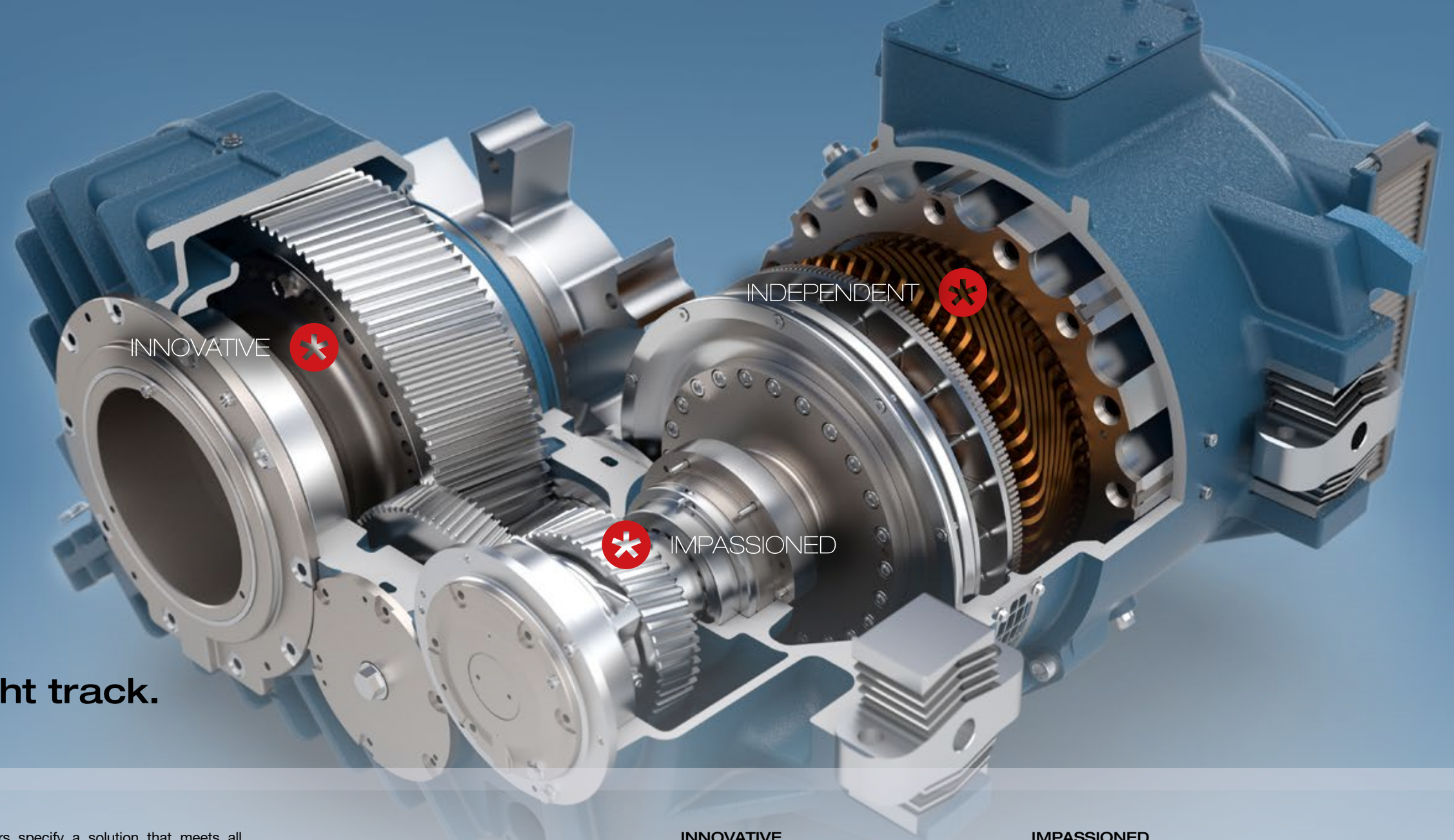




Long-Life Value Service  
Best service for guaranteed value protection.  
**Throughout the vehicle lifetime.**



## Traktionssysteme Austria: Keeping you on the right track.

Innovative, Independent and Impassioned. As an independent manufacturer of electromechanical drive equipment for rail rolling stock and electric road vehicles, Traktionssysteme Austria has been using its expertise and wide product range to deliver top quality and customized solutions to our customers for over 60 years. Our company's roots grow from three traditional railway engineering companies: BBC, ABB and Elin. Our production facility is on the site of the former Brown Boveri plant in the Austrian town of Wiener Neudorf.

### TECHNOLOGY LEADER AND GLOBAL PLAYER

We specialize in traction motors, generators and gearboxes for the transit/transportation industry. As technology leaders, TSA is the ideal partner for global manufacturers and operators of rail rolling stock. Our solutions ensure that e-mobility is not only the more contemporary choice, but the more reliable, more efficient and more powerful option.

Our customers specify a solution that meets all electrical and mechanical criteria – we can supply top quality products that confirm each requirement. We are committed to simplifying maintenance criteria and reducing lifecycle costs. As the largest independent complete drive system supplier, TSA is the only manufacturer with the ability to assess the entire drive unit down to the smallest detail. We know exactly how to support our customers to deliver a successful rolling stock program – and this knowledge is the key to guaranteeing optimum performance.

