

**PANDROL**

Partners in excellence

**25**

**Anniversary**

Celebrating 25 years of  
Pandrol in Thailand

# SRT Thailand Track Fastening Guide

2024 Edition

## Partners in excellence

At Pandrol, we believe in quality above all else, and are proud to provide innovative products and services that support rail infrastructure. Across the world, our solutions define the industry standard in rail fastenings, aluminothermic welding, electrification, track engineering and maintenance, and noise and vibration reduction.

This booklet is intended for use by all those involved in the specification, installation, and maintenance of Pandrol fastenings for State Railway of Thailand (SRT) and has been designed to answer the most frequently asked questions relating to our fastenings. It is not applicable to other railways because product specifications vary from region to region.

# 25

## Anniversary

Celebrating 25 years of  
Pandrol in Thailand

## Contents

1 Fastclip FC / 4

2 Fastclip Baseplate / 14

3 e-Clip / 22

4 e-Clip SRS / 40

5 VIPA DRS / 48

6 Fastening Systems  
for Steel Structures / 58

7 Depot Fastenings / 70

8 DSA / 76



# Fastclip FC

Fastclip is a total system in which all components are delivered to site pre-assembled on the sleeper or baseplate. Once the sleepers are laid and the rail installed the clip is simply pushed onto the rail by means of a simple drive action.

Fastclip FC is a threadless fastening with low maintenance and pre-assembly of the fastening which remains captive on the sleeper. The unique switch on – switch off system enables fast efficient track installation (seamless destressing, easy unclipping for welding etc.) and reduced maintenance costs. It is designed for all categories of track and rapid installation by mechanised equipment.

Fastclip FC also eases the on-site logistics during track construction. As the system is fully captive, there is no need to distribute components (clips, pads, insulators) alongside the track and there is no risk of loss or theft of components.

## → Fastclip Assemblies (Ballasted Track)

Pandrol Assembly Reference	Description
21868	<p><b>FC1509 Concrete sleeper assembly for 54E1 rail 1000 mm gauge. Gauge widening available up to +20 mm*</b></p> <p><b>Qty per Rail Seat</b></p> <p>10856 FC1509 Clip Assembly (black) x2 10292 FC 8 mm Insulator (natural) x2 21007 FC HDPE Rail pad x1</p> <p><i>* Gauge widening achieved through combination of sleeper type (shoulder setting) and insulator change. Standard sleeper = 1000 mm nominal gauge. GW1 sleeper = 1002 – 1010 mm gauge. GW2 sleeper = 1012 – 1020 mm gauge.</i></p>
24774	<p><b>FC1511 Concrete sleeper assembly for BS100A rail 1000 mm Gauge*</b></p> <p><b>Qty per Rail Seat</b></p> <p>11503 FC1511 Clip Assembly (red brown) x2 11746 FC 11 mm Insulator (green) x1 21084 FC 12 mm Insulator (light blue) x1 21115 FC HDPE Rail pad x1</p> <p><i>*Interchangeable with 54E1 rail in the same rail seat via insulator, rail pad, and rail clip change</i></p>



## → Fastclip Special Applications (ZLR)

Pandrol Assembly Reference	Description
23569	<p><b>FC1509 ZLR Concrete sleeper assembly for 54E1 rail</b></p> <p><b>Qty per Rail Seat</b></p> <p>13769 FC1509 ZLR Clip Assembly x2 (black) 13768 Interface Plate ZLR x2 10292 FC 8 mm Insulator (natural) x2 21007 FC HDPE Rail pad x1</p> <p><i>*See terminology. Converts standard Fastclip assembly 21868 to a rail free ZLR assembly*.</i></p>



## → Fastclips

Pandrol Part Reference	Description	
10856	<p><b>FC1509 Clip Assembly</b>  <b>Standard Finish: Black</b></p> <p>Toe Insulator Natural            Standard toe load clip            Material: Spring Steel + Plastic (HVN)</p>	
11503	<p><b>FC1511 Clip Assembly</b>  <b>Standard Finish: Red brown</b></p> <p>Toe Insulator Natural            Standard toe load clip            Material: Spring Steel + Plastic (HVN)</p>	
13769	<p><b>FC1509 ZLR Clip Assembly</b>  <b>Standard Finish: Black</b></p> <p>Toe Insulator Green            Material: Spring Steel + Plastic (HVN)            Used in Zero Longitudinal Restraint (ZLR) assemblies – see Terminology.</p>	

## → Fastclip Rail Pads

Pandrol Part Reference	Description	
21007	<p><b>FC HDPE Rail Pad</b>  <b>(Black)</b></p> <p>Working Thickness 7.5 mm            Material: HDPE            Used on Fastclip concrete sleepers with 54E1 rail.</p>	
21115	<p><b>FC HDPE Rail Pad</b>  <b>(Black)</b></p> <p>Working Thickness 9 mm            Material: HDPE            Used on Fastclip concrete sleepers with BS100A rail.</p>	

## → Fastclip Insulators

Pandrol Part Reference	Description
Insulators for 54E1 rail	
11745	<p><b>FC Side post Insulator 6 mm (Yellow)</b></p> <p>Material: Plastic (HVN) Used on Fastclip concrete sleepers.</p>
	
10292	<p><b>FC Side post Insulator 8 mm (Natural)</b></p> <p>Material: Plastic (HVN) Used on Fastclip concrete sleepers.</p>
	
21083	<p><b>FC Side post insulator 10 mm (Brown)</b></p> <p>Material: Plastic (HVN) Used on Fastclip concrete sleepers.</p>
	

## → Fastclip Insulators

Pandrol Part Reference	Description
Insulators for BS100A rail	
11746	<p><b>FC Side post insulator 11 mm (Green)</b></p> <p>Material: Plastic (HVN) Used on Fastclip concrete sleepers.</p>
	
21084	<p><b>FC Side post insulator 12 mm (Light Blue)</b></p> <p>Material: Plastic (HVN) Used on Fastclip concrete sleepers.</p>
	

## → Fastclip Shoulders

Pandrol Part Reference	Description
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10530	<p><b>FC Cast in Shoulder for Concrete Sleepers</b></p> <p>Material: Cast Iron (SGI) Precast in supplied Fastclip sleeper.</p>
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## → Fastclip Special Applications (ZLR) – Interface Plates

Pandrol Part Reference	Description
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13768	<p><b>Fastclip ZLR interface plate to suit 10530 shoulder</b></p> <p>Material: Cast Iron (SGI) Used in Zero Longitudinal Restraint (ZLR) assemblies – see Terminology.</p>
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## → Handtools for Fastclip

Pandrol Tool Reference	Description
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Handtools for Fastclip concrete sleeper assemblies

PP140172	<p><b>Fastclip Factory Installation Tool (Body and Handle Yellow, Reaction Frame Black)</b></p> <p>Used to pre-assemble Fastclip to the concrete sleeper.</p>
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## → Handtools for Fastclip

Pandrol Tool Reference	Description
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Handtools for Fastclip concrete sleeper assemblies

PP140142	<p><b>Fastclip Clip Installer (Body and Handle Yellow, Reaction Frame Black)</b></p> <p>Suitable for use on Fastclip FC concrete sleepers only.</p>
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PP140143	<p><b>Fastclip Clip Extractor (Body and Handle Cream, Reaction Frame Black)</b></p> <p>Suitable for use on Fastclip FC concrete sleepers only.</p>
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PP140144	<p><b>Fastclip Sleeper Lifter (Body and Handle Blue, Lifting Jaw and Link Black)</b></p> <p>Suitable for use on Fastclip FC concrete sleepers only. Used in conjunction with the Fastclip installer where sleepers need to be lifted.</p>
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PP140168	<p><b>Fastclip Rear Arch Extractor (Body and Handle Grey, Reaction Frame Black)</b></p> <p>Suitable for use on Fastclip FC concrete sleepers only. This tool is required at IBJ's to extract clips which are shielded by the joint.</p>
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## → Handtools for Fastclip

Pandrol Tool Reference	Description
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Handtools for Fastclip concrete sleeper assemblies

24720

**Fastclip Clip Installer for use at guard rail locations (Body and Handle Yellow, Reaction Frame Green)**

Suitable for use on Fastclip FC concrete sleepers where an adjacent guard rail is installed.



## → Machines for Automated Installation and Extraction of Fastclip

Pandrol Machine Reference	Description
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CD200 IQ

**CD200 IQ**

For clip installation and extraction to achieve productivity and efficiency gains.  
Single operator walk behind machine.  
Intuitive control system with digital display.  
Clips up to 20 sleepers per minute.  
Sleeper lift function for lift of low-lying sleepers up to 50 mm.



## → Fastclip Stressing Rollers

Pandrol Tool Reference	Description
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SR201001

**FC Stressing Roller (Yellow)**

For Fastclip FC Sleeper.  
This is a multi-function stressing roller for FC clip types. It combines both the side and under roller requirements for stressing rail. It also incorporates a lift function removing the need for track jacks.  
Suitable for use with 54E1 Rail.





# Fastclip Baseplate

A fastening assembly which provides a captive Pandrol Fastclip rail fastening system mainly for ballastless track applications. The baseplate offers a very large range of both vertical and lateral adjustment in a configuration where these adjustments can be made very quickly and easily and with a minimum of additional components required.

The Pandrol Fastclip Baseplate is designed for use on pre-cast concrete elements.

As the system is fully captive, there is no need for a distribution of the various components alongside the track before construction, which is particularly convenient on elevated structures and tunnel areas with limited accessibility.

## → Fastclip Baseplate Assemblies (Ballastless Track)

Pandrol Assembly Reference	Description
23146	<b>FCB 2 Hole SR Baseplate assembly for 54E1 rail For Embedded Concrete Sleeper Applications 1000 mm Gauge. Gauge adjustment available <math>\pm 20</math> mm*</b>
<b>Qty per Rail Seat</b>	
22605	Pad Conforming x1
21250-SRT	Baseplate x1
22606-SRT	Pad-Rail x1
21809-11	Insulator-Sidepost 11 mm x2
9471	FC1501 Clip and Toe Insulator Assembly x2
22607	Bush-Clamp x2
21632	Washer-Clamp x2
12412	M27 Disc Spring Washer x2
C225/195-J06	Screw GS25 mm (154 mm long) x2

\*Gauge adjustment achieved within the baseplate.



