

Edition 2.4
Europe

Rail Welding Equipment

PANDROL

Partenaires dans l'excellence



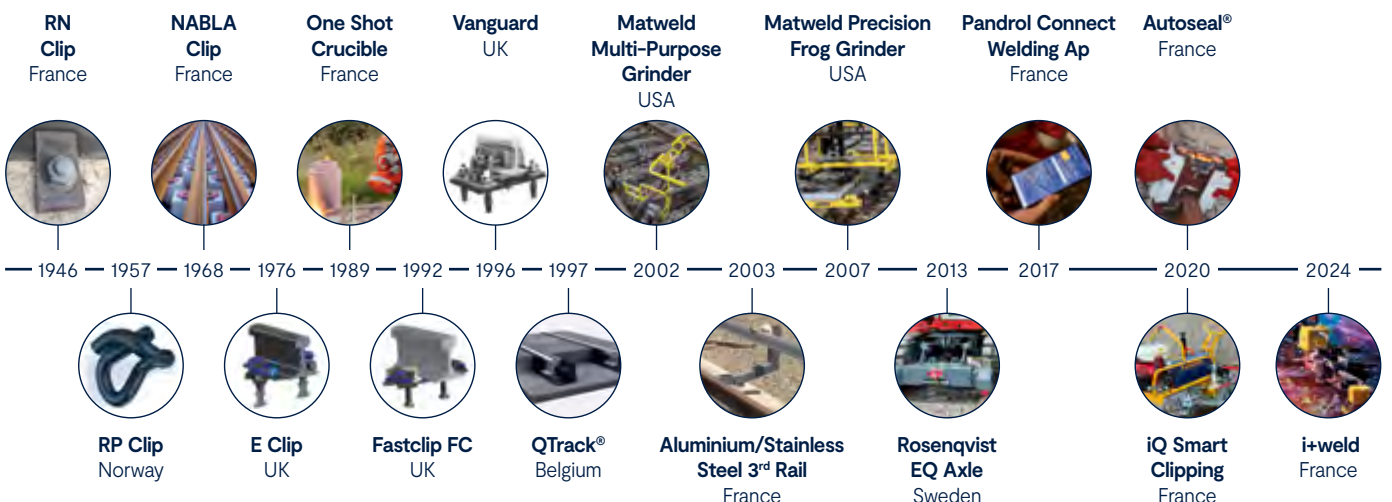
Partners in Excellence

Pandrol defines the industry standard across rail fastening systems and aluminothermic welding. We've created rail infrastructure in more than 100 countries with our products and services extending to designing, developing and manufacturing equipment to make constructing and maintaining railways more efficient. That means we've experienced just about every situation, problem, question and solution before.

Our Story

Part of the Delachaux Group, Pandrol is a business founded on a passion for innovation, and our unique heritage is still at the heart of how we do business today. Over 100 years of product development, engineering know-how, acquisitions and growth has enabled us to become a world leader and global employer with over 1700 team members across 40 locations.

In 2017, all the businesses within the rail division of the Delachaux Group were united under the single brand of Pandrol, including Railtech – specialist in welding equipment and electrification solutions – , Vortok – specialist in rail equipment – , Pandrol CDM Track, Rosenqvist Rail, Matweld, RSS and fastenings systems solution company Pandrol.



i+weld
by **PANDROL**



Pandrol has developed a global solution for a revolutionary aluminothermic welding solution: i+weld. Based on automation and data. i+weld represents the future of rail welding, offering enhanced control and improved traceability of the welding process while maintaining the flexibility that rail networks demand. Discover how i+weld can transform your rail operations with superior quality, safety, and efficiency.

YESTERDAY. TODAY. TOMORROW.

Contents

1 / Protective Worker Equipment

Personal protective equipments	5
Safety barrier	5
Track Welding Tent	5

2 / Clipping Equipment

Clip Driver battery powered: CD100 B	7
Clip Driver: CD200 IQ	7

3 / Railsaw

Railsaw: HC355 / HC406 / HC305	9
Cutting discs: Pandrol Alox / Pandrol Zirconia	10

4 / Alignment and rail stress management

Track jacks: HJ5, HJ10, BM5, BM10, BLR10	13
A Frame Rail Aligner: CR 57 / CR 61	13
Alignment: Straight Edge	14
Stress Free Temperature Measurement: Verse	14
Rail Stressor: TR75	15
Stressing Rollers: VSR	15

5 / Preheating Equipment and Welding Consumables

Battery High Flow Preheater: HFP	17
Turbine preheating unit: GP40	17
Pandrol Connect	17
Ignition System: Startwel®	18
Self-sealing mould: i+seal	18
Vignole rail welding: PLA/ PLR	18
Grooved rail welding: SRG / SRG-N	19
Crane Rail Welding: APR	19
Head Wash Repair Rail Welding: HWR	19

6 / Shearing Equipment

Monobloc Battery-Operated Shear: EMB1, EMB2, EMB2 RAG	21
Monobloc Battery-Operated Shear: Compact-Shear B-M-VIR	22
Monobloc Electrical Weld Shear: EME1	23
Weld Shear Hand-Pump: EPM2	23
Bi-Bloc Weld Shear: EGH1 / EGH2 / EGH2 RAG	24
Blades for shearing machines	25
Accessories for shearing	25

7 / Grinding Equipment

Wired & Battery-Powered Handheld Grinders	27
Grinding discs and stones	27

8 / Rail drilling machine

Thermic drilling machine	29
--------------------------	----

9 / Trolleys

Welders Trolley: PLO1 / PLO15	31
Power Carriers: HP 500	31

10 / Power Units

Electric Power Unit GEE500 / GEE500 B	33
Battery accessories	33

11 / Services

Pandrol Training Academy	35
On-Track Services	35
After-sales	35



1

Protective Worker Equipment

Pandrol provides a range of protective products to ensure the safety of track workers during operation, even under poor weather conditions.



pandrol.com

Personal protective equipments

Adapted clothing and protective accessories, essential for working safely on-track.



Technical Specification			
Description	Metallic frame with spring effect, internal lining in leather, up part in leather RHT double thickness, strap under the tread	Welder gloves, 5 fingers in leather full grain sleeve 150 mm	Umbrella white PVC, square, dimensions 1,83 x 1,83 m
Item number	TSV00008	48801002	TSV00012

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 and Norway. The barrier provides an effective safe zone for track workers (Green zone in the UK) and fits virtually all rail types internationally.

