

Which factors determine the choice of gear type?

The gear types described above dominate the industrial gear market. For this reason, WEG offers the WG20 geared motor as a helical, parallel shaft or helical bevel geared motor. This type series allows WEG to cover the majority of the types of geared motors in demand. The WEG portfolio also includes worm gears and customized drive solutions.

Bevel gear units and worm gear units have similar characteristics. The input and output shafts are positioned at right angles to each other, allowing them to be installed very close to the machine and attached to the respective machine shaft by means of a hollow shaft. The bevel gear is more efficient, but the worm gear is more compact at high ratios. The most cost-effective gear of the gear types described above is the helical gear. In the case of parallel shaft gear units, the shafts are offset parallel to each other, which is an advantage of this type series depending on the application.

Which gear unit is used in an application depends primarily on the available space in addition to the above-mentioned characteristics. If the axial installation space is limited, a bevel gear is typically used. A helical gear unit, on the other hand, has a longer design; it is used where sufficient space is available. This gear has the advantage that the input and output axes are arranged axially, i.e. practically in one line. At the same time, the unit has a central center of gravity, which is advantageous depending on the design. Installation space or available room, costs, center of gravity and efficiency are therefore the determining features for the choice of gear unit.

The interactive product catalog
“cat4CAD”
will help you to choose the best drive component from our entire range of gear units/geared motors and modular motor systems.

Online Version: **www.cat4cad.com**
Offline Version is available as download at:
www.wattdrive.com

Technical trends in gear development

On the mechanical side, the development of gears and geared motors is at an extremely advanced stage. Materials, designs and efficiencies have largely been exhausted. It is more likely that new developments will be seen on the electronic side in the near future. In the course of Industry 4.0, these machine components will also be integrated into the overall “digital factory” package. These include control components and appropriate sensor technology, which provides the required data and feed-

back. Ultimately, the latter concerns the entire drive train – WEG offers all the necessary components. The focus of future developments could be components for predictive maintenance for larger gear units. However, trends focussing on development in the field of geared motor technology also include decentralized drive technology, such as geared motors with attached inverters.

Further literature on the subject:

Herbert Wittel, Dieter Muhs, Dieter Jannasch, Joachim Voßiek
Roloff/Matek Maschinenelemente. Normung, Berechnung, Gestaltung
Springer Verlag, 24th Edition, 2019 (ISBN-10: 3658262796)

Josef Uphaus
Grundlagen der Drehstrom-Antriebstechnik: Betriebsverhalten, Auslegung und EMV-gerechte Antriebsprojektierung von Asynchronmotoren
Carl Hanser Verlag, 2018 (ISBN-10: 3446454950).

Fritz Klocke, Christian Brecher
Zahnrad- und Getriebetechnik: Auslegung. Herstellung. Untersuchung. Simulation.
Carl Hanser Verlag, 2016. (ISBN-10: 3446430687)

Edwin Kiel (Hrsg.)
Antriebslösungen: Mechatronik für Produktion und Logistik
Springer Verlag, 2007 (ISBN-10: 3540734252)



About WEG

WEG is one of the world's leading manufacturers of electrical components and systems. The business is divided into five divisions: motors, power generation, power transmission and distribution, automation and varnishes. The company employs more than 31,000 people worldwide and in 2018 achieved sales of approx. 3 billion USD across a broad range of products. These include the latest generation of low/medium and high-voltage motors, transformers, generators, geared motors, low-voltage switchgear, frequency inverters, soft starters, ATEX-compliant flameproof motors, smoke extraction motors and full turnkey systems.

The company's solutions in the field of power generation, transmission and distribution guarantee more efficient plant operation in various industries, e.g. the oil and gas industry, water management, power distribution and the chemical and petrochemical industries. This means that they not only help to reduce energy consumption and CO2 emissions, but also improve environmental sustainability. WEG also provides comprehensive solutions for renewable energy projects, e.g. complete wind turbines.

About Watt Drive

Watt Drive, specialized in the development and manufacture of gear technology based in Markt Piesting, is part of the Brazilian WEG Group, one of the world's leading manufacturers of electric motors. Watt Drive sells products and solutions in the fields of drive technology and automation all over the world. With its modular motor and gear system, the company offers a complete range of combinable drive systems for production machines and industrial manufacturing plants.

If you have any questions about gear motors or need some advice about your planned application, please get in touch with us:

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