

## Helical Gears

The spur gear that has helix teeth (helicoids teeth) is called Helical Gear. Helical gears can transmit force between parallel shafts and non parallel shafts. They are widely used in different industries, such as the automotive, and in industrial machinery. Helical gears can bear load more than spur gears and work more quietly. Spur gears make noise due to sudden contact between gear teeth at the time of engagement, but helical gears make smooth contact from one edge of the tooth the other. This provides smooth and noiseless operation with higher efficiency than spur gears.

### Classification of Helical gears

1. Parallel helical gears (used to transmit power between parallel shafts)
2. Double helical gears or herringbone gears.
3. Cross helical gears or skew gears (used to transmit power between non parallel shafts)

#### Parallel helical gears

Helical gears that are used to transmit power between two parallel shafts are called as parallel helical gears.

#### Double helical gears

Double Helical gears have two sections of teeth, right hand and the other left hand. They are designed to eliminate the thrust load induced in helical gears.

#### Cross helical gears

Cross helical gears are used in intersecting shaft with the shaft angle at 90 degrees. Crossed Helical Gear are only recommended for a narrow range of applications, with relatively

light loads. What happens is that the for the two gears contact takes place only in a point, and not a line.

### Transverse module and Normal module

The difference between transverse module and normal module is defined as the difference of basic tooth form. As shown in the figure below the module of tooth datum orthogonal to the center axis of gear is called transverse module. The module of tooth datum orthogonal to the thread helix is called normal module.

Difference between normal and transverse module

The characteristics of each module is Shown below