Morat|swoboda

[launching careers]

Morat Swoboda Motion is a young, dynamic company that is advancing electromobility through innovative drive solutions. To achieve our ambitious growth targets and strengthen our creative, multicultural team, we are looking for people who want to follow this exciting path with us and take on responsibility. Apply now at **https://jobs.morat-swoboda.com**

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Morat|swoboda

[advancing e-mobility]

[drive solutions for the mobility of the future]

[joining forces]

Morat Swoboda Motion is a young, dynamic company that is advancing electromobility through innovative drive solutions. Founded in 2018, the core business of the joint venture between the globally active companies **Franz Morat Group** and **Swoboda**, is the development and production of components and systems for all mobile electro-motive applications. Whether gear technology or drive technology, metal processing or plastic injection molding technology, electronics, mechatronics, sensors or actuators – at Morat Swoboda Motion, you get everything from a single source.

Franz Morat Group

F.MORAT-CO FramoMorat

The Franz Morat Group designs and implements metal and plastic drive ideas – from gears to complete drive systems.

- Sales > € 100 million
- More than 700 employees
- Founding year: 1912
- Manufacturing area: > 30,000 m²

swoboda technologies

Swoboda develops and manufactures high-precision, innovative components and systems for the automotive future.

- Sales > € 450 million
- More than 4,000 employees
- Founding year: 1947
- Manufacturing area: > 100,000 m²

In-depth expertise for electromobility

The automotive industry is in the midst of a major upheaval: topics such as individualization, autonomous driving, sustainable drive concepts or smart cities will permanently change the mobility of the future. The demands on gear and drive technology in this sector are enormous. As such, the space available for installation and the permissible weight of the gear unit are usually restricted, while the highest possible power density and efficiency have to be achieved at the same time - all while generating minimal noise. At Morat Swoboda Motion, you will benefit from decades of experience gained in numerous automotive and electromobility projects.

Drive solutions for the mobility of the future

Our product range includes geared drive shafts, planetary gears, spur gears and pinions, technical housing parts as well as assemblies and complete drive units that combine the advantages of metal and plastic. We perform all quality-crucial production steps in-house at our newly erected production plant in Nowa Ruda, Poland. This includes turning, hobbing, annealing, grinding, gear cutting and final quality control.

IATF 16949:2016 – The quality seal of approval

Since 2022, Morat Swoboda Motion Sp. z o. o. has been certified according to **IATF 16949:2016**, the globally recognized quality standard in the automotive industry.

[from specification to serial production]

The high demands placed on the gear components and drive units of the future pose major challenges for the development and production process, which can only be solved with comprehensive expertise. On the way to more efficient gear units, Morat Swoboda Motion uses its knowledge of the material properties of both metals and plastics and their combination. Especially in the early stages, the gear concept and gear design must match the materials used. During the whole process, we closely support you from the creation of the requirements specification through to serial production and assembly at our newly erected production location in Nowa Ruda. Each custom development project goes through multiple project phases (milestones). Project management from start to finish ensures compliance with the specifications regarding quality, costs and deadlines. During the design and validation phase, our development department relies on cutting-edge tools and the knowledge that our technology specialists have been accumulating for generations.

[specification]

Learning what's needed: Performance specification and scheduling while taking into account general economical and technological conditions.

[feasibility study]

Showing our approach: 3D bid with a dimensional drawing, project schedule and pre-processing of important and / or cost-intensive components.

[project management]

Keeping all in perspective: Close coordination with all departments involved and recording the process workflows secures quality, time and costs.

[design & prototyping]

From concept to reality: Design of the drivetrain under FE stress tests as well as design FMEA and documented prototype assembly.

[testing & validation]

Proof of theory: Torque tests, customer-specific stress tests, tests for climate-related influences and noise and vibration tests.

[industrialization]

Get ready for quantities: Serial tool manufacturing including filling simulation and 3D scans, as well as the FOT phase and selection and certification of suppliers.

[serial production]

Trust & reliability: In-house machining of plastics and metals, including SPC production monitoring and product planning software.

[assembly]

Putting it all together: Automated machining processes with certified quality controls and intermediate and end-of-line tests allowing for backtracking.

[drive solutions for the mobility of the future - micromobility]

No other area of mobility places such high demands on gear and drive technology as micromobility. Depending on the requirements profile, there is a conflict of interest between the attributes of installation space, weight, power density, efficiency and noise. Reducing weight by slimming down components, for example, can cause vibration and result in greater noise development. In e-bikes, though, this is precisely what has to be avoided, since a smooth ride is paramount for many customers when making a purchasing decision.
Morat Swoboda Motion has already spent years investing in the research areas of plastics and metal to achieve the best possible results in gear development by intelligently pairing the two materials. This results not only in high-precision gearing components, but also in complete drive units.

[tube drive for e-bikes]
The tube drive, which can be invisibly integrated into the bicycle frame thanks to its streamlined design, features a gearbox diameter of 46 mm. The two-stage hybrid planetary drive contributes to improved NVH performance.

[application examples]

Spur gear for e-bike, characterized by high requirements for NVH performance.

Metal and plastic spur gear stage for e-bike motors to reduce weight and operating noise.

