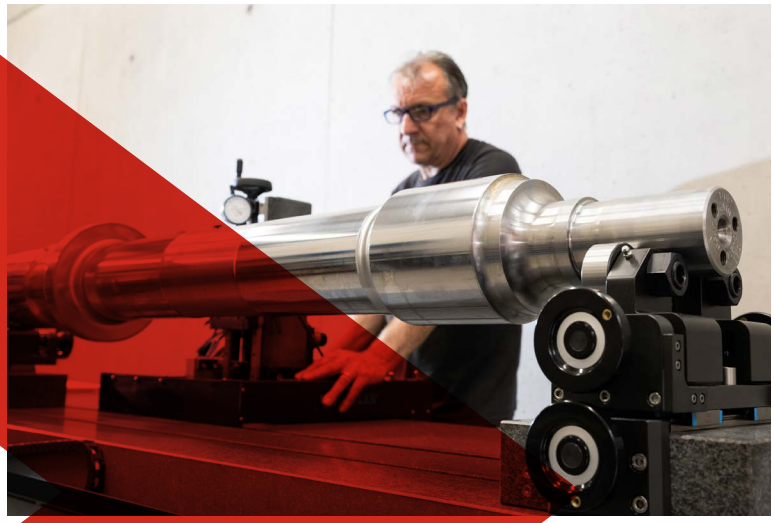












TMR OCTOFER

BOGIE OVERHAUL

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THE SOURCE
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OUR HISTORY, THE SOURCE OR OUR EXPERTISE

1906
The Martigny Châtelard Company (MC), operating on a metre-gauge track, inaugurates its railway line, comprising a rack-and-pinion section with a gradient of 200‰, using the Strub rack system, and a third rail for power supply

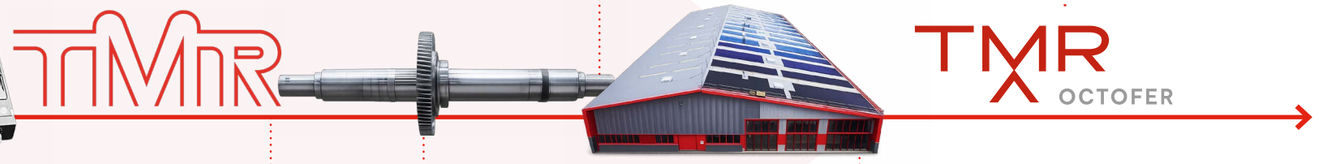
Line extended to Chamonix-St-Gervais-les Bains - Le Fayet, including an adhesion section at a gradient of 90‰ on French territory
1908

1964
In-house overhaul of all bogies and rack-and-pinion bridges on the compagny's rolling stock

Launch of the first F-CH interoperable rollstock from the Z800 series. The company has been accredited as the sole unit authorised to overhaul rack-and-pinion bogies for the SNCF on the St-Gervais-les Bains- Le Fayet - Martigny line
1996

1998
MC becomes the sole overhaul facility for all metre-gauge bogies - rack-and pinion and adhesion - in France





2000
Foundation of Transports de Martigny et Régions TMR SA - a merger of the companies MC and MO (Martigny-Orsières, standard-gauge), thereby enabling entry into the standard-gauge bogie market

2000-2018
Gradually, TMR has built up a reputation in the most specialised markets for the overhaul of bogies and metric-gauge rack-and-pinion bridges

Inauguration of the OCTOFER industrial workshop in Martigny, covering an area of 3,250 m². TMR is now in a position to meet, on a long-term basis, the quality and quantity requirements of a client basewith a wide range of needs.
2018

2021
An SNCF audit authorise TMR to manufacture and to overhaul metric-gauge wheel asssemblies, in accordance with standard EN 13261

Renewal of contrats with several major clients, demonstrating their confidence in TMR and its expertise
2025-2026

TMR OCTOFER



OUR SKILLS, OUR KNOW-HOW

We anticipate the challenges that come with standardisation requirements, with legislation and new technologies.

