The company Steyr-Daimler-Puch was founded as "Josef and Franz Werndl and Company" in 1864 as a rifle manufacturer, but became known as Steyr-Werke AG in 1924. The company began producing bicycles, mopeds, motorcycles, automobiles, tractors, trucks and buses. Its early years were dominated by three big names - Steyr, Daimler and Puch (merged with Puch and Austro-Daimler to form Steyr-Daimler-Puch), which form the Austrian roots of MAGNA. Thanks to Steyr, the company even predates the birth of the world’s motor industry. When you take a historical look at MAGNA in Austria, you can see that we have been consistently delivering satisfaction to our customers for the last 100 years by engineering and assembling vehicles to the highest technical standards.

More than 100 years of great history in vehicle engineering.
Engineering Center Steyr

Your partner with the largest competence in Commercial Vehicle Engineering

With over 50 years of experience in the field of commercial vehicle engineering and chassis development, the ENGINEERING CENTER STEYR is the competence center for commercial vehicle engineering of MAGNA POWERTRAIN.

We can provide our customers with the wide range of development capabilities and knowledge from concept to series production needed to build commercial vehicles, that meet the high standards in lifetime, driveability and productivity and which are set by the expectations of our customers for tomorrow’s transportation business.

Our business activities range from custom-tailored engineering solutions for axles, suspensions, chassis modules and drivetrains to complete vehicle development, including chassis, BIW and engine integration.

Product Portfolio
- Cabin
- Chassis & chassis modules
- Engine
- Drivetrain
- Electrics / electronics

Engineering Portfolio
- Concept and design
- Calculation and simulation
- Integration and application
- Prototyping and testing

Business Areas
- SUV
- Light duty and pick-up trucks
- Medium and heavy duty commercial vehicles
- Special vehicles
- Low volume production

Simultaneous Engineering - from Idea to Production Ready
Concept & Design

Based on our long engineering experience, we have the knowledge and competence to develop new concepts for individual components and modules as well as for complete vehicles.

Using state-of-the-art CAD tools and Digital Mock Up enables us to examine and optimize the design in a very early stage by analysing the boundary conditions, tolerances and test procedures. We simulate and investigate interactions and movements of different parts and components under operating conditions, thus increasing the maturity of the concept design and enabling us to perform a real simultaneous engineering process.

We also ascertain in our design process the technical and financial feasibility of individual parts and consider the suppliers' various manufacturing needs as well as the customer's requirements. All in all, we can provide everything from initial concepts to specifications for the final design.

Cabin
- BIW
- Exterior
- Interior
- Cab suspension
- Tiling mechanism

Chassis and Chassis Modules
- Frame
- 4x2 to 6x8 or even more
- Axles and suspension
- Steering
- Pedals
- Add-on parts
- Cooling system
- Driving behaviour
- Weight management
- Benchmarking

Commercial Vehicle Development

We can offer the competence and skills to carry out complete vehicle development. From the start we set our minds on modularity of component design and to fulfill our customer expectations specific to commercial vehicle business:

High durability standards, long-life cycles, cost-effective and feasible design under consideration of local manufacturing requirements and customer needs.
Calculation & Simulation

ECS software is generally used in virtual vehicle development, prototype verification and variants optimization. It not only helps to save money in reducing development loops and prototype tests, moreover the ECS tools help to shorten production planning and manufacturing processes.

STEYR truck engineering and manufacturing know how combined with state of the art CAD, CAE, CAM tools - these are the basics to serve the automotive industry best. Moreover virtual vehicle durability can be verified by using ECS test lab and proving ground facilities.

FE-simulation for fatigue life prediction considers all complex and dynamical loaded components in vehicles (spots, joints, welds, plasticity, ...). Multi body simulation and test data integration complete the structural analysis (strength-, stiffness-, modal-, durability- and crash simulation).

www.femfat.com

Vehicle thermal management simulation optimizes and designs the heat management in vehicles including AC systems, virtual driving and heat flux analysis and virtual test bench simulation. CFD simulation methods and services round up the simulation process.

www.kuli.at

Driving simulation software facilitates finding of powertrain variants. FASI generates real life driving conditions with the aim to reduce fuel consumption and emission.

www.fasi.at

Dip paint simulation optimizes dipping tank and cycles, avoids generation and migration of air bubbles during dipping process, visualizes passage through dipping tank, product geometry and dip paint process.