ADVANTAGES:

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



Track Welding Tent

Aluminothermic welding on track can often be complicated in harsh weather conditions such as rain and wind. The RW25 Track Welding Tent provides essential protection to ensure that high-quality welds can still be achieved.

ADVANTAGES:

- **Ensures high quality welds during wind, rain, and snow**
- **Approved by the SNCF, with wind withstand up to 70 km/h**
- **One welder can quickly assemble and disassemble**
- **Significantly reduces track downtime**

Technical Specification	
Description	Track welding tent
Item number	TSV000010
Material	PVC
Dimensions	2600 x 2600 x 2100 (height) mm
Weight	23 kg



2



Clipping Equipment

Pandrol distributes the full range of Rosenqvist clippers for more efficient construction and maintenance of railway infrastructure.

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

Manufactured by

ROSENQVIST RAIL



pandrol.com

Clipping Equipment

Clip Driver battery powered CD100 B

This versatile small clipping tool is perfect for clipping and declipping Pandrol Fastclips. Ergonomically designed and battery powered, CD100 B 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 B 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.

Thermic version available.

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**

3 modular units consisting of:

Technical Specification

Unit	Power Unit	Clipping Tool	Unclipping Tool
Capacity	–	10 sleepers / min	
Weight	18.5 kg	23 kg	25 kg
Length	480 mm	580 mm	560 mm



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.

Technical Specification

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



3

Railsaw

As rail track technology continues to make major advances to cope with increasing axle weight and tonnage, the steel used for tracks has become purer and harder.

This, combined with high levels of carbon, manganese and silicon and the heat treatment used in manufacturing, has made cutting operations an increasing challenge. At Pandrol, we recognised that rail maintenance teams needed a new, powerful solution for cutting heavy duty steel track.



pandrol.com

Rail Saw

HC355 / HC406 / HC305

The Pandrol Rail Saw ensures fast and accurate cutting of rails of all profiles and grades. The ergonomic design of the rail clamp prevents physical stress.

The machine is equipped with a safety device that prevents sawing operation without the support arm. The device fixing, reversible on the support arm, enables the saw to be positioned on the inside or the outside of the track without dismantling the tightening jaw. The cutting guide helps to ensure the support arm jaw is placed in exactly the right position for cutting.



ADVANTAGES:

- High-quality cutting thanks to the support arm
- A range of safety features to protect operators
- Powerful engine and high power transmission rate make it fast and efficient
- Setting up the saw is quick and easy
- The Pandrol Rail Saw is available in different versions depending on the type of rail and the preferred size of cutting

Technical Specification			
Description	HC355 Vignole 3 Position Arm - Gas ¹	HC355 Universal 3 Position Arm - Gas ²	HC406 Universal 3 Position Arm - Gas ²
Item number	14221031	14221032	14221034
Saw engine	Husqvarna K1270	Husqvarna K1270	Husqvarna K1270
Energy	2 strokes gas engine	2 strokes gas engine	2 strokes gas engine
Power	5,8 kW at 10 000 rpm	5,8 kW at 10 000 rpm	5,8 kW at 10 000 rpm
Support arm	Vignole	Universal	Vignole
Disc size	355 mm / 14" / bore 25.4 mm	355 mm / 14" / bore 25.4 mm	406 mm / 16" / bore 25.4 mm
Total weight saw (+ arm)	21 (+8) kg	21 (+10) kg	21 (+10) kg
Rail type			
Vignole	Yes	Yes	Yes
Grooved rail	-	Up to 150 mm (total width)	Up to 150 mm (total width)
Tramway rail	-	Up to 150 mm (total width)	Up to 150 mm (total width)
HEB 140/160	-	Yes	Yes

Cutting discs

Pandrol Alox
Pandrol Zirconia

The Pandrol Alox cutting disc is a widely-used, well-proven product suitable for all applications.

The Pandrol Zirconia allows more cuts per disc and is both easy and comfortable to use.



ADVANTAGES:

Alox:

- Comfortable to use
- Enables operators to complete one to two welds before changing the disc

Zirconia:

- Longer lifetime reduces waste and environmental impact
- More efficient; less time is spent changing discs

Technical Specification			
Description	Pandrol Alox	Pandrol Zirconia	Pandrol Alox
Specification	A24Q	ZA24Q	A24Q
Material	Aluminium oxide	Zirconia	Aluminium oxide
Pack quantity	10	10	10
Cutting confort	***	****	***
Disc life	***	****	***
Dimensions	356 x 4x25,4 mm	356 x 4 x 25,4 mm	406 x 4 x 25,4 mm
Item number	47901041	47901044	47901042
Compatible cutting machine	HC355 VIGNOLE 3 Position Arm - Gas (14221031) HC355 UNIVERSAL 3 Position Arm - Gas (14221032) HC355 VIGNOLE Spring Arm - Gas (14221035)	HC355 VIGNOLE 3 Position Arm - Gas (14221031) HC355 UNIVERSAL 3 Position Arm - Gas (14221032) HC355 VIGNOLE Spring Arm - Gas (14221035)	HC406 UNIVERSAL 3 Position Arm - Gas (14221034)



4

Alignment and rail stress management

Our range of Welding Adjustment and Stress Free Management Equipment has been designed with efficiency in mind. It supports reduced track downtime and possession requirements.



pandrol.com

Track jacks

HJ5, HJ10, BM5, BM10, BLR10

Track Jacks range – Hydraulic, Mechanical and Obstructionless – have been designed for ease of use, maximum operator safety and high performance in all working conditions.

ADVANTAGES:

- The Pandrol hydraulic jack device is equipped with a lowering valve and load limiter for precision
- The Pandrol mechanical jack option comes with a built-in locking system to ensure your team has safe and secure lifting power
- Pandrol's obstructionless track lifting jack comes with a detachable slewing toe for aligning and lifting track with ease, with a quick-release spring for disengagement in emergencies

Technical Specification					
Description	HJ 5	HJ 10	BM 5	BM 10	BLR 10 (w/o T-wrench 48401212)
Item number	FHJ05000	FHJ10000	FMJ05200	FMJ10200	FOJS0001
Type	Hydraulic	Hydraulic	Mechanical	Mechanical	Obstructionless
Capacity	5 tons	10 tons	5 tons	10 tons	10 tons
Weight	25 kg	35 kg	27 kg	47 kg	19 kg



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.

