

U.S. Tsubaki DISCO

Powerful, flexible and reliable speed variation backed by U.S. Tsubaki high technology.

DISCO

■ Low Maintenance

- Use of a synthetic oil means virtually no maintenance is necessary.
- DISCO is shipped fully lubricated, and can be put to use immediately.

■ Compact, lightweight design

- Compact design for use almost anywhere in your environment.
- Lightweight aluminum case allows for easier handling.

■ Flexible placement of speed control knob

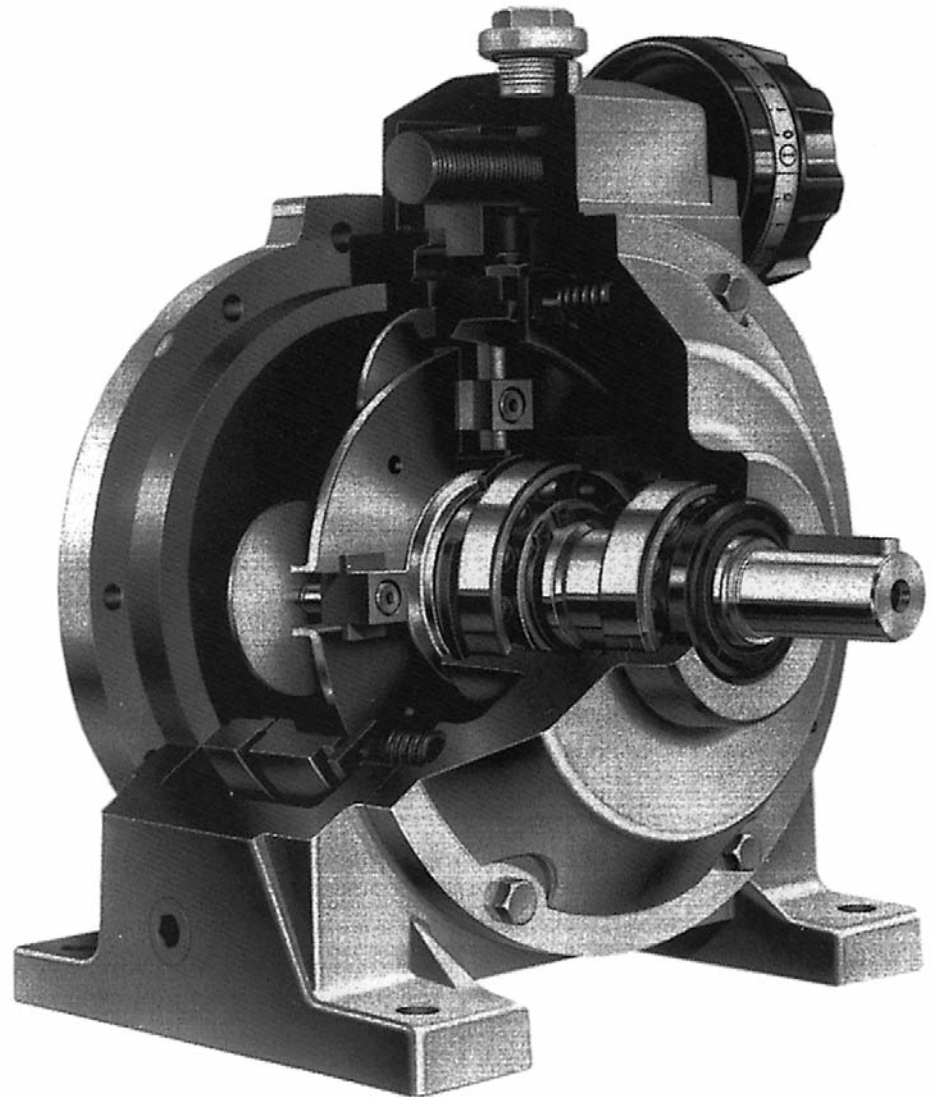
- Removing just one screw allows you to change the speed control knob position, and use it on the side appropriate for the installation position.
- Ergonomically designed, easy-to-grip knob.

■ Remote control related options available

- The electrical type speed variation range has been increased to a 6-to-1 speed range, the same as that for the speed control knob type.

■ Uses the ANSI key

- The input-output shaft keys meet ANSI standards.



