

Application Handbook

Printing Machines

Harmonic Drive LLC

Bank Note Printing Machine Phase Control Drive

- Differential Gear

A great variety of different configurations for differential drives are possible when using Harmonic Drive® strain wave gears.

In this application, a CSF cup-type gear is used as the basis for a multi-function differential. The Circular Spline forms part of the housing, which, when mounted between the bearings, is free to rotate. As shown in the diagram, the Flexspline is attached to a shaft that can then be used for primary power input or power output. The Wave Generator is also attached to a shaft that can be used as the trim input or it can be fixed, dependent on the desired speed relationship between primary input and output.

Due to its compactness and high torque capacity, this design is ideal for the following applications:

- Register control
- Fine speed adjustment
- Adjustment drive
- Two speed range drive

The high reduction ratio of the gear means that a comparatively small motor, or in some applications a hand-wheel, can be used to provide the trim input for speed adjustment.

For the particular version shown in the diagram, oil lubrication is used, hence the provision of oil inlet and outlet ports.