ADVANTAGES:

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

Technical Specification				
Description	CR61 Universal	CR57 Grooved rail	CR57 Crane rail	CR57 Fastclip®
Item number	11111002	11111003	11111004	11111006
Rail type	Vignol rails	Grooved and Tramway rails	Crane rails	Vignol rails
Spread (distance between feet)	570 mm	570 mm	570 mm	570 mm
Width	160 mm	160 mm	160 mm	160 mm
Height	600 mm	600 mm	600 mm	600 mm
Weight	18 kg	18 kg	18 kg	18 kg



Alignment

Straight Edge

Our straight edges enable the welder to properly crown the rail ends to the desired height with ease. Flat or adjustable straight edges are essential tools, used before casting aluminothermic welds.



ADVANTAGES:

Straight edges

- Laser-engraved graduation
- Treated steel
- Ergonomic handle

Magnetic straight edge

- Lightweight
- Maximum stability
- Adjustable height knobs

Technical Specification

Description	1,0 m magnetic straight edge with adjustable stands calibrated – RAP1000	1,0 m steel straight edge, calibrated – RP1000	1,0 m bevelled edge 1,0 m, large handle, calibrated – Bevelled-Edge 1000	1,0 m bevelled straight edge, calibrated – RB1000	0,5 m bevelled straight edge, calibrated – RB500	0,7 m bevelled straight edge, calibrated – RB700
Item number	19123022	19123024	19123014	19123020	19123021	19123023
Protective case	Included	Included	Included	Included	Included	Included
Length	1,00 m	1,00 m	1,00 m	1,00 m	0,50 m	0,70 m
Protective case	PEHD case (42005001)	Soft case (29123012)	–	–	–	–

Stress Free Temperature Measurement

Verse

VERSE® is an internationally accredited scientific instrument that is used to non-destructively measure the stress-free temperature of continuously welded rail, improving safety and reliability through the avoidance of derailment caused by track buckles or breaks.

ADVANTAGES:

- Providing non-destructive and accurate measurements for stress-free temperature (SFT), VERSE® is the recognised industry standard for measuring SFT.
- Measurements using VERSE® allows destress activities to be targeted to areas of non-compliance, reducing total cost of maintenance
- VERSE® can be used to certify new or existing track
- Easy and efficient to use, VERSE is a digital system providing an instant result, full traceability, and integration to asset management databases

COMPATIBILITY:

Compatible with all vignola rail sections and most track forms.



Rail Stressor

TR75

The Rail Stressor TR75 has been designed for the stress relief or replacement of continuous welded rails (CWRs). It is used during maintenance works to stretch long welded rails before aluminothermic welding and to secure the tensioned rail while cutting. It is capable of joining and maintaining a constant gap between the two rail ends.



ADVANTAGES:

- Possible to be set up under the rail without obstructing the rolling surface
- Equipment can also be installed more quickly
- Designed for ease of use
- Only two people needed to install and operate the Rail Stressor

Technical Specification	
Description	TR75 – Rail Stressor with Ball Connectors PARKER Including Pressure Release Tool Excluding : Hydraulic Power Source, Hoses, Tie-Rods
Item number	21121066
Traction force	700 kN
Pushing force	400 kN
Hydraulic ram stroke	380 mm
Total weight	270 kg
Accessories	
Hydraulic hand pump	21121069
Hydraulic petrol unit 580 bar	21121065
Set of hoses	21121068
Pressure release tool	11121010
Set of tie rods – length 1.20 m	11121003
Set of tie rods – length 1.80 m	11121002
Set of ajustable tie rods – length 1.20 m	11121004
Set of ajustable tie rods – length 1.80 m	11121005

Stressing Rollers

VSR (Vortok Stressing Roller)

The Vortok Stressing Roller (VSR) is a fast fit and fast removal roller system designed to reduce friction during stressing operations. It offers a very safe alternative to traditional methods, as well as achieving significant quality, cost, and time savings.

ADVANTAGES:

- Reliability and safety increase for rail network through; a more even Stress-Free Temperature distribution, few welds being required, and lower residual tension applied to welds (reducing rail breaks)
- Efficiency gains by managing friction between sleepers and rail. This allows lower tensor load, longer stressing lengths, reduced time on track, and improved Stress-Free Temperature distribution
- Safe method of lifting rail keeping workers hands clear of the rail. The VSR replaces rail jacks, under rollers and side rollers

PANDROL FASTENING SYSTEMS COMPABILITY :

- Pandrol e-clip
- Pandrol Fastclip FCX
- Pandrol Fastclip FC
- Pandrol Safelock
- Pandrol Fastclip FE



5



Preheating Equipment and Welding Consumables

Pandrol provides world-leading aluminothermic welding solutions for our global customers. Beyond offering welding processes for all standard rail profiles, we also collaborate with customers to engineer bespoke solutions for special rail types that are less commonly used, such as the special rail grades used on metro lines including rubber-tyred rail, guide bar rail, conductor rail, and rack rail. We can offer portions, moulds and crucibles designed to your exact specification.



pandrol.com



Battery High Flow Preheater

HFP

The High Flow Preheater has been designed as a universal preheating system, able to replace all current preheating equipment. It brings the best compromise between all technologies and has been automated for easier and more reliable operations.

ADVANTAGES:

- **Lightweight and compact design**
- **Reduces weld-defect rate**
- **Generates significant cost savings**
- **Automation & Pre-set timing**

Technical Specification		
Description	HFP 36V Metabo batteries	HFP 36V Milwaukee batteries
Item number	S000A498	S000B505
Battery	2 x 18 Volts	
Weight	19 kg	
Dimensions	750 x 305 x 295 mm	



Turbine preheating unit

GP40

Equipped with a combustion engine or electrical motor which powers air compressor, the preheating unit GP40 ensures a good air-carburant mixture to guarantee preheating of the end of the rail.

