



# Rail Equipment Catalogue

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Our products stand the test of time. Which is why they're chosen by half the world's rail networks - equivalent to the distance from the earth to the moon. Our customers trust us to help them achieve their goals. And if anything falls short of our shared standards, they know we'll put it right, right away.

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# Welding Equipment

Pandrol offers a range of equipment designed to support welders deliver high quality welds efficiently and effectively. From shearing and alignment, to sawing and tamping, the product range is designed to be used alongside all aluminothermic welding processes.

## Rail Saws

### Rail Saw

00800A

The 00800A Rail Saw is a hydraulic powered abrasive rail saw that uses a 14" or 16" diameter blade to cut rail. A sturdy pivot arm securely clamps to the rail and guides the saw during operation. Free axis movement of the tool allows cutting on either side of the rail and clean separations average well under two minutes. Sturdy construction and quality components ensure low maintenance and long life of the tool.



#### → SPECIFICATIONS

Technical data			Clamp	
Dimensions	36" (91.4 cm)	10" (25.4 cm)	17" (43.2 cm)	36" x 8" x 11"
Flow	10 gpm (38 lpm)			
Pressure	2,000 PSI (140 bar)			
RPM	3,200			
Weight	35 lbs (15.8 kg) / Clamp: 21 lbs (9.5 kg)			

#### → ACCESSORIES

00897	14" Saw Blades
00899	16" Saw Blades

## Rail Saws

### Reversing Rail Saw

03900A

The 03900A Reversing Rail Saw is a hydraulic powered abrasive rail saw that can cut rail from either side of the rail safely without disconnecting or realignment; simply pivoting the saw to the other side of the rail provides the flexibility and safety that is needed on track.



#### → SPECIFICATIONS

Technical data			Clamp	
Dimensions	36" (91.4 cm)	10" (25.4 cm)	17" (43.2 cm)	36" x 8" x 11"
Flow	10 gpm (38 lpm)			
Pressure	2,000 PSI (140 bar)			
RPM	160			
Weight	40 Lbs (18.1 kg) / Clamp: 21 Lbs (9.5 kg)			

Shearing Machines

## Electric Shearing Machines

EME1 / EME2

The EME1 and EME2 shearing machines are used to cut excess metal around the rail head after aluminothermic welding.

The EME1 is the narrow variant, ideal for shearing vignole rails as well as switches and crossings. The EME2 has a wider design and is applicable to vignole rails and optimised for use with Pandrol's Head Wash Repair welding process.



→ SPECIFICATIONS

Technical data		
	EME1	EME2
Energy	Electrical - 230V 1P	Electrical
Type	Narrow	Wide
Weight	55 kg	60 kg
Dimensions (mm)	1,200 x 470 x 450	1,200 x 470 x 480
Power	2,600 W	2,600 W

- Easy to set up the shear head
- Quick and powerful cut
- Precise cut without risk to the weld
- Perfect centring and guiding
- Choice between the narrow and wide version

Shearing Machines

## Battery Shearing Machines

EMB1 / EMB2

The EMB1 and EMB2 shearing machines are battery powered and ideal tools for working in tunnels and closed environments.

The EMB1 is the narrow variant, perfect for shearing vignole rails including switches and crossings.

The wide version, the EMB2, can also shear vignole rails and is optimised for use with Pandrol's Head Wash Repair welding process.



→ SPECIFICATIONS

Technical data		
	EMB1	EMB2
Energy	LiHD battery technology	LiHD battery technology
Type	Narrow	Wide
Weight	57 kg	60 kg
Dimensions (mm)	1,200 x 470 x 450	1,200 x 470 x 480
Power	2 x 18V - 8 Ah - 2,400 W	2 x 18V - 8 Ah - 2,400 W

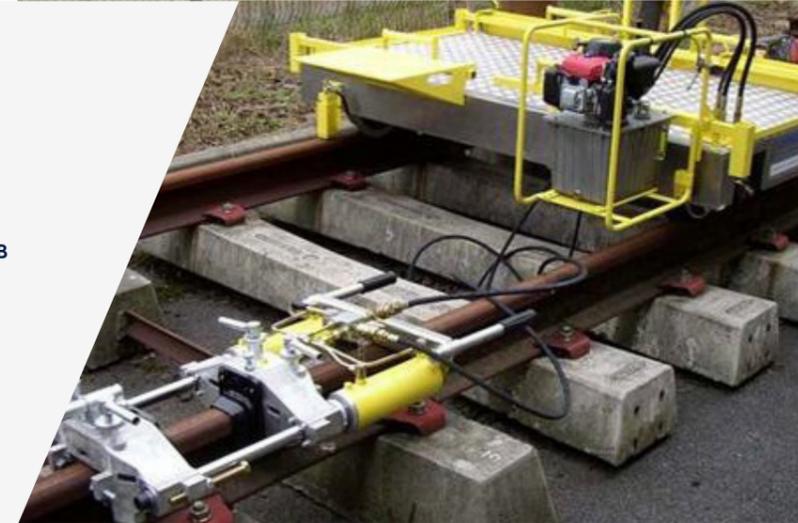
- Easy to set up the shear head
- Quick and powerful cut
- Precise cut without risk to the weld
- Perfect centring and guiding
- Choice between the narrow and wide version

Shearing Machines

## Hydraulic Shearing Machines

EGH1 / EGH2 / Dead Head Cutter TM / 05100A / 05100B

Pandrol's range of hydraulic shearing machines are designed to shear excess metal after welding. We offer shearing tools for all rail types and aluminothermic welding processes.



→ SPECIFICATIONS

Technical data							
	EGH1 Thermal	EGH1 Electrical	EGH2 Thermal	EGH2 Electrical	Dead Head Cutter TM	05100A	05100B
Energy	Thermal	Electrical 230V 1P	Thermal	Electrical	Hydraulic	Hydraulic	Hydraulic
Type	Narrow	Narrow	Wide	Wide	Narrow	Wide	Narrow
Weight	39 kg	23 kg	39 kg	23 kg	40 kg	45 kg	38,6 kg
Dimensions (mm)	1,020 x 315 x 270	1,020 x 315 x 270	1,020 x 315 x 270	1,020 x 315 x 270	835 x 265 x 360	737 x 508 x 330	68,6 x 50,8 x 33
Pressure/Power	4,000 W	2,500 W	4,000 W	2,500 W		206 bar	140 bar

Shearing Machines

## Hydraulic Hand Pump Shearing Machine

EPM2 / 05000

Pandrol's range of hydraulic hand pump shearing machines deliver a consistently safe and precise shearing of the excess weld.



→ SPECIFICATIONS

Technical data		
	EPM2	05000
Energy	Hydraulic	Hydraulic
Type	Wide	Wide
Weight	63 kg	59 kg
Dimensions (mm)	1,200 x 490 x 500	737 x 508 x 330
Pressure		206 bar

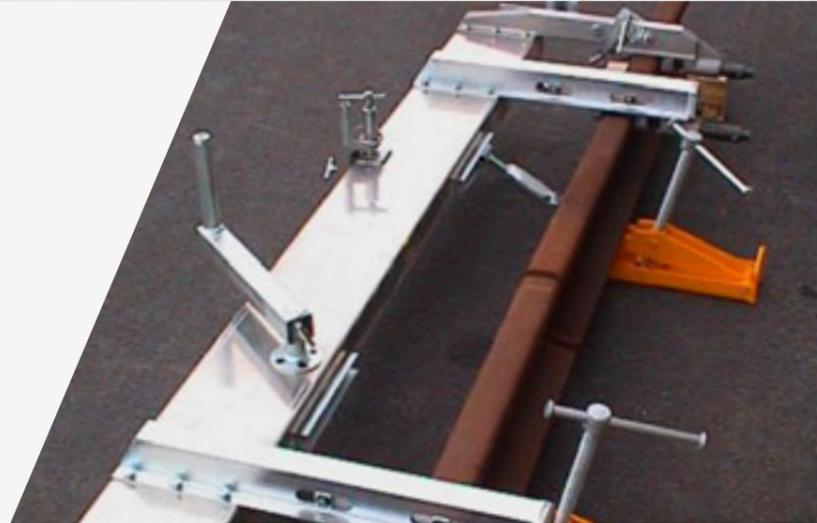
Alignment

## Alignment Beam

BA240

Pandrol's Alignment Beams ensure accurate aligning of free rails prior to aluminothermic welding.

Technical data	
Weight	60 kg
Dimensions	2,630 x 800 x 270 mm



→ FEATURES

- Easy to use
- For all types of rail
- Heavy duty construction
- Allows independent adjustment
- Ensure an accurate positioning

→ ACCESSORIES

- A detwisting system
- A support foot
- A pair of rail jacks
- An aluminium frame with 4 clamps

Alignment

## Magnetic Straight Edge

The Magnetic Straight Edge enables the welder to properly crown the rail ends to the desired height with ease. The heavy duty magnet located at the end of the straight edge provides improved control and stability during the alignment process. The height adjustment knobs located at either end of the magnetic straight edge can be set to the appropriate height for crowning with the Starrett Taper Gage.



→ FEATURES

- Lightweight
- Maximum stability
- Adjustable height knobs

Alignment

## A Frame Rail Aligner

CR 57 / CR 61

The A Frame Rail Aligner delivers precision positioning of the rails prior to aluminothermic welding. Pandrol's A Frame range is designed for easy lifting, carrying, and operation. The aligner jaws can be modified to a wide range of global rail types.



→ FEATURES

- Suitable for all kinds of rail
- Heavy duty construction
- Lightweight alloy
- Ensures accurate alignment
- Guarantees the welding geometry

→ SPECIFICATIONS

Technical data	
Spread	570 mm
Width	160 mm
Height	600 mm
Weight	18 kg

→ VARIATIONS



Universal A Frame



For Fastclip fastenings



For Grooved / Crane rails

Alignment

## Alignment Plates

ap-1

The Alignment Plates make it possible for the welder to accurately align the rails through lift, twist and horizontal adjustment. The towers enable the rail to move vertically and reduce twist, while the base of the rail sits on the rail-saddle to stabilise and adjust by shifting horizontally.



→ EASY TO USE

The towers for the Alignment Plates are removable, allowing the user to easily situate the base plate under the rail base for quick set-up and convenient storage. The foot of the tower is grooved, which allows for a more stable and sturdier grip into the sleeper.

The design of the Alignment Plates allows the user to replace individual parts as needed, rather than replacing the entire Pandrol Alignment Plate.

- Removable towers
- Easy installation and removal

→ SPECIFICATIONS

Dimensions	
Length	16¾"
Width	5"
Height	5"

Preheaters

## Hydraulic Preheater

The Hydraulic Preheater is a compact, lightweight and easy-to-use tool for heating the rail-ends before welding. It features a hydraulically driven blower and uses bottled Liquid Propane (LP).

The Pandrol Hydraulic Preheater utilises oxygen pulled in from the air, eliminating the need for bottled oxygen. This Hydraulic Preheater ensures the rail-ends never melt during preheating with the QP Process and the torch safely extinguishes once removed from the moulds.



→ SPECIFICATIONS

Technical data			
Dimensions	18" (45.7 cm)	16" (40.6 cm)	13½" (34.3 cm)
Flow	10 gpm (38 lpm)		
Pressure	2,000 PSI (140 bar)		
RPM	3,600		
Weight	83 lbs (37.6 kg)		

→ PREHEATER COMPLETE SETUP: 03800B-COMP

22500000	Hydraulic Preheater Unit
26110000	Precision Torch Stand
22600001	Hydraulic Torch
22700000	50" Air-Propane Hose
22800000	20" Flex Hose
HP-FIP-1	Flint Ignitor Pistol

Preheating

## Precision Torch Stand

The Precision Torch Stand is used during the preheating process to finely tune the torch position while preheating the rail ends.

The 2 adjustment knobs on the upper portion of the Torch Stand manipulate side-to-side and forward/backward movement while the smaller adjustment rings on the lower portion, the stem, allow the user to raise and lower the height of the torch when needed and lock it into place at the appropriate height.



→ FURTHER CONTENT

The Precision Torch Stand comes apart in two separate "units". The upper "clamp" portion holds the Torch Setup for the preheat while the lower "stem/post" is meant to support it.

This design enables the welder to pre-align the torch in the moulds, quickly remove and replace the torch without disturbing the preset alignment, and quickly remove the torch tip after preheating for the pour process.

→ FEATURES

- Precision adjustment
- Better stability
- Sturdier grip

Wrenches & Drills

## ½" Hydraulic Drill / Impact Wrench

04500D

The 04500D ½" Impact Wrench is designed to offer the operator superior torque handling capabilities under the most adverse conditions. Operators will appreciate the lightweight aluminium body and the ergonomic trigger design. The Impact Wrench is shipped with a 7/16" quick change chuck for a wide variety of bits and accessories. A ½" square drive is included for use with ½" impact sockets.



