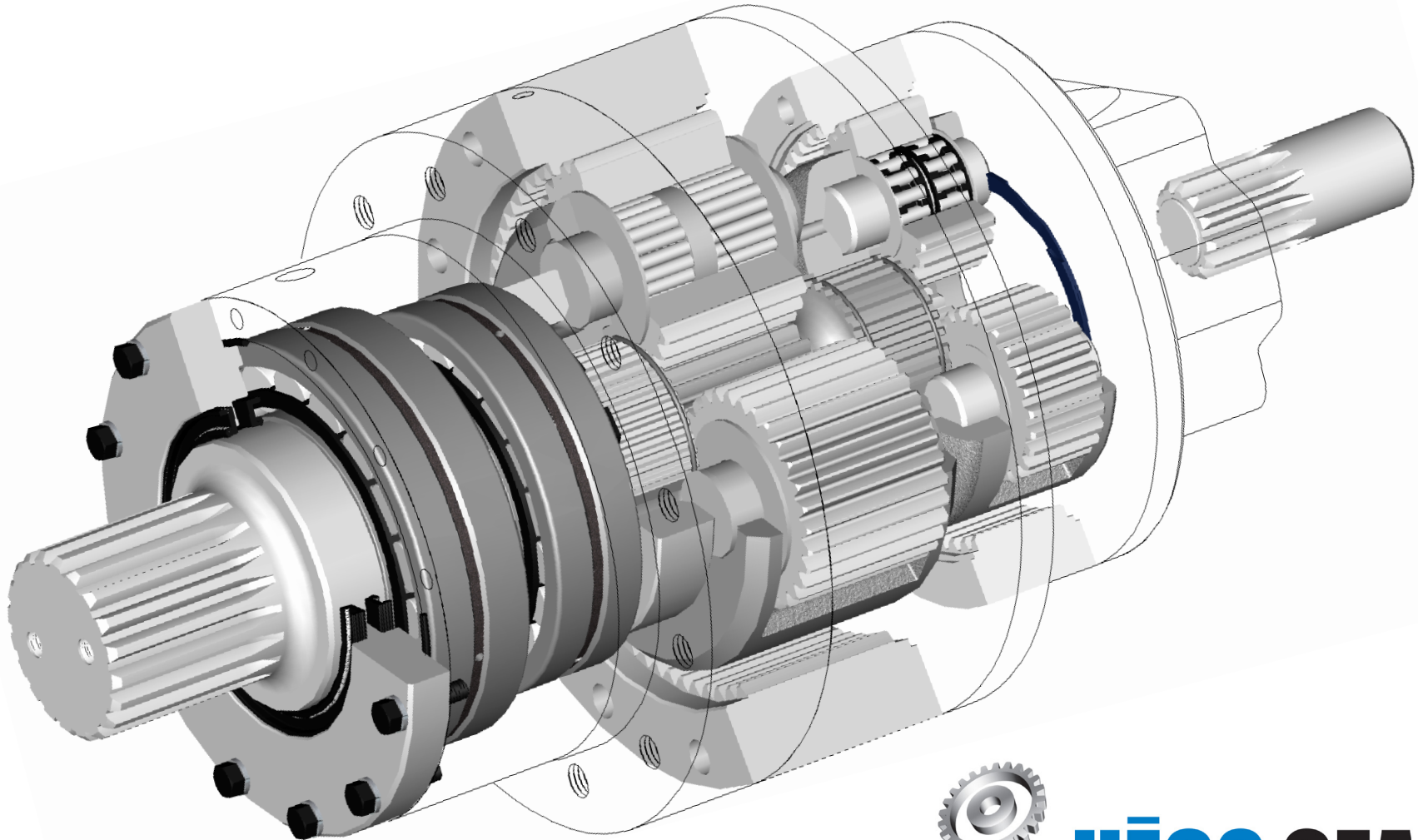


# Model 65D

## *Parts and Lubrication Information*



Model 65D Performance Specifications: [www.hecogear.com/m60performance.pdf](http://www.hecogear.com/m60performance.pdf)

Heco Terms and Conditions of Sale: [www.hecogear.com/termsandconditions.pdf](http://www.hecogear.com/termsandconditions.pdf)

