Our references include:

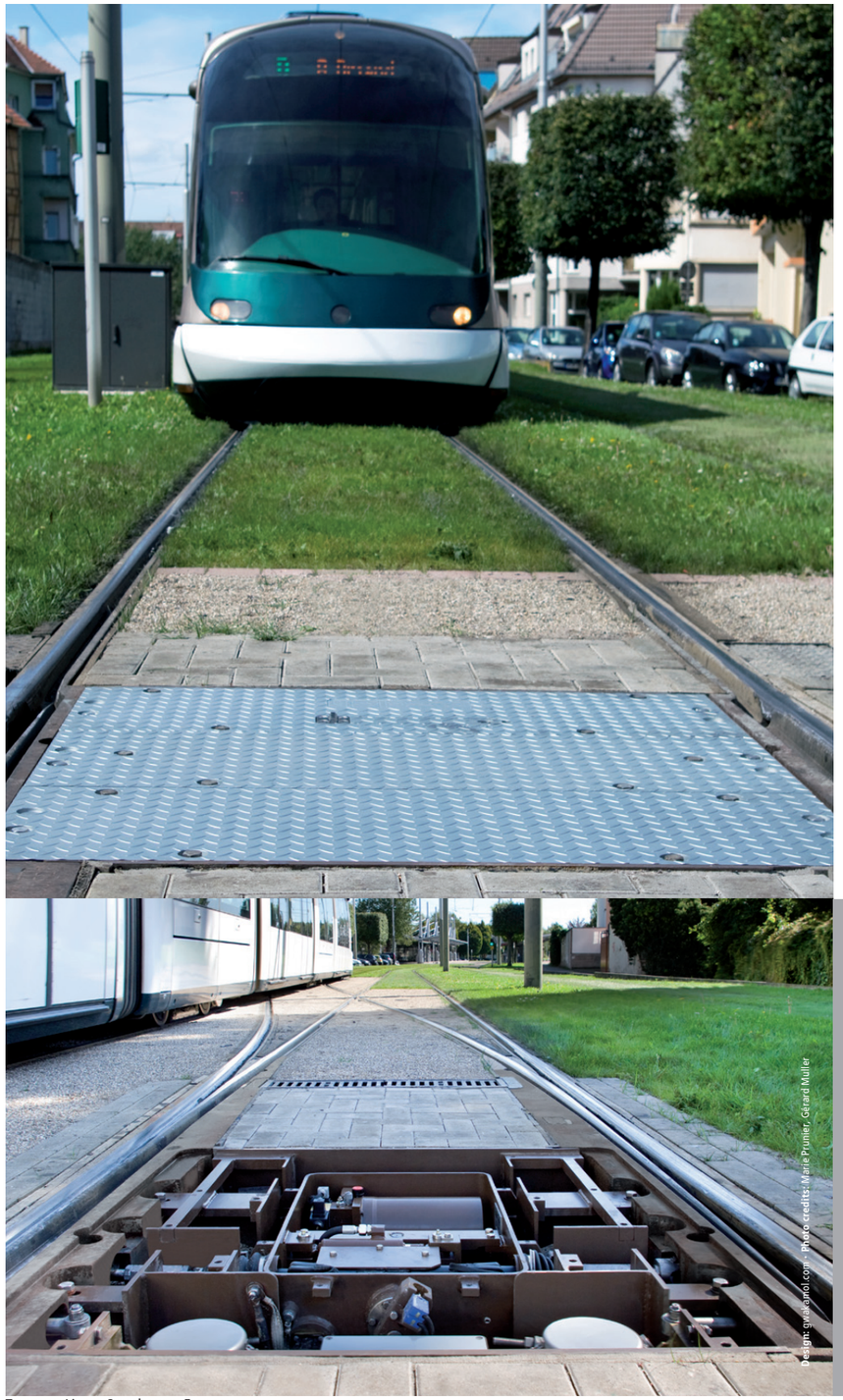
France: Angers, Besançon, Bordeaux, Brest, Grenoble, Le Havre, Le Mans, Lille, Lyon, Marseille, Montpellier, Mulhouse, Nantes, Nice, Orléans, Paris, Rennes, Rouen, St-Etienne, Strasbourg, Toulouse, Tours and Valenciennes