ADVANTAGES:

- **Sufficient Power for a speedy preheating**
- **Simple combustion adjustment for maximum efficiency**
- **Compact and light weight**

Technical Specification		
Description	GP 40 TE	GP 40 TP
Item number	11211020	11211019
Engine	Petrol	Propane Gas
Electrical Power	2,94 kW (4 CV) at 3.600 rpm	2,94 kW (4 CV) at 3.600 rpm
Petrol Tank	2,0 litres	2,0 litres
Weight	50 kg	45 kg
Dimensions	675 x 380 x 490 mm	675 x 380 x 490 mm



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. Access weld information on site even without internet access.

ADVANTAGES:

- **Full traceability of welding**
- **Saves time for all users and drastically cuts down paperwork**
- **QR Code integration**
- **Welding instructions included**
- **Available now for Android and IOS devices**



Ignition System

Startwel®

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

ADVANTAGES:

- **Non-hazardous classification for transport**
- **Consistent ignition point**
- **Long-lasting lithium-ion battery**

STARTWEL® IGNITION KIT: 82632508

Included in the kit

82632506	1 empty Startwel® Suitcase
82632509	1 Starter Handle
82632504	1 14.4V battery
82632505	1 Battery Charger
82632502	1 Box of 100 Starters



Self-sealing mould

i+seal

The i+seal removes the need to do this while providing leak and moisture-free results. The built-in strip expands during the pre-heating phase to create a tight weld seal between the mould and rail.

ADVANTAGES:

- **Save three to five minutes per weld, as the mould is sealed automatically and there is no need for the luting procedure**
- **Self-sealing felt more reliable than manual sealing, especially in cold weather and tight spaces**
- **Reduce the defect rate by facilitating moisture evacuation during the preheat**
- **Promote welder's health and wellbeing, reducing stress and time spent kneeling**
- **Compatible with vignole and grooved rails**



Vignole rail welding

PLA / PLR

Pandrol offers market-leading solutions for the aluminothermic welding of vignole rail. This flat-bottomed, slim-webbed rail is commonly used on mainline and high speed tracks around Europe. Our vignole rail welding processes equip the user to perform new welds as well as wide-gap and head-wash repairs.

PLA

Pandrol's PLA process is one of the world's most cutting-edge aluminothermic welding approaches. It has been optimised from every technical perspective to minimise both the time requirement and defect rate, whilst delivering consistently excellent results.

PLR

The process is renowned for offering a high performing, safe, and simple solution to welding. All TGV lines in France have been welded using the PLR process and the world speed record on a high-speed line (574.8 km/h) was recorded on a track welded using PLR.



ADVANTAGES:

PLA :

- **Track downtime minimised thanks to the faster process**
- **Consistently high-quality welds are produced, with a <0.5% defect rate**

PLR :

- **Low risk of defects needing repairs, meaning track downtime is minimised**
- **Consistent high-quality results that are simple to achieve**
- **The use of air-induced preheating is highly practical and reliable, requiring no adjustment and no oxygen tanks**

Grooved rail welding

SRG / SRG-N / SRG-R

SRG is Pandrol's standard welding process for grooved rail and has been optimised to deliver consistently excellent results. An advanced version of this process is also available, the SRG-N process.

ADVANTAGES:

SRG

- Track downtime minimised thanks to the faster process
- Consistently high-quality welds produced, with a <0.5% defect rate

SRG-N / SRG-R

- Cost savings thanks to the standardisation of tools and preheating device between the PLR and SRG-N processes
- New collar designed to improve performance on slow bending tests and to prevent cracks during cooling. It facilitates the installation of coating foams which improves the insulation of the track



Crane Rail Welding

APR

Pandrol's APR process sets the global standard for aluminothermic welding on crane rail. The process offers excellent results and has been designed specifically for environments including ports, dockland and warehouses.

ADVANTAGES:

- Process tailored to a variety of crane rail designs
- Standardised work steps, ergonomically designed process, and reciprocally compatible products, high quality welding results obtainable with relatively little training time
- New hardware design streamlines the installation of the moulds
- Several preheating options available that adapt to various site configurations



Head Wash Repair Rail Welding

HWR

Pandrol is a world leader in Head Wash Repair welding, which is a cost-effective and efficient solution to repairing railhead defects and significantly decreasing the maintenance cost of modern rail networks. It can also be used to repair flash butt welds, which often suffer from squats.

ADVANTAGES:

- Very efficient compared to using a new piece of rail
- Reducing the number of welds from two to one
- Available for grades R260, R350 HT and R350 LHT





6

Shearing Equipment

Pandrol offers a range of equipment designed to support welders in delivering high quality welds efficiently and effectively. The product range is designed to be used alongside all aluminothermic welding processes.



pandrol.com

Monobloc Battery-Operated Shear

EMB1, EMB2, EMB2 RAG

The Monobloc battery-operated Weld Shear EMB1/EMB2/ EMB2 RAG are hydraulic rail shearing machines designed to shear off excess metal after aluminothermic welding of Vignole rails (EMB1/EMB2) or grooved rail (EMB2 RAG).

The shearing machines are powered by two batteries, using lithium HD technology. There is no carbon emission during operation.



ADVANTAGES:

- **With the shearing machine, there is no risk of damaging the rail**
- **Adjustable blades and guiding rollers resulting in much greater precision**
- **Easy to carry around with positioning of the handles and the separate hydraulic unit**

Technical Specification			
Description	EMB1 Narrow Hydraulic Shearing machine Vignole rail	EMB2 Wide Hydraulic Shearing machine Vignole rail	EMB2 RAG Wide Hydraulic Shearing machine Grooved rail
Item number	11334014	11334015	11334019
Application	Can be used in switches and crossings (use «L» shape blades)	Specially designed for wide gap ATW process such as PLA68, WG68 and HWR - Head Wash Repair Excluding switches and crossings"	Excluding switches and crossings Use on Tramway rails with Head width (incl. rut) < 121 mm
Shearing force	212 kN (21.5 tons)	212 kN (21.5 tons)	212 kN (21.5 tons)
Maximum hydraulic power	250 bar	250 bar	250 bar
Opening between blades	175 mm	175 mm	175 mm
Energy	Hydraulic	Hydraulic	Hydraulic
External dimensions	1200 x 470 x 480 mm	1200 x 470 x 480 mm	1200 x 470 x 480 mm
Minimum width (rail level)	315 mm	455 mm	455 mm
Weight without blades	57 kg	60 kg	60 kg
Power unit			
Energy	Electrical	Electrical	Electrical
Power	2400 W	2400 W	2400 W
Batteries	2 x 18 V - 8 Ah Metabo (included)	2 x 18 V - 8 Ah Metabo (included)	2 x 18 V - 8 Ah Metabo (included)
Charger	230 V Metabo (included)	230 V Metabo (included)	230 V Metabo (included)
Blades			
Vignole	Type 32 (11335018) Type 36 (11335019) Type 40 (11335024) - Type 40 Gold* (11335044) Type 45 (11335022) - Type 45 Gold* (11335043) Type 48 (11335023) - Type 48 Gold* (11335042)		-
Grooved rail	-		11335030

Note : blades not included. *Could be refurbished.

