Geismar’s product evolution to meet today’s market requirements

March 2022
1

About us
Geismar at a Glance

100 years of railway expertise
Global know-how
Largest range of standardized, cost effective and off the shelf equipment
Tailored-made solution for any railway requirement
Onsite presence and local training

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Our engineering and manufacturing capacity

6 factories in Europe and the United States with specific equipment expertise

9 design offices
100 engineers

We can address any specific regional need and bring creative and productive solutions
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A Global Presence

Commercial subsidiaries
After-sale workshops

In the USA since 1974
Beaufort, SC
Equipment for every type of projects

**MAIN LINE**
- Rails and ties laying
- Track panel laying
- Bed of tie laying

**TURNOUT & CROSSING**
- Track panel laying
- Track panel laying and tilting wagon

**CATENARY**

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Track laying solutions
Equipment Range for track laying = 4 different solutions
Modular and efficient track laying technology

- The most successful method worldwide for track laying
- Best-in-class productivity
- Used in 20 countries
- Chosen by 40 customers
- Flexible installation
- Safe remote-controlled solution
1. Lifting of tracks & turnouts by gantries and positioning of lorries under the load

2. Transporting to laying area and preparation to use the ramp

3. Tracks & turnouts on place and lifting the load with gantries

4. Lorries evacuation and lay down the load on area

5. Adjusting the tracks & turnouts (lateral and longitudinal slewing)

6. Evacuation of gantries and lorries
Turnout & track laying system

Turnout and panel laying with temporary track
Turnout & track laying system

Modularity of the solution with one operator and one remote control

Work site typical efficiency
✓ Laying 525 ft (160 m) turnout in approximately 2 hours (implementation and evacuation of machines)

Other applications
✓ Transport of concrete mixers
✓ Transport of tippers
✓ Transport of poles
✓ Transport of metallic bridges

Maximum laying length: 525 ft (160 m)

Minimum laying length: 20 ft (6 m)
Modular and efficient track laying technology

- High output up to 656 ft of track panels per hour and one switch in less than an hour
- Compatible with other track laying methods (type PEM-LEM)
- Possibility to work on any networks
- Safe remote-controlled solution
X-TRACK
Modular laying solution

Modular configuration for laying any track

- No need for temporary track (trolleys fitted with caterpillars)
- Modular configuration for any tracks (118 ft – 36 m / 22 t) & turnouts (118 ft – 42 m length / 42 t)
- Limited staff required (3 operators for X-TRACK / 2 operators for X-TRACK²)

Remote control

Motorized lifting trolley (LEM)

Telescopic handling gantry (PEM)

Beam track laying (P2PV)

Motorized lifting caterpillar trolley (LMC)
Modular laying solution

Track panels laying without temporary track
X-TRACK
Modular laying solution

Other situations
Track & turnouts laying solution for tilting wagon

Multifunctional and powerful track laying technology

- Lays all track & turnouts types from a panel transportation tilting wagon
- Unique design to maintain geometry of tracks
- Compatible with other track laying methods (PEM-LEM, X-TRACK...)
- Possibility to work on any network and single-track
- Safe remote-controlled solution
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Track & turnouts laying solution for tilting wagon

✓ Easy track & turnouts unloading from a tilting wagon (WPA)
✓ Efficient organization by slewing track & turnouts or by transporting them on motorized transportation trolleys
✓ Safe displacement and accurate positioning of track & turnouts
✓ Modular configuration for any track & turnout lengths and types
✓ Requires only one operator to unload track & turnouts from a tilting wagon

Gantry for tilting wagon (PWP)
Beam track laying (P2PV)
Motorized lifting caterpillar trolley (LMC)
Track & turnouts laying solution for tilting wagon

Turnout laying from tilting wagon
Track & turnouts laying solution for tilting wagon

Other situations
With a load capacity of 20 tons, the ECTR is equipped with both railway wheels and caterpillars, its optimum versatility ensures the laying of:

✓ Up to 3 concrete slabs of 16 ft (5m) long each
✓ Track panels up to 59 ft (18m) long
✓ Up to 20 ties at once
✓ Long welded rails (LWRS) up to 1,417 ft (432m) long
✓ Even further possibilities on request!

