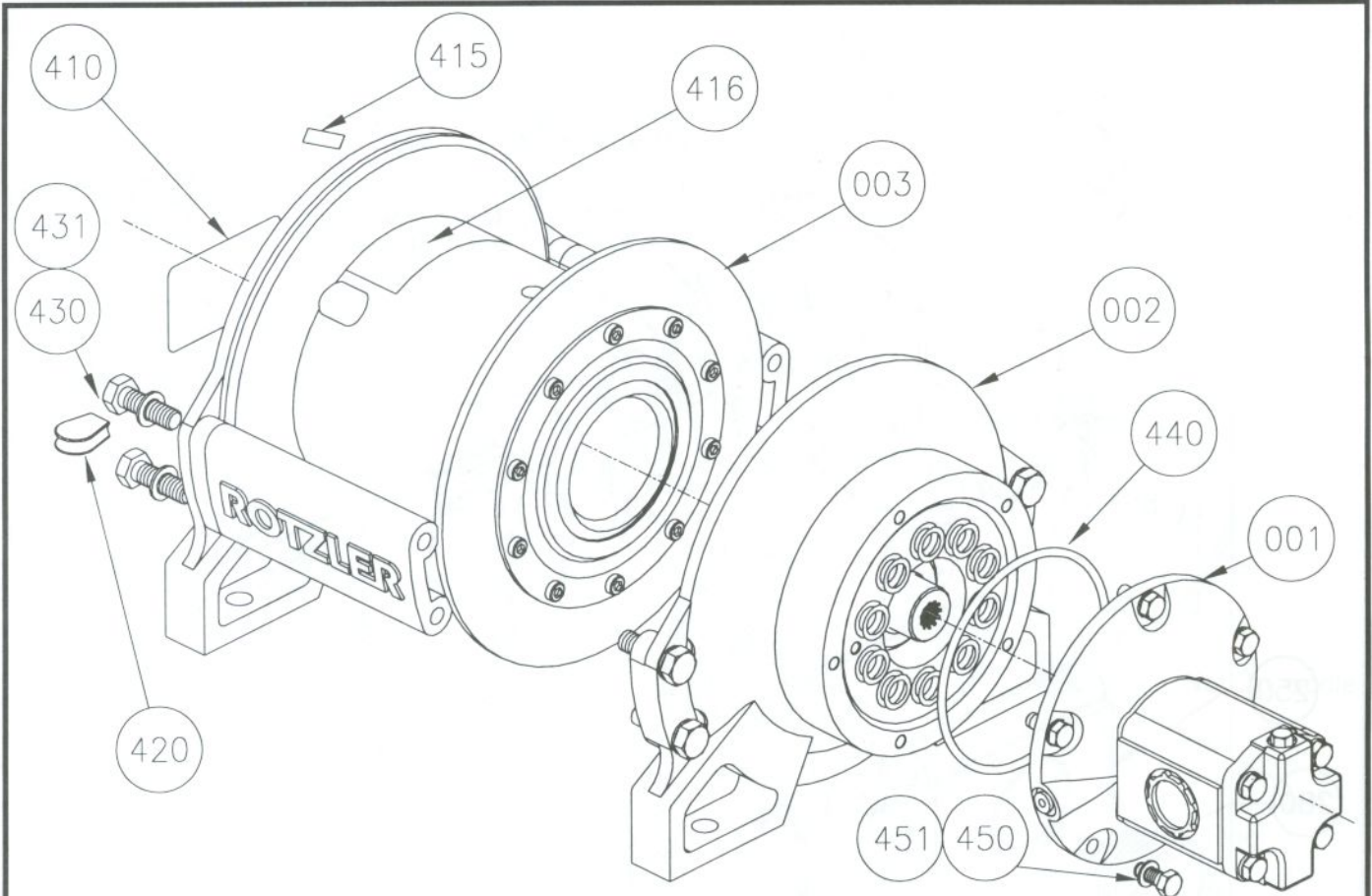


DRAWINGS

WINCH DRAWING

#EW.TH1 REV A



REF.	COMPONENT	QTY.	DESCRIPTION	STAINLESS STEEL SCREW OPTION
001	See Table 1	1	Assembly, Motor, TH1.XX.XX	
002	See Table 1	1	Assembly, Primary, TH1.XX	
003	F.TH1	1	Assembly, Final, TH1	
004	H.TH1	1	Assembly, Hardware, TH1. Includes:	
410	220-065	1	Label, Identification	
415	220-077	1	Label, Number	
416	220-078	1	Label, Rotation, CC - counter clockwise hoisting	
416	220-079	1	Label, Rotation, CW - clockwise hoisting	
420	220-067C	1	Cable Wedge, .44"	