Monobloc Battery-Operated Shear

Compact-Shear B-M-VIR

The Lightweight Battery-Operated Weld Shear is Pandrol's solution to zero-emission shearing, delivering consistently fast and excellent results. Operation is simple and effective, and the machine is designed to operate with the included battery-operated non-impacting drill.

ADVANTAGES:

- **Makes track-work environments more environmentally friendly with zero emission**
- **Delivers high quality consistent results**
- **The lightweight design makes it easy for operators to safely lift on and off track**



Technical Specification	
Description	Compact-Shear B-M-VIR
Item number	11334018
Application	For use in vignol rails, including switches and crossings - Inner Distance between cylinders = 328 mm
Shearing force	88 kN (8.8 tons)
Maximum hydraulic power	140 bar
Opening between blades	154 mm
Energy	Battery
Power	12,0 Ah
Dimensions	800 x 520 x 400 mm
Weight	45,3 kg
Blades	
Vignole	Type 32 (11335018) / Type 36 (11335019) / Type 40 (11335024) - Type 40 Gold* (11335044) / Type 45 (11335022) - Type 45 Gold* (11335043) / Type 48 (11335023) - Type 48 Gold* (11335042)

Note : blades not included. *Could be refurbished.

Accessories

The powerful Milwaukee® drill 18V M18 is delivered together with the weld shear. It can be operated separately as a drill and is easily plugged with the shear. The separate case with accessories protects the drill during transport and includes two batteries with a charger.



Monobloc Electrical Weld Shear

EME1

The Monobloc Electrical Weld Shear EME1 is an electrical rail shearing machine designed to shear off the red-hot metal remaining around the rail head after aluminothermic welding of Vignole rails, for narrow area.

ADVANTAGES:

- **Compact design**
- **Greater precision thanks to the adjustable blades and guiding rollers**
- **Efficient thanks to the powerful hydraulic unit**



Weld Shear Hand-Pump

EPM2

The manual shearing machine with incorporated hydraulic pump EPM2 is used to cut red hot metal after an aluminothermic weld. chisel.

AVANTAGE :

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



Technical Specification		
Description	EME1 Narrow Integral Unit Electrical Shearing machine	EPM2 Wide Hydraulic Shearing machine
Item number	11334010	11334004
Application	For use in vignol rails, including switches and crossings Inner Distance between cylinders = 210 mm	Specially designed for wide gap ATW process such as PLA68, WG68 and HWR (Head Wash Repair). Excluding switches and crossings
Shearing force	212 kN (21.5 tons)	212 kN (21.5 tons)
Maximum hydraulic power	250 bar	250 bar
Opening between blades	175 mm	175 mm
Energy	Electrical	Manual
Power	2600 W (50 Hz)	-
Dimensions	1200 x 470 x 450 mm	1200 x 490 x 500 mm
Weight	55 kg	63 kg
Blades		
Vignole	Type 32 (11335018) / Type 36 (11335019) / Type 40 (11335024) – Type 40 Gold* (11335044) / Type 45 (11335022) – Type 45 Gold* (11335043) / Type 48 (11335023) – Type 48 Gold* (11335042)	

Note : blades not included. *Could be refurbished.

Bi-Bloc Weld Shear

EGH1, EGH2, EGH2 RAG

The Bi-Bloc Weld Shear EGH1/EGH2/EGH2 RAG is a hydraulic rail shearing machine designed to shear off excess metal after aluminothermic welding of Vignole rails.

The shear is operated by a separate hydraulic unit, either with an electrical motor or a gas power engine.



ADVANTAGES:

- With the shearing machine, there is no risk of damaging the rail
- The adjustable blades and guiding rollers result in much greater precision
- The powerful hydraulic unit significantly reduces grinding time, saving money and decreasing downtime

Technical Specification						
Description	EGH1 Narrow Hydraulic Shearing machine Vignole		EGH2 Wide Hydraulic Shearing machine Vignole		EGH2 RAG Wide Hydraulic Shearing machine grooved rail	
Item number	11332001		11332002		11332006	
Application	Can be used in switches and crossing (use "L" shape blades)		Specially designed for wide gap ATW process such as PLA68, WG68 and HWR – Head Wash Repair. Excluding switches and crossing		Excluding switches and crossing Use on Tramway rails with Head width (incl. groove) < 121 mm	
Shearing force	212 kN (21.5 tons)		212 kN (21.5 tons)		212 kN (21.5 tons)	
Maximum hydraulic power	250 bar		250 bar		250 bar	
Opening between blades	175 mm		175 mm		175 mm	
Energy	Hydraulic		Hydraulic		Hydraulic	
External dimensions	1020 x 315 x 270 mm		1000 x 450 x 480 mm		1000 x 450 x 480 mm	
Minimum width (rail level)	315 mm		455 mm		455 mm	
Weight	43 kg		49 kg		49 kg	
Power unit						
Energy	Petrol	Electrical	Petrol	Electrical	Petrol	Electrical
Item number	19511007	19511015	19511007	19511015	19511007	19511015
Motor	Honda	Hilti	Honda	Hilti	Honda	Hilti
Power	4 kW at 3600 rpm	2600 W	4 kW at 3600 rpm	2600 W	4 kW at 3600 rpm	2600 W
Weight	39 kg	20 kg	39 kg	20 kg	39 kg	20 kg
Energy	740 x 440 x 420 mm	472 x 230 x 555 mm	740 x 440 x 420 mm	472 x 230 x 555 mm	740 x 440 x 420 mm	472 x 230 x 555 mm
Blades						
Vignole	Type 32 (11335018) Type 36 (11335019) Type 40 (11335024) – Type 40 Gold* (11335044) Type 45 (11335022) – Type 45 Gold* (11335043) Type 48 (11335023) – Type 48 Gold* (11335042)				-	
Grooved rail	-				11335030	

Note : blades not included. *Could be refurbished.

