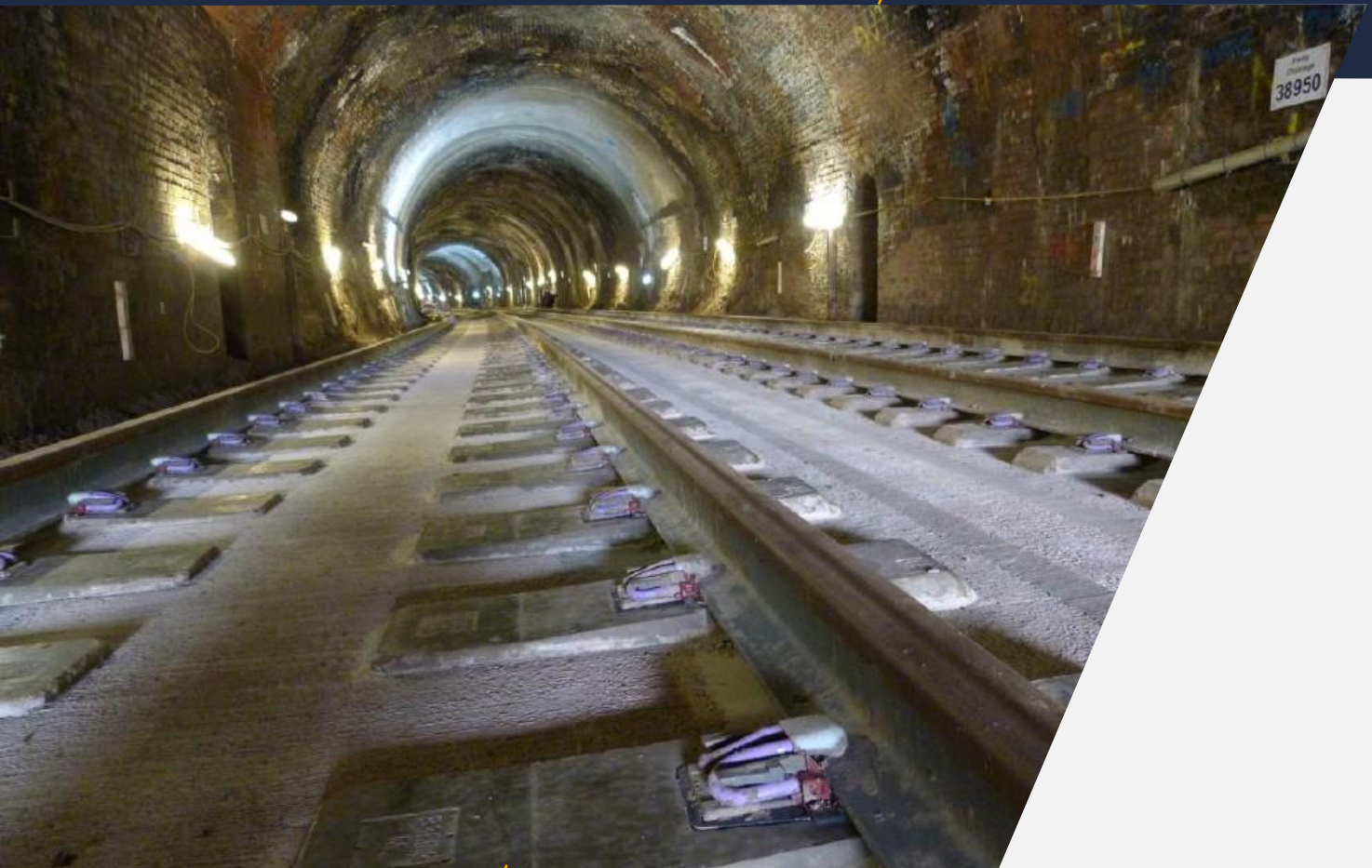


PANDROL

FASTCLIP FCA Assembly

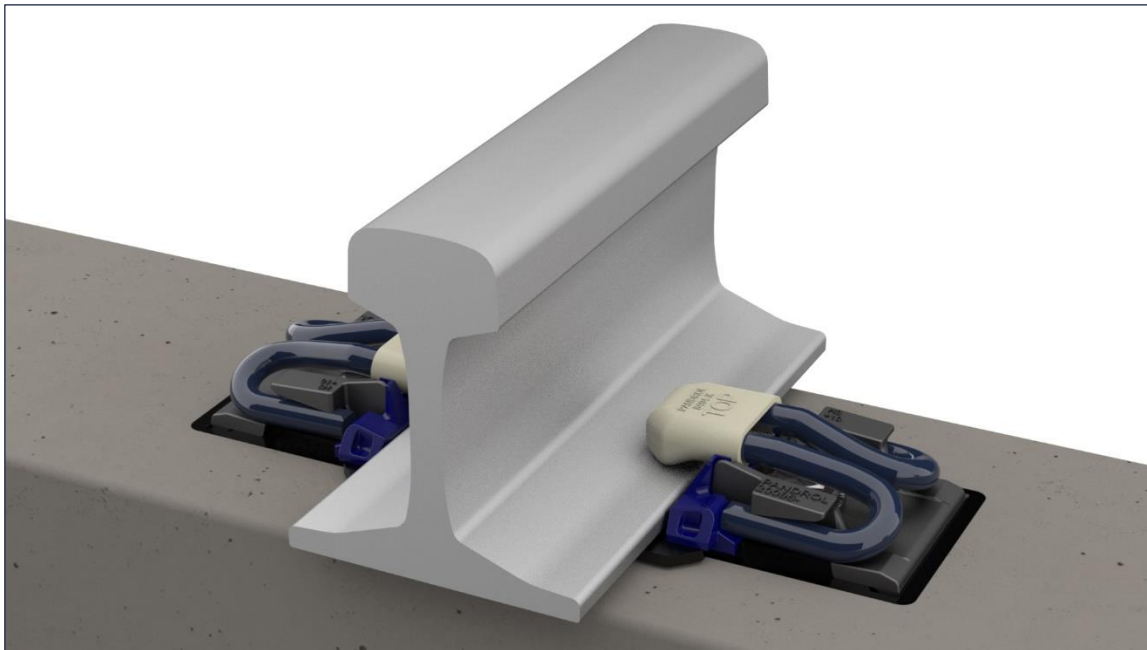
PRODUCT GUIDE



001-14_C
2nd February 2021

Partners in excellence

General Description



PANDROL FCA is a resilient rail fastening assembly with the unique PANDROL ‘switch-on/switch-off’ function that enables fast, efficient track installation and reduced maintenance costs. This proven PANDROL FASTCLIP technology has been combined with the facility to make rail height adjustments to allow for track maintenance.

Can be supplied pre-assembled onto pre-cast elements to the construction site with the clips set in the parked position. The fastenings are then installed by driving the clips onto the rail foot using a track machine or an installation hand tool. This allows track construction and maintenance operations to be performed swiftly and with high levels of efficiency and cost savings.

Designed for long life, the assembly can be fully dismantled for inspection and maintenance purposes, with all parts being replaceable.

Design options for gauge widening, gauge redemption and gauge adjustment. Special track application solutions are available for joint bars and zero/low longitudinal restraint (ZLR) requirements.

