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SERSTAR - The Mobile Flash Butt Welding System

Welding and Destressing as
a continuous process



 Member of the
RHOMBERG SERSA RAIL GROUP

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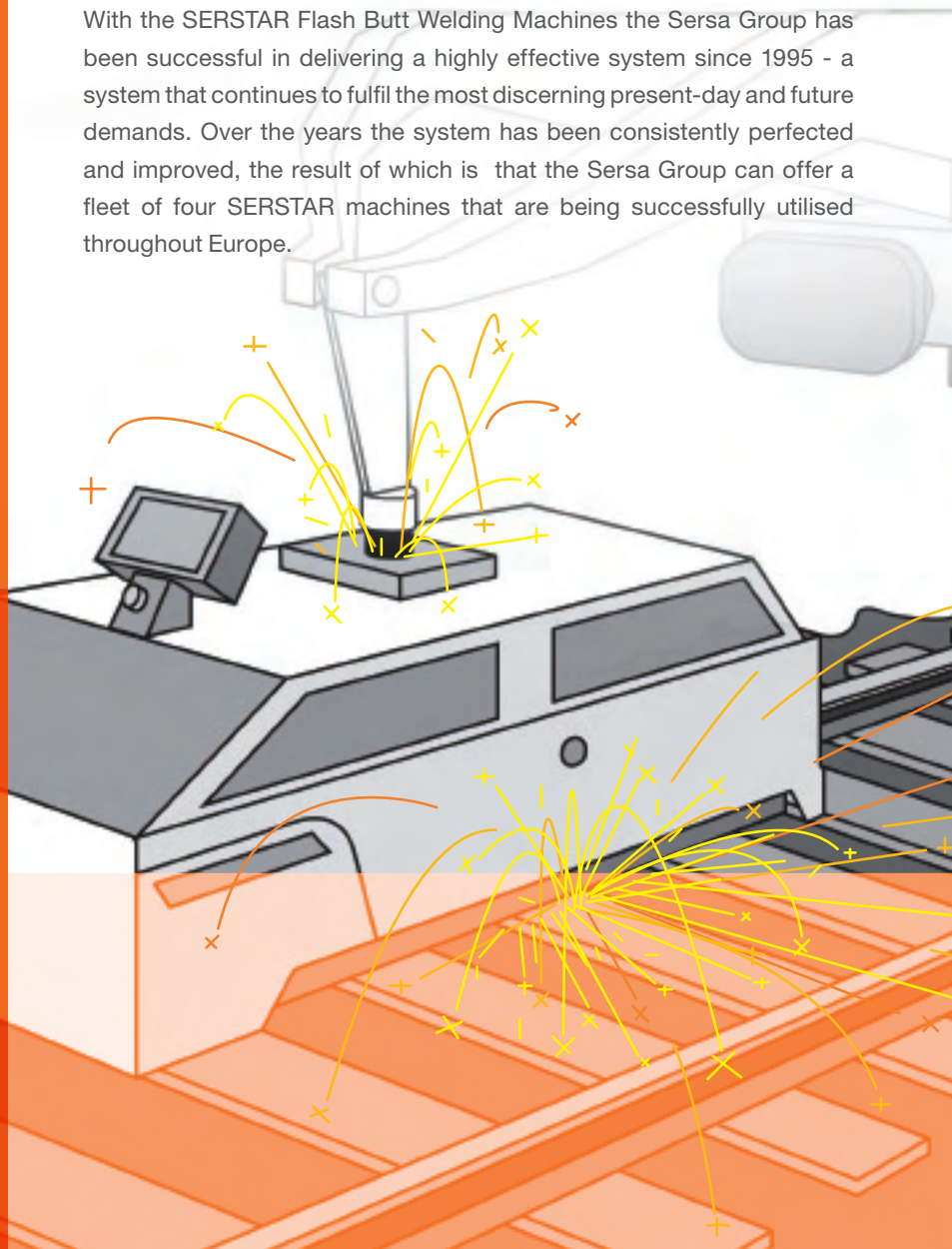
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Quality and efficiency are the order of the day!

High traffic density combined with the increase in the number of high-speed trains with high axle loads are placing greater demands on the railway networks throughout the UK and Mainland Europe. Meeting these demands requires a welding process that will be produced with consistently high quality and efficiency.

Welding quality is determined by various criteria, along with a defined welding and flash trimming process. It is essential that geometric accuracy along the running table, running edge and at the rail foot is achieved so as to meet the demands of high-speed routes.

With the SERSTAR Flash Butt Welding Machines the Sersa Group has been successful in delivering a highly effective system since 1995 - a system that continues to fulfil the most discerning present-day and future demands. Over the years the system has been consistently perfected and improved, the result of which is that the Sersa Group can offer a fleet of four SERSTAR machines that are being successfully utilised throughout Europe.