→ SPECIFICATIONS

Technical data			
Dimensions	10" (25.4 cm)	7" (17.8 cm)	7" (17.8 cm)
Flow	5 gpm (19 lpm)		
Pressure	2,000 PSI (140 bar)		
Weight	13 lbs (6 kg)		

→ ACCESSORIES

01743	Counter Bore 1½"
01750	Counter Bore 2-9/16"
01751	Counter Bore 3"
01775	1/2" x 12" Auger Bit
01782	9/16" x 18" Auger Bit
01777	11/16" x 12" Auger Bit
01781	11/16" x 18" Auger Bit
01795	5/8" x 18" Auger Bit
045046	Adapter ½" Square Drive

Wrenches & Drills

## 5 GPM 1" Impact Wrench

01600A

The 01600A 1" Impact Wrench is capable of handling the toughest jobs. Crossing, frog or track bolts are no problem for this rugged tool. Optional handles allow the operator to modify the tool to provide an efficient, safe and ergonomic work position for the task at hand. A torque adjustment knob fine-tunes torque from 0-3500 ft/lb.



→ ACCESSORIES

01635	Stand Up Handle
01669	Crossing Handle
-	Sockets Available - Specify Requirements

Wrenches & Drills

## 10 GPM 1" Impact Wrench

02500

The 02500 1" Impact wrench is capable of handling the toughest jobs. Crossing, frog or track bolts are no problem for this rugged tool. Its anti-vibration design and optional handle provides an efficient, safe, and ergonomic work position. A torque adjustment knob will fine-tune torque from 0-3500 ft/lb.



→ SPECIFICATIONS

Technical data			
Dimensions	18" (45.7 cm)	8" (20.3 cm)	10" (25.4m)
Flow	5 gpm (19 lpm) or 10 gpm (38 lpm)		
Pressure	2,000 PSI (140 bar)		
Weight	37 lbs (16.8 kg)		

→ ACCESSORIES

02575	Stand Up Handle
-	Sockets Available - Specify Requirements

Wrenches & Drills

## Rail Drill

01500

The 01500 Hydraulic Rail Drill is a small, dependable and efficient maintenance tool that offers cost-effective operation under adverse conditions. Simple clamp and height adjustment mechanisms allow quick set-up time on a variety of track configurations. The drill has a quick-set indexing bar that provides accurate hole spacing. Standard flat spade bits are used and can be changed in seconds without the need for wrenches. The rail drill includes a lubrication system.



→ SPECIFICATIONS

Technical data			
Dimensions	16" (40.6 cm)	23" (58.4 cm)	32" (81.3 cm)
Flow	10 gpm (38 lpm)		
Pressure	2,000 PSI (140 bar)		
RPM	4,000		
Weight	68 lbs (31 kg)		

→ ACCESSORIES

-	Drill bits (specify size)
-	Form blocks (specify size)
-	Index Bars (specify size)

Wrenches & Drills

## Self-Feed Rail Drill

03500

The 03500 Self Feed Rail Drill is a lightweight maintenance tool that offers cost effective operation. Maintenance crews will appreciate the simple clamp for quick setup on track. The use of patented Arrowhead inserts allows for quick drilling time and precision holes. The drill includes a lubrication system.



→ SPECIFICATIONS

Technical data			
Dimensions	35" (89 cm)	9" (22.8 cm)	15½" (39.4 cm)
Flow	10 gpm (38 lpm)		
Pressure	2,000 PSI (140 bar)		
Weight	68 lbs (31 kg)		

→ ACCESSORIES

03532	Rail templates (Specify Rail Profile)
01540	Index bars (Specify Rail Profile)
03598	Storage Case
03599	Biodegradable cutting fluid (1 or 5 US Gallon)
-	Assortment Of Carbide Drill Bit Inserts

Rail Pullers & Tampers

## 60 Ton Bridge Jack / Spreader 100 Ton Bridge Jack / Spreader

02800A / 02800-6

Pandrol's range of Bridge Jacks are ideal for crews doing bridge maintenance. The hydraulic circuit is equipped with a remote power up and down control manifold with built in flow control for protection and comes with a 25 foot transmission hose. Cylinders are pre-piped, terminating at quick disconnect couplers which allow for quick setup time.



→ SPECIFICATIONS

Technical data			
Dimensions	194" (492.8 cm)	6" (15.2 cm)	29" (73.7 cm)
Flow	5 gpm (19 lpm)		
Pressure	2,000 PSI (140 bar)		
Weight	02800A: 1,619 lbs (734.3 kg) 02800-6: 1,780 lbs (807.4 kg)		

→ ACCESSORIES

02850-KIT	Bridge Jack / Spreader Stool
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Rail Pullers & Tampers

## Bridge Jack / Spreader Stool

02850-KIT

Pandrol's Bridge Spreader Stool is a complete system with no additional pieces or chains required. Quick and secure connection around pylons ensures streamlined setup at the work site. Designed for use along with the Pandrol Bridge Spreader, the system can quickly and safely be installed wherever the bridge repairs are required.



→ SPECIFICATIONS

Technical data			
Dimensions	14½" (36.8 cm)	12" (30.5 cm)	14" (35.6 cm)
Technical data			
	Stool	Pin	Chain assembly
Weight	48 lbs. (22 kg)	12 lbs (5 kg)	32 lbs (15 kg)

Special chain length available upon request.

→ ACCESSORIES

02575	Stand Up Handle
-	Sockets Available - Specify Requirements

Rail Pullers & Tampers

## Lightweight Two-Stage Spike Puller

01100RM

The 01100RM Spike Puller uses a new design that is 25% lighter than older models, weighing only 39 pounds. Despite the lighter weight, it generates the same pulling force of 13,000 pounds.



→ SPECIFICATIONS

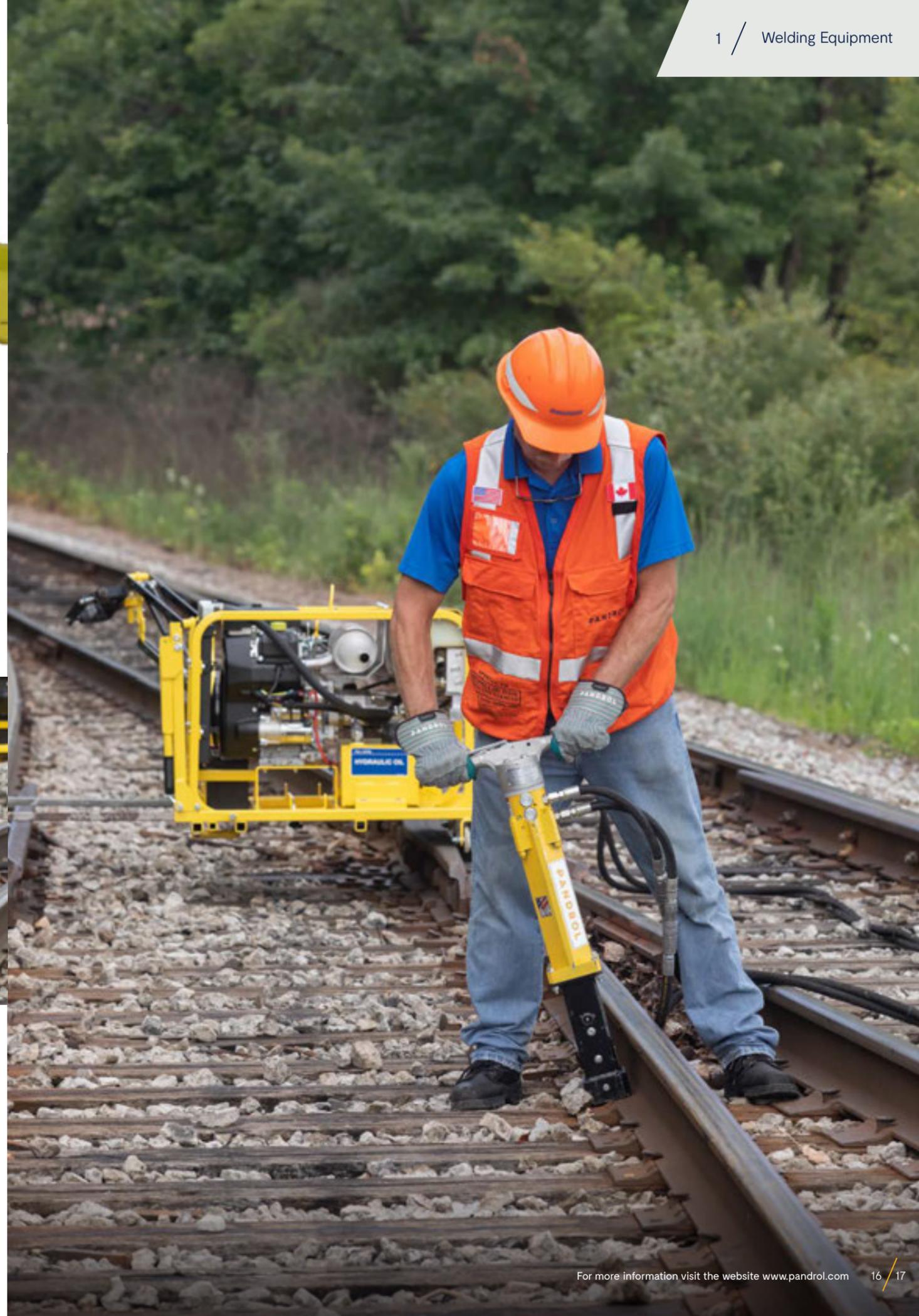
Technical data			
Dimensions	30" (76.2 cm)	13" (33 cm)	4" (10.1 cm)
Flow	5 gpm (19 lpm) or 10 gpm (38 lpm)		
Pressure	2,000 PSI (140 bar)		
Weight	39 lbs (17.7 kg)		

→ FEATURES

- Two-speed design to ensure smooth motion
- Safety trigger to prevent accidental activation
- Design allows spike to be grabbed from either side
- All moving parts fully enclosed for safety
- Quick change jaws

→ ACCESSORIES

01145	Hair Pin Puller Kit
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Rail Pullers & Tampers

## Rail Puller

03100C

The 03100C is a hydraulic actuated 120 ton rail puller. Operators will appreciate the single unit construction allowing quick set up time. The operator station houses an integrated intensifier and control valve manifold. Clamping blocks are captured and this self-aligning design is preloaded hydraulically for a safe and efficient pull.



→ SPECIFICATIONS

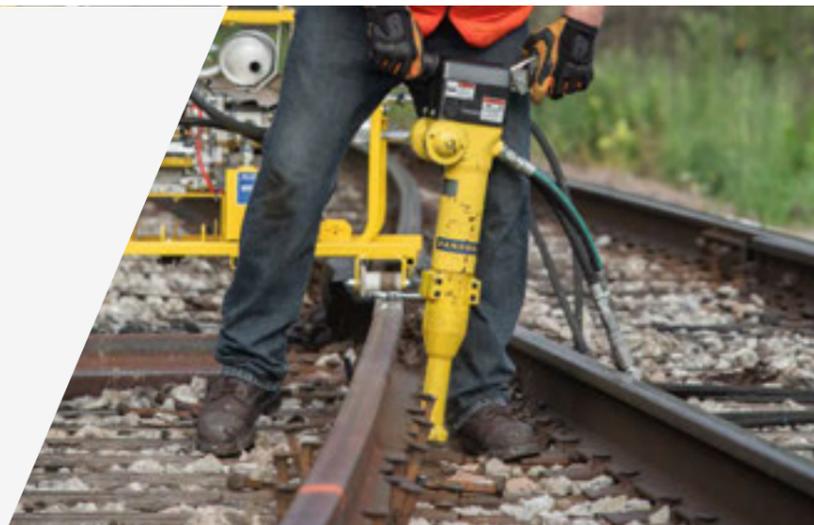
Technical data	Fully Extended	Pulling Cylinder Stroke	Width	Height
Dimensions	105" (266.7 cm)	10" (25.4 cm)	34" (86.4 cm)	17" (43.2 cm)
Flow	5 gpm (19 lpm) or 10 gpm (38 lpm)			
Pressure	2,000 PSI (140 bar)			
Pulling Cylinder Pressure	Rated 5,500 PSI (385 bar)			
Clamp Cylinder Pressure	2,000 PSI (140 bar)			
Weight	1,350 lbs (612.3 kg)			

Rail Pullers & Tampers

## Spike Driver

08300

The 08300 Spike Driver is equipped with torsion dampened handles which reduce the vibration level to a minimum. An excellent heavy duty tool designed to drive spikes and hairpins into the toughest sleepers in seconds.