430	210-062	8	Screw, Hex Head Cap, M10-1.50x30mm, DIN 933, Gr.8.8, Plated	210-098
431	220-068	8	Washer, M10, DIN 433, Plated	220-101
*	440	1	Seal, O-Ring, #2-163	
450	220-032	5	Screw, Hex-Head Cap, M10-1.50x25mm, DIN 933, Gr.8.8, Plated	220-100
451	220-068	5	Washer, M10, DIN 433, Plated	220-101

* TH1 Winch Service Kit #210-086, includes item #440.

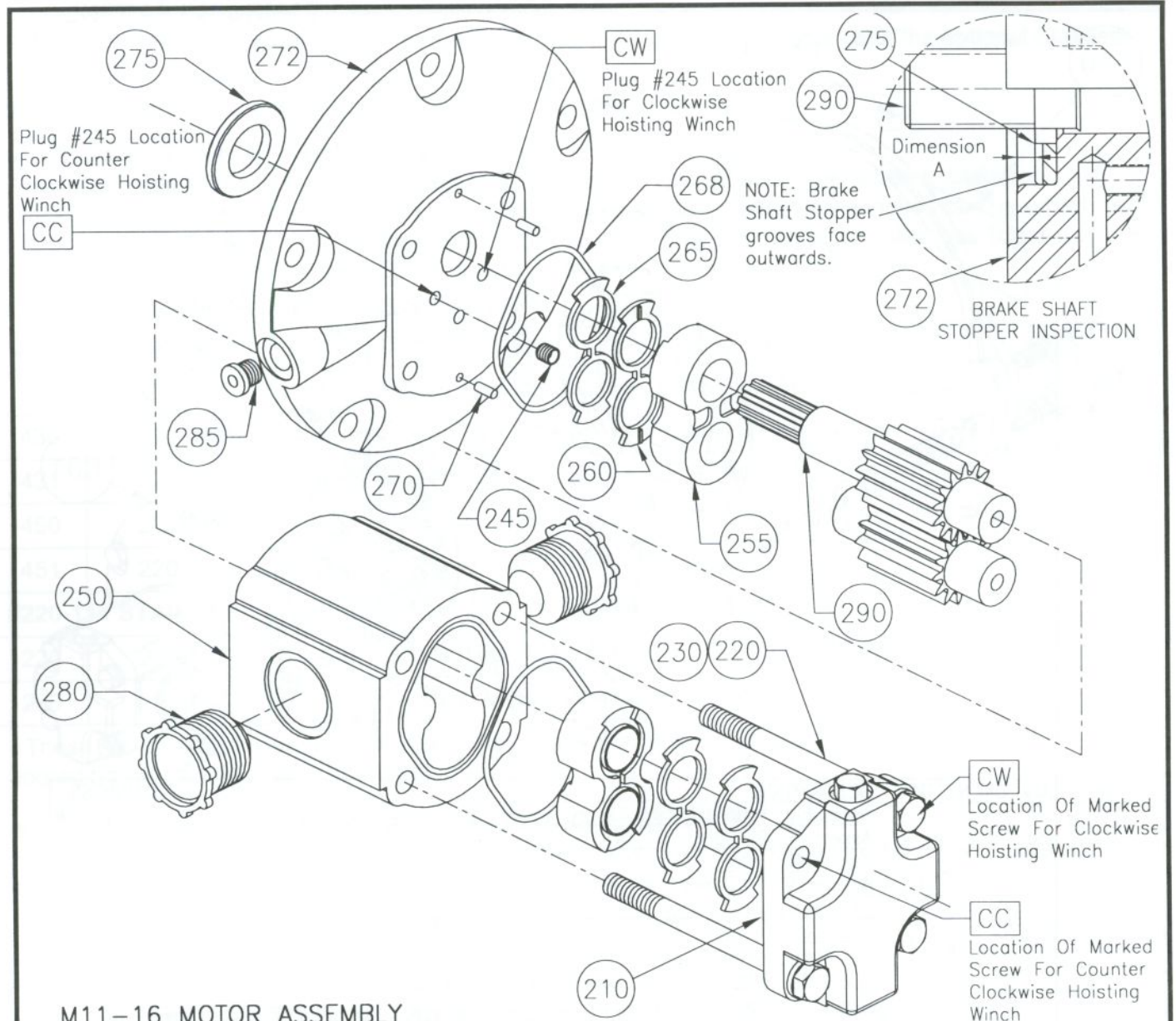
TABLE 1		REF.	VARIANCE	COMPONENT	DESCRIPTION	
	001		Counter clockwise hoisting, standard motor	M.TH2.CC.16	Assembly, Motor, TH1.CC.0	
			Clockwise hoisting, standard motor	M.TH2.CW.16	Assembly, Motor, TH1.CW.0	
			Counter clockwise hoisting, -10 motor	M.TH2.CC.10	Assembly, Motor, TH1.CC.10	
			Clockwise hoisting, -10 motor	M.TH2.CW.10	Assembly, Motor, TH1.CW.10	
			Counter clockwise hoisting, -19 motor	M.TH2.CC.19	Assembly, Motor, TH1.CC.19	
			Clockwise hoisting, -19 motor	M.TH2.CW.19	Assembly, Motor, TH1.CW.19	
			Counter clockwise hoisting, -31 motor	M.TH2.CC.31	Assembly, Motor, TH1.CC.31	
			Clockwise hoisting, -31 motor	M.TH2.CW.31	Assembly, Motor, TH1.CW.31	
		002		Counter clockwise hoisting	P.TH1.CC	Assembly, Primary, TH1, CC
				Clockwise hoisting	P.TH1.CW	Assembly, Primary, TH1, CW

