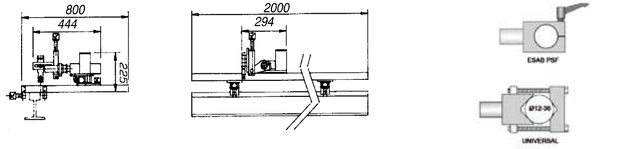
Technical specification

Connection voltage:	36-46 VAC/40-60 VDC	**Welding speed:**	10-150 cm/min
Output consumption:	Max. 80 W	**Rapid transport speed:**	150 cm/min
Weight excluding rail:	7 kg	**Weaving speed:**	7-50 mm/s
Weight of rail, 2 m:	4 kg	**Weaving width (W):**	1-80 mm
Slide for adjusting height of torch:	± 22 mm	**Zero-line shift:**	25 mm (± 12.5 mm)
Mechanical lateral adjustment:	200 mm	**Programmable edge length (L):**	6-99 cm
Gun attachment, universal:	Ø 12-36 mm	**Number of programs:**	BV:4, BVR:6
Effective weld length:	Max. 1,500 mm	**Protection class:**	IP 23

Measurements



Ordering information

Railtrac BV 1000, complete, excl. welding equipment	0398 145 002
Railtrac BVR 1000, complete, excl. welding equipment	0398 145 003
Gun attachment for ESAB PSF 400/500	0398 145 101

Cable key diagram

Feeder unit	Brand	0457 360 880	0457 360 881	0459 681 880	0457 467 880	Voltage	Current	Power	On/Off	Railtrac BV/BVR
Origo™ Feed 304; M12	ESAB	X				—	X	X	X	
Origo™ Feed 484; M12		X				—	X	X	X	
Origo™ Feed 304; M13		X				X	X	X	X	
Origo™ Feed 484; M13		X				X	X	X	X	
Aristo™ Feed 3004; 4804		X		X		X	X	X	X	
Universal	?		X		X	?	?	X	X	
		Cable 23 pins	Cable without plug	Remote adapter kit	Transformer					

ESAB AB
Box 8004, SE-402 77 Göteborg, Sweden.
Phone: +46 31 50 90 00. Fax: +46 31 50 91 70.
info@esab.se
www.esab.com

ISO 9001

The ESAB group is certified according to ISO 14001 & OHSAS 18001

Railtrac BV/BVR 1000

PROGRAMMABLE EQUIPMENT FOR HARDFACING AND REPAIR OF RAIL PROFILES

XA00067820

Railtrac BV/BVR 1000 are optimised for mechanised rail welding

Railtrac BV and BVR 1000 are simple to use. No complicated programming. Just enter the required data in numbers and it is ready to start welding. The control box and the remote control pendant are small units and easy to understand. Simple, non identical plugs connect these units to the ESAB welding power source where it picks up its 42V AC power supply.

Manual welding of rails is extremely demanding. The combination of a harsh environment, uncomfortable working positions, limited time slots, and stress makes the work taxing and demanding. This results in a high level of sick leave, as well as making it difficult to retain skilled welders. Railtrac BV/BVR 1000 is a machine, which is able to solve the vast majority of these problems. Repair by welding has demonstrated considerable cost saving advantages. By weld-surfacing track components, length of service can be substantially prolonged at a lower cost than if work components are replaced with new ones. Repairing a crossing by welding typically constitutes only 20% of the replacement cost.

Railtrac and ESAB inverters for track welding makes the job so much easier.

ESAB has worked closely with Banverket (Swedish National Rail Administration) to provide a package of machines and consumables that are ideally suited to track repairs and maintenance. The machines are very light but still very efficient and robust.
The consumables are specially-developed, self-shielded, flux cored wires for a variety of rail grades.

OK Tubrodur 15.41, 15.42 and 15.43 are used for the carbon-manganese grades. These wires correspond to different hardnesses in the weld metal. For the austenitic-manganese grades, OK Tubrodur 15.65 is used.

We comply with the highest weld quality, economy, environmental and ergonomic requirements

Railtrac BV/BVR 1000 is the result of extremely close collaboration with several different rail administrations in which truly rigorous demands have been imposed following in-depth analyses of the problems involved in track welding.

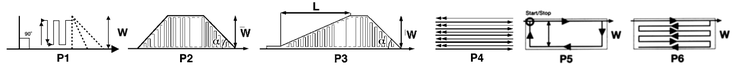
- **Light weight makes it easy and quick to remove the aluminium travel beam from rail or crossing and simple to restore to its original position on the work piece.**
- **It can be used with a number of different power sources and wire feeder combinations.**
- **Precise adjustments of the weaving pattern, travel speed and zero line can all be achieved during welding.**
- **Welding parameters are adjustable from the remote control.**
- **CE and EMC approved.**
- **Having IP 23 makes it approved for use outdoors. The control voltage level of 42V AC is safe for use anywhere.**

Railtrac BV/BVR 1000 give high quality welds on crossings and plain rail

A great deal of time and attention has been devoted to complying with the requirements, which result from welding rail on site. We have taken into account large-scale variations in temperature, rain and wind, as well as rough handling.
Even though Railtrac BV/BVR 1000 is developed to withstand tough use the equipment is well protected during transport and storage.

As a result, it is moved with the most sensitive parts packed in a portable case containing suitable shock-absorbent material. Everything has been done to give the equipment the longest possible service life and operational reliability.

Programmes



This is the explanation of the 6 welding patterns for RAILTRAC BV (4) and BVR (6) 1000. The first four programmes are common for both Railtrac BV and BVR.

Programme 1
Programme one is used when repairing rail ends. The starting edge of the weld pattern is always 90° to the running edge of the rail. The finishing edge of the weld pattern can be chosen to either 90°, 45° or 22.5°.
The width (W) of the rail head is entered into the main control box. All other values regarding speed are optimised and factory preset. Weaving is transverse across the rail head.

Programme 2
Programme two is used for repairing wheel burns and other plain rail defects.
The starting angle is always 45° to the running edge of the rail. The finishing edge of the weld pattern can be either 90°, 45° or 22.5°
The width (W) of the rail head is entered into the main control box. All other values regarding speed are optimised and factory preset. Weaving is transverse across the rail head.

Programme 3
Programme three is used for repairing wing rails and tips of carbon manganese steel crossings. Two values are entered into the main control box.
(W) The width of the weld at full stroke of the weave in millimetres.
(L) The length of the required repair in millimetres. Weaving is transverse across the rail head.

Programme 4
Programme 4 is mainly used for repairing 14% manganese crossings. Two entries are put into the main controller. Welding speed in centimetres per minute and lateral side movement in millimetres. The Railtrac BV/BVR will perform welding in one direction and at a given command will stop welding, move the welding head sideways and return at full speed to the original starting point. At a given command it will restart the cycle.

Programme 5
Programme 5 is used in conjunction with programme 6. Primarily with programme 5 an enclosure in the form of a rectangle is welded involving two limit sensors. These are set at the required distance needed for the rectangle. Two entries are put into the main control box namely welding speed in cm/min and the width of the rectangle in mm. The Railtrac will weld a complete rectangle without stopping.

Programme 6
Programme 6 is used to fill up the previously welded rectangle. Using the two limit sensors the Railtrac BVR will automatically complete the welding non stop.
Two values are entered into the main controller, the welding speed in cm/min and the lateral side movement after each weld bead in mm.