Blades for shearing machines

Shear blades

Our range of robust and long lifetime blades ensure a optimum shearing for your weldings.

A new, high-quality Gold range is also available, for extended service life and refurbishability.



Technical Specification								
Description	Type 32 for Vignole rail	Type 36 for Vignole	Type 40 for Vignole	Type 40 Gold* for Vignole	Type 45 for Vignole	Type 45 Gold* for Vignole	Type 48 Gold* for rail Vignole	Grooved rails
Item number	11335018	11335019	11335024	11335044	11335022	11335043	11335042	11335030
Compatible	EME1 (11334010) / EPM2 (11334004) / EGH1 (11332001) / EGH2 (11332002) / EMB1 (11334014) / EMB2 (11334015)							EGH2 RAG (11332006) EMB2 RAG (11334019)
hearing machine	58 mm < l	59 mm < l < 62 mm	63 mm < l < 66 mm		67 mm < l < 71 mm			
Rail profile								
Vignole	30 E1 36 E1 36 E2	46 E2 ou 33 E1 55 E1	45 E3 46 E1 46 E4 JIS50 50 U6 50 E5 52 E1 50 E6A2 JIS60 50 E6A1		50 E4 54 E2 54 E3 54 E1			-
Grooved rail / Tramway rail	-	-	-		-			60R1 / 35G / 55G1 / NP4A / 55G2

*Could be refurbished. Conditions according to country.

Accessories for shearing

Pandrol offers a complete range of accessories to realise your weldings.

Technical Specification			
Description	Hot Cutter without handle	Risers cutter without handle	Handle for hot and risers cutters
Item number	33910001	33910002	39980001



7

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.



pandrol.com

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.



Technical Specification						
Description	Tangential Straight Grinder Ø175	Cup-stone angle grinder Ø90	Cup-stone angle grinder Ø108	Cup-stone angle grinder Ø115	Angle Grinder Ø230	Groove Straight grinder Ø203
Item number	14312028	14312005	14312004	14312003	48402030	14312023
Steps	Rough and Finishing grinding	Head profile rough and finishing grinding			Cutting of the aluminothermic risers and deburring	Groove cleaning
Disc size	Ø175	Ø90	Ø108	Ø115	Ø230	Ø203
Dimensions	900 x 323 x 311 mm	580 x 150 x 140 mm			510 x 190 x 140 mm	900 x 323 x 311 mm
Energy	Electrical	Electrical			Electrical	Electrical
Power	2600 W (50 Hz)	2600 W (50 Hz)			2600 W (50 Hz)	2600 W (50 Hz)
Weight	10 kg	7 kg			5,6 kg	10,5 kg
Grinding discs and stones (not included)						
Item number	47901037	47901005	-	47901006	47901018 / 47901021	47901032
Rail type						
Vignol	Yes	Yes			Yes	-
Grooved rail	-	Except the groove			Except the groove	Only the groove
Tramway rail	-	Except the groove			Except the groove	Only the groove
Guiding rail	-	Yes			Yes	-
Trail rail "I"	-	Yes			Yes	-
Crane rail	-	Yes			Yes	-
MRS	-	Oui			Oui	-

Grinding discs and stones



Technical Specification				
Description	Angled cutting disc	Angled cutting disc	Flat disc	Tangentiel wheel
Item number	47901021	47901018	47901025	47901037
Dimensions (diam ext/épais)	Ø 230 x 10 mm	Ø 230 x 4 mm	Ø 230 x 3 mm	Ø 175 x 25 mm
Nut	Bore 22.2 mm	Bore 22.2 mm	Bore 22.2 mm	Bore 20 mm
Pack quantity	1	1	1	1
Machine	Angle hand grinder Ø230 (grind) (48402030)	Angle hand grinder Ø230 (cut) (48402030)	MFB / MFR (set up 14344004)	Tangential hand grinder Ø175 (14312028)

Technical Specification					
Description	Grinding stone	Grinding stone	Grinding stone	Grinding stone	Grinding stone with round edge
Item number	47901005	47901006	47901009	47901011	47901032
Dimensions (diam ext/int/thick)	Ø 90 x 40 x 50 mm	Ø 115 x 50 x 50 mm	Ø 150 x 40 x 50 mm	Ø 150 x 72 x 55.2 mm	Ø 203 x 20 x 18 mm
Nut	Bore 15.85 mm	Bore 15.85 mm	Bore 15.85 mm	4 x M8	-
Pack quantity	1	1	1	1	1
Machine	Profile hand grinder Ø90 (14312019)	Profile hand grinder Ø115 (14312018) / RPLE (14352007) / Battery profile hand grinder (14312024)	MFB / MFR (set up 14343016)	Alpha grinder (AGRIN001)	Straight Grinder Ø203 (14312023)

8

Rail drilling machine

The Pandrol Rail Drilling Machine is designed to bore all kinds of vignole and tram rails with extreme precision and minimises vibrations with an advancing lever that controls the engine speed.



pandrol.com

Thermic drilling machine

Drilling machine

The Pandrol Rail Drilling Machine is designed to bore all kinds of vignole and tram rails with extreme precision. Mounted on a clamp and provided with drilling templates, the drill can be adjusted to the full range of standard drilling patterns.

It comes fitted with an advancing lever that minimises vibrations during operation and can be used to control the engine speed.