→ SPECIFICATIONS

Technical data			
Dimensions	33" (83.8 cm)	18" (45.7 cm)	6" (15.2 cm)
Flow	5 gpm (19 lpm) or 10 gpm (38 lpm)		
Pressure	2,000 PSI (140 bar)		
Weight	65 lbs (29.5 kg)		

Rail Pullers & Tampers

## Spring Clip Applicator

01200

The 01200 Spring Anchor Applicator is a lightweight and labour saving tool for the maintenance-of-way crew. It is a safe and quick tool for installing spring anchor clips. The tool utilises a pivoting foot design with seven tons of force available to install the toughest clips. Operators will appreciate the clear view during installation.



→ FEATURES

Technical data	
Width	15" (38.1 cm)
Height	43" (114.3 cm)
Flow	5 gpm (19 lpm) OR 10 gpm (38 lpm)
Pressure	2,000 PSI (140 bar)
Weight	48 lbs (21.7 kg)

→ ACCESSORIES

01225	Head Worn Rail Kit
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Rail Pullers & Tampers

## Tamper

08200

The 08200 Hydraulic Tamper is equipped with torsion dampened handles which reduce the vibration level to a minimum. An excellent multi-purpose tool that can tamp, cut asphalt, and break concrete.



→ SPECIFICATIONS

Technical data			
Dimensions	18" (45.7 cm)	5" (12.7 cm)	30" (76.2 cm)
Flow	5 gpm (19 lpm)		
Pressure	2,000 PSI (140 bar)		
RPM	4,000		
Weight	62 lbs (28.1 kg) (with bit)		

→ ACCESSORIES

01362	Tamper Bit
01365	Spiker Bit
01370	Asphalt Cutter Bit
01375	Concrete Breaker

Ignition

## Startwel® Ignition System

The Startwel® Ignition System allows the welder to easily ignite the weld charge to initiate the pour process for the Pandrol Aluminothermic Weld System, replacing the traditional “sparkler” igniter design.

Startwel® is engineered to fit precisely into the round opening in the lid of the Pandrol CJ One-Shot Crucible. Once the crucible is prepped and ready to pour, the Startwel® Ignition System can be placed in the lid and deployed safely by removing the metal clip grounding the prongs. The Startwel® Ignition System starter is comprised of the same charge material used in the bottom thimble of the Pandrol CJ One Shot Crucible and is activated by touching the prongs on the starter handle with the charge.



→ FEATURES

- **Non-hazardous classification for transport**
- **Even disbursement of activated charge**
- **Ignites over 100 starters on one battery charge**

→ STARTWEL® IGNITION KIT: 82632508B

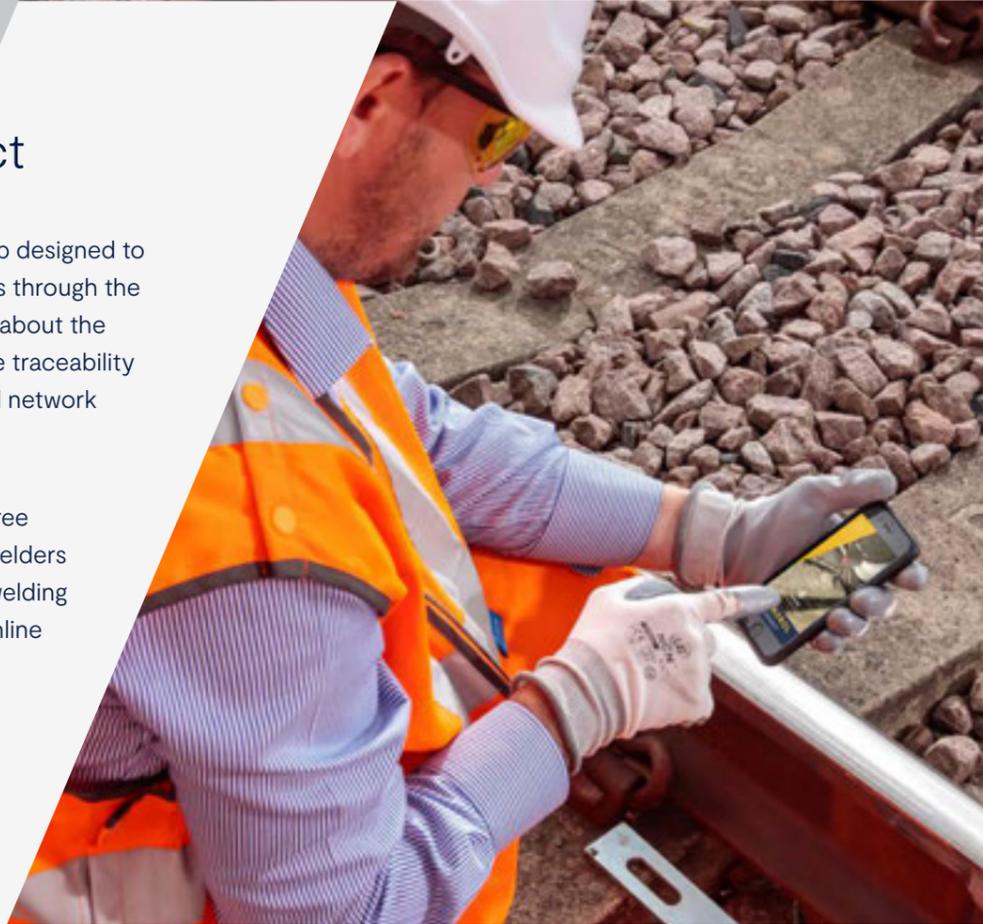
82632506	1 Startwel® Suitcase
82632509	1 Starter Handle
82632504	1 14.4V battery
82632505	1 Battery Charger
82632502	1 Box of 10 Starters

Rail Welding Traceability App

# Pandrol Connect

Pandrol Connect is a mobile app designed to support aluminothermic welders through the weld process, capture live data about the weld, save time and improve the traceability of welds for contractors and rail network operators.

Pandrol Connect consists of three modules: a mobile version for welders to record on-site data and for welding controllers to review data, an online monitoring app to review weld information from the office, and an online administration tool to apply settings to local standards. All data is hosted in the cloud for easy sharing.



Rail Welding Traceability App



→ PARAMETERS

**Location**

Document the location, environmental conditions, line type, and various other geographic variables

**Track Type**

Specify the rail profile, wear, alignment, gap, and cutting method used

**Weld Process**

Record the full welding process from preheating, to the weld itself, to profile grinding

→ TECHNICAL FEATURES

• **Full traceability of welding**

Designed to record data before, during and after welding. Generate detailed records of your operations including the welder's ID, geographic location, environmental factors, and various weld parameters.

• **Document welding operations in detail**

Assign pictures and voice recordings to specific welds, to provide a comprehensive overview of all work carried out on site.

• **Compatibility with preheating systems**

The application can be connected to preheating equipment to increase documentation.

• **QR Code integration**

Consumables can be scanned using QR codes to record the specific items used on site.

• **Welding instructions included**

Contains a detailed welding instruction manual, which is then available at the contractor's fingertips.

• **Works on track**

A reliable reporting tool which uses an ergonomic interface specifically designed for use on track. Access weld information on site even without internet access.

• **Designed for the full life-cycle of the weld**

Data can be reloaded for review at any point and additional information can be added including profiling and inspection data.

• **Available now for Android devices**

Currently available on the Google Play store. For information regarding iOS, contact us for further details.

→ ADVANTAGES

• **Digitalise and enhance welding documentation**

Increases welding traceability by making data transparent – easily identify defective welds and data anomalies

• **Reduced carbon footprint**

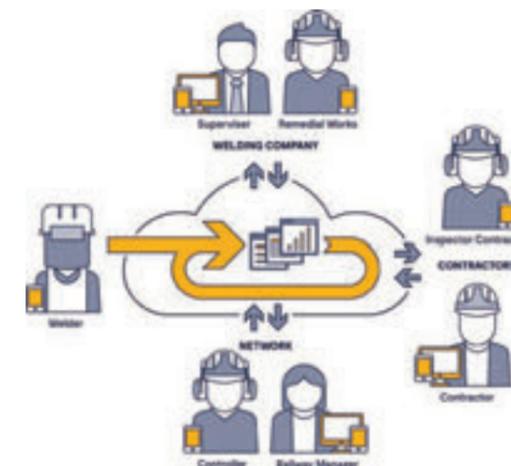
Drastically cuts down paperwork whilst saving users time

• **News updates available**

Includes a news function which updates users on the latest and best welding practices

• **A cost-orientated solution**

This customisable app requires no capital outlay and reduces wasted time spent on paperwork



Track your operations from your online dashboard:

- **Review individual welds**  
Edit, accept, reject, or request medial action
- **Data syncing**  
Connect directly to the SQL database to automatically synch your ERP in real time
- **Download data**  
Export data into spreadsheet software such as Excel
- **Generate certificates**  
Bespoke documentation merging data from casting through to final inspection

## 2

## Grinding Equipment

In addition to being ergonomically designed for safe use by the operator, Pandrol's range of grinding equipment is developed to maximise the life of the track across all rail heads and profiles.

## Profile / Frog Grinders

## Alpha Grinder

The Alpha Grinder extends the life of the track by grinding the complete profile in one operation, delivering the ergonomic design and precision efficiencies that Pandrol are renowned for.

The Alpha Grinder supports all standards of rail heads/profiles, using standard grinding stones. Ergonomically built, the light weight unit enables easy raising and lowering of the carrying handles and includes an electric motor for auto-setting the height of the grindstone.

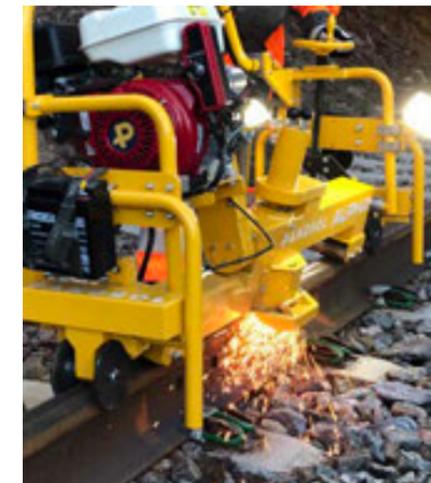
The Alpha Grinder is a robust product that's safe and secure for rolling on track. Built with the operator in mind, the unit incorporates essential and smart safety features.

## → FEATURES /

- Lightweight
- Quiet engine
- Automatic shut-down
- Ideal for corrugation grinding
- Faster reprofiling of the rail head
- Automatic adjustment of grinding height
- Easy raising and lowering of the carrying handles

## → ACCESSORIES /

Grinding stone 6" x 3" x 5/8"



Technical data	
Weight	97 kg
Height	91 cm
Width	67 cm
Length	162 cm
Energy	Gasoline
Engine Power / Speed	5.1 kW / 3,600 rpm
Grindstone rotation speed	4,000 rpm

Profile / Frog Grinders

## Precision Frog Grinder

09200A

The Precision Frog Grinder is a hydraulic powered, track-mounted that provides a precision guide frame with multiple axis adjustment enabling the operator to make consistent refinishing grinds.

Technical data	
Energy	Hydraulic
Weight	60,8 kg
Dimensions (mm)	1,460.5 x 1,016 x 203.2
Pressure	140 bar
Rotation Speed	4,000 rpm



Profile / Frog Grinders

## Profile Grinder

06000 Profile Grinder / 06050 Trigger version

This lightweight precision grinding machine is designed specifically for finish grinding of field welds and will grind the top and sides of the rail to the original profile.

Technical data	
Energy	Hydraulic
Weight	29 kg
Dimensions (mm)	876
Pressure	140 bar
Rotation Speed	4,000 rpm



Profile / Frog Grinders

## Profile Grinder

MR150

Designed to reshape vignal rail heads after aluminothermic or ARC welding.