Heco Warranty: [www.hecogear.com/warranty.pdf](http://www.hecogear.com/warranty.pdf)

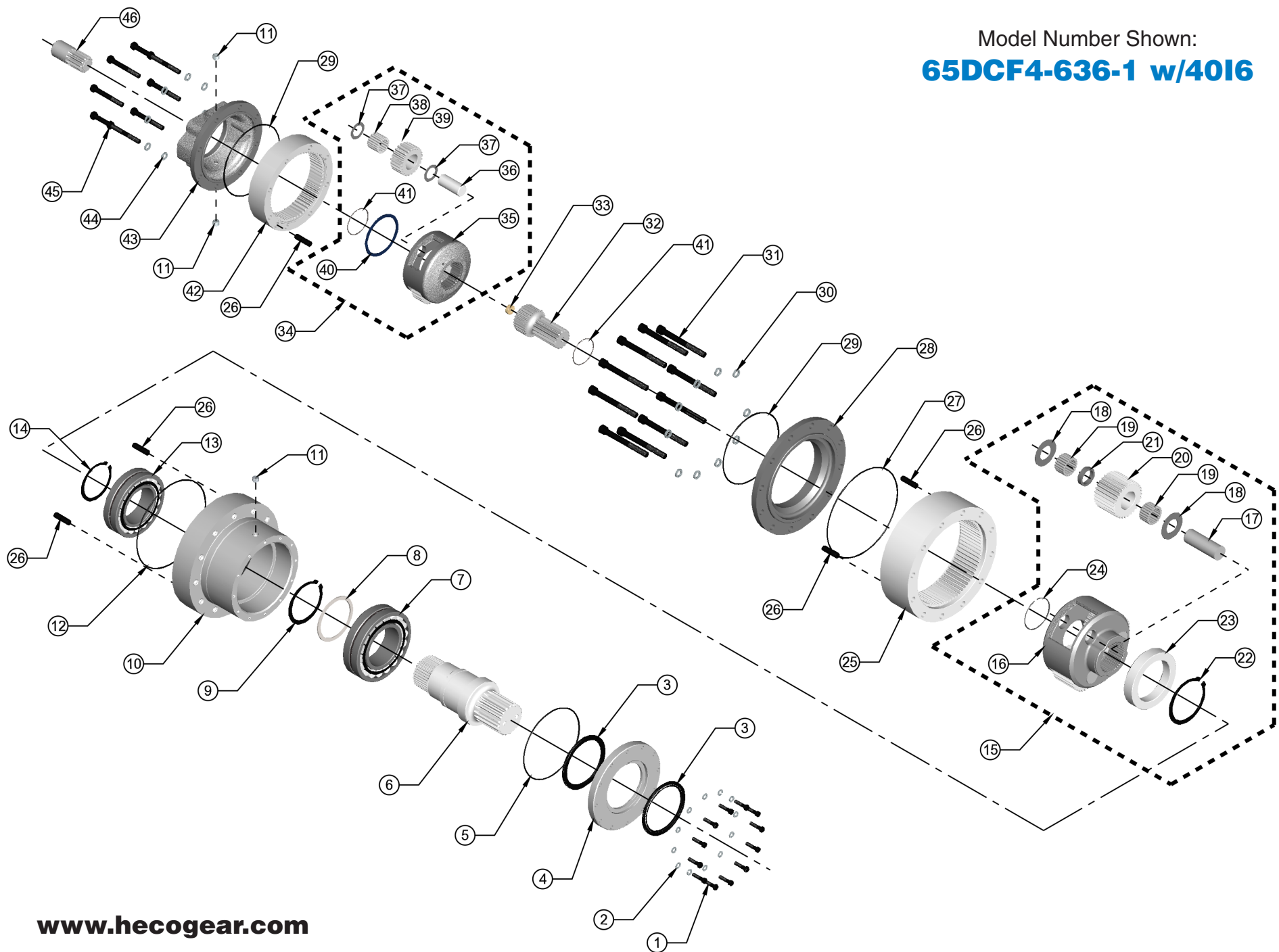


**HĒCO GEAR**  
Planetary Speed Reducers for Industry

ITEM #	PART #	DESCRIPTION	QTY/ASSY
1.	601960	Hex Head Cap Screw	12
2.	601980	Split Lock Washer	12
3.		<b>Shaft Seals</b>	
	601820	Standard High Speed Seal	1
	601920	Optional High Pressure Seal - Buna	2
	601930	Optional High Pressure Seal - Viton	2
4.		<b>Seal Carrier</b>	
	601800	Standard High Speed Carrier	1
	60190A	Optional High Pressure Carrier	1
5.		<b>Seal Carrier O-Ring</b>	
	601940	O-Ring - Buna	1
	611945	O-Ring - Viton	1
6.		<b>Output Shaft</b>	
	60001C	3.875 Straight Keyed	1
	60004B	20 Tooth 6/12DP Splined	1
	60002B	Flanged With Thru Holes	1
	60007B	Flanged With Threaded Holes	1
7.	60155A	Shaft Bearing - Outer	1
8.	601590	Support Washer	1
9.	601570	Bearing Snap Ring - Outer	1
10.	60020E	Front Housing - Center Flange	1
11.	201100	Housing Pipe Plug	4
12.		<b>Housing O-Ring</b>	
	600220	O-Ring - Buna	1
	611225	O-Ring - Viton	1
13.	60156A	Shaft Bearing - Inner	1
14.	601580	Bearing Snap Ring - Inner	1
		<b>Primary Planet Carrier</b>	
15.	610001	6.0:1 Planet Carrier Assembly	1
16.	60111F	Planet Carrier Housing	1
17.	60112A	Planet Pin	3
18.	601190	Thrust Washer	6
19.	60118A	Needle Roller Bearing	132
20.	60113G	Planet Gear	3
21.	60117A	Marriage Ring	3
22.	601080	Snap Ring	1
23.	60110A	Enhancement Ring	1
24.	601990	Wire Retaining Ring	1
25.	60109D	Ring Gear	1
26.	251750	Spring Pin	1

ITEM #	PART #	DESCRIPTION	QTY/ASSY