Our technology is in use in every corner of the world. With a global footprint, an intelligent and targeted logistics network and a mobile service team, TSA is always there when our customers need us.

### INNOVATIVE

Based on our extensive skills and expertise, we were the first independent supplier in the market to combine motors and gearboxes into the perfectly functioning unit. Simply give us your specification and we will do the rest, creating the optimum solution, tailored precisely to your needs.

As a result, we are able to supply our customers in the rail rolling stock market with the key to e-mobility – all under one roof.

### INDEPENDENT

As an independent specialist, we are the only supplier to focus solely on traction drive systems for the transit and transportation markets, and are free from corporate interests. With our customers having the opportunity to speak directly with our company owners, we can ensure that important decisions are made when the time is right. This allows us to concentrate on developing the best custom drive solution for our customers every time.

### IMPASSIONED

We are passionate about traction drives. From design development through production, in-house testing and logistics support, TSA is ready to deliver a service that sets a new standard and benchmark for the market. We strive every day to provide a best-in-class experience for our customers.



# Long-Life Value Service Line for the entire product lifecycle

## THREE ELEMENTS UNDERPIN TSA SERVICE

Reliability, availability, maintainability and safety are TSA's watchwords. At TSA, service means more than just maintenance and repair. We have made it our business to go above and beyond for our customers with an impressive range of services. Any customer can utilize our three service elements:

✱ **AVAILABILITY OF REPLACEMENT MOTORS:**

We can supply the right replacement motors to suit your every need, keeping downtime to a minimum.

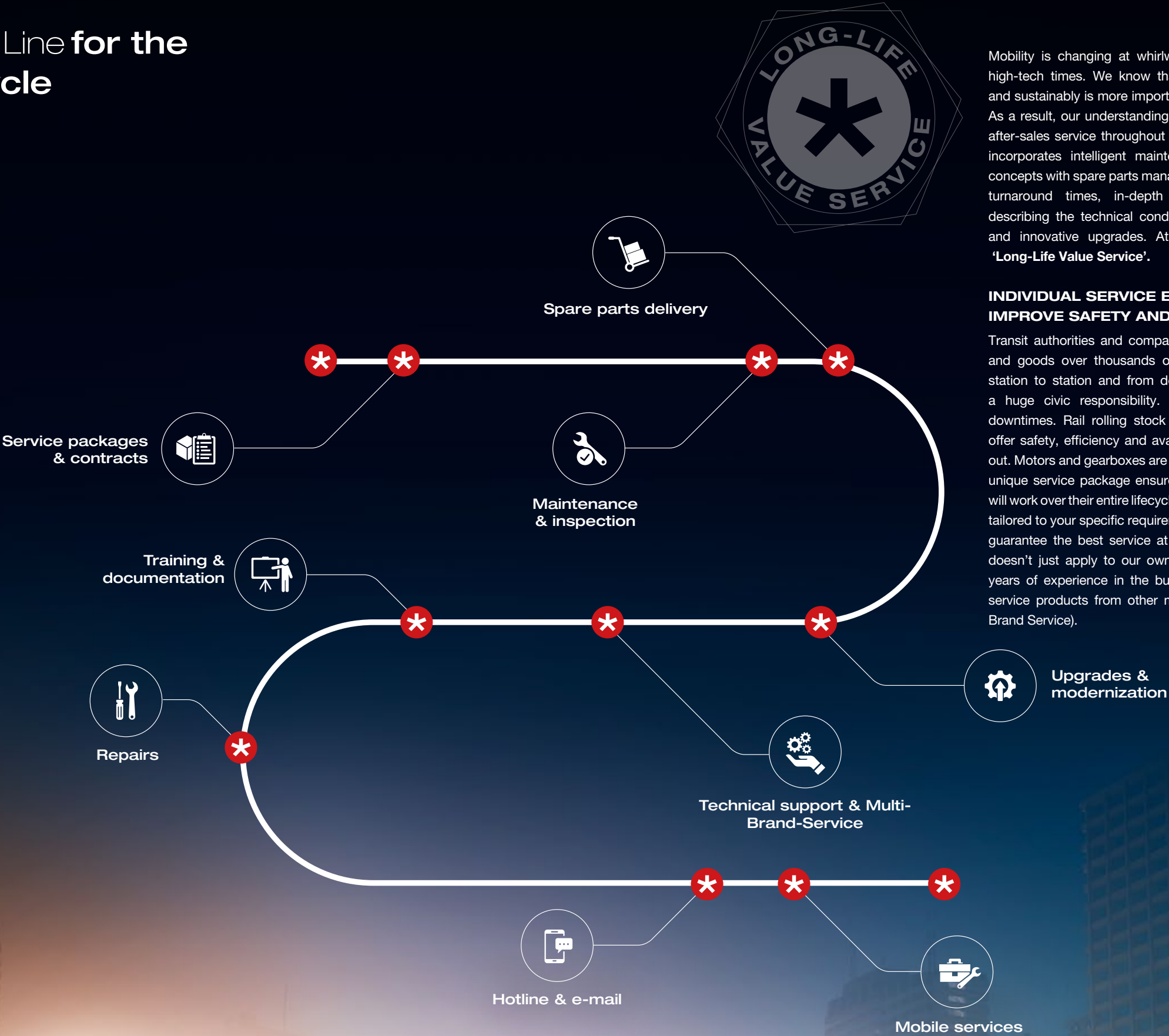
✱ **COMPREHENSIVE FUNCTIONAL AND SERIES TESTING:**

All tests and inspections take place in-house. With engineering, manufacturing and testing experts sitting together, we know exactly what to look for when diagnosing and troubleshooting

✱ a traction drive.