---

Portugal: Porto
Turkey: Bursa

Morocco: Casablanca, Rabat
Algeria: Algiers

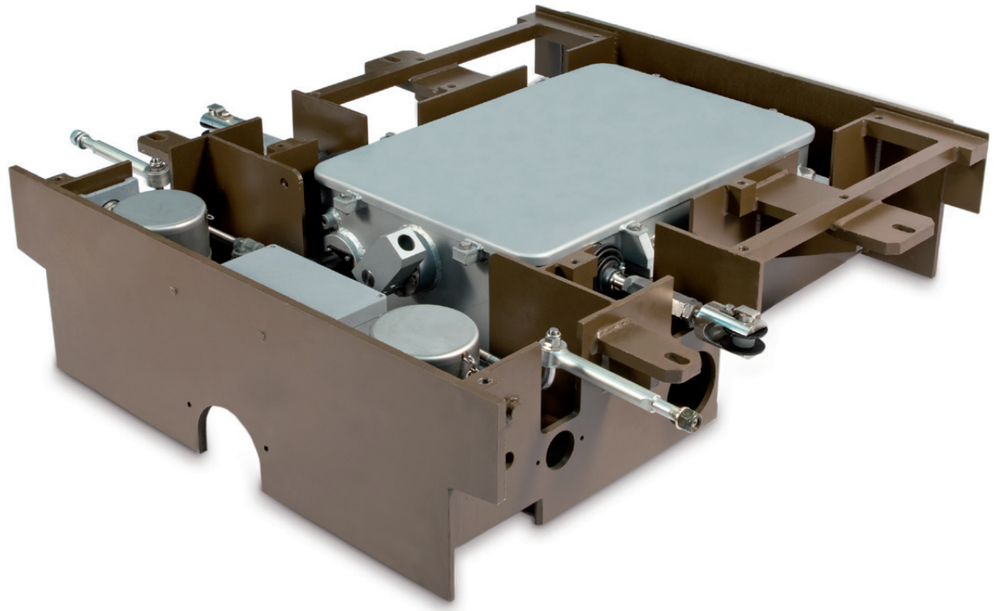
China: Huai'an
Australia: Sydney



Tramway Line – Strasbourg, France

Vossloh Cogifer SA
21, avenue de Colmar
92 500 Rueil-Malmaison - FRANCE
Tel.: +33 (0) 1 55 47 73 00
Fax: +33 (0) 1 41 29 19 18
info@vossloh.com

www.vossloh.com



MCEH61 / MTEH61
Tramway point machine

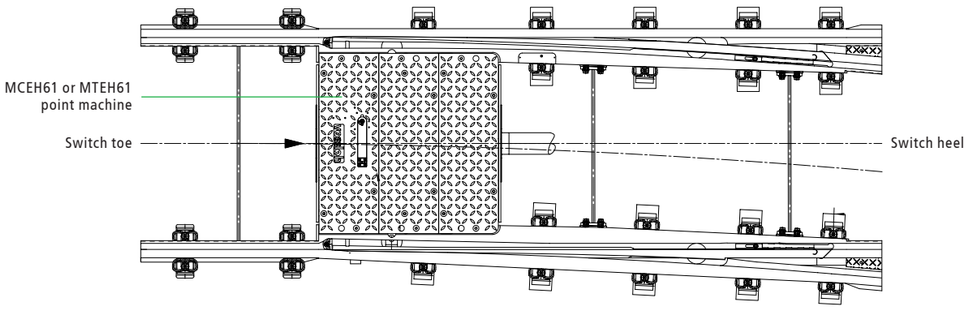
"The point machine that is installed in the roadway, and designed for tramway..."

5100-201-001-rev2

'Robust, easy to install and low maintenance, the MCEH61 and MTEH61 point machines are reliable electro-hydraulic solutions that have been developed for the tramway.'

The electro-hydraulic 61 point machine is used to operate tramway turnouts. The MTEH61 version is the trailable version (accidental trailing), the MCEH61 version is the clamped version. Each point machine is installed in an earth box that forms the electro-hydraulic 61 drive.

The EH61 point machine is highly adaptable. It can be transformed from a clamped version into a trailable version in just 30 minutes, and vice versa. Its modular and ergonomic design enables fast and easy maintenance.



The EH61 drive has been specially designed to be installed in the roadway. It is resistant to road traffic loads and other urban aggressions. The point mechanism is water and dust proof.

