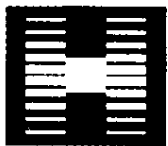
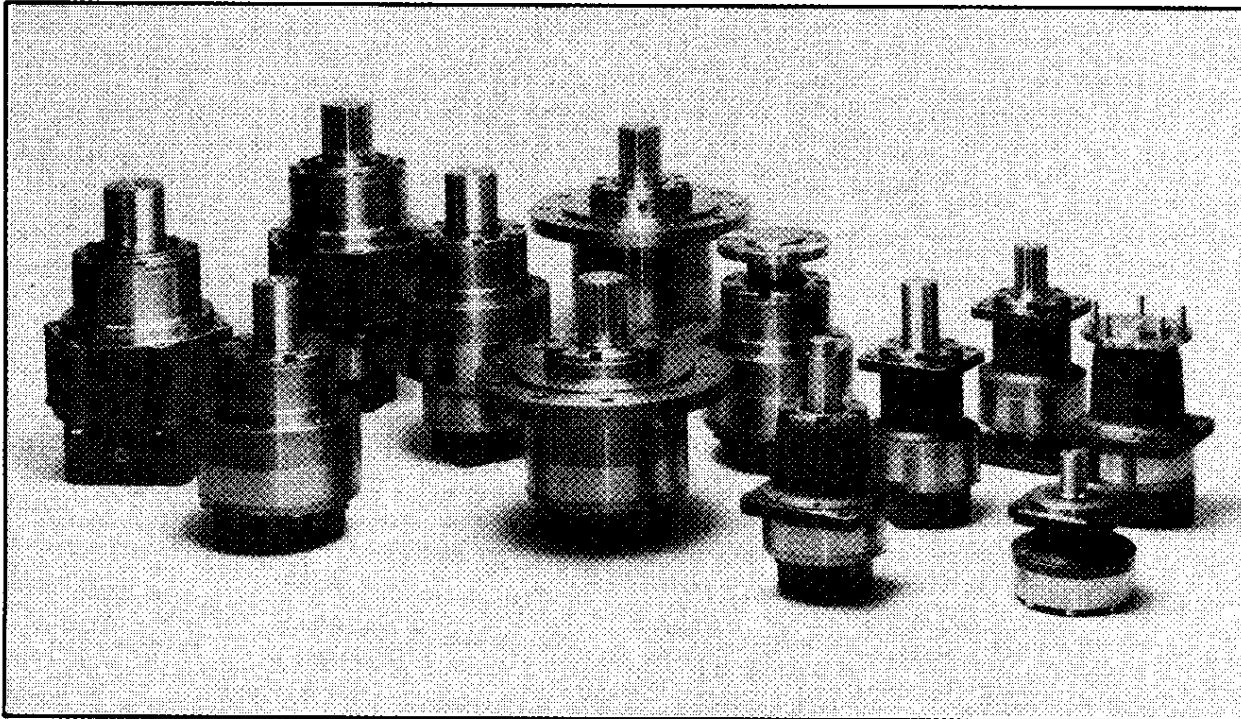


