Technical Description
Rail Mounted Gantry Cranes

LIEBHERR
### Technical Data

#### RMG Model Designation

- **S190 L (MT)/(RT)**
  - Rotating machinery trolley (optional)
  - Machinery trolley
  - Lattice structure for main beam
  - Hoist motor size

#### Typical RMG Model Range*

<table>
<thead>
<tr>
<th>A: Gantry span</th>
<th>22 - 70 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>B: Lifting Height</td>
<td>From 9.2 m for 1 over 2</td>
</tr>
<tr>
<td></td>
<td>Up to 26.9 for 1 over 8</td>
</tr>
<tr>
<td>C: Cantilever</td>
<td>0 - 20 m</td>
</tr>
<tr>
<td>D: Cantilever</td>
<td>0 - 20 m</td>
</tr>
<tr>
<td>E: Travel wheel gauge</td>
<td>16.5 m - 18.2 m</td>
</tr>
<tr>
<td>F: Wheel spacing</td>
<td>1 m - 2 m dependant on wheel loads</td>
</tr>
<tr>
<td>G: Wheels per corner</td>
<td>6 - wide leg</td>
</tr>
<tr>
<td></td>
<td>4 - narrow leg</td>
</tr>
<tr>
<td>SWL</td>
<td>40.6 - 50 t single</td>
</tr>
</tbody>
</table>

*Other features and dimensions also available

#### Typical Design Parameters*

- Classification according to F.E.M.: U7-Q2-A7 (Single lift)
- In service wind speed: 72 km/h (20 m/s)
- Out of service wind speed: 151.2 km/h (42 m/s)
- Ambient temperature range: -45°C to +45°C

#### Advantages of RMG for Yard Stack-

- Suitable for both port and rail terminals.
- Suitable for various yard space conditions.
- Increased yard capacity with wider and higher stack possibilities.
- Reduction in emissions and noise.
- Minimal maintenance.
- Electric supply for energy efficiency and reduced running costs.

#### Working Speeds**

- Hoisting with no load: 56 m/min
- Hoisting with rated load: 28 m/min
- Trolley travel (with and without load): 70 m/min
- Gantry travel without load: 130 m/min
- Slewing ± 190° (optional): 1.2 RPM

*Higher speeds also available on request

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Rail Mounted Gantry Cranes (RMG)
**Liebherr Anti-Sway System**  (Eight Rope Reeving)

**Advantages by Design**

- Minimal spreader positioning times.
- No-sway in hoist, trolley and travel directions.
- Anti-skew.
- No additional ropes or devices necessary.
- No head block - Reduced rope load and tare weight.
- Lower energy consumption.
- All electric spreader - Less maintenance.
- Significant increase in productivity when compared with alternative designs.

**Motors and Speed Control System**

**Motors/Suppliers**

- All drives are sized for maximum torque and power requirements, guaranteeing extended lifetime.
- All major components are sourced from reputable European manufacturers.

**Speed Control System**

- The control system used has been specifically developed for container cranes by Liebherr, which has resulted in a flexible, robust construction with exceptional reliability.
- The “plug-in” modular construction of the electronic equipment is designed to maximise crane availability and minimise the necessity for highly skilled electronic personnel.
**Liebherr Rail Mounted Gantry Crane**

- Liebherr reeving system: Sway prevention, not sway correction.
- Regeneration during lowering of load and drive deceleration, results in overall reduction in power consumption.
- Electric (gantry align) steering.
- Rigid robust structure - Optimum for automation. Optional DGPS auto steering and container positioning.
- Direct gearbox driven travel systems.
- Separate drives for hoist, travel and trolley, with no need for side shift on the spreader. Allows superior fine positioning with simultaneous motion.
- Worldwide Liebherr service network.
- Extensive training (in-house and on-site).
- Purpose built state-of-the-art design and production facilities located in Ireland since 1958.
- Highly skilled and experienced employees with expertise in-house for after sales service.
- Responsibility with Liebherr, eliminating interface and compatibility problems (i.e. structural, mechanical and electrical design, production, commissioning and service).

**Options**

- Rotating machinery trolley.
- Interface with TOS (terminal operating system).
- Trim and skew spreader positioning.
- Energy chain/festoon system.
- Non-contact anti-collision system.
- Automation of RMG and container tracking.
- Container positioning system.
- Remote operation option.
- Fault data between crane and office by RF link/Fibre optic with optional link to the Liebherr factory.

**Diagnostic and Management System**

**Description**

- Liebherr designed and built.
- Windows OS with CoDeSys logic control system.
- Status of switchgear and external electrical components.
- Stores up to 20,000 faults.
- User-friendly interface with easy to use colourful screens.
- Independence of crane logic system, therefore does not interfere with crane control in the event of self failure.
- Includes trending and tables for production data and drive data.

**Summary of Main System Features**

- General Control Overview.
- “Crane ON” status.
- Individual Drive ON screens (one for each drive).
- Detailed drive data (motor current, voltage, speed).
- Wind speed and history.
- Spreader status.
- Fault stack.
- Load statistics.
- Maintenance.