ECTR is fully radio-remote controlled and equipped with on-board cameras, along with a laser positioning system ensuring perfect results, the safest way.
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PULLING LWR FROM WAGON

Caterpillars gantry
Catenary laying, renewal and maintenance

From the automated catenary unrolling & rolling system to the self-propelled maintenance unit, Geismar has a complete range of equipment to meet all needs:

- Unrolling with electronic tension control
- Maintenance and renewal of catenary infrastructure
- Quick intervention with road-rail solutions
- Catenary measurement
Productivity Increase for Catenary Renewal

High Output Catenary Renewal Train

- High-performance industrial technology for efficient and mechanized equipment renewal
- Design and supply of 2 high-output catenary renewal trains
- Training and technical assistance

1 cantilever replaced every 10 min
1 catenary post replaced every 17 min

Vs 1 to 2h with traditional methods
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3

Activion: our environmental-friendly range
30 years of experience in electric vehicles in Europe & North America

1990’s

- atac | ITALY

2000’s

- atac | ITALY
- SNCF | FRANCE

2010’s

- PATH | USA
- AMTRAK | USA
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Rolling stock – All range of power

**ELECTRIC SHUNTING UNIT**
- Power: 32 kW
- Available energy: 73 kWh
- Autonomy: 8h

**ELECTRIC TRUCK**
- Weight: 35 tons
- Speed: 40 kph
- Autonomy: 6-9h
- Power: 230 kW
- Available energy: 290 kWh

**ELECTRIC OR BIMODE TRACK MOTOR CAR**
Available Energy:
- 225 kWh (bi-mode)
- Up to 465 kWh (100% electric)

**BIMODE ROAD-RAIL TRUCK**
- Los Angeles

**BIMODE TRACK MOTOR CAR**
- New Jersey

For industrial application: 1 kWh = 1k€ minimum
Casing and certification not included

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## Focus: bi-mode locomotive

<table>
<thead>
<tr>
<th>Gauge</th>
<th>UIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>18,000 mm (59 ft)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Traction &amp; collision</th>
<th>UIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masses</td>
<td></td>
</tr>
<tr>
<td>• 20 tons per axel</td>
<td></td>
</tr>
<tr>
<td>• 80 tons in running order</td>
<td></td>
</tr>
</tbody>
</table>

| Speeds               |     |
|• 2.5 kph (1.5 mph) regulated work zones |     |
|• 30 kph (19 mph) slow speed |     |
|• 100 kph (62 mph) maximum speed |     |
|• 120 kph (75 mph) max towed speed |     |

| Bi-mode power (diesel + electric + batteries) |     |
|• 1 x 550 kW combustion engine |     |
|• 1 x 500 kW ABB generator |     |
|• 2 x 400 kW ABB traction motor |     |
|• 1 x 400 kWh Battery Pack (adjustable) |     |

| Braking               |     |
|• 3,000 l/min compressor |     |
|• Compliant NF IN 14198-A1:2018 |     |

| Auxiliaries | Radio remote control for work zones and storage areas |

| Sockets | 230V & USB |
Electrical Flash-butt welding head

Set up example combining a flash-butt welding head, an energy-supply unit as well as a control-and-command module fitted within a 20-feet iso container.
## Welding heads

<table>
<thead>
<tr>
<th></th>
<th>FLASH600</th>
<th>FLASH850</th>
<th>FLASH1000</th>
<th>FLASH1200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated power at 50% DC</td>
<td>150 kVA</td>
<td>240 kVA</td>
<td>240 kVA</td>
<td>240 kVA</td>
</tr>
<tr>
<td>Transmission factor</td>
<td>1:60</td>
<td>1:60 &amp; 1:54</td>
<td>1:60 &amp; 1:54</td>
<td>1:60 &amp; 1:54</td>
</tr>
<tr>
<td>Maximum forging force</td>
<td>600 kN</td>
<td>800 kN</td>
<td>1,000 kN</td>
<td>1,200 kN</td>
</tr>
<tr>
<td>Maximum clamping force</td>
<td>1,450 kN</td>
<td>1,650 kN</td>
<td>2,500 kN</td>
<td>3,000 kN</td>
</tr>
<tr>
<td>Maximum discharge speed at no load</td>
<td>1.38 in/s (35 mm/s)</td>
<td>1.38 in/s (35 mm/s)</td>
<td>1.57 in/s (40 mm/s)</td>
<td>2.16 in/s (55 mm/s)</td>
</tr>
<tr>
<td>Machine stroke</td>
<td>3.35 in (85 mm)</td>
<td>3.35 in (85 mm)</td>
<td>3.94 in (100 mm)</td>
<td>5.90 in (150 mm)</td>
</tr>
<tr>
<td>Head mass</td>
<td>3,200 kg</td>
<td>3,350 kg</td>
<td>4,000 kg</td>
<td>4,500 kg</td>
</tr>
<tr>
<td>Independent deburring</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Closing weld after stress release</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Independent deburring stroke</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3.35 in (85 mm)</td>
</tr>
</tbody>
</table>
2021 Highlights

- Innovative bi-mode gas/battery propelled truck for urban transit (France)
- First full-battery powered vehicle for urban transit (STM, Canada)
- New Activion battery for hand held equipment (France)
- New slab track panel laying system (Austria)
- 6 track motor cars in less than a year (Azerbaijan)
- New FB-welding container (Mozambique)
- High intensity catenary train (France)
Thank you!
Any questions?