## → Special Applications (ZLR)

Pandrol Assembly Reference	Description
24251	<b>FCB 2 Hole ZLR* Baseplate assembly for 54E1 rail. For Embedded Concrete Sleeper Applications 1000 mm Gauge. Gauge adjustment available <math>\pm 20</math> mm**</b>
<b>Qty per Rail Seat</b>	
22605	Pad Conforming x1
21250-SRT	Baseplate x1
26461-SRT	Pad-Rail x1
24252-SRT	Rail Shim ZLR x1
21809-11	Insulator-Sidepost 11 mm x2
26490	FC1501 Clip and ZLR Toe Insulator Assembly x2
22607	Bush-Clamp x2
21632	Washer-Clamp x2
12412	M27 Disc Spring Washer x2
C225/195-J06	Screw GS25 mm (154 mm long) x2

\*See terminology.



\*\* Gauge adjustment achieved within the baseplate.

Converts standard FCB assembly 23146 to a rail free ZLR assembly.







## → Fastclips

Pandrol Part Reference	Description	
9471	<p><b>FC1501 Clip Assembly</b> Standard Finish: Black</p> <p>Toe insulator: Natural Standard toe load clip Material: Spring Steel + Plastic (HVN).</p>	
24690	<p><b>FC1501 ZLR Clip Assembly</b> Standard Finish: Black</p> <p>Toe insulator: Blue Material: Spring Steel + Plastic (HVN) Used in Zero Longitudinal Restraint (ZLR) assemblies – see Terminology.</p>	


## → Fastclip Baseplates

Pandrol Part Reference	Description	
21250-SRT	<p><b>FCB Baseplate non-inclined</b></p> <p>Material: Cast Iron (SGI).</p>	

## → Fastclip Baseplate Rail Pads

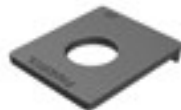
Pandrol Part Reference	Description	
22606-SRT	<p><b>FCB Studded Rubber Rail Pad (Black)</b> SR Single Resilience Assemblies.</p> <p>Working Thickness: 10 mm Material: Natural Rubber.</p>	
24641-SRT	<p><b>FCB Studded Rubber ZLR Rail Pad (Black)</b> Used in Zero Longitudinal Restraint (ZLR) assemblies – see Terminology.</p> <p>Working Thickness: 8 mm Material: Natural Rubber.</p>	

## → Fastclip Baseplate Insulators

Pandrol Part Reference	Description	
21809-11	<p><b>11 mm Side Post Insulator</b> (Dark Blue)</p> <p>Material: HVN For FCB baseplate assemblies with 54E1 rail. Fitted field and gauge side of the baseplate.</p>	

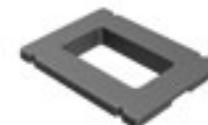
## → Fastclip Baseplate Anchors

Pandrol Part Reference	Description
Fastclip Baseplate Anchor Assembly	
Not allocated	<b>FCB Anchor Screw 25 mm Assembly For initial build</b>
<b>Components per anchor assembly (2 per FCB baseplate required)</b>	
C225/195-J06	GS25 Anchor Screw* (154 mm) x1
12412	Washer x1
22607	Bush - Clamp x1
21632	Washer - Clamp x1
C225/251	GS Dowel Assembly x1
<i>*For vertical rail adjustment up to +10 mm.</i>	
Fastclip Baseplate Anchor Parts	
C225/195-J06	<b>FCB GS25 Anchor Screw (154 mm)</b> For vertical rail adjustment 0 -10 mm. Material: Steel Finish: Galvanised.
C225/195-J08	<b>FCB GS25 Anchor Screw (164 mm)</b> For vertical rail adjustment 10 -20 mm. Material: Steel Finish: Galvanised.
C225/195-J10	<b>FCB GS25 Anchor Screw (174 mm)</b> For vertical rail adjustment 20 -30 mm. Finish: Galvanised.
12412	<b>M27 Disc Spring Washer</b>
21632	<b>Washer - clamp - FCB</b>



## → Fastclip Baseplate Anchors

Pandrol Part Reference	Description
Fastclip Baseplate Anchor Parts	
22607	<b>Bush - clamp - FCB</b>
C225/251	<b>FCB SR Dowel Assembly</b> Supplied pre-cast in concrete sleeper.



## → Fastclip Baseplate Conforming Pads

Pandrol Part Reference	Description
22605	<b>3 mm Thick Conforming Pad (Black)</b> Material: EVA For pre casted concrete elements. (Bottom-Up Build Method).



## → Fastclip Baseplate Height Adjustment Shims

Pandrol Part Reference	Description
21285-1	<b>FCB Height Adjustment Shim 1 mm</b> Material: Mild Steel - Sheradized.
21285-2	<b>FCB Height Adjustment Shim 2 mm</b> Material: Mild Steel - Sheradized.
21284-3	<b>FCB Height Adjustment Shim 3 mm</b> Material: HDPE.
21284-4	<b>FCB Height Adjustment Shim 4 mm</b> Material: HDPE.
21284-5	<b>FCB Height Adjustment Shim 5 mm</b> Material: HDPE.
21284-10	<b>FCB Height Adjustment Shim 10 mm</b> Material: HDPE.



## → Fastclip Baseplate Special Applications (ZLR) – Rail Shims

Pandrol Part Reference	Description
24252-SRT	<b>FCB Rail Shim – ZLR (Black)</b> Material: EVA Used in Zero Longitudinal Restraint (ZLR) assemblies – see Terminology Thickness: 2 mm.



## → Handtools for Fastclip Baseplate

Pandrol Tool Reference	Description
Handtools for Fastclip baseplate assemblies on ballastless track	
AE19914	<b>Fastclip Over The Rail (OTR) Clip Installer (Yellow)</b> Recommended for use with Fastclip baseplate assemblies.
AE17385	<b>Fastclip Clip Extractor (Cream)</b> Recommended for use with Fastclip baseplate assemblies.









## e-Clip

The original Pandrol e-Clip has stood the test of time all around the world thanks to the geometric design and ease of installation. They have been used across hundreds of applications, covering virtually every possible known rail section. Today's Pandrol e-Clips are an evolution of time-tested technologies, which have safely carried the world's rail passengers and freight for decades.

### → e-Clip Assemblies (Ballasted Track)

Pandrol Assembly Reference	Description	
13401	<b>e2091TAV / e1819AV Concrete Sleeper Assembly for 54E1 Rail* 1000 mm Gauge</b> <b>Qty per Rail Seat</b> 7997 or 7540 e2091TAV or e1819AV Clips x2 13403 Rail Pad x1 20074 11.5 mm Insulator (Light Blue) Gauge Side x1 20075 14.5 mm Insulator (Dark Blue) Field Side x1 <i>*Interchangeable with 60E1 rail in the same rail seat via insulator change.</i>	
13401	<b>e2091TAV / e1819AV Concrete Sleeper Assembly for 60E1 Rail* 1000 mm Gauge</b> <b>Qty per Rail Seat</b> 7997 or 7540 e2091TAV or e1819AV Clips x2 13403 Rail Pad x1 13404 8 mm Insulator (black) x 2 <i>*Interchangeable with 54E1 rail in the same rail seat via insulator change.</i>	
18912	<b>e2091TAV / e1819AV Concrete Sleeper Assembly for 54E1 rail 1000 mm Gauge. Gauge widening available up to +13 mm*</b> <b>Qty per Rail Seat</b> 7997 or 7540 e2091TAV or e1819AV Clips x2 20275 Rail Pad x1 20074 11.5 mm Insulator (Light Blue) Gauge Side x1 20075 14.5 mm Insulator (Dark Blue) Field Side x1 <i>* Gauge widening achieved through insulator change.</i>	
11560	<b>e2091TAV Concrete Sleeper Assembly for BS70A rail 1000 mm Gauge. Gauge widening available up to +20 mm*</b> <b>Qty per Rail Seat</b> 7997 e2091TAV Clip x2 11557 Rail Pad x1 11566 13 mm Insulator (Pink) Gauge Side x1 11571 25 mm Insulator (Light Blue) Field Side x1 <i>* Gauge widening achieved through combination of sleeper type (shoulder setting) and insulator change.            7544 Shoulder setting = 0 - 6 mm gauge widening.            11559 Shoulder setting = 8 - 20 mm gauge widening.</i>	

## → e-Clip Assemblies (Ballasted Track)

Pandrol Assembly Reference	Description	
11561	<b>e2091TAV Concrete Sleeper Assembly for BS70R rail 1000 mm Gauge. Gauge widening available up to +20 mm*</b>	
<b>Qty per Rail Seat</b> 7997 e2091TAV Clip x2 11557 Rail Pad x1 11575 10 mm Insulator (Natural) Gauge Side x1 11580 22 mm Insulator (Black) Field Side x1  * Gauge widening achieved through combination of sleeper type (shoulder setting) and insulator change. 7544 Shoulder setting = 0 - 6 mm gauge widening. 11559 Shoulder setting = 8 - 20 mm gauge widening.		
11562	<b>e2091TAV Concrete Sleeper Assembly for 70 ASCE rail 1000 mm Gauge. Gauge widening available up to +20 mm*</b>	
<b>Qty per Rail Seat</b> 7997 e2091TAV Clip x2 11557 Rail Pad x1 11584 11 mm Insulator (Dark Blue) Gauge Side x1 11589 21 mm Insulator (Purple) Field Side x1  * Gauge widening achieved through combination of sleeper type (shoulder setting) and insulator change. 7544 Shoulder setting = 0 - 6 mm gauge widening. 11559 Shoulder setting = 8 - 20 mm gauge widening.		
11563	<b>e2091TAV Concrete Sleeper Assembly for BS80A rail 1000 mm Gauge. Gauge widening available up to +20 mm*</b>	
<b>Qty per Rail Seat</b> 7997 e2091TAV Clip x2 11557 Rail Pad x1 11596 12 mm Insulator (Pink) Gauge Side x1 11600 20 mm Insulator (Purple) Field Side x1  * Gauge widening achieved through combination of sleeper type (shoulder setting) and insulator change. 7544 Shoulder setting = 0 - 6 mm gauge widening. 11559 Shoulder setting = 8 - 20 mm gauge widening.		