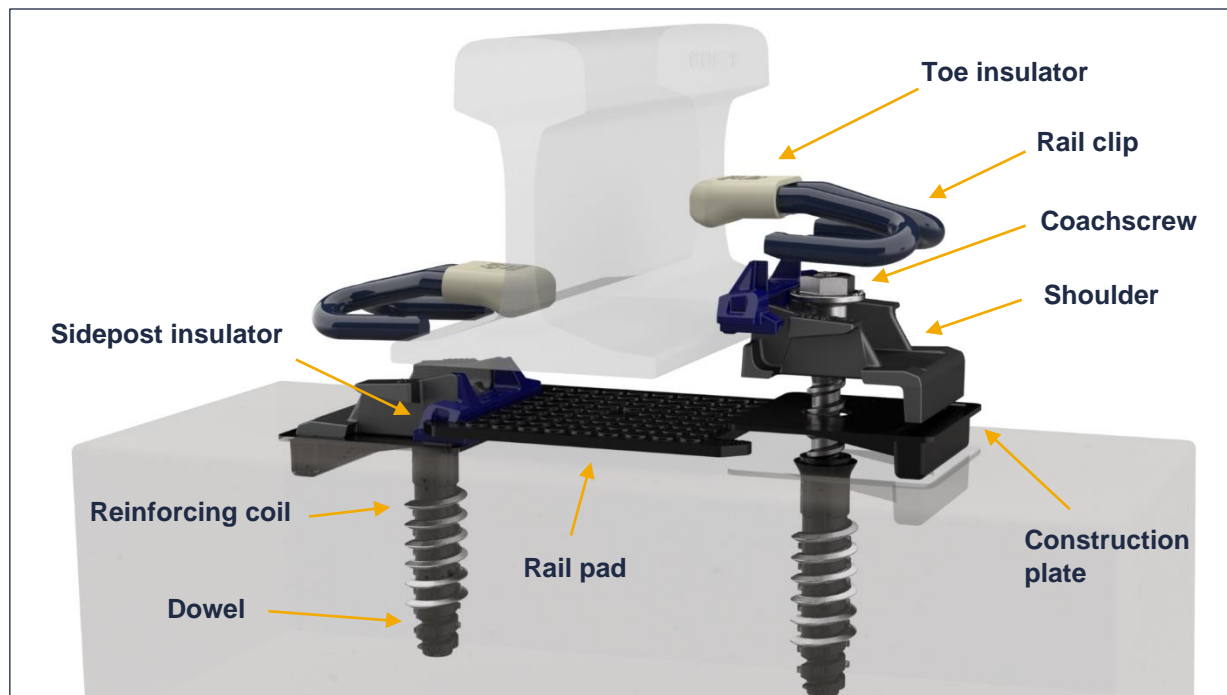
Recommendations for Ballastless Track

Technical Features	
FASTCLIP FCA system	Optimised for use on ballastless track systems where vertical adjustment is required without the need for a baseplate.
Lateral adjustment (If required)	Track gauge adjustment of +/-10mm is achieved in increments of 1mm by changing sidepost insulators.
Vertical adjustment	Up to + 75 mm, by means of fitting shims underneath the assembly and exchange of cast shoulder

FASTCLIP FCA		Operating Conditions					General Suitability		
CEN Cat	Track Type	Typical Rad	Min Rad	Typical Axle	Max Axle	Max Speed	Assembly resilience (kN/mm)		
		(m)	(m)	(kN)	(kN)	(km/h)	100 - 200	50 - 100	15 - 50
A	Light Urban / Tram	80	40	100	130	100	✓	✓	✓
B	Light Urban / Metro	100	80	160	180	140	✓	✓	✓
C	Main Line	400	150	225	260	250	✓	✓	✓
D	Main Line, High Speed	800	400	180	260	350	✓	✓	✓

Special Applications and Upgrades						
Joint Bar	ZLR	Low Clamping Force	High Clamping Force	Corrosion Protection	UV Protection	
✓	✓	✓	✓	✓	✓	

Standard Components

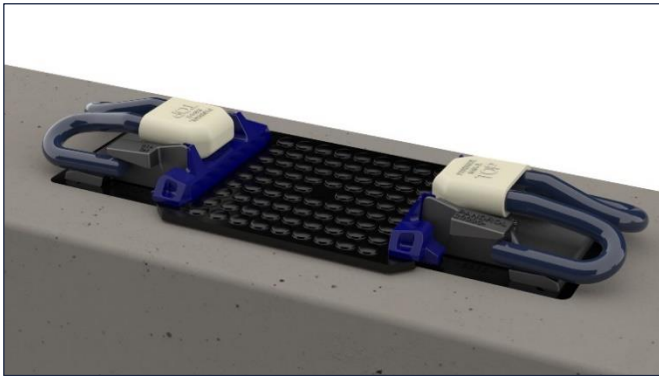


Component (per railseat)	Remarks	Part No.
FASTCLIP FC rail clip (2)	Spring steel	Refer to assembly drawing
Toe insulator (2)	HVN	
Pad - rail (1)	Rubber, EVA, Polyurethane options as required	
Sidepost (2)	HVN	
Shoulder (2)	SG Iron – Cast in Sleeper	

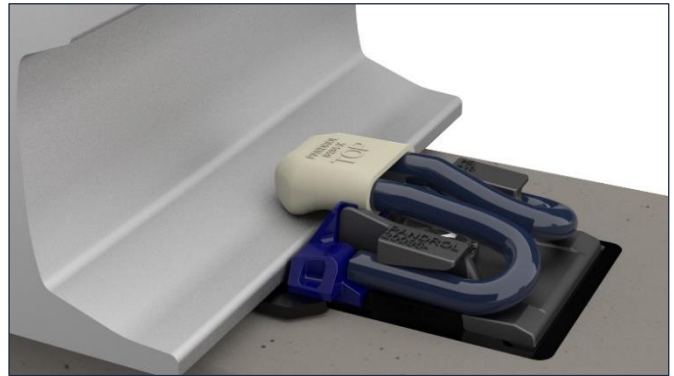
Construction

Sleepers are delivered to site with all the components pre-assembled and held captive with the FASTCLIP FC clips installed to the 'parked' position ready to accept the rail. Once the rails are threaded the FASTCLIP FC clips are driven forward onto the railfoot either mechanically or manually.

