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| United Technologies Corporation |
| Mechanism Description |
| Planetary Gear Box (Epicyclic Concentric Reduction Gear Box) |
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Mechanism Description

Planetary Gear Box (Epicyclic Concentric Reduction Gear Box)

Definition - A Gearing system in which a set of gears arrayed around each other in a concentric pattern allow a high ratio speed reduction in a compact configuration.

The configuration of a planetary gear box consists of a central gear often called the “sun-gear”. A set of planet gears which mesh with the sun-gear and orbit around the same axis of the sun gear. The planet gears are connected via bearings to a carrier that rotates on a common axis with the sun-gear. Finally a ring-gear with internal teeth meshes with the planet gears simultaneously. With a planetary gear box any one of the three main components can be fixed while the most common configuration has the outer ring statically mounted with the input applied to the sun gear and output occurring on a shaft attached to the carrier. The

The sun gear –

The planet gears -

The bearings –

The bearing are typically roller or journal bearings.

**Ring Gear**

The ring gear is the largest gear in the assembly and it surrounds the entire assembly. It has Internal teeth that mesh with the external teeth of the planet gears. The ring gear’s meshes

Citations

[1] The World of Planetary Gears Mar 1, 2000 Charles S. Kaim Associate Editor | Motion System Design - http://machinedesign.com/motion-control/world-planetary-gears