Since March 2021, we have been ECM-certificated, functions 1-4, and are therefore qualified and autho-rised to overhaul bogies and their components for all types of vehicles.

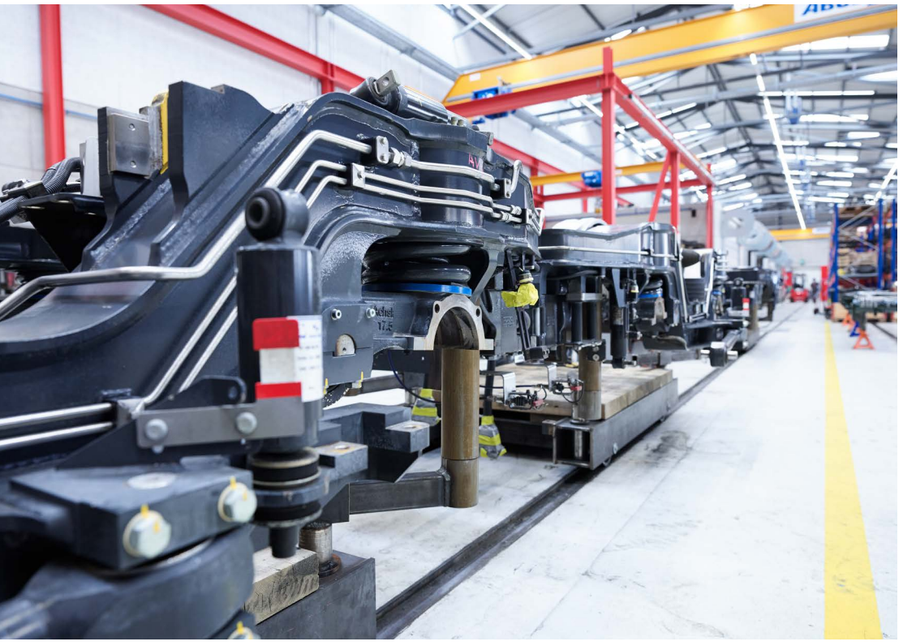
We are the only service provider accredited by SNCF to overhaul metre-gauge bogies, including their components, un particular wheel sets, in accordance with standard EN 13261.

We are CL1-certified in accordance with the EN 15085 standard for welding in the railway sector.

We invest in training to ensur the long-term preservation of our expertise, throught a tardeted programme spread over a four-year apprenticeship

TECHNOLOGICAL PROCESS - MACHINERY AND TOOLING

The workshop was designed and fitted out by our own staff under the supervision of the ingineers in our infrastructure project section. The experience gained in overhauling bogies pf all types and configurations has resulted in a facility with a continuous and flexible production flow. It is characterised by a logical sequence of workstations, each dedicated to a specific stage of the process.