ADVANTAGES:

- **Engine speed directly synchronised with the position of the drill from the rail, preventing excessive fuel consumption**
- **Modular rail clamp enabling customers to swap the working rail or drill a different pattern by changing the rail or drilling templates on the original clamp**
- **Robust transmission, coupled with its high-quality drill, allows the operator to drill without excessive force on the advancement lever**



Technical Specification	
Gas powered rail drill, including tank and wooden box. Excluded rail template and hole locator	FDRILL0006
Engine	Honda GXV57
Maximum power	1,5 Kw (2HP) à 4800 rpm
Maximum torque	3,2 Nm à 4000 rpm
Wheel rotation speed	300 rpm
Tool maximum diameter	33 mm
Hole diameter	6 à 40 mm
Tool maximum stroke	48 mm
Maximum rail thickness	33 mm
Weight (dry without accessories)	17,8 kg
Vignole Rail version	
Dimensions (L x l x H)	570 x 340 x 395 mm
Tram Rail version	
Dimensions (L x l x H)	695 x 341 x 392 mm
Accessories	
Vignol rail clamp	FDRILL0023
Grooved rail clamp	FDRILL0003
Hole locator for vignol rails – 4 holes	FDRILL0007
Hole locator for grooved rails	FDRILL0040
Other hole locator	On demand

Trollies

Pandrol offers a range of trollies, which are equipped with a safety break device and designed to ensure easy transportation of tools and equipment on the track, especially on rail maintenance sites.

Welders Trolley

PLO1 / PLO1.5

A simple and light weight trolley 1 ton load capacity with safety locking device.
1.5 tons loading capacity is specially designed for welding operations on tracks.

ADVANTAGES:

PLO1:

- Very useful to transport any kind of material on the track especially on aluminothermic welding site
- Safety manual break device
- Reversible push handle

PLO1.5 :

- Big loading tray to ensure easy transportation of welding equipment's and consumables
- Strong steel frame
- Hot temperatures proof
- Safety manual break device

Technical Specification

Description	PLO1	PLO1.5
Item number	12111014	12111020
Maximum load	1000 kg	1500 kg
Track gauge	1435 mm	1435 mm
Dimensions	1670 x 850 x 320 mm	1910 x 1090 x 360 mm
Weight	43 kg	70 kg



Power Carriers

HP 500

Pandrol's HP transporters are Power Carriers designed to save time and labour on tracks and worksites.

ADVANTAGES:

- Safe and easy to operate
- Ideal to move heavy items
- Ideal to help reduce work-related injuries
- Robust and efficient

Technical Specification

Description	HP 500
Item number	TME00005
Engine	HONDA GX160 - 4 stroke single cylinder air-cooled - OHV
Maximum Power	4 kW at 3.600 rpm
Tilt mechanism	Manual
Speed	0 to 4.3 Km/h
Reverse speed	0 to 3.6 Km/h
Fuel tank capacity	3.6 l
Oil tank capacity	0.6 l
Continuous operating hours	2.4 h without refueling



10

Power Units

Pandrol has a range of robust power units designed for supplying power to portable electric tools and lightening equipment. For battery operated equipment, spare batteries and chargers are also available.



pandrol.com

Electric Power Unit

GEE500 / GEE500 B

Pandrol's Electric Power Unit GEE500 is a suitable portable power unit to use all kind of electrical machineries and tools to ensure tracks works.

ADVANTAGES:

- Safety device
- OHV engine
- Easy to move

Technical Specification		
Description	GEE 500	GEE 500 B
Item number	29411003	19411002
Support	Frame	Wheelbarrow
Dimensions	720 x 560 x 490 mm	1110 x 650 x 750 mm
Weight	56 kg	80 kg
Motor		
Engine	Petrol 4 Stroke	
Power	6.6 kW at 3 600 rpm	
Fuel consumption	313 g/kW.h	
Alternator		
Voltage	230 Volts – 50 Hz single phase	
Power	4 kW – 5 kVA	
Autonomy	3.2 hours	



Battery accessories



Technical Specification		
Description	Battery LiHD 18V 8,0Ah	Charger high capacity ASC Ultra
Item number	48402027	48402033
Battery pack voltage	18 V	–
Battery pack capacity	8 Ah	–
Battery voltage	–	14.4 – 36 V
Mains frequency	–	50 – 60 Hz
Max. charging current	–	6.5 A
Charging time for 18 V/4.0 Ah	–	37 min
Charging time for 18 V/8.0 Ah	–	74 min
Weight	980 g	1150 g
Compatible with	EMB1 (11334014) / EMB2 (11334015) / HFP 36V / Cup Stone Angle Grinder Ø115 (14312024)	



ADVANTAGES:

Battery LiHD 18V 8,0Ah

- LiHD battery packs for ultimate performance and extremely long application with minimal temperature generation
- Ultra M technology: Intelligent battery management for long-lasting battery packs
- Patented “AIR COOLED” charging technology
- Permanent Electronic Single Cell Protection (ESCP) when charging, for particularly long life
- Processor-controlled charge and discharge management
- Capacity display with almost no self-discharge

Charger high capacity ASC Ultra

- Patented “AIR COOLED” charging technology: battery pack cooling during charging for significantly reduced charging times
- High charging current for fast charging of the battery packs
- Very low stand-by input power
- Processor-controlled charging management for gentle charging and maximum number of charging cycles

11

Services

Pandrol helps increase your equipment and rail longevity. With specific welding training for your teams, equipment services and optimised maintenance solutions, we guarantee a longer railway lifetime and safer traffic.



pandrol.com

Pandrol Training Academy

Our dedicated welding training centres both in Raismes, France and Worskop, UK, offer world-class expertise, with dedicated training areas and digital training tools. We support specialists with a comprehensive training package including: aluminothermic welding, arc welding repair, and JIC training.

The Training Centers work closely with railway operators to ensure that the Academy delivers fully accredited training for each country. The Raismes centre is SNCF accredited, EN 14730-2 and Qualiopi compliant. It has recently been validated and recognized by the Deutsche Bahn and Swiss Federal Railways (CFF), the UK centre is approved by Network Rail.



On-Track Services

Drawing on Pandrol's expertise in rail infrastructure, our on-site interventions provide tailor-made solutions designed to address your challenges.

Pandrol offers on-track services ranging from aluminothermic rail welding to precise inspection of track conditions and the repair of defects such as wear or damage to rails and fasteners.



After-sales

Pandrol After-sales service supports you during the entire lifespan of your Pandrol products, helping to maximize their efficiency and longevity in the field.

We provide on-track services as required, as well as delivering spare parts to support the repair of your equipment.

Additionally, our on-site after-sales service includes diagnosis, refurbishment and calibration by factory trained and certified technicians to make your equipment last longer.