Clips in parked position



Rail threaded and clips fully installed



The system lends itself to various track construction methods. Contact PANDROL for full details.

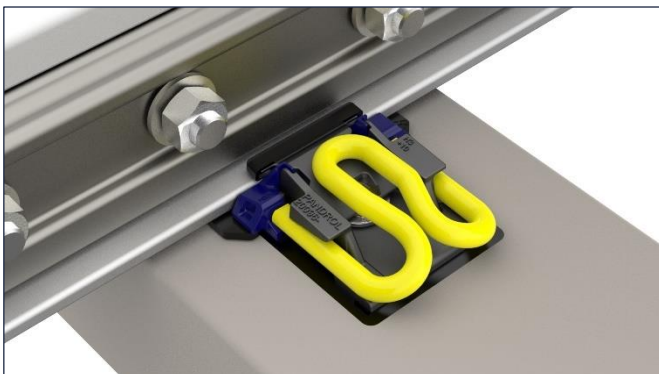
Special Applications

The PANDROL FASTCLIP FCA system can be used with:

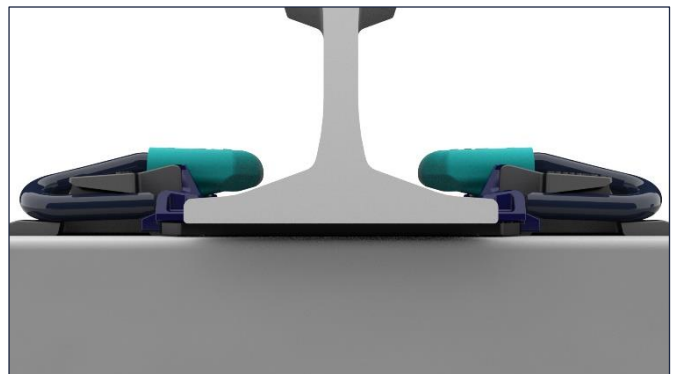
Rail Joints. The FC1402 rail clip is supplied along with an 'Interface Plate' which applies the clamping force to the rail foot in the limited space available.

ZLR Systems. The zero longitudinal restraint system can be supplied where differential thermal movement between the support structure and rail is required.

Joint bar fastenings



ZLR – Zero longitudinal restraint



Handtools and Machinery

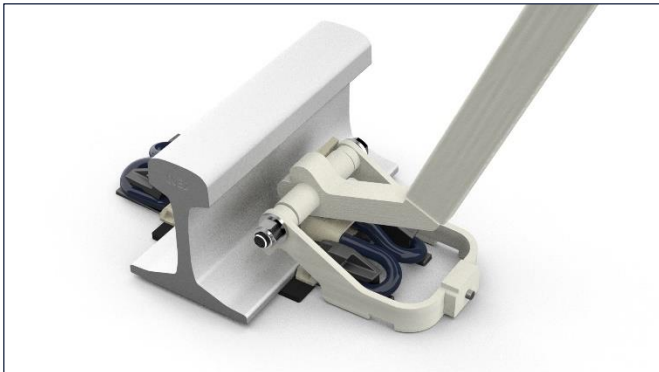
Handtools

The FASTCLIP FCA assembly uses two different handtools; one tool for installation and one tool for extraction. Refer to the Operation and Maintenance Manual for all handtool information.

Clip installation



Clip extraction



Machinery

A range of automated machines are available for larger scale FASTCLIP FCA sleeper installations.