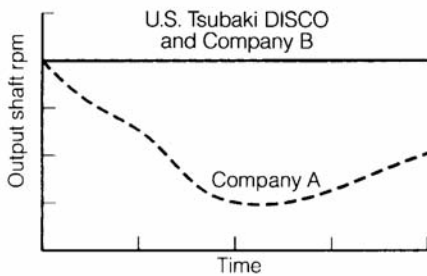
INFINITELY VARIABLE SPEED DRIVES

U.S. Tsubaki DISCO is one of the most competitive traction drive units on the market today.

DISCO combines compactness and simplicity with energy efficiency to ensure quiet operation and long, trouble-free performance.

Starting with materials of the highest quality, U.S. Tsubaki carefully manufactures and assembles DISCO according to strict quality control and efficient manufacturing processes.

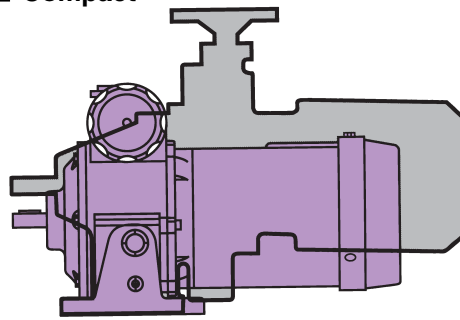
■ Speed stability



Comparison of speed stability

DISCO uses precisely machined parts. This provides very low speed drift under changing loads or over long periods of operation; speed is stable right throughout the range, with very little noise or vibration.

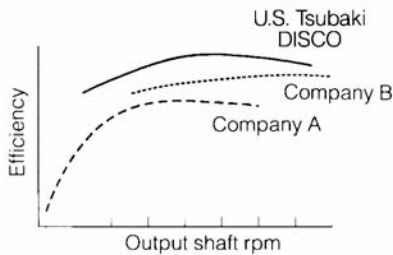
■ Compact



Size comparison

The unique construction of DISCO minimizes the number of parts required, yielding a lightweight, compact design—the smallest in its class.

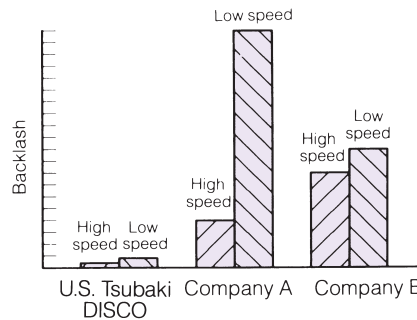
■ High efficiency & long life



Comparison of mechanical efficiency

To achieve long-term, high torque capacity and wide speed variation with low surface pressure, DISCO employs a planetary design utilizing specially formulated synthetic lubricants.

