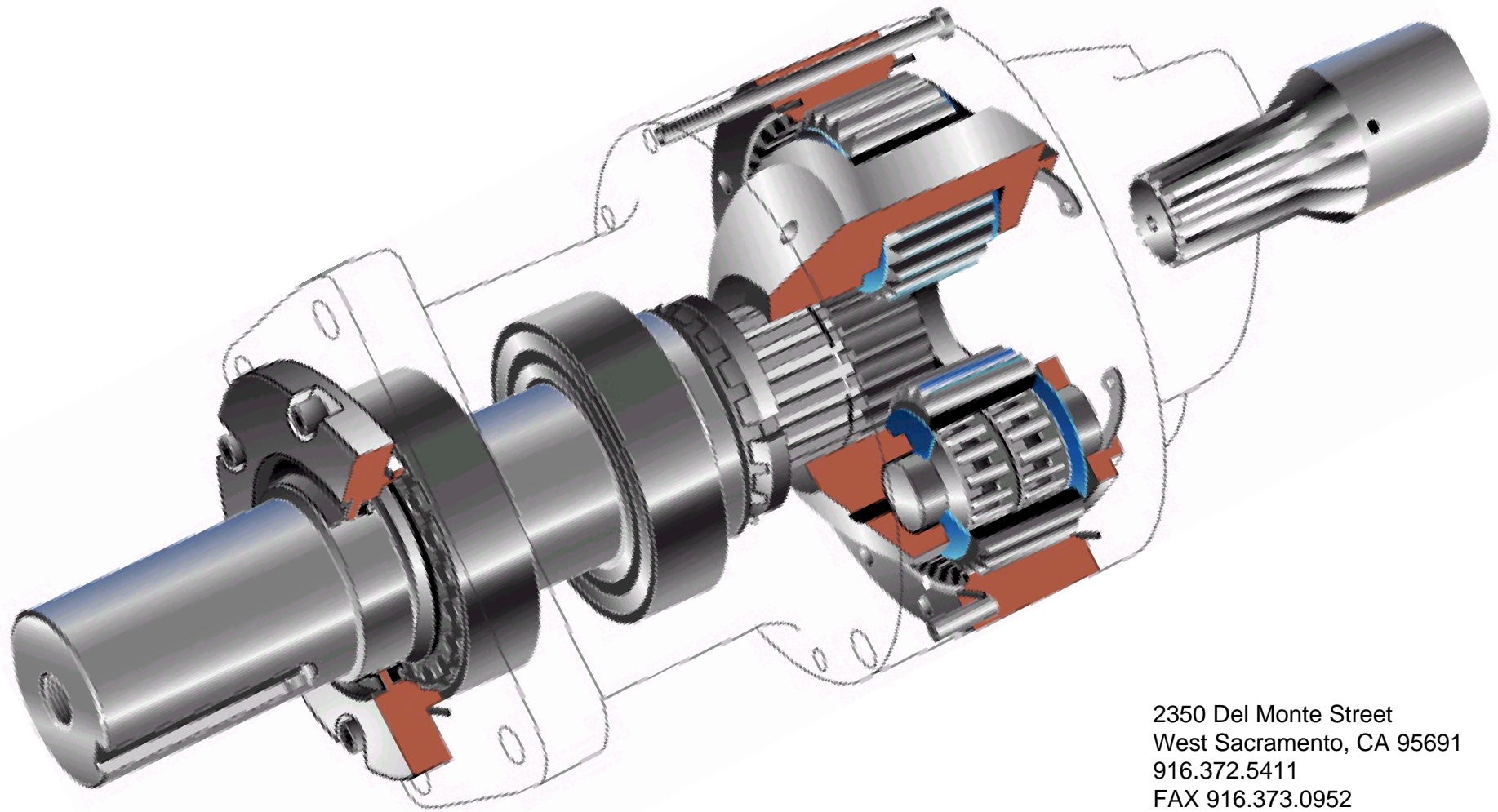


# Model 16

## *Parts and Lubrication Information*



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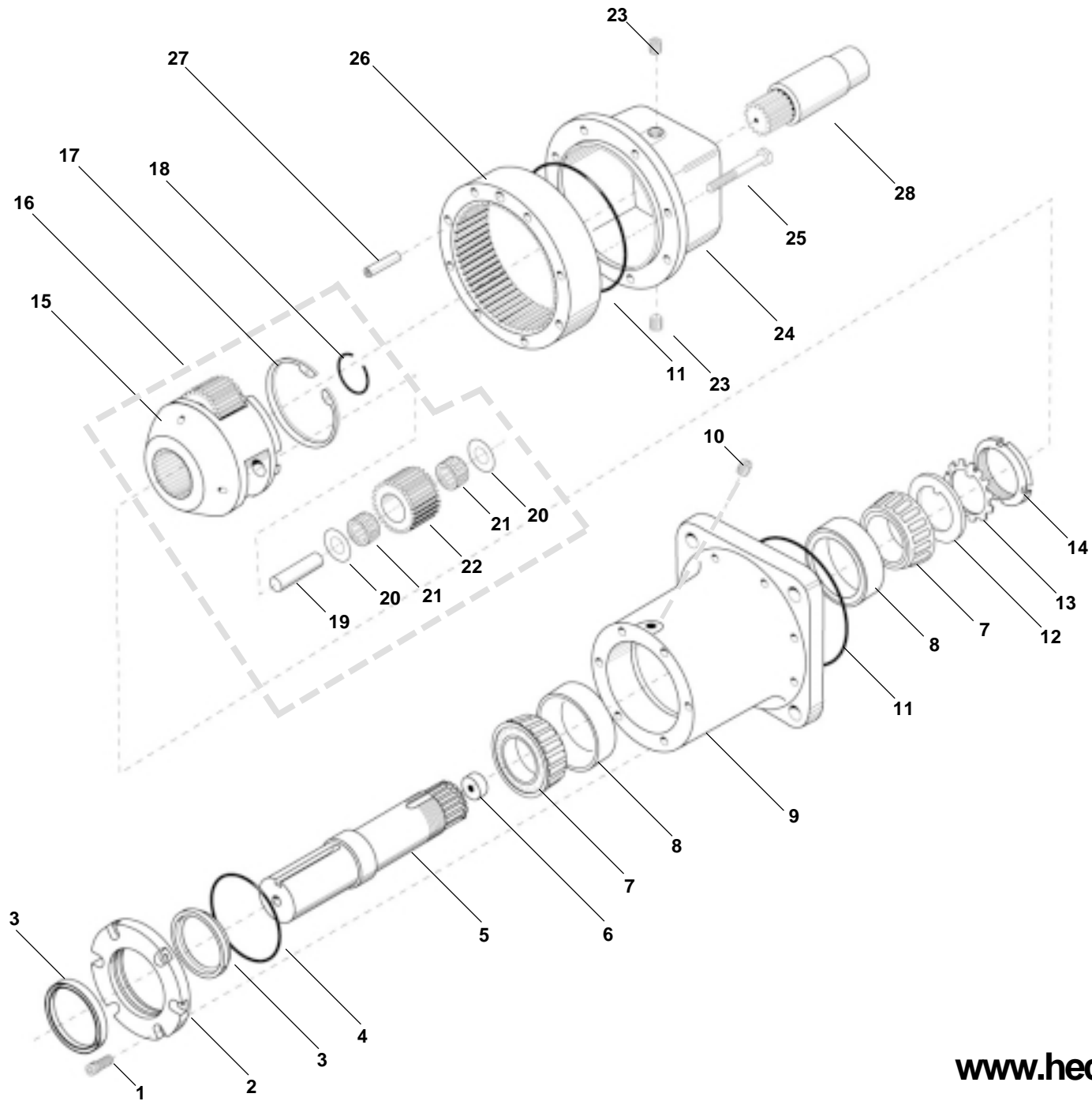


**HĒCO GEAR**

# Model 16 -- Revision 6

ITEM #	PART #	DESCRIPTION	QTY/ASSY
1.		Cap Screw	6
	15111	Cap Screw	
	15117	Cap Screw -- Stainless Steel	
2.		Seal Carrier	1
	15616	Seal Carrier <sup>(3)</sup>	
	15617	Seal Carrier -- nickel plated	
3.	15620	Shaft Seal <sup>(2)</sup>	2
4.	15133	O Ring <sup>(2)</sup>	1
5.		Output Shaft	1
	15053	2.250" Straight Keyed	
	15073	2.250" Straight Keyed -- nickel plated	
	15054	2.250" J501 Tapered	
	15099	16Tooth-8/16 Spline	
	15057	4-Bolt Flange w/ 1/2" studs	
	15077	4-Bolt Flange w/ 1/2" studs -- nickel plated	
	15058	4-Bolt Flange w/ 5/8" studs	
	15223	5-Bolt Flange w/ 5/8" studs	
	15224	5-Bolt Flange w/ 1/2" studs	