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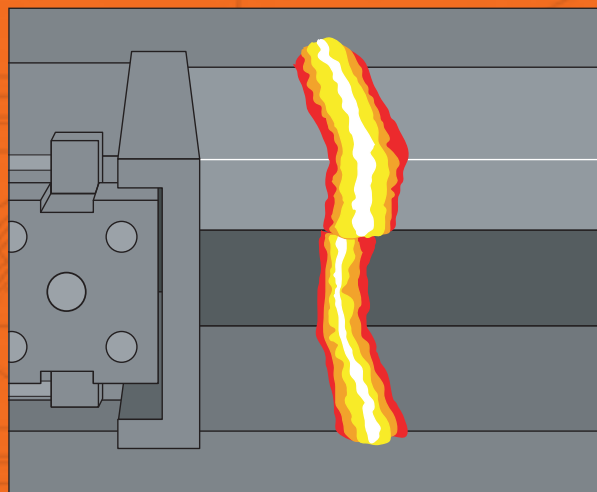
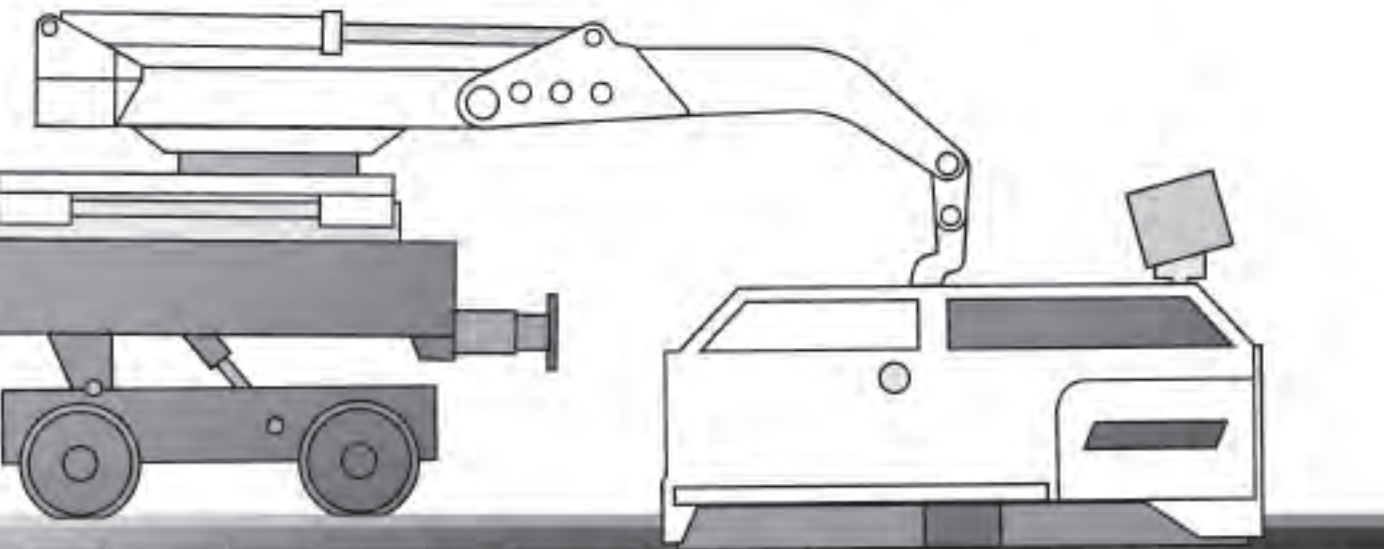
The ultimate solution: The SERSTAR Flash Butt welding system

A fully integrated Road Rail vehicle based on a four-axle lorry with a hydraulically lowered swivelling bogie to the rear, allows a fast and safe access / egress of the railway infrastructure at any level crossing or purpose made access point.

Having arrived at the point of deployment the lorry is first pre-positioned in readiness for the welding process. The welding head is lowered and positioned over the rail ends to be welded. To achieve the required tolerances of alignment, the fully automated system will elevate the rail to the head stops, thus achieving vertical alignment. The horizontal alignment is then automatically achieved immediately prior to the flashing process. Automatic shearing of the upset completes the welding process.



The onboard computer system automatically monitors the entire welding process which guarantees fault-free welding and ensures that all welding parameters are recorded throughout each weld. Even the slightest deviation from the pre determined welding parameters results in automatic intervention of the system and the termination of the welding process.