■ Low backlash and good shock resistance

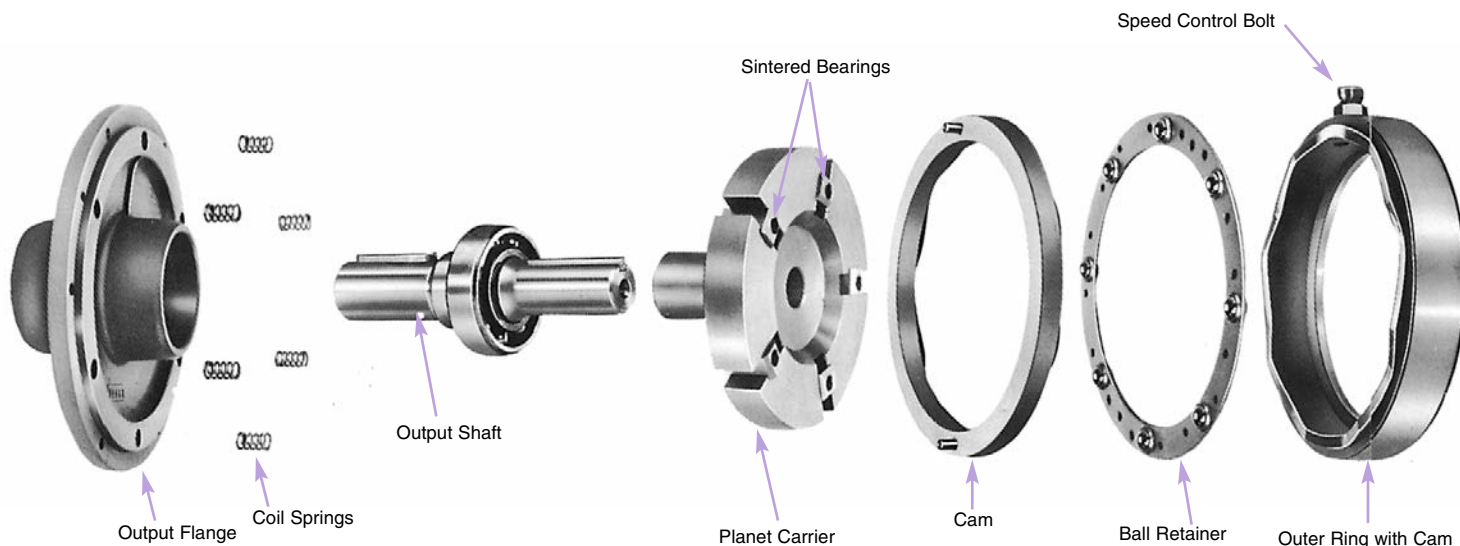


Comparison of amount of backlash

DISCO is constructed to allow for constant pressure, eliminating backlash and providing good shock resistance. This allows you to use DISCO with confidence in situations requiring frequent start/stop cycles or reversing.

Variable Speed Mechanism

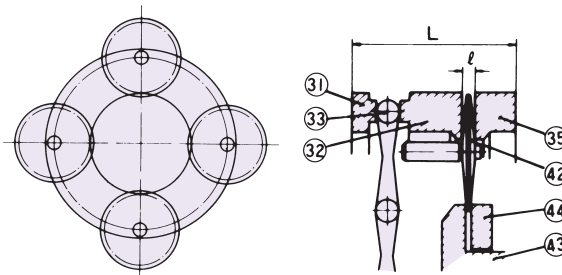
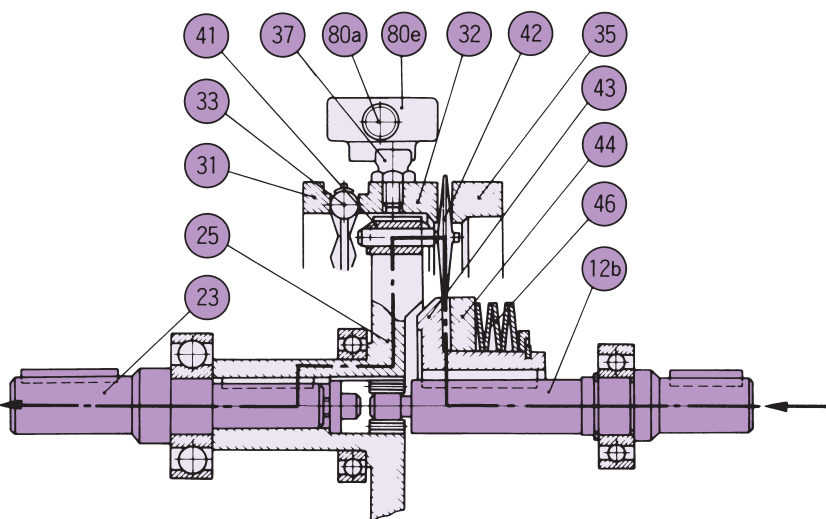
The secret to the dependability of DISCO lies in its simple construction.