NOTE: The winch model number is located on the Identification Label #410 and identifies rotation code (CC, CW) and motor code (0, 10, 19, etc.)

DRAWINGS

MOTOR ASSEMBLY DRAWING

#EM.TH2.**.16 REV B



M11-16 MOTOR ASSEMBLY

(Refer to separate drawing for other motor options.)

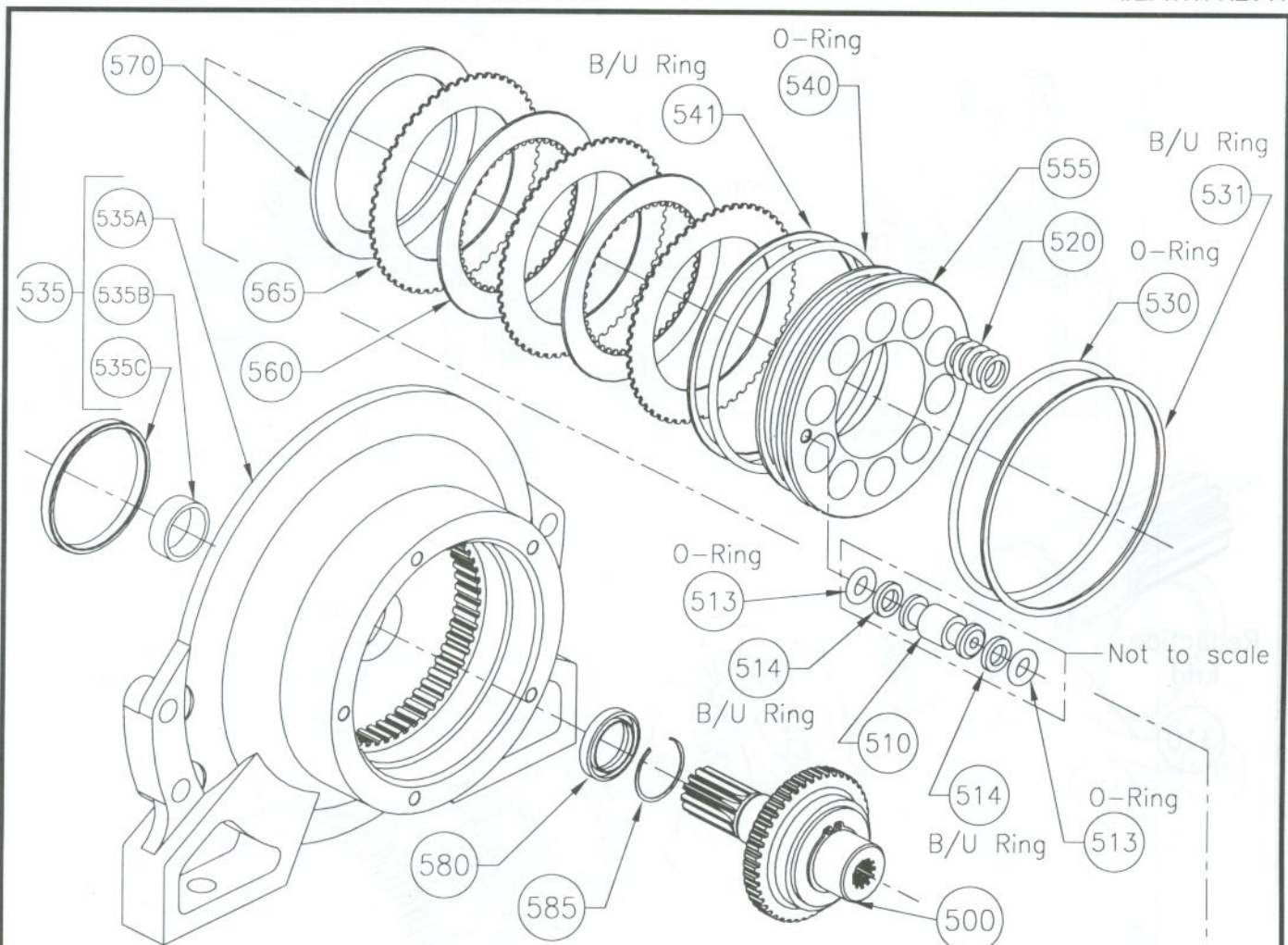
REF.	COMPONENT	QTY.	DESCRIPTION	STAINLESS STEEL SCREW OPTION
210	220-019	1	Motor Cover, Port End, M11	220-113
220	220-110	4	Motor Screw, M11-16, CI #391 1401 768	220-101
230	220-029	4	Motor Washer, M11, CI #391 3782 245	
245	220-057	1	Fitting, Plug, Pipe, 1/16, Airway #5406-1HHP	
250	220-108	1	Motor Housing, Gear, M11-16	
255	220-020	2	Motor Bushing, Thrustblock, M11, CI #391 2185 111	
*	260	2	Motor Seal, Channel, M11, CI #391 2882 198	
*	265	2	Motor Seal, Backup, M11, CI #391 2882 197	
*	268	2	Motor Seal, Section, M11, CI #391 2882 158	
270	220-054	2	Motor Dowel Pin, M11, CI #391 2080 078	
272	220-017	1	Motor Cover, Shaft End, M11	
275	220-084	1	Stopper, Brake Shaft	
280	210-071	2	Fitting, Plug, Plastic, SAE #10, Caplug #PDO-110	
285	220-072	1	Fitting, Plug, SAE, #4, Airway #6408-4HHP	
290	220-109	1	Motor Gear Set, M11-16, CI #332 2931 330	