Automatic shearing of the upset



01

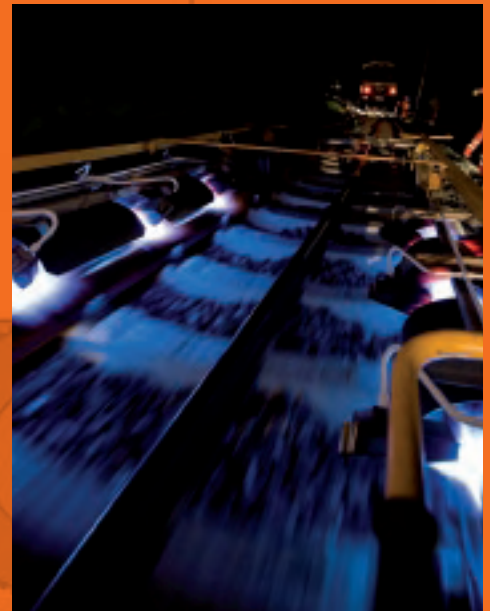
- (01) Rail replacement with a mechanical digger
- (02) Welding process
- (03) Destressing with the heating carriage
- (04) Heating carriage



02



03



The advantages

The SERSTAR mobile flash butt welding system is characterised by numerous advantages and is particularly efficient:

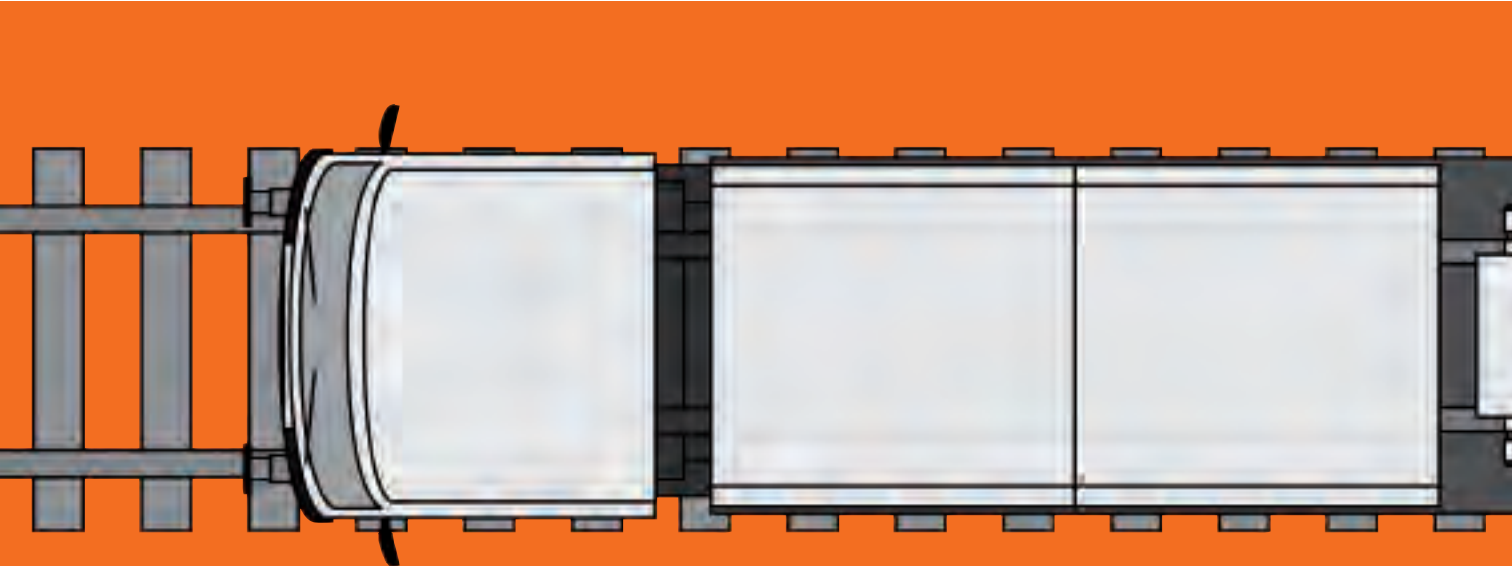
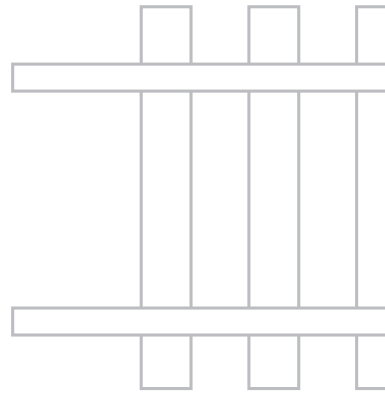
- An exceptionally high measure of flexibility and mobility
- Can also be used for stationary welding in order to produce Continuous Welded Rail
- Performance-conform operation during track closure periods
- Virtually zero waste materials
- No secondary materials required
- High quality repeatable process
- Welding of both normal and wide track gauges
- Welding duration only 3 minutes

Stress equalisation with Sersa Destressing System

Welding is only part of the process to produce Continuous Welded Rail. Parallel to this process is stress equalisation of the rails with the Sersa Destressing System (SDS). The rail temperature is raised to a predetermined stress free temperature by means of special heating units; the rails are then refastened at the desired stress free temperature. This combination of welding and destressing is particularly economical and offers a high quality process.

