

Fastening systems



A proven futureproofing fastening system that provides the ability to tune track performance quickly.

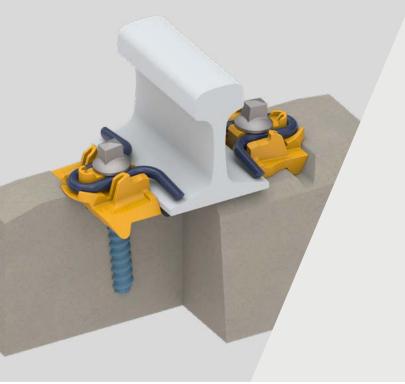
PANDROL Partners in excellence

Pandrol's SD-HH is a durable and reliable threaded fastening solution that has been developed to meet Cat-E & AREMA standards.

SD-HH can deliver higher rates of construction thanks to its efficient controlled clip guidance from parked to the in-service position.

The system is characterized by a more compact and robust design with lower carbon footprint. Its optimized geometry also enables, automatic installation resulting improved efficiency and cost saving during installation and maintenance.

SD-HH also offers various advantages over legacy screwed systems, which include avoiding ballast entrapment in the fastenings and an improved sealing of the dowel to protect the sleeper.



 $\rightarrow$  TECHNICAL FEATURES

#### **SKL** conversion

SD-HH products can be installed in an SKL-shaped rail seat, providing a simple retrofit upgrade.

#### **Captive fastening**

SD-HH sleepers can be supplied to sites fully preassembled, with all components remaining captive during construction and maintenance activities.

#### Switch-on/switch-off function

The SD-HH clip can be moved quickly from the parked position (in which it is held securely without intruding into the rail seat) into the service position. The clip is simply pushed from one position to the other to either clamp or release the rail.

#### Eco-design

Compared to other screwed solutions, the clip is relatively low weight. This reduces its environmental impact and logistics cost without compromising on performance.

#### Increased robustness & Lifecycle

The clip has been modified to avoid frequencies where destructive amplitudes are generated, causing the clip to fail in fatigue. A significant increase in the natural frequency is key to increase the robustness of the tension clamp.

#### Innovative geometry

Pandrol SD-HH innovative geometry increase the contact area between clip and rail and solves ballast entrapment problem of SKL tension clamps.

### $\rightarrow$ advantages

- The SD-HH system's pre-assembled captive fastening units and simple switch-on/switch-off function enable very high rates of track construction and maintenance. This efficiency translates into huge savings in labour, as well as reduced distribution and handling costs throughout the system's lifecycle.
- The SD-HH is an extremely environmentally-friendly fastening solution. reducing the CO<sub>2</sub> footprint, logistics costs and environmental impact.
- The innovative geometry of the SD fastening improves track stability, prevents dust and impurities entering the dowel, and solves the problem of ballast entrapment.
- The SD-HH can provide a simple retrofit upgrade for SKL fastenings.



## COMPONENTS

- 1. SD clip
- 2. Guide plate insulators
- 3. Rail pad
- 4. Anchor screw
- 5. Dowel

# $\rightarrow$ specifications

Assembly performance data	
Static Stiffness	>150 kN/mm
Longitudinal rail restraint	>10kN
Clamping Force	>25kN
Lateral adjustment	+/- 7.5
Vertical adjustment	+/- 10
Gauge adjustment	+/- 15mm