* M11 Motor Service Kit #220-080 includes #260, #265 and #268

DRAWINGS

PRIMARY ASSEMBLY DRAWING

#EP.TH1 REV A



REF.	COMPONENT	QTY	DESCRIPTION
500	See table 1	1	Assembly, Clutch, TH1.XX
510	220-045	1	Brake Conduit
* 513	220-047	2	Seal, O-Ring, #2-008
* 514	220-048	2	Seal, Backup Ring, #8-008
520	220-016	8	Spring
* 530	220-043	1	Seal, O-Ring, #2-357
* 531	220-042	1	Seal, Backup Ring, #8-357
535	210-076	1	Base, Primary, Assembled, TH1. Includes:
	535A	210-002	1 Base, Primary, TH1
	535B	220-066	1 Bearing, Sleeve, 1.26"
	535C	210-058	1 Sleeve, Rotary Shaft Seal, TH1
* 540	220-041	1	Seal, O-Ring, #2-356
* 541	220-040	1	Seal, Backup Ring, #8-356
555	210-011	1	Brake Piston, TH1
560	220-039	2	Brake Disc
565	220-038	3	Brake Separator
570	220-015	1	Brake Locator
* 580	220-035	1	Seal, Brake Shaft, 1.25"
585	220-081	1	Retainer, Spirolox #UR-162

* TH1 Winch Service Kit #210-086 includes #513 (x2), #514 (x2), #530, #531, #540, #541 and # 580.

TABLE 1

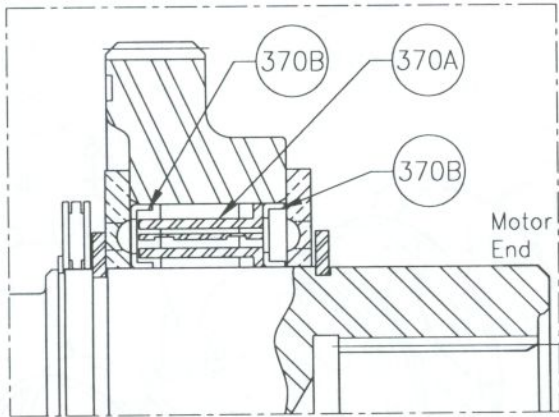
REF.	VARIANCE	COMPONENT	DESCRIPTION
500	Counter clockwise hoisting	C.TH1.CC	Assembly, Clutch, TH1.CC
	Clockwise hoisting	C.TH1.CW	Assembly, Clutch, TH1.CW

NOTE: The winch model number is located on the Final Base Identification label and identifies rotation code (CC,CW).