Highly integrated, noise- and space-optimized gear drive for e-bike hubs, e.g. in folding bikes.

Planetary carrier in cargo bike hub drives with strict requirements on load capacity and durability.

Compact wheel hub gears that provide drive in electrically powered micro-vehicles in E-axes.

High-performance planetary gearbox for fast rotating BLDC motors in e-scooters.

[drive solutions for the mobility of the future - automotive]

The automotive industry invests in research and design more than any other industry. The further development of classic drives and alternative fuels, the expansion of electromobility and the digital revolution in cars - from autonomous driving to connectivity - are the driving themes of the future that offer great potential for a new, safe and efficient era of mobility.
Battery electric drives, fuel cell electric drives, modern diesel, gasoline or hybrid drives - all concepts offer specific advantages for diverse areas of application, from long distance to the proverbial “last mile” and are continuously being developed and optimized to meet these challenges.
Morat Swoboda Motion contributes with high-precision & high-performance gear components, gearboxes, electronic & electromechanical assemblies, up to complete drive systems that combine the benefits of both metals and plastics - not only for electric vehicles but also for combustion engines.
The symbiosis of metal and plastic enables a combination of the strengths of the two material groups. Newly developed plastics are fulfilling ever higher requirements for strength, temperature resistance, toughness and weight reduction - a criterion that has a positive effect on energy efficiency.
Key products from Morat Swoboda Motion for future mobility are drive shafts for electric motors, transmission components for the powertrain, wheel sets for electrical power steering systems (EPS), wiper drives for sensors or actuators for comfort drives such as window lifters, seat adjustments or liftgate drives.

[application examples]

Spur gear for electric axle drive characterized by high quality requirements.

Multi-stage planetary gear unit for use in electromechanical brakes.

Rotor shafts for electric motors or spindle shafts for active rear steering.

Worm wheel set for use in electromechanical power steering systems (EPS).

Steering pinion for electric power steering systems (EPS).

Plastic precision geared wheels for start/stop automation, sun blinds or headlight and sensor cleaning.

[location for production]

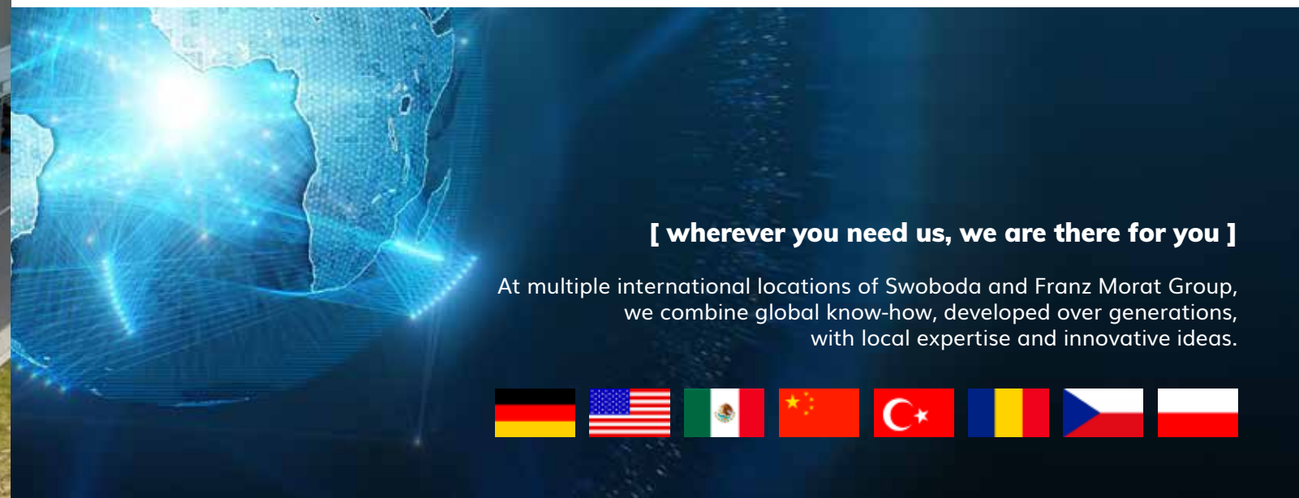
Morat Swoboda Motion Sp. z o.o.
Nowa Ruda, Lower Silesia, Poland
founding year: 2018
start of production: June 2019
+70 employees
9,000 m² production area

[state of the art production where every detail counts]

At our Morat Swoboda Motion production site in Nowa Ruda, Poland, founded in 2018, we have been producing geared drive components for electromobility on 4,500 m² since June 2019. The new plant houses all quality-critical manufacturing technologies, such as hobbing, vacuum hardening, centerless grinding, hard turning and gear grinding in-house.

The automation concept intelligently interlinks the processing machines. The parts are stocked via slide-in carts with identical system pallets. In parallel, numerous robots are used for loading and unloading the machine tools. Thanks to the flexibility of the automation solution, production can be expanded on a modular basis.

During 2022/2023, the production area was expanded by an additional 4,500 m², resulting in a total area of 9,000 m².



[wherever you need us, we are there for you]

At multiple international locations of Swoboda and Franz Morat Group, we combine global know-how, developed over generations, with local expertise and innovative ideas.