Gears

Application fields:

The compact and proven gears from Nanotec are ideal for use in the following tasks:

- Increase and matching of the output torques
  $M_{dgear.} = M_{dMot} \times i \times \eta$
- Reduction of the output torque
  $n_2 = n_{Mot} / i$
- Quadratic reduction of ext. moments of inertia
  $J_{red} = J_{ex} / i^2$
- Reduction of the step angle
  $\alpha_{Outp} = \alpha_{Mot} / i$

Advantages

- Large speed reduction bandwidth
- Wide torque spectrum
- High running smoothness
- Maintenance-free due to permanent lubrication
- Versatile combination options

! Note: In the selection of the gears, it is essential to pay attention to the following criteria:

a) **Output torques**
Output torques rise in proportion to the speed reduction and can lead to damage of the gearing (do not exceed max. admissible power take-off values!).

b) **Radial and axial forces**
Radial and axial forces mainly impair the expected service life of the bearing and the shaft strength in some cases.

c) **Working temperatures**
Working temperatures affect the thermal loading of the bearing.

d) **Load types**
Various types of load lead to high gear, shaft and bearing stresses and hence reduce the service life.

Which type of gear is advantageous?

1) Planetary gear	due to the triple meshing, these gears offer the highest torque at comparable volume and have the highest efficiency with concentric shaft output.
2) Worm gear	Enable smooth running performance and, due to the 90° force transfer, have a low installation depth and offer a self-locking torque due to continuous power transmission at higher reduction ratios.