Technical data	Thermal
Motor	
Weight	54 kg
Dimensions (mm)	1,380 x 600 x 950
Power	2,600 W
Rotation Speed	3,600 rpm

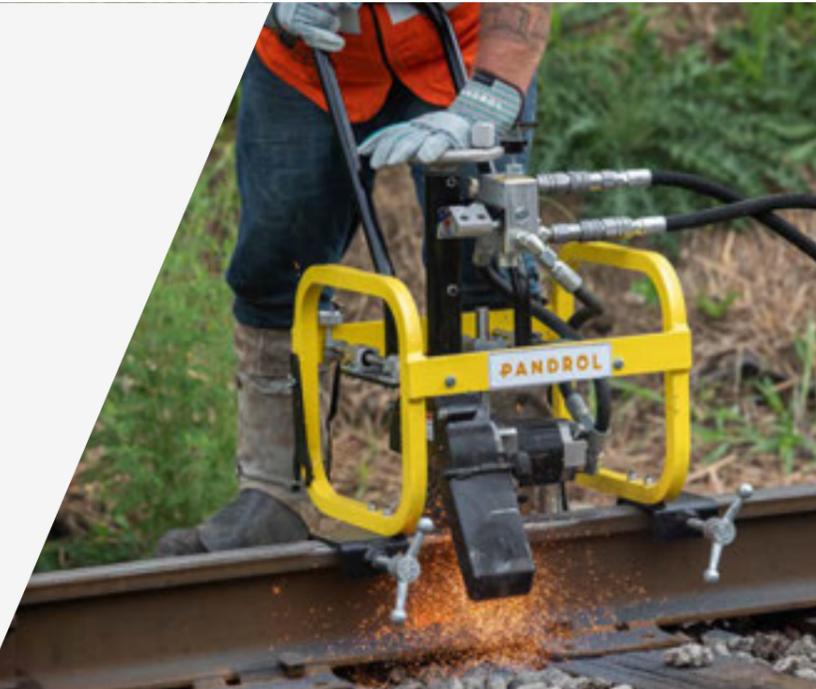


Profile / Frog Grinders

## Head Wash Grinder

09300

The 09300 Head-Wash Grinder (HWG) is a hydraulic powered, track-mounted machine that is designed to efficiently grind the ball of the rail in preparation for the Head-Wash Repair Weld (HWR). This specially designed grinder provides a precision grind to compliment the HWR process in defect removal. The compact and lightweight grinder allows for quick set-up and breakdown on track while the ergonomic profile allows the operator to quickly and comfortably grind the ball to the appropriate depth and width.



Profile / Frog Grinders

## Profile Grinder

RPLE

Technical data	
Energy / Motor	Electrical / 230V 1P
Weight	35 kg
Dimensions (mm)	1,360 x 455 x 800
Power	2,600 W
Rotation Speed	6,500 rpm



→ SPECIFICATIONS

Technical data			
Dimensions	16" (40.6 cm)	23" (58.4 cm)	32" (81.3 cm)
Flow	10 gpm (38 lpm)		
Pressure	2,000 PSI (140 bar)		
RPM	4,000		
Weight	68 lbs (30.8 kg)		

→ ACCESSORIES

09298	8" x 2" x 1" Stone
09281	HWR Depth Gauge

Handheld Grinders

## 8" Cup Stone Grinder

00600

The 00600 8" Cup Stone Grinder is designed for use in grinding the tops of frogs and rail. The unique stone adjustment feature allows the operator to easily adjust the guard as the stone wears without the need for wrenches. The double handles give the operator complete control of the tool. Note: Model 00600C has factory installed Type 6 Stone Adaptor (00733-Kit) for use exclusively for a type 6 stone (00797).



→ SPECIFICATIONS

Technical data			
Dimensions	16½" (41.9 cm)	10" (25.4 cm)	9" (22.9 cm)
Flow	10 gpm (38 lpm)		
Pressure	2,000 PSI (140 bar)		
RPM	4,000		
Weight	1,285 lbs (582.87 kg)		

→ ACCESSORIES

00799	8" x 2" x 4" Plate Mounted Cup Stone (exclusive use with the model 00600)
00733-KIT	Type 6 Stone Adapter Kit
00797	8" x 2" x 1½" Type 6 Stone

Handheld Grinders

## Chamfer Tool

07500

The 07500 Chamfer Tool is a light weight powerful maintenance-of-way tool ideal for chamfering drilled holes. Utilising low rpm & high torque permits the operator safe and long lasting service of chamfer bits.



→ SPECIFICATIONS

Technical data			
Dimensions	14" (35.6 cm)	8" (20.3 cm)	7½" (19 cm)
Flow	5 gpm (19 lpm) or 10 gpm (38 lpm)		
Pressure	2,000 PSI (140 bar)		
RPM	160		
Weight	18 lbs (8.16 kg)		

Handheld Grinders

## Wired & Battery-Powered Handheld Grinders

Pandrol's extensive range of wired and battery-powered handheld grinders are designed to support the welder with all track grinding and finishing work.



→ VARIATIONS

**CUP-STONE GRINDERS**  
Ideal for the head profile grinding.

**STRAIGHT GRINDERS**  
Ideal for difficult access.

**ANGLE GRINDERS**  
Ideal for risers.



Technical data	04800	00600	04600/4700	05400
Disc size	ø 90 / 108 / 115	ø 152 x 76 x	ø	ø 175 / 203
Energy	Electrical	Hydraulic	Hydraulic	Electrical
Pressure		140 bar	140 bar	140 bar
Available in Battery version	Yes ø 90 / 115		Yes	Yes

→ FEATURES

**Battery powered grinders :**

- Autonomous battery : 2600 W, 2 x 18V / 8Ah
- Fast batteries charger
- Included accessories :
  - Battery
  - Fast battery chargers
  - Accessories transport case

**Wired grinders :**

- Light weight (5 to 13 kg)
- Powerful (2,600W, 50 Hz)





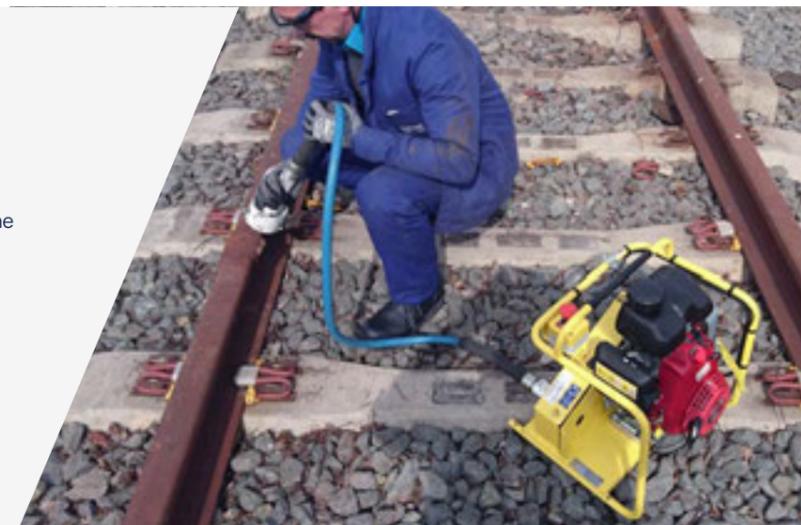
Multipurpose Grinders

## Multipurpose Grinder

**GML 24**

This light Grinding unit GML 24 is efficiently preparing the surface of the rail before fixing the connections. Easily handled equipment adapted to small track work.

Technical data	
Energy	Petrol
Weight	23 kg
Dimensions (mm)	400 x 370 x 420
Rotation Speed	6,000 rpm



Multipurpose Grinders

## Multipurpose Grinder

**MFB / MFR**

The MFB Grinder uses a flexible shaft on a wheelbarrow frame, which allows the operator to easily tackle a variety of grinding operations.

Technical data	
Energy	Petrol
Weight	57 kg
Dimensions (mm)	950 x 600 x 740
Rotation Speed	4,800 rpm



Multipurpose Grinders

## Multipurpose Grinder

**06950A / 06950**

The Multipurpose Grinder allows operators to remain in an ergonomic upright position while performing field weld grinding.

Technical data	
Energy	Hydraulic
Weight	16,36 kg
Dimensions (mm)	1,016 x 610 x 863,6
Pressure	140 bar
Rotation Speed	4,000 rpm



## 3

## Power Units

Offering a range of modular and mobile power units and work carts to meet all of your on-track power requirements.

The range includes diesel, electric, and hydraulic solutions to suit all track maintenance activities.

## Power Units

## Diesel Power Unit

02900A

The 02900A Diesel Power Unit can be optionally equipped with a catalytic convert, a mobility kit, and a mounted hose reel. Engine protection devices are installed to protect the engine from low oil and high temperature.



## → SPECIFICATIONS

Technical data			
Dimensions	38" (96.5 cm)	24" (70 cm)	36" (91.4 cm)
Engine	18hp kubota		
Fuel	Diesel 4 US gal (15.14 l)		
Start	Electric 12 v		
Hydraulics	(2) 5 gpm (19 lpm) or (1) 10 gpm (38 lpm)		
Fluid	Hydraulic 5 US gal (18.9 l)		
Pressure	2,000 PSI (140 bar)		
Weight	321 lbs (145.6 kg)		

Power Units

## Dual Circuit Power Unit

00100K

The 00100K Dual Circuit Power Unit is designed to deliver two 5 GPM or one 10 GPM circuit at 2000 PSI. A mounted hose reel is available with a 50 foot hose, as well as solutions for moving the machine manually or with powered assistance.



Power Units

## Electric Power Unit

03700A

The 03700A Electric Power Unit is designed to deliver two 5 GPM circuits or one 10 GPM circuit at 2000 PSI for hydraulic tool operations in buildings or other closed environments. This power unit is equipped with heavy duty wheels for mobility.



→ SPECIFICATIONS

Technical data			
Dimensions	37" (94.0 cm)	24" (60.9 cm)	27" (68.5 cm)
Engine	23hp kohler		
Fuel	Gasoline 4 US gal (15.14 l)		
Start	Electric 12 v		
Hydraulics	(2) 5 gpm (19 lpm) or (1) 10 gpm (38 lpm)		
Fluid	Hydraulic 5 US gal (18.9 l)		
Pressure	2,000 PSI (140 bar)		
Weight	321 lbs (145.6 kg)		

→ ACCESSORIES

00187-Kit	00100K Lift Handle Kit
00195	Power Point
02326	Hose Reel with 50' hose and mounting bracket
06300	Power Unit Mobility Cart
06327	Power Unit Mobility Kit
06600	Power Unit Transport Cart

→ SPECIFICATIONS

Technical data			
Dimensions	41" (104.1 cm)	30" (76.2 cm)	33" (83.8 cm)
Engine	20hp electric 240/360/480 VAC 3 phase check Hertz Requirements		
Hydraulics	(2) 5 gpm (19 lpm) or (1) 10 gpm (38 lpm)		
Fluid	Hydraulic 5 US gal (18.9 l)		
Pressure	2,000 PSI (140 bar)		
Weight	487 lbs (220.8 kg)		

→ ACCESSORIES

02326	Hose Reel with 50' hose and mounting bracket
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Power Units

## Battery-Operated Hydraulic Power Unit

00100

Going green with your hydraulic equipment just became possible.

Pandrol introduces its battery operated hydraulic power unit with zero emission. Compatible with existing Pandrol hydraulic equipment, the unit permits clean and safe use of tools without fuel consumption making it an ideal solution for tunnels and clean working environments.



→ SPECIFICATIONS

Technical data	
Dimensions	30,5" (77,5 cm) x 27,75" (70,5 cm) x 27,75" (70,5 cm)
Battery	200AH Lithium Ion
Hydraulics	5 gpm (19 lpm) or 10 gpm (38 lpm)
Pressure	2,000 PSI (140 bar)
Weight	560 lbs (254 kg)

Power Units

## Hydraulic Intensifier

06500

The 06500 Hydraulic Intensifier is a complete, self-contained, safe, and compact unit. The intensifier is designed to operate off of a 2000 PSI, 5 GPM power source. All Intensifiers have a relief pressure adjustable up to 10,000 PSI. This ensures safe operation, not allowing the cylinders to receive excessive pressure.



→ SPECIFICATIONS

Technical data			
Dimensions	15" (38.1 cm)	8" (20.3 cm)	10½" (26.7 cm)
Flow	5 gpm (19 lpm)		
Pressure	2,000 PSI (140 bar)		
Weight	33 lbs (15 kg)		

Power Units

## Hydraulic Manifold Circuit

03000

The 03000 Hydraulic Manifold Circuit is a self contained flow and directional control assembly. The manifold can be installed on any vehicle which is already equipped with a hydraulic system capable of producing at least 10 GPM at 2000 PSI. It can be installed and takes up very little space. The manifold circuit provides a safe and cost effective way of adding hydraulic tool capabilities to your existing range of equipment.



→ SPECIFICATIONS

Technical data			
Dimensions	18¾" (47.6 cm)	7" (17.8 cm)	8½" (21.6 cm)
Flow	(2) 5 gpm (19 lpm) or (1) 10 gpm (38 lpm)		
Pressure	2,000 PSI (140 bar)		
Weight	31 lbs (14 kg)		

Power Units

## Mobile Diesel Power Unit

06700

The 06700 Mobile Diesel Power Unit is a 2WD power unit designed for remote areas that are not readily accessible by conventional high rail methods. The handlebar controls provide positive steering with forward and reverse travel at your fingertips. Track wheel outriggers allow for easy mobility down the rail.



