Simplified, economic solutions for every urban mass transit situation

Robust, service proven assemblies.
Meets all requirements for mass transit vehicles.
Easy to change wear strips.
High precision pneumatic pressure system allows perfect control of the pantograph height and contact pressure at every extension level.

Faiveley Transport Range of pantographs
INSULATORS
Insulators are fixed on the roof to support the pantograph (3 or 4 feet integration).

FRAME
Made of welded steel profiles, this frame supports:
• Hinged system.
• Balancing system.
• Electric connection points.

PNEUMATIC PRESSURE REGULATION UNIT
The pneumatic pressure regulation unit's function is to keep a constant pressure into the cushion whatever the pantograph extension. It also adjusts the pantograph movement speed (raising and lowering).

BALANCING SYSTEM
The pantograph is balanced by air cushion. This air cushion applies a torque to the lower arm by means of a cam-chain system. Its function is to balance the hinged system and ensure the application of the constant contact force.

ACTUATION SYSTEM
The pantograph extension is controlled by the air cushion. As the cushion is causing the pantograph raising, the lowering is caused by gravity. The lowering speed is controlled by the damper and limited by the bleeding air flow.

HINGED SYSTEM
Made of steel welded tubes, it includes:
• T-shaped lower arm
• Upper arm
• Upper rod
• Balancing shaft

The registration assembly (upper rod + balancing shaft) keeps the current collecting head horizontal within the whole collecting extension. Articulations of lower and upper arm are fitted with sealed ball bearings and sealed needle bearings. Each articulation is protected against current damages by means of flexible shunts.

CURRENT COLLECTION HEAD
The current collecting head includes wear strips, horns and suspension device.

CURRENT COLLECTION DAMPER
The damper is a single acting damper, which comes into action during the downward movements of the hinged system.

REFERENCES
LX 1800
Project | Customer     | Country
---     | ---           | ---
Chennai | Alstom VPF    | India
Marmaray | Hyundai Rotem | Turkey
Metro Delhi | Bombardier | India

GLOBAL TECHNICAL DESCRIPTION

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Maximum speed</td>
<td>up to 160 km/h</td>
</tr>
<tr>
<td>Extension</td>
<td>1100mm up to 3600mm</td>
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<tr>
<td>Current</td>
<td>up to 3000A</td>
</tr>
<tr>
<td>Insulation</td>
<td>750V DC; 1.5kV DC; 3kV DC; 15kV AC; 25kV AC</td>
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<tr>
<td>Basic installation</td>
<td>3 feet (600 x 1000mm) or 4 feet (500 x 1000mm)</td>
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<tr>
<td>Motorisation</td>
<td>Air cushion</td>
</tr>
<tr>
<td>Weight without insulators</td>
<td>approximately (according to different equipment and extension) 140kg (version 2600mm)</td>
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<tr>
<td>Static force for catenary</td>
<td>configurable from 50N to 120N</td>
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Standard TSI
For mass insulation distances: NF F60 101, Suitable for AC and DC operation

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