DISCO basic construction

Speed variation arrangements

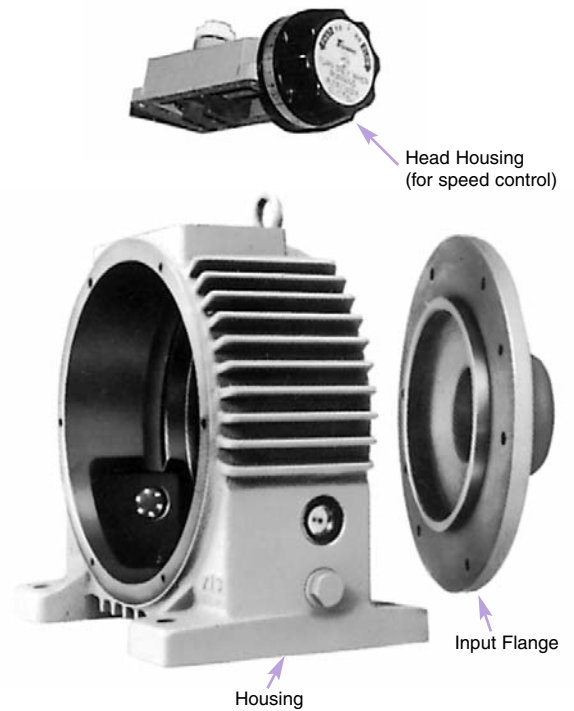
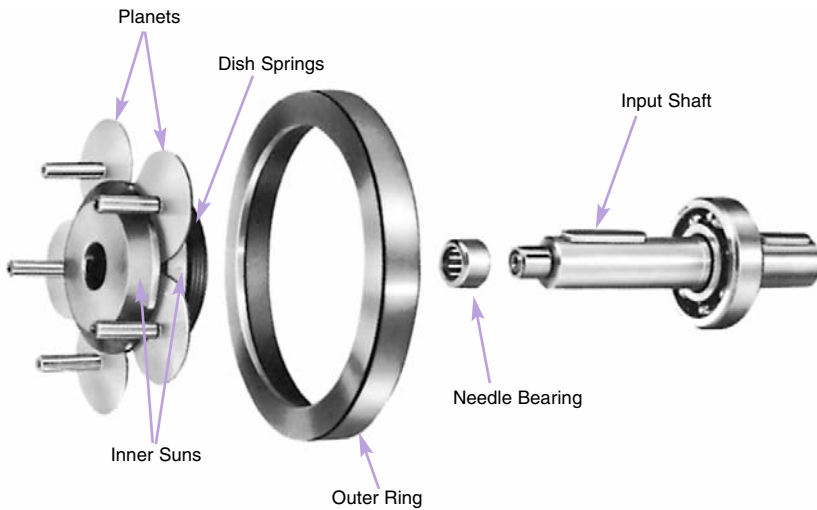
(a) Output shaft at minimum speed



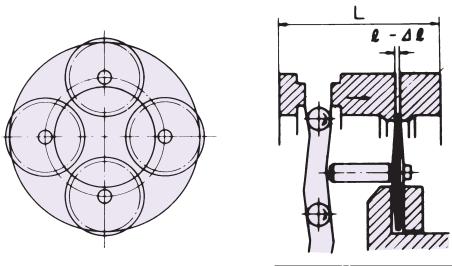
1. Power transfer

Power is transferred through the route shown by the thick dotted line in the diagram. First, the rotation of the input shaft (12b) is transferred to the inner sun with hub (43), and then the inner sun (44). The inner sides of the circular parts of the planets (42) are pushed by both suns by the force of the dish spring (46), and the outer sides are pressed against the outer ring and outer ring with cam.

When the suns rotate, the planets revolve in a fixed orbit as shown in the drawings (a) and (b). The sintered bearings (41), fitted into the grooves of the planet carrier (25), transmit the rotation to the output shaft (23).



(b) Output shaft at maximum speed

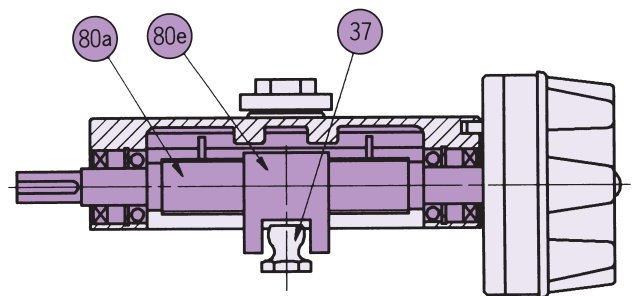


2. Speed variation

Speed adjustment is achieved by modifying the gap l between the outer ring (35) and the outer ring with cam (32), and changing the radius of the planet's orbital revolution.

The outer ring with cam has a special shape (32), holding the ball retainer (33) in place. Turning the speed control shaft (80a) acts through the speed control nut (80e) and the speed control bolt (37) to move the outer ring with cam in the direction of rotation. The cam moves only Δl in the direction of the shaft, and changes the gap l .

Speed control head housing construction



3. Power transmission

Power is transmitted via a traction drive through an oil membrane that forms between the ground contact surfaces.

The low surface pressure on the contact surfaces assures long life. Planet positioning is the secret to achieving strength in this compact design.