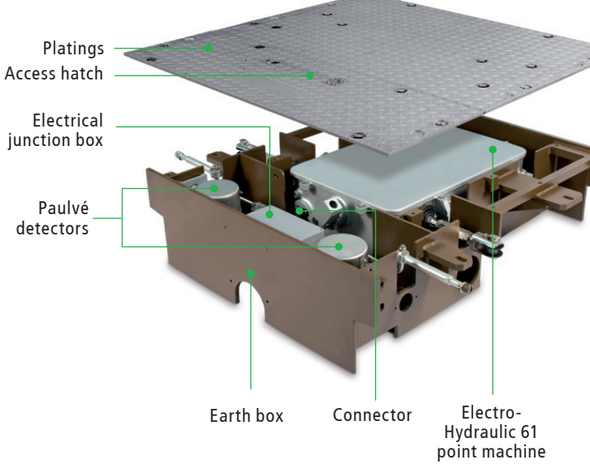
Mounted inside the track, the EH61 point machine drives the switch via interface parts that are coupled to the switch rails.

On a depot track, in case of accidental switch trailing, the MTEH61 point machine enables trailing of the switch without any damage.

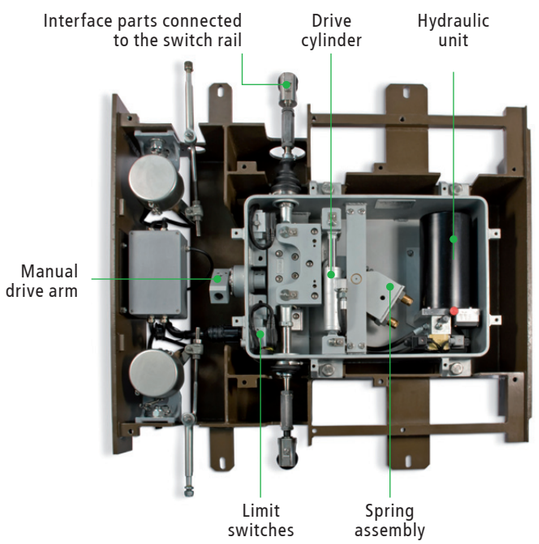
Description of the EH61 point machine

EH61 point machine is made up of the following elements:

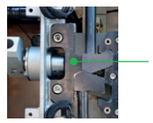
- One hydraulic unit (optional reversible unit)
- One drive cylinder
- Two limit switches or more
- One main connector
- Two interface parts each connected to one switch rail
- One spring assembly ensuring stability of clamping (MCEH61) or proper application (MTEH61) of the switch rails
- A manual drive arm actuated by a lever (20 daN, being sufficient to maneuver with a 1-metre lever)
- Changeover detection to manual or automatic mode



MTEH61 drive



MCEH61 drive



Description of the EH61 drive

The electro-hydraulic 61 drive consists of the following components:

- One earth box
- The EH61 point machine
- Two Paulvé detectors, an other Vossloh flagship product
- One electrical junction box
- Platings with access hatch and access detection

Technical characteristics

- Adjustable stroke: 30 to 70 mm
- Throw force: > 400 daN
- Load applied to the switch rails: 220 +/ 10 daN
- Driving time: ≤ 1,2 s
- Electrical voltage: 230/400V AC, 230V AC single phase, others on demand
- EH 61 point machine mass: 210 Kg
- Operating temperature : -30°C to +70°C
- Hydraulic limit pressure: 120 bar (for user and product safety)
- Sealing: mechanism (IP67)
- GPS (Ground Power Supply) compatible
- Operation counter: optional

Installation and application

EH61 point machine provides unprecedented adaptability:

- Installed in tramway track in the roadway
- Suitable for 1 000 mm track, 1 435 mm track or any gauge greater than 1 000 mm
- Installation in an earth box
- The earth box, equipped with evacuation pipes, allows efficient water drainage
- Its modular and ergonomic design allows for fast and easy maintenance for maximum availability and reduced maintenance costs

Operation

Within its operating temperature range, EH61 point machine achieves the turnout operation under the action of a hydraulic cylinder. With the MTEH61 version, the application force is applied by a spring assembly.

With the MCEH61 version, the applied switch rail is secured and the open switch rail is stabilized by the spring assembly set. The hydraulic concept allows the mechanism to be operated manually after the changeover to manual mode has been detected.