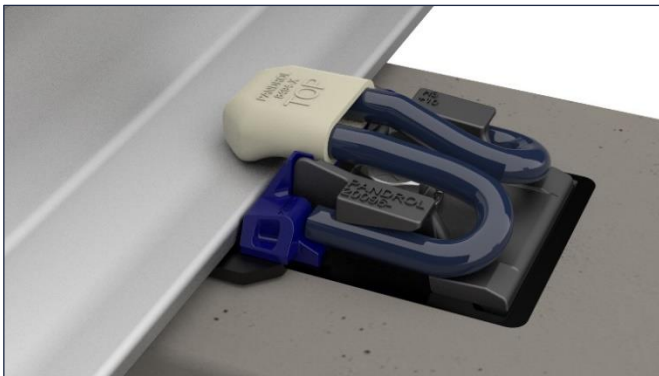


Lateral Adjustment

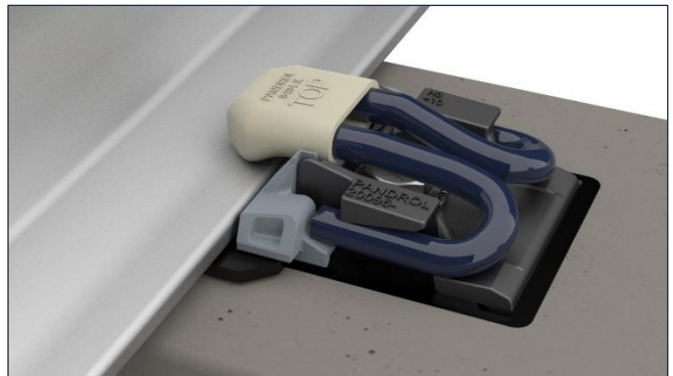
The FASTCLIP FCA system is available in different variants. Lateral rail adjustment can be offered through a simple exchange of the FASTCLIP FCA sidepost insulators. PANDROL can supply a range of different thickness FASTCLIP FCA sidepost insulators to enable positive or negative lateral rail adjustment relative to track gauge. Each sidepost insulator being identified with a different colour.

- Track gauge adjustment up to +/-10mm (+/-5mm per railseat)
- Range of sidepost = 6mm to 16mm

Example: 11mm sidepost



Example: 14mm sidepost



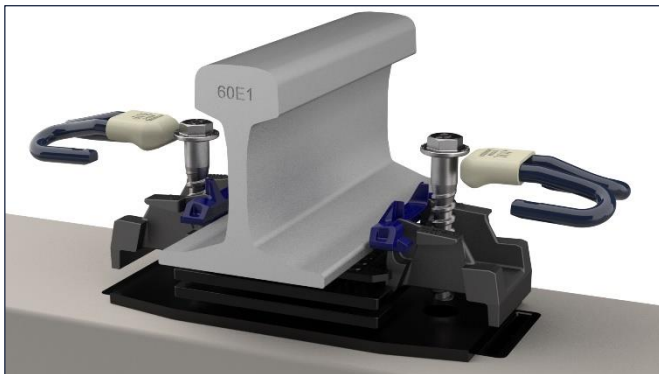
Vertical Adjustment

Vertical adjustment can be achieved by using alternative shoulders and placing height adjustment shims under the shoulders and rail pad to adjust the rail height within a 75mm range. The amount of vertical adjustment required will determine the shoulder and height adjustment shim configuration. Adjustment can be made up to 75mm in 1mm increments.

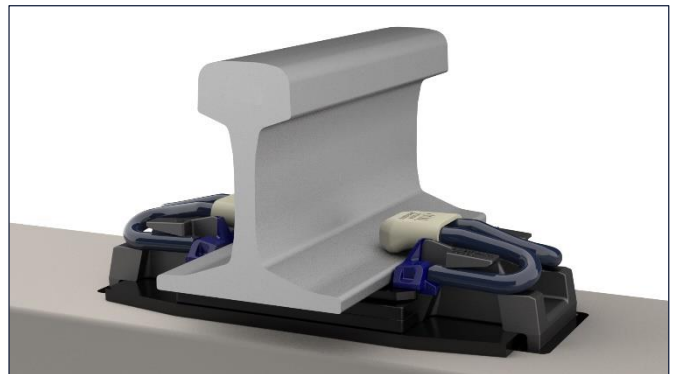
Height Adjustment

Ht Adjustment Required (mm)	Shoulder Type	Height Adjustment In Railseat (mm)	Spacer Plate for Extreme Height Adjustment	Height Adjustment Shim on Concrete (mm)
0-10	Type 1 - 0-10mm Shoulder	0	-	1-10 Ht adjustment shim as req'd
11-20	Type 2 - 10-20mm Shoulder	1 x 10 Railseat shim	-	
21-30	Type 3 - 20-30mm Shoulder	2 x 10 Railseat shims	-	
31-75	Types 1 - 3	Repeat above increments	1	

Insertion of height adjustment



Complete assembly



For further detail consult PANDROL



Safety, Life Cycle and Environmental Information

SAFETY - PANDROL Fastener components are safe to handle during installation and use based on intended and expected service conditions. Contamination during service from railway traffic (passenger and freight) is expected, so appropriate precautions (e.g. the use of personal protective equipment, PPE) are recommended when inspecting / replacing fastener components in this condition. Safety warnings are included on PANDROL brand handtools.

ENVIRONMENT - PANDROL Fastener components include recycling codes (e.g. plastic insulators, bushes, shims and pads) and can be readily recycled (e.g. cast iron). Local regulations should be respected when disposing of packaging materials and when disposing of worn / life expired fastener components.

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Find out more at

pandrol.com

PANDROL Fastenings
Gateford Road
Worksop, Notts
S81 7AX
UK

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