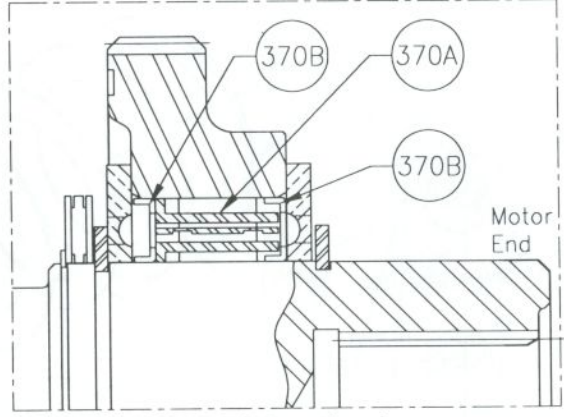
DRAWINGS

CLUTCH ASSEMBLY DRAWING

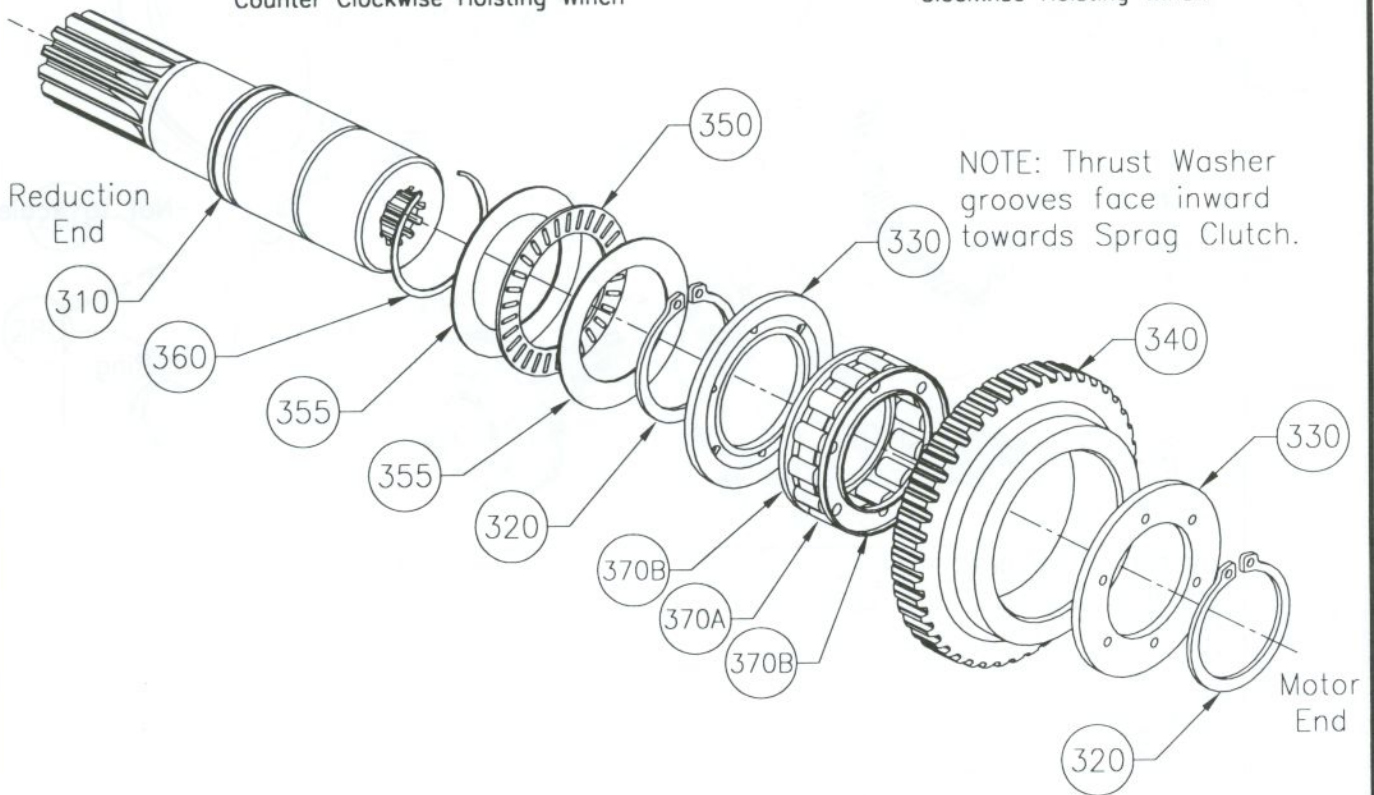
#EC.TH1 REV A



Clutch Orientation for Counter Clockwise Hoisting Winch



Clutch Orientation for Clockwise Hoisting Winch



REF.	COMPONENT	QTY.	DESCRIPTION
⊕ 310	210-014	1	Brake Shaft, TH1
320	220-037	2	Retainer, DIN 471, American Ring #471-0380
330	220-036	2	Brake Clutch Thrust Washer
⊕ 340	220-010	1	Brake Hub, 0.91"
350	220-034	1	Bearing, Thrust Roller, INA #TC 2435
355	220-049	2	Bearing, Thrust Washer, INA #TWA 2435
360	220-046	1	Retainer, Spirolox #US-150
⊕ 370A	220-124	1	Brake Sprag Clutch Cage
370B	220-125	2	Brake Sprag Clutch End Bearing

⊕ Refer to SERVICING CRITICAL COMPONENTS for special instructions.