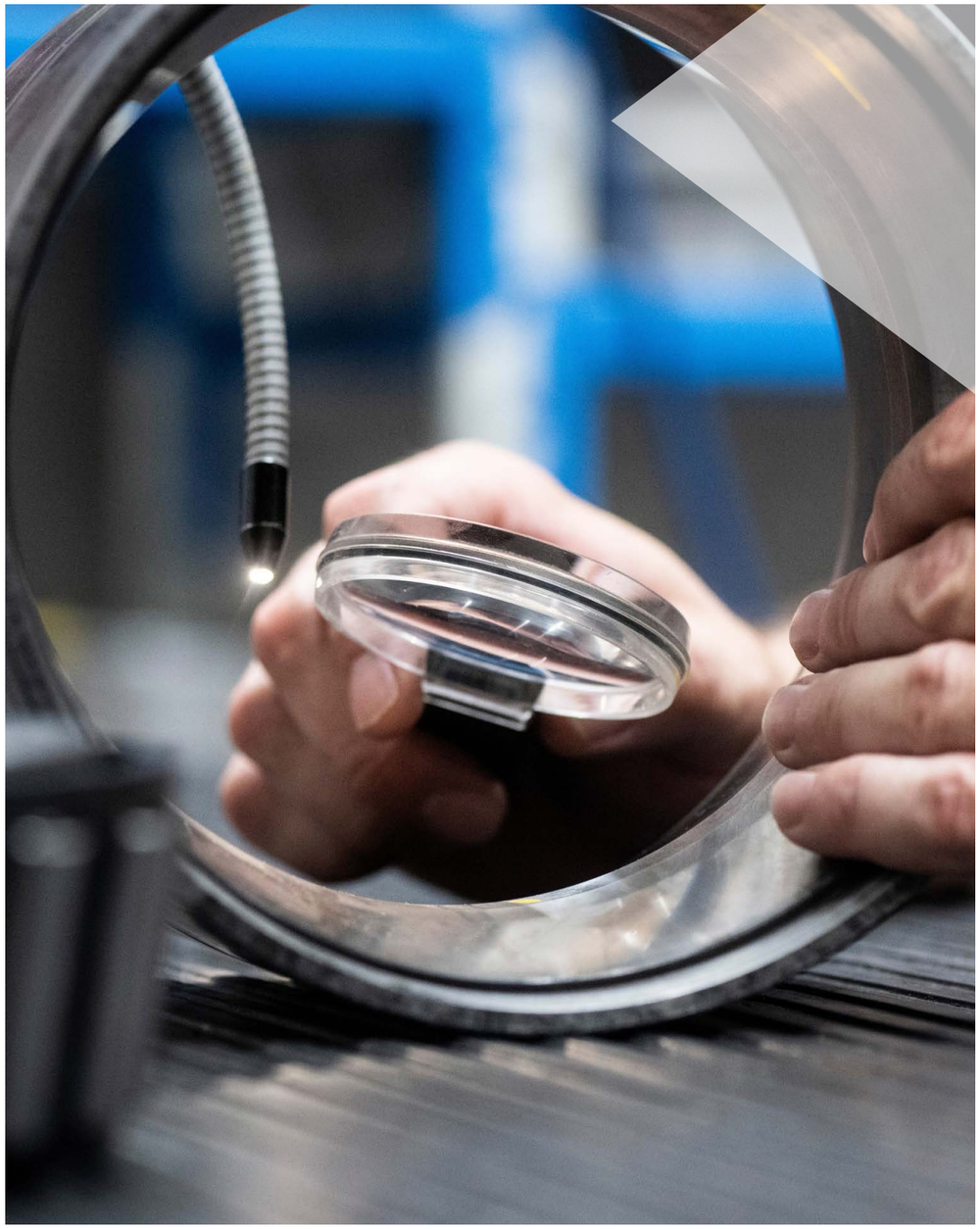






SCHÉMA DU FLUX TECHNOLOGIQUE

DE L'ATELIER DE RÉVISION DE BOGIES TMR OCTOFER











A) RECEPTION AREA UPON ARRIVAL OF THE BOGIES

→ The bogies are unloaded using a hoist, the placed on a trestle so that they can be dismantled in accordance with the scope of work specified by the costumer.

→ The pit beneath the trestle allows technicians to access the sub-assemblies located in the lower part of the bogie, for the purpose of simantling it.

→ Bogies with track gauges of 1000 mm and 1435 mm can be accommodated.

B) PRE-WASH/WASH

→ Pre-wash: bulky components such as bogie frames or axies are transported there on a specialised trolley with a hydraulic pivot poin (turntable) at the entrance-a high-pressure nozzle using recycled hot water removes the majority of contaminants.

→ Washing: in a separate room, more delicate components, such as bearings, axle shafts and brake calipers, are cleaned in accordance with the manufacturer's instructions for these parts.