✱ **ORIGINAL MANUFACTURER WARRANTIES:**

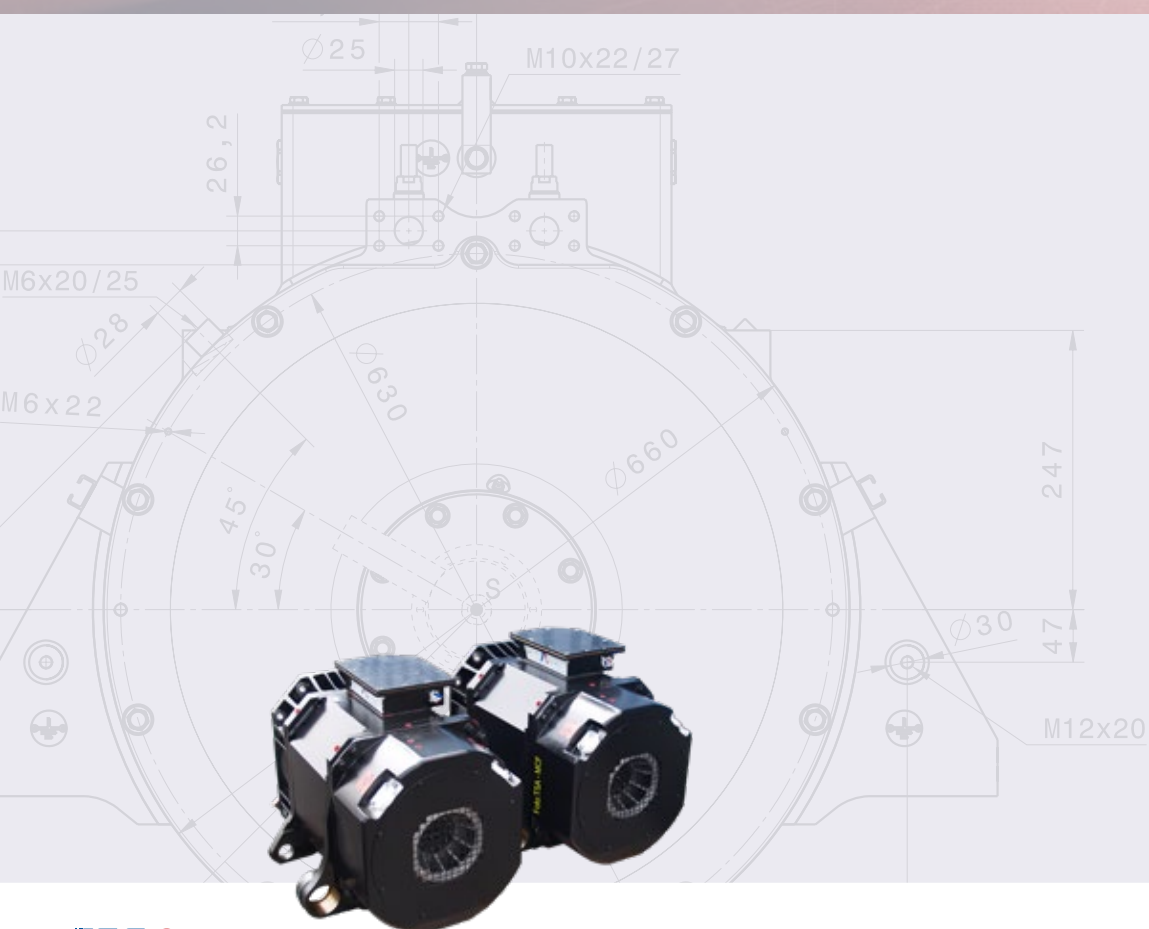
With our knowledge and experience in the field, we would bring analysis and testing to the reworked units. In return, we can offer you a corresponding warranty covering the motor.



Mobility is changing at whirlwind speed in these high-tech times. We know that maintaining value and sustainably is more important than ever before. As a result, our understanding of a comprehensive after-sales service throughout the product lifecycle incorporates intelligent maintenance and service concepts with spare parts management, guaranteed turnaround times, in-depth diagnostic reports describing the technical condition of a drive unit, and innovative upgrades. At TSA, we call this 'Long-Life Value Service'.

## INDIVIDUAL SERVICE EFFORTS TO IMPROVE SAFETY AND EFFICIENCY

Transit authorities and companies carrying people and goods over thousands of miles a day, from station to station and from depot to depot, have a huge civic responsibility. They can ill afford downtimes. Rail rolling stock and buses need to offer safety, efficiency and availability year in, year out. Motors and gearboxes are our business – TSA's unique service package ensures that our products will work over their entire lifecycle. We offer packages tailored to your specific requirements, allowing us to guarantee the best service at optimum cost. This doesn't just apply to our own motors: with many years of experience in the business, we can also service products from other manufacturers (Multi-Brand Service).



