

Quiz Mechanical construction

What is a gear teeth?

A gear is a **kind of machine element in which teeth are cut around cylindrical or cone shaped surfaces with equal spacing**. By meshing a pair of these elements, they are used to transmit rotations and forces from the driving shaft to the driven shaft.

What are the gear teeth parts called?

Top Land - The top land of a gear tooth is the flat surface at the tooth's tip. Its width, known as the face width, matches the spacing between adjacent teeth. **Tooth Thickness** - The tooth thickness (ts) is the arc length between the opposing faces of a tooth, measured along the pitch circle.

How hard are gear teeth?

In induction hardening, the surface of gear teeth is hardened by a heating coil (inductor). Common materials used are S45C and SCM440, which contain more than 0.30% carbon, and their hardness after hardening is about **50-60HRC**.

Why is it called gear?

The background of gear as "equipment" dates back to around 1200 and **comes from the Old Norse gervi, "apparel."** The word gear in machinery became common in the early 19th century, although there is evidence that the word came to mean "toothed wheel" as early as 1520.

What is gear tooth terminology?

Basic Gear Terminology **Face Width is the length of the teeth in the axial direction**. Outside Diameter (O.D.) is the diameter of a circle around the outer surface, or tops of the gear teeth. Pitch Diameter (P.D.) is the diameter of the pitch circle.

What is the tooth form of a gear?

For power transmission gears, the tooth form most commonly used today is the **involute profile**. Involute gears can be manufactured easily, and the gearing has a feature that enables smooth meshing despite the misalignment of center distance to some degree.

What is gear tooth module?

What is a gear module ? The module (m) is a **unit of gear tooth size defined by ISO**. Gears will only mesh with each other if they have teeth of the same module. Image 1 - A value of module of properly meshing pair of gear is same. (Image shows a pair of gears with module 2)

What is the axle shaft?

An axle is a **rod or shaft that connects a pair of wheels to propel them and retain the position of the wheels to one another**. In a car, the engine applies the force to the axle which rotates the wheels and moves the vehicle forward. In other words, axles deliver the driving power from the engine to the wheels.

Is shaft and axle the same?

Drive shafts are longer than drive axles, and are built using either carbon fiber, aluminum, or tubular steel to minimize their weight. On the other hand, drive axles are shorter, and thus can be made of solid steel.

What is the difference between shaft axle and spindle?

1-Shaft is a transmitting device which is transmits the power from drive to driven member.

2-axle-axle is a central shaft or a rotating wheel or gear.

3-spindle- it is a rotating axis of the machine which obtain has a shaft at it's heats the shaft itself is known as a spindle.

What is called bearing?

Bearings are "**parts that assist objects' rotation**". They support the shaft that rotates inside the machinery. Machines that use bearings include automobiles, airplanes, electric generators and so on.

How do you calculate bearing load?

The Computation of Bearing Loads is simplified as follows: R= Radial load – loads that are perpendicular to the shaft. T= Thrust load – loads that are parallel to the axis of the bearing. C= Combined load is a result of calculating both Radial and Thrust loads using the combined load calculations.

What is the meaning of bearing a load?

supporting the weight of the building above it: We can't knock through there because that's a load-bearing wall. SMART Vocabulary: related words and phrases. Physical supports and supporting. abutment.

What is the bearing load strength?

Bearing load strength refers to **the maximum load a bearing can withstand without experiencing failure or permanent deformation**. This strength is determined by factors such as material properties, design, and load-carrying capacity under different operating conditions.