Power Units

## Modular Power Unit

02050RM

The 02050RM Modular Power Unit is designed to be easily transported in two lightweight sections and it simply couples together for immediate use. It delivers 9 GPM of flow which will operate all critical hydraulic tools. Where size and weight are primary concerns, this unit is perfect for the job. Two compact sections allow for ease of getting into tight work locations while being lightweight and safe for operators to carry to the work site.



→ SPECIFICATIONS

Technical data			
Dimensions	45" (114.3 cm)	32" (81.3 cm)	38½" (97.8 cm)
Engine	19hp lambardini		
Fuel	Diesel 4 US gal (15.14 l)		
Start	Electric 12 v		
Hydraulics	(2) 5 gpm (19 lpm) or (1) 10 gpm (38 lpm)		
Fluid	Hydraulic 5 US gal (18.9 l)		
Pressure	2,000 PSI (140 bar)		
Weight	585 lbs (265 kg)		

→ ACCESSORIES

02326	Hose Reel with 50' hose and mounting bracket
02900C	w/Catalytic Converter
02998	Power Unit Lift Handle Kit
06100	Tamper Cart w/ 2 hose reels

→ SPECIFICATIONS

Technical data	
Length	Handle collapsed 45" (114.3 cm) Handle extended 57" (144.7 cm)
Width	33" (83.8 cm)
Height	36" (91.4 cm)
Max payload	425 lbs (953 kg)
Tires	Flat-free Foamfilled
Weight	187 lbs (84.8 kg)

Power Units

## Power Unit Mobility Cart

06300

The 06300 Mobility Cart is lightweight, highly versatile, and simple to set up, allowing the operator to easily manoeuvre power units both on-rail and off-rail. It can also be used as a tool trolley when no power unit is secured to it. The handles and rollers on this unit collapse for compact storage.



Power Units

## Power Unit Transport

06600

The 06600 Power Unit Transport Cart is a 2WD mobility package designed to transport Pandrol power units to remote areas that are not readily accessible by conventional high-rail methods. The handlebar controls provide positive steering with forward and reverse controls at your fingertips. Power to operate the cart (5 GPM @ 2000 PSI) is provided by the power unit being transported.



→ SPECIFICATIONS

Technical data			
Dimensions	36" (91.4 cm)	25" (63.5 cm)	32" (81.3 cm)
Generator	5,000w 120/240 v Single phase @ 60 hz 120V - 41.6 Amp rating 240V - 20.8 Amp rating		
Engine	23Hp kohler		
Fuel	Gasoline 4 us gal (15.14 l)		
Start	Electric 12 v		
Hydraulics	(2) 5 gpm (19 lpm) or (1) 10 gpm (38 lpm)		
Fluid	Hydraulic 5 US gal (18.9 l)		
Pressure	2,000 PSI (140 bar)		
Weight	506 lbs (229.5 kg)		

→ ACCESSORIES

06300	Power Unit Mobility Cart
02326	Hose Reel with 50' hose and mounting bracket

→ SPECIFICATIONS

Technical data			
Dimensions	29½" (74.9 cm)	23½" (59.6 cm)	25" (63.5 cm)
Engine	14hp kohler		
Fuel	Gasoline 7.4 Qts (7.0 l)		
Start	Pull		
Hydraulics	(1) 9 gpm (34 lpm)		
Fluid	Hydraulic 3.5 Us gal (13.2 l)		
Pressure	2,000 PSI (140 bar)		
Weight	165lbs (74 kg) Engine Module: 100lbs (45 kg) Hydraulic Tank Module : 65lbs (27 kg)		

Power Units

## Twin Power Unit W/ Generator

05500

The 05500 Twin Power Unit is designed to deliver two 5 GPM circuits or one 10 GPM circuit at 2000 PSI for hydraulic tool operations. With the additional 5000 watt generator, AC powered equipment may be operated simultaneously. Quiet and efficient, this unit gives maintenance-of-way crews the versatility to operate safely and cost effectively in adverse conditions with a variety of equipment.



→ SPECIFICATIONS

Technical data	
Dimensions	29" (73.6 cm) x 39" (99 cm) x 18½" (46.3 cm)
Weight	96 lbs (43.5 kg)



# 4

## Clipping Equipment

Pandrol develops and manufactures a wide range of modern clipping equipment which drives efficient construction and maintenance of rail infrastructure.

Pandrol clipping machinery adds value to tasks from track renewals and installation to welding and sleeper change operations.

### Clipping Equipment

## Clip Driver CD100

This versatile small clipping tool is perfect for clipping and declipping Pandrol Fastclips. The ergonomically designed CD100 is ideal for smaller clipping and declipping applications.

It has its own power supply and a weight bearing wheel that runs along the rail to prevent back injuries among operatives. Designed with a quick connect interface, the patented CD100 comes in three modules: the power pack, the clipping tool and the declipping tool. It can be coupled quickly and easily to other tools and can lift sleepers up to 10 mm if required.



#### → SPECIFICATIONS

3 modular units consisting of :

Technical data	Power Unit	Clipping Tool	Unclipping Tool
Capacity		10 sleepers / min	
Weight	18 kg	24 kg	24 kg
Length	480 mm	580 mm	560 mm

#### → ADVANTAGES

- Easy to use
- Clips up to 10 sleepers per minute
- Can be transported in a car or pickup
- Small and portable tool that well suited to maintenance teams

### Clipping Equipment

## Clip Driver CD200 IQ

Clip Driver CD200 IQ is the first machine in our new IQ series with intelligent control systems that streamline operations, whilst providing information on clips installed and operating hours.

CD200 IQ is modular built to enable it to be easily lifted on and off track. It is simple to change between the two tools for Fastclip and e-clip with the mechanical and hydraulic quick connections.

The CD200 IQ has the patented built-in sleeper lift function enabling a lift of low lying sleepers up to 50 mm. A fail-safe mechanical parking brake is available as an option.



#### → SPECIFICATIONS

Technical data	
Capacity	Up to 20 sleepers / min (Fastclips) Up to 10 sleepers / min (e-clip)
Weight powerpack	108 kg
Weight trolley	50 kg
Weight tool Fastclip	100 kg
Weight tool e-clip	117 kg
Height	1,050 mm
Length	2,100 mm
Width	1,980 mm



## Clipping Equipment

## Clip Driver CD300 IQ

Clip Driver CD300 IQ is a high-production clipping machine designed to install Pandrol Fastclip FC and FE. Its low weight makes it suitable for use on smaller road-rail machines from 6 tonnes and upwards.

The intelligent control system monitors the operation of the machine and actively controls the clipping operation. The tools are based on proven technology used by Pandrol's Clip Driver CD400, but the tools are folded up when not in use and thereby eliminate the risk of collision with fish plates and clips in the track.



## → SPECIFICATIONS

## Technical data

Capacity	40 sleepers / min
Weight	975 kg
Height	1,030 mm
Length	1,730 mm
Width	2,250 mm
Wheels	ø 125 mm

- Combines time-tested technology of the CD400 with a newly designed control system
- Compatible with Pandrol Fastclip FC and FE
- Folds up the tools when not in use to avoid collision with fishplates, shoulders, clips etc.

## → ADVANTAGES

- The intelligent and intuitive control system automatically adjusts the clipping speed to correlate with the speed of the carrier machine
- The system also ensures that tools are not activated in the wrong work mode, preventing damage to the machine and surrounding infrastructure
- Can be used on road-rail machines as light as 6 tonnes

Clipping Equipment

## Clip Driver CD400

A high-performance clipping machine for use with a rail road machine.

The robust Clip Driver CD400 clips and unclips Pandrol Fastclip and/or Pandrol e-Clip. The unit can also be equipped with a sleeper lift to be used for new construction (only compatible with Fastclip).



→ SPECIFICATIONS /

Technical data	
Capacity (Fastclips)	40 sleepers / min
Weight	1,400 kg
Height	1,030 mm
Length	2,500 mm
Width	2,100 mm

→ FEATURES /

- Fits tools for both Pandrol Fastclip and e-Clip on the same machine
- Robust design including tools with tapered roller bearings for extra long life
- Covers and mechanical stop arms eliminates risk for pinch injuries and prevents clips to fly off

Clipping Equipment

## Clip Driver CD400 SP

The Rosenqvist CD400SP Clip Driver is a walk-behind machine which can clip and unclip a range of fastening systems.

Self-propelled, this track clipping machine is designed with a high-performance diesel engine to enable easy use for a single operator via a control panel. A handheld control panel allows the operator to easily control the speed, clipping and unclipping functions.



→ SPECIFICATIONS /

Technical data	
Capacity	30 sleepers / min
Track gauge	1,600 / 1,435 / 1,000 mm
Weight	2800 kg
Height	2,290 mm
Length	3,150 mm
Width	2,100 mm

→ FEATURES /

- Designed to increase efficiency, allowing the user to simultaneously install 4 clips per cycle
- Guiding rollers to centre the machine for optimum precision
- Proximity sensors operated via the control panel support automatic clipping of Pandrol Fastclip

Clipping Equipment

## Clip Driver CD500

This high-output clipping machine is a self-propelled fastening machine designed for the Pandrol Fastclip. It has a computer-controlled system (PLC) and a tracking system that enables it to "walk" on and off the track.

An electrical backup hydraulic system enables it to off-track in the event of engine failure. Built-in guiding rollers ensure centering position on rail.



→ FEATURES /

- Clip and unclip (also unclips SHC clips)
- An electrical backup hydraulic system enables it to off-track in the event of engine failure
- Designed to increase efficiency of track installation and maintenance activities, with optimised clipping capabilities with a single operator
- Safety guards can be fitted which protect operatives from the adjacent track when installing stressing rollers



Technical data	
Capacity	60 sleepers / min
Weight	5,000 kg
Length	3,870 - 4,930 mm
Width	2,180 - 2,380 mm
Max speed	20 km/h
Rail type	UIC60 & U50
Rail wheels	std UIC-profile

→ ACCESSORIES /

	Safelok head
31990750S	Rail lift
31991906	Safety system for tilt limitation
319916022	Levelling system
31992769S	Support pads + storage, to stabilise machine on soft ground
31992680S	Bridging unit + storage, to protect sleepers



Clipping Equipment

## Track Renewal Clipper TRC

The Track Renewal Clipper TRC fits easily onto track renewal trains and similar machines to provide automated clipping of Pandrol Fastclip FC and FE fastenings. Powered by a PLC system, the machine has built-in sensors for clip detection and a hydraulically controlled slide to enable clipping whilst in motion. The TRC features a rigid frame structure to which the clipping tools are fitted.



→ SPECIFICATIONS

Technical data	
Capacity (Fastclips)	25 sleepers / min
Wheels	250 m
Height	1,030 mm
Weight	950 kg
Electrical System	24VDC

→ FEATURES

- Has a stand-alone control system
- Easy to fit to a track renewal train
- Capability to lift sleepers up to 8 mm
- Can be fitted to any track renewal train
- Manual operation possible through the control panel
- Can be lifted up and secured in parked position when not in use

Clipping Equipment

## Track Renewal Declipper TRD

The TRD is fitted underneath a track renewal trains or equivalent and offers automatic unclipping of Pandrol Fastclip or FE. The unit consists of two unclipping tools, one for each rail. It has a stand-alone control system and built-in sensors that detects the clips and automatically triggers the unclipping operation. The TRD unit also has sensors to detect fishplates in the web of the rail and automatically raises the tools to eliminate the risk for collision and potential damage to sleepers and tools.



→ SPECIFICATIONS

Technical data	
Width	715 mm (per tool)
Height	870 mm
Weight	500 kg (250 kg per tool)
Length	930 mm
Electrical System	24VDC

→ FEATURES

- Has a stand-alone control system
- Can be fitted to any track renewal train
- Detects fishplates or other obstacles in the rail web
- Can work efficiently also in curves due to its two independent tools

## 5

Hy-Rail  
Equipment

Pandrol has developed a range of Hy-Rail equipment to adapt the most common type of excavators for use on rail.

The Hy-Rail solutions, for use with excavators ranging up to 20 tons, offer significant advantages over heavy and immobile traditional machinery.

## Hy-Rail Equipment

Hy-Rail 5-9T  
Rail Road Conversion

Increase stability and flexibility for tracked excavators used on rail tracks with the Hy-Rail attachment. This innovative 4WD rail conversion kit is patented and designed for excavators weighing between five and nine tonnes, giving the driver full control of operations and confidence that work can be undertaken safely.