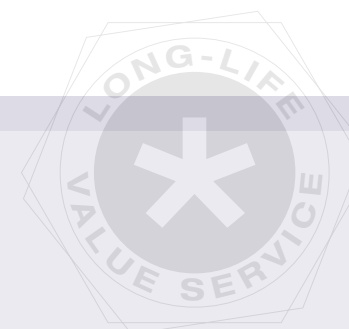
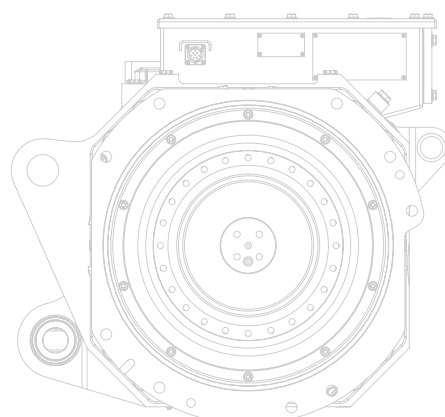
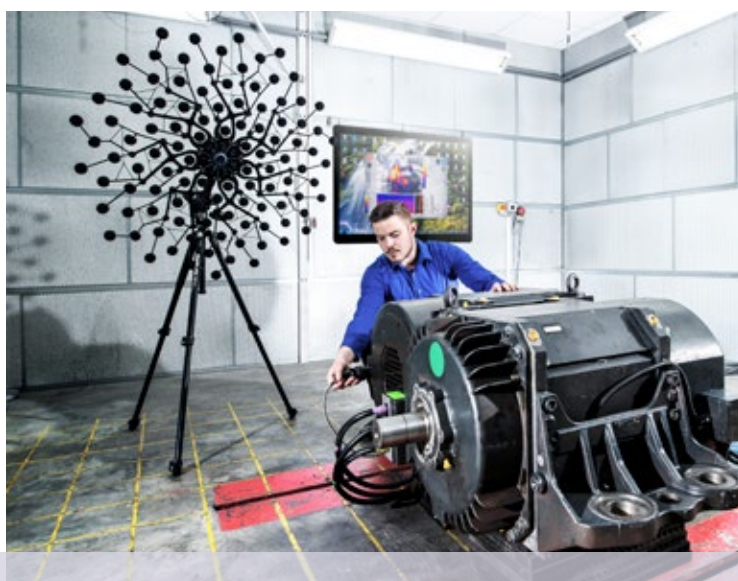
## Service packages & contracts

Prevent unexpected breakdowns and protect the value of your vehicles in the long term. Preventive maintenance and servicing over a unit's entire lifecycle will save you money and time in the long run. Additionally, your drive systems will always be equipped with state-of-the-art technology.

### Replacement motors & original manufacturer warranties

Service agreements are the easiest way to plan for maintenance costs. All contracts and packages are specifically tailored precisely to your individual requirements to ensure the optimum performance of your systems. We can provide replacement components while your own are being serviced. After servicing, you will also receive a new two-year warranty on the motor.





## Maintenance & inspection

Quick, flexible and efficient: Our knowledgeable experts ensure that evaluation, repairs and services are specifically tailored to your expectations. Our in-house engineering expertise, original equipment level spare parts and innovative upgrade options protect the value of your rolling stock throughout its entire lifecycle.

### Extensive functional and performance tests capabilities

As designers and manufacturers of the full range of traction drives, we have the capability to conduct exhaustive tests to guarantee that quality requirements are met. Function and performance tests on motors and gearboxes, as well as noise and vibration measurements, ensure that our drives satisfy all structural and production requirements. Our extensive testing capabilities allow us, after servicing, to offer a full warranty for the entire motor.