27.		<b>Transition Plate O-Ring</b>	
	601070	O-Ring - Buna	1
	611075	O-Ring - Viton	1
28.	62222B	Transition Plate	1
29.		<b>Ring Gear O-Ring</b>	
	201010	O-Ring - Buna	2
	201015	O-Ring - Viton	2
30.	602080	Split Lock Washer	10
31.	602060	Socket Head Cap Screw	10
32.	62223B	Intermediate Gear	1
33.	150152	Bronze Thrust Plug	1
		<b>Secondary Planet Carrier</b>	
34.	400006	6.0:1 Planet Carrier Assembly	1
	400004	4.75:1 Planet Carrier Assembly	1
35.	40106B	6.0:1 Planet Carrier Housing	1
	40104C	4.75:1 Planet Carrier Housing	1
36.	251120	Planet Pin	4
37.	251190	Thrust Washer	8
38.	25138A	Needle Roller Bearing	76
39.	30126E	6.0:1 Planet Gear	4
	30124G	4.75:1 Planet Gear	4
40.	251140	Spiral Lock Ring	1
41.	200110	Wire Retaining Ring	2
42.		<b>Secondary Ring Gear</b>	
	301270	Ring Gear	1
43.		<b>Input Adapter</b>	
	200701	SAE A 2&4 Bolt	1
	25518A	SAE B 2&4 Bolt	1
	20024B	SAE C 2&4 Bolt	1
	25161A	SAE D 2&4 Bolt	1
44.	201080	Split Lock Washer	8
45.	201090	Hex Head Cap Screw	8
46.		<b>Input Sun Gear</b>	
	30F6	6.0:1 Charlynn 4000 Bearingless	1
	40F4	4.8:1 Charlynn 4000 Bearingless	1
	30G6	6.0:1 Charlynn 6000 Bearingless	1
	40G4	4.8:1 Charlynn 6000 Bearingless	1
	40L6	6.0:1 1-1/2" 17 Tooth Spline	1
	40L4	4.8:1 1-1/2" 17 Tooth Spline	1
	40K6	6.0:1 1-3/4" 13 Tooth Spline	1
	40K4	4.8:1 1-3/4" 13 Tooth Spline	1
	40I6	6.0:1 1-1/4" 14 Tooth Spline	1
	30I4	4.8:1 1-1/4" 14 Tooth Spline	1

Model Number Shown:  
**65DCF4-636-1 w/40I6**



# LUBRICATION INSTRUCTIONS

The Heco Gear Model 65D planetary speed reducer may be lubricated using one of two methods.

