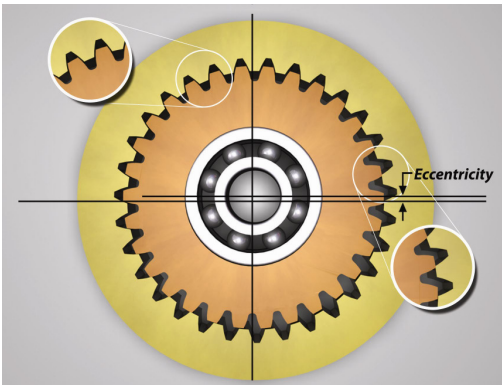


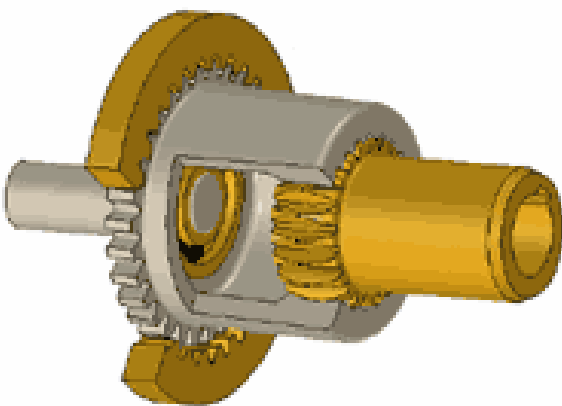
The Oden gear

Oden Control AB is a provider of innovative reduction gear solutions for a variety of industries and applications. The Oden gear is a cog reduction gear, a unique technique, which comprises of just two gears and an eccentric. This technique can only be designed by modern CAD-systems, but is manufactured in a normal gear cutting machine or by plastic moulding.

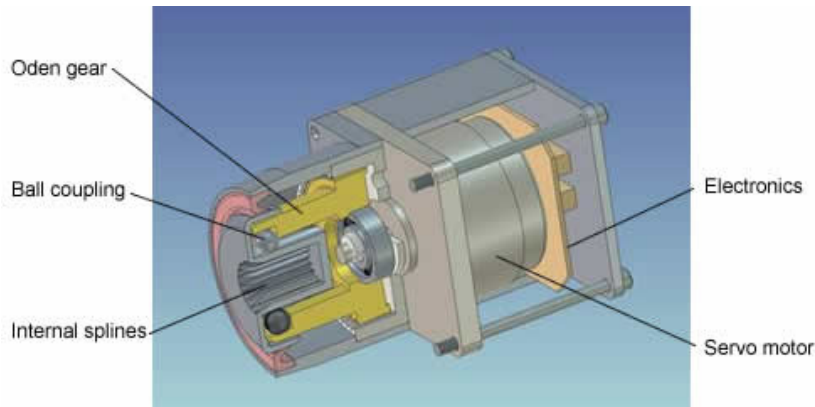


Oden gear characteristic

- High gear reduction (up to 250:1 in one step)
- High gear efficiency with low backlash (>90%)
- Low weight
- Compactness in a robust design
- Suitable for demanding environments.
- Shock-resistance and excellent stiffness
- Very silent operation
- No maintenance required
- Can be reversed and used as a step-up gearbox



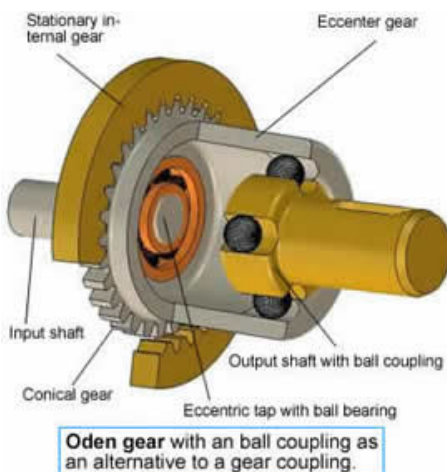
This gear principle is used in applications which require high reduction ratios with perfect accuracy and reliability as in rotary/linear actuators, robotics, high performance electronic instruments and high torque industrial applications. The Oden gear is covered by patents world-wide.



The Oden gear system can also be used as OEM-products. An example to the left, a servo unit using Oden gear. The servo unit is connected to the driven load which have a splined shaft in bearings. This design gives a backlash free servo. The ball coupling in the Oden gear accepts misalignments between the servo unit and the driven shaft.

The technique in detail

The input motor shaft has an eccentric tap with a ball bearing and a gear meshing a stationary internal gear. When the input shaft is rotated one turn, the inner wheel rotates one tooth pitch in the opposite direction if the difference in amount of teeth is one. This gives an exceptionally high gear ratio in one step with as much as 5 to 10 teeth in meshing depending on ratio, material and load. With 100 teeth at the inner wheel the ratio is 100:1 in one step and with 200 teeth the ratio is 200:1 and so on.



To transmit the slow eccentric rotation of the gear to a centric rotation to the output shaft you may use some kind of coupling. Oden gear has a more simple and reliable solution: The eccenter gear consists of a cylindrical "pipe" with a slightly conical gear placed at one end of it and in the other end an internal coupling. The gear is making a conical movement around the centre point of the coupling. The eccenter on the input shaft has a small balance weight.

With very few parts you get high reduction ratio, stiffness and silent running. This simple design creates a compact, low weight and reliable speed reduction system with extremely high accuracy and little maintenance. The total gear efficiency is higher than 90% and the one-step gear up to 250:1 gives a very compact design.

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