www.alsim.at

The Virtual Vehicle

- Fatigue analysis
- Multi body simulation
- NVH optimization
- Vehicle durability simulation
- Drivetrain optimization

www.kabi.at

In the field of Electric Engineering Solutions we create designs for electrical systems and functions, electrical components with automated documentation for wiring harness and we design the packaging and routing. Automatic calculation of cable lengths, cable harness manufacturing, shortening of the design process, production-planning and manufacturing process (data management of planning variants to reduce planning faults and to minimize varieties) are further advantages for our customers.

www.kabi.at
System Integration

A major task in commercial vehicle engineering is the integration and application of existing components and modules like engines, axles, transmissions, transfer cases or complete drivetrains into new vehicles or vice versa to keep parts’ commonality and system modularity.

At the ENGINEERING CENTER STEYR, we are well experienced and capable of performing a complete vehicle integration of all these modules including the installation of a cabin with all its necessary adaptations of BIW, frame, exterior and the interfaces like cooling, steering and braking system, gear shifting, cab suspension and cab tilting mechanism.

We believe in a holistic approach to engine and drivetrain integration, taking into account thermal management, emission targets, on-board diagnosis (OBD) and driveability.

Our range of services includes layout, design, simulation and testing for cooling, intake and exhaust systems, engine mounts, axle suspension and add-on parts (fuel tank, spare wheel carrier, batteries, mufflers, air reservoir). We adapt, integrate and validate them - both on test benches and in the vehicle.

Engine Integration
- Installation of various engines
- Digital Mock-Up (Enovia V5 Navigator)
- NVH and cooling investigations
- Engine and vehicle testing
- Emission calibrations

Engine Application
- Light duty trucks and heavy duty trucks
- Data bus
- Software / OBD application

Electrics / Electronics
These days the percentage of electronics in vehicles is constantly rising. The ENGINEERING CENTER STEYR has responded to this trend with a comprehensive range of services. Our in-depth expertise takes components from the initial concept to production stage, ensuring functional intelligence down to the last detail.

E/E Design
- Model-based development
- Embedded software development
- Systems integration
- Rapid prototyping
- Hardware prototyping
- E / E on-vehicle testing

Complete Vehicle Integration
- Chassis
- Cabin and cab suspension
- Engine and cooling
- Drivetrain and components
- Axles and suspension
- Add-on parts
- Electric / electronic systems
Prototyping & Testing

With the same importance as design and simulation we perform testing as an important validation procedure thus enhancing our capabilities of delivering sturdy and long-living solutions to our customers. In our facilities we can build up and inspect prototypes before and after testing.

Our test facilities are all located directly at our engineering center allowing design and test engineers to work in close collaboration.

Fatigue Lab
- 2000 sqm test area
- 5 large foundations (200t - 500t)
- 16 channels simultaneously

Acoustics, NVH
Consulting, measurement and analysis development and complete solutions
- Sound power optimization
- Interior, exterior noise
- Running mode analysis
- Transfer path analysis
- Pass-by noise
- Roller test bench

Proving Ground Facilities
- Steep hill
- Circular track
- Pass-by noise track
- Over 7 kms off-road tracks and bad road
- Torsional track with 300/400mm obstacles
- Sinus washboard
- Wooden boles
- Deep fording basin, etc ...
- Roller test bench
- Full vehicle powertrain test rig

At our large fatigue lab we are able to test under well defined and steady (climatic) conditions single components or complete trucks. In addition we do have a large number of different engine test benches and drivetrain test rigs for functional and endurance testing.

Proving Ground
At our own proving ground, we have a variety of on-road and off-road tracks and obstacles for performing complete vehicle testing and evaluations, benchmarks, load data acquisition, NVH or endurance testing regardless. If it is an SUV, pick up or 8x8 heavy duty truck.

Product Evaluation

- Component, system, complete vehicle
- Virtual, lab, on-road, off-road
- Regulations, customer standards, ECS standards
References

Selection of Engineering & Testing Projects

Engineering Center Steyr

Your competence partner for vehicle engineering worldwide ...

ISO TS 16949
ISO 9001
ISO 14001
OHSAS 18001

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Quality Management System
Environmental Management System
Health- & Safety Management System
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