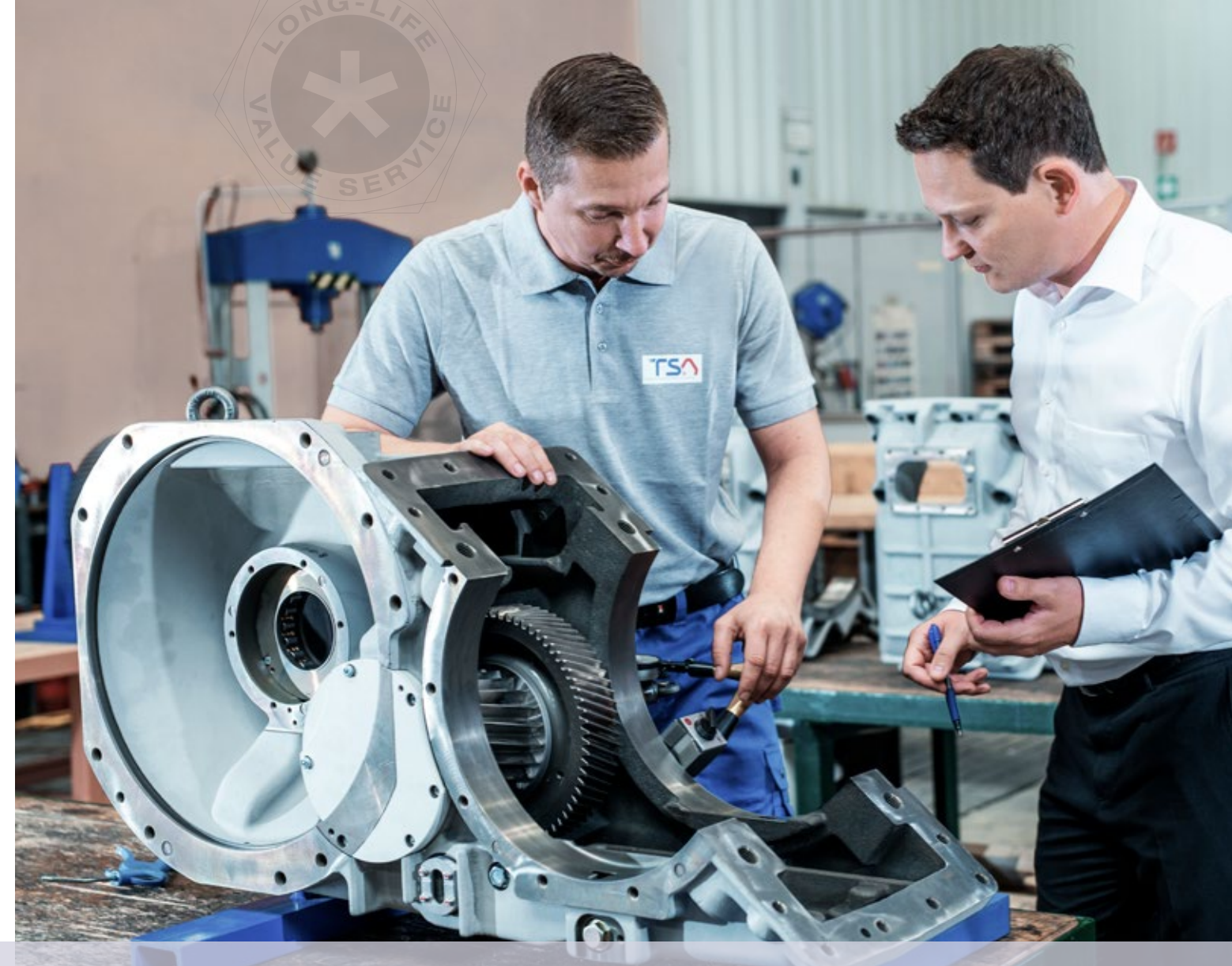
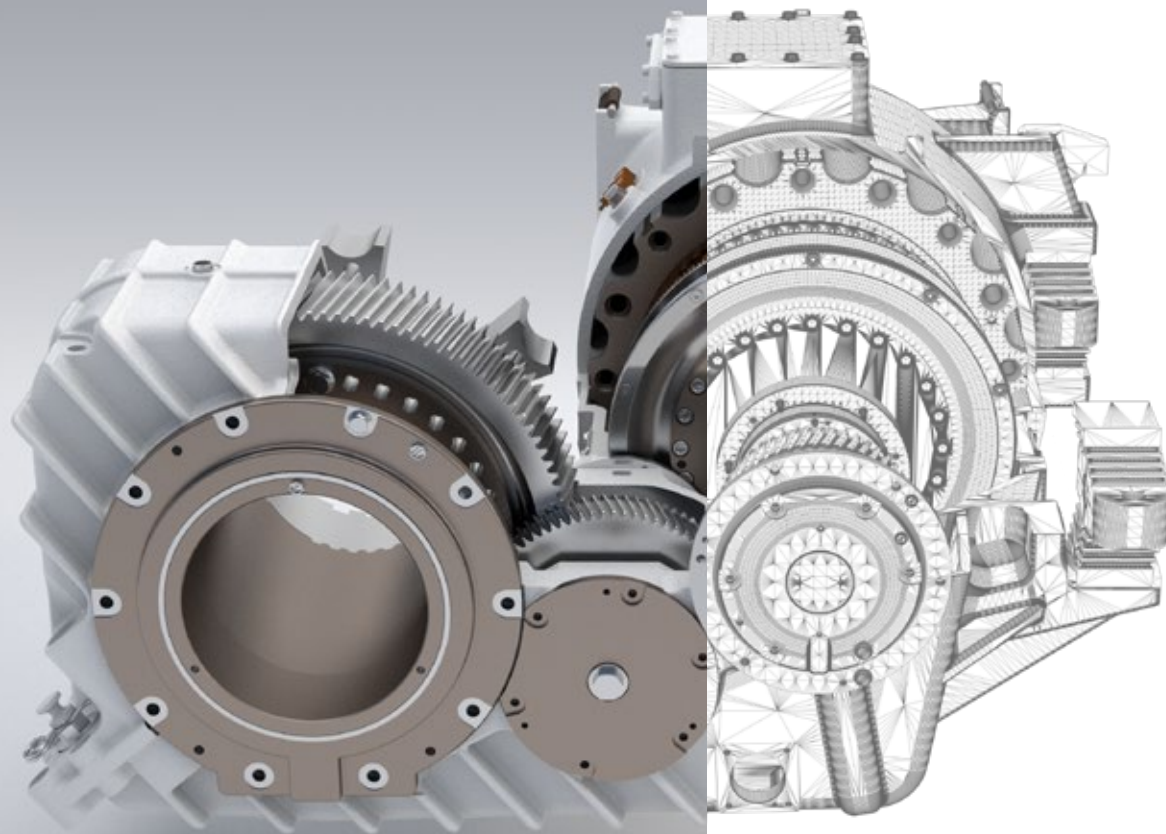
## Spare parts delivery

Our name is synonymous with manufacturer quality. Our spare parts are original-quality products, helping to maximize the performance and service life of your motor. Regular maintenance and overhauls not only ensure that all parts meet the necessary requirements, but also represent the latest in state-of-the-art technology.

