2	462127	O-RING, 6.484 ID X 6.762 OD X .139THK			X	X		
45	4	470156	THREADED TAPER PIN			X			
46	2	472052	PLUG-SAE O-RING,.562-18NF						
47	5	474111	PLATE-SEPARATOR,BRAKE		X				
48	1	474258	TIE PLATE-TENSIONER MTG						
49	1	474262	TIE PLATE-WITH LOGO						
50	1	490080	RING-RETAINER						
51	1	490081	RING-RETAINER			X			
52	1	494002	SPRING-QQ						
53	6	494110	SPRING-BRAKE		X				
54	4	494112	SPRING		X				
55	6	494140	SPRING			X			
56	1	509140	HOSE 13.8 LENGTH						
57	1	516061	VALVE-COUNTERBALANCE						
58	1	518052	WASHER-THRUST,1.37 O.D.		X			X	
59	1	530094	SPACER-BRK DISC,20GAX7/8 D						
60	1	530187	ASSEMBLY-GEAR BOX						
61	1	332303	DRUM						
62	1	412092	BUSHING-DRUM,GEAR HSG.END					X	
63	1	412188	BUSHING-DRUM, MOTOR END					X	
64	1	416059	SETSCREW3/8-16NCX1/2 HX SOCK HD CUP						
65	1	462013	QUAD-RING-2 7/8ODX2 1/2IDX3/16				X		
66	1	462050	QUAD-RING				X		
67	1	462052	O-RING, 3 7/8 ID				X		
68	1	462054	O-RING-3/16X3IDX3 3/8OD				X		

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.