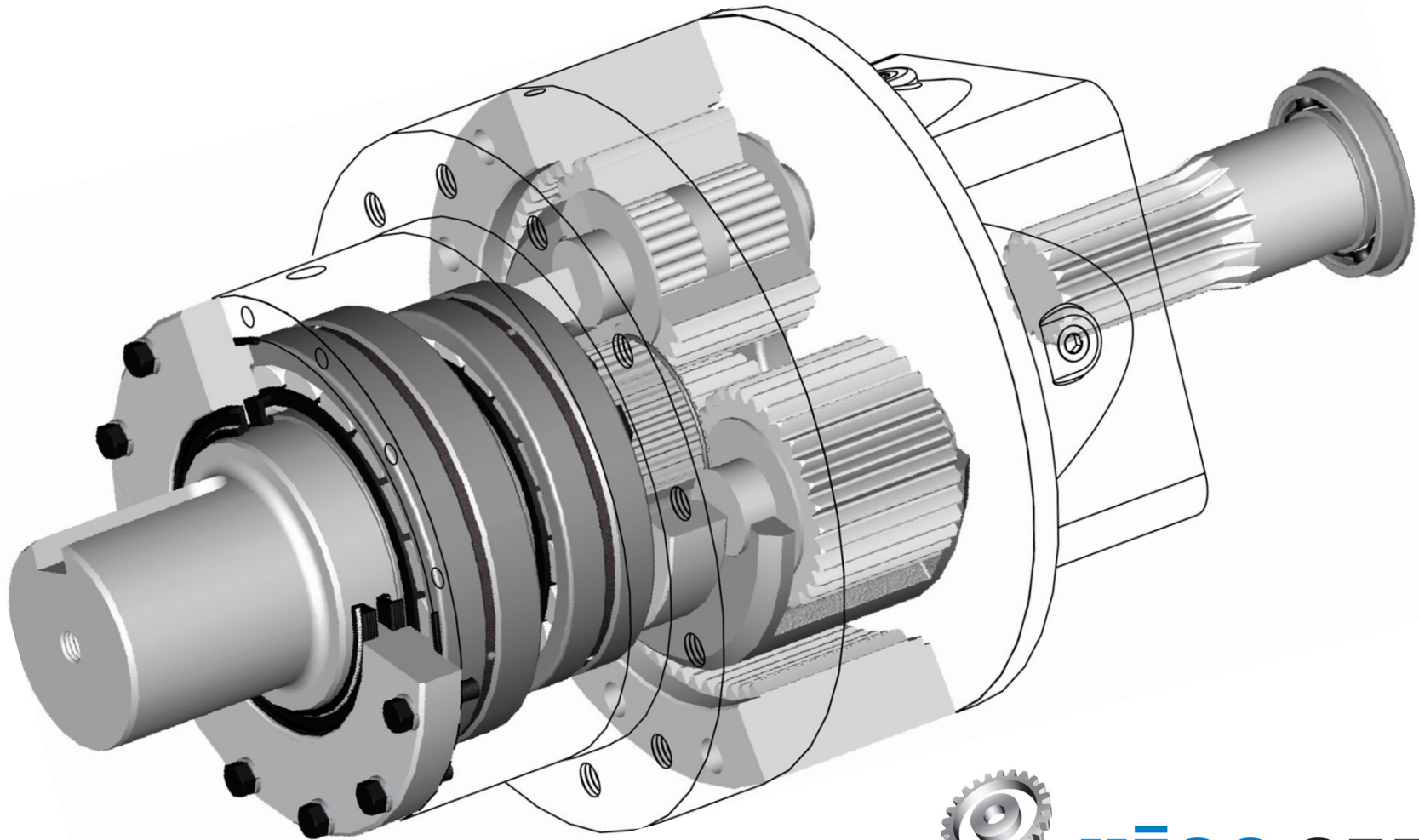


Model 60

Parts and Lubrication Information



Model 60 Performance Specifications: www.hecogear.com/m60performance.pdf

Heco Terms and Conditions of Sale: www.hecogear.com/termsandconditions.pdf

Heco Warranty: www.hecogear.com/warranty.pdf

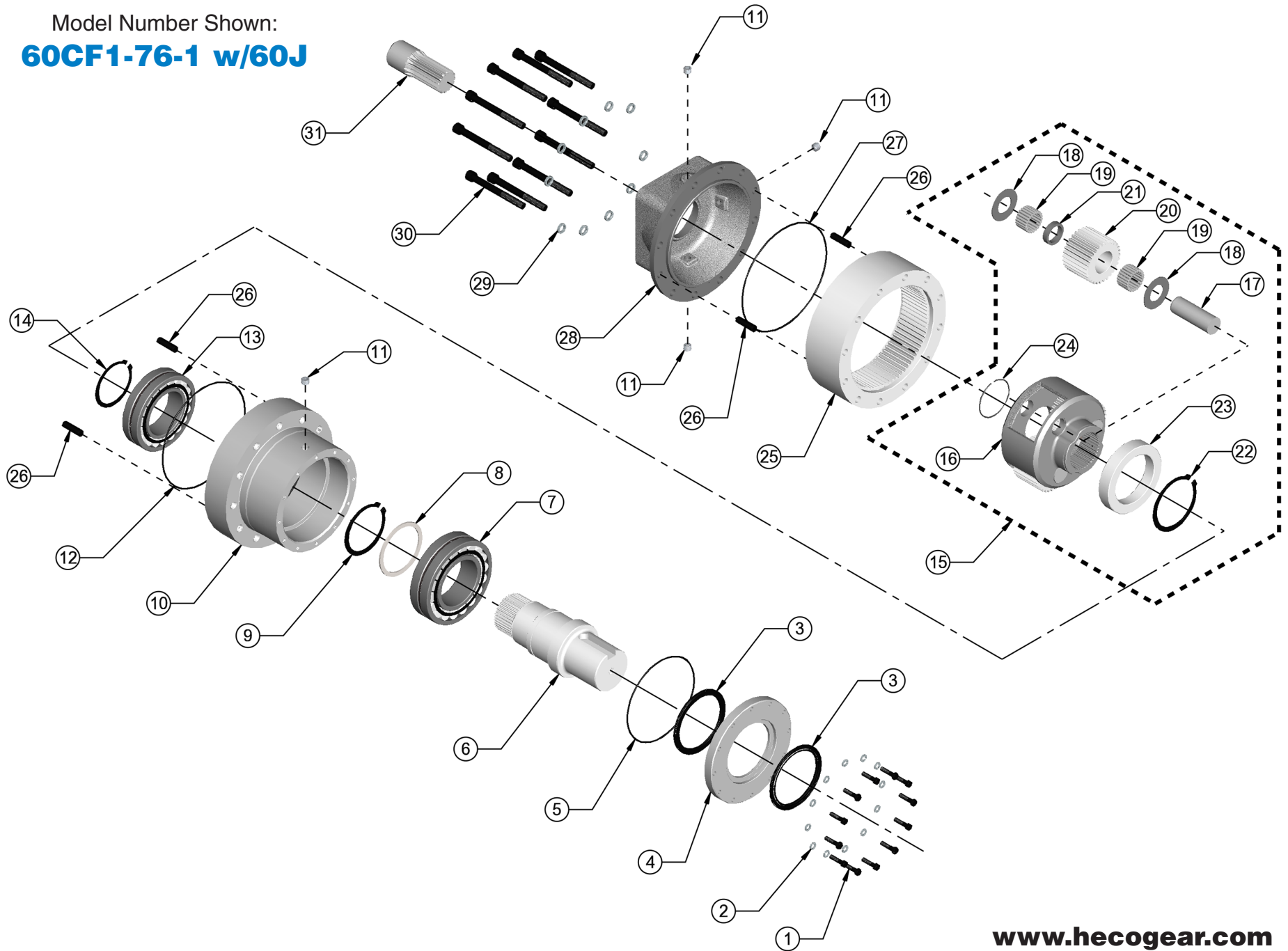


HĒCO GEAR
Planetary Speed Reducers for Industry

ITEM #	PART #	DESCRIPTION	QTY/ASSY
1.	601960	Hex Head Cap Screw	12
2.	601980	Split Lock Washer	12
3.		Shaft Seals	
	601820	Standard High Speed Seal	1
	601920	Optional High Pressure Seal - Buna	2
	601930	Optional High Pressure Seal - Viton	2
4.		Seal Carrier	
	601800	Standard High Speed Carrier	1
	60190A	Optional High Pressure Carrier	1
5.		Seal Carrier O-Ring	
	201010	O-Ring - Buna	1
	201015	O-Ring - Viton	1
6.		Output Shaft	
	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.		Housing O-Ring	
	600220	O-Ring - Buna	1
	611225	O-Ring - Viton	1
13.	60156A	Shaft Bearing - Inner	1
14.	601580	Bearing Snap Ring - Inner	1
		Planet Carrier	
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

ITEM #	PART #	DESCRIPTION	QTY/ASSY
25.	60109D	Ring Gear	1
26.	251750	Spring Pin	4
27.		Input Adapter O-Ring	
	601070	O-Ring - Buna	1
	611075	O-Ring - Viton	1
28.		Input Flange Adapter	
	60270E	SAE D 4 Bolt	1
	60260A	SAE C 2/4 Bolt	1
29.	602080	Split Lock Washer	10
30.	602060	Socket Head Capscrew	10
31.		Input Sun Gear	