## → FEATURES /

- 4WD as standard
- The EQ axle concept ensures that all wheels are in contact with the rail at all times, and thereby eliminate risk for derailment
- Delivered with CE certification
- On-track speeds of up to 20 km per hour (12.4 mph)
- Hy-Rail wheels are based on the patented EQ axle concept
- The rail wheels are designed in accordance with UIC and its hydraulics operate without extra swivel implements

## Hy-Rail Equipment

Hy-Rail 9-14T  
Rail Road Conversion

Fit the innovative Hy-Rail system to tracked excavators and increase stability and flexibility when working on railways.

Designed specifically for machines weighing 9 to 14 tonnes, this 4WD Hy-Rail attachment gives drivers full manoeuvrability when working on rail tracks. Its wheels are designed according to UIC and the Hy-Rail hydraulics work without extra swivel implements.



## → FEATURES /

- 4WD as standard
- Brakes on all four wheels
- UIC wheel profile (diameter 450 mm)
- EQ Axle concept ensures all wheels in contact with the rail at all times
- Rail axles are manoeuvred using the original hydraulic functions on the machine
- The optional tool carrier attachment makes it possible to carry a bucket or forks

Hy-Rail Equipment

## Hy-Rail 10-16T Rail Road Conversion

Manufactured specifically for wheeled excavators weighing 10 to 16 tonnes, this Hy-Rail system offers stability and flexibility when working on rail tracks. All movement is controlled from the driver's cabin, and the hydraulics work without the need for additional swivel implements.

The machine has two modes of operation: lifted up with the rubber wheels in contact with the rail wheels, or lowered down onto the rail with the rubber wheels running on the rail with the rail wheels used as guide wheels.



→ FEATURES /

- The front and rear Hy-Rail adapters are devices intended for mounting on wheeled excavators
- Propulsion and braking is done with the mounted Hy-Rail adapter in transport mode
- Propulsion and braking in work mode is achieved with the machine's wheels in contact with the head of the rail
- The adapter is operated up and down with the machine hydraulics
- The front and rear wheel axle kits are bolted to the undercarriage of the machine
- The wheel axles are operated up and down from the cab using the original machine hydraulics
- Parking and emergency brakes are fitted onto one axle
- Rail guards are fitted on all four wheels to clear the rail from obstacles

→ ADVANTAGES /

- Designed for stability and flexibility when working on rail
- The equipment is designed to facilitate safe and effective work on the railway
- Rail wheels are designed in accordance with UIC
- The kit has one rigid and one pivoting wheel axle to ensure that all wheels remain in contact with the rail at all times
- The two modes of operation provides flexibility and ensures that the machine can work on all track lines
- The rail axle can be fitted with an optional tool carrier attachment which enables the machine to carry a bucket or forks.

→ ACCESSORIES /

- Safety kit - for height and swing limitation
- Rates Capacity Indicator (RCI) Kit
- Towing Kit / Towing bar

Additional information	
Weight	1,800 kg
Gauge, standard	1,435 mm
Wheel	450 mm

# 6

## Carrier-mounted Attachments & Trailers

We design, manufacture and market high productivity machinery, equipment and working processes for efficient construction and maintenance of railways.

We developed new methods and design innovative equipment to safely speed up and increase productivity on the railways.

### Carrier-mounted Attachments

## Auto Master for SB40 and SB60

Clip new sleepers onto the rail with just one press of a button. Minimise the number of people needed for clipping during re-sleeper operations by using the Rosenqvist Auto Master.

Developed as an accessory for the Sleeper Replacer SB40 and SB60, the Auto Master enables Pandrol Fastclips or Pandrol FE to be fitted automatically, ensuring a higher degree of site safety by reducing the amount of staff on track.

This self centering machine can handle the normal varieties of rails and sleepers and is supplied with CE certification as standard.



### → SPECIFICATIONS

Technical data	
Weight for SB60	420 kg / unit
Weight for SB40	222 kg / unit
Length	530 mm
Width	2,530 mm
Height	510 mm
Max rail height	213 mm
Track gauge standard	1,435 mm
Min opening on tool (installation)	330 - 445 mm
Energy	Hydraulic
Flow recommended	20-50 litre/min
Installation force at	190 bar : 40 kN
Recommended oil pressure	180 bar

### → FEATURES

- Automatic clip installation controlled by the machine operator
- The working capacity with the Automaster is approx. 20-30 sleepers per hour
- Removes 6-8 people on the ground and is therefore an enormous advantage when looking at personnel safety.
- Automaster can be adjusted to accommodate a wide range of different clip assemblies
- Requires no extra hydraulics from the carrier machine

Carrier-mounted Attachments

## Sleeper Replacer SB40

This light weight version of the reliable SB60, provides the same cost effective and safe working solution. It is intended for smaller carrier machines in the range 8-12 ton which are equipped with a permanently fitted tilt rotator.

Same as the SB60, the SB40 is compatible with most types of sleepers and is available in various track gauges to provide maximum flexibility.



→ SPECIFICATIONS

Technical data	
Weight	416 kg
Height	1,000 mm
Width	1,635 mm
Blade width	2,578 mm
Clamp force	6,000 kg

→ FEATURES

- Fits most types of sleepers
- Available for a range of track gauges
- Reduced manpower on track improves safety
- A single attachment digs out, removes and replaces the sleeper to improve productivity
- Can be tilted and rotated to allow maximum flexibility when replacing sleepers
- Redundant sleepers are removed from site easily and efficiently to leave a clear and tidy work site

Carrier-mounted Attachments

## Sleeper Layer SL400

Achieve fast and accurate sleeper handling with the SL400, an easily adjustable tool designed to fit most kinds of sleepers. The system can handle four sleepers simultaneously.

The SL400 has a telescopic frame that makes the unit compact and safe to operate and, thanks to a unique patented linkage system, the centre of gravity will not change during spreading. Spacing between sleepers can be set from 300 – 750 mm. The SL400 works in a hydraulic sequence and no electricity is required on the carrier machine.



→ SPECIFICATIONS

Technical data	
Weight	814 kg
Width	2,578 mm
Length min - max	1,000 - 2,500 mm
Height	655 mm
Max distance between sleepers	750 mm

→ FEATURES

- Production rate 60 to 80 meters / hour
- Telescopic frame structure
- Grabs underneath the sleeper
- Compact and easy to manoeuvre safely
- Prepared for use both rotator and rototilt
- Easy adjusted to fit most type of sleepers

Carrier-mounted Attachments

## Sleeper Replacer SB60

The Sleeper Replacer SB60 is a sleeper replacement attachment designed to provide safe and efficient replacement of sleepers. The SB60 has innovative tilt and rotate functions which allow sleepers to be changed from both the middle and side of the track.

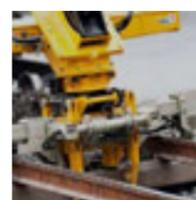
Designed for effective movement and recessing of the track ballast, this high performance sleeper replacer supports a versatile, high-output, cost effective and safe working method for track maintenance.



→ SPECIFICATIONS

Technical data	
Weight	1,050 kg
Height	1,000 mm
Depth	1,300 mm
Blade width	2,700 mm
Clamp force	6,000 kg
Flywheel capacity	295 dNm

→ ACCESSORIES



Automaster clipping



Bucket attachment

Carrier-mounted Attachments

## Sleeper Layer SL450

This carrier-mounted attachment is designed for high output sleeper laying. Correct placement of sleepers is ensured by the SL450's precision gauging hydraulic system that spreads the sleepers to the desired spacing, which can be set at 300 – 750 mm.

Its telescopic frame makes the Sleeper Layer compact and safe to operate. Thanks to its unique linkage system, the centre of gravity will not change during spreading.



→ SPECIFICATIONS

Technical data	
Weight	1,050 kg
Width	2,905 mm
Length min - max	1,120 - 2,500 mm
Height	762 mm
Max distance between sleepers	750 mm

→ FEATURES

- Production rate 60 to 80 meters / hour
- Prepared for rototilt
- Telescopic frame structure
- Grabs sleepers from the side
- Easy adjusted to fit most type of sleepers
- Suggested carrying machine tonnage 15 ton

Carrier-mounted Attachments

## Sleeper Layer SL550

Up to five adjacent sleepers can be laid simultaneously from an accompanying supply. Lifted into position, their correct placement are ensured by a precision gauging hydraulic system that spreads the sleepers to the desired distance. A major benefit is that the sleepers do not move sideways when the grab is released and also that it is possible to pick up the sleepers straight from the ground.

Technical data	
Number of sleepers	Max 5 pcs
Weight (without options)	1,525 kg
Length min - max	1,750 - 3,520 mm
Height standard, + tilt rotator, + bracket	825, 1 375, 1 525 mm



Carrier-mounted Attachments

## Sleeper Layer SL800

Place up to 8 sleepers simultaneously with the Sleeper Layer SL800. Offering maximum efficiency, the SL800 is our largest capacity sleeper layer and is compatible with most sleeper types. Its precision gauging system ensures an even spread of sleepers, laid correctly at the desired intervals, whilst the SL800's telescopic frame makes it compact and safe to operate.

The SL800 can be supplied with or without a tilt rotating function, which reduces the risk of anything pointing over the adjacent track whilst grabbing sleepers from a rail car.



Carrier-mounted Attachments

## Sleeper Layer SL600

Designed for high output sleeper laying : up to six adjacent sleepers can be laid simultaneously from an accompanying supply. Lifted into position, their correct placement is ensured by a precision gauging system that spreads the sleepers to the desired distance. Suggested tonnage of carrier machine is 23 ton plus.

Technical data	
Performance	80 to 120 meters / hour
Weight	1,309 kg
Length min - max	2,000 - 4,475 mm
Height	1,333 mm
Max distance between sleepers	762 mm



→ SPECIFICATIONS

Technical data	
Performance	120 to 150 meters / hour
Weight (including bracket)	2,410 kg
Length min - max	3,005 - 5,985 mm
Height with tilt rotator and bracket	1,660 mm

→ FEATURES

- Easy adjusted to fit most type of sleepers
- Quick change of gripping claws for various sleeper lengths
- Safety lifting is ensure by the control system function
- Suggested tonnage of carrier machine is 25 ton plus

Carrier-mounted Attachments

## Sleeper Layer SL850

The SL850 is designed and manufactured for efficient positioning of concrete sleepers. It utilises standard couplings on heavy extractors and loaders.

Up to eight adjacent sleepers can be laid simultaneously from an accompanying supply. Lifted into position, their correct placement are ensured by a precision gauging hydraulic system that spreads the sleepers to the desired distance up to maximum 765 mm (30in). (With fewer sleepers the distance can be extended further).



Carrier-mounted Attachments

## Sleeper Layer SL650

Up to six adjacent sleepers can be laid simultaneously from an accompanying supply. Lifted into position, their correct placement are ensured by a precision gauging hydraulic system that spreads the sleepers to the desired distance up to maximum 765 mm.

Technical data	
Performance	80 to 120 meters / hour
Weight (with tilt rotator and bracket)	2,500 kg
Length min - max	2,000 - 4,475 mm
Height standard, + tilt rotator, + bracket	825, 1,375, 1,525 mm
Max distance between sleepers	762 mm



→ SPECIFICATIONS

Technical data	
Performance	120 to 150 meters / hour
Number of sleepers	Max 8 pcs
Weight (including tilt rotator)	2,800 kg
Length min - max	3,005 - 5,985 mm
Height standard, + tilt rotator, + bracket	825, 1,375, 1,525 mm

→ FEATURES

- Possible to pick up sleepers straight from the ground
- Easy adjusted to fit most type of sleepers
- Safe lifting is ensured by the control system function
- Suitable for slab track or when the track bed must not be disturbed

Carrier-mounted Attachments

## Rail Grip RG2500

Our Rail Grip RG2500 is specially designed to lift rail segments and pull them, thanks to the towing support welded to the side. Delivered with CE certification, the patented grip can be attached or removed from rails with a simple adjustment and is treated with linseed oil to improve lubrication.

Technical data	
Weight	5 kg
Width	160 mm
Height	270 mm
Max load	2,500 kg



Trailers

## Rail Trailer RT3230

The Rail Trailer RT3230 is designed for transport of material and equipment between different work sites on railway. It is manufactured to be towed by a railroad vehicle and is equipped with an accompanying tow bar. The trailer can be fitted with load sides as an option.

Technical data	
Weight	3,000 kg
Length	5,500 mm
Width	2,560 mm
Loading capacity	17,000 kg
Gauge, standard	1,435 mm



Carrier-mounted Attachments

## Rail Grip RG3000

The Rail Grip RG3000 is designed for the North American market and complies to the AREMA requirements. It safely lifts rail segments and can also be used to pull rail thanks to the towing support welded to the sides. With its two supports it holds the rail horizontal during the lift.

