

MODEL 20

PARTS AND LUBRICATION INFORMATION

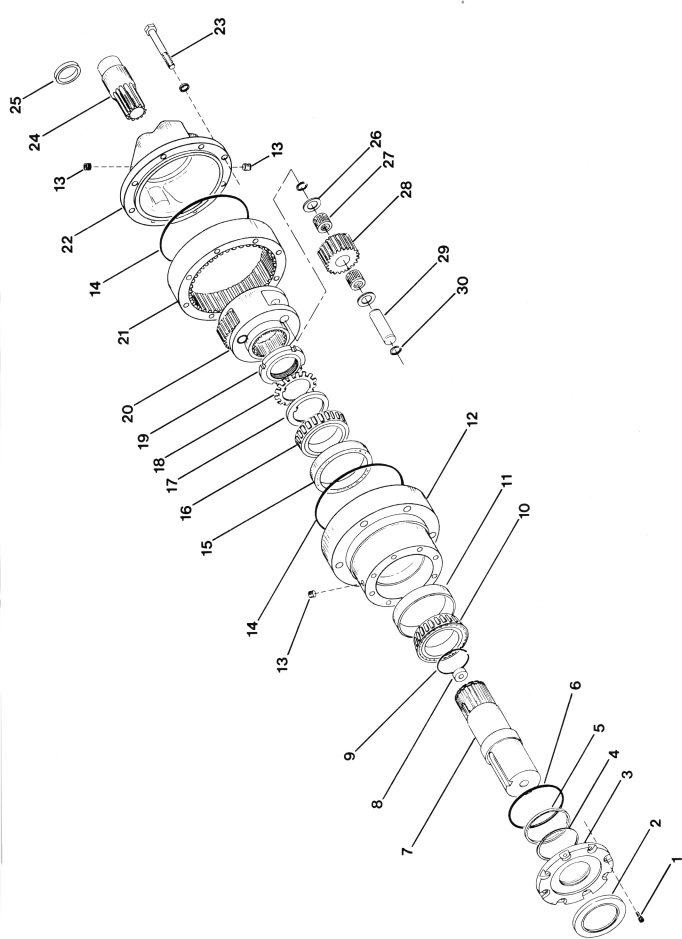


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ITEM #	PART #	DESCRIPTION	QTY/ASSY
1.	15111	Cap Screw	8
* 2.	20150	Shaft Seal	1
3.	20023	Seal Carrier — 1 design	1
	20064	Seal Carrier — 2 design	
* 4.	20119	Backup Ring	1
* 5.	20117	Quad Ring	1
* 6.	20116	O Ring	1
7.		Output Shaft	1
	20044	2.750" Straight Keyed	
	20021	3.375" Straight Keyed	
	20057	23T 8/16 Spline	
	20053	8-Hole Flange	
8.	150152	Thrust Washer	1
9.	20011	Retaining Ring	1
10.	20156	Cone	2
11.	20155	Cup	2
12.	20020	Housing	1
13.	20110	Pipe Plug	3
* 14.	20101	O Ring	2
15.	20112	Cup	2
16.	20121	Cone	2
17.	20128	Keyed Washer	1
18.	20106	Lock Washer	1
19.	20107	Lock Nut	1
20.	20005	Planet Carrier	1
21.		Internal Gear	1
	20019	6:1	
	20004	4.8:1	
22.		Motor Adapter	1
	20024	SAE C 2 & 4-Bolt	
	200701	Ross MAB & MAE	
23.	20109	Bolt	8
24.		Sun Gear	1
	20F	6:1 4000 Char-Lynn Bearingless	
	20G	6:1 6000 Char-Lynn Bearingless	
	2006	6:1 14T 12/24 Spline	
	2004	4.8:1 14T 12/24 Spline	
25.	20113	Bushing (Char-Lynn Bearingless Only)	1
26.	20115	Thrust Washer	6
27.	20111	Planet Bearing	6
28.		Planet Gear	3
	20008	4.8:1	
	20018	6:1	

ITEM #	PART #	DESCRIPTION	QTY/ASSY
	29.	Planet Pin	3
	30.	Retaining Ring	6
	20105	Seal Kit — BUNA	
	20932	Seal Kit — VITON	
	20933	Seal Kit — H-P	
	20935	Seal Kits include items indicated by*	



LUBRICATION INSTRUCTIONS

HECO planetary speed reducers may be lubricated as a self-contained unit (standard hydraulic motor), or as an integral part of the hydraulic system (bearingless motor).

In applications where the speed reducer is lubricated as a self-contained, horizontal unit, it is recommended that the unit be half-filled with EP⁽¹⁾ oil (see chart for amount and proper grade gear oil). Self-contained, vertical installations (output shaft down) require the unit to be filled to the center line of the upper planetary gear train. For self-contained vertical installations (output shaft up) consult HECO. When installed as a self-contained unit, ensure adequate ventilation is provided to allow for lubricant expansion.

The oil should be changed after the first 50 hours and 100 hours of operation, and every 1000 hours thereafter. Oil should be drained while the unit is at operating temperature. The unit should be cleaned with flushing oil (use of solvents should be avoided). NOTE: The importance of a thorough gear case cleaning with flushing oil during the first lubricant change cannot be overemphasized. If the maximum oil operating temperature is exceeded, change oil immediately.

In applications where the speed reducer is lubricated by oil flow from the bearingless hydraulic motor, a petroleum based hydraulic oil with EP⁽¹⁾ additives should be used. Ensure that a minimum oil flow of 2 GPM is maintained, a separate case

drain line should be connected directly from the top of the reducer (ensure the reducer remains full) to the oil reservoir.

For maximum cooling and lubrication the case drain should be connected to the drain port at the opposite end of the reducer from the hydraulic motor. Reducer case pressure must not exceed 20 PSI with the standard shaft seal or 50 PSI with the optionally available high pressure seal installed.

(1) Extreme Pressure Lubricants — These lubricants are petroleum base liquids with chemical additives, such as, sulfur phosphorous or similar materials or soluble compounds which produce a protective film to withstand high pressures.

	HORIZONTAL OPERATION (1/2 FULL)	TOTAL CAPACITY
Model 16	20 oz. (6 dl.)	40 oz. (12 dl.)
Model 20	50 oz. (15 dl.)	105 oz. (31 dl.)
Model 20D	50 oz. (15 dl.)	105 oz. (31 dl.)
Model 50	100 oz. (30 dl.)	200 oz. (60 dl.)
Model 50D	85 oz. (25 dl.)	170 oz. (50 dl.)
Model 52D	85 oz. (25 dl.)	170 oz. (50 dl.)
Model 52T	115 oz. (34 dl.)	230 oz. (68 dl.)

OIL GRADE — Single Reduction (RPM Out)

0-25 RPM — AGMA #5
25-100 RPM — AGMA #3
100-200 RPM — AGMA #1
200 + — Consult HECO

OIL GRADE — Double Reduction (RPM Out)

0-40 RPM — AGMA #5
40-60 RPM — AGMA #1
60 + — Consult HECO

MAXIMUM OIL TEMPERATURE

140°F (60°C) continuous
170°F (76°C) intermittent
Consult HECO for higher temperatures