	15060	2.00" Straight Keyed	
	15230	2.545" Round w/Cross Drilled Hole	
	15231	2.00" Hex w/ Cross Drilled Hole	
	15912	1.625" Square	
6.	150152	Thrust Plug	1
7.	15118	Cone	2
8.	15128	Cup	2
9.		Bearing Housing	1
	15052	Front Flange	
	15055	Center Flange	
10.	15129	Pipe Plug	3
11.	15102	O Ring <sup>(2)</sup>	2
12.	15163	Keyed Thrust Washer	1
13.	15162	Lock Washer	1
14.	15138	Lock Nut	1
15.	15611	Planet Carrier <sup>(1)</sup>	1
16.	15004Z	Planet Carrier Assembly <sup>(1)</sup>	1
17.	15614	Retaining Ring <sup>(1)</sup>	1
18.	15011	Retaining Ring <sup>(1)</sup> -- wirelock*	1
19.	15612	Planet Pin <sup>(1)</sup>	3
20.	15112	Thrust Washer <sup>(1)</sup>	6
21.	15115	Planet Bearing <sup>(1)</sup>	6
22.	15006	Planet Gear <sup>(1)</sup>	3
23.	15129	Pipe Plug	3
24.		Motor Adppter	1
	15205	SAE A 2-Bolt & 4-Bolt combination	
	15064	SAE B 2-Bolt	
	15018	SAE B 4-Bolt	

