



General Presentation of **STEINER CONSULT**

TS International Consulting
Dr. Thomas Steiner e.K.

Company Profile and
Group Member Information
Information of the Division Rolling Stock Industry

Company of Steiner Company Group

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Introduction

Steiner Consult is an independent engineering and consultancy company with partner manufacturing locations that has accumulated expertise and competency in the field of designing and manufacturing for the Rolling Stock material according to UIC, BS, AAR and other standards and machining industry including ToT contracts (Technology Transfer contracts). We have DIN EN 15085-2, CL5 Certificate (design of rail cars & Bogies) & we have a own Homologation Approval Support department.

Due to our longstanding and considerable expertise we are able to offer complete satisfaction to our customers.

Main Data

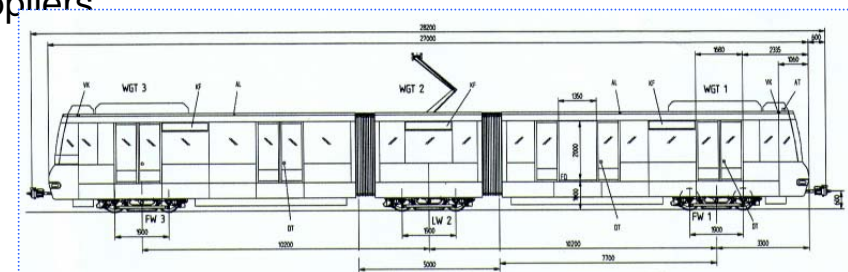
Employees in the Company (excl. the Group):

(Steiner Consult): **44 Fix Employees** in 2 offices |
Germany & Hungary

- Design Engineers: 26
 - Project Manager: 5
 - Administrative: 1
 - Management/Sales: 5
 - Project Rolling Stock Engineers: 8
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- Foundation: March 2000 (as court registered company) with original **foundation in 1993**
 - Main activities: Railway Industry, Machinery Industry, Renewable Energy, Engineering and Consulting/Agency Activities

Main activities / products in Rolling Stock

- **Pre-design, final design and engineering**
- **Planning and construction / Approval process**
- **Mobile repair team**
- **Flexible customer support**
- **ToT (Technology Transfer)**
- **After Sales Service**
- **Spare Part Service**
- Manufacturing of new vehicles and prototypes by our suppliers
- Modernization and re-design by our suppliers
- Maintenance by our suppliers
- Repair after accident by our suppliers
- Approval, inspection and commissioning by our suppliers
- Renovation of historic vehicles by our suppliers
- Revision and main inspection by our suppliers
- Steel work by our suppliers
- Coloring by our suppliers
- Components and Subsystems by our suppliers
- Manufacturing of components by our suppliers



 Direct work of Steiner Consult

Products in Rolling Stock delivered by our manufacturing partners

- Container wagons with maximum load capacity in the market (UIC, RIV, AAR, BS, RID, TSI)
- Auto-carrier wagons with top moving deck by means of a mechanical system
- Tank wagons for dangerous and toxic substances complying with the latest safety norms (incl. pressure tank cars and chemical tank cars)
- Hopper wagons and Container flat wagons
- Multivalent wagons for containers and motor vehicles
- Ballast wagons and all other kinds of freight cars (e.g. Habbins, Laeers, Res, Sgnss, Falns, Talns etc.)
- Freight bogies (e.g. Y25lsd1-k, BA 628/629, broad gauge bogies)
- Bogies for motor driven and trailer cars
- Passenger coaches and Bogies
- DMU and EMU trains (Passenger transport trains incl. new design)
- Light Rail Vehicles / LRV / Trams
- Metro cars and Light Rail Bogie design



Engineering & Design

Our Vehicle Development Department offers the complete development process, starting with preparation of the specification through to production assistance in manufacturing. Main areas of our activities are the engineering and prototyping for new cars or rebuild of driving cab vehicles, passenger coaches, locomotives, power units and auxiliary vehicles (special purpose) and of course all kinds of freight cars and freight car bogies.

Complete systems and subsystems are designed and developed from conceptual stage to pre-series acceptance.

We can offer the following scope:

- Design concepts and detail design (incl. manufacturing drawings)
- car body manufacturing design
- interiors
- electrical design
- development and engineering in 2D (AutoCAD) and 3D (AutoCAD Inventor Suite 2008)
- FEM calculation static / dynamic
- technical project management
- ToT (Technology transfer) & Homologation Management

Process Automation

The successful execution of complex and demanding projects in the field of process automation gives us an even more innovative drive.

In our Automation Department (own office in Burghausen FIWA, Bavaria) we enhance your projects with our future-oriented solutions to optimize your existing systems. Together with you, we define concepts and we develop a very precise and eminently suitable solution. Our Bavarian partner FIWA has more than 150 electrical and automation engineers.

If so required we can support you on questions regarding:

- SPS systems / bus systems
- Planning / Projecting / Electrical diagram design and layout
- Process visualisation
- Start-up
- Training
- ToT (Transfer of Technology)

Jig & Fixtures Design

Our Jig Design engineering team will respond to your individual requirements and will agree with you on planning and realization to achieve precision in view of the application and conditions. We develop and design jigs and fixtures for assembly and disassembly as well as for examination of components.

Our scope of services comprises:

- Specification preparation
- Process chain analysis incl. first proposal
- Selection of system components
- Mechanical engineering
- Electrical developments
- Manufacturing
- Start-ups
- Training and TOT

Expert organisation

We examine your calculations for structural strength of railroad vehicles and rail sets. Additionally we certify your components and systems regarding their electromagnetic compliance with specified requirements.

Our vast experience in the process of new build and modernisation railroad vehicles puts us in the position to execute approval processes not only for components but also for the complete vehicles, starting with the application up to the final acceptance. Alternatively, we can provide relevant consultancy services to your company.

We support our suppliers during the complete project and homologation process until finishing of the prototypes and approval by the European Notified Bodies and National Safety Authorities/NSA (e.g. EBA/EBC) and until reaching TSI Conformity Certificates. We own the Certification according DIN EN 15085-2.

References

We have designed and manufactured (our partners) in partner location:

- Coaches (passenger coaches for Spain and Germany)
- Workshop and repair coaches for the Spanish High Speed Line (AVE)
- Vehicles for the Madrid Underground System
- Wagons for the transport of general goods
- Tank wagons for dangerous and toxic goods
- Container platform cars, Falns cars, tank cars, flat wagons
- Container Flat cars for special purpose
- Swap bodies
- Bogies for passenger and freight vehicles
- Brake testing equipment
- Bearing extractors
- Wheel set changing stations
- Bimodal semi-trailers and bogies
- Forged and cast steel spare machine parts
- Carts for dragging vehicles with damaged wheels
- Mounting of compressed air brake on rail vehicles
- Capital equipment
- Design for DMU, EMU trains





Imprint

GENERAL Engineering Company & AGENTS IN ROLLING STOCK

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