## → e-Clip Assemblies (Ballasted Track)

Pandrol Assembly Reference	Description	
11564	<b>e2091TAV Concrete Sleeper Assembly for BS100A rail 1000 mm Gauge. Gauge widening available up to +20 mm*</b>	
<b>Qty per Rail Seat</b> 7997 e2091TAV Clip x2 2061 / 54 Rail Pad x1 7324 8 mm Insulator (Black) x2  * Gauge widening achieved through combination of sleeper type (shoulder setting) and insulator change. 7544 Shoulder setting = 0 - 6 mm gauge widening. 11559 Shoulder setting = 8 - 20 mm gauge widening.  Alternative rail pad 9588 replaces standard rail pad 2061 / 54 at joint bar locations.		



## → e-Clip Baseplate (Ballasted Track)

Pandrol Assembly Reference	Description	
For Fixation to Timber / Synthetic Sleeper		
8386	<b>e2091TAV Baseplate Assembly for BS100A rail Timber Sleepers</b>	
<b>Qty per Rail Seat</b> 7996 LS Cast Baseplate, BS100A, 1:40 x1 7997 e2091TAV Clip x2 LS-13034 Lockspike, Type L6 as required* S10207 'Gagelok' Lock Screw, 16 mm x 105Lg as required*  *Baseplate can be fastened by either Lockspike or Lockscrew. Also can be used in a combination of each.		




## → e-Clips

Pandrol Part Reference	Description	
7997	<b>e2091TAV Clip</b> <b>Standard Finish: Red</b> Standard toe load clip Material: Spring Steel.	
7540	<b>e1819AV Clip</b> <b>Standard Finish: Black</b> Standard toe load clip Material: Spring Steel.	

## → e-Clip Rail Pads

Pandrol Part Reference	Description	
13403	<b>Plain Rail Pad</b> Thickness: 5 mm Material: HDPE For Deep Post Insulators Used on e-Clip concrete sleeper assemblies with 54E1 and 60E1 rail.	
20275	<b>Plain Rail Pad</b> Thickness: 5 mm Material: HDPE For Deep Post Insulators Used on e-Clip concrete sleeper assemblies with 54E1 rail with gauge widening.	

## → e-Clip Rail Pads

Pandrol Part Reference	Description	
11557	<b>Plain Rail Pad</b> Thickness: 5 mm Material: HDPE For Deep Post Insulators Used on e-Clip concrete sleeper assemblies with BS70A, BS70R, 70ASCE, BS80A rail.	
2061/54	<b>Plain Rail Pad</b> Thickness: 5 mm Material: HDPE Used on e-Clip concrete sleeper assemblies with BS100A rail.	
9588	<b>Chevron Grooved Rail Pad</b> Thickness 6.5 mm Material: Rubber Used on e-Clip concrete sleeper assemblies with BS100A rail at joint bar locations.	



## → e-Clip Insulators for Concrete Sleepers

Pandrol Part Reference	Description
Insulators for 54E1 Rail	
18906	<b>e-Clip Insulator 7 mm (Pink) Deep Post</b> Material: GRN For 54E1 Rail
18907	<b>e-Clip Insulator 9 mm (White) Deep Post</b> Material: GRN For 54E1 Rail
18908	<b>e-Clip Insulator 11 mm (Brown) Deep Post</b> Material: GRN For 54E1 Rail
20074	<b>e-Clip Insulator 11.5 mm (Light Blue) Deep Post</b> Material: GRN For 54E1 Rail
13405	<b>e-Clip Insulator 13 mm (Grey) Deep Post</b> Material: GRN For 54E1 Rail
20075	<b>e-Clip Insulator 14.5 mm (Dark Blue) Deep Post</b> Material: GRN For 54E1 Rail
18909	<b>e-Clip Insulator 15 mm (Red) Deep Post</b> Material: GRN For 54E1 Rail
18910	<b>e-Clip Insulator 17 mm (Yellow) Deep Post</b> Material: GRN For 54E1 Rail
18911	<b>e-Clip Insulator 19 mm (Orange) Deep Post</b> Material: GRN For 54E1 Rail



## → e-Clip Insulators for Concrete Sleepers

Pandrol Part Reference	Description
Insulators for BS70A Rail	
11565	<b>e-Clip Insulator 11 mm (Dark Blue) Deep Post</b> Material: GRN For BS70A Rail
11566	<b>e-Clip Insulator 13 mm (Pink) Deep Post</b> Material: GRN For BS70A Rail
11567	<b>e-Clip Insulator 15 mm (Brown) Deep Post</b> Material: GRN For BS70A Rail
11568	<b>e-Clip Insulator 17 mm (Dark Grey) Deep Post</b> Material: GRN For BS70A Rail
11569	<b>e-Clip Insulator 21 mm (Purple) Deep Post</b> Material: GRN For BS70A Rail
11570	<b>e-Clip Insulator 23 mm (Red) Deep Post</b> Material: GRN For BS70A Rail
11571	<b>e-Clip Insulator 25 mm (Light Blue) Deep Post</b> Material: GRN For BS70A Rail
11572	<b>e-Clip Insulator 27 mm (Dark Green) Deep Post</b> Material: GRN For BS70A Rail
11573	<b>e-Clip Insulator 29 mm (Yellow) Deep Post</b> Material: GRN For BS70A Rail



## → e-Clip Insulators for Concrete Sleepers

Pandrol Part Reference	Description
Insulators for BS70R Rail	
11574	<b>e-Clip Insulator 8 mm (Black) Deep Post</b> Material: GRN For BS70R Rail
11575	<b>e-Clip Insulator 10 mm (Natural) Deep Post</b> Material: GRN For BS70R Rail
11576	<b>e-Clip Insulator 12 mm (Pink) Deep Post</b> Material: GRN For BS70R Rail
11577	<b>e-Clip Insulator 14 mm (Brown) Deep Post</b> Material: GRN For BS70R Rail
11578	<b>e-Clip Insulator 18 mm (Orange) Deep Post</b> Material: GRN For BS70R Rail
11579	<b>e-Clip Insulator 20 mm (Purple) Deep Post</b> Material: GRN For BS70R Rail
11580	<b>e-Clip Insulator 22 mm (Black) Deep Post</b> Material: GRN For BS70R Rail
11581	<b>e-Clip Insulator 24 mm (Light Blue) Deep Post</b> Material: GRN For BS70R Rail
11582	<b>e-Clip Insulator 26 mm (Dark Green) Deep Post</b> Material: GRN For BS70R Rail



## → e-Clip Insulators for Concrete Sleepers

Pandrol Part Reference	Description
Insulators for 70ASCE Rail	
11583	<b>e-Clip Insulator 9 mm (Black) Deep Post</b> Material: GRN For 70ASCE Rail
11584	<b>e-Clip Insulator 11 mm (Dark Blue) Deep Post</b> Material: GRN For 70ASCE Rail
11585	<b>e-Clip Insulator 13 mm (Pink) Deep Post</b> Material: GRN For 70ASCE Rail
11586	<b>e-Clip Insulator 15 mm (Brown) Deep Post</b> Material: GRN For 70ASCE Rail
11587	<b>e-Clip Insulator 17 mm (Dark Grey) Deep Post</b> Material: GRN For 70ASCE Rail
11588	<b>e-Clip Insulator 19 mm (Orange) Deep Post</b> Material: GRN For 70ASCE Rail
11589	<b>e-Clip Insulator 21 mm (Purple) Deep Post</b> Material: GRN For 70ASCE Rail
11590	<b>e-Clip Insulator 23 mm (Red) Deep Post</b> Material: GRN For 70ASCE Rail
11591	<b>e-Clip Insulator 25 mm (Light Blue) Deep Post</b> Material: GRN For 70ASCE Rail



## → e-Clip Insulators for Concrete Sleepers

Pandrol Part Reference	Description
Insulators for BS80A Rail	
11595	<b>e-Clip Insulator 10 mm (Dark Blue) Deep Post</b> Material: GRN For BS80A Rail
11596	<b>e-Clip Insulator 12 mm (Pink) Deep Post</b> Material: GRN For BS80A Rail
11597	<b>e-Clip Insulator 14 mm (Brown) Deep Post</b> Material: GRN For BS80A Rail
11598	<b>e-Clip Insulator 16 mm (Dark Grey) Deep Post</b> Material: GRN For BS80A Rail
11599	<b>e-Clip Insulator 18 mm (Orange) Deep Post</b> Material: GRN For BS80A Rail
11600	<b>e-Clip Insulator 20 mm (Purple) Deep Post</b> Material: GRN For BS80A Rail
11601	<b>e-Clip Insulator 22 mm (Red) Deep Post</b> Material: GRN For BS80A Rail
11602	<b>e-Clip Insulator 24 mm (Light Blue) Deep Post</b> Material: GRN For BS80A Rail



## → e-Clip Insulators for Concrete Sleepers


Pandrol Part Reference	Description
Insulators for BS100A Rail	
11603	<b>e-Clip Insulator 6 mm (Orange)</b> Material: GRN For BS100A Rail
7324	<b>e-Clip Insulator 8 mm (Black)</b> Material: GRN For BS100A Rail
11605	<b>e-Clip Insulator 10 mm (Green)</b> Material: GRN For BS100A Rail
11606	<b>e-Clip Insulator 12 mm (Natural)</b> Material: GRN For BS100A Rail
Insulators for 60E1 Rail	
13404	<b>e-Clip Insulator 8 mm (Black), Deep Post</b> Material: GRN For 60E1 Rail





## → e-Clip Shoulders

Pandrol Part Reference	Description	
7323	<p><b>e-Clip Shoulder for Concrete Sleepers</b></p> <p>Material: Cast Iron (SGI). Precast in supplied e-Clip sleeper.</p>	
18375	<p><b>Assembled e-Clip Shoulder and Seal Plate for Concrete Sleepers*</b></p> <p><b>Pre-assembled components</b></p> <p>18374 Cast shoulder. Material SGI. 17406 Seal plate. Material Nylon. Precast in supplied e-Clip sleeper. *Alternative option to 7323 or 24692 shoulder.</p>	
24692	<p><b>e-Clip Shoulder for Concrete Sleepers</b></p> <p>Material: Cast Iron (SGI). Precast in supplied e-Clip sleeper.</p> <p>*Alternative option to 7323 or 18375 shoulder.</p>	

## → e-Clip Baseplates for Timber Sleepers

Pandrol Part Reference	Description	
7996	<p><b>LS Cast Baseplate for BS100A rail</b></p> <p>Inclination 1:40. Material: Cast Iron (SGI). Can be supplied with round holes.</p>	

## → e-Clip Baseplate Fixings for Timber Sleepers

Pandrol Part Reference	Description	
LS-13034	<p><b>Lockspike Type L6</b></p>	
S10207	<p><b>'Gagelok' Lock Screw 16 mm x 105Lg</b></p> <p>Also called GageLok-6 16 mm Lok.</p>	

## → Handtools for e-Clip (Ballast)

Pandrol Tool Reference	Description
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## Handtools for Anti Vandal e-Clip assemblies on ballasted track

AE21227

**e-Clip Installer (Yellow)**

Suitable for installing e2091TAV clips on Concrete Sleepers.  
Replacement hooks are available: Pandrol No. AE21229.