# MODEL 20D

## PARTS AND LUBRICATION INFORMATION



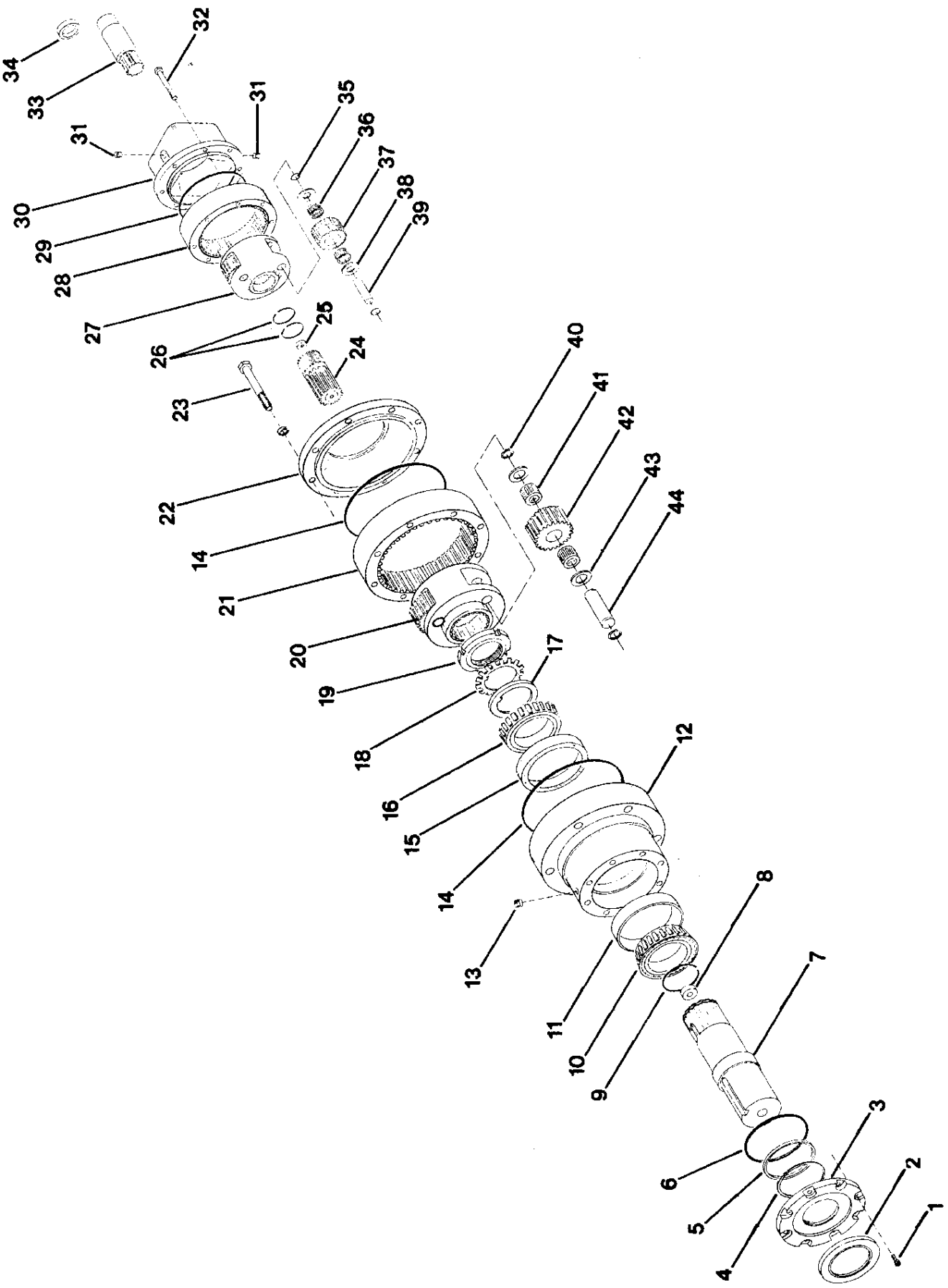
**HECO** INC.

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MODEL 20D

ITEM #	PART #	DESCRIPTION	QTY/ASSY
1.	15111	Cap Screw	8
* 2.	20118	Shaft Seal --- 1 design	1
3.	20150	Shaft Seal --- 2 design	1
* 4.	20023	Seal Carrier --- 1 design	1
* 5.	20064	Seal Carrier --- 2 design	1
* 6.	20119	Backup Ring	1
7.	20117	Quad. Ring	1
	20116	O Ring	1
	20044	Output Shaft	1
	20021	2.750 Straight Keyed	1
	20057	3.375 Straight Keyed	1
	20053	23T 8/16 Spline	1
8.	150152	8-Hole Flange	2
9.	20011	Thrust Washer	1
10.	20156	Retaining Ring	1
11.	20155	Cone	2
12.	20020	Cup	1
13.	20110	Housing	1
* 14.	20101	Pipe Plug	1
15.	20112	O Ring	2
16.	20121	Cup	2
17.	20128	Cone	2
18.	20106	Keyed Washer	1
19.	20107	Lock Washer	1
20.	20005	Lock Nut	1
21.	20004	Planet Carrier	1
22.	20030	Internal Gear	1
23.	20109	24.96:1	1
24.	20033	31.2:1	8
	20032	Transition Plate	1
25.	150152	Bolt	1
26.	15011	Intermediate Gear	2
27.	15004	31.2:1	2
28.	15003	Thrust Washer	1
* 29.	15102	Retaining Ring	1
30.	15205	Planet Carrier	1
	15064	Internal Gear	1
	15018	O Ring	2
	15209	Motor Adapter	1
	150901	SAE A 2-Bolt	
		SAE B 2-Bolt	
		SAE B 4-Bolt	
		SAE C 2 & 4-Bolt	
		Ross MAB & MAE	

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



# LUBRICATION INSTRUCTIONS

HÉCO 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 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 HÉCO. 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, ensure that a minimum oil flow of 2GPM 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 15 PSI with the standard shaft seal or 50 PSI with the optionally available high pressure seal installed.

Consult HÉCO for applications involving Char-Lynn 006 design 2000 series bearingless motors, or for additional information.

## CAPACITY:

Model:	Horizontal Operation (½ Full):	Total (Capacity):
M-16	20 oz.	40 oz.
M-20	50 oz.	105 oz.
M-20D	50 oz.	105 oz.
M-50	100 oz.	200 oz.
M-50D	85 oz.	170 oz.
M-52D	85 oz.	170 oz.

## OIL GRADE:

### Single Reduction (RPM Out):

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

### Double Reduction (RPM Out):

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

## MAXIMUM OIL TEMPERATURE:

140° F Continuous  
170° F Intermittent  
For higher temperatures, consult HÉCO

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