### Intelligent logistics concepts & short delivery times

As original equipment manufacturers, we can provide flexible access to components from serial production during maintenance and repair activities. This means short delivery times, even for critical components. You will also appreciate our intelligent logistics concepts: We offer the full range of services under one roof, from storage to order picking, right through to packing and dispatch. We are able to deliver quality spare parts, while offering cost savings of direct contact.





## \* Upgrades & modernization

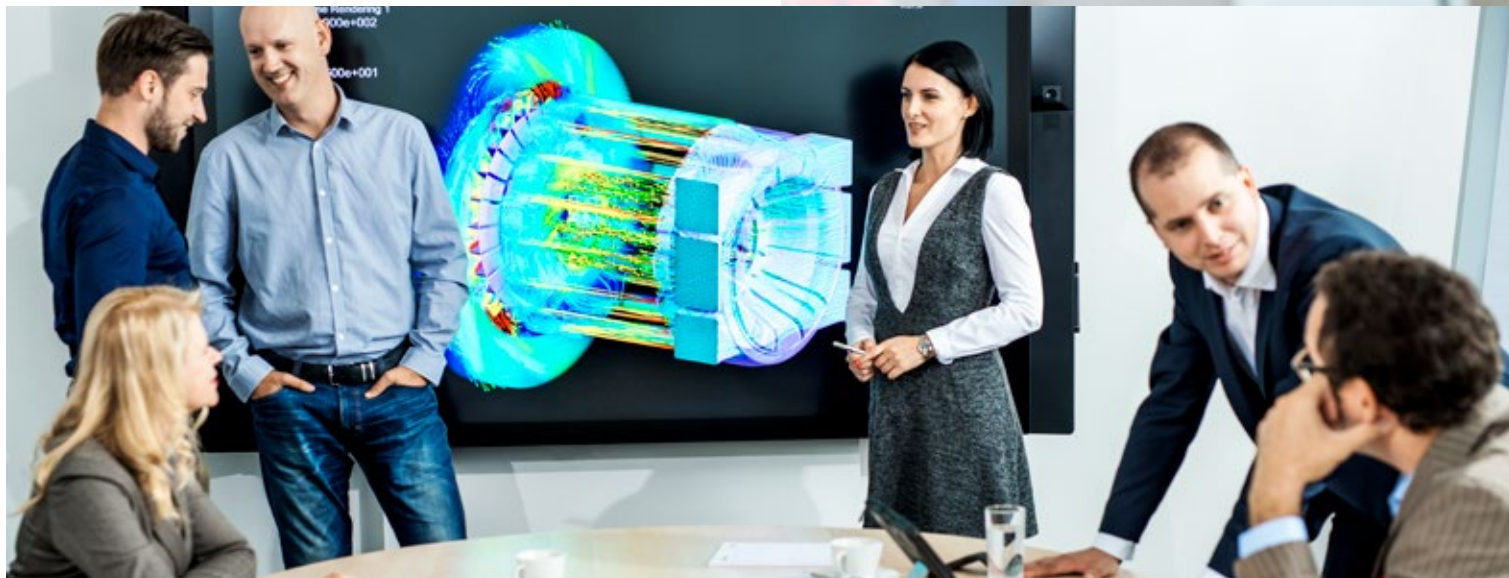
Technical developments are constantly evolving. Thanks to many years of engineering experience and continuously self-funded research and development, TSA can commit to always develop the best possible technical solution for your problem. In other words, we don't just replace or repair components, we always try to find the latest solution for your needs. We don't limit this service to our own products. We work with products from other manufacturers (Multi-Brand Service) and have successful studies to prove it.



## \* Technical support & Multi-Brand Service

Our employees have been manufacturing traction drives on the site of the former Brown Boveri plant in the Austrian town of Wiener Neudorf for over 60 years. We have combined the technological and manufacturing expertise of three traditional companies (BBC, ABB and Elin), giving us a wide range of experience and skills. Our broad knowledge base makes us the perfect partner for our customers – not only for our own motors, but also for other manufacturers' products (Multi-Brand Service).





## \* Training & documentation

We view ourselves as a value added partner to our customers, not just a vendor. Through our detailed documentation and training offerings, we want our customers to have a strong understanding of our products and a comfort level of the maintenance requirements. Why not make use of our experience and expertise to maintain the value of your vehicle over its entire lifecycle?



## \* Repairs

If a problem occurs, we will be right at your side. We are committed to helping you quickly, competently and flexibly and we will make sure that your product is back to working order as soon as possible. Our experienced design engineers use original spare parts to maintain the value of your vehicle. We can provide replacement motors, should repairs be necessary on your own equipment.





## Hotline & e-mail

We are here to answer your queries around the clock, seven days a week. Experienced engineers are committed to helping you and will make sure that you receive the best possible service.