AE21229

**e-Clip Installer replacement hook (Yellow)**

For use with AE21227 handtool.



PP140036

**e-Clip Installer (Yellow)**

Suitable for installing e1819AV clips on Concrete Sleepers.  
Replacement hooks are available: Pandrol No. PP140075.



PP140075

**e-Clip Installer replacement hook.**

For use with PP140036 handtool.



## → Handtools for e-Clip (Ballast)

Pandrol Tool Reference	Description
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## Handtools for Anti Vandal e-Clip assemblies on ballasted track

AE21732

**e-Clip Extractor (Cream)**

Suitable for extracting e2091TAV and e1819AV clips on Concrete Sleepers.  
Replacement hooks are available: Pandrol No. AE21763.



AE21763

**e-Clip Extractor replacement hook (Cream)**

For use with AE21732 handtool.



AE19544

**e-Clip Pansetter (Blue)**

Used for lifting the sleeper to the rail foot. It pushes the rail over, leaving the correct gap between the rail foot and the Pandrol housing, so that the insulator can be easily placed in the correct position.



## → e-Clip Stressing Roller

### Pandrol Tool Reference

### Description

SR313001

#### The eVSR (Yellow)

A multi-function stressing roller for e-Clip types. It combines both the side and under roller requirements for stressing rail. It also incorporates a lift function removing the need for track jacks.

Suitable for use with 54E1 and 60E1 rails.

SR313002

#### The eVSR (Yellow)

A multi-function stressing roller for e-Clip types. It combines both the side and under roller requirements for stressing rail. It also incorporates a lift function removing the need for track jacks.

Suitable for use with BS80A and BS100A rails.







## e-Clip SRS

The Single Resilient System (SRS) e-Clip assembly is ideally suited to transit applications where noise and vibration mitigation is required. This non-bonded, low-profile system is fully insulated and provides excellent stray current protection. The SRS assembly consists of a cast base plate and a resilient pad and is ideally suited for all slab track applications.

### → e-Clip SRS Baseplate Assemblies (Ballastless Track)

Pandrol Assembly Reference	Description																								
19146	<p><b>e-Clip SRS Baseplate Assembly for 54E1 Rail For Embedded Concrete Sleeper Applications 1000 mm Gauge. Gauge adjustment available <math>\pm 20</math> mm*</b></p> <p><b>Qty per Rail Seat</b></p> <table border="1"> <tr><td>15156</td><td>Baseplate – Cast x1</td></tr> <tr><td>7997</td><td>e2091TAV Rail Clip x2</td></tr> <tr><td>19124</td><td>Insulator- Deep Post – 13 mm x2</td></tr> <tr><td>19155</td><td>Rail Pad – Studded Rubber x1</td></tr> <tr><td>11368</td><td>M24 Nut x2</td></tr> <tr><td>11242</td><td>M24 Disc Spring Washer x4</td></tr> <tr><td>11244</td><td>M24 Flat Washer x4</td></tr> <tr><td>11032-24</td><td>Top Hat Bush x2</td></tr> <tr><td>11328</td><td>Serrated Washer x2</td></tr> <tr><td>20676</td><td>Conforming Pad x1</td></tr> <tr><td>11027-70</td><td>M24 Anchor Stud (pre-cast into concrete sleeper) x2</td></tr> </table>	15156	Baseplate – Cast x1	7997	e2091TAV Rail Clip x2	19124	Insulator- Deep Post – 13 mm x2	19155	Rail Pad – Studded Rubber x1	11368	M24 Nut x2	11242	M24 Disc Spring Washer x4	11244	M24 Flat Washer x4	11032-24	Top Hat Bush x2	11328	Serrated Washer x2	20676	Conforming Pad x1	11027-70	M24 Anchor Stud (pre-cast into concrete sleeper) x2		
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	<i>*Gauge adjustment through serrated washer.</i>																								
15155	<p><b>e-Clip SRS Baseplate Assembly for 60E1 Rail For Embedded Concrete Sleeper Applications 1000 mm Gauge. Gauge adjustment available <math>\pm 20</math> mm*</b></p> <p><b>Qty per Rail Seat</b></p> <table border="1"> <tr><td>15156</td><td>Baseplate – Cast x1</td></tr> <tr><td>7997</td><td>e2091TAV Rail Clip x2</td></tr> <tr><td>20779</td><td>Insulator- Deep Post – 8 mm x2</td></tr> <tr><td>15157</td><td>Rail Pad – Studded Rubber x1</td></tr> <tr><td>11368</td><td>M24 Nut x2</td></tr> <tr><td>11242</td><td>M24 Disc Spring Washer x4</td></tr> <tr><td>11244</td><td>M24 Flat Washer x4</td></tr> <tr><td>11032-24</td><td>Top Hat Bush x2</td></tr> <tr><td>11328</td><td>Serrated Washer x2</td></tr> <tr><td>20676</td><td>Conforming Pad x1</td></tr> <tr><td>20678</td><td>M24 Anchor Stud (grade 8.8) or</td></tr> <tr><td>21273</td><td>M24 Anchor Stud (grade 12.9) (pre-cast into concrete sleeper) x2**</td></tr> </table>	15156	Baseplate – Cast x1	7997	e2091TAV Rail Clip x2	20779	Insulator- Deep Post – 8 mm x2	15157	Rail Pad – Studded Rubber x1	11368	M24 Nut x2	11242	M24 Disc Spring Washer x4	11244	M24 Flat Washer x4	11032-24	Top Hat Bush x2	11328	Serrated Washer x2	20676	Conforming Pad x1	20678	M24 Anchor Stud (grade 8.8) or	21273	M24 Anchor Stud (grade 12.9) (pre-cast into concrete sleeper) x2**
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21273	M24 Anchor Stud (grade 12.9) (pre-cast into concrete sleeper) x2**																								

*\*Gauge adjustment through serrated washer.*


*\*\*Anchor Stud grade dependant on track parameters.*

*Interchangeable with VIPA DRS 20673.*



## → Special Applications: e-Clip SRS (ZLR)



Pandrol Assembly Reference	Description
15163	<b>e-Clip SRS ZLR Baseplate assembly for 60E1 rail* For Embedded Concrete Sleeper Applications 1000 mm Gauge. Gauge adjustment available ±20 mm**</b>
<b>Qty per Rail Seat</b>	
15156	Baseplate – Cast x1
15177	Support Plate x2
9543	e2071AV Rail Clip x2
20779	Insulator– Deep Post – 8 mm x2
15157	Rail Pad – Studded Rubber x1
15159	Rail Free Shim x1
11368	M24 Nut x2
11242	M24 Disc Spring Washer x4
11244	M24 Flat Washer x4
11032-24	Top Hat Bush x2
11328	Serrated Washer x2
20676	Conforming Pad x1



\*See terminology. Converts standard e-Clip SRS assembly 15155 to a rail free ZLR assembly.  
\*\*Gauge adjustment through serrated washer.

## → e-Clips

Pandrol Part Reference	Description
7997	<b>e2091TAV Clip Standard Finish: Red</b>
	Standard toe load clip Material: Spring Steel.
9543	<b>e2071AV Clip Standard Finish: Green or Black</b>
	Material: Spring Steel Used in ZLR assemblies – see Terminology.



## → e-Clip SRS Baseplates

Pandrol Part Reference	Description
15156	<b>e-Clip SRS Baseplate</b>
	Inclination 1:40 Material: Cast Iron (SGI).




  

Pandrol Part Reference	Description
	<b>e-Clip SRS Rail Pads</b>



Pandrol Part Reference	Description
19155	<b>e-Clip SRS Studded Rubber Rail Pad (Black)</b>
	Thickness: 10 mm Material: Natural Rubber Used on e-Clip SRS assemblies with 54E1 rail.
15157	<b>e-Clip SRS Studded Rubber Rail Pad (Black)</b>
	Thickness: 10 mm Material: Natural Rubber Used on e-Clip SRS assemblies with 60E1 rail.

## → e-Clip Insulators for SRS Baseplates






Pandrol Part Reference	Description	
Insulators for e-Clip SRS – 54E1 Rail		
19124	<b>e-Clip Insulator 13 mm (Yellow) Deep Post</b> Material: GRN For 54E1 Rail	
Insulators for e-Clip SRS – 60E1 Rail		
20779	<b>e-Clip Insulator 8 mm (Black) Deep Post</b> Material: GRN For 60E1 Rail	

## → e-Clip SRS Baseplate Anchors




Pandrol Part Reference	Description	
e-Clip SRS Anchor Assembly		
Not allocated	<b>Anchor assembly for e-Clip SRS 19146</b> <b>Components per anchor assembly (2 per SRS baseplate required)</b>	
11027-70	M24 Anchor Stud (pre-cast into concrete sleeper) x1	
11368	M24 Nut x1	
11242	M24 Disc Spring Washer x2	
11244	M24 Flat Washer x2	
11032-24	Top Hat Bush x1	
11328	Serrated Washer x1	
Not allocated	<b>Anchor assembly for e-Clip SRS 19155, 15163</b> <b>Components per anchor assembly (2 per SRS baseplate required)</b>	
20678	M24 Anchor Stud (grade 8.8)	
21273	M24 Anchor Stud (grade 12.9) (pre-cast into concrete sleeper) x1*	
11368	M24 Nut x1	
11242	M24 Disc Spring Washer x2	
11244	M24 Flat Washer x2	
11032-24	Top Hat Bush x1	
11328	Serrated Washer x1	

\*Anchor stud grade dependent on track parameters. Refer to assembly drawing.