C) SANDBLASTING

→ Compenents that are to undergo thorought non-destructive testing must be sandblasted in advance to ensure a clean surface free from paint residues or other impurities

→ the parts are hoisted into the sandblating booth and treated by the technician without any dust escaping into the workshop, thanks to the dust-collection hoppers.

D) SURFACE COATING

→ Surfaces are coated in accordance with the compenent, the applicable standard, the customer's specifications or our recommendations.

→ Any chemical composition and any combination of coatings is permitted, including powder coating.



E) BEARING INSPECTION

→ Depending on the scope of the work to be carried out, the bearings are systematically replaced or repositioned.

→ For minor maintenace work, we inspect the bearing to identify any defects in their component parts.
- In accordance with relevant standards, we determine whether or not they are fit to remain in service until the nexte maintenance intervention.

→ During major overhauls (R2), the bearings are systematicaly replaced.



F) NON-DESTRUCTIVE TESTING (NDT)

→ Stripped safety components undergo non-destructive testing using magnetic particle testing (MT) on visible areas and ultrasonic testing (UT) on concealed areas.

→ These techniques make it possible to determine whether defects not visible to the naked eye are present and require re-welding, machining followed by molybdenum cladding, or scrapping.



G) MACHINING

Geminis GT7 :

→ This high-capacity horizontal lathe is used for wheel profiling and the machining of axles.

→ Wheel sets can be machined/reprofiled

→ Technical specifications :
- Centre-to-centre distance = 5000 mm
- Diameter above the bed = 1600 mm
- Maximum workpiece weight between centres = 13 t
- Power = 68 kW
- C-axis on the spindle
- Special tailstock fitted with a rotating sleeve and chuck

Böhringer DUS 560-ti :

→ Using this horizontal lathe, we machine axles

→ Technical specifications:
- Centre-to-centre distance = 2200 mm
- Diameter above the bed = 570 mm
- Workpiece weight between centres = 1 t
- Power = 25 kW

Fehlmann PICOMAX 56L :

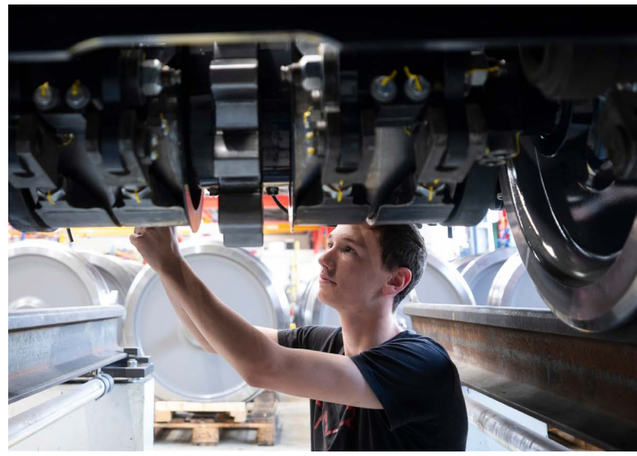
→ Precision vertical milling machine, 3-axis with motorised spindle

→ Travel : x 800, y 400, z 400 mm

→ Spindle speed 50 - 12'000 tr/min

→ Spindle power 9,7 kW (S6 40%)

→ Maximum torque of 61 Nm between 50 - 1'530 tr/min



H) ASSEMBLY

MD300/1 Wheel Clamping/Offset Press

→ Used to offset wheels from axles

→ Technical specifications:
- Clamping of wheels to axles
- Maximum thrust cylinder force = 3000 kN
- Maximum diameter of the wheel to be clamped = 1100 mm
- Maximum length of the axle to be secured = 2500 mm
- Fast/slow travel speed of the cylinder = 25 mm/s/0,5...5 mm/s
- Total power = 20 kW