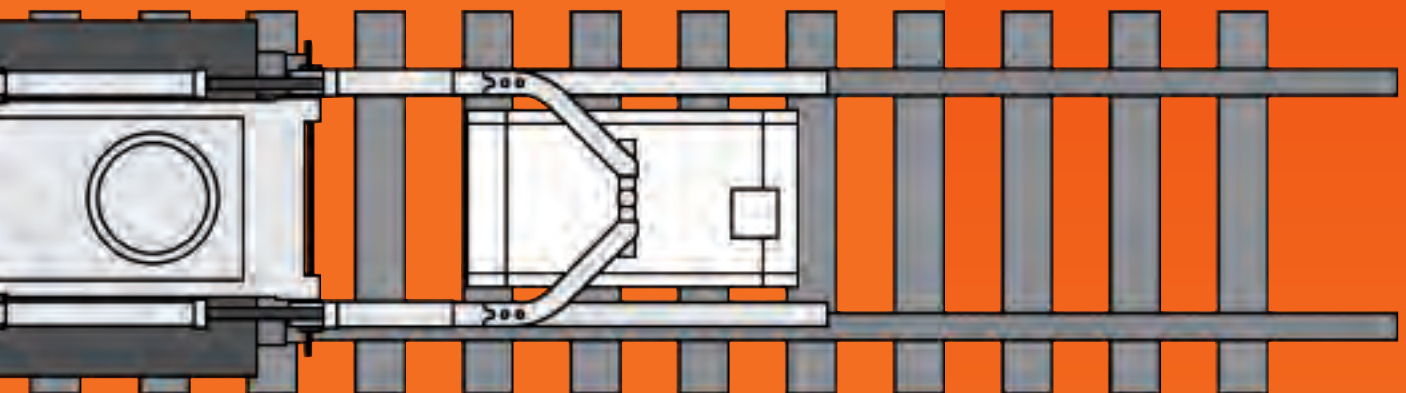
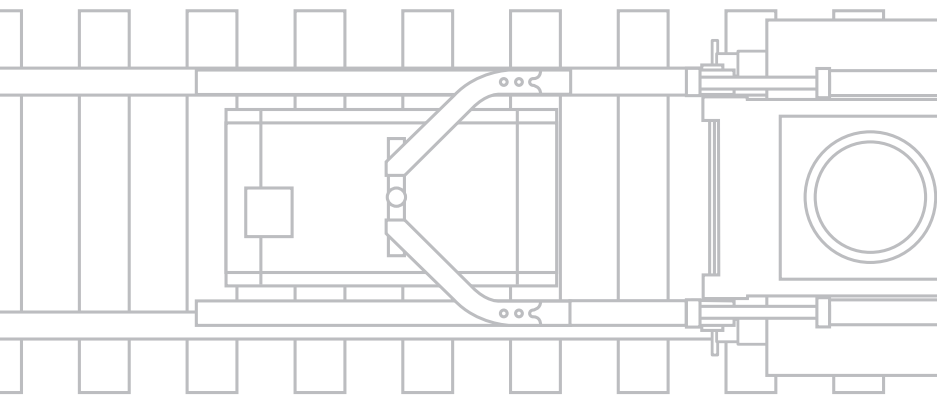
Successful throughout Europe

SERSTAR and SDS are particularly successful in Germany, Switzerland, Austria, Poland, The Netherlands, Great Britain, Ireland, France, Italy, Spain, Turkey, Greece and Scandinavia. It has proved to be an exceptionally flexible and commercially viable system for all of our clients, whether utilised on small or large-scale projects. These projects have included the high-speed railway lines such as HSL-Zuid/Netherlands, Madrid-Valladolid through the Guadarrama Tunnel/Spain and HSL Ankara – Eskisehir/ Turkey, where the high quality and economic solution of Flash Butt welding and Destressing as a single process proved a success.



The prospects for the future are very promising as a result of the high standard of quality and the efficiency of this system, in addition to the economic benefits, we believe that the Sersa Group have set the standards for producing Continuous Welded Rail.

We are always available for more detailed information.



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