

Title:

Spur Gears - An Introduction

Word Count:

645

Summary:

A gear is a wheel with teeth around its circumference. The purpose of the projections is to mesh with similar teeth on another mechanical device. Their purpose is to transmit force in a direction tangential to their surface. Rotation of one of the gears necessarily causes the other gear to rotate. In this way, rotational motion can be transferred from one shaft to another.

Keywords:

spur gears, internal spur gears, precision spur gears, dowel pins, shaft couplings, shaft spacers, gears spur

Article Body:

What is a gear?

A gear is a wheel with teeth around its circumference. The purpose of the projections is to mesh with similar teeth on another mechanical device. Their purpose is to transmit force in a direction tangential to their surface. Rotation of one of the gears necessarily causes the other gear to rotate. In this way, rotational motion can be transferred from one shaft to another. The wheels of a gear are different in size so that they can produce increased or decreased torque or speed, as required. Numerous nonferrous alloys, cast irons, powder-metallurgy and even plastics are used in the manufacture of gears. However steels are most commonly used because of their high strength and low cost.

Spur Gears

[Spur gears](http://www.rinomechanical.com/spur-gears.htm) are the simplest and probably the most common type of gear. Their general form is a cylinder or a disk. The teeth project radially, and with these straight cut gears, the leading edges of the teeth are aligned parallel to the axis of rotation. These gears can only mesh correctly if they are fitted to parallel axis. A spur gear is used to transmit rotary motion between parallel shafts and the shafts rotate in opposite directions. Such arrangements are also called external spur gears.

Internal spur gear

A variant of an external spur gear is the internal spur gear. Their working is similar except that the gear teeth are on the inside diameter. The meshing arrangement in an internal spur gear enables a greater load carrying capacity within a confined space. Shaft axis remain parallel and enable a compact reduction with rotation in the same sense. The geometry of an [internal spur gear](http://www.rinomechanical.com/spur-gears.htm) is ideal for epicyclic gear design. A convex profile makes good surface endurance possible.

Small spur gears

The same mechanism as that of a larger spur gear can be implemented in a comparatively small space. [Small spur gear](http://www.rinomechanical.com/spur-gears.htm) are produced by using fine pitch tooling to make very small gear teeth. They can be very light and compact and highly efficient. Small spur gears are generally associated with miniature precision applications such as aerospace or instrumentation. A stem pinion is a small spur gear that does not have a hole bored through the axis and is made intrical to a shaft or stem.

Precision spur gear

Spur gears for aerospace and other highly delicate and precise applications have to be produced to extremely close tolerances. This involves the use of multiple highly controlled fabrication steps and sophisticated manufacturing equipment like cutting apparatus, carbonizing vessels, quenching equipment, etc. Also, only skilled and well versed operators undertake the production of a precision spur gear. It is important that [presicion spur gears](http://www.rinomechanical.com/spur-gears.htm) are completely accurate and designed to the exact specifications needed.

About the author

[Rino Mechanical Components Inc.](http://www.rinomechanical.com/) is a manufacturing resource which specializes in production of all types of mechanical components, including [air motors](http://www.rinomechanical.com/dynatork/products/air_motors/air_motors_home.htm). Mechanical parts are custom made as per the client's specifications. A guarantee of two years is provided with all products. All equipment is of top quality made exactly to the consumer's liking.

© Copyright 2005-07, Rino Mechanical Components Inc. All rights reserved.

This Article is Copyright protected. Republishing & syndication of this article is granted only with the due credit, as mentioned, retained in the republished article. Permission to reprint or republish does not waive any copyright. The text, hyperlinks embedded on the article and headers should remain unaltered. This article must not be used in unsolicited mail.