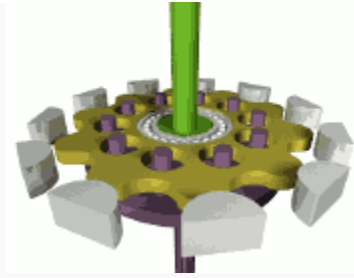
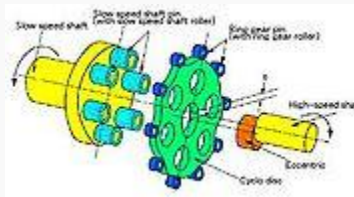


CYCLO DRIVES



Animation of Cyclo Drives



Cyclo Drives



Cyclo Drives

Cyclo Drives are mechanism for reducing the speed of an input shaft by a certain ratio. Cyclo Drives are capable of high ratios in compact sizes. The input shaft drives an eccentric bearing that in turn drives the cycloidal disc in an eccentric, cycloidal motion. The perimeter of this disc is geared to a stationary ring gear and has a series of output shaft pins or rollers placed through the face of the disc. These output shaft pins directly drive the output shaft as the cycloidal disc rotates. The radial motion of the disc is not translated to the output shaft.

The cyclo drive transmission is a step-up gear without gear wheels. It does not work purely rolling, the torque-transferring parts is suspended shearing stresses. Sudden losses by overload are to be excluded. The main components of the cyclo are the eccentric cam, the drive shaft, the cam discs and the so-called pin ring. These components permit shock load to 500%. Small friction losses and the even distribution of load protect the cyclo transmissions as far as possible against wear. The cyclo drive is superior to traditional gear mechanisms, since it only operates with rolling force and is not exposed to shear forces. By comparison with gears with contact loads, cyclo drives are more resistant and can absorb extreme shock loads by means of uniform load distribution over the power transmitting components. cyclo drives and cyclo drive geared motors are characterized by their reliability, long service life and outstanding efficiency, even under difficult conditions.

Disadvantages

Unlike many other drive mechanisms the cyclo drive is not back drivable, the input and output shafts of the cyclo drive cannot be reversed. This is because rotating the output pins will not rotate the cycloidal disc in the correct way. Also, the eccentrically mounted cycloidal disk will cause vibration in the drive which will propagate through the drive/driven shafts.

This will also cause increased wear on the exterior teeth of the cycloidal disk, as well as the interface with the output roller pins due to small relative motion caused by the vibrations. A second cycloidal disc installed a half-rotation relative to the first will balance the input shaft and reduce vibration.

Applications

- Conveyor systems
- Food and sugar industry
- Mixers and agitators
- Metalworking machines
- Water treatment plants
- Recycling plants
- Poultry Processing Equipment
- Sawmills and woodworking machines
- Rolling mills
- Construction machinery
- Paper industry

Source: http://solidswiki.com/index.php?title=Cyclo_Drives