Wheel extractor

→ Used to remove wheels from mounted axles, including during wheel removal tests

→ Technical specifications:
- Maximum thrust cylinder force = 800 kN
- Maximum mass of mounted axle = 3500 kg
- Maximum wheel diameter = 920 mm



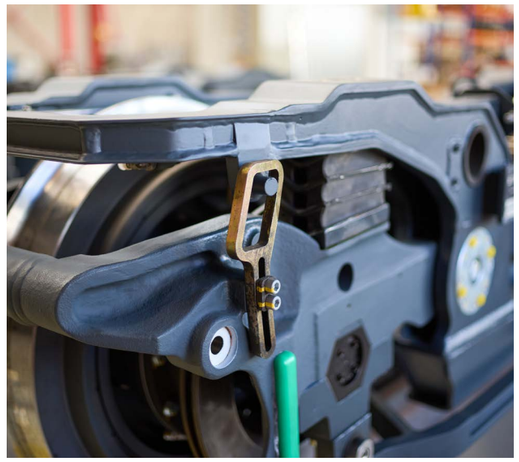
I) ADJUSTMENT TESTS

Bogie adjustment bench

→ This vertical press simulates the load of the carriage body on the assembled bogie.

→ The distribution of this load is monitored using sensors positioned at rail level, with the aim of achieving an even distribution of the VOM and maximum loads.

→ Technical specifications:
· Variable track gauge = 1000 mm/1435 mm
· Maximum bogie mass = 20t
· Bogie wheelbase = 1500 mm ... 3500 mm
· aximum load per cylinder = 150 kN
· Load accuracy per wheel = 100 N



J) INSPECTION AREA BEFORE SHIPMENT OF BOGIES

→ Once again fully assembled and overhauled after approximately 250 to 500 man-hours, depending on the specifications, the bogies are accepted by customers and ready for delivery.

→ A packing list, containing all the information required to track the components, is provided to the customer, either in paper or digital format.

→ TMR's turnkey service also offers the transport of goods, handled by the haulage department. Loading and unloading can be carried out by a crane lorry, thereby relieving the customerof any logistical constraints.

TMR - YOUR CHOICE

- CERTIFIED EXPERTISE
- LONG-TERN KNOWLEDGE AND CAPABILITIES
- PERSONALISED, HIGH-QUALITY TECHNICAL AND COMMERCIAL SUPPORT
- UNCOMPROMISING QUALITY
- COMPETITIVE TURNAROUND TIMES AND ADHERENCE TO COMMITMENTS MADE
- TRANSPARENT AND ATTRACTIVE PRICES
- TURNKEY SERVICE