Contact : contact.sav@pandrol.com



i+weld

by **PANDROL**

**Track welding has been waiting
for a breakthrough. i+weld delivers.**

We understand the complexity of rail welding.
We've developed a solution that addresses customers'
challenges head-on. Complete more welds in less time
with semi-automated processes that reduce the physical
strain on welders and streamline training.

Yesterday. Today. Tomorrow.



More info.



Index

11111004	A frame CR57 Crane rail	13	47901044	Rail saw – cutting disc Zirconia 356 mm bore 25.4 mm	10
11111006	A frame CR57 Fastclip®	13	47901042	Rail saw – cutting disc Zirconia 406 mm bore 25.4 mm	10
11111003	A frame CR57 Grooved rail	13	14221032	Rail saw – HC355 Universal bore 25.4 mm	9
11111002	A frame CR61 Universal	13	14221031	Rail saw – HC355 Vignol bore 25.4 mm	9
48402030	Angle grinder Ø 230	27	14221034	Rail saw – HC406 Universal bore 25.4 mm	9
47901018	Angled cutting disc Ø 230 x 10 mm	27	21121069	Rail stressor – hydraulic hand pump	15
47901021	Angled cutting disc Ø 230 x 4 mm	27	21121065	Rail stressor – hydraulic unit 580 bar	15
48402027	Battery LiHD 18V 8,0Ah	33	11121010	Rail stressor – pressure release tool	15
11335030	Blades – Grooved rail	25	11121004	Rail stressor – set of adjustable tie rods – length 1.20 m	15
11335018	Blades – Type 32 for Vignole rail	25	11121005	Rail stressor – set of adjustable tie rods – length 1.80 m	15
11335019	Blades – Type 36 for Vignole rail	25	21121068	Rail stressor – set of hoses	15
11335024	Blades – Type 40 for Vignole rail	25	11121003	Rail stressor – set of tie rods – length 1.20 m	15
11335044	Blades – Type 40 Gold for Vignole rail	25	11121002	Rail stressor – set of tie rods – length 1.80 m	15
11335022	Blades – Type 45 for Vignole rail	25	21121066	Rail stressor with ball connectors TR75	15
11335043	Blades – Type 45 Gold for Vignole rail	25	33910002	Risers cutter w/o handle	25
11335042	Blades – Type 48 Gold for Vignole rail	25	On demand	Safety barrier	5
48402033	Charger battery LiHD 18V 8,0Ah	33	11334018	Shearing machine – Compact-Shear B-M-VIR	22
On demand	Clip Driver CD100 B	7	11332001	Shearing machine – EGH1 Narrow Hydraulic Vignole rail	24
On demand	Clip Driver CD200 IQ	7	11332002	Shearing machine – EGH2 Narrow Hydraulic Vignole rail	24
14312004	Cup-stone angle grinder Ø 108	27	11332006	Shearing machine – EGH2 RAG Wide Hydraulic Grooved rail	24
14312003	Cup-stone angle grinder Ø 115	27	11334010	Shearing machine – EME1 narrow electric	23
14312005	Cup-stone angle grinder Ø 90	27	11334004	Shearing machine – EPM2 wide hydraulic	23
FDRILL0006	Drilling machine	29	19123021	Straight edge 0,5 m bevelled – RB500	14
11334014	EMB1	21	19123023	Straight edge 0,7 m bevelled – RB700	14
11334015	EMB2	21	19123024	Straight edge 1,0 m	14
11334019	EMB2 RAG	21	19123020	Straight edge 1,0 m bevelled – RB1000	14
47901025	Flat disc Ø 230 x 3 mm	27	19123014	Straight edge 1,0 m bevelled large handle – Bevelled-Edge 1000	14
47901006	Grinding stone Ø 115 x 50 x 50 mm	27	19123022	Straight edge 1,0 m magnetic – RAP1000	14
47901009	Grinding stone Ø 150 x 40 x 50 mm	27	On demand	Stressing Rollers – VSR	15
47901011	Grinding stone Ø 150 x 72 x 55.2 mm	27	14312028	Tangential Straight Grinder Ø175	27
47901005	Grinding stone Ø 90 x 40 x 50 mm	27	47901037	Tangential wheel Ø 175 x 25 mm	27
47901032	Grinding stone with round edge Ø 203 x 20 x 18 mm	27	FHJ10000	Track jacks hydraulic HJ 10	13
14312023	Groove Straight grinder Ø203	27	FHJ05000	Track jacks hydraulic HJ 5	13
39980001	Handle for hot and risers cutters	25	FMJ10200	Track jacks Mechanical BM 10	13
33910001	Hot cutter w/o handle	25	FMJ05200	Track jacks Mechanical BM 5	13
On demand	i+seal	18	FOJS0001	Track jacks Obstructionless BLR 10 (w/o T-wrench 48401212)	13
82632504	Ignition kit – 14.4V battery	18	12111014	Trolley PLO1 1000 kg	31
82632505	Ignition kit – Battery Charger	18	12111020	Trolley PLO1.5 1500 kg	31
82632502	Ignition kit – Box of 10 Starters	18	TSV00012	Umbrella	5
82632509	Ignition kit – Starter Handle	18	On demand	Verse	14
82632506	Ignition kit – Startwel® Suitcase	18	TSV00008	Welder gaiter	5
82632508	Ignition System Startwel®	18	48801002	Welder gloves	5
NA	Pandrol Connect	17	On demand	Welding Crane rail – APR	19
TME00005	Power carrier HP500	31	On demand	Welding Grooved rail – SRG	19
29411003	Power unit electric – GEE500 with frame	33	On demand	Welding Grooved rail – SRG-N	19
19411002	Power unit electric GEE500 B on wheelbarrow	33	On demand	Welding Head Wash Repair – HWR	19
11211020	Preheater – GP 40 TE Petrol	17	TSV00010	Welding tent	5
11211019	Preheater – GP 40 TP Propane gas	17	On demand	Welding Vignol rail – PLA	18
S000A498	Preheater – HFP 36V Metabo batteries	17	On demand	Welding Vignol rail – PLR	18
S000B505	Preheater – HFP 36V Milwaukee batteries	17			
47901041	Rail saw – cutting disc AloX 356 mm	10			

[illegible]

Notes

[illegible]

Partners in excellence

Contact your local team to discuss your requirements

pandrol.com/contact