Technical data	
Weight	7.15 kg
Width	160 mm
Height	270 mm
Max load	3,000 kg



Trailers

## Rail Trailer RT3235

The Rail Trailer RT3235 is designed for transport of material and equipment between different work sites on railway. It is manufactured to be towed by a railroad vehicle and is equipped with an accompanying tow bar.

Technical data	
Weight	785 kg
Length	2,500 mm
Width	1,800 mm
Loading capacity	3,500 kg
Gauge, standard	1,435 mm



Carrier-mounted Attachments

## Roller Grip RG4800

The Roller Grip RG4800 is great for handling rails. Thanks to its clever design, the non-hydraulic rail thimble tool is easy to use and will minimise the risk of damaging the rail. For added peace of mind, it is tested thoroughly and supplied with CE certification

Technical data	
Weight	28 kg
Width	310 mm
Height	335 mm
Max load	4,800 kg

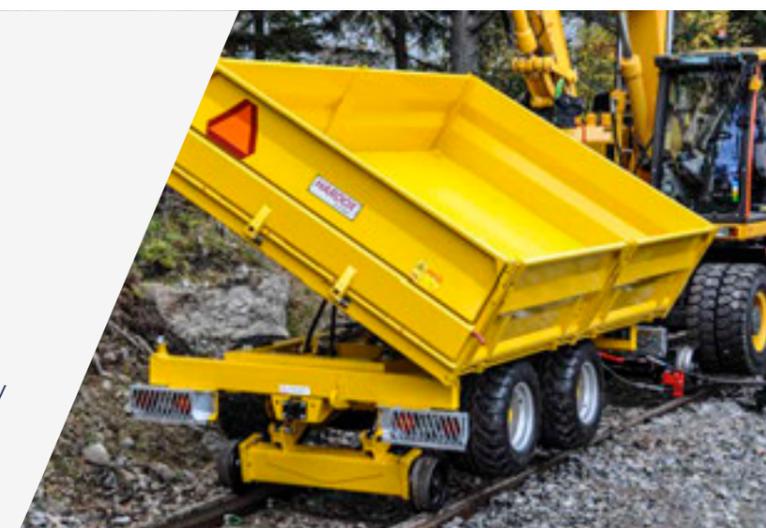


Trailers

## Road Rail Trailer RRT

The trailer can easily be converted to tip right, left and backwards and the tipping angle adjusted to comply with maximum heights on particular work sites. The trailer has been designed for easy connection to the carrier machine and it has its own remote control system that makes it possible to manoeuvre all functions from the cab.

The rail axles can be manoeuvred individually, have parking/emergency brakes and one axle can pivot to increase safety. The hydraulic tow-bar can be adjusted up and down to make it easy to enter or exit the track.



7

## Rail Maintenance

By minimising installation time we reduce or even eliminate the need for track possession. We create products suitable for all environments regardless of sleeper type, rail fastening or whether they are being used on ballasted or slab track. Operational efficiency, flexibility and reliability are critical factors in the design of every product.

### Rail Maintenance

## Rail Clamp

The Pandrol Rail Clamp is an innovative temporary rail joint clamp used prior to welding and to safeguard rail defects prior to repair. The Rail Clamp has been engineered to eliminate many of the disadvantages of other traditional rail clamp designs and provides enhanced performance under all conditions of use.

The Pandrol Rail Clamp design is radically different to the legacy design and guarantees a positive pre-torque angle so as the bolt is tightened the bolt holes remain aligned, eliminating the risk of bent bolts. Pandrol tests have proved that bolts remain straight even at twice the recommended torque.

### → FEATURES

- 4WD as standard
- Increased clamping force reduces rail creep due to temperature change
- Improved vertical deflection allows higher line speeds over the joint
- Hardlock anti-loosening nut system available
- Compatible with many different rail profiles
- Bolts can be reused unlike current designs

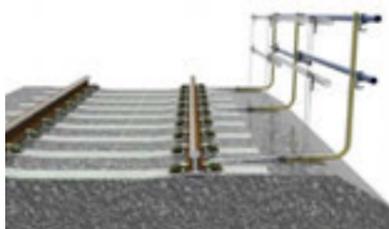


Rail Maintenance

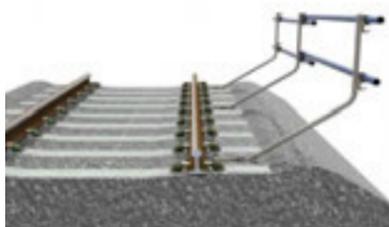
# Safety Barrier

The Pandrol Safety Barrier is designed for worker protection and is widely used in many countries including the UK, Germany, Australia, Belgium, Sweden & Norway. The barrier provides an effective safe zone for track workers (Green zone in the UK) and fits virtually all rail types internationally.

Pandrol manufacture two variants: the Telescopic Safety Barrier for varying line speeds and the Shoulder Clearance Safety Barrier for minimal ballast disturbance. Our proven barrier has insulation properties giving protection in overhead line and 3rd rail environments.



Standard telescopic barrier



Fixed distance barrier

→ FEATURES

- Cost savings
- Improved track safety
- Quick & easy to install
- All components are fully re-usable

→ ADDING VALUE

The Pandrol Safety Barrier is the UK industry standard for track working protection.

→ ACCESSORIES

1. 111-1015	Bungee tool
2. 111-1001	Cocking lever
3. 111-1019	Corner post
4. 111-1016	Safe access gate
5. 111-1002	Light mast support



Rail Maintenance

## Vortok Stressing Roller VSR

The VSR is designed to attach to the rail fastening and by means of a rotating lift arm and bearing, contact the underside of the rail head and lift the unclipped rail from the sleeper.

Lift action moves the bearing over centre which self-locks the VSR in the raised position, replacing under rollers and side-rollers and eliminates the need for rail jacks on site. Once lifted, the rail can be moved with very low friction for the purposes of rail stressing. The resultant stress distribution is therefore optimised. The VSR can also be used for changing rail pads.



→ VARIATIONS

Designed for the majority of Pandrol rail fastenings and common rails irrespective of sleeper material. The Pandrol fastening and VSR combination enables the highest quality rail stress processes



eVSR



feVSR



fVSR

→ FEATURES

- **Higher productivity with a significant reduction in manpower and achieves time savings of more than two hours on a standard 900 m stressing operation**
- **No need for rail jacks which can slip during use therefore meaning that there is no need for operators to reach under the rail to fit under rollers.**
- **Stress distribution is significantly improved and rail breaks at the weld are reduced, as the localised tension is optimised**

Example of installation times :

Technical data	Time taken to set up 190m	Time taken to remove 190m	Time taken to set up 800m	Time taken to remove 800m
Vortok eVSR	10 minutes (2 men)	6 minutes (2 men)	42 minutes (2 men)	28 minutes (2 men)
Traditional	24 minutes (4 men)	17 minutes (4 men)	102 minutes (4 men)	73 minutes (4 men)

There are savings made in possession costs, which are worksite as well as country related, and are usually the greater savings – as much as 75% on some jobs.

## 8

## Track-mounted Equipment

Our range of track-mounted equipment has been designed with efficiency in mind. They support reduced track downtime and possession requirements.

## Track-mounted Equipment

## Rapid Fit Frames

Utilising our extensive experience with mounting beams, we have developed a range of rapid fit frames for use with our modular AWS magnets.

The frames can be configured for single, double or triple magnet installations and are easily installed on a wide range of rail fastening and sleeper designs. The system comprises of glass-reinforced plastic beams fitted over and around the existing rail fixing and galvanised steel stringers supporting and securing the AWS Magnets.



## → FEATURES /

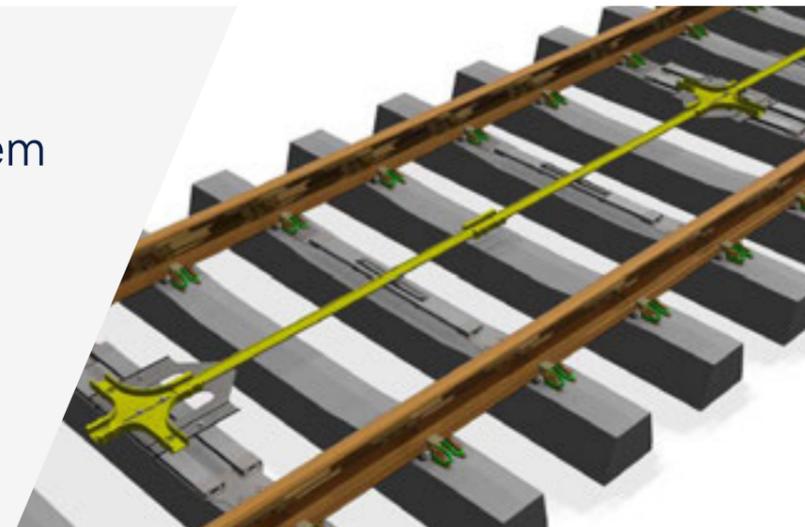
- Can be installed on a wide range of sleeper types and rail fastenings
- Does not require specialised tools to install or remove
- Can be retrofitted in existing installations
- Reduces the need for track possession
- Removes the need to drill into concrete sleepers
- High resistance to chemicals and climatic changes

## Track-mounted Equipment

## Z Bond Mounting System

The Z-Bond Mounting System has been specifically developed for fitting components of Bombardier EBI Track 400 Z-Bond and SATU/CU circuit systems within the Network Rail infrastructure.

This mounting system facilitates quick in-track installation and is compatible with the majority of sleeper, rail and fastening combinations across the UK. It uses the same mounting technology as our Balise Beams, AWS Magnets and TPWS panels.



## → FEATURES /

- Designed for use with Bombardier EBI Track 400 Z-Bond and SATU/CU circuit systems
- Reduced track downtime through increased installation speeds
- Can easily be installed in-track within minutes
- Glass-reinforced plastic (GRP) beams are used to fit over and around the existing rail fixing
- GRP channels and a cross connector securely guide and mount cables of EBI Track 400 systems

# 9

## Track Control Solutions

Rail networks have an increasing need to understand the condition of their track, allowing them to implement efficient maintenance operations.

Pandrol's inspection services and equipment are suitable to all types of network and provide valuable insights for the safety and longevity of the track.



### Track Control Solutions

## Geometrical Measurement

Our Geometrical Measurement analyses the rail based on a variety of physical parameters, allowing rail operators to accurately plan their maintenance operations. Parameters including track gauge, alignment and twists are tested for conformity to network standards and specifications.

Identifying points of undulatory wear on the rail head will outline where grinding actions need to be taken to prevent further deterioration. This data is highlighted on the control panel of the machine, and feeds into a comprehensive report for the user.

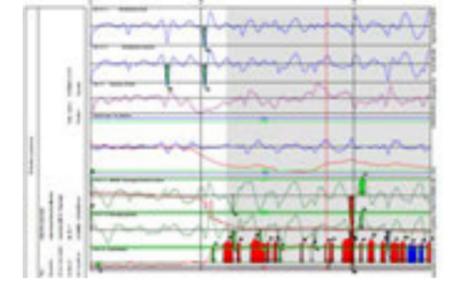


#### → PARAMETERS

- Gauge
- Cant
- Alignment
- Twist
- Top
- Undulatory wear

#### → REPORT

The data collected is outputted into a comprehensive report, that shows all anomalies detected and their precise GPS locations.



### Track Control Solutions

## Rail Profile Inspection

A detailed inspection of the rail profile is carried out using laser technology. The rail profile is compared to an optimal profile to see the level of wear on the head on the rail.

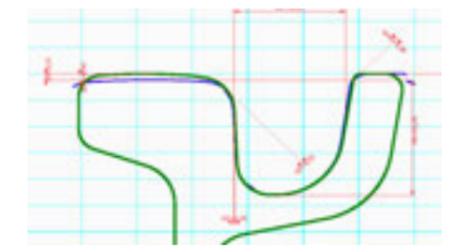


#### → FEATURES

- Laser technology
- Determines the profile on the pad
- See the result at a glance

#### → REPORT

The report compares the actual profile to the optimal profile and determines the causes of the damage.



Ultrasonic Testing

## Ultrasonic Testing of a single rail

Pandrol's ultrasonic rail testing uses high pitched waves to identify defects in the rail. A full track inspection service is available, which provides an exhaustive report of the location, characteristics and urgency of all defects.

Pandrol also sells a variety of ultrasonic testing equipment along with comprehensive training tailored to your infrastructure, delivered by certified inspectors. Our range of ultrasonic equipment includes both manual and motorised inspection tools, which can be operated at up to 20 km per hour.

