

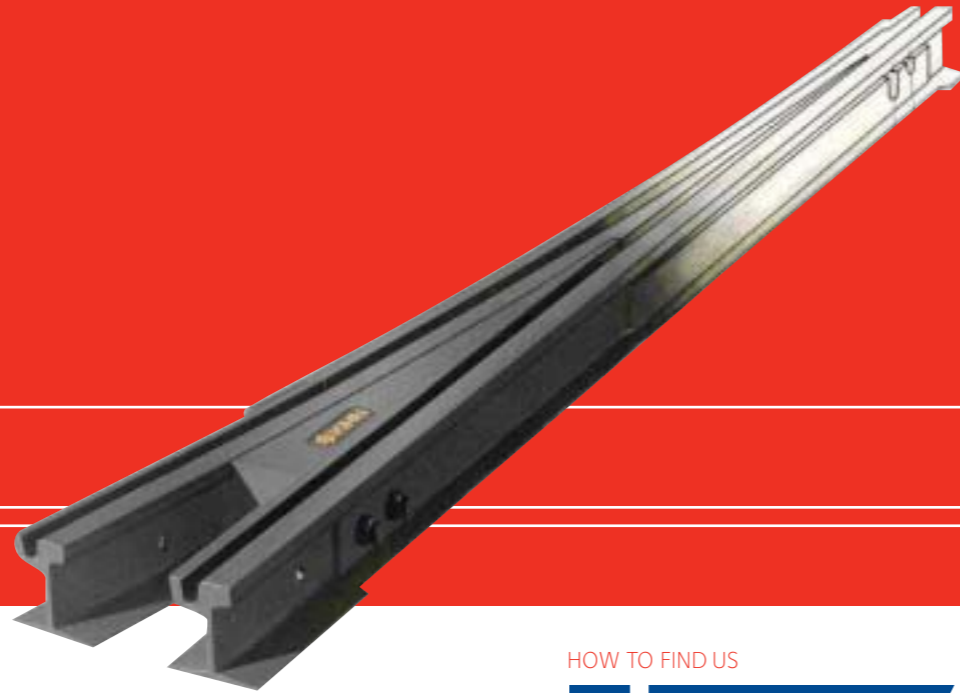
Switch and Crossing layouts have been supplied in the UK by Corus Cogifer to

Docklands Light Railway
Manchester Metro
Tyne & Wear Metro
Midland Metro
Nottingham Express Transit

And by Cogifer worldwide to

Antwerpen DE LIJN, Belgium
Strasbourg Tramway, France
Amsterdam GVA, Holland
Ferro de Lisboa, Portugal
Seattle Metro, USA
Dallas Area Rapid Transit, USA
Rome Tramway & Autobus, Italy
Cairo Transport Authority, Egypt
Hong Kong Tramways, MTRC & KCRC

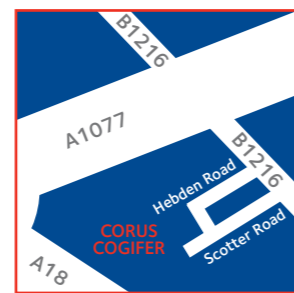
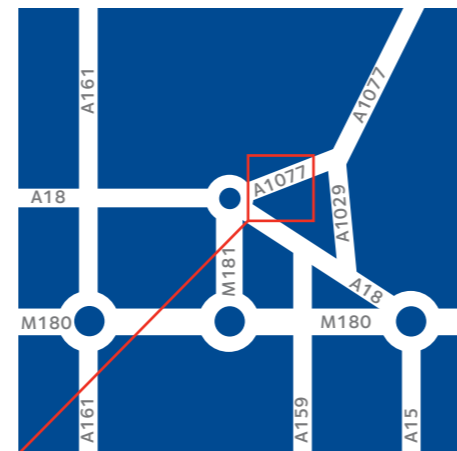
and many more besides.



Tramway & Urban Railway Systems



HOW TO FIND US



Corus Cogifer
Switches and Crossings Ltd
Hebden Road
Scunthorpe
DN15 8XX
England
T +44 0 1724 862131
F +44 0 1724 295243
E info@coruscogifer.com
W coruscogifer.com





Corus Cogifer is uniquely positioned to be able to offer a complete urban rail solution tailored to meet the specific requirements of the customer.

Through their relationship with parent Companies Vossloh Cogifer, who has designed and manufactured complete urban transport systems for many major cities worldwide and Corus, who is a leading supplier of groove and special rail sections, Corus Cogifer is able to meet the growing demands of the UK urban transport market. Corus Cogifer is able to call on the broad base of experience and technological innovation offered with our Group to guarantee comfort, safety and reliability.

Groove Rail Solid Monobloc Switches with removable blades

Cogifer's own unique development of Tramway switch systems comprises two elements; a Monobloc switch 'cradle' and a fully removable switch blade. The Monobloc cradle is fully machined from ultrasonically tested rolled profile CC397 and all ends are milled to suit the exact sections of adjacent groove rails to ensure perfect transition prior to welding to lengths of rail. As all flangeways and transition areas are milled on sophisticated CNC milling machines this allows unlimited design. Switches can be located on spirals or curves without necessitating special patterns.