## → e-Clip SRS Baseplate Anchors

Pandrol Part Reference	Description	
e-Clip SRS Anchor Parts		
20678	<b>M24 Anchor Stud Splayed</b> Material: H.T Steel Grade 8.8 Finish: Sheradized or Galvanised Length: 250 mm.	
21273	<b>M24 Anchor Stud Splayed</b> Material: H.T Steel Grade 12.9 Finish: Zinc Flake Coating Length: 250 mm.	
11027-70	<b>M24 Anchor Stud Splayed</b> Material: H.T Steel Grade 8.8 Finish: Sheradized or Galvanised Length: 230 mm.	
11368	<b>M24 Plain Nut</b> Finish: Galvanised Grade 8.	
11244	<b>M24 Plain Flat Washer</b> Finish: Galvanised.	


## → e-Clip SRS Baseplate Anchors

Pandrol Part Reference	Description	
e-Clip SRS Anchor Parts		
11242	<b>M24 Disc Spring Washer</b> Finish: Zinc Passivated.	
11032-24	<b>Top Hat Bush 24 mm</b> Material: Nylon Finish: Coloured Black.	
11328	<b>Serrated Washer</b> Material: Cast Iron.	

## → Conforming Pads

Pandrol Part Reference	Description	
20676	<b>Conforming Pad - 2 Hole (Black)</b> Thickness: 3 mm Material: EVA For use with e-Clip SRS and VIPA DRS.	

## → e-Clip SRS Height Adjustment Shims

Pandrol Part Reference	Description	
15164-2	<b>Height Adjustment Shim 2 mm (Black)</b> Material: HDPE.	
15164-3	<b>Height Adjustment Shim 3 mm (Black)</b> Material: HDPE.	
15164-5	<b>Height Adjustment Shim 5 mm (Black)</b> Material: HDPE.	
15164-10	<b>Height Adjustment Shim 10 mm (Black)</b> Material: HDPE.	

## → e-Clip SRS Special Applications (ZLR)

Pandrol Part Reference	Description	
15177	<b>ZLR Support Plate</b> Material: Cast Iron (SGI) For ZLR Assembly only - see terminology.	
15159	<b>Rail Free Shim (Natural - Cream)</b> Material: Nylon For ZLR Assembly only - see terminology.	



## VIPA DRS

The VIPA DRS (Double Resilient System) fastening assembly incorporates an e-Clip baseplate mounted on a studded rubber pad, which provides resilience. It is intended for applications where a further degree of vibration mitigation is required and can be tuned for various axle loads and stiffness requirements.

### → VIPA DRS Baseplate Assemblies (Ballastless Track)

Pandrol Assembly Reference	Description
20673	VIPA DRS Baseplate Assembly for 60E1 Rail For Embedded Concrete Sleeper Applications 1000 mm Gauge. Gauge adjustment available $\pm 20$ mm*
<b>Qty per Rail Seat</b>	
20676	Pad Conforming x1
20674	Pad Baseplate x1
20639	Baseplate – Cast x1
20675	Rail Pad – Studded Rubber x1
20779	Insulator – Deep Post – 8 mm x2
7997	e2091TAV Rail clip x2
20679-0	Bush – M24 – Obround x2
19049	M24 Compression Spring x2
19050	Collared Washer x2
12425	M24 Nyloc Nut x2
20678	M24 Anchor Stud (grade 8.8) or
21273	M24 Anchor Stud (grade 12.9) (pre-cast into concrete sleeper) x2**

\*Gauge adjustment through obround bush and insulator change.

\*\*Anchor Stud grade dependant on track parameters.

Interchangeable with e-Clip SRS 15155.



### → e-Clips

Pandrol Part Reference	Description
7997	e2091TAV Clip Standard Finish: Red
	Standard toe load clip Material: Spring Steel.



## → VIPA DRS Baseplates

Pandrol Part Reference	Description
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20639	<b>VIPA DRS Baseplate</b> Inclination 1:40 Material: Cast Iron (SGI).
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## → VIPA DRS Rail Pads

Pandrol Part Reference	Description
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20675	<b>VIPA DRS Studded Rubber Rail Pad (Black)</b> Thickness: 10 mm Material: Natural Rubber Used on VIPA DRS assemblies with 60E1 rail.
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## → VIPA DRS Baseplate Pads

Pandrol Part Reference	Description
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20674	<b>VIPA DRS Studded Rubber Baseplate Pad (Black)</b> Material: Natural Rubber.
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## → e-Clip Insulators for VIPA DRS Baseplates

Pandrol Part Reference	Description
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<b>Insulators for VIPA DRS – 60E1 Rail</b>	
20644	<b>e-Clip Insulator 6 mm (Red) Deep Post</b> Material: GRN For 60E1 Rail

20645	<b>e-Clip Insulator 7 mm (Light Blue) Deep Post</b> Material: GRN For 60E1 Rail
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20779	<b>e-Clip Insulator 8 mm (Black) Deep Post</b> Material: GRN For 60E1 Rail
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20646	<b>e-Clip Insulator 9 mm (Dark Green) Deep Post</b> Material: GRN For 60E1 Rail
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20647	<b>e-Clip Insulator 10 mm (Brown) Deep Post</b> Material: GRN For 60E1 Rail
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## → VIPA DRS Baseplate Anchors

Pandrol Part Reference	Description	
VIPA DRS Anchor Assembly		
Not allocated	<b>Anchor assembly for VIPA DRS 20673. For initial build</b> <b>Components per anchor assembly (2 per DRS baseplate required)</b>	
20678	M24 Anchor Stud (grade 8.8) or	
21273	M24 Anchor Stud (grade 12.9) (pre-cast into concrete sleeper) x1*	
20679-0	Bush - M24 - Obround x1	
19049	M24 Compression Spring x1	
19050	Collared Washer x1	
12425	M24 Nyloc nut x1	
*Anchor stud grade dependant on track parameters. Refer to assembly drawing.		
VIPA DRS Anchor Parts		
20678	<b>M24 Anchor Stud Splayed</b> Material: H.T Steel Grade 8.8 Finish: Sheradized or Galvanised Length: 250 mm.	
21273	<b>M24 Anchor Stud Splayed</b> Material: H.T Steel Grade 12.9 Finish: Zinc Flake Coating Length: 250 mm.	
12425	<b>M24 Nyloc Nut</b> Finish: Galvanised Grade 6.	

## → VIPA DRS Baseplate Anchors

Pandrol Part Reference	Description	
VIPA DRS Anchor Parts		
19050	<b>Plastic Collared Washer</b> Material: Nylon Colour: Light Blue.	
19049	<b>M24 Compression Spring</b> Finish: Sheradized.	
20679-0	<b>M24 Obround Bush - Offset 0 mm</b> Material: Nylon Colour: Natural.	
20679-5	<b>M24 Obround Bush - Offset 5 mm</b> Material: Nylon Colour: Light Green.	
20679-8	<b>M24 Obround Bush - Offset 8 mm</b> Material: Nylon Colour: Dark Blue.	

→ **Conforming Pads**

Pandrol Part Reference	Description
20676	<p><b>Conforming Pad - 2 Hole (Black)</b></p> <p>Thickness: 3 mm Material: EVA</p> <p>For use with e-Clip SRS and VIPA DRS.</p>

→ **VIPA DRS Height Adjustment Shims**

Pandrol Part Reference	Description
20692	<p><b>Height Adjustment Shim 1 mm (Black)</b></p> <p>Material: Stainless Steel.</p>
20693-2	<p><b>Height Adjustment Shim 2 mm (Black)</b></p> <p>Material: HDPE.</p>
20693-3	<p><b>Height Adjustment Shim 3 mm (Black)</b></p> <p>Material: HDPE.</p>
20693-5	<p><b>Height Adjustment Shim 5 mm (Black)</b></p> <p>Material: HDPE.</p>
20693-10	<p><b>Height Adjustment Shim 10 mm (Black)</b></p> <p>Material: HDPE.</p>

→ **Handtools for e-Clip baseplate assemblies**

Pandrol Tool Reference	Description
Handtools for Anti Vandal e-Clip baseplate assemblies incorporating cast-in anchor studs	
AE21689	<p><b>e-Clip Installer (Yellow)</b></p> <p>Suitable for installing e2091TAV clips on e-Clip SRS and VIPA DRS.</p> <p>It is recommended that the hook of the handtool should be checked with a Go / No Go gauge periodically, to minimise the risk of slippage. A wear gauge is available to assess the condition of the hooks: Pandrol No. AE17260.</p> <p>Replacement hooks are available: Pandrol No. AE21691.</p>
AE21691	<p><b>e-Clip Installer replacement hook (Yellow)</b></p> <p>For use with AE21689 handtool.</p>
AE22636	<p><b>e-Clip Installer (Yellow)</b></p> <p>Suitable for installing e2071AV clips on e-Clip SRS ZLR assembly.</p> <p>It is recommended that the hook of the handtool should be checked with a Go / No Go gauge periodically, to minimise the risk of slippage. A wear gauge is available to assess the condition of the hooks: Pandrol No. AE17260.</p> <p>Replacement hooks are available: Pandrol No. AE22637.</p>
AE22637	<p><b>e-Clip Installer replacement hook (Yellow)</b></p> <p>For use with AE22636 handtool.</p> <p>Converts AE21689 to AE22636 handtool.</p>



## → Handtools for e-Clip baseplate assemblies

Pandrol Tool  
Reference

Description

Handtools for Anti Vandal e-Clip baseplate assemblies incorporating cast-in anchor studs

AE21732

**e-Clip Extractor  
(Cream)**

Suitable for extracting e2091TAV and e2071AV clips on e-Clip SRS and VIPA DRS.

Replacement hooks are available: Pandrol No. AE21763.



AE21763

**e-Clip Extractor replacement hook  
(Cream)**

For use with AE21732 handtool.



# Fastening Systems for Steel Structures

The SRT network counts thousands of steel bridges. The Pandrol Steel Bridge fastening system offers the flexibility to be adaptable to the two main types of running rail (BS100A and 54E1), as well as the two main types of guard rail (BS70A and BS80A). The unique Zero Longitudinal Restraint "ZLR" feature allows for differential thermal movement between the supporting structure and rail, thus avoiding unacceptable rail stress. The system also exists in full toe load version, if required.