## Self-Contained Lubrication

This method is to be used with sealed motors. When 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.

## Mounting Orientations

*Shaft Horizontal* - The speed reducer should be filled 1/2 full.

*Vertically Shaft Down* - With the shaft facing down, fill the speed reducer to the centerline of the upper gear set prior to installing the motor.

*Vertically Shaft Up* - The speed reducer must be completely filled and provisions made for maintaining the fluid level at or above the top shaft bearing. This can be done using a "stand pipe" or small reservoir.

## Model 65D Oil Capacity

Horizontally Mounted (1/2 Full):

154 Oz.    4.8 Qt.    4.5 L

Vertically Mounted (Full):

307 Oz.    9.6 Qt.    9.1 L

## Recommended Lubricant

*Maximum Life* - For maximum speed reducer life the recommended oil is SAE 85W-140 Multi-Grade gear oil meeting API-GL5 and API-MT1 service.

*Adequate Life* - If 85W-140 gear oil as specified above is unavailable, 90W gear oil meeting API-GL5 and API-MT1 service, may be substituted.

These lubricants should be available at your local automotive stores or Heco distributor.

## 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 with 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 0.125% zinc anti-wear additive should be used to ensure good speed reducer life at rated torques and speeds.

If you are using any of the below sun gears you **MUST** use flow-through lubrication:

30F - Charlynn 4000 Bearingless

30G - Charlynn 6000 Bearingless

When either of the above sun gears are ordered with a model 63D speed reducer it will be configured with high pressure seals.

Notes:

1. Flow-through lubrication is not compatible with the standard model 65D output shaft seals. The speed reducer **MUST** be configured with high pressure seals to use flow through lubrication.

2. The speed reducer should be completely filled with hydraulic fluid **BEFORE** the hydraulic motor is installed and/or the unit is ran. Do not rely on the motor drain to fill the speed reducer!

3. No case drain is required provided the return line pressure of the hydraulic motor does **NOT** exceed 60 PSI. If the return line pressure is higher than 60 PSI (such as if the motor is being used in series or if you are using a meter out flow control) then make sure to attach the case drain line to a port on the speed reducer which will keep it at least 1/2 full if mounted horizontally, or completely full if mounted vertically.

## Case Pressure

*Standard High Speed Seal* - The Heco model 65D comes standard with a long life double lip shaft seal

that is designed for low case pressures and high speeds. A breather **MUST** be installed above the oil level of the speed reducer to ensure the case pressure remains below 3 PSI at all times.

*High Pressure Seals* - Available for flow through lubrication applications the optional high speed seal package can withstand case pressure of up to 60 PSI. High pressure seals may be ran with self contained lubrication and **NO** breather is required. Maximum output shaft speed is limited to 200 RPM with these seals and must **NOT** be exceeded!

## Seal Kits

Should your gear reducer suffer a seal failure; listed below are the available seal kits for the model 63D. Soft parts kits contain all O-rings and seals listed in the parts breakdown. Universal kits contain all O-rings and an assembled seal carrier & hardware.

### Standard High Speed Seal

SK65HS-1	Soft Parts Kit - Buna
SK65HS-U	Universal Kit - Buna

### Optional High Pressure Seals

SK65HP-1	Soft Parts Kit - Buna
SK65HP-1V	Soft Parts Kit - Viton
SK65HP-U	Universal Kit - Buna
SK65HP-UV	Universal Kit - Viton

## Maximum Oil Temperature

Continuous - 220° F (104° C)

Intermittent - 250° F (121° C)

## Periodic Maintenance

Reducers using the standard self-contained lubrication should have the fluid drained after the first 50 hours of operation. The reducer should then be flushed with oil, and re-filled with the recommended lubricant. The oil should be changed approximately every 1,000 hours of use. Reducers using flow through lubrication require no maintenance.

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