The flexible switch blades, which are fully machined from a rolled steel profile CC332, are fastened at their heel with a secured wedge. This design enables a quick replacement and easy maintenance of switches. There are a number of different switch rail types available to suit a range of track conditions including the use of switch rail from cast 12/14% manganese steel or heat treated steel with shop welded heels for heavy traffic lines. The maintenance requirements can be reduced by the options of installing either a central automatic lubrication system for the slide plates, with integrated power in the signal box or a lubrication free special coating (such as Nicol Chrome) on the sliding area of the switch rails.

The Solid Monobloc switch and crossing design offers a number of advantages over other designs of Groove Rail switches:

- A constant quality throughout all components is ensured because a rolled profile is used
- Switches are adaptable to custom specification of design geometry because no pattern work is involved
- CNC complete milling guarantees straight running surfaces and smooth curves
- Welded heel rails mean no bolted joints and the switch is housed in one single piece
- Monobloc cradle joints are welded to track leading to reduced noise pollution and less maintenance
- Easy field assembly because of exact matching of milled joints to adjacent groove rail
- Ability to rebuild worn components and speedy replacement of switch tongues secured by a wedge
- Standard heating can be installed on the stock rail or under sliding surface

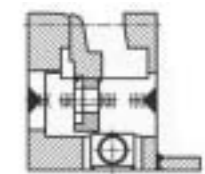
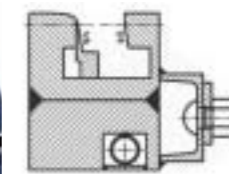
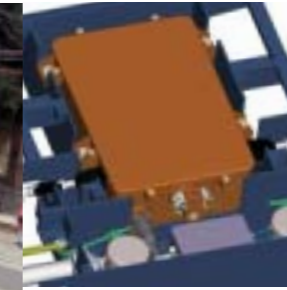
Additionally the production of single piece crossings offers numerous advantages during installation:

- No adjusting the alignment of individual crossings
- No requirement to assemble using temporary fishplates or fitting of permanent fishplates in the finished crossings
- No grinding or welding (which can lead to deformation due to welding shrinkage)
- Considerable reduction in installation time
- Elimination of tracklaying errors

Vossloh Cogifer has now developed the **Cogidur** system for switches and crossings whereby the switch and crossing are manufactured out of different components welded together. The upper part of the central bloc which is in contact with the wheel is made of heat treated steel having a high tensile strength of 1300 N/mm² and a hardness of 400 HB minimum. The lower part of the item is manufactured from construction strength steel with the ends of the central bloc milled to exact sections of adjacent rails in order to ensure perfect transition. Additionally the heel and adjacent rails can be provided with head hardening. The Cogidur system has been successfully installed and proven on a number of projects throughout the world including the Nottingham Express Transit.

CORUS COGIFER

Typical sections through Cogidur Switch incorporating heating element and point machine coupling.



Solid Monobloc Crossings

The crossings are fully CNC machined from a rolled steel profile CC332 grade 700 N/mm². The CNC milling allows for precise machining of all the functional surfaces, providing an optimised wheel transfer, reducing wear and noise. Lengths of groove rails can be electric shop welded to the 4 legs of the Monobloc to ensure a direct connection to the standard groove rail track by means of thermit welds. The flangeways can be custom machined to produce deep or flange bearing surfaces according to specific geometry and wheel profiles. The technological know-how and vast tramway experience of Vossloh Cogifer can be called upon to carry out specific wheel rail interface studies to design the optimum flangeway type and profiles.

By using advanced CNC milling machines equipped with a mobile frame Corus Cogifer is able to facilitate the manufacture of single piece crossing arrangements and complex layouts of large dimensions up to 15m long.

There are a number of advantages to assembling and machining complex layouts as a single piece including the ability to ensure absolute evenness of surface, perfect geometry of curves and maintenance of minimum tolerance on gauge.

Switch Actuation, Locking, Detection and Heating Systems

Vossloh Cogifer has their own specialised track signalling department which has been involved with the design, manufacture and installation of signalling equipment on numerous urban rail projects. They have developed the motorized MCH61 series of locking and trailable electro-hydraulic point machines for the operation of road level tramway points and crossings. The point machines are designed to fit in (and be easily removable from) durable casings between the tracks and also include two watertight EH61-02 Paulvé type controllers for switch blade position detection, optional switch heating and manual operating lever.

Consideration has also been given to the need for heating the movable parts with heating elements integrated into the switch at an early stage.

A large range of route control interlocking systems, partially or fully computerised, have been developed by the Vossloh Cogifer signalling department. These interlocking and track monitoring systems have been chosen by many public transportation systems throughout Europe.