ITEM #	PART #	DESCRIPTION	QTY/ASSY
	15209	SAE C 2- & 4-Bolt combination	
25.	15110	Bolt	8
26.	15003	Internal Gear	1
27.	15175	Spring Pin	1
28.		Sun Gear Kit (Input Shaft Adapter)	1
	16B	7/8" -- 13T Spline	
	16C	1" -- 15T Spline	
	16D	1" Straight Keyed	
	16E	Charlynn 2000 Bearingless	
	16F	Charlynn 4000 Bearingless	
	16H	1 1/4" Straight Keyed	
	16I	1 1/4" -- 14T Spline	
	16M	1" SAE 6B Spline	
	16O	7/8" Straight Keyed	
	16P	1 1/8" Straight Keyed	
		<b>SEAL KITS</b>	
	SK16-6	Version 6 Seal Kit -- Buna	
	SK16-6V	Version 6 Seal Kit -- Viton	
	SK16-5	Version 5 Seal Kit -- Buna	
	SK16-5V	Version 5 Seal Kit -- Viton	
	SK16-4	Version 4 Seal Kit -- Buna	
	SK16-4V	Version 4 Seal Kit -- Viton	
	SK16-U	Universal Seal Kit -- Buna	
	SK16-UV	Universal Seal Kit -- Viton	
		(1) All items contained in part number 16. (Planet Carrier Assembly)	
		(2) Items included in the SK16-6 seal kit	
		(3) Universal seal kit includes 6 design seal carrier plus seals. This will upgrade all previous revisions to the current seal design.	
		* Disassembly Note: Item (18) -- wire locking retaining ring. Item (18) retains the planet carrier assembly (16) to the output shaft (5). To remove the planet carrier this ring must be removed. To remove (18) take two screw drivers and reach down into the planet carrier assembly and pry the wire lock (18) out of its groove in the end of the shaft (5).	



# LUBRICATION INSTRUCTIONS

The HecoGear Inc. Model 16 planetary speed reducer may be lubricated using one of two methods.

## Self Contained Lubrication

If you are using self contained lubrication you need to install the proper amount of lubrication fluid into the speed reducer. The amount of fluid depends on the mounting orientation of the speed reducer.

## Model 16 Oil Capacity

1/2 Full	20 oz. (6 dl)
Full	40 oz. (12 dl)

## Recommended Lubricant

For maximum speed reducer life the recommended oil is SAE 85W-140 Multi-Grade gear oil, meeting API-GL5 and API-MT1 service. An alternate oil that will provide adequate speed reducer life is SAE 90W gear oil, meeting API-GL5 and API-MT1 service. These lubricants should be readily available at your local automotive store or oil distributor.

**Shaft horizontal** – it is recommended that the speed reducer be filled to ½ full.

**Vertical Shaft Down** – with the shaft facing down fill the speed reducer to the level of the centerline of the upper gear set prior to installing the motor.

**Vertical Shaft Up** – the speed reducer must be completely filled and provision for maintaining a fluid level at or above the top shaft bearing is required. This can be done using a “stand pipe” or small reservoir.

## “Flow Through” Lubrication

In this method of lubrication, fluid from the hydraulic system is used to lubricate the speed reducer. This is most commonly done using a “bearingless” hydraulic motor which has no shaft seal and the internal leakage of the motor flows into and lubricates the speed reducer. A petroleum based hydraulic fluid with EP1 additives and a minimum of .125% zinc anti-wear additives should be used to ensure good speed reducer life at rated torques and speeds. Bio-degradable fluids and water glycol fluids can be used below the maximum ratings of the speed reducer. (contact HecoGear for your specific application)

The speed reducer should be completely filled with hydraulic fluid before the hydraulic motor is installed.

**Case drains** – No case drain is required with self contained lubrication. On units with flow through lubrication you do not need to case drain the unit unless the return line pressure from the hydraulic motor exceeds 50 PSI; as it does if the motor is in series or you are using a “meter out” flow control.

The most popular hydraulic motors connected to the Model 16 HecoGear speed reducer that provide a “Flow Through” lubrication are the Charlynn 2000 series and the 4000 series bearingless hydraulic motors. The correct location for the drain on these units is:

**C/L 2000 Bearingless** Connect case drain to the hydraulic motor

**C/L 4000 Bearingless** Connect case drain to the hydraulic motor or to the speed reducer

If a case drain is required for your application care must be taken to ensure that the drain is taken from the proper location so that all internal components are thoroughly lubricated. The case drain should be taken from the high point of the motor/reducer.

## Maximum Oil Temperature

160° Continuous

180° Intermittent

Consult HecoGear, Inc. for higher temperatures

## Periodic Maintenance

Reducers using self contained lubrication should have the fluid drained after the first 50 hours of operation and the reducer should be flushed with a flushing oil, drained and then replaced with the proper fluid. This should also be done every 1,000 hours thereafter. Reducers using flow through lubrication require no periodic maintenance.

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