Ultrasonic testing is one of the safest and most reliable solutions to effectively monitoring your track condition.



Ultrasonic Testing device

## Ultrasonic Flaw Detector

USSTA001

This compact Ultrasonic Flaw Detector offers an ergonomic design and a variety of functionality for daily applications in workshops, laboratories, and on track. It has 2 channels, allowing the user to detect defects in two rails.



→ FEATURES

- A Scan and B Scan Display
- Standard DAC
- Automatic calibration
- Auto Gain and Auto Freeze

→ SPECIFICATIONS

Technical data*	
Weight	1,28 kg
Dimensions	224 x 188 x 34 mm
Battery	10 hours
LCD Screen	1 024 x 768 pixels



→ FEATURES

- Detailed analysis of all elements of the track (rail, bonded insulating seals, switches and crossings)
- Conventional probes or new Phased Array technology available
- Designed, built and calibrated by Pandrol's ultrasonic experts
- The development team are certified in level III Non-Destructive Testing, and work with a European Committee member for the elaboration of new standards
- Accredited by French railways

→ VARIATIONS



Technical data	Walking Stick	Bifil trolley	Motorised version
Inspection of	1 rail	Both rails	Both rails
Performance	1 km/h	2 km/h	20km/h

Ultrasonic Testing device

## Ultrasonic Flaw Detection for Mobile and Tablet

USBLU001

Transform your smartphone or tablet into an Ultrasonic Testing tool using your device's Bluetooth. With this system, you can easily make on track inspections.



→ FEATURES

- Conduct Ultrasonic Testing in environments that are difficult to access
- Works in high temperatures
- Can submit measurement data to local devices up to 8 meters away

→ SPECIFICATIONS

Technical data*	
Weight	240 g
Dimensions	112 x 32 x 79 mm
Display	A-Scan
Battery	8h + battery backup
Connection	Bluetooth

Track Control Solutions

## Geometrical Weld Analysis

This inspection allows the user to analyse the geometrical parameters of a recent weld to determine that it has conformed to network specifications.

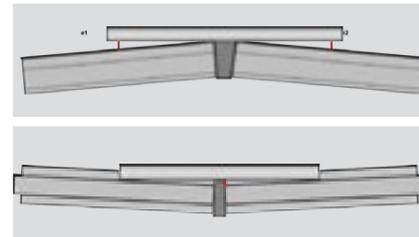


→ FEATURES

- Determines conformity of the weld
- See the result at a glance

→ REPORT

Accurate tracking of the weld can be done in real time using the Pandrol Connect App.



Track Control Solutions

## Ultrasonic Weld Testing

Ultrasonic testing involves emitting high pitched waves into the welded section of rail in order to detect internal flaws. This comprehensive test is carried out on the head, web and foot to provide a detailed analysis of the entire weld.

This allows the user to determine whether or not the weld has confirmed to the specifications of the rail network.

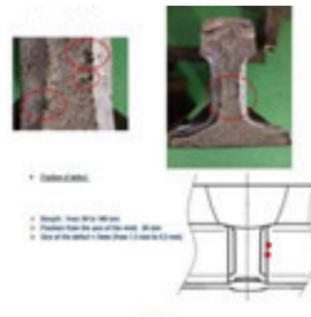


→ FEATURES

- Multiple angles are used to inspect 100% of the weld
- Prevents breaking in the weld
- Detects a variety of defects including blowholes, insufficient fusion and shrinkage

→ REPORT

The report will highlight the exact location, characteristics and cause of the defect inside the weld.



Track Control Solutions

## VERSE (Rail Stress Management)

Vortok VERSE is a reliable and low-cost method of checking the rail is at the correct stress-free temperature (SFT). The internationally accredited VERSE monitoring system significantly reduces the risk of buckling and fracturing, achieving new track quality acceptance and allowing operators to plan cost-effective re-stressing programmes.

The SFT can be determined trackside immediately, allowing for on-the-spot maintenance and safety decisions to be made. No additional tools or historical rail samples are required to make the calculations. VERSE is the only widely used, proven and accepted method of non-destructive SFT testing, in over 25 countries worldwide.



→ FEATURES

- Suitable for all rail profiles
- Instant results can be picked up on the handheld computer
- Small and lightweight handheld device with 20-hour battery life
- Exportable readings into databases including Excel and Access for integration with other track data
- Eliminates the need to cut the rail to measure rail stress
- Quick and easy measurement taking 20 to 30 minutes per measurement (depending on rail fastening)

→ ADVANTAGES

- Cost-effective re-stressing programmes allows operators to predict where track is vulnerable to stress free temperature change and plan cost-effective programmes
- Eliminates the need to cut the rail to measure rail stress
- Calculates the Stress Free Temperature without requiring knowledge of any residual stress history of the rail
- Quick and easy measurement taking 20 to 30 minutes per measurement (depending on rail fastening)

# 10

## Condition Monitoring

Pandrol has developed a range of sensing technology that enables quick and extremely cost effective remote condition and fault monitoring of key assets in the railway. Built around the innovative Multi-Sensor product, the Measure and Detect system can be used to monitor a range of rail infrastructure conditions including wheel flats, bogie hunting, stress free temperature, core rail temperature, rail and bridge strain, and ground disturbance.

### Condition Monitoring

## Measure & Detect

**Multi-parameter sensor for monitoring stress in railways.**

Conventional track-based monitoring systems face many challenges. Physical bulk, unfriendly connection systems, poor mounting techniques and fragility are the main problem areas.

The Vortok Measure and Detect Sensors integrates three measuring technologies into a compact, rugged, general purpose device that can simultaneously sense a number of parameters. Each M&D Sensor becomes part of the rail it is inserted into and measures.



### → FEATURES /

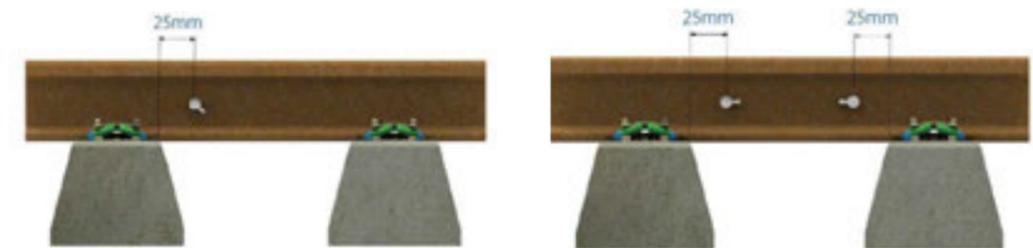
- Installed around 1/5 the time taken to install bonded gauges
- Immune of rain and cold temperature
- Remote data and alarms accessed via SMS, Email and FTP
- A complete monitoring installation can be complete in less than half an hour
- The M&D interface provides in excess of 1,000 volts isolation and can be battery powered for low speed logging situations

### → MEASURES /

- Either vertical or horizontal strain
- Rail core temperature
- Vertical acceleration
- Lateral acceleration

### → CHALLENGE /

The challenge is to allow management decisions to be made and maintenance plans to be investigated, providing quality data via a low cost and high reliability compact rugged device.



Condition Monitoring

## Rail Stress Monitor

Real-time monitoring of the rail stress with alerts ensuring a safe rail break and buckle free modern railway.

The stress free (neutral) temperature of rail changes with time. This is particularly true of; tight curves, braking zones such as at signals and stations, through inclines and with the effects of track maintenance procedures such as tamping. Continuous and accurate monitoring with multiple alerts issued in good time to allow for efficient maintenance planning.



→ TECHNICAL FEATURES

• **Real Time Remote Monitoring of SFT**

Using multiple power and communication methods the monitor will continuously assess the strain in the rail and calculate the stress free temperature in both rails at each location

• **Automatic alerts sent to multiple systems and devices**

Each unit can send data, and alerts, to a rail operators back-office system, by email, to smart phones and via our bespoke cloud based portal

• **Low Power Consumption**

The SFT Monitor can connect to a power source up to 5km away. In addition, if no power source is available the monitor can be connected via a solar panel and/or battery.

• **Proven Technology**

The Pandrol MultiSensor is a proven method of measuring the rail strain and core temperature of the rail. It will continuously measure, calculate and report the current stress free temperature.

→ ADVANTAGES

- **Can be installed in known trouble areas for rail buckling/ breakages.**
- **Live data transmitted over 3/4G connection**
- **Easy Installation – no need to bond gauges to the rail with associated maintenance issues**
- **No need to use personnel to patrol the track.**
- **Ideal for areas where track access is difficult.**

Customer data dashboard:

- **Indicates the customers rail network with the SFT installation site marked in green**
- **Stress and Temperature Trend Analysis in chart format**
- **Data can be downloaded on to excel or PDF formats**



Condition Monitoring

## Indigo

Indigo is a powerful new tool for monitoring and maintaining track. By identifying faults when they are still minor, it enables pre-emptive maintenance to be carried out and prevents more serious events and disruption occurring.

As Indigo is fitted to in-service trains, track can be monitored more frequently than when dedicated track measurement trains are used. Internal sensors continuously measure vertical and lateral accelerations, roll, pitch and yaw. An internal ARM processor monitors the sensors and sends an alarm to the Indigo cloud server when configurable thresholds are exceeded, along with a snapshot of the raw data spanning the event.

Accurate GPS directs track maintenance staff to target problems quickly.



→ FEATURES

- **Internal sensors continuously measure vertical and lateral accelerations, roll, pith and yaw**
- **The train's location is constantly and accurately tracked using GPS**
- **An internal ARM processor monitors the sensors and sends data to the indigo cloud server, including an alarm when configurable thresholds are reached**
- **The Indigo cloud server collects and collates wide-ranging, accurate data from across all indigo devices**
- **Small and easy to install, Indigo is deal for fitting in the equipment cabinet of passengers trains, where space is often at a premium**
- **Correlation of data from across all Indigo devices results in a high level of confidence about the severity and location of developing track faults.**

→ ADVANTAGES

- **As Indigo is fitted to in-service trains, the track can be monitored much more frequently than when dedicated track measurement trains are used**
- **Indigo has a proven record of successfully identifying, with a high degree of positional accuracy, areas of track that require maintenance. This enables track maintenance engineers to deal with issues quickly and efficiently**
- **Accurate location reports and early identification of faults save customers money, reducing time spent identifying issues and preventing major events and disruption occurring**
- **Reporting is real time. As soon as an anomaly is detected, data is sent to the Indigo cloud server. This data is then available on the website for downloading and analysis within minutes**

→ SPECIFICATIONS

Technical specifications	
Input voltage	40 – 160 VDC
Power	< 20 W
Linear Accelerometers	3-axis, ±2g full scale
Gyros	3-axis, ±500 dps
Sampling rate	160 samples per second
Mobile telecommunications	2G / 3G
GPS	Yes
Wi-Fi	Dual band (802.11)

# 11

## Signalling & Detection

By minimising installation time we reduce or even eliminate the need for track possession. We create products suitable for all environments regardless of sleeper type, rail fastening or whether they are being used on ballasted or slab track.

Operational efficiency, flexibility and reliability are critical factors in the design of every product.

### Signalling & Detection

## On Sleeper Beam

Uses the rail fastening to secure the Balise above the sleeper.

The system removes the requirement for drilling into sleepers, by making use of the existing rail fastenings, ensuring the installation process is very fast and simple using standard rail tools.



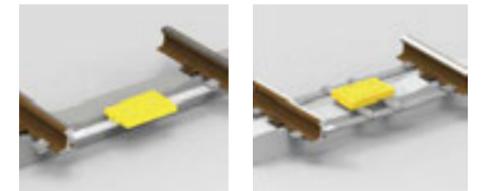
#### → FEATURES

- Any rail fastening type
- Any sleeper type
- Any balise type
- No drilling sleepers
- Install in seconds
- Proven

#### → VARIATIONS

The Clamp Beam is designed to be mounted between sleepers on ballasted or slabtrack tracks and is retained by clamping to the foot of the rail.

#### CLAMP BEAM



Single clamp

Double clamp

### Signalling & Detection

## AWS Magnet

Designed to fit all common track construction, the AWS Magnets fit into the national signalling system. All magnets can be fitted onto the Rapid Fit Frames or retrofitted to existing BR Magnet frames through the use of adaptor plates.



#### → FEATURES

- Can be installed in minutes when coupled with Vortok's Rapid Fit Mounting System, reducing possession time significantly
- Modular "plug and play", simplifying the installation process
- Flexible range : Suppressor, Electro and Permanent in either standard strength or extra strength
- Minimal maintenance required - fully sealed units

# Partners in excellence

Contact your local team to discuss your requirements

[pandrol.com/contact](https://pandrol.com/contact)