The running rail baseplate of the Pandrol Steel Bridge fastening is directly attached to I-shaped transversal beams (steel sleepers) through a bolted anchor system, and the guard rail is fixed using a standard e-Clip and weld on shoulder. This technique is well known to all major steel structure contractors in the country.



## → Steel Structure Assemblies (Ballastless Track)

Pandrol Assembly Reference	Description																														
20243	<p><b>Running Rail ZLR* Baseplate assembly for 54E1 rail</b>  <b>Guard Rail Fixing Assembly for BS80A rail.</b></p> <p><b>Qty per Rail Seat - Running Rail</b></p> <table border="1"> <tr><td>15156</td><td>Cast Baseplate x1</td></tr> <tr><td>19155</td><td>Studded Rubber Rail Pad x1</td></tr> <tr><td>19169</td><td>Rail Free Shim Slide Plate x1</td></tr> <tr><td>19124</td><td>Insulator 13 mm, Deep Post x2</td></tr> <tr><td>15177</td><td>Rail Free ZLR Support Plate x2</td></tr> <tr><td>9543</td><td>Rail Clip, Type e2071AV x2</td></tr> <tr><td>11328</td><td>Serrated washer 30 mm Diameter Hole x2</td></tr> <tr><td>11032-24</td><td>Bush Top Hat M24 x2</td></tr> <tr><td>N/A</td><td>Bolt M24 x 90 long Hex Head x2</td></tr> <tr><td>11244</td><td>M24 Plain Flat Washer x4</td></tr> <tr><td>11242</td><td>M24 Disc Spring Washer x4</td></tr> <tr><td>11368</td><td>M24 Plain Nut x2</td></tr> <tr><td>20676</td><td>Pad Conforming - 2 Hole x1</td></tr> </table> <p><b>Qty per Rail Seat - Guard Rail</b></p> <table border="1"> <tr><td>PMP 41100</td><td>Guard Rail Weld-on Lug Assembly x1</td></tr> <tr><td>7997</td><td>Rail Clip Type e2091TAV x1</td></tr> </table> <p><i>*See terminology.</i></p>	15156	Cast Baseplate x1	19155	Studded Rubber Rail Pad x1	19169	Rail Free Shim Slide Plate x1	19124	Insulator 13 mm, Deep Post x2	15177	Rail Free ZLR Support Plate x2	9543	Rail Clip, Type e2071AV x2	11328	Serrated washer 30 mm Diameter Hole x2	11032-24	Bush Top Hat M24 x2	N/A	Bolt M24 x 90 long Hex Head x2	11244	M24 Plain Flat Washer x4	11242	M24 Disc Spring Washer x4	11368	M24 Plain Nut x2	20676	Pad Conforming - 2 Hole x1	PMP 41100	Guard Rail Weld-on Lug Assembly x1	7997	Rail Clip Type e2091TAV x1
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7997	Rail Clip Type e2091TAV x1																														
22505	<p><b>Running Rail ZLR* Baseplate assembly for 54E1 rail</b>  <b>Guard Rail Fixing Assembly for BS70A rail.</b></p> <p><b>Qty per Rail Seat - Running Rail</b></p> <table border="1"> <tr><td>15156</td><td>Cast Baseplate x1</td></tr> <tr><td>19155</td><td>Studded Rubber Rail Pad x1</td></tr> <tr><td>19169</td><td>Rail Free Shim Slide Plate x1</td></tr> <tr><td>19124</td><td>Insulator 13 mm, Deep Post x2</td></tr> <tr><td>15177</td><td>Rail Free ZLR Support Plate x2</td></tr> <tr><td>9543</td><td>Rail Clip, Type e2071AV x2</td></tr> <tr><td>11328</td><td>Serrated washer 30 mm Diameter Hole x2</td></tr> <tr><td>11032-24</td><td>Bush Top Hat M24 x2</td></tr> <tr><td>N/A</td><td>Bolt M24 x 90 long Hex Head x2</td></tr> <tr><td>11244</td><td>M24 Plain Flat Washer x4</td></tr> <tr><td>11242</td><td>M24 Disc Spring Washer x4</td></tr> <tr><td>11368</td><td>M24 Plain Nut x2</td></tr> <tr><td>20676</td><td>Pad Conforming - 2 Hole x1</td></tr> </table> <p><b>Qty per Rail Seat - Guard Rail</b></p> <table border="1"> <tr><td>PMP 41103</td><td>Guard Rail Weld-on Lug Assembly x1</td></tr> <tr><td>7997</td><td>Rail Clip Type e2091TAV x1</td></tr> </table> <p><i>*See terminology.</i></p>	15156	Cast Baseplate x1	19155	Studded Rubber Rail Pad x1	19169	Rail Free Shim Slide Plate x1	19124	Insulator 13 mm, Deep Post x2	15177	Rail Free ZLR Support Plate x2	9543	Rail Clip, Type e2071AV x2	11328	Serrated washer 30 mm Diameter Hole x2	11032-24	Bush Top Hat M24 x2	N/A	Bolt M24 x 90 long Hex Head x2	11244	M24 Plain Flat Washer x4	11242	M24 Disc Spring Washer x4	11368	M24 Plain Nut x2	20676	Pad Conforming - 2 Hole x1	PMP 41103	Guard Rail Weld-on Lug Assembly x1	7997	Rail Clip Type e2091TAV x1
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15177	Rail Free ZLR Support Plate x2																														
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PMP 41103	Guard Rail Weld-on Lug Assembly x1																														
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## → Steel Structure Assemblies (Ballastless Track)

### Pandrol Assembly Reference / Description

8019

**Running Rail ZLR\* Baseplate assembly for BS100A rail**  
**Guard Rail Fixing Assembly for BS80A rail**

#### Qty per Rail Seat - Running Rail assembly 8388

8111	Cast Baseplate x1
7993	Shim, ZLR Slide Plate x1
7992	Rail Pad, 10 mm Studded Rubber x1
8364	Insulator, 8 mm x2
7994	Cover Plate, Rail Free ZLR x2
8375	Rail Clip, Type e20117AV x2
7991	Conforming Pad 3 mm x1
12371	Serrated Washer x2
10009-24-75	Bolt Hex Head ISO 14014-M24x75-8.8 x2
10008	Washer, Spring M24 x2
11197-24	Nut, M24 Nyloc x2

#### Qty per Rail Seat - Guard Rail

PMP 41100	Guard Rail Weld-on Lug Assembly x1
7997	Rail Clip Type e2091TAV x1

\*See terminology.



11860

**Baseplate assembly for BS100A Running Rail**

#### Qty per Rail Seat

8111	Cast Baseplate, 1:40 inclination x1
7992	Rail Pad, 10 mm Studded Rubber x1
8364	Insulator, 8 mm x2
7997	Rail Clip, Type e2091TAV x2
7991	Conforming Pad, 3 mm x1
12371	Serrated Washer x2
10009-24-110	Bolt Hex Head ISO 14014-M24x110-8.8 x2
10008	Washer, Spring M24 x2
11197-24	Nut, M24 Nyloc x2



## → e-Clips for Steel Structure Assemblies

### Pandrol Part Reference / Description

7997

**e2091TAV Clip**  
**Standard Finish: Red**

Standard toe load clip  
 Material: Spring Steel.



9543

**e2071AV Clip**  
**Standard Finish: Black**

Material: Spring Steel  
 Used in 54E1 Rail ZLR assemblies – see Terminology.



8375

**e20117AV Clip**  
**Standard Finish: Black**



Material: Spring Steel  
 Used in BS100A Rail ZLR assemblies – see Terminology.





## → e-Clip Baseplates for Running Rail

Pandrol Part Reference	Description	
15156	<b>e-Clip Baseplate for 54E1 Rail</b> Inclination 1:40 Material: Cast Iron (SGI).	
8111	<b>e-Clip Baseplate for BS100A Rail</b> Inclination 1:40 Material: Cast Iron (SGI).	

## → e-Clip Rail Pads

Pandrol Part Reference	Description	
19155	<b>Studded Rubber Rail Pad (Black)</b> Thickness: 10 mm Material: Natural Rubber Used with 54E1 rail.	
7992	<b>Studded Rubber Rail Pad (Black)</b> Thickness: 10 mm Material: Natural Rubber Used with BS100A rail.	

## → e-Clip Insulators

Pandrol Part Reference	Description	
19124	<b>Insulator 13 mm (Yellow) Deep Post</b> Used with 15156 Baseplate and 54E1 Rail.	
8364	<b>Insulator 8 mm (Green)</b> Used with 8111 Baseplate and BS100A Rail.	

## → Special Components for ZLR

Pandrol Part Reference	Description	
15177	<b>ZLR Support Plate</b> Material: Cast Iron (SGI) Used with 15156 Baseplate and e2071AV Clip for ZLR assembly – see terminology.	
7994	<b>ZLR Support Plate</b> Material: Cast Iron (SGI) Used with 8111 Baseplate and e20117AV Clip for ZLR assembly – see terminology.	
19169	<b>Rail Free Shim Slide Plate to suit 54E1 Rail</b> Material: Nylon Colour: Natural.	

## → Special Components for ZLR

Pandrol Part Reference	Description
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7993	<b>Rail Free Shim Slide Plate to suit BS100A Rail</b> Material: Nylon Colour: Natural.
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## → e-Clip Baseplate Conforming Pads

Pandrol Part Reference	Description
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20676	<b>Conforming Pad - 2 Hole (Black)</b> Thickness: 3 mm Material: EVA.
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7991	<b>Conforming Pad - 2 Hole (Black)</b> Thickness: 3 mm Material: HDPE.
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## → e-Clip Baseplate Height Adjustment Shims

Pandrol Part Reference	Description
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15164-2	<b>Height Adjustment Shim 2 mm (Black)</b> Material: HDPE Used with 15156 Baseplate.
15164-3	<b>Height Adjustment Shim 3 mm (Black)</b> Material: HDPE Used with 15156 Baseplate.
15164-5	<b>Height Adjustment Shim 5 mm (Black)</b> Material: HDPE Used with 15156 Baseplate.
15164-10	<b>Height Adjustment Shim 10 mm (Black)</b> Material: HDPE Used with 15156 Baseplate.