### Long-Life Value Service Hotline:

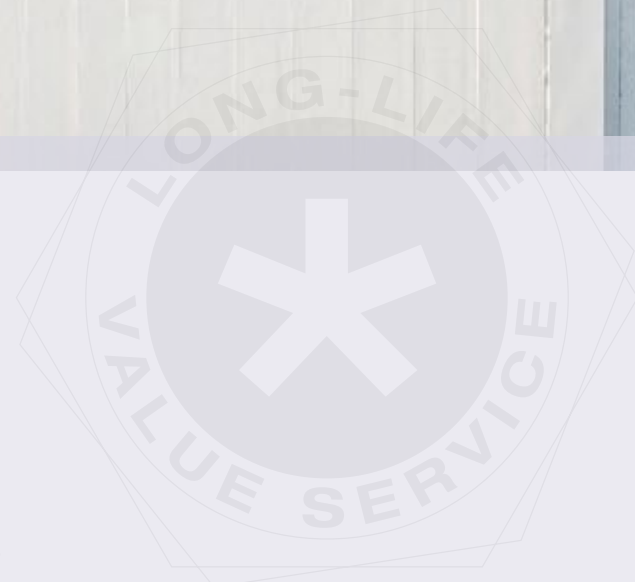
+43 (0)2236 8118-111

E-mail: [service@tsa.at](mailto:service@tsa.at)

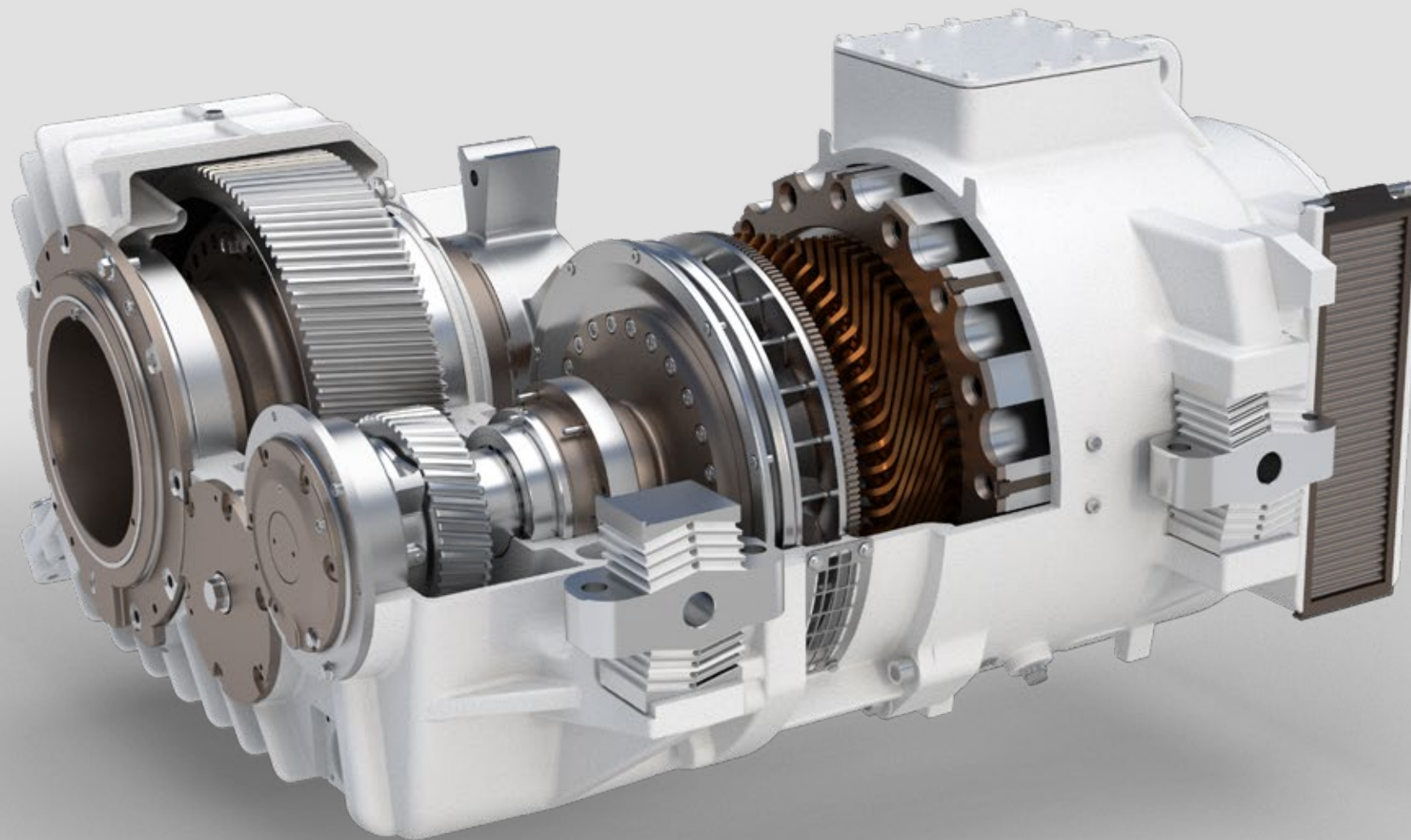


## Mobile services

If needed, we can provide many of our services anywhere in the world. We can support your needs where you need us. We use a flexible, mobile and reactive model to provide optimum maintenance and service quality. Top TSA quality for you, right where you need it, when you need it.







## One partner, many benefits

Many companies offer maintenance and repair services, but only TSA's Long-Life Value Service has the full range of benefits to guarantee protected value.

