

# Lubrication Guide

## Component sets

v.1

Conic Systems harmonic gearing can be lubricated with either grease or oil. Grease provides permanent lubrication in many applications and is less prone to leakage. Oil lubrication allows for higher efficiency and higher speed operation. Choose the appropriate lubricant based upon the application requirements including the environmental conditions. Recommended greases and oils are noted within this document. Review and read Conic Systems' additional technical information on safe handling and installation prior to assembling and lubricating harmonic component sets.

### Grease Lubrication Notes

- Unless otherwise specified, Conic Systems' LT series, CSF Series, and SHF Series gearheads are shipped pre-lubricated with Mobil Beacon 325 Synthetic grease. The following instructions are for harmonic component sets and gearhead shipped without lubrication.
- Recommended grease for general purpose applications include:

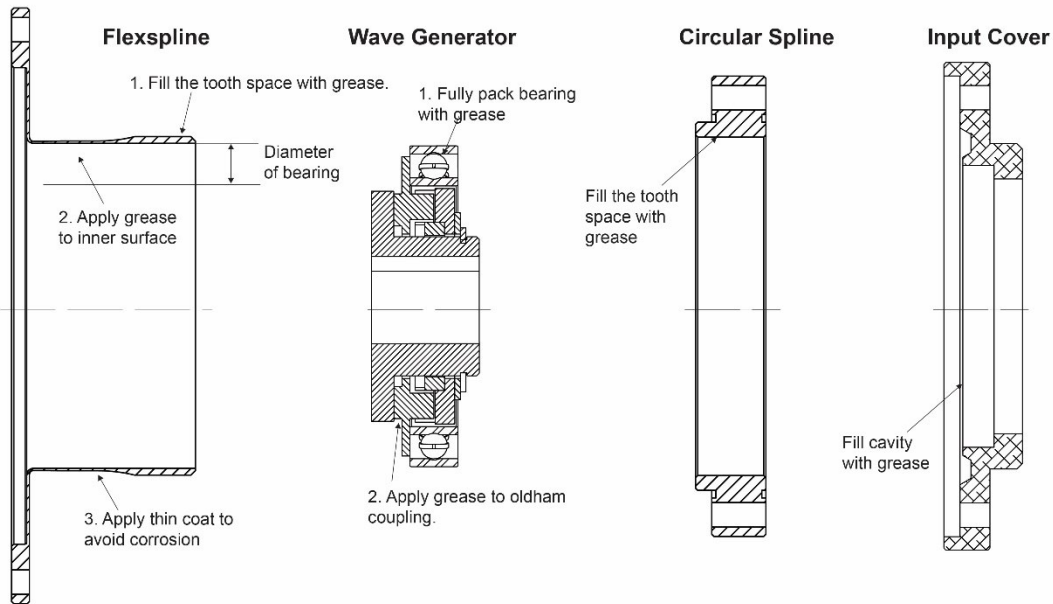
Mobil	Sumico
Beacon 325	Sumiplex MP No.2

- Take care to avoid debris from contaminating the grease.
- Observe the recommended grease change intervals for non-permanently lubricated applications. Consult with Conic Systems' engineering for more details.

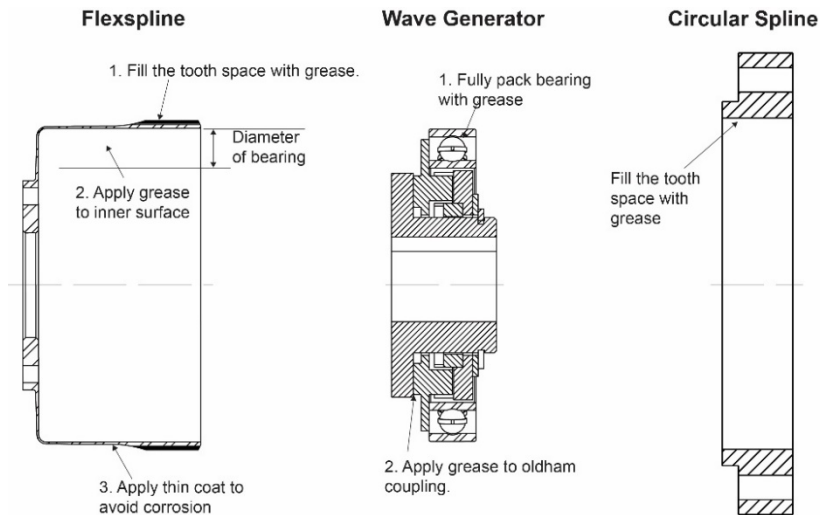
### Grease Lubrication Instructions – All Units

- Flexspline
  1. Tooth surface: Completely fill the tooth spaces with grease.
  2. Internal surface: Apply the recommended quantity of grease to the inside of flexspline. (cup and hat styles - see diagrams)
  3. External surface: Apply a thin film of grease to the outer surface of the flexspline as a rust preventative.
  4. Be careful to keep the contact interfaces of bolted joints free of grease.
- Wave Generator
  1. Bearing: Completely pack the wave generator bearing(s). Rotate the bearing slowly while applying grease.
  2. Outer Surface of Bearing: Apply a thin film over the outer surface of the outer race.
  3. Apply grease to the Oldham coupling if applicable.
- Circular Spline
  1. Completely fill the tooth spaces with grease.
  2. Be careful to keep the contact interfaces of bolted joints free of grease.
- Input Cover / Motor Flange
  1. If applicable, fill the input motor flange cavity with grease.

## SHF Grease Lubrication



## CSF, HDC Grease Lubrication



## HDF, HDR, HDA, HDB Grease Lubrication

- For Pancake type units, apply grease lubrication according to the general instructions that apply to all units. Fill customer supplied covers and housings as necessary to retain the grease in the harmonic gearing components.

## Oil Lubrication Notes

- Recommended oils for general purpose applications include:

SINOPEC	ExxonMobil	ExxonMobil
4109 Synthetic Oil	Mobil SHC 626	Spartan EP 68

- Ensure the oil is appropriate for the product's operating and environmental conditions.
- Take care to avoid debris from contaminating the oil.
- Unless otherwise specified, the recommended oil change interval is after the first 100 hours of operation to flush the unit, and every 1000 hours or six months of operation thereafter.
- Observe the recommended minimum oil levels. (See diagrams)
- Ensure that oil is providing the proper lubrication to all necessary surfaces and components under all environmental and operating conditions, and orientations.

## Oil Lubrication Diagrams

- Suggested minimum oil levels are shown below.

