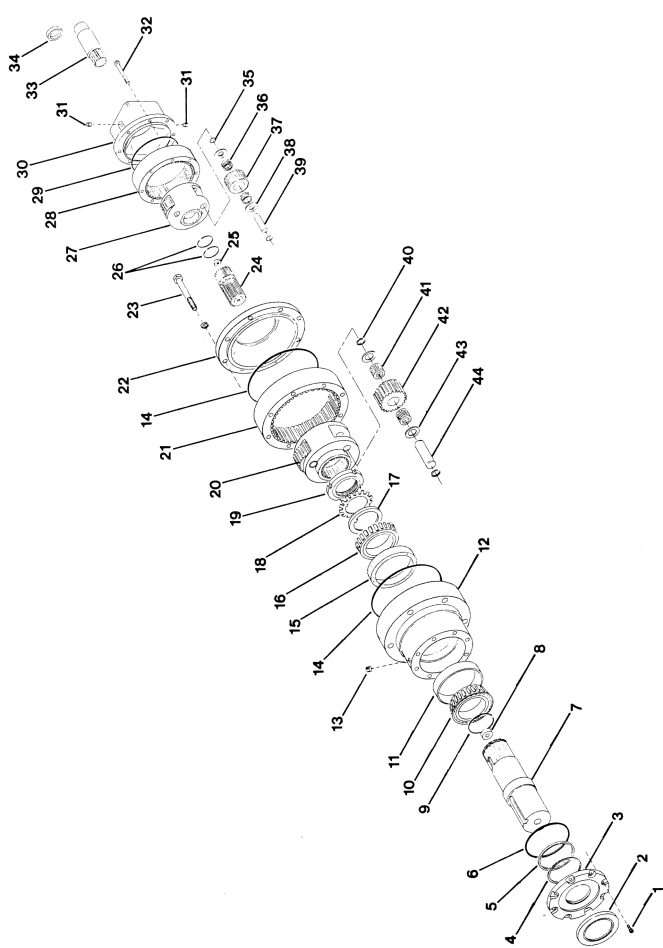


MODEL 20D

PARTS AND LUBRICATION INFORMATION



 **HECO** INC.



MODEL 20D

ITEM #	PART #	DESCRIPTION	QTY/ASSY
1.	15111	Cap Screw	8
* 2.	20118	Shaft Seal — 1 design	1
	20150	Shaft Seal — 2 design	1
3.	20063	Seal Carrier — 1 design	1
	20064	Seal Carrier — 2 design	1
* 4.	20119	Backup Ring	1
* 5.	20117	Quad. Ring	1
* 6.	20116	O Ring	1
7.		Output Shaft	1
	20044	2.750 Straight Keyed	1
	20051	3.375 Straight Keyed	1
	20057	23T 8/16 Spline	1
	20053	8-Hole Flange	1
8.	150152	Thrust Washer	2
9.	20011	Retaining Ring	1
10.	20156	Cone	2
11.	20155	Cup	2
12.	20020	Housing	1
13.	20110	Pipe Plug	1
* 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
	20004	24.96:1	1
	20019	31.2:1	1
22.	20030	Transition Plate	1
23.	20109	Bolt	8
24.		Intermediate Gear	1
	20033	24.96:1	1
	150152	31.2:1	1
25.	150152	Thrust Washer	2
26.	15011	Retaining Ring	2
27.	15004	Planet Carrier	1
	15003	Internal Gear	1
* 28.	15102	O Ring	2
30.		Motor Adapter	1
	15205	SAE A 2-Bolt	1
	15064	SAE B 2-Bolt	1
	15018	SAE B 4-Bolt	1
	15209	SAE C 2 & 4-Bolt	1
	150901	Ross MAB & MAE	1

ITEM #	PART #	DESCRIPTION	QTY/ASSY
31.	15129	Pipe Plug	2
32.	15110	Bolt	8
33.		Sun Gear Kit (Input Shaft Adapter)	1
	16B	7/8"-13 Tooth Spline	1
	16C	1"-15 Tooth Spline	1
	16D	1" Straight Key	1
	16E	Char-Lynn 2000 Bearingless	1
	16F	Char-Lynn 4000 Bearingless	1
	16H	1 1/2" Straight Key	1
	16I	1 1/2"-14 Tooth Spline	1
	16M	1" — SAE 6B Spline	1
	16O	3/4" Straight Key	1
	16P	1 1/8" Straight Key	1
34.		Bushing (Char-Lynn Bearingless Only)	1
	15116	2000 Char-Lynn Bearingless	1
	20113	4000 Char-Lynn Bearingless	1
35.	15107	Retaining Ring	2
36.	15115	Planet Bearing	6
37.	15006	Planet Gear	6
38.	15112	Thrust Washer	3
39.	15008	Planet Pin	6
40.	20105	Retaining Ring	3
41.	20111	Planet Bearing	6
42.		Planet Gear	6
	20008	24.96:1	3
	20018	31.2:1	3
43.	20115	Thrust Washer	6
44.	20010	Planet Pin	3
	20950	Seal Kit — BUNA	1
	20955	Seal Kit — VITON	1
		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