- Preventive maintenance and service packages offer a minimized risk and a high level of availability.
- Individual packages with built-in flexibility to suit your specific requirements and needs – allowing you to choose a package with predefined costs.
- Personal and individual consultancy services, anywhere in the world.
- Single point-of-contact. We understand your requirements and needs, so we can offer you the right solutions to protect the value of your vehicle.
- Long vehicle service life
- Maximum breakdown cover through preventive maintenance
- Long operating intervals with minimum planned downtime for planned maintenance activities.
- Protecting the value of your vehicles

### THREE ELEMENTS TO HELP YOU SUCCEED.

We have shifted the service paradigm. While others repair, we focus on providing our customers with a comprehensive service package. With preventative maintenance through product upgrades, TSA delivers state-of-the-art technology to ensure that our services are always aligned with our partners' requirements.

**Our chief benefits are based on three core elements that demonstrate our understanding of quality:**

- Availability of replacement motors
- Comprehensive functional and series testing
- Original manufacturer warranties

### WHAT DO YOU EXPECT FROM SERVICE? ALL-ROUND SATISFACTION.

We have made it our business to help our customers succeed when using our products and services. We know the latest technologies and what requirements we'll need to take on board in the future too. We also concentrate solely on traction systems, which means that we can assess the complete drive unit, motor and gearbox, in its entirety. TSA's Long-Life Value Service prides itself on the following features:

- **Flexibility:** Long-Life Value Service takes note of your individual needs and requirements, with an eye on costs and timeliness.
- **Communication:** You need just one valued partner to answer all your queries.
- **Expertise:** Our employees bring a first-class technical knowledge to handle your every need – a prompt and straightforward service.
- **An international approach:** We have a global network of service partners and our own mobile service teams to ensure that you can access TSA quality whenever and wherever you need it.
- **Efficiency:** Our process has built in efficiencies. We will accompany you throughout the product lifecycle, helping to save time and costs.

### LONG-LIFE VALUE SERVICE PROTECTS THE VALUE OF YOUR DRIVE EQUIPMENT – THAT'S A GUARANTEE.

TSA's Long-Life Value Service ensures that your products and maintenance processes are designed and manufactured for both the challenges of today and the opportunities of tomorrow. As experienced experts, we accompany you throughout the product lifecycle, and as a value added partner, we know exactly how to support your projects every step of the way. Safety and efficiency are our priorities while providing solutions and packages that undoubtedly protect the value of your drive systems.

### WHAT CAN TSA'S LONG-LIFE VALUE SERVICE OFFER YOU?

#### REDUCED COSTS:

- Reliability through regular maintenance
- Planned service intervals driving towards no unexpected breakdowns
- Controlled costs with individual contracts

#### HIGH AVAILABILITY:

As original equipment manufacturers, we focus on keeping customers' assets ready for duty. Our ability to develop a program to keep equipment available during repairs and maintenance work means that our servicing operations do not put the vehicle out of action. In other words, our customers can continue to carry passengers and freight at the usual tempo.

- Flexible service level
- Individual maintenance and service concepts geared to business and industrial processes
- Regular maintenance
- Quick reactions when servicing is required: A single point-of-contact and replacement motors on stock for a whole range of applications.

#### INNOVATIVE UPGRADES & MODERNIZATION OPTIONS:

- Not only for TSA motors and drives, but also for products from other manufacturers
- Over 60 years of experience
- Engineering expertise



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ITALY | LATVIA | LUXEMBOURG | MEXICO  
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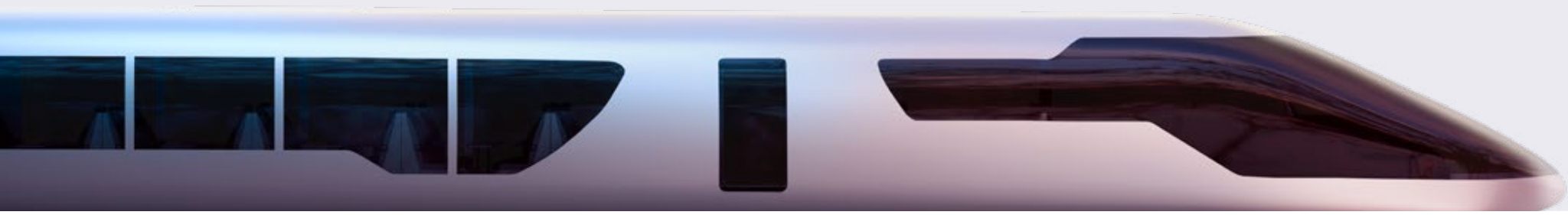
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TURKEY | UKRAINE | UNITED KINGDOM | USA | UZBEKISTAN



Long-Life Value Service is our mission.  
With sustainable benefits for you.  
**Today and tomorrow.**

We operate globally, keeping rail rolling stock and buses moving throughout the world. The technology introduced by Traktionssysteme Austria is in successful use across the globe – with more than 40,000 TSA motors and 1,500 gearboxes produced and sold in the past fifteen years alone. Our aim is to create electrical mobility solutions that are more efficient, more reliable and more powerful.

No matter where you are based, we think and act on the global stage. Innovative. Independent. Impassioned. The result are quality and technical advances in rail vehicles and buses across the world. Our Long-Life Value Service offers you the opportunity to protect the value of your vehicles today and for the years to come. Our many years of expertise will ensure that you are fully prepared for the challenges of tomorrow. That's a guarantee.





## Traktionssysteme Austria GmbH

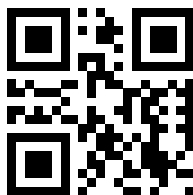
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