## → Anchor Assemblies

Pandrol Part Reference	Description
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Not allocated	<b>Anchor Bolt Assembly for Baseplate 15156</b> <b>Components per anchor assembly (2 per baseplate required)</b> N/A Bolt M24 x 90 long Hex Head x1 11244 M24 Plain Flat Washer x2 11242 M24 Disc Spring Washer x2 11032-24 Bush Top Hat M24 x1 11328 Serrated washer 30 mm Diameter Hole x1 11368 M24 Plain Nut x1
Not allocated	<b>Anchor Bolt Assembly for Baseplate 8111</b> <b>Components per anchor assembly (2 per baseplate required)</b> 12371 Serrated Washer x1 10009-24-75 Bolt Hex Head ISO 14014-M24x75-8.8 x1 10008 Washer, Spring M24 x1 11197-24 Nut, M24 Nyloc x1










## → Anchor Parts

Pandrol Part Reference	Description	
Not supplied by Pandrol	<b>Bolt M24 x 90 long Hex Head</b> Finish: Galvanised.	
10009-24-75	<b>Bolt Hex Head ISO 14014-M24 x 75- 8.8</b> Finish: Galvanised.	
11368	<b>M24 Plain Nut</b> Finish: Galvanised.	
11197-24	<b>M24 Nyloc Nut</b> Finish: Galvanised.	
11244	<b>M24 Plain Flat Washer</b> Finish: Galvanised.	

## → Anchor Parts

Pandrol Part Reference	Description	
11242	<b>M24 Disc Spring Washer</b> Finish: Zinc Passivated.	
10008	<b>M24 Spring Washer</b> Finish: Galvanised or Zinc Coated.	
11328	<b>Serrated Washer</b> Material: Cast Iron.	
12371	<b>Serrated Washer</b> Material: Cast Iron.	
11032-24	<b>Top Hat Bush 24 mm</b> Material: Nylon Finish: Coloured Black.	



## → Guard Rail Weld-On Lug Assemblies

### Pandrol Assembly Reference / Description

PMP41103	<b>Guard Rail Weld-on Lug Assembly for BS70A Rail</b>
	<b>Qty per Rail Seat</b>
PL70081-01 8020	Pressed Steel Lug x1 Weld-on Hook x1 Channel. 100 x 50 x 220 mm long x1
PMP41100	<b>Guard Rail Weld-on Lug Assembly for BS80A Rail</b>
	<b>Qty per Rail Seat</b>
PL70081-01 8020	Pressed Steel Lug x1 Weld-on Hook x1 Channel. 100 x 50 x 220 mm long x1



## → Guard Rail Weld-On Lug Assembly Components

### Pandrol Part Reference / Description

PL70081-01	<b>Pressed Steel Lug</b>
8020	<b>Weld-on Hook</b>
Not supplied by Pandrol	<b>Channel. 100 x 50 x 220 mm long</b>





# Depot Fastenings

The Pandrol depot fastening, sometimes named “pit track fastening”, is a simple and efficient fastening system which can be adapted to all types of depot track. It can be accommodated on steel or concrete pedestals and steel beams and is suitable for all the major rail types.

The use of smart polyamide insulators, together with the insulation plate, ensure high level of electrical resistance. The high electrical resistance generally allows for a spacing of 1m between fastenings (to be verified per Pandrol calculation notes) helping reduce track construction costs.

## → Depot Fastenings

Pandrol Assembly Reference	Description
E360/301	<b>Depot Track Fastening for 54E1 Rail on Concrete Pillar For drill and grout fixation applications</b>
<b>Qty per Rail Seat</b>	
C152/028	Nylon Locking Nut H FR M22 x2
C323/031	Flat Washer ULS6 x2
C228/003	Double Coil Spring Washer x2
C226/077	Spring Washer AP77 x2
C362/240	Insulator AP240 Type 1 x2
C120/002	Grooved Rail Pad x1
C120/649	Insulating Plate x1
C153/072	Compressible Washer x2
C323/054	Flat Washer x2
EN ISO 4035	Low Nut H M22 x2
C322/053	M22 Threaded Rod L=336 mm x2



## → Depot Fastening Anchors

Pandrol Part Reference	Description
<b>Depot Fastening Anchor Assembly</b>	
Not allocated	<b>Anchor assembly for E360/301. For initial build.</b>
<b>Components per anchor assembly (2 per Rail Seat required)</b>	
C152/028	Nylon Locking Nut H FR M22 x1
C323/031	Flat Washer ULS6 x1
C226/077	Spring Washer AP77 x1
C362/240	Insulator AP240 Type 1 x1
C153/072	Compressible Washer* x1
C323/054	Flat Washer* x1
EN ISO 4035	Low Nut H M22* x1
C322/053	M22 Threaded Rod L=336 mm* x1

\*Embedded component.



## → Depot Fastening Anchors

Pandrol Part Reference	Description
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## Depot Assembly Anchor Parts

C322/053	<p><b>M22 Threaded Rod</b></p> <p>For drill and grout fixation into concrete pillar. Length = 336 mm Finish = Zinc Plated / Zinc Coated.</p>
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C152/028	<p><b>Nylon Locking Nut H FR M22</b></p> <p>Finish = Zinc Plated / Zinc Coated.</p>
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C323/031	<p><b>Flat Washer ULS6</b></p> <p>Size: Outer Diameter 47 mm, Inside Diameter 23 mm Finish = Zinc Plated / Zinc Coated.</p>
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C228/003	<p><b>Double Coil Spring Washer x2</b></p>
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C226/077	<p><b>Spring Washer AP77</b></p> <p>Size: Outer Diameter 56 mm, Inside Diameter 24 mm.</p>
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## → Depot Fastening Anchors

Pandrol Part Reference	Description
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## Depot Assembly Anchor Parts

C362/240	<p><b>Insulator AP240 Type 1 (Black)</b></p> <p>Material: Polyamide – Glass Reinforced.</p>
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C153/072	<p><b>Compressible Washer</b></p> <p>Size: Outer Diameter 45 mm, Inside Diameter 23 mm Material: Elastomer.</p>
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C323/054	<p><b>Flat Washer</b></p> <p>Size: Outer Diameter 39 mm, Inside Diameter 23 mm.</p>
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Not allocated	<p><b>Low Nut H M22 - EN ISO 4035</b></p> <p>Width across flats = 34 mm.</p>
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## → Depot Fastening Rail Pads

### Pandrol Part Reference

### Description

C120/002

#### Grooved Rail Pad

Working Thickness: 4.5 mm  
Material: Natural Rubber.



## → Depot Fastening Insulating Plates

### Pandrol Part Reference

### Description

C120/649

#### Insulating Plate

Thickness: 15 mm  
Material: Permal.







# DSA

## Discontinued/Serviceable Concrete Sleepers

The DSA fastening is a historical Pandrol product similar to the e-Clip system. It is based on the same concept of a spring clip secured to the sleeper through a cast-in shoulder or baseplate, for fixation to concrete or timber sleepers. The DSA fasteners have been integrated in the e-Clip family and spare parts are available upon request.

## → DSA Assemblies (Ballast)

Pandrol Assembly Reference	Description																												
E600/118	<p><b>DSA Concrete Sleeper Assembly for BS70A rail 1000 mm Gauge. Gauge widening available up to + 20 mm*</b></p> <p><b>Qty per Sleeper Set</b></p> <table border="1"> <tr> <td>C620024</td> <td>Clip DSA 24 x4</td> </tr> <tr> <td>E120/346</td> <td>E120/346 Rail Pad x2</td> </tr> <tr> <td>C630/77</td> <td>Insulator 14 mm (Sky Blue) Gauge Side x1</td> </tr> <tr> <td>C630/77</td> <td>Insulator 26 mm (Green) Field Side x1</td> </tr> <tr> <td>C630/77</td> <td>Insulator 12 mm (Black) Gauge Side x1</td> </tr> <tr> <td>C630/77</td> <td>Insulator 28 mm (Orange) Field Side x1</td> </tr> </table> <p><i>* Gauge widening achieved through combination of sleeper type (shoulder setting) and insulator change. Main Sleeper = 0 - 8 mm gauge widening. Complementary Sleeper = 10 - 20 mm gauge widening.</i></p> <p><b>DSA Concrete Sleeper Assembly for BS70R rail 1000 mm Gauge. Gauge widening available up to + 20 mm*</b></p> <p><b>Qty per Sleeper Set</b></p> <table border="1"> <tr> <td>C620024</td> <td>Clip DSA 24 x4</td> </tr> <tr> <td>E120/346</td> <td>Rail Pad x2</td> </tr> <tr> <td>C630/79</td> <td>Insulator 10 mm (Black) Gauge Side x2</td> </tr> <tr> <td>C630/79</td> <td>Insulator 24 mm (Natural) Field Side x2</td> </tr> </table> <p><i>* Gauge widening achieved through combination of sleeper type (shoulder setting) and insulator change. Main Sleeper = 0 - 8 mm gauge widening. Complementary Sleeper = 10 - 20 mm gauge widening.</i></p> <p><b>DSA Concrete Sleeper Assembly for BS75R rail 1000 mm Gauge. Gauge widening available up to + 20 mm*</b></p> <p><b>Qty per Sleeper Set</b></p> <table border="1"> <tr> <td>C620024</td> <td>Clip DSA 24 x4</td> </tr> <tr> <td>E120/346</td> <td>Rail Pad x2</td> </tr> <tr> <td>C630/79</td> <td>Insulator 8 mm (Dark Blue) Gauge Side x2</td> </tr> <tr> <td>C630/79</td> <td>Insulator 20 mm (Brown) Field Side x2</td> </tr> </table> <p><i>* Gauge widening achieved through combination of sleeper type (shoulder setting) and insulator change. Main Sleeper = 0 - 8 mm gauge widening. Complementary Sleeper = 10 - 20 mm gauge widening.</i></p>	C620024	Clip DSA 24 x4	E120/346	E120/346 Rail Pad x2	C630/77	Insulator 14 mm (Sky Blue) Gauge Side x1	C630/77	Insulator 26 mm (Green) Field Side x1	C630/77	Insulator 12 mm (Black) Gauge Side x1	C630/77	Insulator 28 mm (Orange) Field Side x1	C620024	Clip DSA 24 x4	E120/346	Rail Pad x2	C630/79	Insulator 10 mm (Black) Gauge Side x2	C630/79	Insulator 24 mm (Natural) Field Side x2	C620024	Clip DSA 24 x4	E120/346	Rail Pad x2	C630/79	Insulator 8 mm (Dark Blue) Gauge Side x2	C630/79	Insulator 20 mm (Brown) Field Side x2
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C630/79	Insulator 20 mm (Brown) Field Side x2																												