THEY PUT THEIR TRUST IN US

France

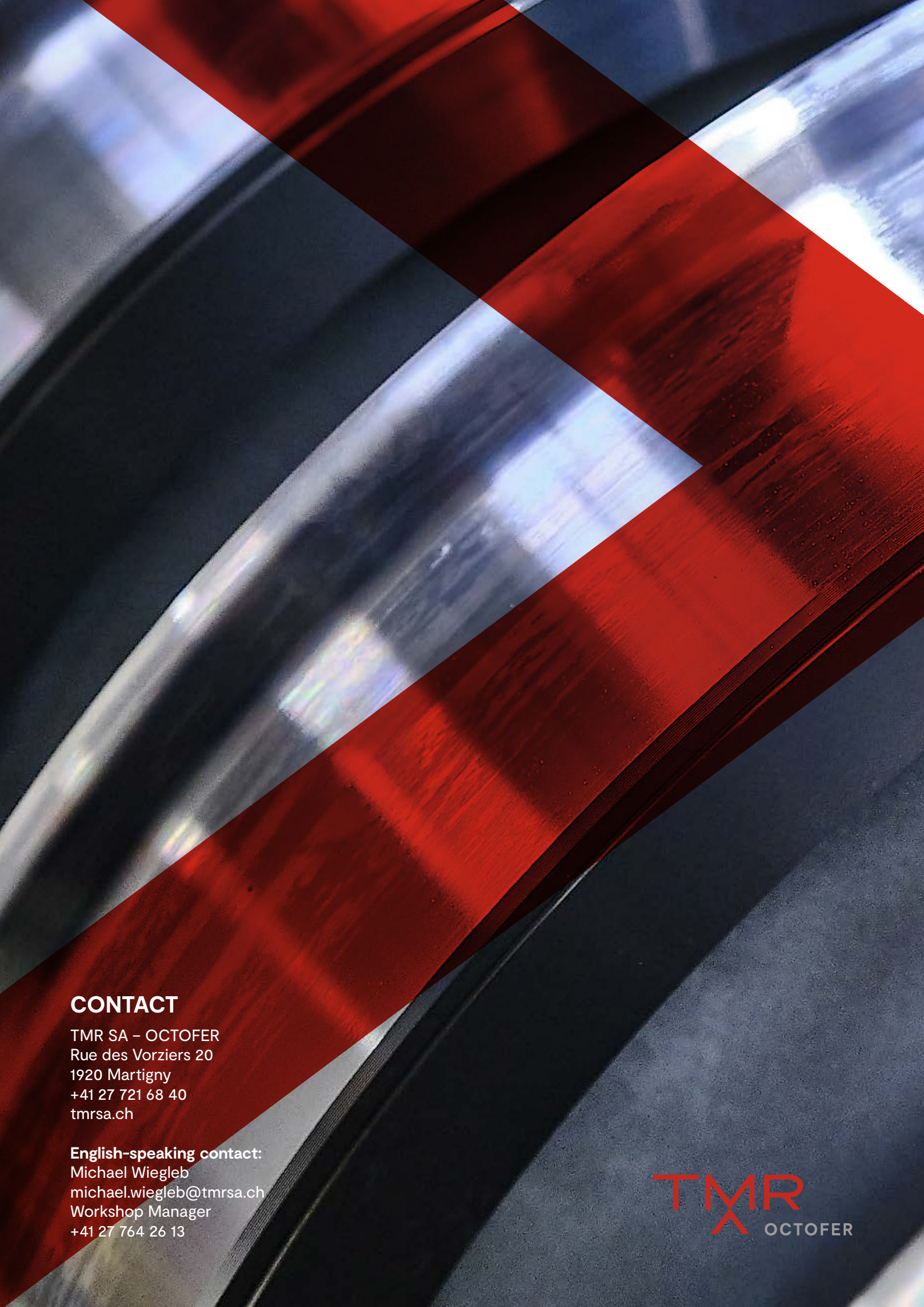
- SNCF (Société nationale des chemins de fer français) : Cerdagne, Etablissements du Mont-Blanc, Compagnie du Blanc-Argent
- AEF (Agence d'essai ferroviaire - Paris)
- CFP (Chemin de fer de Provence)
- CFBS (Chemin de fer touristique
- Baie de Somme)
- Régie départemental du Montenvers
- Semitan (Société d'économie mixte des transports en commun de l'agglomération nantaise)
- RATP Dev Rhône Express
- MCL (Keolis Lyon métro C)
- CFC (Chemin de fer de la Corse)

Switzerland

- ASM (Aare Seeland mobil)
- MGB (Matterhorn Gotthard Bahn)
- TPG (Transports publics genevois)
- TPC (Transports publics du Chablais)
- RA (RegionAlps)
- BLS (Berne-Lötschberg-Simplon)
- CFF (Chemins de fer fédéraux)
- MOB (Chemin de fer Oberland bernois)
- GGB (Gornergrat Bahn)
- MATISA Matériel Industriel
- Scheuchzer
- CJ (Chemin de fer du Jura)
- TransN (Transports publics neuchâtelois)
- Josef Meyer Rail
- ZB (Zentralbahn)

Italy

- Trentino Trasporti (Ferrovia Trento - Malé – Mezzana)



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