	60J	Charlynn 10000 Bearingless	1
	60K	1-3/4" 13 Tooth Spline	1
	60L3	1-1/2" 17 Tooth Spline (Motor Shaft Length 3.23-3.48")	1
	60L2	1-1/2" 17 Tooth Spline (Motor Shaft Length 2.97-3.22")	1
	60L1	1-1/2" 17 Tooth Spline (Motor Shaft Length 2.56-2.96")	1

Model Number Shown:
60CF1-76-1 w/60J



LUBRICATION INSTRUCTIONS

The Heco Gear Model 60 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 60 Oil Capacity

Horizontally Mounted (1/2 Full):

106 Oz. 3.3 Qt. 3.13 L

Vertically Mounted (Full):

210 Oz. 6.6 Qt. 6.23 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 the below sun gear you **MUST** use flow-through lubrication:

60J - Charlynn 10000 Bearingless

When the above sun gear is ordered with a model 60 speed reducer, the reducer will be configured with high pressure seals.

Notes:

1. Flow-through lubrication is not compatible with the standard model 60 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 60 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 60. 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

SK60HS-1	Soft Parts Kit - Buna
SK60HS-U	Universal Kit - Buna

Optional High Pressure Seals

SK60HP-1	Soft Parts Kit - Buna
SK60HP-1V	Soft Parts Kit - Viton
SK60HP-U	Universal Kit - Buna
SK60HP-UV	Universal Kit - Viton

Maximum Oil Temperature

Continuous - 160° F (70° C)

Intermittent - 180° F (82° 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.