## → DSA Assemblies (Ballast)

Pandrol Assembly Reference	Description
E600/118	<p><b>DSA Concrete Sleeper Assembly for BS80R rail 1000 mm Gauge. Gauge widening available up to +20 mm*</b></p> <p><b>Qty per Sleeper Set</b></p> <p>C620024 Clip DSA 24 x4 E120/346 E120/346 Rail Pad x2 C630/79 Insulator 6 mm (Dark Green) Gauge Side x1 C630/79 Insulator 18 mm (Green) Field Side x1 C630/79 Insulator 8 mm (Dark Blue) Gauge Side x1 C630/79 Insulator 16 mm (Yellow) Field Side x1</p> <p><i>* Gauge widening achieved through combination of sleeper type (shoulder setting) and insulator change. Main Sleeper = 0 – 8 mm gauge widening. Complementary Sleeper = 10 – 20 mm gauge widening.</i></p> <p><b>DSA Concrete Sleeper Assembly for BS70ASCE rail 1000 mm Gauge. Gauge widening available up to +20 mm*</b></p> <p><b>Qty per Sleeper Set</b></p> <p>C620024 Clip DSA 24 x4 E120/346 Rail Pad x2 C630/78 Insulator 11 mm (Black) Gauge Side x2 C630/78 Insulator 23 mm (Natural) Field Side x2</p> <p><i>* Gauge widening achieved through combination of sleeper type (shoulder setting) and insulator change. Main Sleeper = 0 – 8 mm gauge widening. Complementary Sleeper = 10 – 20 mm gauge widening.</i></p> <p><b>DSA Concrete Sleeper Assembly for BS80A rail 1000 mm Gauge. Gauge widening available up to +20 mm*</b></p> <p><b>Qty per Sleeper Set</b></p> <p>C620024 Clip DSA 24 x4 E120/346 Rail Pad x2 C630/77 Insulator 12 mm (Black) Gauge Side x2 C630/77 Insulator 22 mm (Natural) Field Side x2</p> <p><i>* Gauge widening achieved through combination of sleeper type (shoulder setting) and insulator change. Main Sleeper = 0 – 8 mm gauge widening. Complementary Sleeper = 10 – 20 mm gauge widening.</i></p>



## → DSA Assemblies (Ballast)

Pandrol Assembly Reference	Description
	<p><b>DSA Concrete Sleeper Assembly for BS100A rail 1000 mm Gauge. Gauge widening available up to +18 mm*</b></p> <p><b>Qty per Sleeper Set</b></p> <p>C620024 Clip DSA 24 x4 E120/346 Rail Pad x2 C630/76 Insulator 8 mm (Black) Gauge Side x2 C630/76 Insulator 10 mm (Natural) Field Side x2</p> <p><i>* Gauge widening achieved through combination of sleeper type (shoulder setting) and insulator change. Main Sleeper = 0 – 8 mm gauge widening. Complementary Sleeper = 10 – 18 mm gauge widening.</i></p>
	<p><b>→ DSA Baseplate Assemblies</b></p>
	<p><b>For fixation to timber sleepers</b></p>
E670/38	<p><b>DSA Baseplate Assembly for BS80A rail Timber Sleepers</b></p> <p><b>Qty per Sleeper Set</b></p> <p>E622/29 Baseplate DSA 29–P117.5–40 x2 C620005 Clip DSA 5 x4 E120/257 Grooved Rubber Pad x2 E225/23FV Coach Screw FV23–135 No.9 x4 E228/3 Spring Washer ID26 mm OD46 mm x4</p>
E670/19	<p><b>DSA Baseplate Assembly for BS100A rail Timber Sleepers</b></p> <p><b>Qty per Sleeper Set</b></p> <p>E622/14 Baseplate DSA 14–P133.5–40 x2 C620005 Clip DSA 5 x4 E120/257 Grooved Rubber Pad x2 E225/23FV Coach Screw FV23–135 No.9 x4 E228/3 Spring Washer ID26 mm OD46 mm x4</p>

## → DSA Serviceable Components

Pandrol Part Reference	Description
<b>Rail Clips</b>	
C620024	<p><b>DSA Rail Clip 24</b> <b>Standard Finish: Red</b></p> <hr/> <p>Standard toe load clip Material: Spring Steel For use with concrete sleeper assemblies.</p>
C620005	<p><b>DSA Rail Clip 5</b> <b>Standard Finish: Red</b></p> <hr/> <p>Standard toe load clip Material: Spring Steel For use with baseplates on timber sleepers.</p>
<b>Rail Pads</b>	
E120/346	<p><b>HDPE Rail Pad (Black)</b></p> <hr/> <p>Thickness: 7 mm Material: HDPE Used with BS70A, BS70R, BS75R, BS80R, BS70ASCE, BS80A, BS100A Rails on concrete sleepers.</p>
E120/257	<p><b>Grooved Rubber Pad (Black)</b></p> <hr/> <p>Thickness: 4.5 mm Used with BS80A and BS100A rails on baseplates for timber sleepers.</p>
<b>Insulators for Concrete Sleeper Assemblies - BS100A Rail</b>	
C630/76	<p><b>Insulator 76</b></p> <hr/> <p>Material: GRN 6 mm - Grey 8 mm - Black 10 mm - Natural 12 mm - Sky Blue</p>

## → DSA Serviceable Components

Pandrol Part Reference	Description
<b>Insulators for Concrete Sleeper Assemblies - BS70A Rail</b>	
C630/77	<p><b>Insulator 77</b></p> <hr/> <p>Material: GRN 12 mm - Black 14 mm - Sky Blue 16 mm - Violet 18 mm - Brown 20 mm - Grey 22 mm - Natural 24 mm - Yellow 26 mm - Green 28 mm - Orange.</p>
<b>Insulators for Concrete Sleeper Assemblies - BS80A Rail</b>	
C630/77	<p><b>Insulator 77</b></p> <hr/> <p>Material: GRN 12 mm - Black 14 mm - Sky Blue 16 mm - Violet 18 mm - Brown 20 mm - Grey 22 mm - Natural.</p>
<b>Insulators for Concrete Sleeper Assemblies - BS70R Rail</b>	
C630/79	<p><b>Insulator 79</b></p> <hr/> <p>Material: GRN 10 mm - Black 12 mm - Sky Blue 14 mm - Violet 16 mm - Yellow 18 mm - Green 20 mm - Brown 22 mm - Grey 24 mm - Natural.</p>
<b>Insulators for Concrete Sleeper Assemblies - BS75R Rail</b>	
C630/79	<p><b>Insulator 79</b></p> <hr/> <p>Material: GRN 8 mm - Dark Blue 10 mm - Black 12 mm - Sky Blue 14 mm - Violet 16 mm - Yellow 18 mm - Green 20 mm - Brown.</p>

## → DSA Serviceable Components

Pandrol Part Reference	Description
<b>Insulators for BS80R Rail</b>	
C630/79	<b>Insulator 79</b> 6 mm – Dark Green 8 mm – Dark Blue 10 mm – Black 12 mm – Sky Blue 14 mm – Violet 16 mm – Yellow 18 mm – Green.
<b>DSA Shoulders</b>	
C610/15	<b>Cast shoulder DSA 15</b> Material: Cast Iron (SGI) Precast in supplied DSA sleeper.

## → DSA Baseplates for Timber Sleepers

Pandrol Part Reference	Description
E622/29	<b>Baseplate DSA 29–P117.5–40</b> Baseplate for BS80A rail Inclination 1:40 Material: Cast Iron (SGI).
E622/14	<b>Baseplate DSA 14–P133.5–40</b> Baseplate for BS100A rail Inclination 1:40 Material: Cast Iron (SGI).

## → DSA Baseplate Fixings for Timber Sleepers

Pandrol Part Reference	Description
E225/23FV	<b>Coach Screw FV23-135 No.9</b>
E228/3	<b>Spring Washer ID26 mm OD46 mm</b>

## Terminology

### ZLR

Zero Longitudinal Restraint assemblies allow longitudinal movement of the rail. Used to provide differential movement between the rails and long bridge structures, or stressing relief for ground subsidence. ZLR assemblies use normal toe-load clips but divert the clamping force in other directions providing a gap over the rail foot and allowing the rail to slide longitudinally in the gap. In the event of the rail moving to close the gap (such as rail roll) the nominal toe-load is immediately available to prevent further overturning movement. This component can be used with existing sleeper configurations to alter the fastening assembly into a ZLR assembly.

## Change Log

Changes from 2022 edition.

Page	Description
5	Added New Fastclip FC1511 Concrete sleeper assembly for BS100A rail.
6	Added FC1511 clip Assembly (used in BS100A assembly 24774).
7	Added 21115 rail pad (used in BS100A assembly 24774).
9	Added sidepost insulators 11746 (11mm) and 21084 (12mm) used in BS100A 24774.
12	Added new FC installation tool for use at guard rail. Part number 24720.
15	Part numbers added to 26461-SRT Pad-Rail x1 and 26490 FC1501 ZLR Clip and Toe Insulator (Blue) x2.
16	Part number added to 24690 FC1501 ZLR Clip Assembly.
17	Added 24641-SRT FCB Studded Rubber ZLR Rail Pad (Black).
20	Thickness added to 24252-SRT FCB Rail Shim – ZLR.
21	Fastclip Clip Extractor part number change from AE16180 to AE17385.
23	Part numbers added to e2091TAV / e1819AV Concrete Sleeper Assembly for 54E1 Rail assembly 13401.
23	Part numbers added to e2091TAV / e1819AV Concrete Sleeper Assembly for 60E1 Rail assembly 13401.
23	Part numbers added to e2091TAV / e1819AV Concrete Sleeper Assembly for 54E1 Rail assembly 18912.
26	Added 7540 e1819AV Clip.
34	Alternative option 24692 shoulder added.
34	Added 24692 e-Clip Shoulder for Concrete Sleepers.
36	Added PP140036 e-Clip Installer (Yellow).
36	Added PP140075 e-Clip Installer replacement hook.
37	Changed AE21732to include e1819AV clips.



# Partners in excellence

Contact us to discuss your track requirements

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