DRAWINGS

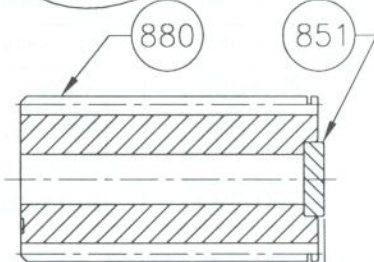
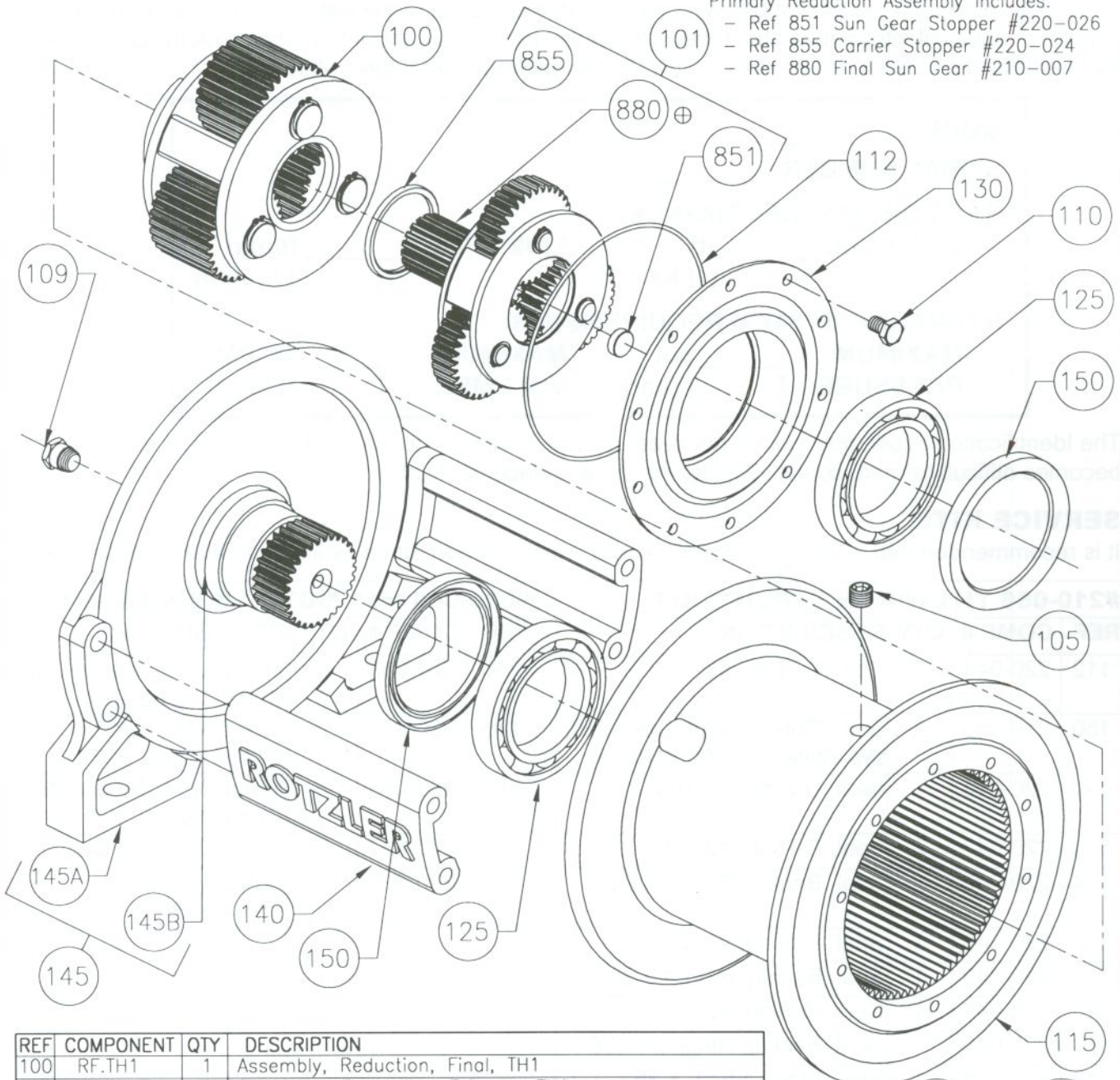
FINAL ASSEMBLY DRAWING

#EF.TH1 REV A

⊕ Refer to SERVICING CRITICAL COMPONENTS for special instructions.

