

Always on the move.

High precision rotor shafts for electric vehicles.



Rotor shafts

- Module from 0.5 to 6 mm
- Diameter up to 300 mm
- Tooth diameter up to 320 mm
- Length up to 480 mm
- Straight and angled gearing



Gear technology is our specialty.

Everything under control - every detail is important to us.

Production Technology



Turning

- Advanced chuck and bar turning centers



Milling

- Highest possible accuracy due to five-axis milling technology



Gear cutting

- Gear hobbing, gear shaping and broaching / straight-toothed and helical components



Hardening

- Case hardening, Nitriding/oxidizing, Nitrocarburizing, Quenching and tempering and Annealing



Hard-fine machining

- Profile grinding, generation grinding, internal and external grinding, as well as hard turning and hole honing



Assembly

- Process chain in-house, including process-oriented intermediate testing and complex EoL-test benches

What can we do for you?

We are glad to be personally there for you and we look forward to common challenges and projects.



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Gear technology is our specialty! We back this up with decades of experience, cutting-edge machinery, and a tremendous depth of in-house manufacturing capabilities. This lets us control all quality-related parameters directly and perform complex machining tasks according to each customer's needs, while maintaining the highest possible standards of quality. Operations like turning, notch and gear broaching, worm and worm gear milling, gear shaping, gear hobbing as well as profile grinding, generation grinding, internal grinding, and circular grinding are among our core competencies. We are also one of the few manufacturers in our industry to have our own heat treatment processes.

You benefit from:

- Over 100 years of experience in gear and drive technology
- A commercially solid, family-owned company, with a flexible organization and the ability to react rapidly to customer requirements and changing circumstances
- Project specific choice of materials (metals, thermoplastics or combinations of both) according to your requirements regarding quality, weight, smooth operation or lifetime
- All process steps from a single source



Rotor shaft for electric forklifts

Rotor shafts for the drives of industrial trucks and fork-lift trucks require maximum precision during production in order to withstand the heavy loads in daily operation whilst offering very quiet running.

[generating motion]

Morat | swoboda

We bring motion to the streets - In-depth expertise for electromobility.

The E-mobility is considered as the key technology and is a promising approach for sustainable mobility. In 2018, we have founded the joint venture Morat Swoboda Motion with the renowned automotive supplier Swoboda. The core business is the production of drive components for electric cars, e-scooters, pedelecs, e-bikes or cargo bikes. Morat Swoboda Motion combines the expertise in gear and drive engineering with know-how in electronics, sensors, mechatronics and actuators. Since July 2019 we are producing high-precision gear components on an area of 4,500 m² in the newly established production plant in Nowa Ruda, PL.

Drive shaft for electric cars



The drive shaft establishes the connection from the electric motor to the transmission. To satisfy the high requirements set for quality and noise, the spherically ground gear is manufactured in a quality level of 3.

Drive shaft for electric cargo bikes



The use of electric cargo bikes in the transport logistics is rapidly increasing. They convince through their performance, flexibility, sustainability and cost-efficiency. We make use of our entire manufacturing range during the production of our drive shaft.

The best of both worlds.

Gear technology and drive solutions of both metals & plastics.



Combining local expertise & global presence.

Since the founding of Franz Morat GmbH in 1912, gear and drive engineering has been in a continuous state of development at the company's headquarters in Eisenbach, Black Forest. Today, the Franz Morat Group is a globally operating manufacturer of high-quality drive solutions for many industries and applications. The company counts over 670 employees and runs subsidiaries in the United States, Turkey, Poland and México.



Uniting metals & plastics.

Our core competencies lie in the production of high-precision gears, rotor shafts and worm gear sets made from various metals as well as technically advanced injection-molded parts from thermoplastics. This results in solutions that incorporate the technical advantages of both material groups depending on the required specifications. You benefit from over 100 years of expertise and an experienced partner who offers all process steps from a single source.



Metal machining:

Turning, Milling, Gear Hobbing, Gear Shaping, Broaching, Hardening, Cylindrical Grinding, Honing, Profile & Hob Grinding



Plastic injection molding:

Mold Design & Tool Making, Over 70 injection molding machines, All technical thermoplastics (incl. PEEK™), Subsequent processing



Pioneering research & development.

In developing custom engineered drive solutions, Framo Morat and F. Morat cooperate closely under the umbrella of the Franz Morat Group. Our many years of experience make us your ideal partner, from development and design engineering to prototyping and testing all the way to series production and assembly. Numerous highly respected companies from a wide variety of industries rely on our development services and the resulting drive solutions.



Drive technology:

Specification, Development & Design, Prototyping, Testing & Quality Control, Serial Production, Assembly & Use

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