Primary Reduction Assembly includes:

- Ref 851 Sun Gear Stopper #220-026
- Ref 855 Carrier Stopper #220-024
- Ref 880 Final Sun Gear #210-007



Dimension B
FINAL SUN GEAR
STOPPER INSPECTION

REF	COMPONENT	QTY	DESCRIPTION
100	RF.TH1	1	Assembly, Reduction, Final, TH1
101	RP.TH1	1	Assembly, Reduction, Primary, TH1
105	220-061	1	Fitting, Plug, Pipe, 3/8, Airway #5406-6HHP
109	220-063	1	Valve, Relief
*	112	220-044	1 Seal, O-Ring, #2-163
	115	210-013	1 Cable Drum, TH1
	125	210-059	2 Bearing, Ball, SKF #6011
	130	210-012	1 Holder, Bearing, TH1
	140	210-030	2 Spacer Bar, TH1
	145	210-074	1 Base, Final, Assembled, TH1. Includes:
	145A	210-001	1 Base, Final, TH1
	145B	210-058	1 Sleeve, Rotary Shaft Seal, TH1
*	150	210-060	2 Seal, Rotary Shaft, DIN3760, WA Style, 70X90X10mm

* TH1 Winch Service Kit #210-086, includes item #112 and #150 (x2)

ORDERING

6. ORDERING

TECHNICAL INFORMATION

An Identification Label as shown below, is located on the outside of the winch Final Base, identifying important technical information about the particular winch. Record this information exactly as it appears on the Identification Label in the space provided below and retain for future reference.

MODEL: _____	
SERIAL NUMBER: _____	
BARE DRUM PERFORMANCE	
LINE PULL: _____ lb [] [kN]	LINE SPEED: _____ ft/min [] [m/min]
HYDRAULIC SYSTEM REQUIREMENTS	
MAXIMUM _____ psi PRESSURE: [] [bar]	MAXIMUM _____ USGPM VOLUME: [] [L/min]

The Identification Label must not be removed, altered or have its technical data obscured. If the data becomes difficult to read, contact Rotzler Inc. for a replacement Label.

SERVICE KITS

It is recommended that a Motor Service Kit and a Winch Service Kit be available before beginning service.

#210-086 TH1 WINCH SERVICE KIT			
REF	COMP #	QTY	DESCRIPTION
112	220-044	1	Seal, O-Ring, #2-163
150	210-060	2	Seal, Rotary Shaft, DIN 3760, WA Style, 70 X 90 X 10mm
440	220-044	1	Seal, O-Ring, #2-163
513	220-047	2	Seal, O-Ring, #2-008
514	220-048	2	Seal, Backup Ring, #8-008
530	220-043	1	Seal, O-Ring, #2-357
531	220-042	1	Seal, Backup Ring, #8-357
540	220-041	1	Seal, O-Ring, #2-356
541	220-040	1	Seal, Backup Ring, #8-356
580	220-035	1	Seal, Brake Shaft, 1.25"
-	220-087	1	Adhesive, #565 Sealant
-	220-088	1	Adhesive, #262 Threadlocker
-	220-089	1	Adhesive, #648 Retaining Compound
-	220-090	1	Adhesive #330 Acrylic

#220-080 M11 MOTOR SERVICE KIT			
REF	COMP #	QTY	DESCRIPTION
260	220-053	2	Motor Seal, Channel, M11, CI #391 2882 198
265	220-055	2	Motor Seal, Backup, M11, CI #391 2882 197
268	220-056	2	Motor Seal, Section, M11, CI #391 2882 158
-	220-087	1	Adhesive, #565 Sealant
-	220-088	1	Adhesive, #262 Threadlocker

ORDERING REPLACEMENT COMPONENTS

When ordering replacement components for the winch or when making technical inquiries, always refer to the Model and Serial Number listed on the winch Identification Label.